

MIL-STD-903C

20 November 1986

SUPERSEDING
MIL-STD-903B
1 FEBRUARY 1982

MILITARY STANDARD

SANITARY STANDARDS FOR COMMISSARIES



FSC 89GP

MIL-STD-903C

20 November 1986

DEPARTMENT OF DEFENSE
Washington, D.C. 20310-2300

Sanitary Standards for Commissaries

MIL-STD-903C

1. This Military Standard is approved for use by the Departments of the Army and the Navy.

2. The proponent agency of this document is the Office of The Surgeon General. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commandant, Academy of Health Sciences, US Army, ATTN: HSHA-IVS, Fort Sam Houston, TX 78234-6100 or use DD Form 1426 (Standardization Document Improvement Proposal), which is self-addressed, appearing at the end of this document.

CONTENTS

		<u>Page</u>
Paragraph 1.	SCOPE-----	1
1.1	Purpose-----	1
1.2	Application-----	1
1.3	Objectives-----	1
2.	REFERENCED DOCUMENTS-----	1
2.1	Issues of documents-----	1
2.2	Other publications-----	2
3.	DEFINITIONS-----	3
3.1	Adequate-----	3
3.2	Adulterated-----	3
3.3	Cleaning-----	3
3.4	Contamination-----	3
3.5	Commissary-----	3
3.6	Commissary annex-----	3
3.7	Critical defect-----	3
3.8	Defect-----	3
3.9	Delicatessen-----	3
3.10	Food-----	3
3.11	Inspectors-----	3
3.12	Plant-----	4
3.13	Potentially hazardous food-----	4
3.14	Processing-----	4
3.15	Production area-----	4
3.16	Product area-----	4
3.17	Product load line-----	4
3.18	Product zone (food contact surface)-----	4
3.19	Sanitize-----	4
3.20	Toilet facility-----	4
3.21	Toilet room-----	4
3.22	Unsafe temperature range-----	4
3.23	Urinal-----	4
3.24	Warehouse-----	4
3.25	Water closet-----	4
3.26	Waterfoods-----	5
3.27	Wholesome-----	5
4.	GENERAL REQUIREMENTS-----	5
4.1	Sanitary compliance rating (SCR)-----	5
4.2	Commissary sanitary compliance checklist-----	5
4.2.1	Recording of defects-----	5
4.2.2	Computation of the sanitary compliance rating-----	5
4.2.3	DD Form 2460 (Commissary Sanitary Compliance Checklist)-----	6

MIL-STD-903C

20 November 1986

CONTENTS Continued.

		<u>Page</u>
Paragraph 5.	DETAILED REQUIREMENTS-----	6
5.1	Premises-----	6
5.2	Raw materials-----	6
5.2.1	Single-service articles and packaging material-----	6
5.3	Construction of building-----	6
5.4	Lighting-----	7
5.5	Ventilation and humidity-----	7
5.6	Water supply-----	7
5.7	Ice (if used)-----	7
5.8	Disposal of wastes-----	8
5.9	Toilet/dressing room, and handwashing facilities -----	8
5.10	Construction, repair and maintenance of equipment and utensils-----	9
5.10.1	Equipment and utensils-----	9
5.11	Meat market-----	10
5.11.1	Cleaning and sanitizing-----	10
5.11.1.1	Washing, rinsing, and sanitizing of utensils-----	10
5.11.1.2	Areas and equipment-----	11
5.11.1.3	Meat display cases-----	11
5.11.1.4	Electrically operated meat market equipment	11
5.11.1.5	Midshift cleanup-----	11
5.11.1.6	Raw pork processing-----	12
5.11.2	Processing area-----	12
5.11.2.1	Tempering of product-----	12
5.11.2.2	Cooked or ready-to-eat items-----	12
5.11.2.3	Prepackaged fresh poultry and prepackaged waterfoods-----	12
5.11.2.4	Packaging materials-----	12
5.11.2.5	Scraps and fat materials-----	13
5.11.3	Refrigeration areas-----	13
5.11.3.1	Freezer storage-----	13
5.11.3.2	Chill storage-----	13
5.11.3.3	Display cases-----	13
5.11.3.4	Meat processing area temperatures-----	14
5.11.4	Storing and storage facilities-----	14
5.11.4.1	Sawdust-----	14
5.11.4.2	Contaminated product-----	14
5.11.4.3	Separate storage areas-----	15
5.12	Produce market-----	15
5.12.1	Cleaning and sanitizing treatment-----	15
5.12.2	Processing area-----	15
5.12.3	Storing and storage-----	15

CONTENTS Continued.

		<u>Page</u>
Paragraph 5.13	Grocery market-----	15
5.13.1	Cleaning and sanitizing treatment-----	15
5.13.2	Refrigeration areas-----	15
5.13.3	Storing and storage facilities-----	16
5.13.3.1	Hazardous products-----	16
5.13.3.2	Salvage area-----	16
5.14	Warehouse section-----	16
5.14.1	Cleaning-----	16
5.14.2	Refrigeration areas-----	16
5.14.3	Storing and storage facilities-----	16
5.15	Delicatessen-----	16
5.15.1	Cleaning and sanitizing treatment-----	16
5.15.2	Separation of areas-----	17
5.15.3	Separation of product-----	17
5.15.4	Separation of equipment-----	17
5.15.5	Separation of personnel-----	17
5.15.6	Temperatures-----	17
5.15.7	Dry and liquid wastes-----	18
5.16	Control of insects, birds, rodents, and/or other animals-----	18
5.17	Vehicles and transportation facilities-----	18
5.18	Cleanliness and health of personnel-----	18
5.18.1	Cleanliness-----	18
5.18.1.1	Gloves-----	19
5.18.1.2	Handwashing signs-----	19
5.18.2	Health of personnel-----	19
5.18.3	Medical examinations-----	19
5.18.4	Education and training-----	19

MIL-STD-903C
20 November 1986

MIL-STD-903C

20 November 1986

1. SCOPE

1.1 Purpose. This standard establishes certain minimum sanitary requirements for military commissaries and a system of recording specific violations of these requirements to assure that military food protection programs are effective.

1.2 Application. This standard is applicable to commissaries and commissary annexes operated by the commissary officer for the primary purpose of providing subsistence and household supplies for sale to authorized individuals.

1.3 Objectives. The objectives of this military standard are as follows:

1.3.1 To insure the issue or sale of clean, wholesome food products that are free from chemical, microbiological, and physical contaminants.

1.3.2 To prevent the transmission of foodborne disease to members of the Armed Forces.

1.3.3 To establish a system of recording specific violations of sanitary standards and requirements to assure that food protection programs are effective.

2. REFERENCED DOCUMENTS

2.1 Issues of documents. The following documents form a part of this standard to the extent specified herein:

LAWS AND REGULATIONS

Environmental Protection Agency (EPA)

Code of Federal Regulations (CFR), title 40, Protection of the Environment, parts 100 to 149

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

US Department of Agriculture (USDA)

List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs

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

20 November 1986

US Department of Health and Human Services (HHS)

CFR, Title 21, Food and Drugs, Parts 100 to 169

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

US Department of Labor

CFR, Title 29, Labor, Parts 1900 to 1910

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

Military Publications

AR 40-5, Medical Services, Preventive Medicine

AR 40-657/NAVSUPINST 4355.4/AFR 161-32/MCO P10110.31, Medical Services, Veterinary/Medical Food Inspection

DOD 4145.19-R-1, Storage and Materials Handling

NAVMED P-5010, Manual of Naval Preventive Medicine

TB MED 530, Occupational and Environmental Health, Food Service Sanitation

(Copies of regulations and technical manuals may be obtained from normal military publication channels.)

2.2 Other publications. The following documents form a part of this standard to the extent specified herein:

Illuminating Engineering Society (IES)

IES Lighting Handbook

(Application for copies should be addressed to Illuminating Engineering Society, 40 United Engineering Center, 345 East 47th Street, New York, NY 10017.)

National Sanitation Foundation (NSF)

NSF Standard #37 for Air Curtains for Entrances in Food Establishments

NSF Food Service Equipment Standards

(Application for copies should be addressed to the National Sanitation Foundation, PO Box 1468, Ann Arbor, MI 48106.)

MIL-STD-903C

20 November 1986

3. DEFINITIONS

3.1 Adequate. Methods that are needed to accomplish the intended purpose in keeping with accepted public health practices.

3.2 Adulterated. The condition of a food (a) if it bears or contains any poisonous or deleterious substance in a quantity which may render it injurious to health; (b) if it bears or contains added poisonous or deleterious substance for which no safe tolerance has been officially established, or in excess of such tolerance if one has been established; (c) if it consists in whole or part of any filthy, putrid, or decomposed substance, or if it is otherwise unfit for human consumption; (d) if it has been processed, prepared, packed, or held under insanitary conditions, whereby it may have become contaminated with filth, or whereby it may have been rendered injurious to health; (e) if it is in whole or in part the product of a diseased animal; or (f) if its container is composed in whole, or in part, of any poisonous or deleterious substance which may render the contents injurious to health.

3.3 Cleaning. The physical removal of food residues, ingredients, and other soiling materials by approved methods.

3.4 Contamination. The act or process of exposing the product to an adulterant or unwholesome material.

3.5 Commissary. An activity located on an installation established for the primary purpose of providing subsistence and household supplies for sale to authorized individuals.

3.6 Commissary annex. A facility established within the confines of an installation which augments the sales function of an existing commissary.

3.7 Critical defect. A defect that creates or appears to create a serious health hazard or unwholesome condition.

3.8 Defect. A product, practice, procedure, or condition at variance with specified requirements.

3.9 Delicatessen. An area designated in the commissary for selling foods already prepared or requiring little preparation for serving.

3.10 Food. Any raw, cooked, or processed edible substance, ice, beverage, or ingredient used or intended for use or for sale in whole or in part for human consumption.

3.11 Inspectors. Any properly designated representative of the military medical departments. Representatives include commissioned medical officers, environmental health officers, civilian technicians, or preventive medicine technicians (Navy); or Veterinary Corps officers, Warrant Officers (Military Food Inspection Technician MOS 051A), or qualified enlisted veterinary food inspection specialists (Army).

20 November 1986

3.12 Plant. The building or buildings or parts thereof, used for or in connection with the manufacturing, processing, packaging, labeling, or storing of human food.

3.13 Potentially hazardous food. Any food that consists in whole or part of milk or milk products, eggs, meat, poultry, fish, shellfish, edible crustacea, or other ingredients, including synthetic ingredients, in a form capable of supporting rapid and progressive growth of infectious or toxigenic microorganisms.

3.14 Processing. Any further preparation, boning, trimming, cutting, packaging, reconditioning, and so forth of raw or cooked products.

3.15 Production area. The room or area in which processing occurs.

3.16 Product area. The production area and all other areas where the product, ingredients, and packaging materials are handled or stored.

3.17 Product load line. The highest point of discharge and return of refrigerated air within a display case.

3.18 Product zone (food contact surface). The surface of any equipment, utensils, or other materials that contacts the unpackaged product or ingredients during processing.

3.19 Sanitize. The adequate treatment of clean product contact zones by a process that is effective in destroying vegetative cells of pathogenic bacteria and substantially reducing numbers of other microorganisms. Such treatment shall not adversely affect the product and shall be safe for the consumer.

3.20 Toilet facility. A fixture maintained within a toilet room for the purpose of defecation and/or urination.

3.21 Toilet room. A room maintained within or on the premises of the commissary, commissary annex, or warehouse that contains toilet facilities for use by employees.

3.22 Unsafe temperature range. For Army facilities will be temperatures above 45°F (7°C) and below 140°F (60°C). For Navy facilities unsafe temperature range will be temperatures above 40°F (4.5°C) and below 140°F (60°C).

3.23 Urinal. A toilet facility maintained within a toilet room for the sole purpose of urination.

3.24 Warehouse. Area where bulk food for the commissary is stored, except merchandise delivered directly to the grocery market. This may include the commissary itself or any additional building designated for this purpose.

3.25 Water closet. A toilet facility maintained within a toilet room for the purpose of defecation and urination and which is flushed with water.

MIL-STD-903C

20 November 1986

3.26 Waterfood. All fresh and saltwater fish and shellfish used for food.

3.27 Wholesome. That characteristic possessed by a food product that is conducive to good health and well being in the consumer.

4. GENERAL REQUIREMENTS

4.1 Sanitary compliance rating (SCR). Commissaries that attain an SCR of 90 or above shall be considered "satisfactory" provided no critical defects, determined in accordance with 4.2.1, are recorded. When a critical defect is recorded, the inspection will still be completed, annotating all deficiencies. A numerical SCR will be computed; however, the facility shall receive a failure for the inspection. Regardless of the SCR attained, no defect that is immediately correctable shall be left uncorrected. Reporting procedure, responsibility, and authority will be in accordance with regulations and directives of the applicable military service.

4.2 Commissary sanitary compliance checklist. The sanitary requirements are set forth in this standard and are itemized as sanitation defects in column 1 of the checklist. The individual defects are given assigned points in column 2 of the checklist unless defects are designated as critical (see paragraph 3.7).

4.2.1 Recording of defects. The inspector designates as critical or numerically rates the observed sanitation defects. The numerical rating shall be within the numerical range of the assigned defect points in column 2 and shall be recorded in column 3. Any defect entry and related defect points that are not applicable to the commissary being inspected shall be deleted by lining out the nonapplicable defect and assigned defect points. Nonapplicable defect points shall be subtracted from the total number of assigned defect points when totaling column 2. In instances where the inspector considers a defect to be of such magnitude as to constitute a serious health hazard, the numerical rating shall be deleted in column 2 and the word "critical" shall be recorded in column 2 and 3. Defects designated as critical in the checklist may not be downgraded or assigned defect points. Numerical and critical defects shall be explained in the remarks section in sufficient detail to clearly describe the condition which resulted in the disrating. Deficiencies not listed in the checklist that are observed and considered by the inspector to be of sufficient importance to affect the SCR will likewise be explained in the remarks section.

4.2.2 Computation of the sanitary compliance rating. If a critical defect is recorded, an SCR shall still be computed. Columns 2 and 3 are totaled and the SCR shall be computed using the following formula:

$$\frac{\text{Net total of column 2} - \text{Net total of column 3}}{\text{Net total of column 2}} \times 100 = \text{SCR}$$

The SCR assigned will be rounded to the nearest whole percent.

MIL-STD-903C

20 November 1986

4.2.3 DD Form 2460 (Commissary Sanitary Compliance Checklist). A copy of this form is located at the end of this publication for local reproduction. The form will be locally reproduced on 8 1/2 X 11-inch paper.

5. DETAILED REQUIREMENTS

5.1 Premises. The premises shall present a clean and orderly appearance. They shall be well drained and free of environmental conditions and/or materials that are a nuisance or a hazard to sanitation. The area shall be free of weeds, debris, and unused equipment and materials. The area shall also be free of waste materials that are stored or handled in such a manner as to be a potential health hazard. The presence of any harborage, attractant, and/or breeding area for insects, rodents, or birds shall not be permitted. If the commissary grounds are bordered by grounds not under the commissary's control, care must be exercised in the commissary by inspection, extermination, or other means to effect exclusion of pests, dirt, and other filth that may be a source of food contamination. The approaches to receiving and shipping docks shall be kept clean and maintained to minimize dust.

5.2 Raw materials. All food must be obtained from approved sources as required by AR 40-657/NAVSUPINST 4355.4 /AFR 161-32/MCO P10110.31. Food that shows evidence of adulteration, contamination, active insect infestation, or any condition that from a public health or esthetic standpoint renders the product unfit for human consumption, shall not be accepted by the commissary.

5.2.1 Single-service articles and packaging materials. Single-service articles and packaging materials shall be free of contamination and maintained in sanitary boxes, cartons, tubes, or otherwise protected and handled in a sanitary manner.

5.3 Construction of building. The building shall be large enough to accommodate the operation without hampering sanitary practices. The layout of the building shall be such that the flow of dissimilar products, such as poultry, fish, and meat, are channeled through separate and controlled routes that do not cross. Floors, walls, and ceilings shall be constructed of materials that can readily be kept clean, sanitary, and in good repair. Any unnecessary clutter of wiring, pipes, hangers, ducts, and so forth shall be avoided. Ceilings shall be free of peeling paint and condensates. In new construction, painted ceilings shall be sealed with a mold inhibitor agent. The exterior openings, including doors, windows, conveyor openings, pipe openings, and vents shall be clean and in good repair. Where practicable, exterior openings shall be equipped with screens or other effective means (such as air curtains or overlapping plastic strips) to prevent the entrance of insects, birds, rodents, and/or other animals. When the screening of openings is impracticable, such as in receiving areas, flying insect entry shall be controlled by properly positioned air curtains or overlapping plastic strips large enough to cover the total door opening. Air curtains shall comply with the National Sanitation Standard No. 37 for Air Curtains for Entrances in Food Establishments. Screen doors shall open outward and be self-closing.

MIL-STD-903C

20 November 1986

5.4 Lighting. Each room shall have sufficient natural or artificial lighting for the purpose for which it is to be used. Lighting intensities shall conform to the intensities established in the latest edition of the IES Lighting Handbook. Lights in the product areas shall be equipped with protective shields or shall be of such construction that they will not shatter if broken.

5.5 Ventilation and humidity. Humidity shall be regulated in conjunction with ventilation or air movement to control condensation, objectionable odors, and mold growth on ceilings and walls in all areas. Air for ventilation shall be adequately filtered as appropriate to prevent contamination. Ventilation systems shall be kept clean and maintained in good repair.

5.6 Water supply. The water supply shall be readily accessible, of a sufficient quantity, and have an acceptable quality as established in the CFR, title 40, Protection of the Environment, or individual service regulations. The water heater shall be of such capacity so as to be able to furnish an undiminished supply of hot water at a minimum temperature of 120°F - 140°F (49°C - 60°C), for a complete food plant cleaning procedure at all times throughout a working day. There shall be mixing valves at all scullery sinks and hose connections. There shall be hose connections available in all processing areas, near all coolers, and in the trash and garbage areas. There shall be no cross-connection between potable and non-potable lines. There shall be protection against possible back-siphonage. There shall be effective protection of wells from contamination by surface drainage or floods. Bacteriological examination and water test results shall be maintained to show that the water supply has been approved by Federal, State, or local health authorities within the past 6 months. If Federal, State, or local health authorities do not have such evidence of water potability, applicable military service regulations governing potable water supplies will be followed to approve the water supply(ies). Within the Continental United States (CONUS), Hawaii, and Alaska, a water supply approved by a Federal, State, or local health authority will be considered potable, if the samples drawn for testing were taken from the faucets located within the commissary facility(ies). Nonpotable water outlets, if present, shall be located and identified by color code and labeled nonpotable so as to preclude the use of nonpotable water for other than the purposes designated. The color code used shall be readily identifiable, prominently displayed, and clearly understood by commissary personnel. The use of nonpotable water is permitted for the flushing of urinals and water closets, for boilers, and for such other similar uses provided it does not directly, nor indirectly, contact the ingredients, products, packaging materials, general product area, or personnel handling the products.

5.7 Ice (if used). Ice shall be made from a supply of potable water that meets the requirements of paragraph 5.2 and/or 5.6. It shall be manufactured, handled, stored, and used in a sanitary manner.

MIL-STD-903C

20 November 1986

5.8 Disposal of wastes. Liquid wastes shall be conveyed to a public sewer system through inclosed piping or shall be disposed of in another sanitary sewage system approved by State or local health authorities. Floor drains shall be functional and properly trapped. Dry and product waste shall be placed in suitably covered receptacles conveniently located throughout the commissary store and premises. All waste shall be collected and disposed of in a sanitary manner at a frequency to prevent insect and rodent attraction and development of objectionable odors. Garbage cans shall be water tight and provided with tight-fitting lids. They shall be kept outside on racks that can be easily cleaned. Contents of the cans shall not be permitted to accumulate above a level of 4 inches (10 centimeters) from the top. The cans shall be kept clean at all times. After cleaning garbage cans, personnel shall not handle food without thoroughly washing hands with a detergent and sanitizing agent. Refuse container equipment shall be used for the collection of wastes. Doors of refuse containers shall be tight fitting. Doors of the containers shall be kept closed at all times. Refuse containers and the refuse container area shall be cleaned at a frequency to prevent insect and rodent attraction and development of objectionable odors.

5.9 Toilet/dressing rooms, and handwashing facilities. A sufficient number of sanitary toilet facilities shall be provided. Employee toilet facilities required are as follows:

Number of employees of same sex	Minimum number of water closets required*
1-15	1
16-35	2
36-55	3
56-80	4
81-110	5
111-150	6
Over 150	1 additional fixture for each additional 40 employees

*Where toilet facilities will not be used by women, urinals may be provided instead of water closets, except that the number of water closets in such cases shall not be reduced to less than two-thirds of the minimum specified.

Toilet rooms shall be conveniently located, constructed of materials which can be easily and satisfactorily cleaned, adequately lighted, and separately vented to the outside. They shall be constructed so that they do not open directly into rooms or areas where components or products are processed or stored. The doors shall be tight-fitting and self-closing. A sign directing employees to wash their hands before returning to work shall be conspicuously posted in all toilet rooms. Handwashing signs will be multilingual, as appropriate. Handwashing facilities, with running water at a suitable temperature for handwashing, soap (liquid or powder), soap dispenser, and sanitary single-service towels will be conveniently located in the toilet rooms and throughout the processing area. Hot air blower-type hand dryers may

MIL-STD-903C

20 November 1986

be used to augment sanitary single-service towels. Toilet rooms and fixtures, dressing rooms, and handwashing facilities will be maintained in a clean, orderly manner. There shall be a sanitary waste receptacle in each toilet room. Toilet/dressing rooms shall not be used for storage of cleaning equipment. Each employee shall be furnished a locker or other suitable facility, and lockers and dressing rooms shall be kept clean and orderly.

5.10 Construction, repair and maintenance of equipment and utensils. Equipment and utensils shall be designed, constructed, and used to preclude the adulteration of food with lubricants, fuel, metal fragments, contaminated water, or any other contaminants. Lubricants used on contact surfaces of moving parts to overhead rails, pumps, and product handling and processing equipment, shall be edible and nontoxic and shall be used in a manner that prevents contamination of food or food contact surfaces.

5.10.1 Equipment and utensils. All equipment and utensils shall be designed and constructed of such material and workmanship as to be smooth, easily cleanable, and durable. In addition, the food contact surfaces of such equipment shall be easily accessible for cleaning, nontoxic, corrosion-resistant, and consist of nonabsorbent material. Food contact surfaces and solder shall be corrosion-resistant and shall not contain antimony, bismuth, cadmium, lead, zinc, and/or other toxic materials. Solder on the food contact surface shall be hard solder of such formulation as to be nontoxic under normal use conditions. Galvanized metal containers may be used for storage of dry foods only. The use of wooden cutting boards is prohibited. Equipment shall be located in a manner that provides adequate space for cleaning, maintenance, and inspection. Food service equipment and utensils shall meet the standards and bear the seal of approval of the National Sanitation Foundation Testing Laboratory, the Commercial Refrigeration Manufacturers Association, or other recognized agencies with equivalent testing programs recognized by The Surgeons General. When plastic is used in the construction of dishes, utensils, containers, and equipment, it shall be of a type that is unaffected by high temperatures, soaps, detergents, sanitizers, and chlorine. The plastic shall maintain a hard, smooth, and easily cleanable surface. A temperature sensing or indicating device shall be provided for each temperature zone within refrigerators, freezers, dishwashing machines, and other equipment in which temperature must be closely controlled. Such devices shall have an accuracy of $\pm 3^{\circ}\text{F}$ ($\pm 1^{\circ}\text{C}$) at the critical range, shall be of an easy-to-read type, and so located as to be readily visible to persons using the equipment. The sensory element of the device shall be easily cleaned and so located as to reflect the representative temperature in the appropriate temperature zone. The temperature sensing/indicating device shall be constructed of materials that are not easily shattered or damaged by minor impacts. Unprotected glass mercury or alcohol type thermometers will not be used. Supervisors shall be issued a thermometer by the commissary officer for use in monitoring temperatures within their areas of operation. Defective thermometers shall be repaired or replaced immediately. Supervisors will calibrate their thermometers weekly to ensure their continued accuracy.

MIL-STD-903C

20 November 1986

5.11 Meat market.

5.11.1 Cleaning and sanitizing. Cleaning and sanitizing procedures must be accomplished by recognized, approved methods. There are two recognized, approved methods: (a) the standard method and (b) the one-step cleaning and sanitizing method. The steps in the standard method are as follows: (1) rough clean; (2) alkaline detergent cleaning; (3) rinse; (4) sanitize; (5) rinse (if needed); and (6) air dry. The steps in the one-step cleaning and sanitizing method are as follows: (1) rough clean; (2) germicidal detergent cleaning and sanitizing; (3) rinse (if needed); and (4) air dry. The methods used shall be such that the product shall not be contaminated or adulterated. All products shall be moved away from the area or otherwise protected prior to the start of cleaning to avoid contamination or adulteration by splashing. All multiple-service containers, equipment, and utensils used in handling, processing, storing, or transporting of exposed product shall be disassembled, as applicable, cleaned thoroughly and sanitized after use. Chemicals used in cleaning and sanitizing treatments shall be properly labeled and stored. Cleaning and sanitizing chemicals shall be used and diluted as prescribed by the manufacturer's recommendations. The only chemical compounds authorized for use on food contact surfaces, production areas, coolers, freezers, and refrigerated display cases are those listed in the USDA publication, "List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs." Only category A1 cleaners and D2 sanitizers are approved for routine use in processing and refrigerated storage and display areas. When chemicals are used for sanitizing, a test kit or other device that accurately measures the concentration of the solution shall be provided and used. Water at 120°F - 140°F (49°C - 60°C) is adequate for both washing and sanitizing if chemical sanitizers are utilized. Drainboards or racks (wood not acceptable) shall be provided and be of adequate size for the proper handling of cleaned utensils following sanitizing. This does not preclude the use of easily moveable dish tables for the storage of soiled utensils or the use of easily moveable dish tables for the storage of clean utensils following sanitizing. Brushes with wooden handles or bodies are prohibited. Plastic brushes with sealed nylon bristles shall be used in cleanup operations. Multi-use cloths and towels, sponges, and feather dusters shall not be permitted in cleaning and sanitizing of equipment. High wet strength disposable towels shall be used in cleanup operations. Steel wool and wire brushes shall not be used for cleaning. Nylon webbing scouring pads may be used. Cleaning utensils and equipment shall be properly stored in a dedicated space or rack separate from any food preparation or storage area. Following use, cleaning utensils shall be cleaned and sanitized and stored in a well ventilated area.

5.11.1.1 Washing, rinsing, and sanitizing of utensils. For manual washing, rinsing, and sanitizing of utensils, a 3-compartment sink shall be provided and used daily. However, those commissary stores which prior to the effective date of this MIL-STD had 2-compartment sinks need not provide 3-compartment sinks until replacement is necessary. If water is to be used as the sanitizer, it must be 170°F (77°C) and utensils must be in contact with the water for 30 seconds. Chemicals such as chlorine, quaternary

MIL-STD-903C

20 November 1986

ammonium compounds, iodine, and so forth may be used as sanitizers; however, chemical sanitizers must be registered with the Environmental Protection Agency (EPA) and used as prescribed by the manufacturer's recommendations. A test kit or other device that accurately measures the PPM concentration of the sanitizing solution shall be available and used. Manufacturer's shelf-life and instructions for storage will be followed.

5.11.1.2 Areas and equipment. Walls, floors, ceilings, dunnage, trolleys, hooks, trees, and permanent shelving in meat processing rooms, refrigerated storage rooms, or refrigerators shall be kept in good repair and kept clean and free of chipping or peeling paint, free of mold, and free of objectionable odors at all times. The meat market shall be cleaned and sanitized weekly. Floors and all equipment and utensils in the meat market shall be cleaned and sanitized daily or more often if necessary.

5.11.1.3 Meat display cases. Meat display cases, that contain meat drippings or other residue present, shall be cleaned and sanitized daily. On a weekly basis, the meat display cases shall be emptied and thoroughly washed (to include foamy mesh material, if used, in the display case) with a general purpose detergent, rinsed, sanitized, and dried. Display cases containing only prepackaged meat items will be cleaned and sanitized every two weeks.

5.11.1.4 Electrically operated meat market equipment. Electrically operated meat market equipment (such as power saws, meat slicers, or meat grinders) shall be kept clean and in good operating condition. Any equipment used and then allowed to stand idle for more than 3 hours shall be completely disassembled, cleaned, and sanitized prior to further usage in that day's operation or work shift, whichever is shorter. Additionally, all equipment shall be disassembled, cleaned, and sanitized at the end of each day's operation or work shift, whichever is shorter. Equipment will be disassembled, cleaned, and sanitized according to manufacturer's equipment manuals or directives and technical manuals published by the military services.

5.11.1.5 Midshift cleanup. If the meat processing area temperature is 50°F (10°C) or below during processing of raw meats, all of the equipment and the area will be cleaned and sanitized every 8 hours or at the end of the shift, whichever is shorter. If the temperature is between 51°F-60°F (10°C-15°C) during processing of raw meat, all of the equipment and the contact surfaces used in processing will be completely disassembled, cleaned, and sanitized every 4 hours. If the temperature exceeds 60°F (15°C) during the processing of raw meats, operations must cease, the product returned to the meat cooler, then thorough cleaning and sanitizing performed, and the temperature returned to 55°F (12°C) or below before resuming limited operations with small quantities of meat so that the internal temperature of the meat does not exceed 45°F (7°C) while the room temperature returns to 50°F (10°C).

MIL-STD-903C

20 November 1986

5.11.1.6 Raw pork processing. When raw pork is processed, all equipment used in the processing of these products will be completely disassembled, cleaned, and sanitized prior to any further usage in processing of other meat items. Personnel who process raw pork shall change their apron and wash and sanitize their hands prior to handling any other product in order to minimize cross-contamination.

5.11.2. Processing area. The cumulative time interval for holding potentially hazardous perishable products (cooked or raw) outside the unsafe temperature range shall not exceed 3 hours. Product held at unsafe product temperatures for greater than 3 hours cumulative time shall be considered adulterated and shall be discarded as food waste. Commissary facilities shall include separate holding coolers and a separate cutting/trimming/preparation/processing/packaging area for each of the following products: red meat, poultry, and waterfoods. In existing commissaries without the space for separate facilities, tables and the surrounding area shall be cleaned and sanitized prior to processing another food product other than the one previously processed.

5.11.2.1 Tempering of product. Tempering of edible raw products shall be at a maximum air temperature of 38°F (3°C).

5.11.2.2 Cooked or ready-to-eat items. When luncheon meats (cold cuts) or bulk cheeses are handled, sliced, or packaged in the raw meat area, they must be protected from cross-contamination by raw products.

5.11.2.3 Prepackaged fresh poultry and prepackaged waterfoods. Personnel who stock or handle fresh prepackaged poultry or waterfoods shall wear an apron maintained solely for this purpose during such handling and shall remove the apron and wash and sanitize their hands prior to handling any other product.

5.11.2.4 Packaging materials. Packaging materials that will eventually be in contact with food products shall never be placed or stored on the floor. This includes rolls of paper standing on end. These materials shall be handled and stored on cleaned and sanitized surfaces of shelves, skids, flats, and so forth. During long-time storage, they shall be protected from dust and other contaminants. While in the processing areas, packaging supplies shall be protected from splash contamination during cleaning procedures. In summary, packaging materials for edible supplies shall be treated as "edible products". In no instances shall rendering personnel be allowed to enter the coolers or foodhandling areas of the store. Scrap and fat material shall be collected at least once a week or more often if necessary.

MIL-STD-903C

20 November 1986

5.11.2.5 Scraps and fat material. Barrels and containers used for collecting fat and meat scraps may be a prime source of contamination. Cleanable, preferably unpainted aluminum or heavy gauge plastic barrels or drums in good condition, shall be provided by store management. Drums with flaking paint shall not be used. The barrels shall be lined with a heavy disposable plastic bag that is sufficiently large so as to be turned down outside the rim 6 to 8 inches. In those instances where the use of plastic bags interfere with contractor's handling, the barrels must be thoroughly cleaned and sanitized both inside and outside by commissary personnel prior to placing barrels in the meal cooler for reuse. When filled, the barrels/drums are delivered to the renderer's personnel at the outside door. In no instance shall rendering personnel be allowed to enter the coolers or foodhandling areas of the store. Scrap and fat material shall be collected at least once a week or more often if necessary.

5.11.3 Refrigeration areas. Refrigeration areas shall be free from objectionable odors and from mold. They also shall be maintained in a sanitary condition. The coolers and freezers shall be capable of maintaining temperatures and humidity necessary for the preservation of the foods being stored or processed. Directives and technical manuals of the military service concerned will be used to determine proper temperatures and humidity. Refrigeration areas shall be equipped with an accurate ($\pm 3^{\circ}\text{F}$) ($\pm 1^{\circ}\text{C}$) thermometer. Temperature checks will be conducted on all display cases and storage refrigerators and freezers at least three times each working day and once on nonworking days and the date, hour, temperature, and checker's initials will be recorded. In commissaries equipped with remote, 24-hour temperature surveillance monitoring systems, the check will not be required on nonworking days. Commissary personnel responsible for temperature checks will be designated in writing by the commissary officer.

5.11.3.1 Freezer storage. The temperature of frozen storage facilities shall be 0°F (-18°C) or below so as to maintain product temperatures at 0°F (-18°C) or below.

5.11.3.2 Chill storage. The temperature of chill red meat, poultry and waterfood storage facilities shall be between $29^{\circ}\text{--}35^{\circ}\text{F}$ ($-2^{\circ}\text{--}2^{\circ}\text{C}$).

5.11.3.3 Display cases. The temperature of chill meat display cases shall be between $29^{\circ}\text{--}35^{\circ}\text{F}$ ($-2^{\circ}\text{--}2^{\circ}\text{C}$). Temperature of the meal in the display case storage space shall not be lower than 29°F (-2°C) or higher than 35°F (2°C). The upper temperature range shall be determined by the type of item stored. Frozen food display cases shall be capable of maintaining an air temperature of 0°F (-18°C) or lower. Frost on the refrigerator coils and in the air passages of the display cases shall be removed as frequently as necessary to maintain refrigeration efficiency. Each display case shall be equipped with an accurate ($\pm 3^{\circ}\text{F}$) ($\pm 1^{\circ}\text{C}$) thermometer in which the sensing element will be located within the path of refrigerated air being returned to the evaporating coils. The load limit shall be designated by a distinctive line at the inside of each display case. Perishable products shall never be placed above the load line level in display freezers and cooler cabinets. Products designed by the manufacturer to be maintained in a frozen state shall be displayed frozen, and products designed by the manufacturer to be

MIL-STD-903C

20 November 1986

maintained in a chill state shall be displayed at chill temperatures. When display cases are equipped with dividers to provide false walls, it must be insured that circulation of refrigerated air around the displayed products is unobstructed. Packaged fresh poultry and waterfoods may be held in the red meat display case provided that the area is separated by a solid partition divider. Packaged fresh poultry, waterfoods, and red meats shall not be displayed above each other in a vertical stack display case.

5.11.3.4 Meat processing area temperatures. The temperature of the meat processing area shall not exceed 50°F (10°C) during operations. If, however, the area temperature in the meat processing area is between 51°F (10°C) and 59°F (15°C) during processing of raw meat, a midshift cleanup (para 5.11.1.5) will be required. Temperatures 60°F (15.5°C) or above in the meat processing area during processing are prohibited and processing will cease until temperature is returned to 50°F (10°C) or below.

5.11.4 Storing and storage facilities. Storage facilities shall be provided for storing raw materials, packing and packaging materials, and finished products. They shall be clean, sanitary, and in good repair. Storing methods that minimize deterioration and prevent contamination shall be used. Shelves, cabinets, and dunnage or pallets shall be used where necessary to protect materials from contamination. Storage practices shall be in accordance with directives and technical manuals of the military services concerned.

5.11.4.1 Sawdust. The use of sawdust is prohibited. Absorbents or anti-slip compounds for spot application to floors may be used provided they are listed in the USDA publication, "List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs." These compounds may be used on floors of meat handling coolers where there is drippage of meat juices and blood, provided that use is limited to the portion of the floor area where the hazard exists and that such use does not result in dusting, tracking, or other objectionable conditions. In coolers that are combinations of meat handling, hamburger grinding, or sausage grinding, the compound shall be limited to those areas directly under the hanging meat. All compounds shall be removed and replaced at least daily. New, clean, brown paper or corrugated cardboard may be used on the floors of meat handling coolers and processing rooms. They shall be firmly secured to the floor for safety purposes. Brown paper or corrugated cardboard, if used, will be removed on a daily basis.

5.11.4.2 Contaminated product. Product that has spoiled, has become contaminated, has been returned from customers, or is otherwise unsaleable shall be either immediately disposed of or held in an area completely segregated from saleable product. All such product is to be considered contaminated. The product, if it is to be held, should be placed into a waterproof tote bin or container with tight fitting lids that may be periodically washed. Cardboard or corrugated board boxes are not satisfactory for this purpose.

MIL-STD-903C

20 November 1986

5.11.4.3 Separate storage areas. In existing commissaries where separate storage areas are not provided, cold cuts or luncheon meats, fresh poultry, and/or fresh waterfoods, that are received in the final consumer package may be held in separate areas of the red meat cooler, provided that there are designated areas for each of these products and that these areas are used exclusively for the designated product. NSF approved rubber mats may be used if they are cleaned and sanitized daily.

5.12 Product market.

5.12.1 Cleaning and sanitizing treatment. The general requirements for cleaning and sanitizing of the produce market are the same as those specified in paragraphs 5.11.1 and 5.11.1.1. Storage refrigerators and processing room(s) shall be washed, cleaned, and sanitized at least weekly, or more often if necessary. Produce display cases shall be emptied, washed, cleaned, and sanitized at least weekly with intermittent cleaning on a daily basis. Floor(s) in the processing room(s) shall be kept free of fruit and vegetable debris. The floor(s) shall be washed with appropriate cleaning agents and dried thoroughly at the end of each day. Scales and immediate areas shall be kept clean.

5.12.2 Processing area. There should be a separate holding cooler and a separate cutting/trimming/preparation/processing/packaging area for produce. The general sanitation procedures for packaging for use in the produce market are the same as those specified in paragraph 5.11.2.4.

5.12.3 Storing and storage. The general requirements for storage of product in the produce market are the same as those specified in paragraph 5.11.4. The isolation of products unfit for human consumption shall follow those procedures specified in paragraph 5.11.4.2.

5.13 Grocery market.

5.13.1 Cleaning and sanitizing treatment. The general requirements for cleaning and sanitizing of the grocery market are the same as those specified in paragraph 5.11.1. Floors shall be kept clean and free of all debris. Waste receptacles shall be emptied and cleaned and trash removed from the store area at least daily, or more often as necessary. Checkout counters shall be cleaned daily and kept free of all extraneous material. Shopping carts shall be kept clean. Shelves shall be kept clean. Display cases and storage refrigerators of fresh dairy and egg products area shall be cleaned and washed after spillage or leakage of products. On a weekly basis, the cases and storage refrigerators shall be emptied and thoroughly washed with a general purpose detergent, rinsed, sanitized, and dried. On a weekly basis, refrigerated display cases of bakery products shall be emptied and thoroughly washed with a general purpose detergent, rinsed, sanitized, and dried.

5.13.2 Refrigeration areas. The general requirements for refrigeration in the grocery market are the same as those specified in paragraphs 5.11.3, 5.11.3.1, and 5.11.3.3. Dairy products including milk, eggs, and dough products will be stored and displayed at temperatures below 40°F (40°C). Freezer storage may be common to all products.

20 November 1986

5.13.3 Storing and storage facilities. The general requirements for storage in the grocery market are the same as those specified in paragraph 5.11.4. The isolation of products unfit for human consumption shall follow those procedures specified in paragraph 5.11.4.2.

5.13.3.1 Hazardous products. Hazardous products such as pesticides, insecticides, and other toxic materials shall be segregated from all food products in storage, during transportation, and while on display. Segregation means that there is sufficient space between these materials and food so that spillage or leakage does not contaminate foods or food service supplies such as paper plates, disposable eating utensils, and so forth. These materials shall not be placed above food products. Hazardous products in open, broken, or leaking containers shall not be displayed or sold. Garden and lawn supplies shall be handled the same as hazardous products.

5.13.3.2 Salvage area. The salvage area shall be physically separated from all other products storage areas. The area shall be cleaned on a daily basis. Salvage products shall be segregated to prevent contamination of salvageable products. Damaged hazardous product containers shall not be placed in the salvage area at any time.

5.14 Warehouse section.

5.14.1 Cleaning. The warehouse shall be kept clean and orderly. Food product spillage will be removed on a daily basis to prevent insect and rodent attraction. Floors in the warehouse shall be swept and cleaned on a weekly basis, or more often if necessary. Cleaning utensils and equipment shall be stored in a dedicated space or racks separate from the storage areas.

5.14.2 Refrigeration area. The general requirements for refrigeration in the warehouse section are the same as those specified in paragraph 5.11.3.

5.14.3 Storing and storage facilities. The general requirements for storage in the warehouse section are the same as those specified in paragraph 5.11.4.

5.15 Delicatessen.

5.15.1 Cleaning and sanitizing treatment. The general requirements for cleaning and sanitizing of the delicatessen are the same as those specified in paragraphs 5.11.1 and 5.11.1.1. In addition, food contact surfaces must be cleaned and sanitized after every use, after interruption of service, and if they are in continuous use, at regularly scheduled intervals throughout the day. Display cases of the delicatessen area shall be emptied, washed, rinsed, sanitized, and air-dried on a daily basis, if the product is placed directly on shelves. If the product is placed on multiservice trays, then only the trays need to be cleaned and sanitized on a daily basis and the display case will be required to be cleaned and sanitized on a weekly basis (or more often as necessary due to accumulations of drippings and residues). Storage areas underneath display cases will be emptied and sanitized at least once per week.

MIL-STD-903C

20 November 1986

5.15.2 Separation of areas. The delicatessen preparation area, cooler areas, or display areas shall be completely separated from the remainder of the operations insofar as traffic of materials and personnel are concerned. There shall be a separate holding cooler and a separate cutting/trimming/preparation/processing/packaging area for luncheon meats and cooked delicatessen items. However, existing commissary stores without space for separate areas may combine luncheon meats and cooked delicatessen items. Large bologna or other cooked meats received for further cutting, slicing, or packaging shall always be held in the delicatessen cooler. The delicatessen cooler shall not contain raw products or produce of any kind.

5.15.3 Separation of product. There shall be no nonpackaged raw meats, poultry, and waterfoods in the delicatessen. Raw and ready-to-eat products in display counters shall be separated to the extent that these products are not in contact nor are their respective containers in contact. Raw foods in the delicatessen shall be limited to vegetables and/or salads sold or served from containers. For example, raw packaged waterfoods shall not be displayed with ready to eat waterfoods, but raw waterfoods shall be displayed in a specified area of the commissary rather than the delicatessen; raw packaged pork sausage shall not be displayed in the delicatessen area, but in the raw meat counter of the commissary; and, where ready-to-eat and raw product display counters adjoin in the delicatessen and commissary there shall be a solid divider reaching from the bottom supporting rack to above the product. Sanitation procedures for packaging general materials for use in the delicatessen are the same as those specified in paragraph 5.11.2.4.

5.15.4 Separation of equipment. Equipment (tools, utensils, saws, knives, tables, boards, blocks, and so forth) shall not be commonly used for both raw and cooked product. If this situation cannot be prevented, then the equipment item shall be thoroughly washed with detergent and sanitized according to instructions prior to use for cooked product.

5.15.5 Separation of personnel. All personnel involved in preparing or selling cooked items must possess required training in food service sanitation. Only personnel assigned to the cooked processed meat area shall handle cooked products. Delicatessen personnel shall not pass through other product handling areas.

5.15.6 Temperatures. All delicatessen operations, (heating, holding, and chilling) shall be monitored by thermometers to assure that the prescribed temperatures are maintained. Temperatures of all display cases and storage/freezers shall be checked three times each working day and at least once during each nonworking day, and the date, hour, temperature, and checker's initials will be recorded. No potentially hazardous or temperature sensitive perishable product, cooked or raw, shall be held at unsafe temperatures for more than 3 hours.

5.15.7 Dry and liquid wastes. Dry and liquid wastes shall be placed in suitable, covered receptacles. Waste shall be collected and disposed of at frequent intervals in a sanitary manner.

5.16 Control of insects, birds, rodents, and/or other animals. Insects, birds, rodents, and/or other animals shall be excluded from the commissary. Effective measures for control of insects, birds, rodents, and/or other animals shall be maintained at all times. Control measures shall be in accordance with directives of the military service concerned. Operations or procedures which contribute to rodent harborages or insect breeding areas are prohibited. Insecticides and rodenticides, if used, shall be only those which appear in the USDA publication, "List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs". These products shall be used by approved methods of the military service concerned, and shall be handled and stored in a safe manner.

5.17 Vehicles and transportation facilities. Vehicles and transportation equipment shall be constructed and operated to protect contents from contamination and deterioration. They shall be kept clean and in good repair. The load hauling area of all vehicles used for transporting food shall be covered. When canvas covered vehicles are used, the rear flap shall be lowered and secured. Completely enclosed or refrigerated vehicles are required for transporting perishable foods where dust or a temperature rise above recommended levels, or other detrimental effects are encountered. The temperature of frozen foods shall not be allowed to rise above 10°F (-12°C) during delivery. The temperature of chilled foods shall not be allowed to rise above 45°F (7°C) during delivery. All vehicles used to move subsistence items must be provided with pallets or duckboards that will elevate the supplies 3 to 4 inches above the bed of the truck. Vehicles used to transport food must not be used concurrently to carry trash, garbage, petroleum products, or other materials that might contaminate subsistence supplies.

5.18 Cleanliness and health of personnel.

5.18.1 Cleanliness. All employees shall wash their hands before beginning work and upon returning to work after using toilet facilities, eating, smoking, or otherwise soiling their hands. They shall keep their hands clean and follow acceptable hygienic practices while on duty. Eating, expectorating, or use of tobacco in any form shall be prohibited in each room and compartment where any food products or supplies are prepared, stored, or otherwise handled. With the exception of plain wedding bands and emergency medical bracelets, personnel shall not wear any jewelry or fingernail polish while preparing or handling food. All persons engaged in receiving, testing, processing, manufacturing, packaging, or handling food products shall wear clean, white, or light-colored washable or disposable outer garments that are suitable for the work being performed. Hair nets, headbands, caps, beard nets, or other effective hair restraints to effectively cover hair shall be worn so as to prevent contamination of food and food contact surfaces. Employees' personal effects shall not be stored in production areas.

MIL-STD-903C

20 November 1986

5.18.1.1 Gloves. If gloves are used in food handling, they shall be maintained in an intact, clean, and sanitary condition. Such gloves shall be of an impermeable material except where their usage would be inappropriate or incompatible with the work involved. Gloves used for handling foods shall not be used for any other purpose.

5.18.1.2 Handwashing signs. Handwashing signs shall be prominently displayed in work areas. They shall be multilingual, as appropriate. One sign shall be in English and the other(s) shall be in the foreign language(s) predominately spoken in the geographical area. The sign shall read "EMPLOYEES MUST WASH HANDS UPON RESUMING WORK" or words to this effect.

5.18.2 Health of personnel. No person affected by any disease in a communicable form, while a carrier of such disease, while affected with boils, sores, infected wounds, or other abnormal sources of microbiological contaminations shall work in the commissary store in any capacity in which there is a reasonable possibility of food or food ingredients becoming contaminated by that person, or of that disease being transmitted by that person to other individuals. Commissary officers or immediate supervisors of food service activities will inspect all personnel daily at the start of the work period. Persons who exhibit signs of illness, skin disease, diarrheal illness (admitted or suspected), infected cuts, or boils will be referred to a medical facility for a determination as to their fitness for duty.

5.18.3 Medical examinations. Pre-employment and periodic medical examinations of commissary personnel will be performed on individuals or groups when required by the appropriate local medical authority. Persons who have been absent from work for any length of time for reasons of communicable illness (including diarrheal illness) will be referred to the medical facility for a determination as to their fitness for duty prior to resuming work. Persons so referred will be evaluated and if found fit will be provided a written clearance signed by a medical officer permitting that person to return to work as a food service employee.

5.18.4 Education and training. Personnel responsible for identifying sanitation failures or food contamination shall have a background of education or experience, or a combination thereof, to provide a level of competency necessary for production of clean and safe food. In accordance with the applicable service requirements, food handlers and supervisors shall receive appropriate training in proper food handling techniques, disease control, and food protection principles and shall be aware of the danger of poor personal hygiene and insanitary practices. Sanitation schedules describing items to be cleaned and sanitized, frequency, and person responsible will be posted and checked in each department.

MIL-STD-903C

20 November 1986

Custodians:

Army - GL
Navy - SA
Air Force - 50

Preparing activity:

Army - GL
Project No. 89GP-0122

Review activities:

Army - MD
Navy - MS

Copies of this standard for military use may be requisitioned on DD Form 1425 (Specification and Standard Requisition) and submitted to Commanding Officer Naval Publications and Form Center, 5801 Tabor Avenue, Philadelphia, PA 19120. The title and identifying symbol shall be stipulated when requesting copies of military standard.

COMMISSARY SANITARY COMPLIANCE CHECKLIST (This appendix is an integral part of MIL-STD-903C and its application is mandatory.)		1. DATE OF INSPECTION (YYMMDD)	
2. COMMISSARY INSPECTED			
a. NAME		b. ADDRESS	
3. COMMISSARY OFFICER			
a. NAME		b. GRADE	c. TELEPHONE NUMBER
4. ACCOMPANYING INDIVIDUAL			
a. NAME		b. TITLE	
SANITATION DEFECTS (1)		ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
5. PREMISES			
a. Not clean or well organized		3	
b. Not well drained		3	
c. Not free from nuisances and sources of contamination		5	
d. Approaches to receiving and shipping docks not clean and maintained to minimize dust		5	
6. RAW MATERIALS			
a. Not from approved sources		Critical	
b. Not inspected upon receipt and at other times as needed for determination of adulteration, contamination, or infestation		5	
c. Single-service articles and packaging materials not protected		4	
7. CONSTRUCTION OF BUILDING			
a. Not large enough to accommodate the operation without hampering sanitary practices		4	
b. Building's flow of dissimilar products is not channeled through separate routes		4	
c. Walls, floors, ceilings not in good repair or not constructed of materials that can easily be kept clean and sanitary		4	
d. Unnecessary clutter of wiring, pipes, hangers, ducts and so forth		4	
e. Exterior openings not clean and in good repair		4	
f. Exterior openings do not prevent the entrance of insects, birds, rodents or other animals		4	
g. Air curtains, if used, not in compliance with NSF standards		3	
h. Screen doors not outward opening and not self-closing		3	
8. LIGHTING			
a. Insufficient lighting		4	
b. Lights in product areas not equipped with shields when required		5	
9. VENTILATION AND HUMIDITY			
a. Insufficient control of ventilation or air movement		5	
b. Presence of mold on walls or ceilings in processing or storage areas		5	
c. Accumulation of condensates in processing or storage areas		5	
d. Ventilation system not kept clean and maintained in good repair		3	
e. Air not filtered and not directed outward when required		5	
10. WATER SUPPLY			
a. Not easily accessible		4	
b. Inadequate in quantity		5	
c. Undiminished supply of hot water not available		5	
d. Mixing valves not available at all scullery sinks and hose connections		4	
e. Hose connections not available where required		5	
f. Cross-connection exists between potable and nonpotable water supply or sewage		Critical	
g. Not adequate protection against possible back-siphonage		5	
h. Potability certificate not current or available		5	
i. Potable water supply found to be nonpotable		Critical	
j. Nonpotable water outlets not identified by prominently displayed color code and labels		5	
11. ICE (If used)			
a. Not made from potable water which meets requirements		Critical	
b. Not manufactured, handled, stored, or used in a sanitary manner		5	

CO: 1MISSARY SANITARY COMPLIANCE CHECKLIST

SANITATION DEFECTS (1)	ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
12. DISPOSAL OF WASTES		
a. Liquid wastes not disposed in a sanitary manner	5	
b. Floor drains not functional or properly trapped	3	
c. Waste not collected in suitable, properly covered containers and disposed of at frequent intervals and/or in a sanitary manner	4	
d. Garbage cans not clean, watertight, or do not have tight fitting lids	3	
e. Garbage cans not kept outside on racks that can be cleaned easily	3	
f. Contents of garbage cans allowed to accumulate above level of 4 inches from the top	3	
g. Personnel handle unpackaged food after cleaning garbage cans without taking appropriate personal sanitizing measures	Critical	
h. Refuse container doors not tight fitting or kept closed	3	
i. Refuse container or refuse container area not cleaned periodically or as required	3	
13. TOILET/DRESSING ROOM, AND HANDWASHING FACILITIES		
a. Sufficient number of toilet facilities not provided	5	
b. Toilet rooms not conveniently located	2	
c. Toilet rooms constructed of materials not easily cleaned	2	
d. Toilet rooms not adequately lighted	2	
e. Toilet rooms not separately vented to outside	5	
f. Toilet rooms open directly into product area	5	
g. Doors not self-closing and tight-fitting	3	
h. Absence of handwashing sign or not multilingual as prescribed	3	
i. Absence of water at suitable temperature, soap, soap dispenser, or sanitary single-service towels	5	
j. Sanitary waste receptacles not present	3	
k. Toilet/dressing rooms, and handwashing facilities not maintained in a clean, orderly fashion	4	
l. Restrooms used for storage of cleaning equipment	3	
m. Each employee not furnished a locker or other suitable facility	5	
14. CONSTRUCTION AND REPAIR OF EQUIPMENT AND UTENSILS		
a. Design, construction, and use of such equipment and utensils does not preclude the adulteration of food	Critical	
b. Product-contact surfaces not of impervious material, smooth, nor of corrosion-resistant material	4	
c. Product-contact surfaces not of nontoxic material	Critical	
d. Not clean or not in good repair	5	
e. Not constructed so that all surfaces are readily sanitizable	5	
f. Use of wooden cutting boards	Critical	
g. Equipment not easily accessible for cleaning, maintenance, and inspection	5	
h. Thermometer not provided for each zone in which temperature must be closely controlled	3	
i. Supervisors not issued or using thermometer for monitoring	3	
j. Defective thermometers not repaired or replaced immediately	3	
k. Lubricants not used in a manner that prevents contamination of food or food contact surfaces	5	
15. MEAT MARKET		
15.1 CLEANING AND SANITIZING		
a. Cleaning or sanitizing methods do not prevent product contamination or adulteration	Critical	
b. All products not moved away or protected prior to equipment or area cleaning to avoid contamination or adulteration	Critical	
c. All multiservice containers, equipment, and utensils not cleaned and sanitized after use	Critical	
d. Cleaning and sanitizing chemicals not properly labeled or stored	5	
e. Unauthorized chemical compounds used for cleaning and sanitizing	Critical	
f. Test kits or other device not used when chemical sanitizers are utilized	5	
g. Drainboards or racks not provided after sanitizing	3	
h. Improper cleaning utensils and equipment being utilized	5	
i. Cleaning equipment and utensils not properly stored	5	
j. Cleaning equipment and utensils not cleaned and sanitized following use	3	
k. Water used as a sanitizer less than 170°F	5	
l. Areas and equipment not in good repair and cleaned and sanitized as required	3	
m. Meat display cases not cleaned and sanitized as required	3	
n. Cleaning and sanitizing frequency for equipment and contact surfaces not as required	5	

COMM SARY SANITARY COMPLIANCE CHECKLIST

SANITATION DEFECTS (1)	ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
15. MEAT MARKET (Continued)		
15.2 PROCESSING AREA		
a. Perishable product held at unsafe temperatures for more than three hours	Critical	
b. Complete physical separation of raw and ready-to-eat products not attained in holding coolers or preparation areas	5	
c. Tempering edible raw products does not follow recommended procedures	Critical	
d. Cooked or ready-to-eat items contaminated by raw products	Critical	
e. Personnel handling poultry or fish not wearing an apron maintained for this purpose	5	
f. Personnel handling poultry or fish not washing and sanitizing hands prior to handling other product	Critical	
g. Packaging materials that will be in contact with product not properly handled or stored	5	
h. Stored packaging materials unprotected from dust and other contaminants during cleaning procedures	4	
i. Containers used for collecting fat and meat scraps not cleanable, not in good condition, or with flaking paint	3	
j. Barrels not lined with plastic bag as required	3	
k. Rendering company personnel entering coolers or food handling areas	5	
l. Scrap and fat material allowed to collect for more than one week	5	
15.3 REFRIGERATION AREAS		
a. Refrigeration areas not free from objectionable odors and from mold	5	
b. Refrigeration areas not maintained in a sanitary condition	5	
c. Product not stored at proper temperature and humidity	5	
d. Accurate thermometer not indicating a representative air temperature	3	
e. Temperature checks not conducted as required	5	
f. Temperature of meat freezer area not 0°F or below	5	
g. Temperature of meat chill area not between 29° and 35°F	5	
h. Temperature of meat display cases/storage space not as required	5	
i. Product load line not designated	3	
j. Perishable products placed above the load line level	5	
k. Product designed to be maintained in chill state not displayed chilled	Critical	
l. Product designed to be maintained frozen not displayed frozen	Critical	
m. Display cases with dividers obstruct air circulation	3	
n. Packaged fresh poultry, waterfoods, and red meats not displayed as required	5	
o. Temperature in meat processing room 60°F or above	Critical	
15.4 STORING AND STORAGE FACILITIES		
a. Storage facilities not clean, sanitary, or in good repair	3	
b. Storing methods do not minimize deterioration or contamination	5	
c. Shelves, cabinets, or dunnage not used where necessary to prevent contamination or deterioration	5	
d. Recommended storage practices not followed	5	
e. Absorbents/antislip compounds not used as specified	5	
f. Paper or corrugated cardboard not new and removed on a daily basis	5	
g. Unsaleable product not immediately disposed of or segregated	5	
h. Product held for disposal not in a waterproof tote bin or container with lid that may be cleaned as needed	3	
i. Luncheon meats in final consumer package not held in separate area as required	5	
j. Poultry and waterfoods in the red meat cooler not segregated as required	5	
16. PRODUCE MARKET		
16.1 CLEANING AND SANITIZING		
a. Cleaning or sanitizing methods do not prevent product contamination or adulteration	Critical	
b. All products not moved away or protected prior to equipment or area cleaning to avoid contamination or adulteration	Critical	
c. All multiservice containers, equipment, and utensils not cleaned and sanitized after use	Critical	
d. Cleaning and sanitizing chemicals not properly labeled or stored	5	
e. Unauthorized chemical compounds used for cleaning and sanitizing	Critical	
f. Test kits or other device not used when chemical sanitizers are utilized	5	
g. Drainboards or racks not provided after sanitizing	3	
h. Improper cleaning utensils and equipment being utilized	5	
i. Cleaning equipment and utensils not properly stored	5	
j. Cleaning equipment and utensils not cleaned and sanitized following use	3	

COMMISSARY SANITARY COMPLIANCE CHECKLIST

SANITATION DEFECTS (1)	ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
16. PRODUCE MARKET (Continued)		
16.1 CLEANING AND SANITIZING (Continued)		
k. Water used as sanitizer less than 170°F	5	
l. Areas and equipment not in good repair and cleaned and sanitized as required	3	
m. Storage refrigerators not emptied, washed, and cleaned at least weekly or more if necessary	3	
n. Produce display cases not emptied, washed, cleaned, and sanitized at least weekly with intermittent cleaning on a daily basis	3	
o. Floors in the processing and display area not free of fruit and vegetable debris	2	
p. Floors in processing room not washed and dried at end of each day	3	
q. Scales and immediate areas not clean	3	
16.2 PROCESSING AREA		
a. Separate holding cooler and processing packaging area not provided	5	
b. Packaging materials that will be in contact with products not properly handled or stored	5	
c. Stored packaging materials not protected from dust or other contaminants during cleaning process	4	
16.3 STORING AND STORAGE FACILITIES		
a. Storage facilities not clean, sanitary, or in good repair	3	
b. Storing methods do not minimize deterioration or contamination	5	
c. Shelves, cabinets, or dunnage not used where necessary to prevent contamination or deterioration	5	
d. Recommended storage practices not followed	5	
e. Unsaleable product not immediately disposed of or segregated	5	
f. Product held for disposal not in a waterproof tote bin or container that may be cleaned as needed	3	
17. GROCERY MARKET		
17.1 CLEANING AND SANITIZING		
a. Cleaning or sanitizing methods do not prevent product contamination or adulteration	Critical	
b. All products not moved away or protected prior to equipment or area cleaning to avoid contamination or adulteration	Critical	
c. All multiservice containers, equipment, and utensils not cleaned and sanitized after use	Critical	
d. Cleaning and sanitizing chemicals not properly labeled or stored	5	
e. Unauthorized chemical compounds used for cleaning and sanitizing	Critical	
f. Test kits or other device not used when chemical sanitizers are utilized	5	
g. Drainboards or racks not provided after sanitizing	3	
h. Improper cleaning utensils and equipment being utilized	5	
i. Cleaning equipment and utensils not properly stored	5	
j. Cleaning equipment and utensils not cleaned and sanitized following use	3	
k. Water used as sanitizer less than 170°F	5	
l. Areas and equipment not in good repair and cleaned and sanitized as required	3	
m. Floors not clean or free of debris	2	
n. Waste receptacles not emptied and cleaned as often as necessary	2	
o. Checkout counters not cleaned daily or kept free of extraneous matter	2	
p. Shopping carts not clean	2	
q. Shelves not clean	2	
r. Display cases and storage refrigerators of fresh dairy and egg product area not cleaned and washed after spillage or leakage of products	3	
s. Display cases and storage refrigerators of fresh dairy and egg product area not cleaned and sanitized on a weekly basis	3	
t. Refrigerated display cases of bakery products not cleaned and sanitized on a weekly basis	3	
17.2 REFRIGERATION AREAS		
a. Refrigeration areas not free from objectionable odors and from mold	5	
b. Refrigeration areas not maintained in a sanitary condition	5	
c. Product not stored at proper temperature and humidity	5	
d. Accurate thermometer not indicating a representative air temperature	3	
e. Temperature checks not conducted as required	5	
f. Temperature of freezer area not 0°F or below	5	
g. Temperature of dairy products display cases and storage areas not as required	5	
h. Product load line not designated	3	
i. Perishable products placed above the load line level	5	

COMMISSARY SANITARY COMPLIANCE CHECKLIST

SANITATION DEFECTS (1)	ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
17. GROCERY MARKET (Continued)		
17.2 REFRIGERATION AREAS (Continued)		
j Product designed to be maintained in chill state not displayed chilled	Critical	
k Product designed to be maintained frozen not displayed frozen	Critical	
l Display cases not equipped with separators to provide false walls	3	
17.3 STORING AND STORAGE FACILITIES		
a Storage facilities not clean, sanitary, or in good repair	3	
b Storing methods do not minimize deterioration or contamination	5	
c Shelves, cabinets, or dunnage not used where necessary to prevent contamination or deterioration	5	
d Recommended storage practices not followed	5	
e Hazardous products not segregated from all food products in storage, during transportation, and while on display	5	
f Hazardous products stored, transported, or displayed above food products	5	
g Garden and lawn supplies not handled the same as hazardous products	5	
h Salvage area not cleaned and physically separated from product areas	3	
18. WAREHOUSE SECTION		
18.1 CLEANING		
a Warehouse not cleaned and orderly in appearance	3	
b Food product spillage not removed on a daily basis	3	
c Floors not swept and cleaned at least weekly, or more if necessary	3	
d Cleaning equipment and utensils not properly stored	5	
18.2 REFRIGERATION AREAS		
a Refrigeration areas not free from objectionable odors and from mold	5	
b Refrigeration areas not maintained in a sanitary condition	5	
c Product not stored at proper temperature and humidity	5	
d Accurate thermometer not indicating a representative air temperature	3	
e Temperature checks not conducted as required	5	
f Product designed to be maintained in chill state not so maintained	Critical	
g Product designed to be maintained in frozen state not so maintained	Critical	
18.3 STORING AND STORAGE FACILITIES		
a Storage facilities not clean, sanitary, or in good repair	3	
b Storing methods do not minimize deterioration or contamination	5	
c Shelves, cabinets, or dunnage not used where necessary to prevent contamination or deterioration	5	
d Recommended storage practices not followed	5	
19. DELICATESSEN		
a Cleaning or sanitizing methods do not prevent product contamination or adulteration	Critical	
b All products not moved away or protected prior to equipment or area cleaning to avoid contamination or adulteration	Critical	
c All multiservice containers, equipment, and utensils not cleaned and sanitized after use	Critical	
d Cleaning and sanitizing chemicals not properly labeled or stored	5	
e Unauthorized chemical compounds used for cleaning and sanitizing	Critical	
f Test kits or other device not used when chemical sanitizers are utilized	5	
g Drainboards or racks not provided after sanitizing	3	
h Improper cleaning utensils and equipment being utilized	5	
i Cleaning equipment and utensils not properly stored	5	
j Cleaning equipment and utensils not cleaned and sanitized following use	3	
k Water used as sanitizer less than 170°F	5	
l Areas and equipment not in good repair and cleaned and sanitized as required	3	
m Display cases not cleaned and sanitized as required	3	
n Not completely separated from the remainder of the operations flow of material	3	
o Meat received for further slicing not held in the delicatessen cooler	5	
p Cooked delicatessen items not held in a separate area	Critical	
q Raw and cooked products in display counters in contact or respective containers in contact and not separated by a solid divider	5	
r Packaging materials that will be in contact with product not properly handled or stored	5	
s Stored packaging materials not protected from dust or other contaminants during cleaning process	4	

COMMISSARY SANITARY COMPLIANCE CHECKLIST

SANITATION DEFECTS (1)		ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
19. DELICATESSEN (Continued)			
t. Equipment used for raw products not washed prior to use for cooked product		Critical	
u. Personnel involved in preparing or selling cooked items not possessing required training in sanitation		5	
v. Personnel of other than cooked processed meat areas handle cooked products		3	
w. Cooked products handled without taking proper sanitary precautions		5	
x. Delicatessen personnel pass through other product handling areas		3	
y. All delicatessen operations (heating, holding, and chilling) not controlled by thermometers		Critical	
z. Temperature checks not conducted as required		5	
aa. Perishable product held at unsafe temperatures for more than three hours		Critical	
bb. Wastes not collected in properly covered suitable containers and disposed of at frequent intervals and/or in a sanitary manner		3	
20. CONTROL OF INSECTS, BIRDS, RODENTS, AND / OR OTHER ANIMALS			
a. Presence of insects, birds, rodents, and/or other animals in production area		Critical	
b. Presence of insects, birds, rodents, and/or other animals in nonproduction area		5	
c. Effective measure for the control of insects, birds, rodents, and/or other animals is not maintained		3	
d. Rodent harborage or insect breeding places present		4	
e. Unauthorized insecticides or rodenticides used		Critical	
f. Insecticides or rodenticides not used by approved methods		5	
g. Insecticides or rodenticides are handled or stored in an unsafe manner		5	
21. VEHICLE AND TRANSPORTATION FACILITIES			
a. Not constructed or operated to protect contents from contamination or deterioration		Critical	
b. Not properly maintained or not clean		3	
c. Supplies not elevated three or four inches above the truck bed		2	
d. Vehicle used to transport food is used to carry materials that might contaminate subsistence supplies		5	
e. Temperature of chilled or frozen foods not maintained at recommended levels		5	
22. CLEANLINESS AND HEALTH OF PERSONNEL			
22.1 CLEANLINESS			
a. Employees not washing hands after contamination		Critical	
b. Failure of employees to be hygienically clean		4	
c. Personnel not prohibited from eating, smoking, chewing tobacco, or expectorating in product handling areas		5	
d. Fingernail polish or unauthorized jewelry worn by plant personnel		3	
e. Employees not wearing garments/hair restraints suitable for work being performed		5	
f. Storage of employees' personal effects in production room		3	
g. If gloves used, not maintained as required		3	
h. Handwashing signs not prominently displayed in processing areas or multilingual as prescribed		3	
i. Employee break rooms and eating areas not maintained in a clean and sanitarily acceptable manner		5	
22.2 HEALTH OF PERSONNEL			
a. Employees affected with or a carrier of a communicable or infectious disease not excluded from product areas		Critical	
b. Employees having an infectious wound, sore, or lesion on hands, arms, or other exposed parts of the body not excluded from contacting ingredients, products, or product zone		Critical	
22.3 MEDICAL EXAMINATIONS			
a. Prescribed medical examinations of personnel not being made or records of such not available		4	
23. EDUCATION AND TRAINING			
a. Supervisor not having education and experience to provide competency for protection of safe food		5	
b. Food handlers and supervisors not instructed in acceptable hygienic practices and proper sanitary rules of food handling		Critical	
c. Responsibility for assuring compliance with this Standard not clearly assigned to competent supervisory personnel		5	
24. FORMULA		TOTALS	855
SCR = $\frac{\text{Net Total of Column 2} - \text{Net Total of Column 3}}{\text{Net Total of Column 2}} \times 100$		MINUS NONAPPLICABLE DEFECT POINTS	-
		NET TOTAL DEFECT POINTS	
25a. SANITARY COMPLIANCE RATING COMPUTATIONS	b. SANITARY COMPLIANCE RATING ASSIGNED	c. NUMBER OF CRITICAL DEFECTS	

COMMISSARY SANITARY COMPLIANCE CHECKLIST

26. OTHER REGULATORY AGENCIES CONCERNED WITH SANITATION OF THIS ESTABLISHMENT *(Record the agency, date, and results of last inspection)*

27. METHODOLOGY SECTION *(Record narrative information describing the plant, premises, equipment, and procedures)*

COMMISSARY SANITARY COMPLIANCE CHECKLIST

28. REMARKS / RECOMMENDATIONS (Key discrepancies noted to the subparagraph numbers above)

29. INSPECTOR

a. TYPED NAME

b. TITLE

c. SIGNATURE

d. GRADE

e. DATE SIGNED (YYMMDD)

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (**DO NOT STAPLE**), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification 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.

(Fold along this line)

(Fold along this line)

DEPARTMENT OF THE ARMY



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

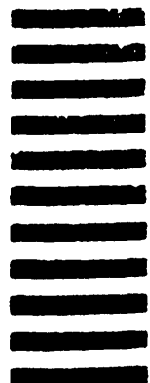
OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 12062 WASHINGTON D C

POSTAGE WILL BE PAID BY THE DEPARTMENT OF THE ARMY

Commandant
Academy of Health Sciences, US Army
ATTN: HSHA-IVS
Fort Sam Houston, TX 78234-6100



STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL*(See Instructions - Reverse Side)***1. DOCUMENT NUMBER**

MIL-STD-903C

2. DOCUMENT TITLE

Sanitary Standards for Commissaries

3a. NAME OF SUBMITTING ORGANIZATION**4. TYPE OF ORGANIZATION (Mark one)**☐

VENDOR

☐

USER

☐

MANUFACTURER

☐

OTHER (Specify): _____

b. ADDRESS (Street, City, State, ZIP Code)**5. PROBLEM AREAS****a. Paragraph Number and Wording:****b. Recommended Wording:****c. Reason/Rationale for Recommendation:****6. REMARKS****7a. NAME OF SUBMITTER (Last, First, MI) - Optional****b. WORK TELEPHONE NUMBER (Include Area Code) - Optional****c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional****d. DATE OF SUBMISSION (YYMMDD)****DD FORM 1426**
82 MAR

PREVIOUS EDITION IS OBSOLETE.