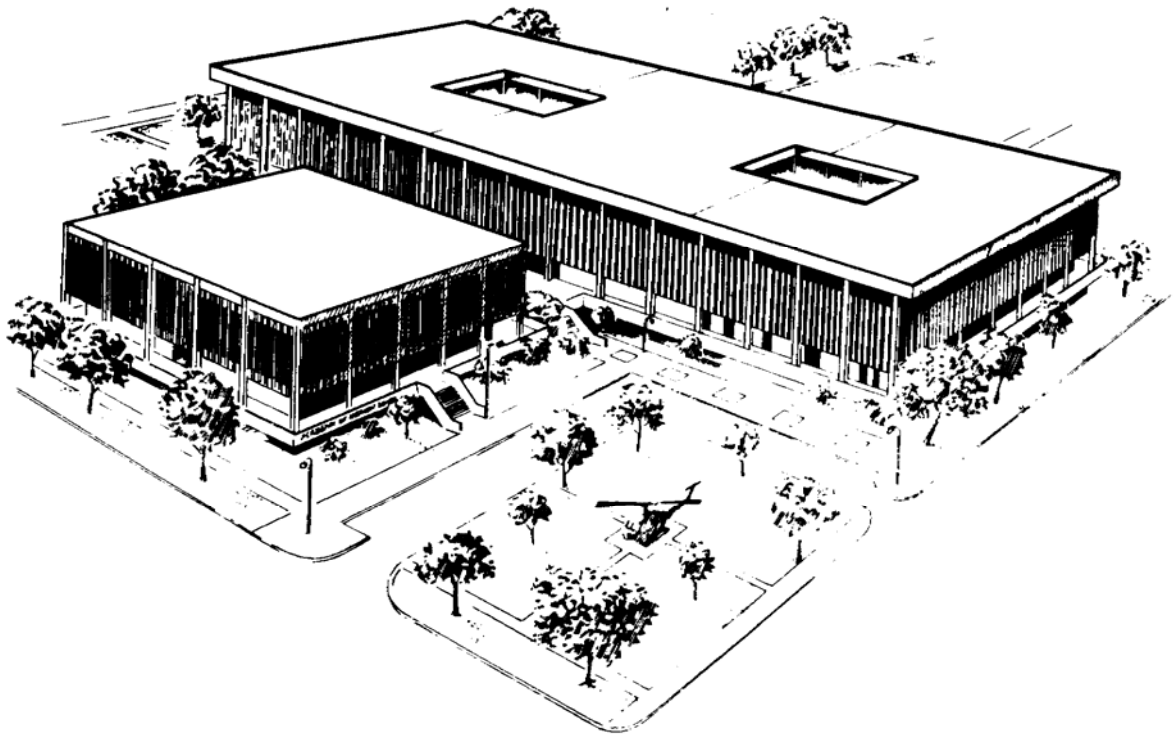


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**U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL  
FORT SAM HOUSTON, TEXAS 78234-6100**

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# **OPERATIONAL RATINGS I**

**SUBCOURSE MD0718**

**EDITION 100**

## **DEVELOPMENT**

This subcourse is approved for resident and correspondence course instruction. It reflects the current thought of the Academy of Health Sciences and conforms to printed Department of the Army doctrine as closely as currently possible. Development and progress render such doctrine continuously subject to change.

The subject matter expert responsible for content accuracy of this edition was the NCOIC, Nursing Science Division, DSN 471-3086 or area code (210) 221-3086, M6 Branch, Academy of Health Sciences, ATTN: MCCS-HNP, Fort Sam Houston, Texas 78234-6100.

## **ADMINISTRATION**

Students who desire credit hours for this correspondence subcourse must meet eligibility requirements and must enroll in the subcourse. Application for enrollment should be made at the Internet website: <http://www.atrrs.army.mil>. You can access the course catalog in the upper right corner. Enter School Code 555 for medical correspondence courses. Copy down the course number and title. To apply for enrollment, return to the main ATRRS screen and scroll down the right side for ATRRS Channels. Click on SELF DEVELOPMENT to open the application and then follow the on screen instructions.

For comments or questions regarding enrollment, student records, or examination shipments, contact the Nonresident Instruction Branch at DSN 471-5877, commercial (210) 221-5877, toll-free 1-800-344-2380; fax: 210-221-4012 or DSN 471-4012, e-mail [accp@amedd.army.mil](mailto:accp@amedd.army.mil), or write to:

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## **CLARIFICATION OF TERMINOLOGY**

When used in this publication, words such as "he," "him," "his," and "men" are intended to include both the masculine and feminine genders, unless specifically stated otherwise or when obvious in context.

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**CORRESPONDENCE COURSE OF  
THE U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL  
SUBCOURSE MD0718  
OPERATIONAL RATIONS I**

**INTRODUCTION**

What are operational rations? What exactly is a Meal, Ready-to-Eat? What is the difference between Unitized Group Rations-A and Unitized Group Rations, Heat & Serve? What is a module? If you cannot answer these questions now, you will be able to when you have completed this subcourse, and you will also know the answers to many other questions. For those of you who already know this material, let it serve as a review.

Why are we interested in operational rations? Modern operational requirements demand state-of-the-art combat rations to provide the nutritional needs of the war fighter in extremely intense and highly mobile combat situations and other contingency operations. Defense Supply Center Philadelphia (DSCP) procures hundreds of millions of dollars worth of operational rations each year for the Armed Forces. As a veterinary food inspection specialist, it is very important to have a working knowledge of operational rations. You must understand the terminology. In order to protect the health of the troops as well as the financial interests of the government, the veterinary food inspection specialist must be able to perform the routine and special inspections of operational rations.

Subcourse Components:

The subcourse instructional material consists of the following:

- Lesson 1, Introduction to Operational Rations.
- Lesson 2, Basic Operational Ration Inspection Guidance.
- Lesson 3, Inspection of Meals, Ready-To-Eat.
- Lesson 4, Inspection of Unitized Group Rations--Heat & Serve/Tray Pack Rations.

Here are some suggestions that may be helpful to you in completing this subcourse:

- Read and study each lesson carefully.
- Complete the subcourse lesson by lesson. After completing each lesson, work the exercises at the end of the lesson, marking your answers in this booklet.

--After completing each set of lesson exercises, compare your answers with those on the solution sheet that follows the exercises. If you have answered an exercise incorrectly, check the reference cited after the answer on the solution sheet to determine why your response was not the correct one.

**Credit Awarded:**

To receive credit hours, you must be officially enrolled and complete an examination furnished by the Nonresident Instruction Branch at Fort Sam Houston, Texas. Upon successful completion of the examination for this subcourse, you will be awarded 8 credit hours.

You can enroll by going to the web site <http://atrrs.army.mil> and enrolling under "Self Development" (School Code 555).

A listing of correspondence courses and subcourses available through the Nonresident Instruction Section is found in Chapter 4 of DA Pamphlet 350-59, Army Correspondence Course Program Catalog. The DA PAM is available at the following website: <http://www.usapa.army.mil/pdffiles/p350-59.pdf>.

## **LESSON ASSIGNMENT**

### **LESSON 1**

Introduction to Operational Rations

### **LESSON ASSIGNMENT**

Paragraphs 1-1 through 1-24.

### **LESSON OBJECTIVES**

After completing this lesson you should be able to:

- 1-1. Identify what is an operational ration.
- 1-2. Identify the different agencies that are involved in operational rations.
- 1-3. Identify the roles of the different agencies that are involved in operational rations.
- 1-4. Identify the different types of operational rations.
- 1-5. Identify the different uses of operational rations.

### **SUGGESTION**

After studying the lesson assignment, complete the exercises. These exercises will help you to achieve the lesson objectives.

## LESSON 1

### INTRODUCTION TO OPERATIONAL RATIONS

#### Section I. INTRODUCTION

##### 1-1. GENERAL

a. Operational rations are specially packaged rations of subsistence used by the Armed Forces for field feeding.

b. Modern operational requirements demand state-of-the-art combat rations to provide the nutritional needs of the war fighter in extremely intense and highly mobile combat situations and other contingency operations.

c. Operational rations provide an essential contribution to the overall quality of life of the individual combatant.

d. Operational rations are subject to continual inspections and systematic quality evaluations from time of production, to the time of receipt, until consumption.

(1) When quality deficiencies are noted that change the condition therefore the condition code of the operational ration, prompt action will be taken to identify the affected stock, identify the possible cause of the deterioration, and to provide disposition recommendations to the officer/agency that is accountable.

(2) Rations showing physical signs of contamination (for example, foreign odors, oily cases, and so forth) or suspected of exposure to chemical, biological, or radioactive contaminants will be inspected in accordance with the directives of the controlling service/agency.

##### 1-2. RESPONSIBILITY

a. Under the auspices of the Department of Defense (DoD), the United States (US) Army Soldier and Biological Chemical Command's (SBCCOM) DoD Combat Feeding Program and the Defense Supply Center Philadelphia's Directorate of Subsistence, Operational Rations Business Unit, are collaborating to employ a total life cycle approach in developing, testing, evaluating, procuring, fielding and supporting all military rations.

b. The Department of Defense Combat Feeding Program at the US Army Soldiers Systems Center (SSC) in Natick, Massachusetts is responsible for research, development, engineering, integration, field testing with war fighters and technical support for the full range of combat rations.



(1) The program is based on a strong partnership with the commercial sector, other government agencies, and the Office of The Surgeon General.

(2) New combat ration menus and components are introduced each year as a direct result of war fighter input.

c. Defense Supply Center Philadelphia (DSCP) (US DoD) Operational Rations Business Unit procures operational rations and must develop and implement a master strategy for the integration of the US food industry into the combat ration program.

d. The Directorate of Subsistence is responsible for ensuring a logistical infrastructure is in place to supply present and future customers the highest quality combat rations in a timely manner and at an affordable price.

## Section II. TYPES OF RATIONS

### 1-3. UNITIZED B RATION



#### a. Purpose.

(1) The Unitized B Ration is used by the Armed Forces to sustain groups of military personnel during operations that allow organized food service facilities to prepare the meals.

(2) These rations are also used in situations that do not allow resupply of perishable foods or where refrigeration equipment is unavailable.

#### b. Product Characteristics.

(1) The components are mostly canned and dehydrated foods, packaged in bulk containers of various sizes and types.

(2) The ration has ten breakfast and ten lunch/dinner menus. Each menu provides a meal for 100 individuals.

(3) There are approximately 100 semiperishable foods used in the Unitized B Ration.

(4) There are six containers in each module; a module contains all food items and disposable items (trays, cups, dining packets, and trash bags) necessary to feed 100 individuals.

(5) The ration provides approximately 4300 kilocalories.

(6) This ration has a shelf life of 24 months at 80°F (27°C). However, some components are susceptible to damage under extreme conditions such as freezing, high temperatures, humidity, insects/rodents, puncture or breakage of containers, and so forth.

(7) The ration is delivered on pallets; each pallet contains two 100-man breakfast meals or two 100-man lunch/dinner meals.

(8) The average weight of the module is 229.1 pounds.

(9) Each menu has its own National Stock Number (NSN).

**c. Additional Information.**

(1) It takes two to three hours for two cooks to prepare a meal for 100 people; additional personnel are needed for serving and sanitation.

(2) Since fielding the Unitized Group Ration (UGR), the Army has chosen to use the UGR Heat and Serve (H&S) in lieu of the Unitized B Rations. The Marine Corps continues to use the Unitized B Ration.

**1-4. UNITIZED TRAY PACK (T-RATION)**



a. **Purpose.** The T-Ration was designed to sustain groups of military personnel in highly mobile field situations with high quality, nutritionally adequate, heat and serve meals.

**b. Product Characteristics.**

(1) The components of the 10-day menu are thermally processed, pre-prepared, shelf-stable foods, packaged in hermetically sealed, half size steam table metal containers.

(2) Each menu has been unitized into 18-man or 36-man modules.

(3) The container serves as a package, heating pan, and serving tray.

(4) Instant beverages, non-dairy creamers, hot sauce, and disposables (cups, five compartment serving trays, and utensils) are included in each module.

(5) Each meal with the addition of milk and bread supplements provides approximately 1420 kilocalories.

(6) The shelf life is a minimum of 3 years at 80°F (27°C).

(7) A pallet load consists of 24 identical meal modules.

(8) Average net weight per module.

(a) The breakfast module weighs 36 pounds.

(b) The dinner module weighs 46 pounds.

**c. Additional Information.**

(1) Since the T-Ration is pre-prepared, its use allows reduction in food preparation time by 50-80 percent, reduction in water usage by 40 percent, and reduction in fuel consumption by 20 percent when compared with A or B rations.

(2) This ration was phased-out by the Defense Logistics Agency (DLA) but will be used as long as serviceable stocks exist in the federal supply system. The Marine Corps continue to use this ration.

(3) A unitized Cold Weather T-Ration Supplemental Module is available.

(a) This supplemental module contains Styrofoam clamshell trays, hot cups with lids, pouch bread, candy, oatmeal cookie bars, soup, extra hot beverages, and non-dairy creamers.

(b) The Cold Weather T-Ration Supplement provides an additional 1020 kilocalories.

## 1-5. UNITIZED GROUP RATION

### a. Purpose.

(1) The Unitized Group Ration (UGR) is designed to maximize the use of easy to prepare or ready to use core commercial items and to simplify and streamline the process of providing high quality group meals in a field environment by integrating components of the A, B, and T (H&S) Ration entrées.

(2) This ration is used to sustain military personnel during worldwide operations that allow organized food service facilities.

b. **Options.** There are two options or versions available when purchasing this ration.



(1) The UGR/H&S version.

(a) Product characteristics.

1 The components are thermally processed, pre-prepared, shelf-stable foods, packaged in hermetically sealed, half size steam table metal containers.

2 This ration contains tray pack entrée/starch and desserts.

3 There are seven breakfast and fourteen lunch/dinner menus available.

4 Breakfast enhancements include bread, milk, and cold cereal. The lunch/dinner enhancements include bread, milk, peanut butter and jelly.

5 Each module is unitized into three boxes that provide a complete meal for 50 individuals including disposables (cups, five compartment serving trays, and utensils), with the exception of mandatory supplements, such as bread, milk, and cold cereal.

6 The container serves as a package, heating pan, and serving tray.

7 Each menu, including mandatory supplements, provides an average of 1450 kilocalories per serving.

8 The UGR/H&S has an 18-month shelf life at 80°F (27°C).

9 This version consists of semiperishable components unitized into three boxes per menu. Two 50-individual meals/menus per pallet tier, stacked four high; the pallet contains 400 meals/menus.

10 The average weight of the module is 124.5 pounds.

11 Each individual meal module has its own NSN.

(b) Additional information.

1 The UGR/H&S is currently available for procurement.

2 The new polymeric tray that replaces the metal tray is approved for use and has been introduced into the module.

3 The UGR/H&S is assembled at government depots.

(2) The UGR--A version.



(a) Product characteristics.

1 In addition to its semiperishable core items, this ration contains perishable/frozen entrées to provide the luxury of an A-Ration meal in the field.

2 There are seven breakfast and fourteen lunch/dinner menus available.

3 Breakfast enhancements include bread, milk, and cold cereal. The lunch/dinner enhancements include bread, milk, peanut butter and jelly.

4 Each module provides a complete meal for 50 individuals including disposables (cups, five compartment serving trays, and utensils), with the exception of mandatory supplements, such as bread, milk, and cold cereal.

5 Each menu, including mandatory supplements, provides an average of 1450 kilocalories per serving.

6 The components of the UGR-A module have a minimum shelf life requirement of 3 months (semiperishables maintained at 80°F (27°C), perishables maintained at 0°F (18°C)) when delivered to a facility within the continental United States (CONUS). The components of the UGR-A module have a minimum shelf life requirement of 5 months (semiperishables maintained at 80°F (27°C), perishables maintained at 0°F (18°C)) when delivered to a facility outside the continental United States (OCONUS).

7 One pallet is comprised of 12 modules, totaling 600 meals.

8 The average weight of the module is 86.7 pounds.

9 The perishable and semiperishable modules each have their own NSN.

(b) Additional information.

1 The UGR--A is currently available for procurement.

2 Revisions in the components of the UGR--A are customer-driven and continuous under the Fielding Group Ration Improvement Program.

3 The UGR--A is a "build to order" ration with assembly and direct vendor delivery with a 15-day order/ship time within the CONUS and a 45-day order/ship time for OCONUS.

4 This ration has no minimum ordering quantity required and is configured into individual meal modules for ease of ordering and distribution with the preparation similar to any A-Ration meal. This ration can be compared to prime vendor in a box.

## 1-6. MEAL READY-TO-EAT



a. **Purpose.** These rations are used to sustain individuals during heavy activity such as military training or military operations that preclude organized food service facilities, but where re-supply is established or planned.

### b. **Product Characteristics.**

(1) The Meal, Ready-to-Eat (MRE) is a self-contained operational ration consisting of a full meal packaged in a flexible bag. The flexible-packaged foods are heat processed in retort pouches.

(2) The components are lightweight, easily opened, and compact to fit easily into military field clothing pockets.

(3) Each meal contains an entrée/starch, crackers, a spread (cheese, peanut butter, jam, or jelly), a dessert/snack, beverages, an accessory packet, a plastic spoon and a flameless ration heater (FRH).

(4) Since MRE XVIII (1998) to the present, 24 menus have been available. Case A contains menus 1–12 and Case B contains menus 13–24.

(5) Each meal provides an average of 1250 kilocalories. With the addition of supplemental pouch bread, the value increases by 200 kilocalories.

(6) The shelf life is a minimum of 3 years at 80°F (27°C), 6 months at 100°F (38°C).

(7) Each pallet contains 24 A-cases and 24 B-cases.

(8) Each shipping container/case has a net weight of 22 pounds.

(9) This rations NSN is 8970-00-149-1094.

c. **Additional Information.**

- (1) The individual soldier prepares the food.
- (2) Through MRE XV (1995), there were 12 meals per shipping container, one of each menu. The number of menus was expanded to 16 for MRE XVI (1996), 20 menus were available for MRE XVII (1997).
- (3) Under the Fielded Individual Ration Improvement Program the Joint Services Operational Rations Forum Integrated Product Team meets annually to approve all menu changes.
- (4) Since 1993, 95 new items have been approved.
- (5) Over 70 percent are non-developmental items (NDI).
- (6) Twenty-three of the least-acceptable items have been eliminated.
- (7) Four vegetarian meals are available, two each in Cases A and B.
- (8) Each year two menus are replaced.
- (9) A new easy to open bag with commercial like color and graphics was developed.
- (10) Nutritional labeling has been implemented.

**1-7. MEAL RELIGIOUS, KOSHER/HALAL**



a. **Purpose.** The Meal, Religious, Kosher or Halal is used to feed those individuals in the Armed Forces who maintain a strict religious diet.



**b. Product Characteristics.**

(1) Each meal consists of two components, one Kosher or Halal certified meal entrée and one religiously certified/acceptable common accessory packet sufficient to provide the recommended daily nutritional requirements.

(2) Like the MRE, it is a totally self-contained meal; however, it is not combined in a flexible bag.

(3) It is ready to eat with the exception of the beverage.

(4) Kosher or Halal entrées are identical, however, they are never cased together. They are purchased separately from different companies.

(5) Each case of Religious Rations contains two intermediate boxes, one box with 12 entrées, and one box with 12 accessory packets.

(6) The accessory packet also contains condiments/seasoning, utensils, flameless ration heater and napkin.

(7) Each menu provides approximately 1200 kilocalories.

(8) The maximum shelf life at delivery is 10 months; the minimum shelf life at delivery is 3 months.

(9) Each shipping container/case has a net weight of 18 pounds.

(10) The NSN for the Meal, Religious Kosher is 8970-01-E10-0001.

(11) The NSN for the Meal, Religious Halal is 8970-01-E10-0002.

**1-8. GO-TO-WAR-RATION**



a. **Purpose.** The go-to-war-ration (GTW) is designed to sustain an individual during the early stages of mobilization until the time the ration industry can catch up and meet the demand.

**NOTE:** This ration evolved from lessons learned during Operation Desert Shield/Storm. It does not meet the full spectrum of Military Service Requirements for Operational Rations. Therefore, it augments the "family of rations" and does not replace an operational ration.

b. **Product Characteristics.**

(1) Each of the 12 nutritionally complete menus consists of commercially available, individual serving shelf-stable components.

(2) The food is fully processed/prepared and ready-to-eat.

(3) Each meal provides an average of 1300 kilocalories.

(4) The shelf life of this ration is 18 months at 80°F (27°C).

(5) There are 12 meals per shipping container, one of each menu.

(6) Each meal weighs 2 pounds and the case weighs 25 pounds.

c. **Additional Information.**

(1) This ration is not readily accessible. The Defense Supply Center Philadelphia can only provide it when authorized to do so in situations where the MRE is not available.

(2) The Soldier Systems Center, Natick maintains a comprehensive computer database of commercially available, shelf-stable foods to support this ration.

(3) When a requirement for procurement is received by the DSCP, menus reflecting currently available components will be coordinated with the Office of The Surgeon General for approval and packing/assembly documents will be finalized.

**1-9. RATION, COLD WEATHER**



a. **Purpose.** The ration, cold weather (RCW) is used to sustain an individual during operations under frigid conditions.

b. **Product Characteristics.**

(1) The six menus contain precooked, dehydrated entrées and other low moisture foods.

(2) It is a lightweight ration, and many of the components can be eaten either dry or rehydrated. Several drink mixes and soup are included in each menu to encourage water consumption.

(3) The individual soldier prepares the food.

(4) There are two meal bags per ration (an A and B pouch), which provide food for 24 hours.

(5) There are six rations per shipping container, one of each menu. All packaging is flexible and the outside bag is made of white camouflage material.

(6) Each menu provides 4500 kilocalories.

(7) The expected shelf life is a minimum of 3 years at 80°F (27°C) and 6 months at 100°F (38°C).

(8) The ration weighs 2.75 pounds and the case weighs 21.31 pounds.

(9) This ration NSN is 8970-01-267-5864.

c. **Additional Information.**

(1) The RCW will no longer be procured after the year 2000.

(2) The RCW has been reconfigured into three individual meals per day in lieu of the current one complete daily ration packaged in two meal bags.

(3) The RCW has been replaced by the Meal, Cold Weather/Food Packet, Long Range Patrol (MCW/LRP).

## 1-10. FOOD PACKET, LONG RANGE PATROL



a. **Purpose.** This ration was designed to be an extended life operational ration that is used to sustain personnel during initial assault, special operations, and long-range reconnaissance missions.

### b. Product Characteristics.

(1) The Food Packet, Long Range Patrol (LRP) has eight menus that contain dehydrated entrées, cereal bars, cookie and candy components, instant beverages, accessory packets, and plastic spoons.

(2) The individual soldier prepares the food.

(3) There are 16 rations per shipping container, two of each menu.

(4) Each menu provides an average of 1560 kilocalories. The LRP is a restricted calorie ration that is approved for use at an issue of one packet per man per day for up to 10 days.

(5) The water requirement to hydrate the entrée is 10 to 12 ounces and 16 ounces for the beverage.

(6) The expected shelf life is 10 years at 80°F (27°C).

(7) Each ration weighs 1.0 pound and the case weighs 20.0 pounds.

(8) This ration NSN is 8970-00-926-9222.

### c. Additional Information.

(1) This ration has taken advantage of current production technology by using the components from existing military rations.

(2) The new LRP provides approximately 400 more calories than the original version.

(3) The new packaging system includes a new peelable seal menu bag and will allow the LRP to be assembled on the same manufacturing lines as the MRE, using the same size case.

(4) The new packaging system relies on the use of a brick-shaped package for the entrées that has resulted in a 20 percent increase in the LRP packets per pallet (from 480 packets to 576 packets).

(5) The LRP has been replaced by the MCW/LRP.

### **1-11. MEAL, COLD WEATHER/FOOD PACKET, LONG RANGE PATROL**



#### **a. Purpose.**

(1) This ration was designed to meet the Joint Service requirement of the Marine Corps and the Army Special Operational Forces (SOF).

(2) The Marine Corps requires appropriate nutritional and operational characteristics for extreme cold environments and the SOF require a long life restricted calorie ration to be used during initial assault, special operations, and long range patrol.

#### **b. Product Characteristics.**

(1) Each ration provides a dehydrated entrée, cereal bar, cookies, candy, a powdered beverage, accessory packets, and plastic spoons.

(2) This lightweight meal/ration packet includes ready to eat items and instant entrée that can be eaten dry if necessary.

(3) Extra drink mixes are included to encourage water consumption.

(4) One shipping container contains one of each of the twelve menus available.

(5) The MCW is packed in white camouflage meal bags and the LRP in a beige color meal bag.

(6) Each menu provides an average of 1540 kilocalories. The MCW/LRP is compatible with other operational ration feeding systems like the UGR and the MRE and can be used as a separate meal especially in cold weather scenarios.

1 The MCW, if used for three meals, provides the 4500 kilocalories required for heavy exertion in the extreme cold. Limits on protein and sodium help to reduce risk of dehydration in cold weather environments.

2 The LRP is a restricted calorie ration that is approved for use at an issue of one packet per man per day for up to 10 days.

(7) An average of 34 ounces of water is needed to hydrate the all components in the menu bag.

(8) The shelf life is a minimum of 3 years at 80°F (27°C) and 6 months at 100°F (38°C). Extended shelf life for the entrée has been shown in actual storage tests.

(9) A ration weighs 1.0 pound and the case weighs 15 pounds.

(10) The NSN for the MCW is 8970-01-467-1753.

(11) The NSN for the LRP is 8970-01-467-1749.

c. **Additional Information.** The MCW/LRP is now available. Stocks of the original MCW, and LRP will be issued until the stocks are depleted.

## 1-12. TAILORED OPERATIONAL TRAINING MEAL



**a. Purpose.**

(1) The tailored operational training meal (TOTM) was created to provide an alternative operational training meal in lieu of "sack lunches" and catered commercial meals to organizations that engage in inactive duty training (IDT).

(2) The TOTM promotes doctrine requirements and the "train as you fight" philosophy.

**b. Product Characteristics.**

(1) The TOTM is similar to the MRE in packaging and contains many of the same components. However, it employs commercial packaging to reduce cost.

(2) The entire meal is ready to eat, except for the beverages, which need to be rehydrated.

(3) The TOTM is a totally self-contained packet consisting of a meal packed in a flexible meal bag that is lightweight and fits easily into military field clothing pockets.

(4) Three sets of menus are available. Each set is comprised of six menus, and each case contains two of each menu for a total of twelve meals per case.

(5) Each meal bag provides an average of 997 kilocalories.

(6) The average net weight per case is approximately 20.0 pounds.

(7) This product is designed to be a "just in time"/Direct Vendor Delivery (DVD) item with a 7-10 day delivery time.

(8) The shelf life of the TOTM at the time of delivery to the customer will be no less than 12 months.

(9) The NSN for this ration is based on the manufacturer. SOPACKO's NSN is 8970-01E10-0239, Wornick's NSN is 8970-01-E10-0240, and Ameriqua's NSN is 8970-01E10-0238.

**c. Additional Information.**

(1) The TOTM is not a MRE, nor was it designed to take the place of the MRE.

(2) The TOTM can be adapted for disaster relief efforts.

(3) Although the entrée may be eaten cold if operationally necessary, a flameless ration heater is provided with each meal.

## 1-13. HUMANITARIAN DAILY RATION

a. **Purpose.** This ration was created to feed large populations of displaced persons or refugees under emergency situations.

### b. **Product Characteristics.**

(1) The Humanitarian Daily Ration (HDR) is similar in concept to the composed of ready-to-eat thermostabilized entrées and complimentary components. The ration is packaged in materials structurally similar to the MRE. However, the similarity ends there.

(2) In order to provide the widest possible acceptance from the variety of potential consumers with diverse religious and dietary restrictions from around the world, the HDR contains no animal products or animal by-products, except that minimal amounts of dairy products are permitted. Alcohol or alcohol-based ingredients are banned from this ration.

(3) The meal bag is similar to the MRE, except that it is a salmon color for easy visibility. The graphics on the menu bag demonstrate how to open the bag and that the contents should be eaten.

(4) The shipping containers are the same as the MRE except the HDR case holds 10 menu bags and contains markings and graphics specific to this ration.

(5) These rations are packaged to withstand extreme environmental conditions and to allow airdrops when necessary.

(6) The components are designed to provide sustenance for a full day to a moderately malnourished individual, therefore a minimum of two entrees is provided in each meal bag. Each meal bag provides not less than 2200 kilocalories.

(7) The shelf life of this ration is 36 months at 80°F (27°C).

(8) Each case weighs 25 pounds.

(9) This rations NSN is 8970-01-375-0516.

### c. **Additional Information.**

(1) The entrées may be eaten cold, however, as is universally understood, the entrées generally are more desirable when heated.

(2) The packaged entrée may be immersed in hot water or the contents of the package may be placed in a pot for heating over a flame.



## 1-14. HUMANITARIAN POUCHED MEAL

### a. Purpose.

(1) The development of the Humanitarian Pouched Meal (HPM) was based on a need expressed by the US Army.

(2) In 1993, vast numbers of Cubans and Haitians were rescued from boats and ships; many of these people were taken to the US Naval Base at Guantanamo Bay, Cuba pending resolution of the political situations.

(3) Because of a water shortage crisis, the dining facilities were only able to provide two meals a day to the people. Thus, a ration similar to the HDR was required, except the meals contained one meal per day rather than the complete day's food.

### b. Product Characteristics.

(1) The HPM is comprised of one entrée, a beverage, and complimentary components that were selected with the tastes of the recipients in mind.

(2) Since the overwhelming majority of the migrants were young, active people, the nutritional requirements were tailored to that age group.

(3) Each meal provides 967 kilocalories.

## 1-15. FIRST STRIKE RATIONS



### a. Purpose.

(1) Designed to maintain/improve mental/physical performance. Lightweight packaging with compact configuration will result in a reduction in weight and cube.

(2) The First Strike Ration (FSR) supports the Objective Force requirement for a more strategically responsive, agile, and highly mobile force.

(3) Compared to the MRE, the FSR will have a projected weight and volume reduction of 47 percent and 56 percent respectively with a similar cost per calorie.

**b. Product Characteristics.**

(1) The prototype will be a high energy, eat-out-of hand/eat-on-the-move concept with scenario driven tailorability (cold, temperate, hot environment) for use during the first few days of combat.

(2) The FSR will be comprised of components such as the shelf stable pocket sandwich, energy rich snacks, dairy bar, and performance enhancing ration components such as the HooAh! Bar and the ERGO drink. The FSR will be comprised of dense and energy rich components.

(3) Components will include carbohydrate and protein-derived constituents to enhance physical functioning and/or psychological resistance to stress. Micronutrient fortification is also anticipated.

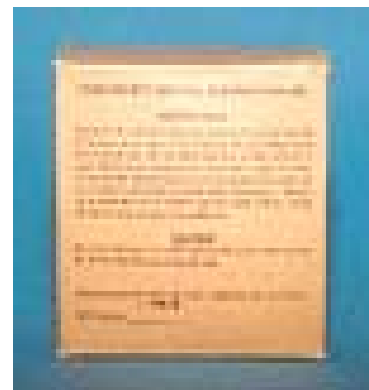
**c. Additional Information.**

(1) This ration will incorporate novel processing, packaging, stabilization, and preservation technologies.

(2) Bioengineering and novel delivery systems will be used to develop ration components that contain desired nutrition/performance-enhancing constituents in a portable, easily consumed and acceptable form.

(3) Focus groups with soldiers have been conducted to provide feedback on potential components and packaging concepts. Marines will evaluate prototype FSRs in 2002.

**1-16. FOOD PACKET, SURVIVAL, GENERAL PURPOSE, IMPROVED**



**a. Purpose.**

(1) The Food Packet, Survival, General Purpose, Improved (GP-1) is used by the Services to sustain an individual in survival situations, including escape and evasion, under all environmental conditions, and when potable water is limited.

(2) Requested by the Air Force, it is used to sustain personnel in any survival situation for periods of less than five consecutive days.

**b. Product Characteristics.**

(1) This food packet contains six compressed bars (two cereal bars, three cookie bars, and a sucrose bar) sealed in trilaminate pouches and packed in a water resistant, paperboard box. Sweetened lemon tea, soup, and gravy base are also included.

(2) There are 24 packets per shipping container.

(3) Each packet provides 1447 kilocalories.

(4) The expected shelf life for this ration is 5 years at 80°F (27°C).

(5) Each packet weighs 71 pounds and the case weighs 18.21 pounds.

(6) This ration, NSN is 8970-00-082-5665.

**c. Additional Information.**

(1) Limited procurement quantities contributed to the unavailability of the old ration packed in a tin-plated steel can, which led to the adoption of flexible packaging for the components.

(2) The GP-1 provides approximately 42 percent more calories than the original general-purpose survival ration with essentially the same weight and volume.

**1-17. FOOD PACKET, SURVIVAL, ABANDON SHIP (CANDY) (OLD VERSION)**



a. **Purpose.** This packet is used by the Navy to sustain personnel who must abandon ship. It is supplied in lifesaving craft aboard ships.

**b. Product Characteristics.**

- (1) The packets contain hard candy and chewing gum.
- (2) There are 16 food packets per intermediate box and 8 intermediate boxes per shipping container.
- (3) The components have maximum stability for storage in on-deck craft under all climatic conditions.
- (4) It is designed to fit in the storage areas of lifesaving craft.
- (5) This packet meets the shelf life criteria of being edible after exposure to 140°F (60°C) for 1 month.

**c. Additional Information.** Earlier versions contained starch jelly bars, candy-coated chewing gum, mint tablets, matches, and a cigarette packet.

**1-18. FOOD PACKET, SURVIVAL, ABANDON SHIP (CEREAL BARS)  
(New Version)**



**a. Purpose.** The Navy uses this food packet; it was designed to sustain life for people who must abandon ship. This packet will sustain one person for three days using 2 bars per day.

**b. Product Characteristics.**

- (1) The packet contains calorically dense cereal bars.
- (2) This ration is strictly a short-term survival food. When the contents of the packet are consumed, it will minimize the negative metabolic effects of acute starvation.

- (3) The components are compatible with the restriction of potable water.
- (4) The Food Packet, Survival, Abandon Ship contains a minimum of six equally shaped, commercially available, individually wrapped bars per intermediate box, 25 packets per case.
- (5) Each packet provides approximately 2400 kilocalories.
- (6) The shelf life is 84 months at 80°F (27°C).
- (7) Each packet weighs 5.2 ounces, 5.75 pounds per intermediate box and 48 pounds per case.
- (8) This rations NSN is 8970-01-434-3192.

**c. Additional Information.**

- (1) The components have a maximum stability for storage in on-deck craft under all climatic conditions.
- (2) This ration meets the 5 year shelf life criteria stated in US Coast Guard regulations Governing Emergency Provisions for Lifeboats and Life Rafts.
- (3) The ration was designed from lessons learned after ocean disasters, which showed that other supplies, such as lifesaving equipment and drinking water, were more critical to survival than food.
- (4) This new commercial version became available in 1997.

**1-19. FOOD PACKET, SURVIVAL, AIRCRAFT, LIFE RAFT**



a. **Purpose.** This packet is used by the Navy to sustain personnel that survive aircraft disasters. The packet, along with other essential equipment, is supplied in the emergency kits carried aboard naval aircraft.

**b. Product Characteristics.**

(1) The packet contains hard candy, candy-coated chewing gum, and twine. An instruction sheet is included explaining the use of the twine for storing the components after the packet is opened.

(2) The components have maximum stability under extreme temperature changes.

(3) This ration is strictly a short-term survival food. When the contents of the packet are consumed, it will minimize the negative metabolic effects of acute starvation.

(4) The components are compatible with the restriction of potable water.

(5) They must withstand temperatures up to 160°F (70°C).

(6) Each packet provides approximately 300 kilocalories.

(7) The shelf life is 84 months at 80°F (27°C).

(8) Each packet weighs 3.5 ounces, and a case weighs 8.0 pounds.

(9) This rations NSN is 8970-01-028-9406.

**c. Additional Information.** Earlier versions included fruit flavored tablets (fortified with ascorbic acid) and mint tablets, but procurement became impractical due to the small quantities required.

**1-20. MEDICAL DIET FIELD FEEDING SUPPLEMENT TO THE UNITIZED GROUP RATION**

**a. Purpose.**

(1) The Medical Diet Field Feeding Supplement provides medically unique food components required to prepare modified diets for consumption by patients with cranial and facial injuries in Armed Forces medical treatment facilities.

(2) The Medical Diet Field Feeding Supplement was designed to simplify and streamline the ordering process of medically unique food items, and is based on the Armed Forces hospital modified diet order patterns observed during Operation Desert Shield/Storm.

**b. Product Characteristics.**

(1) The Medical Diet Field Feeding Supplement consists of liquid and soft foods that are quickly prepared, off-the-shelf (OTS) commercial components.

(2) Each supplement provides a 15-day supply for 50 patients. When combined with the UGR, includes the following diet orders:

(a) 30 Clear Liquid Diets.

(b) 10 Full Liquid Diets.

(c) 10-20 Dental Liquid Diets.

(d) 25 High Calorie/High Protein Diets.

(e) 15 Interval Feeding Diets.

(3) Each module is unitized into three shipping containers, two modules per tier on a pallet, four tiers, for a total of eight Medical Diet Field Feeding Supplements per pallet.

(4) The shelf life is 12 months at 80°F (27°C).

(5) Each tri-wall container weighs 443 pounds.

(6) This rations NSN is 8970-01-470-5077.

**c. Additional Information.**

(1) The supplement is not a stocked item; it is ordered and purchased on an "as needed" basis.

(2) The Medical Diet Field Feeding Supplement may be used in combination with the UGR. Those soldiers at a field hospital able to chew eat the UGR and soldiers unable to chew are given the Medical Diet Field Feeding Supplement.

(3) The Medical Diet Field Feeding Supplement replaced the Medical B Ration.

## **1-21. ARCTIC SUPPLEMENT TO THE UNITIZED GROUP RATION**

### **a. Purpose.**

(1) The Arctic Supplement, when used in combination with the UGR, provides additional beverages and kilocalorie snacks for the war fighter in a cold weather environment.

(2) The Arctic Supplement is only to be used to augment the UGR/H&S.

(3) The Arctic Supplement is designed to simplify and streamline the ordering process of these items.

### **b. Product Characteristics.**

(1) The Arctic Supplement assembly consists of soups, warming beverages, snacks, hinged foam three compartment trays, and hot cups with covers.

(2) Each module promotes the consumption of increased fluids and the number of kilocalories required in cold environments.

(3) Each module is unitized into three shipping containers; two modules per tier on a pallet, four tiers, for a total of eight Arctic Supplement modules per pallet.

(4) This supplement provides approximately 914 kilocalories.

(5) The shelf life is 18 months at 80°F (27°C).

(6) The average weight of the module is 60 pounds.

### **c. Additional Information.**

(1) The DSCP is currently in the process of procuring this supplement.

(2) Once the supplement becomes available, it will replace the Unitized Tray Pack Arctic Supplement.

(3) Food service personnel prepare the Arctic Supplement for serving.



## 1-22. SHELF STABLE POUCH BREAD



### a. Purpose.

- morale.
- (1) Studies have shown that this supplement significantly increases soldier morale.
  - (2) It increases the acceptability of other ration components.
  - (3) It provides soldiers with high quality familiar food.
  - (4) This supplement increases consumption and nutritional intake.

### b. Product Characteristics.

- (1) Pouch bread; Split Top Bread, White, Fully Baked is a new item and replaced Shelf Stable Wheat Bread, Fully Baked.
- (2) This highly desirable meal complement has been stabilized by water activity control to assure its quality and safety.
- (3) Pouch Bread is specially formulated to resist quality changes upon long-term storage, even at high temperatures.
- (4) Each shipping case contains 96 pouches; 12 pouches per bag, 8 bags per shipping container.
- (5) This supplement provides an additional 172 kilocalories.
- (6) Each pouch weighs 1.8 ounces and the case weighs approximately 11 pounds.
- (7) This supplement has an expected shelf life of 24 months.
- (8) The NSN for a case of Bread, Shelf-Stable White is 8920-01-295-9276.

## 1-23. MEAL, ALTERNATIVE REGIONALLY CUSTOMIZED

### a. Purpose.

(1) The Meal, Alternative Regionally Customized (MARC) was created out of a need to support Guantanamo Bay Naval Base (GTMO) detainees.

(2) The meal may be used to provide for other detainees.

### b. Product Characteristics.

(1) The MARC is a self-contained, shelf stable meal packaged in a single meal bag.

(2) It is a vegetarian ration with unique dietary and component requirements.

(3) Each entrée menu contains food components familiar to Southwest Asian/Middle East populations.

(4) Based on the product design parameters, the MARC does not include "prohibited products" such as beef, pork, poultry, or any other animal product or animal by-product in any of the entrées or meal components.

**NOTE:** The MARC is not kosher or halal certified.

(5) Except for the beverages, the entire meal is ready to eat.

(6) Each case contains ten different meals, one of each menu.

(7) The contents of one MARC meal bag provide a minimum of 700 calories.

(8) The contents of one meal bag provide a minimum of 700 calories.

(9) The shelf life is a minimum of 12 months at 80°F (27°C) from the time of product assembly.

(10) Contractors will ship the MARC with no less than 9 months shelf life remaining.

(11) The NSN for a case of the MARC 8970-01-499-7645.

## 1-24. HEATER MEALS



- a. **Purpose.** Used by the National Guard and Reserve forces.
- b. **Product Characteristics.**
  - (1) Full course meal with additional food and beverage items.
  - (2) Each meal comes with a food heater and water pouch to start the heater.
  - (3) Seven different ready-to-eat meals.
  - (4) Each case has ten full course meals with heater.
  - (5) The vendor has given this product a shelf life of 12 months.
- c. **Additional Information.** This product is a General Services Administration (GSA) contract item and not a DSCP product.

**Continue with Exercises**

## EXERCISES, LESSON 1

**INSTRUCTIONS.** Answer the following exercises by marking the lettered response that best answers the question or completes the incomplete statement.

After you have completed all of these exercises, turn to “Solutions to Exercises” at the end of the lesson and check your answers. For each exercise answered incorrectly, reread the material referenced with the solution.

1. Operational rations are used by the Armed Forces for:
  - a. Ease of feeding.
  - b. Ease of shipping.
  - c. Field feeding.
  - d. Research for NASA.
  
2. New combat ration menus and components are introduced each year in the Combat Feeding Program as a direct result of input from:
  - a. The Army Surgeon General.
  - b. The US Army Soldier Systems Center.
  - c. The Defense Supply Center Philadelphia (DSCP).
  - d. The soldier/war fighter.
  
3. Procurement of operational rations is the responsibility of the:
  - a. Army Quartermaster Corp.
  - b. Defense Supply Center Philadelphia.
  - c. US Army Soldier Systems Center.
  - d. Army Center of Excellence-Subsistence.

4. Which organization is responsible for developing and implementing a master strategy for the integration of the US food industry into the combat ration program?
  - a. Directorate of Subsistence.
  - b. Operational Rations Business Unit.
  - c. United States Army Soldier Systems Center.
  - d. Army Center of Excellence-Subsistence.
  
5. The organization responsible for ensuring a logistical infrastructure is in place to supply present and future customers the highest quality combat rations in a timely manner is the:
  - a. Directorate of Subsistence.
  - b. Operational Rations Business Unit.
  - c. Army Quartermaster Corp.
  - d. Army Center of Excellence-Subsistence.
  
6. Which operational ration is also used in situations that do not allow resupply of perishable foods or where refrigeration equipment is unavailable?
  - a. Unitized B Ration.
  - b. Unitized Group Ration--A.
  - c. Unitized Group Ration--Heat & Serve.
  - d. Unitized Tray Pack (T-Ration).
  
7. The Ration, Cold Weather and the Food Packet, Long Range Patrol, has been replaced by:
  - a. Arctic Supplement to the Unitized Group Ration (UGR).
  - b. Go-to-War-Ration (GTW).
  - c. Meal, Cold Weather/Food Packet, Long Range Patrol (MCW/LRP).
  - d. First Strike Ration (FSR).

8. Four vegetarian meals/menus are contained in which operational ration?
  - a. Meal, Ready-to-Eat (MRE).
  - b. Meal, Tailored Operational Training (TOTM).
  - c. Ration, Cold Weather.
  - d. Go-To-War-Ration (GTW).
  
9. Which operational ration was designed for soldiers with facial or cranial injuries?
  - a. Arctic Supplement.
  - b. Meal, Tailored Operational Training (TOTM).
  - c. Medical Diet Field Feeding Supplement.
  - d. Pouch Bread.
  
10. Perishable components are contained in which operational ration?
  - a. Unitized B Ration.
  - b. Unitized Group Ration, Heat & Serve.
  - c. Unitized Group Ration-A.
  - d. Unitized Tray Pack (T-Ration).

11. Which operational ration is not contained in a flexible bag?
  - a. Meal, Tailored Operational Training (TOTM).
  - b. Go-To-War-Ration (GTW).
  - c. Meal, Cold Weather (MCW).
  - d. Meal, Religious, Kosher/Halal.
  
12. The creation of an alternative meal in lieu of “sack lunches” and catered commercial meals resulted in which operational ration?
  - a. Unitized B Ration.
  - b. Meal, Tailored Operational Training (TOTM).
  - c. Unitized Group Ration, Heat & Serve.
  - d. Unitized Group Ration-A.
  
13. The Air Force requested the development of which operational ration?
  - a. Food Packet, Survival, General Purpose, Improved (GP-1).
  - b. Food Packet, Survival, Abandon Ship (Candy) (Old Version).
  - c. Food Packet, Survival, Abandon Ship (Cereal Bars) (New Version).
  - d. Food Packet, Survival, Aircraft, Life Raft.
  
14. Since the fielding of the Unitized Group Ration the Army has chosen to use the UGR-Heat & Serve in lieu of which ration?
  - a. Unitized Tray Pack (T Ration).
  - b. Unitized B Ration.
  - c. UGR-A.
  - d. Meal, Ready-to-Eat (MRE).

15. Which operational ration evolved from lessons learned during Operation Desert Shield/Storm?
- a. Meal, Ready-to-Eat (MRE).
  - b. First Strike Ration (FSR).
  - c. Go-To-War-Ration (GTW).
  - d. Unitized Tray Pack (T-Ration).
16. Which ration is so lightweight that it weighs 1.0 pound and can be carried in the military field clothing pockets?
- a. Food Packet, Long Range Patrol (LRP).
  - b. First Strike Ration (FSR).
  - c. Go-To-War-Ration (GTW).
  - d. Meal, Ready-to-Eat (MRE)
17. Which ration can be used at an issue of one packet per man per day for up to 10 days?
- a. Food Packet, Long Range Patrol (LRP).
  - b. First Strike Ration (FSR).
  - c. Go-To-War-Ration (GTW).
  - d. Meal, Ready-to-Eat (MRE).
18. Which ration has a salmon colored bag?
- a. Meal, Cold Weather (MCW).
  - b. Humanitarian Pouched Meal (HPM).
  - c. Humanitarian Daily Ration (HDR).
  - d. Meal, Tailored Operational Training (TOTM).



19. Which ration is comprised of dense and energy rich components?
- a. Food Packet, Survival, General Purpose, Improved (GP-1).
  - b. First Strike Ration (FSR).
  - c. Go-to-War Ration (GTW).
  - d. Meal Cold Weather (MCW)
20. Which ration is a General Services Administration contract item?
- a. Meal, Tailored Operational Training (TOTM).
  - b. Meal, Alternative Regionally Customized (MARC).
  - c. Shelf Stable Pouch Bread.
  - d. Heater Meals.

**Check Your Answers on Next Page**

## SOLUTIONS TO EXERCISES, LESSON 1

1. c (para 1-1a)
2. d (para 1-2b(2))
3. b (para 1-2c)
4. b (para 1-2c)
5. a (para 1-2d)
6. a (para 1-3a(2))
7. c (para 1-9c(3) and 1-10c(5))
8. a (para 1-20a(1))
9. c (para 1-20a(1))
10. c (para 1-5b(2)(a)1)
11. d (para 1-7b(2))
12. b (para 1-12a(1))
13. a (para 1-16a(2))
14. b (para 1-3c(2))
15. c (para 1-8 NOTE)
16. a (para 1-10b(7))
17. a (para 1-10b(4))
18. c (para 1-13b(3))
19. b (para 1-15b(2))
20. d (para 1-24c)

**End of Lesson 1**

## LESSON ASSIGNMENT

### LESSON 2

Basic Operational Rations Inspection Guidance

### LESSON ASSIGNMENT

Paragraphs 2-1 through 2-23.

### LESSON OBJECTIVES

After completing this lesson you should be able to:

- 2-1. Identify the inspection documents used to inspect operational rations.
- 2-2. Identify the different agencies and their responsibilities involved in operational rations.
- 2-3. Identify the appendices and there use IAW Defense Supply Center Philadelphia (DSCP) Handbook 4155.2
- 2-4. Identify types of inspections.
- 2-5. Identify contractual terms.
- 2-6. Identify diagram and chart terms.
- 2-7. Identify food inspection terms.
- 2-8. Identify industry-processing terms.
- 2-9. Identify mathematical terms.
- 2-10. Identify operational ration terms.
- 2-11. Identify statistical sampling terms.

### SUGGESTION

After studying the lesson assignment, complete the exercises. These exercises will help you to achieve the lesson objectives.

## LESSON 2

### BASIC OPERATIONAL RATIONS INSPECTION GUIDANCE

#### Section I. INSPECTION REFERENCES

##### 2-1. DEFENSE SUPPLY CENTER PHILADELPHIA HANDBOOK 4155.2, SUBSISTENCE INSPECTION OF COMPOSITE OPERATIONAL RATIONS

a. **Purpose.** This handbook provides uniform guidance to all DoD personnel responsible for the inspection and technical management of operational rations under the control of the Armed Forces, the Defense Logistics Agency (DLA), and/or civilian organizations.

b. **Contents.** The handbook addresses the following areas:

- (1) References
- (2) Purpose and Scope
- (3) Policies
- (4) Responsibilities
- (5) Definitions
- (6) Inspection Facilities and Equipment
- (7) Serviceability
- (8) Types and Scheduling of Inspections
- (9) Marking and Identification of Inspected Supplies
- (10) Laboratory Analysis
- (11) Pest Infestation and Laboratory Support
- (12) Quality History Records

c. **Appendices.** Defense Supply Center Philadelphia Handbook 4155.2 contains several appendices that provide detailed inspection procedures for various rations. The appendices are:

(1) Appendix A--Inspection of MRE.

(a) Change 1 to Appendix A, DSCP Handbook 4155.2 Subsistence, Inspection of MRE Rations, Evaluation of Temperature Stressed MRE's. This document was written to provide guidance on evaluating MREs that have been stored at high temperatures for long periods. It is hoped that this document will serve to standardize ration evaluation within both the US Army Veterinary Service and the consumers of these rations.

(b) Additional information on operational rations can be found at DSCP's website: <http://www.dscp.dla.mil/subs/rations/index.htm>

(2) Appendix B--Inspection of UGR H&S and Tray Pack Rations

(3) Appendix C--Inspection of RCW

(4) Appendix D--Inspection of Rations, Light Weight (Not Published to Date)

(5) Appendix E--Inspection of Food Packet, Survival, Aircraft, Life Raft (Not Published to Date)

(6) Appendix F--Inspection of Food Packet, Survival, General Purpose (Not Published to Date)

(7) Appendix G--Not Used

(8) Appendix H--Inspection of Humanitarian Daily Ration

**2-2 DEFENSE SUPPLY CENTER PHILADELPHIA HANDBOOK 4155.2,  
APPENDIX A--INSPECTION OF MEALS, READY-TO-EAT AND APPENDIX  
B--INSPECTION OF UNITIZED GROUP RATIONS HEAT & SERVE MODULES**

a. **Explanation of Inspection Concept.** These Appendices incorporate the concept of condition coding a lot based on the serviceability of the various components contained within the different menus/modules and their estimated remaining shelf life. It involves a basic two-step process:

(1) Determine if any components exceed an action number.

(2) If an action number is exceeded, classify the menus containing the defective components using the criteria contained in Table N, Condition Code Criteria Defects from Special Inspection Results (Components That Equal or Exceed An Action Number).

**b. Inspection Test Date Extensions.** Inspectors may extend an inspection test date (ITD) based on their estimate of the lot's remaining shelf life.

(1) Table N, Condition Code Criteria Defects from Special Inspection Results (Components That Equal or Exceed an Action Number) is provided to aid the inspector in arriving at the best estimate possible without the benefit of laboratory testing.

(2) Remarking of the unitized loads/cases with a revised in ITD will be accomplished IAW the appropriate service regulation. Posting of extensions can be accomplished by posting stickers containing updated ITD information to each pallet or case.

**c. Disposition Recommendations.**

(1) The accountable officer/agency will be informed of inspection results by the Medical Food Inspector. The Medical Food Inspector (MFI) will include (as a minimum):

(a) The rations condition code as determined in accordance with DSCP Handbook 4155.2, Appendices A or B.

(b) The rations estimated remaining shelf life.

(c) The stage of the rations Time-Temperature Indicator (TTI) for MRE.

(d) A summary of the lots general characteristics.

(e) Inspectors are also encouraged to provide additional comments that will assist the accountable officer/agency in determining final disposition.

(2) Final disposition instructions for lots placed on medical hold require review and approval by the local medical authority.

(3) Consider the points listed below when developing a disposition recommendation. This list is not all-inclusive and each point will not always apply.

(a) Can the defective menu(s)/component(s)/module(s) be removed just prior to consumption?

(b) How rapidly is the most defective component expected to deteriorate to the point that it is unlikely to be consumed?

(c) Can the lot be issued and supplemented with similar commercial items, supply catalog items, or other operational ration component(s)?

d. **Inspection Equipment.** The items listed below are the minimum recommended as necessary to perform the inspections of MRE and UGR. However, this list is not intended to be all encompassing.

- (1) High intensity lamp
- (2) Inspection trays and pans, white enamel or plastic
- (3) Magnification lens (3 to 5 power is recommended)
- (4) Metal ruler (32nd of an inch graduation)
- (5) Spatula(s)
- (6) Blotter paper or paper towels
- (7) Scissors, general use
- (8) Tape
- (9) Scissors, general surgical, straight, 5-1/2 inches
- (10) Dish, 140 mm (laboratory "weigh boats")
- (11) Kim wipes, 5 x 8-1/2 wipe or towels, paper, type I, small
- (12) Paper, white, chart size
- (13) Paper, wax impregnated, white roll
- (15) Sterilized Whirl-Pak bags or other similar sample bags
- (16) Can opener
- (17) Knife
- (18) Forceps/Petri-dishes/5ml vials

**2-3. UNITED STATES ARMY VETERINARY COMMAND HANDBOOK 40-3, MEDICAL SERVICES UNITIZED GROUP RATION-A--INSPECTION REQUIREMENTS HANDBOOK**

a. **Purpose.** United States Army Veterinary Command Handbook 40-3 provides the inspection requirements for UGR-A.

b. **Contents.** The handbook addresses the following areas:

- (1) History
- (2) Purpose

- (3) Description
- (4) Applicability
- (5) References
  - (a) Unitized Group Ration -A Inspection Procedures (IP) 02
  - (b) Unitized Group Ration -A Inspection Procedures (IP) 03
- (6) Inspection Frequency
- (7) Inspection Procedures

#### **2-4. VETCOM HANDBOOK 40-4, MEDICAL SERVICES MEAL, READY-TO-EAT INSPECTION REQUIREMENTS HANDBOOK**

a. **Purpose.** United States Army Veterinary Command Handbook 40-4 provides the inspection requirements for the Meal, Ready-to-Eat (MRE).

b. **Contents.** The handbook addresses the following areas:

- (1) History
- (2) Purpose
- (3) Description
- (4) Applicability
- (5) References: Meals Ready To Eat Inspection Procedure (IP) 02
- (6) Inspection Frequency
- (7) Inspection Procedures

#### **2-5. VETERINARY COMMAND OPERATIONAL RATIONS INSPECTION PROCEDURES**

These were written to establish a consistent format and standardization of Inspection Procedures (IPs) and Inspection Instructions (II's). Inspection Procedures documents have been written for many types of operational rations. Listed below (Table 2-1) is Veterinary Commands (VETCOM) inspection procedures for operational rations. The current inspection procedures can be found in the Individual Rations Document Library database on Lotus Notes.



<b>IP No.</b>	<b>Veterinary Command Operational Rations Inspection Procedures Table of Contents</b>	<b>Rev No.</b>	<b>Effective Date</b>
1	Preparation of Inspection Procedures and Instructions	1	13 Mar 03
2	Quality Assurance Terms, Definitions, and References	1	24 Mar 03
3	Operational Rations Installation Support Plan		TBR
4	Meals, Ready-to-Eat (MRE) Procurement Inspection	1	13 May 03
5	MRE Surveillance Inspection	1	10 Apr 03
6	MRE Inspection Database	1	12 May 03
7	Tailored Operational Training Meal (TOTM) Surveillance Inspection	1	22 Jul 03
8	Kosher/Halal Meals (Religious Meals) Surveillance Inspection	1	26 Aug 03
9	Meal Alternative Regionally Customized (MARC) Surveillance Inspection		TBR
10	Humanitarian Daily Rations (HDR) Surveillance Inspection		TBR
11	Go-to-War Ration Surveillance Inspection		TBR
12	Meal Cold Weather/Long Range Patrol (MCW/LRP) Surveillance Inspection		TBR
13	Intentionally Left Blank		
14	UGR-A Procurement Inspection	1	24 Jul 03
15	UGR-A Destination Inspection	3	26 Sep 03
16	UGR-A Surveillance Inspection	5	6 Nov 03
17	UGR-A Inspection Database		TBR
18	Depot Assembly Operations Inspection		TBR
19	UGR-Heat and Serve Surveillance Inspection		TBR
20	UGR-Heat and Serve Inspection Database		TBR
21	UGR Supplement Surveillance Inspection		TBR
22	Unitized B Ration Surveillance Inspection		TBR
23	Intentionally Left Blank		
24	Intentionally Left Blank		
25	Survival Food Packet - General Purpose, Improved Procurement Inspection		TBR
26	Survival Food Packet - General Purpose, Improved Surveillance Inspection		TBR
27	Survival Food Packet - Abandon Ship Procurement Inspection	1	20 Oct 03
28	Survival Food Packet - Abandon Ship Surveillance Inspection		TBR
29	Survival Food Packet - Aircraft/Life Raft Procurement Inspection		TBR
30	Survival Food Packet - Aircraft/Life Raft Surveillance Inspection		TBR
31	DLA-Owned Survival Rations Surveillance Inspection		TBR
32	Health and Comfort Pack Procurement Inspection	2	17 Sep 03
33	Intentionally Left Blank		
34	Intentionally Left Blank		
35	Intentionally Left Blank		

Table 2-1. Operational Rations Inspection Procedures Table of Contents.

## 2-6. ADDITIONAL REFERENCES FOR OPERATIONAL RATIONS

- a. VETCOM Policy Memorandums
- b. AR 30-7, Food Program, Operational Rations.
- b. AR 40-656, Veterinary Surveillance Inspection of Subsistence.
- d. AR 40-657, Veterinary/Medical Food Inspection.
- e. AFI 48-116, Food Safety Program.
- f. NATICK PAM 30-25, Operational Rations of the Department of Defense.  
<http://www.natick.army.mil/>
- g. The DSCP website has many electronic publications listed.  
<http://www.dscp.dla.mil/subs/news/index.htm>
- h. MIL-PRF-44073E, Packaging of Food in Flexible Pouches.
- i. DSCP Manual 4155.6
- j. DLAM 4145.12, Joint Service Manual for Storage and Materials Handling.
- k. DSCP 4155.7, Perishable Subsistence in Storage Quality Control and Inspection.
- l. <http://www.quartermaster.army.mil/ACES/>

## Section II. GENERAL INSPECTION GUIDANCE

### 2-7. GENERAL

a. **Purpose.** DSCP Handbook 4155.2 Subsistence, Inspection of Composite Operational Rations, DSCP Handbook 4155.2 Appendix A - Inspection of Meals, Ready-to-Eat (MRE) Rations, and DSCP Handbook 4155.2 Appendix B - Inspection of Unitized Group Rations – Heat & Serve (UGR – H&S) Modules provide a reference and guide for the surveillance inspection of Meals, Ready-to-Eat (MRE) and Unitized Group Rations – Heat & Serve (UGR – H&S) Modules.

b. **Scope.** DSCP Handbook 4155.2, Appendix A, and Appendix B were written and coordinated to facilitate use on both Defense Logistics Agency (DLA) and Defense Supply Center Philadelphia (DSCP) controlled rations and those controlled by the individual Military Services. Appendix B, does not apply to Mechanicsburg (DDSP) or Tracy (DDJC) Depots. Separate procedures are provided for those locations.

### c. Responsibilities.

(1) The Product Services Office, Defense Supply Center Philadelphia (DSCP-HS) is responsible for developing, maintaining, and coordinating the DSCP Handbook 4155.2, Appendices and any proposed changes with inspection and food service activities of the Military Services.

(2) The Operational Rations Business Unit (DSCP-HR) is responsible for providing contractual inspection guidance when requested by an inspection activity for warranty inspection purposes.

(3) As appropriate, Inspection services shall be provided by either the USAF Public Health Service or the U.S. Army Veterinary Service.

(4) Storage and warehousing services necessary to provide adequate labor and materials handling to conduct sampling and recouping of operational rations shall be provided by the activity having custodial management of the rations.

(5) The inventory of rations shall be managed by either the Defense Supply Center Philadelphia's Operational Rations Business Unit (DSCP-HR), the Ordering Officer; or the Accountable Officer having material management responsibility.

## Section III. INSPECTION INFORMATION

### 2-8. INSPECTION FACILITIES AND EQUIPMENT

Inspection facilities are normally required at fixed storage locations. Listed below are some items to consider when setting up in inspection room:

a. **Location.** A fully enclosed room convenient to the storage facility or location of the rations being inspected, the entrance shall be restricted to those involved in the inspection process. The area should be consistent with the extent of the operation, be heated/air conditioned, and be accessible by forklift.

b. **Ventilation.** A room that is well ventilated and free from dust and odors of all kinds.

c. **Lighting.** The intensity of light needed for critical appearance examinations should be at least 100-foot candles. Florescent lighting shall be restricted to the special daylight type.

d. **Furnishings.** The inspection tables and/or counters should be approximately 36 inches high and 30 to 36 inches wide. The tops should be impervious (e.g., stainless steel, enameled steel, or pressure laminated plastic). The sink (preferably a three-compartment stainless steel) must have hot and cold running water, be large enough to

accommodate the largest equipment used, and have at least a 1/2-horse power disposal system. The storage cabinets or work counter shelves used for storing equipment and supplies should be provided with hinged doors and/or sliding drawers.

## **2-9. SERVICEABILITY**

a. Serviceability determinations have traditionally been made based on estimated remaining shelf life. This approach for composite operational rations is not practical as the sole means of determining serviceability. Operational rations are normally assembled into composite menus (for example, Meals, Ready-to-Eat (MRE)) or modules (for example, Unitized Group Rations (UGRs)) that contain numerous non-homogeneous products. Since components are different, packaged at different times, and deteriorate at different rates, condition coding based on shelf life alone is not practical or indicative of the overall serviceability of the rations.

b. In accordance with this handbook, condition codes and estimated remaining shelf life for composite rations will be based on:

- (1) The condition of each component evaluated individually.
- (2) The importance of each component relative to the ration in which it is contained.

c. The condition code criteria for each composite ration is contained in the appropriate Appendices.

## **2-10. TYPES AND SCHEDULING OF INSPECTIONS**

a. **Receipt Inspection.** This is an inspection upon delivery where a change of Accountable Officer occurs. Additional information on receipt inspections can be found in the applicable appendix to DSCP Handbook 4155.2.

(1) All rations will be inspected at time of receipt or as soon as possible thereafter.

(a) Inspections of Unitized Group Rations – Heat & Serve (UGR – H&S) modules will be accomplished if previous inspection/condition code information accompanies shipment and it is less than three months old, a general inspection for transportation damage and identity will be performed.

(b) If Unitized Group Rations – Heat & Serve (UGR – H&S) possess obvious defects, mechanical damage or it has been more than three months from the last surveillance inspection, perform a full inspection in accordance with this document.

(2) A complete inspection is required if current inspection guidance does not accompany the shipment or cannot be found in the appropriate database.

(3) If current inspection is verified, a general examination will be made for transportation damage/obvious defects.

**b. In-Storage Inspection.** These are inspections performed on a routine schedule while the rations are in storage.

(1) Perishable operational rations (UGR--A) are not designed or intended for long storage periods, however UGR--A's and UGR-H&S's will be inspected monthly to determine product condition once they have reached their inspection test date (ITD).

(2) Defense Logistics Agency (DLA) owned semiperishable operational rations not kept in cold storage/war reserve locations, should be inspected at six-month intervals.

(3) Service-owned rations should be inspected annually, at a minimum.

(4) Inspection frequency should be maintained as long as the ration inspection results do not indicate significant degradation, and the rations have not exceeded their serviceable storage life based on the criteria in DoD 4140.27-M, Shelf-Life Management Manual and applicable appendix.

**NOTE:** The purpose of DoD 4140.27-M is to set forth policy and procedures for the supply chain (life cycle) management of standard and hazardous shelf life items contained in the Federal Supply System.

(5) Rations with a low water activity, such as survival rations need only be inspected annually (DLA-owned or service owned) as long as the rations inspection results do not indicate significant degradation, and the rations have not exceeded their serviceable storage life based on the criteria in DoD 4140.27-M, and applicable appendix. The Accountable Officer may request inspection at any time.

(6) Semiperishable rations will be inspected at the following frequency:

(a) At six-month intervals once the inspection test date (ITD) has been reached, as long as they are still in Condition Code A.

(b) At three-month intervals, once the rations have been placed in Condition Code B.

(c) At one-month intervals, once the rations have been placed in Condition Code C.

(7) After inspection test date (ITD) has passed, inspections of Unitized Group Rations-Heat & Serve (UGR-H&S) modules will be performed at 3-month intervals for Condition Code A stocks, and 1 month intervals for all other condition codes.

**c. Warranty Inspection.**

(1) This is a detailed inspection conducted within the contractual warranty period in accordance with acquisition contract criteria.

(2) A warranty inspection is performed at the first DoD destination to receive the rations from the assembly contractor (excluding commercial contract warehouses).

(3) Ideally, warranty inspections will be conducted between five and six months of the date of receipt at destination.

(4) Warranty inspections should not be performed on tray pack modules assembled at defense depots.

(5) The quality assurance provisions and criteria of this Handbook are not to be interpreted as contractual.

(6) The acquisition activity will provide lotting procedures, guidance on sampling plans, tables of inspection, and other pertinent information needed by the inspection activity.

(7) For Air Force stocks, inspectors will contact the Air Force Services Agency (HQ AFSVA/SVOHT). AFSVA will coordinate requests with DSCP and the inspection activity.

**d. Inspection Prior to Sale or Shipment.**

(1) These are inspections performed to detect obvious condition defects and/or damages that have occurred since the last scheduled cyclic inspection (e.g., mishandling, water damage, and temperature abuse).

(2) If scheduled inspections are not current or have not been performed, a more detailed inspection should be conducted at this time to preclude the movement of damaged/distressed stocks.

**e. Special Inspections.**

(1) A special inspection will be performed when determined necessary based on routine inspection findings, customer complaints, requests from Defense Supply Center Philadelphia (DSCP), requests from the Military Services, or whenever reasons exist for such an action.

(2) For UGR-A's, special inspections are only requested by Defense Supply Center Philadelphia (DSCP) or the Accountable Officer.

## **2-11. MARKING AND IDENTIFICATION OF INSPECTED SUPPLIES**

Ration samples that are inspected and returned to storage will be identified as inspection samples in accordance with the procedures specified in TB MED 263, Veterinary Service, Identification of Inspected Foods or other appropriate means.

## **2-12. LABORATORY ANALYSIS**

a. When doubt exists as to the condition of a lot of operational rations and the inspection activity determines there is a need for a laboratory examination and/or test, samples will be submitted to the Department of Defense (DOD) Veterinary Laboratory. Utilization of laboratories in the determination of serviceability is encouraged whenever it is deemed necessary by the inspection activity.

b. Laboratory guidance for sample submission is currently available in handbook format.

## **2-13. PEST INFESTATION AND LABORATORY SUPPORT**

a. Infestation, damage, or contamination by insect and/or rodent pests encountered during any operational rations inspection procedure will be immediately reported to the Product Quality Office (DSCP-HROS) at (215) 737-3876 or 7533 (DSN 444). For Air Force stocks, this information will also be reported to AFSVA/SVOHT.

b. In the case of insect infestation, the initial notification will be followed up by submission of a DD Form 1222, Request for Results of Tests, or locally approved laboratory form filled out and submitted-in accordance with DSCP Manual 4155.6, Subsection 218.2.

(1) Inspection personnel, the storage facility manager, and the responsible pest control activity should conduct an in-depth facility inspection. Appropriate pest control actions should be taken, when necessary, using the guidance contained in DLA 4145.31, Integrated Stored Products Pest Management or applicable Service directives.

(2) If the current storage location is not the suspected source of infestation, the previous storage facility will be contacted and similar investigative procedures initiated. If the operational rations in question were received infested from a supplier or Defense Logistics Agency (DLA) storage site, contact DSCP-HROS immediately for follow-up action and appropriate recommendations.

c. Disposition recommendations for infested stocks will be based on MIL-STD-904B, Detection, Identification, and Prevention of Pest Infestation of Subsistence or applicable Military Service directives and, when applicable, laboratory identification results. The inspection activity and the owner of the rations should jointly make the final

decision on the disposition of inspected rations. In cases where rations are placed on medical hold, the owner of the rations must coordinate final disposition with the local medical authority.

## **2-14. QUALITY HISTORY RECORDS**

a. Quarterly History Records (QHRs) will be entered into the appropriate Lotus Notes inspection database. Where these databases are not accessible, DSCP Form 5117, Report of Inspection on Operational Rations will be completed and kept at the local level. A copy of the QHR (either Lotus Notes printout or DSCP Form 5117) will be provided to the Accountable Officer. Quality history records will also include reports received with a shipment from another location.

b. Defense Supply Center Philadelphia (DSCP) Quality Assurance personnel have access to the Lotus Notes database information. Electronic transmissions of inspection reports in Lotus Notes are acceptable to DSCP and encouraged. However, if reports on deteriorating stocks are not entered into the appropriate database, faxed/mailed copies of *less than Condition Code A* stocks must be faxed/mailed to:

Defense Supply Center Philadelphia  
ATTN: DSCP-HSQ Building 6  
700 Robbins Avenue  
Philadelphia, PA 19111  
FAX: (215) 737-7526 (DSN 444)

c. For stocks arriving without current quality history records, the local supporting veterinary activity or the Major Command (MACOM) (US Army) Veterinarian should be contacted for assistance.

d. Specific distributions of inspection reports may be addressed in the applicable appendix.

## **Section IV. LOCATION OF DATABASES**

### **2-15. General**

a. All databases are located in Lotus Notes.

b. The databases are used for different purposes. Some contain the documents needed to perform inspections, other databases are used to submit the reports after the inspections are complete, there are a few for training and others are used for discussion purposes.

c. Everyone with a Lotus Notes ID does not necessarily have access to all of the operational ration databases within Lotus Notes.



d. The key thing to remember about the databases is that they change.

## **2-16. DATABASES AND WHAT THEY CONTAIN**

a. The VETCOM Individual Rations Document Library can be located in Lotus Notes. It contains IP and Instructions for different types of operational rations, and Quality Assurance Terms, Definitions and References.

b. The VETCOM MRE Inspection database is used to submit reports and can be located in the Lotus Notes databases.

c. The VETCOM UGR-A IP, contracts, amendments, modifications, and solicitations can be located in the Lotus Notes, UGR Document Library database.

d. The UGR-A3 Database contains the inspection form and is the location that the veterinary food inspector will post his inspection findings after inspecting UGR-A rations.

e. The UGR-H&S Database contains the inspection form and is the location that the veterinary food inspector will post his inspection findings after inspecting UGR/H&S rations.

## **Section V. DEFINITIONS**

### **2-17. CONTRACTUAL TERMS**

a. **Acceptance.** The act of an authorized government representative by which the Government, for itself or as agent of another, assumes ownership of existing and identified supplies tendered, or approves specific services rendered, as partial or complete performance of the contract on the part of the contractor.

b. **Certificate of Analysis.** A certificate issued by a testing agency, which lists the results of specific analytical testing.

c. **Certificate of Conformance.** A contractor's written statement, when authorized by contract, which certifies that supplies or services comply with the contract requirements.

d. **Deviation:**

(1) A specific written authorization, granted prior to manufacture of an item, to depart from a particular requirement(s) of an item's current approved configuration documentation for a specific number of units or a specified period of time.

(2) The difference or distance of an individual observation or data value from the center point (often the mean) of the data set distribution.

e. **Performance-based Contract Requirement.** The performance-based contract requirement (PCR) is DSCP's quality assurance requirements for the production and inspection of MRE components.

f. **Pre-award Survey.** This is an evaluation of a prospective contractor's capability to perform under the terms of a proposed contract.

g. **Product Quality Review.** An action by the Government to determine that the quality of supplies or services accepted by the Government, do in fact, comply with specified requirements.

h. **Rejection.** The act of rejecting a product because the products deficiencies exceed prescribed tolerances or the product is unwholesome.

i. **Request for Waiver.** The request for waiver (RFW) is a written request from the contractor to the contracting officer requesting that an item be accepted with a known variation from the specified requirements.

j. **Specification.** A document intended primarily for use in procurement, which clearly and accurately describes the essential and technical requirements for items, materials and services, including the procedures by which it will be determined that the requirements have been met.

## 2-18. DIAGRAM AND CHART TERMS

a. **Cause and Effect Diagram.** A chart used to determine the cause of a problem by identifying all possible causes to each category of a process (for example, personnel, machinery, environment, methods, supplies, and so forth) and by investigation and elimination, identifying the root cause.

b. **Control Chart.** A graphic representation of data used to detect, identify and analyze variation in a given characteristic, process or product. This statistical tool can be used in problem solving as an indication of whether the system is in or out of control, as determined by computing control limits.

c. **Flow Chart.** A pictorial representation of a single process, from beginning to end, that shows all steps of the process.

d. **Histogram.** A type of bar graph used to show the distribution of groups of data.

e. **Pareto Chart.** A type of bar chart used in problem solving to identify the area(s), which require immediate attention. Descending bars according to the frequency of occurrence are characteristic of this chart. The underlying principal is that 20 percent of the characteristics account for 80 percent of the overall problem.

f. **Scatter Diagram.** This is a graph that is used to study the relationship between two or more variables. Data points of each variable are plotted to determine the strength of the relationship, but the identity of a cause is not determined.

## 2-19. FOOD INSPECTION TERMS

a. **Army Veterinary Inspector.** Army Veterinary Inspector (AVI).

b. **Cyclic Inspection.** A surveillance inspection performed on a routine scheduled basis.

c. **Date of Pack.** The date of pack (DOP) means the actual date that the product was packaged in the primary container or unit. The DoP for operational rations is usually the date that the components were assembled and packed into shipping containers.

d. **Deterioration.** A process of change occurring in a food item that affects the product's normal appearance and/or wholesomeness; which will eventually limit its serviceability.

e. **Grossly Observable Discrepancy.** An immediately observable defect that, in the AVI's judgment, results in the item being nonconforming to contractual requirements.

f. **Inspection.** The examination and testing of supplies and services to determine whether they conform to specified requirements.

g. **Inspection Test Date.** The inspection test date (ITD) is the date that occurs a specified number of months after the item is packed (DOP). The ITD is related to, but less than, the products estimated shelf life.

h. **Measuring and Test Equipment .** Measuring and Test Equipment (M&TE) refers to all devices used to measure, gage, test, inspect, diagnose, or otherwise examine materials, supplies and equipment to determine compliance with technical requirements.

i. **Original Inspection.** The first inspection of a particular quantity of product as distinguished from the inspection of product which has been resubmitted after prior rejection.

j. **Perishable Foods.** This is subsistence that requires refrigeration during transport and storage in order to remain wholesome.

k. **Quality assurance representative.** The quality assurance representative (QAR) is the individual directly charged with performance of the Government contract quality assurance function at a contractor facility.

l. **Scrap.** Nonconforming material that is not suitable for its intended purpose and which cannot be economically reworked or cannot be repaired in a manner acceptable to the Government.

m. **Semi-Perishable Foods.** Foods that are shelf-stable and do not require refrigeration during transportation or storage.

n. **Shelf Life.** The total elapsed time from the DOP to the date the product is issued for immediate consumption.

o. **Unfit for Human Consumption.** Subsistence that would present a health hazard if consumed. The local medical authority makes the determination.

p. **Unfit for Intended Use.** A food product that can no longer be used as originally intended due to deterioration or other restricting factors.

## 2-20. INDUSTRY-PROCESSING TERMS

a. **Assignable Cause.** The reason found for an uncommon variation of a process, usually initially identified by an out-of control situation on a control chart.

b. **Control Limits.** Statistical limits that establish the maximum variation beyond the action that must be taken to investigate and when feasible correct the cause(s) of nonconformance. Control limits are developed using standard statistical methods and based on documented process history.

c. **Control Point.** This is a point, step, or procedure in a system where conformance to contractual requirements can be controlled.

d. **Corrective Action.** Changes to processes, work instructions, workmanship, training, inspections, tests, procedures, specifications, equipment, facilities or material that result in preventing, minimizing or eliminating nonconformances.

e. **Critical Control Point.** Critical control point (CCP) is a point, step or procedure in a system at which control can be applied and a food safety hazard can be prevented, eliminated or reduced to acceptable levels.

f. **Process.** A repeatable set of tasks or activities designed to add value to the output of a product or service for a customer.

g. **Process Average.** This is the average percent defective or the average number of defects per hundred units of a product submitted by the supplier for original inspection.

h. **Process Capability.** This is a process capability a statistical evaluation of a process to determine its ability to produce output within specified limits. The composite of all attributes or characteristics, including performance, of an item or product that bear on its ability to satisfy stated or implied needs.

i. **Quality Assurance .** Quality assurance (QA) is a planned and systematic pattern of all actions necessary to provide adequate confidence that management and technical planning and controls are adequate to:

- (1) Establish correct technical requirements for design and manufacturing.
- (2) Create products and services that conform to the established technical requirements.

j. **Quality Audit.** A systematic and independent examination and evaluation to determine whether quality activities and results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

k. **Process Audit.** This is an analysis of elements of a process and appraisal of completeness, correctness of conditions, and probable effectiveness.

l. **Product Audit.** A quantitative assessment of conformance to required product characteristics. Product quality audits usually involve an inspection operation, but these are carried out independently of the routine inspection and assessment activities.

m. **Quality System Audit.** A documented activity performed to verify, by examination and evaluation of objective evidence, that applicable elements of the quality system are suitable and have been developed, documented, and effectively implemented in accordance with specified requirements.

n. **Statistical Process Control.** This is the application of statistical techniques to the control of processes and quality. These techniques include the use of frequency distributions, measures of central tendency and dispersion, control charts, acceptance sampling, regression analysis, etc.

o. **Traceability.** The ability to trace the history, application, or location of an item or activity and like items or activities by means of recorded identification. Generally, the ability to identify the assembled lots and location of those lots that contain a particular component.

## 2-21. MATHEMATICAL TERMS

- a. **Calibration.** Comparison of two instruments or measuring devices, one of which is a standard of known accuracy traceable to national standards, to detect, correlate, report, or eliminate by adjustment any discrepancy in accuracy of the instrument or measuring device being compared with the standard.
- b. **Mean.** The average or expected value of a number of observations.
- c. **Median.** The middle value identified when the values are arrayed in numerical order. It is the value which has half of the observations above it and half of the observations below it.
- d. **Mode.** The value in a group of observations that occurs the most frequently.
- e. **Probability.** The number of times an event can be assumed to occur based on the past occurrences of the event over a specified number of possible cases.
- f. **Range.** The difference between the largest and smallest values in a group of observations.

## 2-22. OPERATIONAL RATION TERMS

- a. **First Article.** Potential “new” items to be added to rations in which a contractor submits samples to NATICK for evaluation of analytical, physical, microbial, and/or performance requirements.
- b. **Component.** It is one item in a composite ration. Components have different levels of importance/significance to the overall ration, primarily based on the items caloric value.
- c. **Component Classification.** The Monograph indexes, Table M, Component And Classification List for MRE and Table P, Component And Classification List for UGR/H&S indicate the classification of each component. Component classification is determined by coordination of the Surgeon General and the Food Service Headquarters of the Military Services.
  - (1) Primary. Any individual component in the operational ration, which if unserviceable, will make the meal nutritionally inadequate for any method of intended use.
  - (2) Secondary. Any individual component in the operational ration, which if unserviceable, will reduce the nutritional value of the meal but will not render the meal unfit for its intended purpose.

(3) Ancillary. Any component in the operational ration that contributes little or no nutrients to the meal and if unserviceable, will not cause the meal to be nutritionally deficient for any intended use.

d. **Composite Ration**. An operational ration composed of several different components that undergo different rates of deterioration over time and temperature variations.

e. **Condition Coding**. Traditionally, condition codes have been based primarily on estimates of remaining shelf life. Serviceability will be determined based on the usability status of all menus or the complete module. However, to aid Accountable Officers in choosing the best disposition option, inspectors will provide them the best possible estimate of remaining shelf life. A list of applicable condition codes and their descriptions are as follows:

(1) Condition Code A (issue able without qualification). Refer to Table N, Condition Code Criteria Defects From Special Inspection Results (Components That Equal or Exceed An Action Number).

(2) Condition Code B (issue able with qualification). Refer to Table N, Condition Code Criteria Defects From Special Inspection Results (Components That Equal or Exceed An Action Number). Accountable Officers are required to determine what qualifications will be specified in order to issue Condition Code B stock (for example, issue with instructions to consume within 60 days; issue with instructions not to consume dehydrated fruit component and supplement with fresh fruit, and so forth).

(3) Condition Code C (issuable with qualification). Refer to Table N, Condition Code Criteria Defects From Special Inspection Results (Components That Equal or Exceed An Action Number). Accountable Officers are required to determine what qualifications will be specified in order to issue Condition Code C stock (e.g., issue with instructions to consume within 30 days; and so forth).

(4) Condition Code H (unserviceable--destroy in accordance with local policy). Refer to Table N, Condition Code Criteria Defects From Special Inspection Results (Components That Equal or Exceed An Action Number). This classification will be used only when the entire lot has been deemed unserviceable.

(5) Condition Code J (laboratory testing, medical hold, rework, or reclassification hold). Any item that is on hold pending laboratory analysis, rework, or awaiting authority for disposal.

(6) Condition Code L (warranty action hold). Any item placed on hold pending warranty action.

f. **Direct Vendor Deliver**. A direct delivery of rations (DVD) from the ration assembler/contractor to the military installation.

g. **Meal/Menu.** A specific quantity of nutritionally balanced food provided to one person during a scheduled serving period. A combination of three meals/menus (breakfast, lunch, and dinner) constitutes a ration.

h. **Module.** The unit of issue for UGR/H&S menus. A module consists of more than one shipping container (most often two or three shipping containers) and will contain everything needed to feed a certain number of individuals for one meal.

i. **Monograph.** An information and instruction sheet for MRE and UGR. H&S that provide the inspector with a description of a MRE component, or UGR H&S module/component to include the following seven areas:

- (1) National Stock Number.
- (2) Item specification.
- (3) Approximate caloric value (and whether the item is a primary, secondary, or ancillary component).
- (4) Characteristic of Item (normal characteristics of item):
  - (a) Appearance.
  - (b) Odor.
  - (c) Flavor.
  - (d) Texture.
- (5) Defects likely to occur (signs of deterioration of item):
  - (a) Appearance.
  - (b) Odor.
  - (c) Flavor.
  - (d) Texture.
- (6) Unique examination/test procedures (special instructions on how to examine the item)
- (7) Special notes (inspection techniques and additional information that will aid the inspector in performing the examination).



**NOTE:** Access monographs at the following web sites.  
(Appendix A) <http://www.dscp.dla.mil/subs/support/qapubs/appa/mono-a.htm>  
(Appendix B) <http://www.dscp.dla.mil/subs/support/qapubs/appb/mono-b.htm>

j. **Meal, Ready-to-Eat Lot Serviceability.** Two factors are considered when determining the overall serviceability of a MRE lot.

(1) The lot is condition coded using Table N, Condition Code Criteria Defects from Special Inspection Results (Components That Equal or Exceed An Action Number).

(2) Then the integrity of the packaging and packing is considered. It is recognized that the status of a MRE lot initially declared unserviceable might change as the result of a rework effort or special instructions provided by the Accountable Officer at/prior to issue.

k. **Operational Ration.** An operational ration of food used by the Armed Forces for field feeding.

l. **Perishable Module.** Comprised of all perishable components included in the ration module.

m. **Product Codes.**

(1) Assembly code information: Contract and component identification markings found on the shipping container, modules, menu bags, and/or accessory bags that reflect ration assembly information only (for example, assembly contractor, date of pack, assembly lot numbers, inspection test date (ITD), and so forth).

(2) Component code information: Item identification markings found on the primary package and, when applicable, the secondary package (for example., thermostabilized pouch cartons or trays) that reflects the producer's name, the United States Department of Agriculture (USDA) Establishment Number, the production lot number of the component, the nomenclature, and so forth).

n. **Ration.** An allowance of food needed for the subsistence of one person for one day.

o. **Ration Module.** The end-item ration that contains the entire contents of the menu to feed one meal to a specified number of individuals. The ration module includes one perishable module and two semi-perishable modules.

p. **Semi-Perishable Module.** Semi-perishable module is comprised of two cases that contain the complete semi-perishable food items and disposable components of the ration module.

q. **Senior Quality Assurance Representative.** Senior Quality Assurance Representative (SQAR) is the senior enlisted inspector assigned to a ration assembly plant.

r. **Serviceability.** The fitness of an item for its intended purpose; generally expressed in terms of Condition Codes. For composite operational rations, three factors are essential: estimated remaining shelf life, current quality and the condition of the item and its components, and the packaging and packing integrity.

s. **Thermostabilized Component.** Any component subjected to a thermal process in a closed retort approved by a process authority.

t. **Time-Temperature Indicator.** It is a small label attached to the outer case of a MRE that is used to monitor storage conditions. Use the Time-Temperature Indicator (TTI) as a tool only; do not allow it to be the sole factor for determining the disposition of rations in storage.

u. **Unit Load Packing List.** A list attached to a unit load of modules that lists the components (including contractual identification information) contained in the module.

## 2-23. STATISTICAL SAMPLING TERMS

a. **Acceptable Quality Level.** Acceptable quality level (AQL) is the maximum percentage or proportion of variant units in a lot or batch that, for the purpose of acceptance sampling, can be considered satisfactory as a process average.

b. **Acceptance Number.** This is the maximum number of defects or defective units in the sample that will permit acceptance of the inspection lot or batch.

c. **Action Numbers.** A number which, when reached or exceeded, indicates additional inspection is necessary or indicates a component is defective beyond acceptable limits and the menu(s) that contains the item must be evaluated for serviceability.

d. **Assembler's/Contractor Lot.** The collection (grouping) of units of a specific product, limited, as much as possible, to units of identical characteristics as established by:

- (1) Stock number
- (2) Package size
- (3) Contractor/Assembler
- (4) Contract number

- (5) Date of pack
- (6) Type of pack
- (7) Quality and storage history

e. **Attribute.** A characteristic or property which is appraised in terms of whether it does or does not exist (for example, go or no-go, pass or fail) with respect to a given requirement.

f. **Defect.** Any nonconforming unit of product with specified requirements or any state or condition of nonconformance to requirements.

g. **Defective.** A unit of product which contains one or more defects.

h. **Defects per Hundred Units.** Defects per hundred units (DHU or DPHU) expresses nonconformance based on the number of defects in the sample. The number of defects per hundred units of any given quantity of units of product is one hundred times the number of defects contained therein (one or more defects being possible in any unit of product) divided by the total number of units of product, that is:

$$\frac{\text{Number of Defect} \times 100}{\text{Number of Units}}$$

i. **Grand Lots.** Grand lots is an administrative procedure where two or more lots from one contractor/assembler are grouped into one grand lot. Products are not normally moved for inspection purposes. However, the samples are selected proportionally from and representative of each contractor's/assembler's lot.

j. **Grand Lotting.** Collecting or grouping two or more lots presumed equal in quality in order to decrease the cost of surveillance inspections by reducing the number of samples.

k. **Major A Defect.** This classification should be used for defects that are likely to cause hazardous or unsafe conditions for individuals using, maintaining, or dependent upon the product. The words 'are likely to' are important. They do not mean 'could possibly' since it is always possible to develop grand scenarios that transform trivial happenings into major catastrophes. Therefore, the use of this classification requires experience, prudence, and sound judgment.

l. **Major B Defect.** This classification should be used for defects that are not hazardous or unsafe. However, they may restrict the use of the product or make its consumption unlikely under the conditions for which the rations were designed originally. Examples of such conditions are extreme color (darkening), extreme odor (rancidity), or extreme flavor (bitterness) changes in primary components of a ration that make them unlikely to be consumed under normal field conditions where resupply or

alternative feeding strategies are available. However, under conditions that are more restrictive the components could be consumed without concern that illness will be produced.

m. **Minor Defect.** This classification should be used for defects that make the product less useful than it should be, but not seriously so. Minor defects usually do not affect serviceability. However, their identification is important since they often reveal early signs of deterioration and can be detected before the item reaches a condition that makes its consumption unlikely under conditions of normal use. Their early detection may lead to a predictive intervention by the Accountable Officer to ensure consumption before the component or menu loses its serviceability.

n. **One Hundred Percent Inspection.** Inspection in which specified characteristics of each unit of product are examined or tested to determine conformance with requirements.

o. **Percent Defective.** The percent defective (PD) expresses nonconformance based on the number of units in the sample that contain one or more defects. When a component exhibits more than one defect, it will be classified by the most serious defect it possesses. The percent defective of any given quantity of units of product is one hundred times the number of defective units of product contained therein divided by the total number of products, that is:

$$\frac{\text{Number of Defectives} \times 100}{\text{Number of Units Inspected}}$$

p. **Probability of Acceptance.** That percentage of inspection lots expected to be accepted when the lots are subjected to a specified sampling plan.

q. **Product Demonstration Model.** Product Demonstration Model (PDM) Samples a contractor submits to NATICK for evaluation of analytical, physical, microbial, and/or performance requirements.

r. **Random Sample.** A sample selected in such a way that each unit of the population has an equal chance of being selected.

s. **Rejection Number.** This is the minimum number of defects or defective units in the sample that will cause rejection of the lot represented by the sample.

t. **Resubmitted Lot.** A lot which has been rejected, subjected to either examination or testing for the purpose of removing all defective units which may or may not be reworked or replaced, and submitted again for acceptance.

u. **Rework.** A procedure applied to a nonconformance that will completely eliminate it and result in a characteristic that completely conforms to contract requirements.

v. **Sample.** This is one or more units of product drawn from a lot or batch. Each unit is selected randomly.

w. **Sampling.** Sampling is the process of selecting a small part of a lot or batch for inspection or analysis. Acceptance or rejection of the lot is based upon the number of defects or defective units found in the sample. The use of random sampling by the inspector provides for a selection of samples without regard to quality, giving each unit an equal chance of selection. Selection of a random sample is the personal responsibility of the inspector. The vendor should be present when the samples are selected, although failure of the vendor to appear is not a reason to stop the sample selection. The vendor should not have a prior knowledge of the inspector's sample selections. The sampling pattern chosen should be well protected, and varied to prevent sample selection from falling into a set pattern.

x. **Sample Size.** The number of units of product selected to be a part of a sample.

y. **Sampling Plan.** A plan that indicates the number of units of product from each lot which are to be inspected and the criteria for determining the acceptability if the lot. A sampling plan includes a sample size, acceptance number and rejection number.

z. **Screening Inspection.** Inspection in which each item of product is inspected for designated characteristics and all defective items are removed.

aa. **Skip Lot Inspection.** A sampling technique that provides for the acceptance of a lot without verification of its quality characteristics or compliance to contractual requirements.

bb. **Sublot.** A collection of units of a product contained within a lot.

cc. **Variable.** This is a quantity that may assume any one of a number of values. A measurable quantity.

**Continue with Exercises**

## EXERCISES, LESSON 2

**INSTRUCTIONS.** The following exercises are to be answered by marking the lettered response that best answers the question or by completing the incomplete statement, or by writing the answer in the space provided at the end of the question.

After you have completed all the exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers.

1. Which document is used to provide uniform guidance to all Department of Defense personnel responsible for the inspection of operational rations?
  - a. DSCP Manual 4155.6.
  - b. VETCOM Handbook 40-3.
  - c. DSCP Handbook 4155.2.
  - d. VETCOM Policy Letter.
  
2. What is the total number of appendices to DSCP Handbook 4155.2 that are currently used?
  - a. 5.
  - b. 6.
  - c. 7.
  - d. 8.
  
3. Change 1, Evaluation of Temperature Stressed MRE's is a change to which appendix?
  - a. A.
  - b. B.
  - c. C.
  - d. D.

4. The concept of condition coding involves a \_\_\_\_\_-step process.
  - a. 1.
  - b. 2.
  - c. 3.
  - d. 4.
  
5. Appendix A incorporates the concept of \_\_\_\_\_ a lot based on the serviceability of the various components contained within the different menus and their estimated shelf life.
  
6. Inspectors are not allowed to extend the inspection test date on operational rations.
  - a. True.
  - b. False.
  
7. Remarking of unitized loads with a revised date of pack is authorized.
  - a. True
  - b. False
  
8. Final disposition instructions for lots placed on medical hold require review and approval by the local commander.
  - a. True.
  - b. False.

9. VETCOM Handbook 40-3 provides the inspection requirements for:
  - a. Meals, Ready-to-Eat (MRE).
  - b. Unitized Group Ration - A (UGR-A).
  - c. Unitized Group Rations – Heat & Serve (UGR-H&S).
  - d. Humanitarian Daily Rations (HDR).
  
10. DSCP Handbook 4155.2, Appendix A was written to provide guidance and procedures to be used to inspect Meals, Ready-to-Eat for only Defense Supply Center, Philadelphia owned stocks.
  - a. True.
  - b. False.
  
11. DSCP Handbook 4155.2, Appendix B applies to inspections performed on operational rations in Mechanicsburg (DDSP).
  - a. True.
  - b. False.
  
12. Who is responsible for developing and maintaining DSCP Handbook 4155.2?
  - a. VETCOM.
  - b. DSCPs Operational Rations Business Unit.
  - c. DSCPs Product Services Office.
  - d. Regional Commander.



13. When an inspection activity requests contractual inspection guidance, who provides the information?
- a. VETCOM.
  - b. DSCPs Operational Rations Business Unit.
  - c. DSCPs Product Services Office.
  - d. Regional Commander.
14. Which of the answers below best describes the role of the U.S. Army Veterinary Service in regard to operational rations?
- a. Perform warranty inspections.
  - b. Inspection services.
  - c. Shelf life extension.
  - d. Procurement inspections.
15. To inspect operational rations, the lighting should be at least \_\_\_\_\_-foot candles.
- a. 20.
  - b. 50.
  - c. 75.
  - d. 100.
16. Serviceable storage life criteria can be found in which document?
- a. DSCP Handbook 4155.2.
  - b. Product monographs.
  - c. DOD 4140.27-M.
  - d. DLAM 4145.12.

17. Samples of operational rations are routinely sent to the laboratory.
  - a. True.
  - b. False.
  
18. It is unnecessary to report insect or rodent infestation to DSCP.
  - a. True.
  - b. False.
  
19. A specific written authorization granted prior to manufacture of an item to depart from a particular requirement is called a:
  - a. Modification.
  - b. Amendment.
  - c. Request for waiver
  - d. Deviation
  
20. An evaluation of a prospective contractor's capability to perform under the terms of a proposed contract is called a:
  - a. Process capability.
  - b. Pre-award survey.
  - c. Sanitary audit.
  - d. Process audit.

21. A written request from the contractor to the contracting officer requesting an item be accepted with a known variation from the specified requirements is called a:
- a. Deviation.
  - b. Product demonstration model.
  - c. Request for waiver.
  - d. Modification.
22. A specification is primarily used during surveillance inspections.
- a. True.
  - b. False.
23. A surveillance inspection performed on a routine basis is called a(n):
- a. Cyclic inspection.
  - b. Warranty inspection.
  - c. Original inspection.
  - d. In-storage inspection.
24. The Date of Pack (DOP) for operational rations is normally the:
- a. Date the components were packaged in their primary containers.
  - b. Date the components were processed.
  - c. Date the components were assembled and packed into shipping containers.
  - d. Date the components were shipped.

25. Foods that are shelf stable and do not require refrigeration are called:
- Perishable foods.
  - Semiperishable foods.
  - Dried foods.
  - Processed foods.
26. Subsistence that presents a health hazard if it were consumed is considered:
- Unfit for intended use.
  - Unfit for human consumption.
  - Deterioration.
  - Unserviceable.
27. The reason found for an uncommon variation of a process that is usually identified by an out-of control situation on a control chart is called a(n):
- Deviation.
  - Grossly observable discrepancy.
  - Critical control point.
  - Assignable cause.
28. Changes to processes, work instructions, workmanship, training, inspections, tests, procedures, specifications, equipment, facilities or material that result in preventing, minimizing or eliminating nonconformances is called:
- Corrective action.
  - Assignable cause.
  - Deviations.
  - Control point.

29. A systematic and independent examination and evaluation is called a:
- Product quality review.
  - Quality audit.
  - Product audit.
  - Quality system audit.
30. The ability to identify the assembled lots and location of those lots that contain a particular component is called:
- ALFOODACT Message System.
  - Traceability.
  - Inspection.
  - Sampling.
31. The middle value identified when the values are arrayed in numeric order is called:
- Mean.
  - Median.
  - Mode.
  - Average.
32. \_\_\_\_\_ is the number of times an event can be assumed to occur based on the past occurrences of the event over a specified number of possible cases.
33. Range is the difference between the \_\_\_\_\_ and \_\_\_\_\_ values in a group.

34. NATICK evaluates First Articles that are potential “new” items to be added to rations. For what four types of requirements is the product evaluated?
- a. \_\_\_\_\_.
  - b. \_\_\_\_\_.
  - c. \_\_\_\_\_.
  - d. \_\_\_\_\_.
35. An operational rations component classification is determined by coordination of the Food Service Headquarters of the Military Services and:
- a. The Surgeon General.
  - b. Defense Supply Center Philadelphia.
  - c. Defense Logistics Agency.
  - d. Natick Laboratory.
36. Any individual component in the Meal, Ready-to-Eat (MRE), which if unserviceable will render the meal nutritionally inadequate for any method of intended use, is a(n) \_\_\_\_\_.
37. Any individual component in the Meal, Ready-to-Eat (MRE) which if unserviceable will reduce the nutritional value of the meal, but will not render the meal unfit for intended purpose is a(n) \_\_\_\_\_.

38. Match the condition code in Column I to the description in Column II; descriptions may be used more than once.

COLUMN I

COLUMN II

- |                          |  |
|--------------------------|--|
| (1) ___ Condition Code A | a. Laboratory testing, medical hold, rework, or reclassification hold. |
| (2) ___ Condition Code B | b. Issuable with qualification determined by Accountable Officer.      |
| (3) ___ Condition Code C | c. Issuable without qualification.                                     |
| (4) ___ Condition Code H | d. Warranty action hold.   |
| (5) ___ Condition Code J | e. Unserviceable – destroy IAW local policy.                           |
| (6) ___ Condition Code L |  |

39. An information and instruction sheet that provides the inspection activity with a description of a Meal, Ready-to-Eat component is called a(n) \_\_\_\_\_.

40. Monographs can be found in DSCP Handbook 5155.2, Appendix A.

- a. True.
- b. False.

41. What does the Armed Forces utilize for field feeding?

- a. A ration of food.
- b. Operational rations.
- c. A meal/nenu.
- d. Thermostabilized components.

42. An allowance of food needed for the subsistence of one person for one day is called a(n):
- a. Meal.
  - b. Operational Ration.
  - c. Menu.
  - d. Ration.
43. How many factors are considered when determining the overall serviceability of a Meal, Ready-to-Eat?
- a. One.
  - b. Two.
  - c. Three.
44. The Time-Temperature Indicator is the sole factor for determining the disposition of rations in storage.
- a. True.
  - b. False.
45. The definition of a Unit Load Packing List is:
- a. A list of units authorized to load Modules.
  - b. A list used by numbered units to load rations on vehicles.
  - c. A list attached to a unit load of modules that lists the components.
  - d. A list attached to the modules indicating how to load them on a vehicle.



46. A process average that can be considered satisfactory is called:
- a. Action number.
  - b. Acceptable quality level.
  - c. Acceptance number.
  - d. Probability of acceptance.
47. A number which, when reached or exceeded, indicates additional inspection is necessary is called a(n) \_\_\_\_\_.
48. Defects that are not hazardous or unsafe fall under which classification?
- a. Critical.
  - b. Major A.
  - c. Major B.
  - d. Minor.
49. A sample drawn from a lot or batch is selected randomly.
- a. True.
  - b. False.
50. Selection of a random sample is the personal responsibility of the:
- a. Warehouse employee.
  - b. Inspector.
  - c. Vendor.
  - d. Accountable officer.

51. A sample pattern should vary from lot to lot.
- a. True.
  - b. False.
52. The vendor should have prior knowledge of sample selections so that the product can already be staged awaiting inspection.
- a. True.
  - b. False.
53. Normally, the vendor should be present when the samples are drawn from the lot.
- a. True.
  - b. False.
54. When performing a screening inspection, defective products are removed.
- a. True.
  - b. False.
55. A sampling technique that allows the acceptance of a lot without verification is called:
- a. Screening inspection.
  - b. Skip lot inspection.
  - c. Original inspection.
  - d. One hundred percent inspection.

**Check Your Answers on Next Page**

## SOLUTIONS TO EXERCISES, LESSON 1

1. c (para 2-1a)
2. c (para 2-1c(1) – (8))
3. a (para 2-1c(1)(a))
4. b (para 2-2a)
5. condition coding (para 2-2a)
6. b (para 2-2b)
7. a (para 2-2b(2))
8. a (para 2-2c(2))
9. b (para 2-3a)
10. b (para 2-7b)
11. a (para 2-7b)
12. c (para 2-7c(1))
13. b (para 2-7c(2))
14. b (para 2-7c(3))
15. d (para 2-8c)
16. c (para 2-10NOTE)
17. a (para 2-12a)
18. b (para 2-13a & b)
19. d (para 2-17d(1))
20. b (para 2-17f)
21. c (para 2-17i)
22. b (para 2-17j)

- 23. a (para 2-19b)
- 24. c (para 2-19c)
- 25. b (para 2-19m)
- 26. b (para 2-19o)
- 27. d (para 2-20a)
- 28. a (para 2-20d)
- 29. b (para 2-20j)
- 30. b (para 2-20o)
- 31. b (para 2-21c)
- 32. probability (para 2-21e)
- 33. largest,  
smallest (para 2-21f)
- 34. analytical  
physical  
microbial  
performance (para2-22a)
- 35. a (para 2-22c)
- 36. primary component (para 2-22c(1))
- 37. secondary component (para 2-22c(2))
- 38. c (para 2-22e(1))  
b (para 2-22e(2))  
b (para 2-22e(3))  
e (para 2-22e(4))  
a (para 2-22e(5))  
d (para 2-22e(6))
- 39. monograph (para 2-22i)
- 40. b (para 2-22i NOTE)

- 41. b (para 2-22k)
- 42. d (para 2-22n)
- 43. c (para 2-22r)
- 44. b (para 2-22t)
- 45. c (para 2-22u)
- 46. b (para 2-23a)
- 47. action number (para 2-23c)
- 48. c (para 2-23l)
- 49. a (para 2-23v)
- 50. b (para 2-23w)
- 51. a (para 2-23w)
- 52. b (para 2-23w)
- 53. a (para 2-23w)
- 54. a (para 2-23z)
- 55. b (para 2-23aa)

**End of Lesson 2**

## **LESSON ASSIGNMENT**

### **LESSON 3**

Inspection of Meals, Ready-to-Eat.

### **LESSON ASSIGNMENT**

Paragraphs 3-1 through 3-5.

### **LESSON OBJECTIVES**

After completing this lesson you should be able to:

- 3-1. Identify inspection documents and their use.
- 3-2. Identify the steps performed in a routine inspection of Meals, Ready-to-Eat.
- 3-3. Identify the steps performed in a special inspection of Meals, Ready-to-Eat.
- 3-4. Identify inspection tables and how they are used.
- 3-5. Complete DSCP Form 5117.

### **SUGGESTION**

After studying the lesson assignment, complete the exercises. These exercises will help you to achieve the lesson objectives.

## LESSON 3

### INSPECTION OF MEALS, READY-TO-EAT

#### 3-1. RECEIPT INSPECTION GUIDANCE

a. Use the same sampling criteria and defect tables for receipt inspections that are used for surveillance inspections.

b. In addition, inspectors shall advise DSCP (AFESC/DEHF for Air Force inspection activities) when containers/products fail to comply with the essential receipt criteria identified in the appropriate monographs.

c. Notification to the responsible authority should be by the most expeditious means when there is a possibility that warranty action can be initiated. The Medical Food Inspector (MFI) will be provided additional guidance concerning warranty inspection/actions if it is required.

#### 3-2. ROUTINE INSPECTION PROCEDURES

##### a. STEP 1: Evaluate Storage Conditions for Sanitation.

(1) Storage conditions vary significantly. At a minimum:

(a) Meals, Ready-to-Eat storage areas should be clean and dry.

(b) Meals, Ready-to-Eat should be stored on pallets, not directly on the floor.

(c) The area should be free of pests in accordance with:

1 MIL-STD 904, Detection, Identification, and Prevention of Pest Infestation of Subsistence.

2 TIM-38, Protecting MRE During Storage.

(2) When multiple pallets of MRE are warehoused in a storage facility they should meet the additional standards of MIL-STD 3006, Guidelines for Auditing Food Establishments. Meals, Ready-to-Eat cannot be stacked more than four pallets high without the use of storage aids, such as pallet racks/pallet sets, and so forth. These pallet racks/pallet sets should support the full weight of any additional pallets. The pallet(s) that are stored above shall not be in contact with or supported by the pallets beneath.

(3) The temperature history of the storage locations must also be considered when recommending final condition codes and dispositions.

(4) All cases opened for inspection purposes, or damaged cases, shall be recouped or repaired in a sufficient manner to ensure protection of the product during subsequent storage and handling. Cases should be back-filled so that no more than one case will have less than 24 menu bags.

**b. STEP 2: Determine Lot Size.**

(1) Lot size is expressed as the total number of menus in the contractor's lot or the grand lot.

(a) One case of MRE consists of one A-box and one B-box.

(b) Determine how many shipping cases there are in the lot; multiply that number by twenty-four (the number of meals in a full case) (that is, 3,500 cases x 24 menus = 84,000 menus).

(2) Lotting procedures will be as follows:

(a) Contractor's lots are composed of rations from the same assembly contractor, having the same contract number and lot number, and stored under substantially similar storage conditions.

(b) Grand lots for the purpose of MRE inspections will be composed of rations from the same assembly contractor that have the same contract number.

1 Grand lots may contain rations from more than one contractor's lot as long as the contractor and contract numbers are the same.

2 Additionally, the rations must have been stored under substantially similar storage conditions.

3 Samples from grand lots must represent all individual lots proportionally, even if the next highest sample size must be used.

4 Identity of samples from each subplot must be maintained throughout the inspection.

(3) Defective contractor's lots will be segregated from grand lots and inspected individually when one or more of the following occurs:

(a) A Major A defect is found in the contractor's lot.



(b) The Major B or Minor defects found seem to be concentrated in one or more of the contractor's lots that comprise the grand lot.

(c) The inspector determines for any reason, based on initial inspection results, that inspection of the contractor's lot is justified.

(4) Grand lotting is encouraged (to conserve inspection resources) whenever it is considered appropriate by the inspection activity.

(a) Grand lotting will not be used when performing warranty inspections.

(b) Grand lotting will not be used if a lot is suspected of wholesomeness deficiencies.

**c. STEP 3: Inspect Shipping Containers and Selection of Menu Samples.**

(1) In accordance with Table A, Sampling Criteria for Inspection of Shipping Containers (Normal Inspection) (Table 3-1); select the appropriate sample size for shipping container examinations.

(a) Obviously damaged shipping cases should not be selected unless they are truly representative of the lot.

(b) Damaged cases should be set aside, inspected, and salvaged.

(2) Routine inspections will be conducted using a single sampling plan.

(3) Using the defects listed in Table C, Inspection of Shipping Containers (Table 3-3), inspectors should check each sample case for previously opened boxes and loose straps, different types of straps on one or more of the cases that differs from the majority of the lot. While these indicators may be the result of tampering, they may also be due to other reasons such as a wholesale rework of a lot. Inspectors should contact their supervisors for guidance if pilferage or tampering is suspected.

(4) Open the sample cases to determine how many different menus they contain. While the MRE was designed to have 24 different menus in each case; inspectors may encounter double packing of one or more menus.

(5) Using defects listed in Table C, Inspection of Shipping Containers (Table 3-3), observe each case for signs of rodent damage or insect infestation. Place infestation findings on the inspection report, to include:

(a) Whether the pests were found alive or dead.

(b) Identification of pests preferably based on entomological or laboratory identification.

(c) The probable origin of the pests (see DSCP Handbook 4155.2, Subsistence--Inspection of Composite Rations, paragraph XI).

(d) The probable movement of the pests, for example, from outside the shipping container into the menu bags or vice-versa.

(6) Classify each defective case by the most serious defect it possesses.

**d. STEP 4: Perform Closed Package Inspection of the Menu Bags.**

(1) In accordance with Table D, Sampling Criteria for Inspection of Menu Bags and Contents Including Accessory Bags and Contents (Normal Inspection) (Table 3-4), select the appropriate number of menus ensuring the samples are proportionally representative of the menus in the lot.

(2) Inspect for the defects listed in Table F, Inspection of Unopened Menu Bags (Table 3-6).

**e. STEP 5: Perform Closed Package Inspection of the Menu Bag Contents and the Accessory Bag.**

(1) Open the menu and accessory bags.

(2) Inspect the Menu bag components for defects in accordance with Table G, Closed Package Inspection of Food Components and Accessory Bag Items (Table 3-7).

(3) Inspect the Accessory bags for defects in accordance with Table F, Inspection of Unopened Menu Bags (Table 3-6).

(4) Thoroughly examine all pouches within the menu bag under a good light source and, if available, with the aid of a magnification lens.

(a) When a component exhibits more than one defect, classify the component by the most serious defect it possesses.

(b) However, for the purpose of information gathering, the lesser defects will also be noted.

(c) Record the following information for all defective components:

- 1 Menu number.
- 2 Assembler's lot number.
- 3 Component nomenclature and code (Table M) (Table 3-13).
- 4 Processor's and/or plant name (if available).
- 5 Defect number (Tables F and G) (Tables 3-6 and 3-7).
- 6 Specific defect code (if applicable) (Table K) (Table 3-11).
- 7 Narrative description of defect (if necessary).
- 8 Tally defects (Major A, Major B, Minor) according to the type of component.

(5) All components observed during the inspection with Major A or Major B defects will be discarded (whether they are part of the sample or not). Components not exhibiting defects or those exhibiting only minor defects may be reassembled into the lot.

(6) Component packages with a Major A or Major B packaging defect should be opened to evaluate the effect the defect has on the product. Any findings should be recorded as a note on the inspection record.

**NOTE:** This inspection should in no way be confused with the normal open package inspection. Open package inspection is a phase of inspection during which only those components that did not show any external Major A or Major B packaging defects are examined.

f. **STEP 6: Perform Destructive Open Package Inspection**

(1) Open package inspection will be performed in accordance with Table H, Sampling Criteria for Destructive Open Package Inspection (DOPI) (Normal Inspection) (Table 3-8) and those defects listed in Table J, Destructive Open Package Inspection (Table 3-10).

(2) If a menu bag has already had a defect scored against it prior to this point, it cannot be used for DOPI. A new sample menu must be drawn to replace any menu bags with previous defects, and these will be utilized for DOPI only.

(3) Refer to the component monographs (figure 3-1) for information relative to the product's normal characteristics, the most likely deteriorative conditions to be observed and any unique inspection information and special notes concerning the item.

(4) Each component of the sample menus (including all accessory items) will be opened and inspected. If no Major A or Major B defects are noted and the action number for minor defects is not exceeded during normal open package inspection, this phase of the inspection should be considered complete.

(5) Classify each defective by the most serious defect it possesses.

g. **STEP 7: Determine if Special Inspection is Required.** Special inspection is required when any action number is reached/exceeded. If a special inspection is deemed necessary, go to DSCPH 4155.2 Appendix A, Section III for procedures.

h. **STEP 8: Determine Disposition.**

(1) Disposition based on routine inspection results will be determined when no Major A or Major B defects were noted or the action number for minor defects combined has not been reached.

(2) The condition code of a lot may only be downgraded based on special inspection results.

(3) If deemed necessary, samples may be submitted to the appropriate supporting laboratory. Place the lot in Condition Code J pending results of the tests.

i. **STEP 9: Provide Results and Recommendations to the Accountable Officer/Agency.**

(1) Input data to the appropriate Lotus Notes (LN) database, and provide a copy of the inspection report to the accountable officer.

(2) If Lotus Notes (LN) access is not available, complete DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations (figure 3-2 front and back), and provide a copy of the report to the accountable officer.

**ITEM:** Cheese Spread, Cheddar

**NSN:** 8940-00-149-1059

**ITEM SPECIFICATION:** MIL-C-594

**APPROXIMATE CALORIC VALUE:** 169-174 Kilocalories (PRIMARY)

**CHARACTERISTICS OF ITEM:**

**APPEARANCE:** After kneading, spread should be smooth, homogeneous, pasty, dull orange-yellow or off white (see Special Notes).

**ODOR:** Medium cured to sharp cheddar cheese, cooked milk.

**FLAVOR:** Cream cheese to sharp cheddar, salty, sometimes slightly bitter, buttery.

**TEXTURE:** Smooth, buttery consistency and easily spreadable at 70°F.

**DEFECTS LIKELY TO OCCUR:**

**APPEARANCE:** Off-white cheese becomes medium gray to moderately tan. Yellow cheese varies from faded yellow to moderately tan to brown, may exhibit slightly green areas at edges. Product tends to separate (oiled off) (see Special Notes).

**ODOR:** Old cheddar, scorched milk, sour.

**FLAVOR:** Bitter, overcooked/scorched milk, slight metallic, acidic/sour.

**TEXTURE:** Curdled, grainy, gummy, rubbery, excessively thick or excessively oily.

**UNIQUE EXAMINATION/TEST PROCEDURES:** Knead package prior to opening. If mold growth is observed, examine package for tears, cuts and/or holes especially at the juncture of the product edge of the seals and the body of the pouch. If pouch integrity has been compromised, score the pouch defect, and note findings in the narrative (evidence of mold, desiccation, dark color, and so forth).

**SPECIAL NOTES:** Color of product varies by year of pack. For DOPs of 1980-85 color should be orange-yellow; 1986-88 color should be off-white to light tan; however, slight hints of pink have been noted. The major problem with this item has been the effects of long-term storage on its color. Color changes are unavoidable; therefore, color alone should not be the sole factor for making judgments unless it is so far off that the user is unlikely to consume the product. However, other normal degradative processes turn the off-white cheese to light beige as it ages, even under ideal storage conditions. The yellow cheese tends to fade, thereby allowing the browning color to prevail.

Figure 3-1. Example monograph.

### 3-3. SPECIAL INSPECTION PROCEDURES

When a special inspection is performed, the inspector may choose to inspect all of the components in a menu during the special inspection if it is deemed necessary to ascertain the true condition of the lot. Otherwise, only the component(s) that exhibited the defects that initiated the special inspection will be inspected. All defective samples will be classified by the most serious defect they possess.

a. **STEP 1: Determine Lot Size.** Lot size is expressed as the total number of individual suspected defective components as determined during routine inspection (reached/exceeded Action Number).

(1) Each defective component will be inspected as a separate lot.

(2) To determine component lot size, you must determine which menus contain the defective component(s) utilizing Table S, Excerpt from Table S, Meals, Ready-to-Eat, Individual Menus (Table 3-15) and the previous inspection results.

(3) These menus will be the only menus selected for the special inspection.

**NOTE:** Table S, Excerpt from Table S, Meals, Ready-to-Eat, Individual Menus (Table 3-15) is broken down by the year of manufacture and can be found on the Defense Supply Center Philadelphia website at <http://www.dscp.dla.mil/subs/support/qapubs/appa/index.htm> not in the DSCP Handbook 4155.2, Appendix A)

b. **STEP 2: Determine Sample Size for Each Component and Select Sample Cases.**

(1) Sample size will be determined in accordance with Table B, Sampling Criteria for Inspection of Shipping Containers (Special Inspection) (Table 3-2), Table E, Sampling Criteria for Inspection of Menu Bags and Contents Including Accessory Bags and Contents (Special Inspection) (Table 3-5), or Table I, Sampling Criteria for Destructive Open Package Inspection (DOPI) (Special Inspection) (Table 3-9).

(2) Inspect in accordance with applicable defect table (Tables F, G, or J) (Tables 3-6, 3-7 or 3-10).

(a) For special inspections, good sample representation of the lot is extremely important to help preclude unnecessary destruction.

1 Grand lots shall be subdivided and a special inspection will be performed on each subplot/contractor's lot.

2 If routine inspection defects tend to be associated with a certain lot or lots, these should be inspected as a single unit(s).

(b) The sample size for each component involved will dictate the minimum number of cases that must be selected for special inspections.

**c. STEP 3: Determine Disposition of the Lot.**

(1) If none of the action numbers are reached or exceeded, each menu is considered to be fully useable and the condition code of the lot may remain unchanged.

(2) For each action number equaled or exceeded, determine the condition code of the lot. Refer to Table N, Condition Code Criteria for Defects From Special Inspection Results (Components that Equals or Exceeds an Action Number) (Table 3-14).

**d. STEP 4: Provide Results and Recommendations to the Accountable Officer/Agency.**

(1) Input data to the appropriate Lotus Notes database, and provide a copy of the inspection report to the accountable officer.

(2) If Lotus Notes access is not available, complete DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations (figure 3-1 front and back), and provide a copy of the report to the accountable officer.

(3) If rations are placed in *less than condition code A* and not entered in the Lotus Notes database, notify DSCP-HSQ telephonically @ (215) 737-7770/2911 (DSN 444).

**3-4. INSPECTION TABLES**

a. The tables listed in this section are used to perform routine or special inspections.

b. Some of the tables cannot be found in the Appendix A, but can be accessed on the Internet.

c. If a table has footnotes, the underlined footnote number will be listed at the top of each Table and the actual footnote will be found at the bottom of the table.

**TABLE A <sup>1/2/3/</sup> Sampling Criteria for Inspection of Shipping Containers (Normal Inspection)**

LOT SIZE (CASES)	SAMPLE SIZE (BOXES A+B)	DEFECT CLASS	ACTION NUMBER
1-250	6	Major B Minor	1 3
251-17,500	20	Major B Minor	2 8
17,501-250,000	32	Major B Minor	3 11
>250,000	50	Major B Minor	4 15

1/ For use with Table C (Table 3-3).

2/ Developed using American National Standard ANSI/ASQC Z1.4-1993.

3/ If there is a disproportionate amount of BOXES, then pull samples proportionately using the following formula:  $A + B = \text{Total}$ ; (A or B) divided by Total, multiply by 100 = Proportion of (A or B) to Inspect. (that is, 620 boxes of A and 80 boxes of B. To determine the percentage of A to inspect:  $620 + 80 = 700, 620 / 700 = .9714 \times 100 = 97$  percent (rounded). The sample size for this lot is 20.  $20 \times .97 = 19$  (rounded). The inspector would inspect 19 boxes of A and 1 box of B).

Table 3-1. Sampling criteria for inspection of shipping containers (normal inspection).

**TABLE B <sup>1/</sup> Sampling Criteria for Inspection of Shipping Containers (Special Inspection)**

LOT SIZE (CASES)	SAMPLE SIZE (CASES)	DEFECT CLASS	ACTION NUMBER
1-75	3	Major B Minor	1 3
76-250	10	Major B Minor	2 8
251-600	16	Major B Minor	3 11
601-1,600	25	Major B Minor	4 15
1,601-5,000	40	Major B Minor	6 22
5,001-17,500	63	Major B Minor	8 31
>17,500	100	Major B Minor	11 45

1/ For use with Table C (Table 3-3).

Table 3-2. Sampling criteria for inspection of shipping containers (special inspection).



**TABLE C <sup>1/2/</sup> Inspection of Shipping Containers**

CATEGORY		DEFECT
MAJ B	MINOR	
501		Evidence of rodent/insect infestation on or in shipping container. <sup>2/</sup>
502		Container damaged, contents exposed or affected.
	601	Container damaged, contents not exposed or affected.
	616	Missing TTI

<sup>1/</sup> For use with Table A and Table B (Tables 3-1 and 3-2).

<sup>2/</sup> Requires immediate corrective action IAW local Pest Management Program.

Table 3-3. Inspection of shipping containers.

**TABLE D <sup>1/2/3/</sup> Sampling Criteria for Inspection of Menu Bags and Contents Including Accessory Bags and Contents (Normal Inspection)**

LOT SIZE (Menus)	SAMPLE SIZE (Menus)	DEFECT CLASS AND ACTION NUMBERS		
		MAJ A	MAJ B	MINOR
24 - 6,000	24	1	1	15
>6,001	48	1	1	33

<sup>1/</sup> For use with Table F and Table G (Tables 3-6 and 3-7).

<sup>2/</sup> Sample menus will be selected from the shipping containers used for Table C examinations.

<sup>3/</sup> All defects noted for menu bags and its contents, and the accessory bags and its contents will be combined and compared to the normal inspection action numbers.

Table 3-4. Sampling criteria for inspection of menu bags and contents including accessory bags and contents (normal inspection).

**TABLE E <sup>1/2/</sup> Sampling Criteria for Inspection of Menu Bags and Contents Including Accessory Bags and Contents (Special Inspection)**

LOT SIZE (Components)	SAMPLE SIZE (Components)	DEFECT CLASS AND ACTION NUMBERS		
		MAJOR A	MAJOR B	MINOR
24 – 36,000	24	1	2	9
> 36,001	48	1	3	11

1/ For use on Table F and Table G (Table 3-6 and 3-7).

2/ Special inspections, compare separate component inspection results to the action number.

Table 3-5. Sampling criteria for inspection of menu bags and contents including accessory bags and contents (special inspection).

**TABLE F <sup>1/2/</sup> Inspection of Unopened Menu Bags**

CATEGORY			DEFECT
MAJOR A	MAJOR B	MINOR	
	503		1/ Rodent damage/insect infestation of menu bag. —
2/ Visible tear/cut/hole/open seam	602		2/ Visible tear/cut/hole/open seam in menu bag.

1/ For use with Table D and Table E (Tables 3-4 and 3-5).

2/ Requires immediate corrective action according to local Pest Management Programs.

Table 3-6. Inspection of unopened menu bags.

**TABLE G <sup>1/ 2/ 3/ 4/ 5/ 6/</sup> Closed Package Inspection of Food Components**

CATEGORY		DEFECT
MAJOR A	MAJOR B	MINOR
401		Swollen pouch.
402		Tear/cut/hole/open seal in primary package of peanut butter, cheese spread, or thermostabilized component.
	504	Rodent damage/insect infestation of accessory bag.
	505	Complete loss of menu.
	506	Tear/cut/hole/open seal in primary package (other than those covered by defect 402 or 608).
	507	Inadequate vacuum, and/or delamination with moderate to extreme effect on product.
	603	Visible tear/cut/hole open seam in accessory bag.
	604	Rupture of normal appearing cheese spread or peanut butter package when kneaded.
	605	Exhibiting delamination that ruptures when tested.
	606	Inadequate vacuum, product not affected or only slightly affected.
	607	Unserviceable carton (e.g., carton missing, severely torn, flaps not glued).
	608	Tear/cut/hole/open seal or loose lid (hot sauce) in package of ancillary component.
	609	Any component, other than dehydrated, exhibiting delamination or spreading that does not rupture when tested. Product not affected or only slightly affected.
	610	Any dehydrated component exhibiting delamination that does not rupture when tested.

1/ For use with Table D and Table E (Tables 3-4 and 3-5).

2/ Cake items often exhibit more internal air than thermostabilized items. Do not score as swellers solely caused by their naturally puffy appearance.

3/ Score when one or more defective components cause the entire menu to be unserviceable. For example, one or more leaking, ruptured, or contaminated packages may effect the other components.

4/ This defect does not apply to inner wrapper of freeze-dried components.

5/ See component Monograph (defects 507 & 606 apply to vacuum packaged items only).

6/ See component Monograph.

Table 3-7. Closed package inspection of food components and accessory bag items.

**TABLE H <sup>1/2/3/</sup> Sampling Criteria for Destructive Open Package Inspection (DOPI)  
(Normal Inspection)**

LOT SIZE (Menus)	SAMPLE SIZE (Menus)	DEFECT CLASS AND ACTION NUMBERS		
		MAJ A	MAJ B	MINOR
24 - 6,000	24	1	1	15
6,001 or more	48	1	1	33

**1/ For use on Table J (Table 3-10).**

**2/** Sample menus will be selected from those shipping containers selected for the Table C examination.

**3/** All defects noted will be combined and compared to the normal inspection action numbers.

Table 3-8. Sampling Criteria for destructive open package inspection (dopi)  
(normal inspection).

**TABLE I <sup>1/</sup> Sampling Criteria for Destructive Open Package Inspection (DOPI)  
(Special Inspection)**

LOT SIZE (Components)	SAMPLE SIZE (Components)	DEFECT CLASS AND ACTION NUMBERS		
		MAJOR A	MAJOR B	MINOR
1 – 3,000	12	1	1	8
3,001 - 6,000	20	1	2	9
6,001 - 36,000	32	1	3	10
36,001 or more	50	1	3	11

**1/ For use with Table J (Table 3-10).**

Table 3-9. Sampling criteria for destructive open package inspection (dopi)  
(special inspection).

**TABLE J <sup>1/ 2/ 3/</sup> Destructive Open Package Inspection**

CATEGORY		DEFECT
MAJOR A	MAJOR B	MINOR
403		Evidence of rodent damage/insect infestation in product.
404		Product off conditions as evidenced by abnormal odor, color, flavor or texture suggesting contamination and/or spoilage for no apparent reason (e.g., package failure not evident).
405		Foreign material present, effecting wholesomeness (e.g., glass, metal, wire).
	508	Moderate to extreme texture, odor, color or flavor change in a primary component not effecting wholesomeness (product unlikely to be consumed under conditions of intended use).
	509	Mechanical damage to primary component significantly effecting serviceability.
	510	Primary component fails to rehydrate (moderate to extreme) or dissolve (extreme).
	611	Slight texture, odor, color or flavor change in a primary component not effecting wholesomeness.
	612	Primary component fails to rehydrate (slight) or dissolve (slight to moderate).
	613	Moderate to extreme texture, odor, color or flavor change in a secondary or ancillary component not effecting wholesomeness.
	614	Secondary or ancillary component component fails to rehydrate or dissolve (moderate to extreme).
	615	Evidence of mechanical damage to secondary or ancillary component significantly effecting serviceability (e.g., crushed gum).

1/ **For use with Table H and Table I (Tables 3-8 and 3-9).**

2/ Requires immediate corrective action IAW local Pest Management Programs.

3/ Specify defect(s) observed. Enter all specific defect codes that apply and a narrative description when appropriate.

Table 3-10. Destructive open package inspection.

**TABLE K Specific Defect Codes**

<b>A. INSECT/RODENT</b>	
A1.	Rodent.
A2.	Insect.
A3.	Other (describe).
<b>PACKAGING, PACKING, MARKING, LABELING AND UNITIZATION</b>	
B1.	Essential case markings missing.
B2.	Essential case markings illegible.
B3.	Essential case markings incorrect.
B4.	Essential Labeling missing.
B5.	Essential Labeling illegible.
B6.	Essential labeling incorrect.
B7.	Improperly unitized load.
B8.	Unit load failure.
B9.	Missing tear notch.
B10.	Tear notches ripped or torn.
B11.	Sifter (see Monographs).
B12.	Inadequate vacuum.
B13.	Delamination (separation of layers in laminate material).
B14.	Other (describe).
<b>TEXTURE CHANGES</b>	
C1.	Too thick or pasty.
C2.	Chewy/gummy
C3.	Mealy.
C4.	Tough/stringy.
C5.	Caked or hardened.
C6.	Brittle.
C7.	Crumbly, cracking.
C8.	Excessively dry.
C9.	Loss of crispness.
C10.	Soft/mushy.
C11.	Curdled.
C12.	Gritty/grainy.
C13.	Spongy/rubbery.
C14.	Syneresis (Contraction of a gel, or homogeneous colloid system, when left standing separates into two phases: a coherent gel and a liquid. An example is the separation or weeping of liquid from gelatin when left sitting in a refrigerator too long).
C15.	Liquefaction (passing from dry, solid, or semi-solid) to a liquid state (e.g., complete loss of gel structure in jelly component).
C16.	Caramelized.
C17.	Watery gravy or excessive product juices (probably due to product formulation and/or time-temperature abuse).
C18.	Honeycombing.
C19.	Coagulation/gelation (beverage base).
C20.	Other (describe).

(Table K continued)

<b>ODOR CHANGES</b>	
D1.	Medicinal, vitamin-like.
D2.	Chemical odor, solvent-like/turpentine/paint-like.
D3.	Plastic-like.
D4.	Hay-like (oxidized).
D5.	Fermented.
D6.	Scorched/burnt.
D7.	Sulfur-like.
D8.	Musty, moldy, mildew.
D9.	Overripe.
D10.	Not ripe.
D11.	Stale.
D12.	Cardboard.
D13.	Soured.
D14.	Putrid.
D15.	Acidic/vinegary.
D16.	Other (describe).
<b>FLAVOR CHANGES</b>	
E1.	Loss of flavor, flat, bland.
E2.	Chemical flavor, solvent-like/turpentine/paint-like.
E3.	Medicinal, vitamin-like.
E4.	Plastic-like.
E5.	Hay-like (oxidized).
E6.	Bitter.
E7.	Burnt.
E8.	Soapy.
E9.	Musty, moldy, mildew.
E10.	Rancid.
E11.	Stale
E12.	Fermented.
E13.	Earthy.
E14.	Tart, acidic.
E15.	Overripe.
E16.	Green, not ripe.
E17.	Tobacco.
E18.	Sweet, perfume like, flowery.
E19.	Metallic.
E20.	Excessively over-processed/scorched.
E21.	Canned.
E22.	Putrid.
E23.	Sour.
E24.	Excessively salty.
E25.	Other (describe).

(Table K continued)

<b>APPEARANCE CHANGES</b>	
F1.	Darkened.
F2.	Bloomed, blotchy (e.g., chocolate).
F3.	Oily, oiled-off (partial disintegration of an oil in water emulsion whereby a film, pockets, or droplets of oil form on the surface of the product or within the product).
F4.	Off-color (e.g., pink, off-white, reddish, green).
F5.	Cloudiness (beverage bases except orange).
F6.	Webbing (caffeine leeching).
F7.	Other (describe).
<b>FOREIGN MATERIAL</b>	
G1.	Potentially hazardous (e.g., glass, splinters, metal).
G2.	Not potentially hazardous.
G3.	Other (describe).
<b>H. COMPLETE LOSS OF MENU (Does Not Consider Caloric Count)</b>	
<b>NOTE:</b> The purpose of this defect category is to enable inspectors and evaluators of the inspection data to properly identify menus that contained one (or more) leaking component that adversely affected the entire meal. For example, if an applesauce pouch leaks, the entire menu may be unfit for use because of the mold growth that would likely occur inside the menu bag.	
H1.	Due to one leaking or ruptured component.
H2.	Due to more than one leaking or ruptured component.
H3.	Due to one or more components contaminated by insecticide/pesticide.
H4.	Due to one or more components contaminated by an unidentified substance.
H5.	Other (describe).

Table 3-11. Specific defect codes.



**TABLE L <sup>1/</sup> Contractor Abbreviations (ABV)**

<b>NAME</b>	<b>ABV</b>
AMERICAN NATIONAL	ANC
AMSTAR	AMS
AMERIQUEAL FOODS	AMQ
ANTHONY-TOMANT	ANT
BEATRICE FOODS	BEA
CADILLAC	CAD
CHARMS	CHM
CINPAC ASSEMBLY	CIN
CINPAC MANUFACTURER	CIM
CLINIPAD	CPD
CLOUD	CLO
CRESCENT BAKING	CRE
CROMPTON AND KNOWLES	CNK
DD BEAN	DDB
DEL MONTE	DEL
DIAMOND	DIA
FALCON CANDY	FAL
FORD GUM	FDG
FORT BISCUIT	FTB
FREEZE DRY – RAFCO	FRD
FREEDOM FOODS	FRE
FRESH FARMS	FFM
FULLER	FUL
GAYLORD	GLD
GENERAL FOODS	GEN
GREEN GIANT	GRE
HOLLAND AMERICAN WAFER CO	HAW
HORMEL CO	HOR
INNOVATIVE	INN
INTERNATIONAL FOODS	INT
INTERNATIONAL PAPER CO	INP
JIANAS PACKAGING	JSP
KENLAKE FOODS	KEN
KERN FOODS	KER
KOPAK	KOP
KRAFT	KRA
LAND O 'FROST	LAN
MARNAT PACKING CO	MAR
MARY HOWARD FOODS	MHF
M & M MARS	MRS
MISS KING'S KITCHEN	MKK

(Table L continued)

NABISCO	NAB
NATIONAL INSTITUTE FOR THE BLIND	NBI
NATIONAL PACKAGING	NTP
NATIONAL SEASON	NAT
NESTLE	NSL
NICE PACK	NPK
OKLAHOMA LEAGUE FOR BLIND	OKB
ONTARIO FOODS	ONT
OREGON FREEZE DRY	ORE
OTHER 1/	OTH
PACE	PAC
PILLSBURY	PIL
PROFESSIONAL PACK	PRO
RAFCO ASSEMBLY	RAF
RAFCO MANUFACTURING	RAM
RINGER FOODS	RIN
ROYAL MAID	ROY
RYT-WAT	RYT
SANNA	SAN
SCREEN TECH INC.	STI
SHELF STABLE	SHE
SIGNODE	SIG
SOPAKCO ASSEMBLY	SOP
SOP BENNITTSVILLE MNFTRING	SOB
SOP MULLEN MNFTRING	SOM
STAR FOODS	STA
STELLAR	STL
STICKNEY & POORS	STP
THERMO PAK	TPI
TOP LINE INC.	TLI
TRANS PACKER	TRA
TUFCO	TUF
UNITED SPECIALITY	UNI
VANTAGE FOODS	VAN
VECO	VEC
WAYNE CANDY	WAY
WEETABIX	WEE
WILBER CHOCOLATES	WIL
WORNICK	WOR
YORK CANDIES	YOR

1/ Specify unlisted contractor(s) on the inspection report.

Table 3-12. Contractor abbreviations (ABV).

**TABLE M Component and Classification List**

<b>COMPONENT</b>	<b>CODE</b>	<b>CLASS</b>	<b>MONO- GRAPH</b>
<b>1. GENERAL</b>			
Meal, Ready-to Eat	MRE	N/A	M1B
Menu Bag	MBG	N/A	M1C
MRE Packaging	PCK	N/A	M1D
Shipping Container	CSE	N/A	M1E
<b>2. ENTREE COMPONENTS</b>			
Bean, Black and Rice Burrito	BBB	PRIMARY	M2A8
Beans, Western	BNW	PRIMARY	M2B8
Beef Ravioli in Meat Sauce	BRM	PRIMARY	M2B
Beefsteak, Grilled w/Mushroom Gravy	BSM	PRIMARY	M2A1
Beef Patty, Grilled	BPG	PRIMARY	M2Z
Beefsteak, Restructured, Grilled	BSK	PRIMARY	M2C
Beef Roast w/Vegetables	PRV	PRIMARY	M2A5
Beef Stew	BST	PRIMARY	M2D
Beef in Teriyaki Sauce w/Vegetables	BTV	PRIMARY	M2A7
Cheese Tortellini in Tomato Sauce	CHT	PRIMARY	M2E
Chicken & Rice	CAR	PRIMARY	M2F
Chicken Breast Fillet	CBG	PRIMARY	M2G
Chicken Breast, Grilled	CBC	PRIMARY	M2B7
Chicken Breast with Cavalelli	CNV	PRIMARY	M2H
Chicken Noodles and Vegetables in Sauce	CST	PRIMARY	M2I
Chicken Stew	CBS	PRIMARY	M2J
Chicken w/ Salsa	CTZ	PRIMARY	M2A9
Chicken Tetrazzini	CAM	PRIMARY	M2B2
Chili and Macaroni	CMC	PRIMARY	M2A3
Clam Chowder	CBH	PRIMARY	M2L
Corned Beef Hash	CAP	PRIMARY	M2B9
Country Captain Chicken	EPH	PRIMARY	M2M
Escalloped Pot. w/Ham	BFK	PRIMARY	M2N
Frankfurters, Beef	JYA	PRIMARY	M2A4
Jambalaya	HSL	PRIMARY	M2
Ham Slices	MBR	PRIMARY	M2P
Meatballs, Beef & Rice in Spicy Sauce	MOG	PRIMARY	M2B3
Meatloaf w/ Onion Gravy	MIN	PRIMARY	M2B4
Minestrone Stew	NBS	PRIMARY	M2B5
Noodles in Buttered Flavored Sauce	OWH	PRIMARY	M2Q
Omelet w/Ham and Grits	PVA	PRIMARY	M2B6

(Table M continued)

Pasta w/Vegetables in Alfredo Sauce	PWV	PRIMARY	M2R
Pasta and Vegetables in Tomato Sauce	PCJ	PRIMARY	M2S
Pork Chop, Bnls, Jam Sauce w/Noodles	PCM	PRIMARY	M2T
Pork Chow Mein	PRB	PRIMARY	M2A2
Pork Rib, Boneless	PWR	PRIMARY	M2U
Pork w/Rice in BBQ Sauce	SMS	PRIMARY	M2V
Spaghetti w/Meat and Sauce	CTS	PRIMARY	M2B1
Chicken in Thai Sauce	TWN	PRIMARY	M2W
Tuna w/Noodles	VMI	PRIMARY	M2A6
<b>3. VEGETABLE or STARCH COMPONENTS</b>			
Buttered Noodles	NWB	PRIMARY	M3A
Pot. Au Gratin	PAG	PRIMARY	M3A
Rice, Mexican	MRC	PRIMARY	M3B
Rice, White	WRC	PRIMARY	M3C
Mashed Potatoes	PMD	PRIMARY	M3D
<b>4. BAKERY COMPONENTS</b>			
Almond Poppy seed Pound Cake	APC	PRIMARY	M4S
Bread, White, Pouch	BRD	PRIMARY	M4A
Brownie	BRN	PRIMARY	M4B
Cake, Fudge Brownie with Choc Drops	CFB	PRIMARY	M4C
Chocolate Mint Cookies	CMC	PRIMARY	M4T
Coated Chocolate Disk Cookies	MMD	PRIMARY	M4U
Cake, Choc Mint Pound with Choc Drops	CMC	PRIMARY	M4D
Cake, Lemon Pound	CLP	PRIMARY	M4E
Cake, Orange Pound	COP	PRIMARY	M4F
Cake, Pineapple Pound	CPP	PRIMARY	M4G
Cake, Vanilla Pound	CVP	PRIMARY	M4H
Cherry Nut Cake	CRC	PRIMARY	M4I
Chocolate Nut Cake	CNC	PRIMARY	M4J
Oatmeal Cookie	OMC	PRIMARY	M4V
Cookie Bar, Oatmeal (Plain)	OKO	PRIMARY	M4K
Cookie Bar, w/Chocolate	CKC	PRIMARY	M4L
Cookie, Shortbread	CKS	PRIMARY	M4Q
Crackers	CRK	PRIMARY	M4M
Crackers, Vegetable	CKV	PRIMARY	M4R
Fig Bar	FBF	PRIMARY	M4S
Fruit Filled Bar	FFB	PRIMARY	M4T
Maple Nut Cake	MNC	PRIMARY	M4N
Orange Nut Cake	ONC	PRIMARY	M4O
Pineapple Nut Cake	PNC	PRIMARY	M4P
Pumpkin Pound Cake	PPC	PRIMARY	M4W
Vanilla Sugar Crème Wafer Cookies	CVW	PRIMARY	M4X

(Table M continued)

<b>5. FRUIT COMPONENTS</b>			
Applesauce	APS	SECONDARY	M5A
Applesauce, Sweetened	ACS	SECONDARY	M5L
Applesauce, Sweetened, Raspberry	ARS	SECONDARY	M5K
Apples, Spiced	API	SECONDARY	M5J
Fruit Mix	FMX	SECONDARY	M5B
Mixed Fruit, Sweetened, Thermostabilized	MST	SECONDARY	M5C
Peaches	PEA	SECONDARY	M5D
Peaches, Sweetened, Sliced or Diced	PET	SECONDARY	M5E
Pears	PRS	SECONDARY	M5F
Pears, Sweetened, Sliced or Diced	PST	SECONDARY	M5G
Pineapple, Sweetened, Tidbits or Chunks	PAT	SECONDARY	M5H
Strawberries	STR	SECONDARY	M5I
<b>6. SPREAD COMPONENTS</b>			
Apple Jelly	JLA	SECONDARY	M6B
Cheese Spread	CSP	PRIMARY	M6A
Cheese, Jalapeno	CSJ	PRIMARY	M6C
Grape Jelly	JLG	SECONDARY	M6D
Peanut Butter	PBT	PRIMARY	M6E
Jam, Fruit, Strawberry	JFS	SECONDARY	M6F
<b>7. BEVERAGE BASE COMPONENTS</b>			
Apple Cider Beverage Base	BBA	PRIMARY	M7A
Beverage Base, No Flavor Specified	BB	PRIMARY	M7K
Cherry Beverage Base	BBC	PRIMARY	M7B
Cocoa Beverage Powder	CBV	PRIMARY	M7C
Grape Beverage Base	BBG	PRIMARY	M7D
Dairy Shake, Chocolate	DSC	PRIMARY	M7M
Dairy Shake, Strawberry	DSS	PRIMARY	M7N
Dairy Shake, Vanilla	DSV	PRIMARY	M7O
Lemon-Lime Beverage Base	BBL	PRIMARY	M7E
Lemon Beverage Base	LEM	PRIMARY	M7L
Lime Beverage Base	LIM	PRIMARY	M7K
Orange Beverage Base	BBO	PRIMARY	M7F
Orange, Fortified, Beverage Base	BOF	PRIMARY	M7G
Sugar Free, Iced Tea Beverage Base	SFI	PRIMARY	M7H
Sugar Free Lemonade Beverage Base	SFL	PRIMARY	M7I
Sugar Free, Fruit Punch Beverage Base	SFF	PRIMARY	M7J
<b>8. CANDY COMPONENTS</b>			
Candy, Caramels, Vanilla Flavor	CCV	PRIMARY	M8A
Candy, Choc Coated Disks w Peanut Butter	MMP	PRIMARY	M8I
Candy, Hard Fruit Tablets (Type IV)	CFP	PRIMARY	M8B
Candy, Hard Fruit Tablets (Type X)	CFT	PRIMARY	M8C
Candy, Pan-Coated, Chocolate Disks	CCT	PRIMARY	M8D

(Table M continued)

Candy, Peanut Bar	CPT	PRIMARY	M8H
Candy, Toffee Roll, Chocolate flavor	CTC	PRIMARY	M8E
Pan Coated, Fruit Flavored Taffy Disks	CTD	PRIMARY	M8F
Peanut Bar	CPB	PRIMARY	M8G
<b>9. ACCESSORY COMPONENTS</b>			
Barbeque Sauce	BBS	ANCILLARY	M9H
Catsup	CAT	ANCILLARY	M9A
Coffee	COF	ANCILLARY	M9B
Cream Substitute	CRM	ANCILLARY	M9C
Ground Red Pepper	GRP	ANCILLARY	M9J
Gum	GUM	ANCILLARY	M9D
Hot Sauce	HAS	ANCILLARY	M9E
Picante Sauce	PIC	ANCILLARY	M9I
Salt	SLT	ANCILLARY	M9F
Seasoning Blend, Salt Free	SBS	ANCILLARY	M9K
Sugar	SUG	ANCILLARY	M9G
Tea Bag	TBG	ANCILLARY	M9H
Tea, Instant	TIN	ANCILLARY	M9I
<b>10. OTHER COMPONENT</b>			
Beef Snacks, Strips, Cured	BSS	SECONDARY	M10A
Chow Mein Noodles	CMN	PRIMARY	M10B
Crunchy Cheese Flavored Curls	CFC	PRIMARY	M10O
Corn Chips	CCH	PRIMARY	M10C
Flameless Ration Heater	FRH	N/A	M10D
Granola Bar, Cinnamon	GCN	PRIMARY	M10P
Granola Bar, Oats & Honey	GOH	PRIMARY	M10K
Granola Bar, Peanut Butter	GPB	PRIMARY	M10L
Nut Raisin Mix	NRM	PRIMARY	M10S
Peanuts, Shelled, Roasted	PRS	SECONDARY	M10M
Potato Sticks	PST	PRIMARY	M10E
Pretzels	PZL	PRIMARY	M10F
Pretzels, Filled Cheddar Cheese	PCC	PRIMARY	M10Q
Pretzels, Filled Nacho Cheese	PNC	PRIMARY	M10R
Roasted Peanuts, Sweetened	PNT	SECONDARY	M10G
Sandwich Crackers, Toasted P Butter Filling	SCT	PRIMARY	M10N
Sports Bar, Chocolate	SBC	ANCILLARY	M10H

The above listed abbreviations for each component are provided for use when completing the inspection records.

Table 3-13. Component and classification list.

**TABLE N <sup>1/ 2/ 3/ 4/ 5/</sup> Condition Code Criteria for Defects From Special Inspection Results (Components that Equals or Exceeds an Action Number)**

CONDITION CODE A	CATEGORY		
	MAJOR A	MAJOR B	MINOR
Primary	0	0	1
Secondary	0	1	2
Ancillary	0	1	2
<b>CONDITION CODE B</b>			
Primary	0	0	2
Secondary	0	2	3
Ancillary	0	2	3
<b>CONDITION CODE C</b>			
Primary	0	1	3
Secondary	0	3	4
Ancillary	0	3	4
<b>CONDITION CODE J</b>			
Primary	1	2	N/A
Secondary	1	4	N/A
Ancillary	1	4	N/A

1/ Lots determined to be unwholesome will be classified Condition Code J until final disposition is made by the responsible veterinarian.

2/ Each column lists the maximum number of components allowed to equal or exceed an action number for that category.

3/ Each row lists the maximum number of components allowed to equal or exceed an action number by component classification.

4/ Compare the number of components from the inspection that equals or exceeds the special inspection action numbers for each category. If the number in any row/column intersection is exceeded, the lot must be downgraded to the next lower Condition Code.

5/ Components determined to be unwholesome will be classified Condition Code J and final disposition will be made by the responsible veterinarian.

Table 3-14. Condition code criteria for defects from special inspection results (components that equals or exceeds an action number).

**TABLE S Meals, Ready-to-Eat, Individual Menus**

<b>Meal, Ready-to-Eat, Individual Menus (MRE, XXIII)</b>											
MENU 1 Beef Steak w/ Mushroom Gravy Western Style Beans	MENU 2 BBQ Pork Patty	MENU 3 Beef/Banrot	MENU 4 Country Captain Chicken	MENU 5 Grilled Chicken Breast Miso/stone Soup	MENU 6 Oriental Chicken/ Thai Sauce Yellow & Wild Rice Puff	MENU 7 Chicken w/ Salsa	MENU 8 Hamburger Patty	MENU 9 Beef Stew	MENU 10 Chili w/ Macaroni	MENU 11 Pasta w/ Veg - Tomato (Vegetarian) Applesauce CHD/Offical	MENU 12 Bean & Rice Burrito (Vegetarian) TS Fruit
Jelly	Cheese	Fudge Brownie	Toast/ Peanut Cheese	Pound Cake	Raisin Nut Mix	Shredded Cookie	Nacho Combs	M&M® Cookie Jelly	Chocolate Mint Cookie	Pound Cake	Fudge Brownie
Cracker	ZMtrail Snack Bread Fig Bar	Cracker	Cracker	Wildcat Snack Bread Candy	Cracker (veg flavor)	Cracker (veg flavor) Candy	ZMtrail Snack Bread Beef Jerky	Cracker	Whod Stank Bread	Cracker	Cracker
Dairy Shake	Bev. Base w/ Sugar	Bev. Base w/ Sugar	Mocker Cappurino	French Vanilla Cappurino	Hot Sauce	Hot Sauce	Bev. Base w/ Sugar	Dairy Shake	Cocoa	Hard Candy	Hard Candy Peanut Sae
Red/Pepper	Hot Sauce	Hot Sauce	Hot Sauce	Seaspiring Packet	Hot Sauce	Hot Sauce	Hot Sauce	Hot Sauce	Red/Pepper	Seaspiring Packet	Hot Sauce
Spoon ACC PK-B FRH	Spoon ACC PK-A FRH	Spoon ACC PK-A FRH	Spoon ACC PK-A FRH	Spoon ACC PK-A FRH	Spoon ACC PK-E FRH	Spoon ACC PK-C FRH	Spoon ACC PK-C FRH	Spoon ACC PK-A FRH	Spoon ACC PK-B FRH	Spoon ACC PK-E FRH	Spoon ACC PK-E FRH

Table 3-15. Excerpt from Table S, Meals, Ready-to-Eat, Individual Menus.



### 3-5. COMPLETION OF INSPECTION RECORDS

a. **Inspection Form.** All Meal, Ready-to-Eat inspections, except turn-ins, will be entered into the Veterinary Command Lotus Notes MRE Surveillance Inspection database. DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations (Figure 3-2 front and back), will be completed if inspectors do not have access to this database. Local reproduction of DSCP Form 5117 (Figure 3-2 front and back) is authorized.

b. **Instructions for Completion of DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations.** See figure 3-2 front and back.

- (1) In the heading of the form, enter MRE.
- (2) In Part I, Inspection Activity Information enter the following information:
  - (a) **Inspector**--your name and rank.
  - (b) **Section**--your duty section.
  - (c) **District**--the title of your district or command.
  - (d) **Date of Inspection**--self-explanatory.
  - (e) **Branch**--the title of your branch/squad.
  - (f) **Region**--the title of your region/major command.
- (3) In Part II, Inspected Unit Information enter the following information:
  - (a) **Installation**--the location of Unit (installation name).
  - (b) **Storage Location of Rations**--self-explanatory.
  - (c) **Unit Name**--the name of unit owning the rations.
  - (d) **Rations Received From**--the activity/facility/company/ship from which the rations came.
- (4) In Part III, Ration Assembler Information enter the following information:
  - (a) **Contract Number**--list all contract numbers represented, information is located on the case.
  - (b) **Assembler**--the name of company that assembled the rations, information is located on the case.

**TABLE E <sup>1/2/</sup> Sampling Criteria for Inspection of Menu Bags and Contents Including Accessory Bags and Contents (Special Inspection)**

LOT SIZE (Components)	SAMPLE SIZE (Components)	DEFECT CLASS AND ACTION NUMBERS		
		MAJOR A	MAJOR B	MINOR
24 – 36,000	24	1	2	9
> 36, 001	48	1	3	11

1/ For use on Table F and Table G (Table 3-6 and 3-7).

2/ Special inspections, compare separate component inspection results to the action number.

Table 3-5. Sampling criteria for inspection of menu bags and contents including accessory bags and contents (special inspection).

**TABLE F <sup>1/2/</sup> Inspection of Unopened Menu Bags**

CATEGORY			DEFECT
MAJOR A	MAJOR B	MINOR	
503			<u>1/</u> Rodent damage/insect infestation of menu bag.
602			<u>2/</u> Visible tear/cut/hole/open seam in menu bag.

1/ For use with Table D and Table E (Tables 3-4 and 3-5).

2/ Requires immediate corrective action according to local Pest Management Programs.

Table 3-6. Inspection of unopened menu bags.

(d) **Sample Size**--enter the sample size number from the sampling tables (A, B, D, H, and I) (Tables 3-1, 3-2, 3-4, 3-8, and 3-9).

(e) **Defect Class**--list the defect class (i.e. MAJ A, MAJ B, and Minor) from sampling tables (Tables A, B, D, H, and I) (Tables 3-1, 3-2, 3-4, 3-8, and 3-9).

(f) **Action Number**--enter the action numbers from the sampling tables (Tables A, B, D, H, and I) (Tables 3-1, 3-2, 3-4, 3-8, and 3-9).

(g) **Total Defects**--indicate the total number of defects noted for each defect class.

(h) **Defects By Component Classification**--indicate the number of defects noted by the type of component (Table M) (Table 3-13).

**NOTE:** Table M, Component and Classification List (Table 3-13) can be found on the Defense Supply Center Philadelphia website at <http://www.dscp.dla.mil/subs/support/qapubs/appa/table-m.pdf> not in the DSCP Handbook 4155.2, Appendix A).

(8) In Part VII, Nonconformance Summary enter the following information:

(a) **Assembler Lot Number**--list the lot number(s) affected.

(b) **Menu Number**--list the menu number(s) affected.

(c) **Component & Code**--component abbreviation (Table M) (Table 3-13) and Julian lot code from package.

(d) **Component Processor**--Component Contractor Abbreviation (Table L) (Table 3-12).

**NOTE:** Table L, Contractor Abbreviations (Table 3-12) can be found on the Defense Supply Center Philadelphia website at <http://www.dscp.dla.mil/subs/support/qapubs/appa/table-l.pdf> not in the DSCP Handbook 4155.2, Appendix A.

(e) **Defect Table**--list the defect table used (Tables C, F, G, or J) (Tables 3-3, 3-6, 3-7, or 3-10).

(f) **Defect Number**--list the defect number from the examination table (Tables C, F, G, or J) (Tables 3-3, 3-6, 3-7, or 3-10).

(g) **Defect Code**--list the specific Defect Code (Table K) (Table 3-11).

(h) **Description of Defects/Remarks**--write a short description of the defect found.

(i) **Defect Tally**--total number of defects noted by type of component and defect classification.

(9) In Part VIII, Narrative Comments--Use this block for descriptive information concerning inspections results, storage conditions, insect/pest management, and issue/serviceability recommendations to the Accountable Officer.

(10) In Part IX, Signature Block--Self-Explanatory.

**c. Distribution.**

(1) For Defense Logistics Agency owned/controlled stocks, provide one copy of the Lotus Notes database inspection report to the Accountable Officer.

1 Copies of all reports not on the Lotus Notes database will be maintained in the local quality history files.

2 Inspections resulting in less than Condition Code A status not placed in the Lotus Notes database must be telephonically reported to DSCP-HSQ (215) 737-7770/2911 (DSN 444).

(2) Other distribution will be according to the directives of the responsible inspection agency and/or Military Service.

**REPORT OF INSPECTION ON \_\_\_\_\_ OPERATIONAL RATIONS**

(ENTER TYPE OF RATION) PAGE 1 OF \_\_\_\_\_

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**PART I - INSPECTION ACTIVITY INFORMATION**

INSPECTOR: \_\_\_\_\_ DATE OF INSPECTION: \_\_\_\_\_  
 SECTION: \_\_\_\_\_ BRANCH: \_\_\_\_\_  
 DISTRICT: \_\_\_\_\_ REGION: \_\_\_\_\_

**PART II - INSPECTED UNIT INFORMATION**

INSTALLATION: \_\_\_\_\_ UNIT NAME: \_\_\_\_\_  
 STORAGE LOCATION OF RATIONS: \_\_\_\_\_ RATIONS RECEIVED FROM: \_\_\_\_\_

**PART III - RATION ASSEMBLER INFORMATION**

CONTRACT NUMBER: \_\_\_\_\_ NA ASSEMBLER: \_\_\_\_\_

**PART IV - INSPECTION INFORMATION**

CLASS OF INSPECTION: \_\_\_\_\_ LOT SIZE: \_\_\_\_\_  
 TYPE OF INSPECTION LOT: \_\_\_\_\_ LOT INFORMATION: \_\_\_\_\_  
 \_\_\_\_\_ GRAND \_\_\_\_\_ CONTRACTORS/ASSEMBLERS

**PART V - INSPECTION RESULTS**

CONDITION CODE: \_\_\_\_\_ A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ H \_\_\_\_\_ J \_\_\_\_\_ L  
 SPECIAL INSPECTION REQUIRED: \_\_\_\_\_ NO \_\_\_\_\_ YES

REFRIGERATED \_\_\_\_\_ NON-REFRIGERATED \_\_\_\_\_

STORAGE CONDITION: \_\_\_\_\_ TTI STATUS: \_\_\_\_\_ 0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_ NA \_\_\_\_\_ MISSING \_\_\_\_\_ UNKNOWN \_\_\_\_\_

STORAGE TEMPERATURE: \_\_\_\_\_ <30°F \_\_\_\_\_ >30°F \_\_\_\_\_

RATION COMPONENT (SPECIAL ONLY)	DEFECT TABLE	SAMPLING TABLE	SAMPLE SIZE	PART VI - SAMPLING PLANS					DEFECTS BY COMPONENT CLASSIFICATION
				DEFECT CLASS	ACTION NUMBER	TOTAL DEFECTS			
				PRIMARY - ANCHILLARY				NA	
				SECONDARY - ANCHILLARY				NA	
				PRIMARY - ANCHILLARY				NA	
				SECONDARY - ANCHILLARY				NA	
				PRIMARY - ANCHILLARY				NA	
				SECONDARY - ANCHILLARY				NA	
				PRIMARY - ANCHILLARY				NA	
				SECONDARY - ANCHILLARY				NA	
				PRIMARY - ANCHILLARY				NA	
				SECONDARY - ANCHILLARY				NA	

DSCP FORM 5117 (FRONT), JULY 2001

(FOR USE OF THIS FORM, SEE DSCP PH 4155.2, APPROPRIATE APPENDIX)

Figure 3-2. DSCP Form 5117 (front).

REPORT OF INSPECTION ON OPERATIONAL RATINGS (CONT)													PAGE	OF
(USE ADDITIONAL SHEETS IF NECESSARY) PART VII - NON-COMFORMANCE SUMMARY													DEFECT TALLY*	
ASSEMBLER LOT NO.	MENU NO.	COMPONENT & CODE	COMPONENT PROCESSOR	DEFECT TABLE	DEFECT NO.	DEFECT CODE	DESCRIPTION OF DEFECTS/REMARKS	DEFECT TALLY*						
								Primary			Ancillary			
								A	B	M	A	B	M	A
* A = MAJ A, B = MAJ B, W = MINOR, N/A = Items with no Component Classification (Primary, Secondary, Ancillary)								DEFECT TOTALS						
PART VIII - NARRATIVE COMMENTS														

PART IX - SIGNATURE BLOCK													
NAME / SIGNATURE OF SUPERVISOR											TELEPHONE NO.		DATE

DSCP FORM 5117 (BACK), JULY 2001  
 (FOR USE OF THIS FORM, SEE DSCP 4135.2, APPROPRIATE APPENDIX)

Figure 3-2. DSCP Form 5117 (back).

Continue with Exercises

### EXERCISES, LESSON 3

**INSTRUCTIONS.** The following exercises are to be answered by marking the lettered response that best answers the question, or by completing the incomplete statement, or by writing the answer in the space provided at the end of the question.

After you have completed all the exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers.

1. It is unnecessary to notify the responsible authority when containers/products of Meals, Ready-to-Eat fail to comply with the essential receipt criteria.
  - a. True.
  - b. False.
  
2. The specific defect codes table is used in conjunction with all tables that list category of defects/defect number/defect descriptions.
  - a. True.
  - b. False.
  
3. How many steps are required when performing a routine inspection of Meals, Ready-to-Eat?
  - a. Six.
  - b. Seven.
  - c. Eight.
  - d. Nine.

4. You found a swollen pouch while performing a closed package inspection of food components and accessory bag items. Which table would you use to obtain the defect number for this deficiency?
  - a. Table C.
  - b. Table F.
  - c. Table G.
  - d. Table J.
  
5. What are the two types of lots?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  
6. During an inspection, you found a damaged container and the contents were not exposed or affected. What is the defect number?
  - a. 502.
  - b. 601.
  - c. 607.
  - d. 615.
  
7. How many additional steps are required when performing a special inspection of Meals, Ready-to-Eat?
  - a. Three.
  - b. Four.
  - c. Five.
  - d. Six.



8. Which table would you use to identify the sample size for the inspection of shipping containers while performing a normal (routine) inspection?
  - a. Table A.
  - b. Table B.
  - c. Table D.
  - d. Table E.
  
9. All cases that are opened for inspection purposes should be back-filled.
  - a. True.
  - b. False.
  
10. Which table lists the defects to inspect for while performing a normal (routine) inspection of shipping containers?
  - a. Table C.
  - b. Table F.
  - c. Table G.
  - d. Table J.
  
11. When performing a special inspection, the entire lot is reinspected.
  - a. True.
  - b. False.

12. Evidence of rodent damage was found while inspecting a shipping case. What defect category would this deficiency be assigned?
- a. Major A.
  - b. Major B.
  - c. Minor.
  - d. Unclassified.
13. Which table would you use to determine defect class and action numbers for menu bags and contents while performing a normal (routine) inspection?
- a. Table D.
  - b. Table E.
  - c. Table H.
  - d. Table I.
14. Which table lists the defects that could be found while performing a closed package inspection of food components and accessory bag items?
- a. Table C.
  - b. Table F.
  - c. Table G.
  - d. Table J.
15. How high are Meals, Ready-to-Eat (MRE) allowed to be palletized?
- a. 2.
  - b. 3.
  - c. 4.
  - d. 5.

16. What defect number would you assign to a swollen pouch while performing a closed package inspection of food components and accessory bag items?
- a. B14.
  - b. 401.
  - c. 502.
  - d. 601.
17. During a destructive open package inspection, you found an ancillary component that was crushed which significantly affects the serviceability of the product. What is the defect number?
- a. 601.
  - b. 607.
  - c. 614.
  - d. 615.
18. While performing a normal (routine) destructive open package inspection, what would the sample size be if you have a lot size of 5,050 menus?
- a. 20.
  - b. 24.
  - c. 32.
  - d. 48.
19. All tables needed to perform a routine or special inspection on a lot of Meals, Ready-to-Eat can be found in DSCP Handbook 4155.2, Appendix A.
- a. True.
  - b. False.

20. Which table would you use to determine the sample size for destructive open package inspection while performing a normal (routine) inspection?
- a. Table D.
  - b. Table E.
  - c. Table H.
  - d. Table I.
21. Which table lists the defects for destructive open package inspection while performing a normal (routine) inspection?
- a. Table C.
  - b. Table F.
  - c. Table G.
  - d. Table J.
22. You find inadequate vacuum that moderately affects a component. What is the defect number?
- a. 507.
  - b. 508.
  - c. 606.
  - d. 613.
23. If you were performing a routine inspection of unopened menu bags and your lot size was 100 cases, what are your action numbers?
- a. 1, 1, 15.
  - b. 1, 1, 33.
  - c. 1, 2, 9.
  - d. 1, 3, 11.

24. During a destructive open package inspection, you found peanut butter with extreme color change that does not affect wholesomeness. What is the defect number?
- a. 404.
  - b. 508.
  - c. 611.
  - d. 613.
25. To determine lot size when performing a special inspection on a defective component, you should use:
- a. Table B.
  - b. Table E.
  - c. Table I.
  - d. Table S.
26. Which table would you use to determine the contractor's abbreviation?
- a. Table K.
  - b. Table L.
  - c. Table M.
  - d. Table S.

27. Lots of Meals, Ready-to-Eat or its components determined to be unwholesome will be classified as \_\_\_\_\_ until the responsible veterinarian makes the final disposition?
- a. Condition Code H.
  - b. Condition Code J.
  - c. Defective.
  - d. Unusable.
28. Which table would you use to determine the component abbreviation and classification?
- a. Table K.
  - b. Table L.
  - c. Table M.
  - d. Table S.
29. What is the monograph number for Rice, Mexican?
- a. M2M.
  - b. M3A.
  - c. M3B.
  - d. M3C.
30. What was the percentage used as the multiplier for your sample size of A boxes if you were given 340 A boxes and 150 B boxes?
- a. 31 percent .
  - b. 50 percent.
  - c. 69 percent.
  - d. 100 percent.

31. What is the contractor abbreviation for Freedom Foods?
- a. FFM.
  - b. FRE.
  - c. FRD.
  - d. FTB.
32. Which table would you use to determine action numbers for destructive open package inspection while performing a normal (routine) inspection?
- a. Table D.
  - b. Table E.
  - c. Table H.
  - d. Table I.
33. Which three inspection tables are used strictly to aid in filling out the inspection form, DSCP Form 5117?
- a. Tables K, L, and M.
  - b. Tables K, L, and S.
  - c. Tables K, M, and S.
  - d. Tables L, M, and S.
34. Evidence of rodent damage was found while inspecting a shipping case. What defect number would you assign?
- a. 403.
  - b. 501.
  - c. 503.
  - a. 504.

**Check Your Answers on Next Page**

### **SOLUTIONS TO EXERCISES, LESSON 3**

1. b (para 3-1b)
2. a (para 3-6b(8)(g))
3. d (para 3-2a–3-2i)
4. c (section III Table G)
5. Contractor's lot and Grand lot para 3-2b(2)(a)–(b))
6. b (Table C)
7. b (para 3-3a–3-3d)
8. a (Table A)
9. a (para 3-2a(4))
10. a (Table C)
11. b (para 3-3)
12. b (Table C)
13. a (Table D)
14. c (Table G)
15. c (para 3-2a(2))
16. b (Table G)
17. d (Table J)
18. b (Table H)
19. b (paras 3-3a(3)NOTE, 3-5b(7)(h)NOTE, and 3-5b(8)(d)NOTE)
20. c (Table H)



21. d (Table J)
22. a (Table G)
23. a (Table D)
24. b (Table J)
25. b (Table E)
26. b (Table L)
27. b (Table N footnote 1)
28. c (Table M)
29. c (Table M)
30. c (Table A  $340/(340+150)$ )
31. b (Table L)
32. c (Table H)
33. a (paras 3-5b(7)(h), 3-5b(8)(c), 3-5b(8)(d), and 3-5b(8)(g))
34. b (Table C)

**End of Lesson 3**

## LESSON ASSIGNMENT

### LESSON 4

Inspection of Unitized Group Rations--Heat & Serve and Tray Pack Rations

### LESSON ASSIGNMENT

Paragraphs 4-1 through 4-7.

### LESSON OBJECTIVES

After completing this lesson you should be able to:

- 4-1. Identify inspection documents and their use.
- 4-2. Identify the steps performed in a routine inspection of Unitized Group Rations--Heat & Serve (UGR H&S).
- 4-3. Identify the steps performed in a special inspection of UGR--H&S.
- 4-4. Identify inspection tables and how they are used.
- 4-5. Complete DSCP Form 5117.

### SUGGESTION

After studying the lesson assignment, complete the exercises. These exercises will help you to achieve the lesson objectives.

## LESSON 4

### INSPECTION OF UNITIZED GROUP RATIONS – HEAT & SERVE (AND TRAY PACK RATIONS)

#### 4-1. RECEIPT INSPECTION INFORMATION

a. Modules that are received should be accompanied by inspection paperwork from the previous storage/assembly location, or can be retrieved from the appropriate Lotus Notes database.

b. If this is not the case, to avoid duplication of effort, call the last responsible unit from which the shipment came for the inspection status.

c. If no current inspection information can be found or Condition Code status cannot be determined, a full inspection in accordance with this document will be performed.

d. In addition, inspectors shall advise DSCP when products fail to comply with essential receipt criteria identified in the appropriate monographs.

(1) Notification should be by the most expeditious means when there is a possibility that warranty action may be initiated.

(2) Inspectors will be provided additional guidance concerning warranty inspection/actions if required.

#### 4-2. ROUTINE INSPECTION PROCEDURES

##### a. STEP 1: Evaluate Storage Conditions for Sanitation.

(1) Storage conditions vary significantly. At a minimum:

(a) Unitized Group Rations–Heat & Serve storage areas should be clean and dry.

(b) Unitized Group Rations–Heat & Serve should be stored on pallets, not directly on the floor.

(c) The area should be free of pests.

(2) When multiple pallets of (UGR--H&S are warehoused in a storage facility they should meet the additional standards of MIL-STD 3006, Guidelines for Auditing Food Establishments.

(a) Unitized Group Rations--Heat & Serve cannot be stacked more than two pallets high without the use of storage aids, such as pallet racks/pallet sets, etc.

(b) These pallet racks/pallet sets should support the full weight of any additional pallets. The pallet(s) that are stored above shall not be in contact with or supported by the pallets beneath.

(3) The temperature history of the storage locations must also be considered when recommending final condition codes and dispositions.

(4) All modules opened for inspection purposes, or damaged cases, shall be recouped or repaired in a sufficient manner to ensure protection of the product during subsequent storage and handling.

**b. STEP 2: Determine Lot Size.**

(1) The lot size for modules shall be the total number of modules by menu. The sample unit is one complete module.

(2) Lotting procedures will be as follows:

(a) An assembler's lot will be composed of rations from the same assembler that have the same DOP and menu number.

(b) Grand lots for the purpose of UGR--H&S inspections will be

1 Composed of rations from the same assembler, and the same menu number, but will contain more than one lot number.

2 Grand lots will be limited to a 120-day date of pack (DOP) window (earliest to latest DOP shall not exceed 120 days).

3 Additionally, the rations must have been stored under substantially similar storage conditions.

4 Samples from grand lots must represent all individual lots proportionally, even if the next highest sample size must be used.

5 Identity of samples from each subplot must be maintained throughout the inspection.

(3) Defective assembler's lots will be segregated from grand lots and inspected individually when one or more of the following occurs:

(a) A Major A defect is found in an assembler's lot.

(b) The Major B or Minor defects found seem to be concentrated in one or more (a small subset of lots) of the assembler's lots comprising the grand lot.

(c) The inspector determines for any reason, based on initial inspection results, that inspection of an individual assembler's lot is justified.

(4) Grand lotting is encouraged (to conserve resources) whenever it is considered appropriate by the inspection activity. Grand lotting will not be used when performing warranty inspections or on inspections of lots reported as possibly having wholesomeness deficiencies.

**c. STEP 3: Inspect Shipping Containers.**

(1) In accordance with Table A, Sampling Criteria for Normal Inspection of Shipping Containers (Nondestructive CPI) (Table 4-1) select the appropriate sample size for shipping container examinations. Obviously damaged shipping cases should not be selected unless they are truly representative of the lot. Damaged cases should be set aside, inspected and salvaged.

(2) Routine inspections will be conducted using a single sampling plan.

(3) Using the defects listed in Table E, Defects for Shipping Containers (Table 4-5) the inspectors should check each sample case for previously opened boxes. While this may indicate tampering, it may also be due to other reasons (for example, a wholesale rework of a lot). Inspectors should contact their supervisors for guidance if pilferage or tampering is suspected. Also, observe each case for signs of rodent damage or insect infestation. Post the infestation findings on the inspection report, to include:

(a) Whether or not the pests were alive or dead.

(b) Identification of the pests (based on entomological or laboratory identification).

(c) Probable origin of pests (DSCP Handbook 4155.2, paragraph XI).

(d) Probable movement of pests. For example, from outside the shipping container into the modules or vice-versa.

(e) Classify each defective case by the most serious defect it possesses.

**d. STEP 4: Perform Closed Package Inspection of Module Contents.**

(1) Perform closed package inspection (CPI) of module contents in accordance with Table C, Sample Criteria For Normal Inspection of Module Contents (Table 4-3) select the appropriate number of modules being sure the samples are proportionally representative of the modules in the lot.

(2) Open the sample modules.

(3) Module components will be inspected for defects in accordance with tables; Table F, Defects for Metal Trays (Table 4-6), Table G, Defects for Metal Containers Other Than Trays (Table 4-7), Table H, Defects for Plastic/Glass Containers (Table 4-8), Table I, Defects for Flexible Pouches (Table 4-9), Table J, Defects for Envelopes (Packets) (Table 4-10), and Table K, Defects for Nonfood Components (Tables 4-11).

(4) Thoroughly examine all components within the module under a good light source and, if available, with the aid of a magnification lens. When a component exhibits more than one defect, it will be classified by the most serious defect it possesses. Record the following information for all defective components:

- (a) Menu number
- (b) Assembler's lot number
- (c) Component nomenclature and code
- (d) Processor's and/or plant name (if available)
- (e) Defect number
- (f) Specific defect code (if applicable)
- (g) Narrative description of defect (if necessary)
- (h) Tally defects (Major A, Major B, Minor) according to type of component

**e. STEP 5: Perform Destructive Open Package Inspection.**

(1) Perform destructive open package inspection (DOPI) in accordance with Table C, Sample Criteria for Normal Inspection of Module Contents (Table 4-3) select the appropriate number of modules being sure the samples are proportionally representative of the modules in the lot.

(2) Open the sample module(s).

(3) Module components will be inspected for defects in accordance with Table L, DOPI Defects (Table 4-12).

(4) Thoroughly examine all items within the module under a good light source and, if available, with the aid of a magnification lens. When a component exhibits more than one defect, it will be classified by the most serious defect it possesses. However, for the purpose of gathering additional information, the lesser defects will also be noted. Record the following information for all defective components:

- (a) Menu number.
- (b) Assembler's lot number.
- (c) Component nomenclature and code.
- (d) Processor's and/or plant name (if available).
- (e) Defect number (Tables F-L) (Tables 4-6 – 4-12).
- (f) Specific defect code (Table M) (Table 4-13).
- (g) Narrative description of defect (if necessary).
- (h) Tally defects (Major A, Major B, Minor) according to type of component.

(5) Component packages with a Major A or Major B packaging defect should be opened to evaluate the effect the defect has on the product. Any findings should be recorded as a note on the inspection record.

(6) Inspectors should refer to the component monographs (figure 4-1) for information relative to the product's normal characteristics, the most likely deteriorative conditions to be observed and any unique inspection information and special notes concerning the item. Monographs can be accessed on the Defense Supply Center Philadelphia website at <http://www.dscp.dla.mil/subs/support/qapubs/appa/mono-a.htm>

(7) Each component of the sample modules (including all accessory items) will be opened and inspected. If no Major A or Major B defects are noted and the action number for minor defects is not reached or exceeded during normal open package inspection, this phase of the inspection should be considered complete.

(8) Classify each defective by the most serious defect it possesses.

**ITEM:** Chili Con Carne (CCC)

**NSN:** 8940-01-151-5462

**ITEM SPECIFICATION:** MIL-C-44244

**APPROXIMATE CALORIC VALUE PER SERVING:** 504

**CHARACTERISTICS OF ITEM:**

**APPEARANCE:** Thick mixture of cooked ground beef, tomato sauce and onion. May have a slight oiling off of fat. Color profile: Orange-red-brown.

**ODOR:** Slight to moderate chili spices, very slight cooked tomato.

**FLAVOR:** Slightly sweet, slight cooked tomato, cooked ground beef, slight to moderate chili spices, slight to moderate chili burn.

**TEXTURE:** Chewy ground beef in a thick sauce.

**ESTIMATED SHELF LIFE AT 70 DEGREES F:** 36 months

80 DEGREES F: 24 months

90 DEGREES F: 18 months

100 DEGREES F: 12 months

**EXPECTED DETERIORATIVE CHANGES:**

**APPEARANCE:** Slight to moderate oiling off; slight product darkening.

**ODOR:** Slightly bitter with a stronger spice and tomato odor.

**FLAVOR:** Product may exhibit some flavor loss.

**TEXTURE:** A slight thinning of the sauce may occur, with moderate oiling off of the fat. Ground meat may become chewy.

**UNIQUE EXAMINATION/TEST PROCEDURES:** None.

**SPECIAL NOTES:** Can is designed to yield 12 portions of 1 cup each (249 grams).

Figure 4-1. Example monograph.



f. **STEP 6: Determine if Special Inspection is Required.** Special inspection is required when any action number is reached/exceeded. If a special inspection is deemed necessary, go to Section V for procedures.

g. **STEP 7: Determine Disposition.**

(1) The condition code of a lot may only be downgraded based on special inspection results.

(2) If deemed necessary, samples may be submitted to the appropriate supporting laboratory. The lot will then be placed in Condition Code J pending results of the tests.

h. **STEP 8: Provide Results and Recommendations to Accountable Officer/Agency.**

(1) Input data to the appropriate Lotus Notes (LN) database, and provide a copy of the inspection report to Accountable Officer.

(2) If Lotus Notes (LN) access is not available, complete DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations, and provide a copy of the report to the Accountable Officer.

#### **4-3. SPECIAL INSPECTION OF UNITIZED GROUP RATIONS—HEAT & SERVE**

When a special inspection is performed, the inspector may choose to inspect all of the components in a module during the special inspection if he deems it necessary to ascertain the true condition of the lot. Otherwise, only the component(s) that exhibited the defects that initiated the special inspection will be inspected. All defective samples will be classified by the most serious defect they possess.

a. **STEP 1: Determine Lot Size.**

(1) Lot size is expressed as the total number of individual suspected defective components as determined during routine inspection (reached/exceeded action number).

(2) Each defective component will be inspected as a separate lot.

(3) To determine component lot size, you must determine which modules contain the defective component(s) utilizing inspection results. These modules will be the only modules selected for the special inspection.

**b. STEP 2: Determine Sample Size for Each Component and Select Sample Modules.**

(1) Sample size will be determined in accordance with Table B, Sample Criteria For Special Inspection of Shipping Containers (Nondestructive CPI), (Table 4-2) for container inspections or Table D, Sample Criteria For Special Inspection of Module Contents, (Table 4-4) for the module contents inspections.

(2) Inspect in accordance with applicable defect tables; Table F, Defects for Metal Trays (Table 4-6), Table G, Defects for Metal Containers Other Than Trays (Table 4-7), Table H, Defects for Plastic/Glass Containers (Table 4-8), Table I, Defects for Flexible Pouches (Table 4-9), Table J, Defects for Envelopes (Packets) (Table 4-10), and Table K, Defects for Nonfood Components (Tables 4-11).

(3) For special inspections, good sample representation of the lot is extremely important to help preclude unnecessary destruction. If routine inspection defects tend to be associated with a certain lot or lots, these should be inspected separately.

(4) The sample size for each component involved will normally dictate the minimum number of cases that must be selected for special inspections. The inspector may increase the number of cases from which samples are drawn for cogent reasons.

**c. STEP 3: Determine Disposition of the Lot.**

(1) If none of the Action Numbers are reached or exceeded, each module is considered to be fully useable and the Condition Code of the lot may remain unchanged.

(2) For each Action Number equaled or exceeded, determine the Condition Code of the lot. Refer to Table N, Condition Code Criteria Defects From Special Inspection Results (Components That Equal or Exceed an Action Number) (Table 4-14).

**d. STEP 4: Provide Results and Recommendations to Accountable Officer/Agency.**

(1) Input data to the appropriate Lotus Notes (LN) Unitized Group Ration – Heat & Serve (UGR – H&S) database and provide a copy of the inspection report to the Accountable Officer.

(2) If Lotus Notes access is not available, complete DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations (Figure 3-2) and provide a copy of the report to the Accountable Officer.

(3) If rations are placed in *less than condition code A* and not entered into the Lotus Notes database, notify DSCP-HSQ telephonically at (215) 737-7770/2911 (DSN 444).

#### 4-4. METAL TRAY PACK

a. When inspecting traycans for closed package defects, wipe the cans thoroughly with a cloth to remove dirt and debris that could hide corrosion defects such as gray spots. Turn the can under a bright light so that each view (top, bottom, side, and end) may be closely examined for closed package defects. Examine the tray can for vacuum defects.

b. Prior to opening the tray can for destructive open package inspection, completely heat the contents in accordance with the instructions on the can label. Should a product related defect be identified, record the defect after evaluation of the heated product to ensure the defect is genuine and not a normal characteristic of the unheated product. Wash out the can, if possible, and examine the interior for internal defects.

c. On the Defense Supply Center Philadelphia website <http://www.dscp.dla.mil/subs/support/qapubs/appb/aidsugr.htm> there is a visual aids main menu that contains illustrations of defects applicable to the examination of the exterior condition of filled metal food containers under the US Standards for Condition of Containers. They are intended for use as references by inspectors, graders, and others in interpreting and applying the Standards. Since the examination of such containers under the Standards also includes an examination of the can labels, illustrations of labeling defects are also included.

#### 4-5. DEFINITIONS AND CLASSIFICATIONS OF METAL TRAY PACK DEFECTS

a. **Gray Spots.** There are two distinct types.

(1) Internal. This type of gray spot is caused by internal corrosive factors. The corrosion begins when food product comes in contact with the inside surface of the base material through small breaks or scratches in the inner coating(s). In time, the corrosion continues through the metal and is observed as a gray to black spot. At this point, only the external epoxy coating covers the hole and precludes leakage. This form of corrosion is temperature and time dependent and leakers could result before expected product shelf life is exceeded.

(2) External. This type of gray spot is caused by external corrosion factors. The corrosion starts when physical damage (abrasions, nicks, and so forth) to the outer coatings expose the outer surface of the base metal to the atmosphere. At an appropriate temperature and relative humidity, corrosion can progress through the base metal and inner coatings to result in a leaker. This form of corrosion progresses slower than internal corrosion and should not result in leakers until the expected product shelf life has been exceeded.

**NOTE:** The two types of gray spots can be readily distinguished by probing with a pointed object, such as a dissecting needle. Cans with internal gray spots can be easily pierced or have little metal integrity remaining, while those with external gray spots will retain their structural integrity. However, isolated reports have been received where external gray spots (when gentle probing is applied) will make a slight indentation or depression in the base metal but will not penetrate the interior of the can. This has been observed in cans that were approaching or exceeded their expected shelf life. Consequently, gray spot defects will be classified as follows:

- (a) Gray spots that leak when probed (Major A defect).
- (b) Gray spots with weakened base metal (Major B defect).
- (c) Gray spots with no weakening of base metal (Minor defect).

**b. Vacuum Defects.**

(1) Flipper/loose lid. The lid has a wavy appearance and when the lid is depressed at one end, the other end will distend (Major A defect).

(2) Paneling. Is the deformation of the can at the bottom corners resulting from excessive mechanical vacuum during processing. Slight paneling is commonly found in some bakery type items and is not considered a defect. (Affects double seam – Major B defect; does not affect double seam–Minor defect).

**c. Swellers.**

(1) Hard swellers. Swelling of the tray pack can which distends the lid above the double seam (Major A defect).

(2) Soft swellers. Swelling of the tray pack can which distends the lid to the degree where a 12 inch straight edge, when placed on top of the lid, will rock back and forth over the distended lid and/or will evidence light under the ends of the straight edge (Major A defect).

**d. Pinhole.** A small hole penetrating entirely through the can (Major A defect).

e. **Rust.** Corrosion which exhibits the typical reddish brown coloration associated with ferrous material oxidation and in the opinion of the inspection activity cannot be classified as gray spot corrosion.

(1) Pitted rust. Rust that cannot be removed by rubbing with a soft cloth and has “pitted” the can surface (Major B defect).

(2) Rust stain. Rust that cannot be removed by rubbing with a soft cloth (Minor defect).

f. **Interior Defects.** These are identified on Open Package Inspections (OPI) by emptying the tray can, thoroughly washing and drying while taking care not to scratch the inner surfaces. Examine the interior visually for defects and use a magnifying lens to confirm and classify the defect.

(1) Fisheye (cratering). A film defect in the interior coating which resembles small, thinly coated craters (Minor defect).

(2) Blistering (solvent pop/flash). A blister-type defect in the coat caused by the release of trapped solvent during the cure process (Minor defect; Major B defect if pitted corrosion or rust is present).

g. **Other Defects.** Other defects will be classified in accordance with the inspection tables contained in this Appendix.

#### 4-6. INSPECTION TABLES

a. The Tables listed in this section are used to perform routine or special inspections.

b. Some of the Tables cannot be found in the Appendix B but can be accessed on the Internet.

c. If a Table has footnotes the underlined footnote number will be listed at the top of each Table and the actual footnote will be found at the bottom of the table.

**TABLE A Sampling Criteria For Normal Inspection of Shipping Containers (Nondestructive CPI)**

LOT SIZE (Modules)	SAMPLE SIZE (Modules)	ACTION NUMBERS		
		MAJ A	MAJ B	MINOR
50 or less	2	1	1	2
51-----500	3	1	1	2
501-----35,000	5	1	1	3
35,001-----or more	8	1	1	4

For use with Table E (Table 4-5)

Table 4-1. Sampling criteria for normal inspection of shipping containers (nondestructive cpi).

**TABLE B Sampling Criteria For Special Inspection of Shipping Containers (Nondestructive CPI)**

LOT SIZE (Modules)	SAMPLE SIZE (Modules)	ACTION NUMBERS		
		MAJ A	MAJ B	MINOR
150 or less	5	1	1	3
151-----1,200	20	1	2	8
1,201-----10,000	32	1	3	11
10,001-----35,000	50	1	4	15

For use with Table E (Table 4-4)

Table 4-2. Sampling criteria for special inspection of shipping containers (nondestructive cpi).

**TABLE C Sample Criteria For Normal Inspection of Module Contents**

LOT SIZE (Modules)	SAMPLE SIZE (Modules)	ACTION NUMBERS		
		MAJ A	MAJ B	MINOR
150 or less	5	1	1	3
151-----1,200	20	1	2	8
1,201-----10,000	32	1	3	11
10,001-----35,000	50	1	4	15

For use with Tables F - L (Tables 4-6 – 4-12)

Table 4-3. Sample criteria for normal inspection of module contents.

**TABLE D Sample Criteria For Special Inspection of Module Contents**

LOT SIZE (Modules)	SAMPLE SIZE (Modules)	ACTION NUMBERS		
		MAJ A	MAJ B	MINOR
150 or less	5	1	1	3
151-----1,200	20	1	2	8
1,201-----10,000	32	1	3	11
10,001-----35,000	50	1	4	15

For use with Tables F - L (Tables 4-6 – 4-12)

Table 4-4. sample criteria for special inspection of module contents.

**TABLE E DEFECTS FOR SHIPPING CONTAINERS**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Evidence of rodent or insect infestation on or in the shipping container.		501	
Container damaged, contents exposed or affected.		502	
Container damaged, contents not exposed or affected.			601
Essential markings a. Missing b. Illegible/Incorrect		503	602

Table 4-5. Defects for shipping containers.

**TABLE F Defects for Polymeric Trays**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Swollen Container	415		
Tear, crack, cut, hole, or if a multi-layered laminate is used, abrasion through more than one layer of the tray through the barrier (e.g. foil) layer of the lid material or leakage through any seal or surface	416		
Abrasion on the lid material within 1/16 inch of the food product edge of seal	417		
Closure seal not continuous along tray flange, surface	418		
Closure seal width less than 1/8 inch	419		
Foldover wrinkle extending into the seal such that the closure seal is reduced to less than 1/8 inch	420		
Presence of entrapped matter within 1/16" of the food product edge of seal or entrapped moisture or vapor within 1/16" of the food product edge of seal that results in less than 1/16" of defect free seal width at the outside edge /2	421		
Presence of delamination when a multi-layered laminate is used 1/3	422		
Unclean container		524	
Any impression or design on the seal surfaces which conceals or impairs visual detection of seal defects		525	
Presence of delamination when a multi-layered laminate is used 1/3		526	
Presence of delamination when a multi-layered laminate is used 1/3			622
Color does not contribute to woodland camouflage			623
Presence of any permanent tray body deformation, such that deformed area is discolored and roughened in texture			624
Presence of any seal defect or anomaly (that is: entrapped moisture, gases, and so forth) within 1/16" of food product edge seal /2			625

Table 4-6. Defects for polymeric trays.



**TABLE G Defects for Metal Containers Other Than Trays**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Closure incomplete, incorrect or not sealed, crimped or fitted properly		509	
<b>Corrosion Defects</b>			
a. Rust stain			609
b. Pitted rust		510	
<b>Dents</b>			
a. Materially affecting appearance but not affecting usability			610
b. Materially affecting usability		511	
<b>Buckled Containers</b>			
a. Not involving end seam			611
b. Extending into the end seam		512	
Collapsed container		513	
Swell, springer, or flipper (not Applicable to gas or pressure packed product)	407		
Leaker or blown container	408		

Table 4-7. Defects for metal containers other than trays.

**TABLE H Defects for Plastic/Glass Containers**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Closure not sealed, crimped, or properly		514	
Chip in glass			612
Broken or leaking container	409		

Table 4-8. Defects for plastic/glass containers.

**TABLE I Defects for Flexible Pouches**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Tear, hole, or open seal	410		
Swollen pouch	411		
Rupture of pouch when kneaded IAW the package instructions /1		515	
Not clean			613
Pouch exhibits delamination and ruptures when tested		516	
Objectionable odor		517	

1. Pouches exhibiting delamination in the body of the pouch will be examined for rupturing as follows: lay the pouch on a flat surface and apply moderate downward pressure with hands on both sides of the delaminated area. Pouches exhibiting delamination in the seal area will be examined as follows:

a. Test for spreading of the delamination by holding the pouch between the thumb and forefinger of each hand with the delaminated area located at the contact point between the thumbs and forefingers. Flex the delaminated area rapidly while exercising care not to tear the pouch with your fingernails.

b. Test for rupturing by laying the pouch on a flat surface and applying moderate downward pressure with one hand on the product side of the delaminated area.

2. The following shall be scored as minor defects if present within 1/16 inch of the food product edge of seal:

a. Small concave impressions or cavities indicating slight tray imperfections or hand particulates affixed to the seal head and contact the lid and tray.

b. Small (that is, 1/32 inch or less in any direction) convex bumps or points on the seal area indicating small imperfections on the seal head. NOTE: This anomaly is typically visible on successive trays coming off the heat sealer.

c. Minor impressions or scorching of the top layer of the lid material on the seal area indicating soft particulates on the seal head being “burned-off” during sealing.

**NOTE:** This anomaly is typically visible on successive trays coming off the heat sealer.

d. Areas of “wave-like” striations or wrinkles along the seal area indicating slight tray imperfection, improper lid tensioning, or vacuum release prior to lid cooling/setting.

e. Anomalies caused by entrapped moisture or vapor (which typically appear as concave spots on the tray flange surface) that result in less than 1/8" of defect free seal width at the outside edge of these spots.

### 3. Delamination Defect classification:

a. Major A—Evidence of outer ply delamination such that the adjacent ply in the lid body is exposed or evidence of multi ply delamination such that the food contact layer is exposed. Any evidence of outer ply delamination of the tray body or internal layer separation with the tray body due to, (for example) poor adhesion between layers.

b. Major B--Delamination of the outer ply in the lid seal area that can be propagated to expose the adjacent ply at the food product edge of the lid. The separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted in the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be scored as a Major B defect. Additionally, spot delamination of the outer ply in the body of the lid that can be propagated beyond its initial borders is also a Major B defect. To determine if the delaminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the tray and remove the contents. Cut the lid on opposing sides of the delaminated area not closer than 3/16 inch from the delaminated area. Hold the delaminated area between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise-counter clockwise directions. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted away from the lid surface or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. Any propagation of the delaminated area, evidenced by the delaminated area exceeding the limits of the outlined borders, shall be scored a Major B defect.

c. Minor—Minor delamination of the outer ply in the lid seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. Isolated spots of delamination in the body of the lid that do not propagate when flexed shall be classified as minor. Post-retort wrinkling of the outer ply in the lid seal area shall also be scored as a minor defect.

**NOTE:** Post-retort wrinkles of the outer ply are typically perpendicular to the flange direction, in a straight line, and extend from within the food product area to the outer edges of the lid.

Table 4-9. Defects for flexible pouches. (Concluded)

**TABLE J Defects for Envelopes (Packets)**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Tear, hole, or open seal		518	
Not clean			614
Objectionable odor		519	

Table 4-10. Defects for envelopes (packets).

**TABLE K Defects for Nonfood Components**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Damaged/torn/crushed materially affecting usability		521	
Nonfood Component Missing a. Partially/count not as specified b. Completely		524	622

Table 4-11. Defects for Nonfood Components.

**TABLE L DOPI Defects**

DEFECT	CLASSIFICATION(S)		
	MAJ A	MAJ B	MINOR
Evidence of rodent damage or insect infestation in product	412		
Product off-condition as evidenced by abnormal odor, color, flavor or texture suggesting contamination and/or premature spoilage for no apparent reason	413		
Foreign material present, affecting wholesomeness (that is, glass, metal, etc.)	414		
<b>Component missing</b>			
a. Partially/count not as specified			615
b. Completely		520	
Moderate to extreme texture, odor, color, or flavor change in a component not affecting wholesomeness (product unlikely to be consumed under conditions of intended use)		522	
Component fails to rehydrate or dissolve (extreme)		523	
Slight texture, odor, color, or flavor change in a component not affecting wholesomeness			616
Component fails to rehydrate or dissolve (slight to moderate)			617
<b>Internal container defects</b>			
a. Detinning			618
b. Flaking/scarring of enamel			619
c. Faulty coating (tray)			620
d. Damaged coating (tray)			621
e. Other			622

Table 4-12. DOPI Defects.

## **Table M Specific Defect Codes**

### **A. Insect/Rodent.**

- A1. Rodent, describe
- A2. Insect, describe
- A3. Other, describe

### **B. Packaging, Packing, Marking, Labeling, and Unitization.**

- B1. Essential case markings missing
- B2. Essential case markings illegible
- B3. Essential case markings incorrect
- B4. Essential labeling missing
- B5. Essential labeling illegible
- B6. Essential labeling incorrect
- B7. Pitted rust
- B8. Gray spots, leaks when probed
- B9. Gray spots, external, Base metal weakened
- B10. Gray spots, external, Base metal not weakened
- B11. Rust stains
- B12. Dents
- B13. Flat Tray (Low Vacuum)
- B14. Loose lid (Flipper)
- B15. Paneling—Affects double seam
- B16. Paneling— ot affecting seam
- B17. Incomplete/false seam tray closure
- B18. Hard sweller
- B19. Soft sweller
- B20. Leaker-pinhole
- B21. Leaker-blown/ruptured container
- B22. Leaker-seam area
- B23. Collapsed Container—other than Trays
- B24. Incomplete Closure—other than Trays
- B25. Swell, Springer, Flipper—other than Trays
- B26. Buckled containers—other than Trays
- B27. Chip in Glass
- B28. Broken or leaking Glass/Plastic Container
- B29. Tear, Hole, Leaker— lexible Pouches/Envelopes/Poly Trays
- B30. Swollen Flexible Pouch
- B31. Pouch Ruptures when kneaded
- B32. Unclean Pouches/Envelopes/Poly Trays
- B33. Delamination
- B34. Objectionable odor—Flexible Pouches/Envelopes
- B35. Damaged/Missing Food Components
- B36. Damaged/Missing Non-Food Components
- B37. Shipping Container Damaged, Contents Exposed
- B38. Shipping Container Damaged, Contents Not Exposed
- B39. Abrasion of Lid Material—Poly Trays

(Table M—Specific Defect Codes (cont.))

- B40. Foldover Wrinkles—Poly Trays
- B41. Seal Defect or Anomaly—Poly Trays
- B42. Tray Body Deformation—Poly Trays
- B43. Color not contributing to Woodland Camouflage—Poly Trays
- B44. Impression concealing Visual Detection of Seal Defects—Poly Trays
- B45. Other, describe

**C. Texture Changes.**

- C1. Too thick or pasty
- C2. Lumpy
- C3. Chewy/gummy
- C4. Mealy
- C5. Tough/stringy
- C6. Caked or hardened
- C7. Brittle
- C8. Crumbly, cracking
- C9. Excessively dry
- C10. Loss of crispness/soft/mushy
- C11. Curdled
- C12. Gritty/grainy
- C13. Spongy/rubbery
- C14. Syneresis (The contraction of a gel, or a homogeneous colloid system, when left standing, separates into two phases, a coherent gel and a liquid. An example is the separation or weeping of liquid from a gelatin mold when left sitting in a refrigerator too long.)
- C15. Liquefaction (passing from dry, solid, or semisolid to a liquid state.)
- C16. Caramelized
- C17. Watery gravy or product juices (probably due to product formulation and/or time-temperature abuse)
- C18. Honeycombing
- C19. Other, describe

**D. Odor Changes.**

- D1. Medicinal (vitamin-like)
- D2. Chemical odor (solvent-like; turpentine/paint like; etc.)
- D3. Fermented
- D4. Oxidized (hay-like)
- D5. Plastic-like
- D6. Scorched
- D7. Sulfur-like
- D8. Musty, moldy
- D9. Overripe
- D10. Green (i.e., not ripe)
- D11. Stale
- D12. Cardboard
- D13. Metallic

(Table M – Specific Defect Codes (cont.))

- D14. Soured
- D15. Putrid
- D16. Rancid
- D17. Acidic/vinegary
- D18. Loss of spice or product aroma
- D19. Ammonia
- D20. Other, describe
- E. Flavor Changes.**
  - E1. Loss of flavor (flat, bland, etc.)
  - E2. Chemical flavor (solvent-like, plastic-like, etc.)
  - E3. Medicinal (vitamin-like)
  - E4. Excessively salty
  - E5. Oxidized (hay-like)
  - E6. Bitter
  - E7. Burnt
  - E8. Soapy (hydrolytic rancidity)
  - E9. Musty, moldy
  - E10. Rancid
  - E11. Stale
  - E12. Fermented
  - E13. Earthy
  - E14. Tar, acidic
  - E15. Overripe
  - E16. Green (not ripe)
  - E17. Tobacco
  - E18. Sweet (perfume-like)
  - E19. Metallic
  - E20. Overprocessed/scorched
  - E21. Canned
  - E22. Putrid
  - E23. Sour
  - E24. Other, describe
- F. Appearance Changes.**
  - F1. Darkened
  - F2. Bloomed, blotchy (e.g., chocolate)
  - F3. Oily, oiled-off (Partial disintegration of an oil in water emulsion whereby a film, pockets, or droplets of oil form on the surface of the product or within the product.)
  - F4. Off-color (e.g., pink, off-white, reddish, green)
  - F5. Foreign Material affecting wholesomeness
  - F6. Other, describe

Table 4-13. Specific defect codes.



**TABLE N <sup>1/ 2/ 3/ 4/ 5/</sup> Condition Code Criteria Defects From Special Inspection Results (Components That Equal Or Exceed Action Number)**

CONDITION CODE A	CATEGORY		
	MAJOR A	MAJOR B	MINOR
Primary	0	0	1
Secondary	0	1	2
Ancillary	0	1	2
<b>CONDITION CODE B</b>			
Primary	0	0	2
Secondary	0	2	3
Ancillary	0	2	3
<b>CONDITION CODE C</b>			
Primary	0	1	3
Secondary	0	3	4
Ancillary	0	3	4
<b>CONDITION CODE J</b>			
Primary	1	2	N/A
Secondary	1	4	N/A
Ancillary	1	4	N/A

1/ Lots determined to be unwholesome will be classified Condition Code J until final disposition is made by the responsible veterinarian.

2/ Each column lists the maximum number of components allowed to equal or exceed an action number for that category.

3/ Each row lists the maximum number of components allowed to equal or exceed an action number by component classification.

4/ Compare the number of components from the inspection that equals or exceeds the special inspection action numbers for each category. If the number in any row/column intersection is exceeded, the lot must be downgraded to the next lower Condition Code.

5/ Components determined to be unwholesome will be classified Condition Code J and final disposition will be made by the responsible veterinarian.

Table 4-14. Condition code criteria for defects from special inspection results (components that equals or exceeds an action number).

**TABLE P Component and Classification List**

<b>COMPONENT</b>	<b>CODE</b>	<b>CLASS</b>	<b>MONOGRAPH</b>
<b>1. GENERAL</b>			
Apple Coffee Cake	ACC	PRIMARY	3A1
Apple Dessert	ADE	PRIMARY	3A2
Apple Jelly	JLA	SECONDARY	4A1
Applesauce	APP	SECONDARY	2A9
Applesauce; Semisolid	APS	SECONDARY	2A1
Bacon, Canadian Style, Cured, Smoked, Sliced in Brine	BCS	PRIMARY	1D3
Beef Chunks w/Noodles in Sauce	BCN	PRIMARY	1C5
Beef Patties in Broth	BPB	PRIMARY	1A2
Beef Stew	BST	PRIMARY	1A3
Beef Strips w/Green Peppers and Gravy	BGP	PRIMARY	1A4
Blueberry Dessert	BDE	PRIMARY	3A3
Bun, Hamburger	BUN	SECONDARY	3B8
Butterscotch Pudding	PCB	PRIMARY	3B9
Cake Yellow w/Choc Crumb Top	YCC	PRIMARY	3B7
Cake, Blueberry	BCA	PRIMARY	3A4
Cake, Choc w/Van Crumb Topping	CCV	PRIMARY	3B2
Cake, Chocolate Brownie	CBC	PRIMARY	3A5
Cake, Coffee w/Cin Crumb Topping	COC	PRIMARY	3B3
Cake, Marble	MCA	PRIMARY	3A6
Cake, Marble w/Toffee Crumb Top	CMT	PRIMARY	3B4
Cake, Pound	PCA	PRIMARY	3A7
Cake, Spice	SCA	PRIMARY	3A8
W/Vanilla Crumb Top	CSV	PRIMARY	3B5
Candy, Coated, Chocolate Disks	CCT	ANCILLARY	7B3
Catsup	CAT	ANCILLARY	7A1
Cheese	CSP	SECONDARY	4A2
Cherry Beverage Base	BBC	PRIMARY	6A1
Cherry Dessert	CDE	PRIMARY	3A9
Chicken Breasts In Gravy	CBG	PRIMARY	1B7
Chicken Chow Mein	CCM	PRIMARY	1B8
Chicken W/Veg in Teriyaki Sauce	CVT	PRIMARY	1C3
Chili Con Carne	CCC	PRIMARY	1A5
Chili wBeans	CWB	PRIMARY	1C4
Chocolate Pudding	CPU	PRIMARY	3B1
Cocoa Beverage Base	CBV	PRIMARY	6A2
Coffee	COF	ANCILLARY	7A8
Coffee, Instant, Flavored	CFI	ANCILLARY	7B8
Coffee, Inst, Freeze Dried	CFD	ANCILLARY	7A9
Coffee, Roasted, Ground	CRG	ANCILLARY	7B4
Corn, Whole Kernel	CWK	SECONDARY	2B2

<b>COMPONENT</b>	<b>CODE</b>	<b>CLASS</b>	<b>MONOGRAPH</b>
Corned Beef Hash	CBH	PRIMARY	1A6
Country Captain Chicken	CAP	PRIMARY	1A1A
Cranberry Sauce	CBS	SECONDARY	4A6
Cream Substitute	CRM	ANCILLARY	7A5
Creamed Gravy w/ Gnd Beef	SOS	PRIMARY	1A1
Devil's Fudge w/Coconut Crumb Top	DFC	PRIMARY	3B6
Eggs w/ Beef & Potatoes	EBP	PRIMARY	1A1B
Eggs w/Turkey Sausage & Potatoes	ETP	PRIMARY	1A1C
Fruit Cocktail w/Syrup	FCS	SECONDARY	2A2
Grape Beverage Base	BBG	PRIMARY	6A3
Grape Jelly	JLG	SECONDARY	4A3
Grape Juice, Instant	BGJ	PRIMARY	6A4
Green Beans	BGR	SECONDARY	2B1
Half Tray, Double Seam Can (Tray Pack Can)	TPC	N/A	AAA
Ham Slices in Brine	HSL	PRIMARY	1A7
Ham w/Spice Sauce	HSS	PRIMARY	1B9
Hominy Grits	HGQ	SECONDARY	5A7
Hot Pepper Sauce	HAS	ANCILLARY	7A2
Ice Tea Beverage Base	BBT	PRIMARY	6B1
Jam, Fruit Strawberry	SJM	SECONDARY	4A8
Lasagna/Meat Sauce	LAS	PRIMARY	1A8
Lemon-Lime Beverage Base	BLL	PRIMARY	6A8
Lemon Beverage Base	BBL	PRIMARY	6A7
Maple Syrup	MSY	SECONDARY	4A4
Mashed Potatoes w/Brown Gravy	MPG	PRIMARY	2A8
Meatballs in Brown Gravy	MGB	PRIMARY	1C1
Mustard, Prepared	MUS	ANCILLARY	7A3
Oatmeal, Apple/Cinnamon	OAC	PRIMARY	5A1
Oatmeal; Instant, Unflavored	OIU	PRIMARY	5A8
Oatmeal, Maple/Brown Sugar	OMS	PRIMARY	5A2
Oatmeal, Strawberry/Cream	OSC	PRIMARY	5A3
Omelet w/Bacon Pieces and Cheese	OBC	PRIMARY	1A9
Omelet w/Ham	OHM	PRIMARY	1B1
Omelet w/Sausage and Potatoes	OSP	PRIMARY	1B2
Omelet, Western Style	OWS	PRIMARY	1B3
Orange Beverage Base	BBO	PRIMARY	6A5
Orange Juice, Instant	BOJ	PRIMARY	6A6
Pasta & Ital Sausage in Tom Sauce	PST	PRIMARY	1D4
Peaches w/Syrup	PCS	SECONDARY	2A3
Peanut Butter	PBT	SECONDARY	4A5
Peanut Butter & Jelly Twin Packs	PBT	SECONDARY	4A7
Peas	PEA	PRIMARY	2B4
Peas & Carrots	P&C	PRIMARY	2B6

<b>COMPONENT</b>	<b>CODE</b>	<b>CLASS</b>	<b>MONOGRAPH</b>
Pears w/Syrup	PRS	SECONDARY	2A4
Pineapple; Chunks	PAC	SECONDARY	2B7
Pineapple, Slices	PAS	SECONDARY	2B8
Pink Lemonade Beverage Base	BBP	PRIMARY	6A9
Pork and Beans	P&B	PRIMARY	1C7
Pork Ribs, Boneless; Imitation	PRB	PRIMARY	1C2
Pork Sausage in Gravy	PSG	PRIMARY	1C6
Pork Sausage Links in Brine	PLS	PRIMARY	1B4
Pork Tamales	PTM	PRIMARY	1A1D
Potatoes, Diced in Butter Sauce	PDB	PRIMARY	2A5
Potatoes w/Bacon Pieces in Sauce	PBP	PRIMARY	1D5
Potatoes, White, Instant, Dehydrated	PWD	PRIMARY	2B3
Potatoes, Sweet Glazed	PGS	PRIMARY	2A6
Pudding, Canned, Vanilla	PCV	PRIMARY	3C1
Red Beans w/Rice and Bacon	BRB	PRIMARY	2A7
Relish, Pickle, Sweet	REL	ANCILLARY	7A4
Rice, Oriental Style	OSR	PRIMARY	5A5
Rice, White	RWH	PRIMARY	5A4
Salsa	SAL	ANCILLARY	7B5
Salt	SLT	ANCILLARY	7A7
Scrambled Eggs - w/Cheese	SEC	PRIMARY	1C8
Scrambled Eggs-Plain	SEP	PRIMARY	1C8
Soup, Dehydrated; Chicken/Noodle	SDN	ANCILLARY	7B1
Soup, Instant, Chicken/Noodle	SCN	ANCILLARY	7B2
Soy Sauce	SOY	ANCILLARY	7B6
Spaghetti w/Meatballs in Sauce	SMS	PRIMARY	1B5
Stove Top Stuffing	STS	SECONDARY	5A9
Stuffing, Shelf Stable, Cooked	BRS	PRIMARY	5A6
Sugar	SUG	ANCILLARY	7A6
Tea Bags, Black	TBB	ANCILLARY	7B7
Tray Pack Menu Modules	TMM	N/A	N/A
Tropical Fruit Salad	TFS	SECONDARY	2B9
Turkey Slices with Gravy	TSG	PRIMARY	1B6
Vegetable Lasagna	VLA	PRIMARY	1A1E
Vegetables, Mixed	VGM	PRIMARY	2B5
Waffles Apple/Cinnamon	WAC	PRIMARY	1D2
Waffles, Blueberry	WBB	PRIMARY	1D1
Waffles, Plain	WPL	PRIMARY	1C9

Table 4-15. Component and classification list.

**TABLE X - Contractor Abbreviations**

<b>CONTRACTOR</b>			<b>ABBREV</b>
ARC Diversified	Various		ARC
Barrios Distributing	Various	Distributor	BAR
Best Harvest Bakeries	Buns	Sub Contractor	BHB
Crystals International	Dehy Juices		CRY
Delisherries LTD	Bakery & Cookie Mixes		DEL
DeWafelbakkers, Inc.	Waffles		DEW
DDJC	Tracy Depot		TRA
DDSP	Mechanicsburg Depot		MEC
Enterprise Unlimited	Various	Distributor	ENT
Gossner Foods	UHT Milk	Sub Contractor	GOS
Imperial Sales	Various	Distributor	IMP
J.W. Holding	Buns	Prime Contractor	JWH
Mil-Ray Foods	Various	Distributor	MIL
National Industries for the Blind	Trash Bags		NBI
Pocono Produce	Various	Distributor	POC
SOPAKCO Mullins	Polymeric Tray Items		SOP
Stegner Foods	Polymeric Tray Items		SFP
Sterling Foods	Tray Pack Cakes		STR
The Wornick Company Cincinnati	Polymeric Tray Items		WCN
Touch of South	Hot Sauce		TOS
Vanee Foods Corp	Tray Pack Items		VEE
LC Industries	Dining Packets		LCI

Table 4-16. Contractor abbreviations.

#### 4-7. COMPLETION OF INSPECTION RECORDS

a. **Inspection Form.** All inspections (except turn-ins) will be entered into the Veterinary Command Lotus Notes Heat & Serve Inspection database. DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations, (figure 3-1) will be completed if inspectors do not have access to this database. Local reproduction of DSCP Form 5117 (Figure 3-1) is authorized.

b. **Instructions for Completion of DSCP Form 5117, Report of Inspection on \_\_\_\_\_ Operational Rations** (figure 3-1 front and back).

- (1) In the heading of the form, enter UGR H&S.
- (2) In Part I, Inspection Activity Information enter the following information:
  - (a) **Inspector:**—your name and rank
  - (b) **Section:**—your duty section
  - (c) **District:**—the title of your district or command
  - (d) **Date Of Inspection:**—self-explanatory
  - (e) **Branch:**—the title of your branch/squad
  - (f) **Region:**—the title of your region/major command
- (3) In Part II, Inspected Unit Information enter the following information:
  - (a) **Installation:**—the location of Unit (installation name)
  - (b) **Storage Location Of Rations:**—self-explanatory
  - (c) **Unit Name:**—the name of unit owning the rations
  - (d) **Rations Received From:**—the activity/facility/ company/ship from which the rations came
- (4) In Part III, Ration Assembler Information enter the following information:
  - (a) **Contract Number:**—N/A
  - (b) **Assembler:**—the name of company that assembled the rations, information is located on the case

- (5) In Part IV, Inspection Information enter the following information:
- (a) **Class of Inspection:**—receipt or surveillance
  - (b) **Type of Inspection:**—check appropriate block
  - (c) **Type of Inspection Lot:**—check appropriate block, for assistance see DSCPH 4155.2 Appendix B, Section II.B.2
  - (d) **Lot Size:**—list the Lot size in Modules
  - (e) **Lot Information:**—list all lot numbers represented, to include DOP and lot quantities (some modules use the DOP as the lot number, note this)
- (6) In Part V, Inspection Results enter the following information:
- (a) **Condition Code:**—check the Condition Code; see DSCPH 4155.2 Appendix B, Section I.H.8 for assistance (Table N) (Table 4-14)
  - (b) **Special Inspection Required:**—check appropriate block
  - (c) **Storage Condition:**—check appropriate block
  - (d) **Next Inspection Due:**—enter the date of the next required inspection
  - (e) **TTI Status:**— N/A
  - (f) **Storage Temperature:**—check the temperature range at which the Unitized Group Rations—Heat and Serve (UGR H&S) are normally stored
- (7) In Part VI, Sampling Plans enter the following information:
- (a) **Ration Component (Special Only):**—list the nomenclature of the items requiring Special Inspection only
  - (b) **Defect Table:**—list the defect examination tables used (Tables E, F, G, H, I, J, K, and L) (Tables 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, and 4-12)
  - (c) **Sampling Table:**—list the sampling tables used (Tables A, B, C, and D) (Tables 4-1, 4-2, 4-3, and 4-4) and action numbers
  - (d) **Sample Size:**—enter the sample size number from the sampling tables (Tables A, B, C, and D) (Tables 4-1, 4-2, 4-3, and 4-4)

(e) **Defect Class:**—list the defect class (i.e. MAJ A, MAJ B, and Minor) from sampling tables (Tables A, B, C, and D) (Tables 4-1, 4-2, 4-3, and 4-4)

(f) **Action Number:**—enter the action numbers from the sampling tables (Tables A, B, C, and D) (Tables 4-1, 4-2, 4-3, and 4-4)

(g) **Total Defects:**—indicate the total number of defects noted for each defect class

(h) **Defects By Component Classification:**—indicate the number of defects noted by the type of component (Table P) (Table 4-15)

**NOTE:** Table P, Component and Classification List (Table 4-15) can be found on the Defense Supply Center Philadelphia website at <http://www.dscp.dla.mil/subs/support/qapubs/appb/table-p.pdf> not in the DSCP Handbook 4155.2, Appendix B).

(8) In Part VII, Nonconformance Summary enter the following information:

(a) **Assembler Lot No.:**—list the lot number(s) affected

(b) **Menu No.:**—list menu number(s) affected (i.e. Bkfast Day 1 = B1)

(c) **Component & Code:**—component abbreviation (Table P) (Table 4-15) and Julian lot code from package

(d) **Component Processor:**—List the Contractor Abbreviation (Table X) (Table 4-16) that made the component

**NOTE:** Table X, Contractor Abbreviations (Table 4-16) can be found on the Defense Supply Center Philadelphia website at <http://www.dscp.dla.mil/subs/support/qapubs/appb/table-x.pdf> not in the DSCP Handbook 4155.2, Appendix B.

(e) **Defect Table:**—list the defect table used (Tables E, F, G, H, I, J, K, and L) (Tables 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, or 4-12)

(f) **Defect No.:**—list the defect number from the examination table (Tables E, F, G, H, I, J, K, and L) (Tables 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, or 4-12)

(g) **Defect Code:**—list the specific Defect Code (Table M) (Table 4-13)



(h) **Description of Defects/Remarks:**—write a short description of the defect found

(i) **Defect Tally:**—total number of defects noted by type of component and defect classification

(9) In Part VIII, Narrative Comments—Use this block for descriptive information concerning inspections results, storage conditions, insect/pest management, and issue/serviceability recommendations to the Accountable Officer.

(10) In Part IX, Signature Block—Self-Explanatory

**c. Distribution.**

(1) For Defense Logistics Agency (DLA) owned/controlled stocks, provide one copy of the LN UGR H&S database inspection report to the Accountable Officer.

(a) Copies of all reports not on the Lotus Notes database will be maintained in the local quality history files.

(b) Other distribution will be according to the directives of the responsible inspection agency and/or Military Service.

(2) For Service Controlled Stock one copy of each completed inspection report will be provided to the Accountable Officer and the inspection agency's Major Command (MACOM).

(a) Further distribution will be according to the directives of the responsible military service.

(b) Copies of packing lists will be forwarded only when requested.

(c) The addresses in figure 4-2 are provided to assist in report distribution:

<p><b>Air Force:</b> HSQ AFVSA/SVOHF 10100 Reunion Place Suite 401 San Antonio, TX 78216-4138</p>	<p><b>Navy:</b> Naval Supply Systems Command 5450 Carlisle Pike PO Box 2050 Mechanicsburg, PA 17055-0791</p>
<p><b>Army CONUS:</b> Commander AND U.S. Army Veterinary Command ATTN: MCVS-F 2050 Worth Road Suite 5 Ft. Sam Houston, Texas 78234-6005</p>	<p>Commander Defense Supply Center Philadelphia ATTN: DSCP-HR Building 6 700 Robbins Avenue Philadelphia, PA 19111-5092</p>
<p><b>Army Europe:</b> Commander AND 100th Medical Detachment (VS-HSQ) Attn: Food Safety Officer CMR 442 APO AE 09042</p>	<p>Commander Defense Subsistence Region Europe ATTN: HDSRE-Q APO AE 09052-4131</p>
<p><b>Army Korea:</b> Commander 106th Medical Detachment (VS) ATTN: EAMC-VS APO San Francisco 96301-0025</p>	<p><b>Army Japan:</b> Commander US Army Japan – IX Corps ATTN: AJHZ-VHSQ APO San Francisco 96343</p>
<p><b>Marine Corps:</b> HEADQUARTERS, USMC ATTN: LFS-4 Washington, D.C. 20380-1775</p>	

Figure 4-2. Addresses for reporting.

[Continue with Exercises](#)

## EXERCISES, LESSON 4

**INSTRUCTIONS.** The following exercises are to be answered by marking the lettered response that best answers the question, or by completing the incomplete statement, or by writing the answer in the space provided at the end of the question.

After you have completed all the exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers.

1. The first step when inspecting Unitized Group Rations, Heat & Serve is to determine the lot size?
  - a. True.
  - b. False.
  
2. When multiple pallets of Unitized Group Rations, Heat & Serve are warehoused in a storage facility they cannot be stacked more than \_\_\_\_\_ pallets high without the use of storage aids such as pallet racks/pallet sets.
  - a. Two.
  - b. Three.
  - c. Four.
  - d. Five.
  
3. Temperature history of the storage locations must also be considered when recommending final condition codes and dispositions.
  - a. True.
  - b. False.
  
4. While performing the inspection of shipping containers, evidence of rodent infestation is found. What is the defect number?  
  
\_\_\_\_\_

5. If, during a special Inspection, you found two secondary components that had Major B defects, in accordance with Table N, what would your condition code be?
  - a. A.
  - b. B.
  - c. C.
  - d. H.
  
6. The Unitized Group Rations, Heat & Serve sample unit is always one complete module.
  - a. True.
  - b. False.
  
7. While performing the inspection of shipping containers, evidence of rodent infestation is found. What is the defect classification?  
\_\_\_\_\_
  
8. While performing the inspection of shipping containers, evidence of rodent infestation is found. What is the specific defect code?  
\_\_\_\_\_
  
9. Grand lotting is encouraged to \_\_\_\_\_.
  
10. Which type of lotting procedure will not be used if performing a warranty inspection or if a lot is suspected of having wholesomeness deficiencies?
  - a. Assembler's lot.
  - b. Grand lot.
  - c. Contractor's lot.

11. When picking your sample for a normal inspection, you should select cases with obvious damage.
- a. True.
  - b. False.
12. If tampering or pilferage is suspected, whom should the inspector contact?
- a. DSCP.
  - b. Commander.
  - c. Supervisor.
  - d. OIC.
13. What does CPI stand for?
- 
14. While performing a normal closed package inspection on Unitized Group Rations, Heat & Serve, what table do you use to examine packets?
- a. Table D.
  - b. Table E.
  - c. Table F.
  - d. Table J.

15. While performing a normal destructive open package inspection (DOPI) on Unitized Group Rations, Heat & Serve, what table do you use to examine the contents of a #10 can?
- a. Table D.
  - b. Table F.
  - c. Table G.
  - d. Table L.
16. When inspecting Unitized Group Rations, Heat & Serve, record only the most serious defect for each unit of product. It is unnecessary to record lesser defects.
- a. True.
  - b. False.
17. While performing a normal surveillance inspection of Unitized Group Rations, Heat & Serve, what table is used to determine the sample size and action numbers for the destructive open package inspection (DOPI) of the module components?
- a. Table A.
  - b. Table C.
  - c. Table D
  - d. Table L
18. The condition code of a lot may only be downgraded based on the results of a special inspection.
- a. True.
  - b. False.
19. The two types of gray spots are considered \_\_\_\_\_ and \_\_\_\_\_.

20. A gray spot that leaks when probed is considered:
- a. Major A.
  - b. Major B.
  - c. Minor.
  - d. Critical.
21. Can DSCP Form 5117 be reproduced locally?
- a. Yes.
  - b. No.
22. The specific defect code C4 means what defect?
- \_\_\_\_\_
23. Which table would be used to find the specific defect code C4 and its meaning?
- \_\_\_\_\_
24. What is your sample size when performing a destructive open package inspection (DOPI) of 502 Unitized Group Rations, Heat & Serve modules?
- \_\_\_\_\_
25. While performing a destructive open package inspection (DOPI) of 502 Unitized Group Rations, Heat & Serve modules what are the action numbers?
- \_\_\_\_\_

26. You have been tasked to perform a normal in-storage inspection of 1,000 Unitized Group Rations, Heat & Serve. What will your sample size be for a nondestructive closed package inspection of the shipping containers?
- a. 3 modules.
  - b. 5 modules.
  - c. 20 modules.
  - d. 32 modules.
27. If a component has been determined to be unwholesome, which condition code would be assigned?
- a. C.
  - b. H.
  - c. J.
  - d. L.
28. All inspections including the turn-in of Unitized Group Rations, Heat & Serve will be entered into the Veterinary Command Lotus Notes Heat & Serve Inspection database.
- a. True.
  - b. False.

**Check Your Answers on Next Page**



## **SOLUTIONS TO EXERCISES, LESSON 4**

1. b (para 4-2a)
2. a (para 4-2a(2)(a))
3. a (para 4-2a(3))
4. 501 (Table 4-5)
5. b (Table 4-14)
6. a para 4-2b(1))
7. Maj B (Table 4-5)
8. A1 (Table 4-13)
9. conserve resources (para 4-2b(4))
10. b (para 4-2b(4))
11. b (para 4-2c(1))
12. c (para 4-2c(3))
13. Closed Package Inspection (para 4-2d)
14. d (para 4-2d(3) & Table 4-10)
15. c (para 4-2d(3) & Table 4-7)
16. b (para 4-2e(4))
17. b (para 4-2e(1) & Table 4-3)
18. b (para 4-2g(1))
19. Internal and external (para 4-5a(1) & (2))
20. a (para 4-5a(2)(a))
21. a (para 4-7a)
22. Mealy (Table 4-13)

23. Table M (Table 4-13)
24. 5 (Table 4-3)
25.  $1/1/3$  (Table 4-3)
26. b (Table 4-1)
27. c (Table 4-14 footnote 5)
28. b (para 4-7a)

End of Lesson 4