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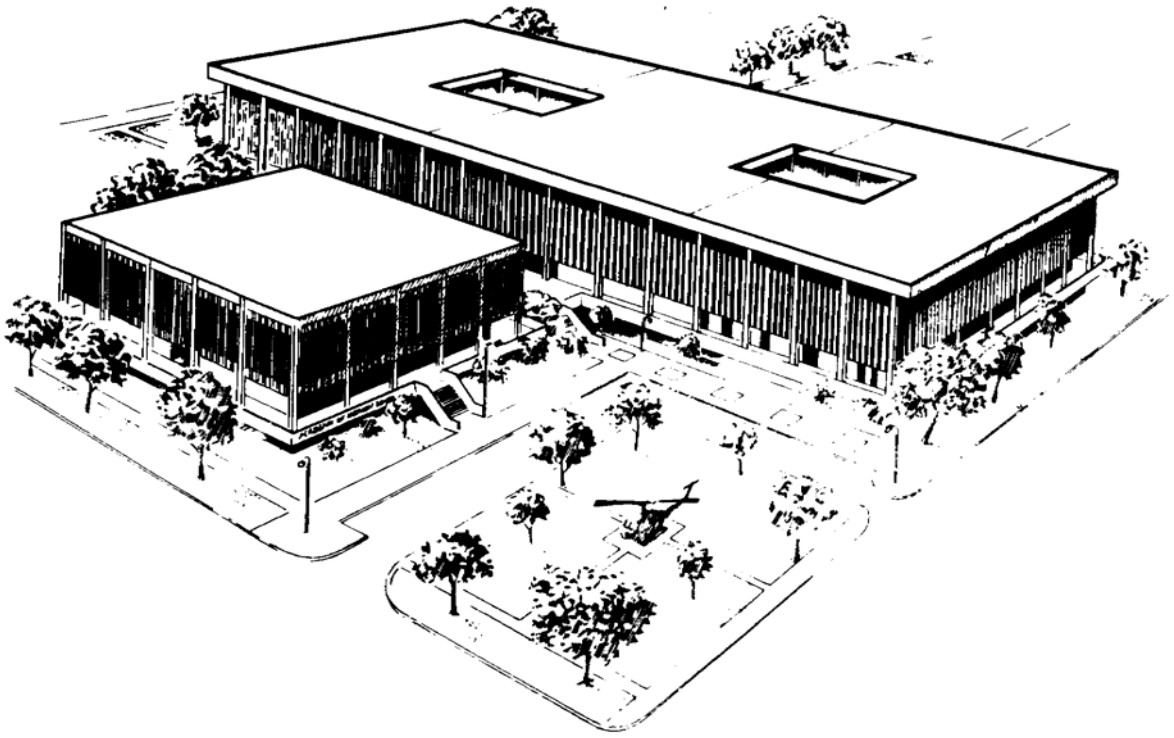

BASIC FOOD INSPECTION PROCEDURES

SUBCOURSE MD0694 EDITION 200

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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 MD0694

BASIC FOOD INSPECTION PROCEDURES

INTRODUCTION

Disease has caused far greater losses of manpower during past military operations, than have direct combat deaths. During the Civil War 199,720 soldiers died of diseases compared to 138,154 battlefield deaths. World War II and the Korean, Lebanon, and Vietnam conflicts records show 15,828,940 disease casualties as opposed to 640,254 combat casualties. The control or prevention of disease is the responsibility of each soldier. By practicing proper personal hygiene, food and water sanitation, waste disposal, and control of insects and rodents, disease can be kept to a minimum.

Subcourse Components:

This subcourse consists of 6 lessons. The lessons are as follows:

Lesson 1, Classes of Inspection.
Lesson 2, Stamping Procedures.
Lesson 3, Warehouse Procedures.
Lesson 4, Measurement of Product Temperature.
Lesson 5, Inspection of Conveyances/Carriers.
Lesson 6, Inspection of Product

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 15 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	Categories of Inspection.
TEXT ASSIGNMENT	Paragraphs 1-1 through 1-5.
LESSON OBJECTIVES	After completing this lesson, you should be able to:
	1-1. Identify the three categories of veterinary food inspection.
	1-2. Identify when each category of inspection would apply.
SUGGESTION	After studying the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.

LESSON 1

CLASSES OF INSPECTION

1-1. CATEGORIES OF INSPECTION

There are three categories of food inspection. Within each category there are circumstances that apply to that particular category. We, the veterinary food inspection specialist, must know our role and carry out our responsibilities in each category. The categories of inspection are:

a. Category I--origin acceptance inspections.

b. Category II--receipt inspections.

c. Category III--surveillance inspections

1-2. CATEGORY I--ORIGIN ACCEPTANCE INSPECTIONS

Origin acceptance inspections are done at the facility of the commercial contractor. The types of inspection performed are antemortem and postmortem:

a. **Antemortem Inspections.**

(1) Antemortem inspections are performed on all food animals (that is, cattle, swine, and poultry) before slaughter. The inspector looks at the live animals or poultry (visual inspection) to observe and detect any evidence of disease or injury that would make the meat unacceptable for human consumption.

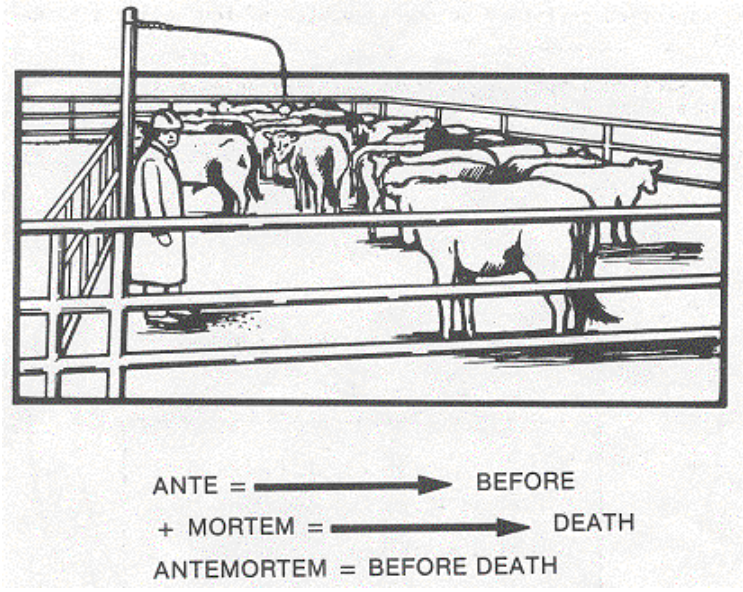


Figure 1-1. A veterinary inspector performs antemortem inspection.

(2) In the United States (US), employees of the United States Department of Agriculture Food Safety Inspection Service, (USDA-FSIS) usually perform antemortem inspections. In overseas areas, these inspections are often performed or supervised by US Army Veterinary Services personnel.

b. **Postmortem Inspections.**

(1) Postmortem inspections are performed immediately after slaughter. The inspector examines the head, viscera, and carcass for diseased conditions that would make the meat unfit for human consumption.

(2) In the US, employees of the USDA-FSIS usually perform postmortem inspections. In overseas areas, these inspections are often performed or supervised by US Army Veterinary Service personnel.

Figure 1-2. Head inspection.

Figure 1-3. Carcass inspection.

Figure 1-4. Viscera inspection.

c. **Antemortem and Postmortem Inspection Policies**

(1) Domestic animals (including pen-raised game) slaughtered for use by the Armed Forces will have antemortem and postmortem inspections performed.

(2) Wild game mammals or wild game birds for resale or use in troop messes, clubs, or other military food-serving facilities will have a postmortem inspection performed by a veterinarian.

(3) Animals used for survival training are exempt from Category 1 inspections, however any animal slaughtered for consumption by the Armed Forces must comply with the Humane Slaughter Act.

(4) Commanders overseas will provide veterinary personnel to supervise antemortem and postmortem inspections of all food animals slaughtered for the Armed Forces.

d. **In-Plant Inspections.** These plants include ration assembly plants and food processing plants. These inspections include examining and testing of food in the plants and processing areas to ensure that they are:

(1) Wholesome

(2) Unadulterated

(3) Fit for intended purpose

(4) Do not pose a danger to public health

(5) Are not in violation of contractual requirements.

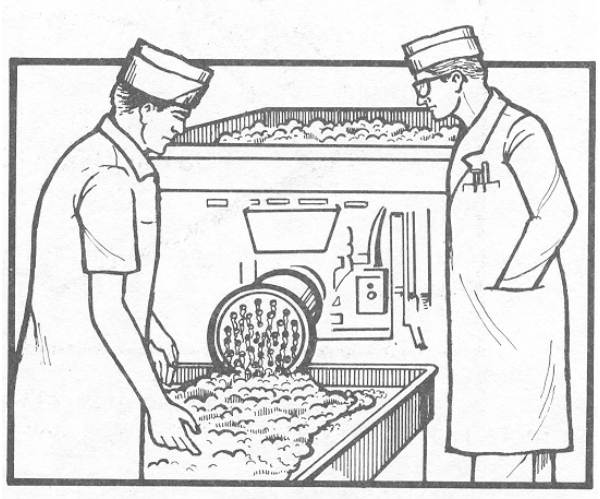


Figure 1-5. In-process inspection.

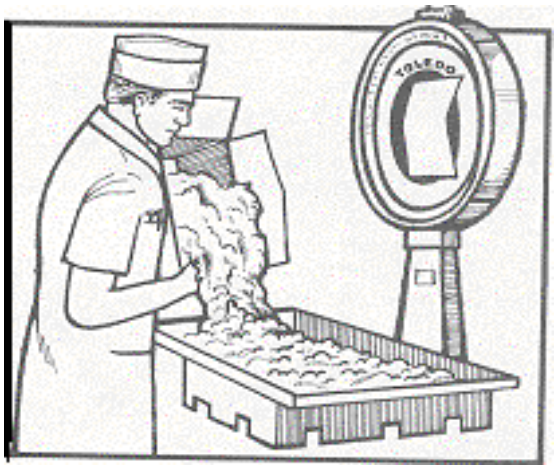


Figure 1-6. End item inspection.

(6) These inspections also protect the financial interests of the government and non-appropriated funds activities nonappropriated funds (NAF) facilities (that is, clubs, bowling alleys and snack bars) by determining if the quality factors comply with procurement requirements. Furthermore, the inspections also ensure the product is produced in a sanitary environment.

1-3. CATEGORY II--RECEIPT INSPECTIONS

a. **On Delivery at Purchase Inspections.** These inspections are performed when the food items are delivered to the Armed Forces (that is, commissaries and NAF facilities and inspected to ensure they comply with the following requirements:

(1) Approved sources.

(2) Sanitation.

(3) Wholesomeness.

(4) Condition.

(5) Quality factors.

b. **Receipt Inspections**. The receipt or "destination inspection" is the last inspection before ownership of the food products is transferred to the government. The final recommendation to the receiving officer to accept or reject the food item will be based on this inspection.

c. **Rejections**. Only the medical authority can reject unwholesome foods and sign certificate of unfitness. When a Veterinary Corps Officer (VCO) or a Warrant Officer/Chief Warrant Officer (WO/CWO) is not available to sign, a senior noncommissioned officer (NCO) can sign. Rejected food in any category of inspection for unwholesomeness, or in violation of federal/state regulations, will be reported through the chain of command and eventually to the Government Agency with jurisdiction over that product.

d. **Any Receipt Except Purchase Inspections.** These inspections are performed on any product received from other government and Department of Defense (DOD) agencies to include commercial contractors where the product has already been inspected. *(Key point – the product is already "government owned").* These inspections are performed to:

(1) Detect any transit damage

(2) Make recommendations on keeping qualities and warehousing requirements

(3) Detect faulty handling and transportation to prevent future loss

(4) Verify origin inspection results on shipments received from a vendor

(5) Detect nonconforming products within the warrantee period

e. **Overseas Receipt Inspections**. Overseas receipt inspections are unique. When a contractor ships directly overseas, the product is not normally inspected prior to shipment, but it becomes *"Government owned"* from the place it is shipped (port of embarkation). The product must be given a receipt inspection for contractual compliance upon arrival at its overseas location (outside of the continental United States (OCONUS)).

f. **Nonanimal Semiperishables**. Nonanimal origin semi-perishable foods are not normally inspected (that is, sugar, salt, coffee), but if the purchasing agency files a request or certain circumstances exist, the inspection will be performed. Infestable product will be inspected in accordance with (IAW) MIL-STD 904, Guidelines for Insect Infestation of Subsistence.

g. **Prime Vendor Program**. The prime vendor program is a direct delivery system. The contractor delivers fresh product several times a week and usually delivers directly to dining facilities, galleys, and other places where the program is in place. Veterinary personnel are not required to inspect the product upon arrival, but will randomly inspect products after they are placed into storage, however they are subject to inspection at receipt if requested or if a problem is identified. Since the product is normally inspected while in storage, this type of inspection is classified as "Any receipt except purchase" and not "On delivery at purchase".

h. **Exceptions to Receipt Inspections:** Veterinary personnel <u>will not provide final recommendations</u> for food received during the following situations:

(1) At United States Naval (USN) activities where veterinary personnel are not assigned. These inspections will be conducted by the USN Food Service Officer or personnel designated by the Commander.

(2) At United States Air Force (USAF) installations, they have their own food inspection/public health personnel.

1-4. CATEGORY III--SURVEILLANCE INSPECTIONS

a. These inspections are made to determine if government-owned foods are wholesome and suitable for further storage, shipment, issue, sale, and consumption in accordance with AR40-656, Veterinary Surveillance Inspection of Subsistence. Factors to be considered when making decisions are:

(1) Evidence of actual or potential deterioration or spoilage due to contamination (naturally or intentional) by microorganisms or their toxins

(2) Exposure to chemicals, radioactive materials, or other foreign toxins

(3) Suitability of the item for the purpose intended

(4) Aesthetic considerations

(5) Rodent and/or insect infestation

b. Veterinary personnel will conduct surveillance inspections at DA (Department of the Army) and DN (Department of the Navy) installations, storage facilities, ships, and other activities (that is, clubs and bowling alleys). Types of surveillance inspections include:

(1) Prior to shipment inspections. Prior to shipment inspections are those inspections performed on government-owned subsistence prior to being shipped or transferred from one installation to another or from one accountable officer to another these inspections prevent wasted labor, transportation costs, and the possible shipment of deteriorated subsistence. It ensures the product will be suitable for intended purpose upon arrival.

(2) At issue or sale inspections. At issue or sale inspections are those inspections performed on government-owned foods at time of issue to:

(a). Troop dining facilities

(b). Other Government dining facilities or messes

(c) After receipt but before sale of foods in commissary stores/retail facilities

(3) In-storage inspections. In-storage inspections are those inspections that are:

(a) Performed to detect early signs of deteriorating food

(b) Performed on all infestable items to include pet food

(c) Performed routinely at the commissary, however the product is usually sold before the inspection is needed

(d) Performed on temporary or permanent closure of dining facilities, decommissioned ships, ships with overhauls and ships in emergency repair status.

c. Requirements for at issue or sale inspections may be based on problems identified during the receipt inspection, other surveillance inspections, and/or requested by the accountable officer. Enough samples will be inspected to assure that no contaminated, decomposed, or unwholesome food is to be issued or sold. Also, all outdated or stressed foods will be inspected. Samples may be sent to the laboratory for testing and final recommendation.

d. In-storage inspections will be performed on all USArmy, USN (ashore and afloat), Marine Corps, and DLA installations, depots, and activities. Nonappropriated funds and club systems should be inspected when in the best interest of the government and/or requested by the accountable officer. Under the prime vendor system, the product is already in storage and a compliance inspection will be performed.

e. If the product is found to be unwholesome or unfit for intended use, a Certificate of Unfitness will be utilized. However, if the food is wholesome, but not fit for intended use, a Certificate of Serviceability may be administered. This document is utilized when the food still possesses some value (that is, animal food, soap, fertilizers or other by products).

f. Reporting of surveillance inspections will be IAW regulations cited in AR 40-657 and directives issued by agencies (such as DLA, DSCP, DeCA, and Exchange Service).

1-5. SUMMARY

Knowing and understanding the categories of inspection is an important role in the performance of the 91R MOS (Veterinary Food Inspection Specialist). The inspector must be able to identify when an inspection is required, what kind of inspection is needed and how/who to report their findings. Moreover, a thorough understanding of this material will prepare you for the subsequent lessons in this course.

Continue with Exercises

EXERCISES, LESSON 1

INSTRUCTIONS: The following exercises are to be answered by marking the lettered response that BEST answers the question or BEST completes the incomplete statement or by writing the answer in the space provided.

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

1. The ANTEMORTEM and POSTMORTEM inspections are in Category _____ inspections.

2. The inspection performed before slaughter of food animals is called a(n)

   _____ inspection.

3. The inspection performed immediately after slaughter of food animals is called a(n)

   _____inspection.

4. The three categories of inspection are:

   _____

   _____

   _____

5. What other agency also performs (Category I) inspections in the United States?

   _____

6. What agency is responsible for (Category I) inspections overseas?

   _____

7. Name 5 things inspectors at processing plants are looking for:

_____

_____

_____

_____

_____

8. Name three NAF activities:

_____

_____

_____

9. Name two Category II inspections.

_____

_____

10. Food delivered to the Armed Forces is inspected to assure compliance with?

_____

_____

_____

_____

11. Fill in the blanks

    The _____ inspection is the last inspection before_____

    of the _____products is _____ to the _____ and the

    final_____ to the receiving officer to _____ or _____

    food items will be based on this inspection.

12. If an inspector is doing a receipt inspection of government owned product, what kind of inspection are they performing? _____

13. What are the purposes of performing a receipt inspection of government owned product?

    _____

    _____

    _____

    _____

    _____

14. What products are not normally inspected during a receipt inspection?

    _____

    _____

    _____

15. Do US Army veterinary personnel inspect subsistence on USAF bases?

    _____.

16. What do surveillance inspections determine?

_____, _____,_____,_____,_____

17. Name five factors to be considered when making decisions during a surveillance inspection:

_____

_____

_____

_____

_____

18. Name the three types of surveillance inspections:

_____

_____

_____

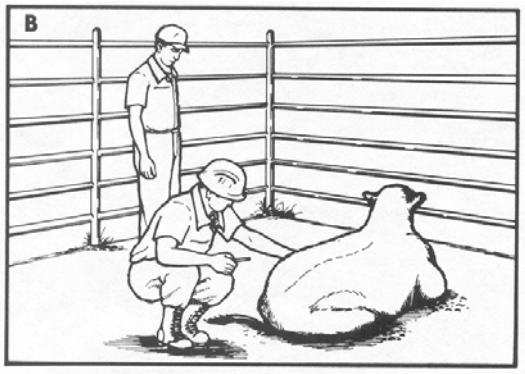
19. What kind of certificate is issued if the product inspected is wholesome, but is not fit for intended use and may be used for animal food, soaps, and fertilizer.

_____

20. Below are a series of illustrations with additional information. Each depicts one of the three categories of veterinary food inspection. Write the name and category of inspection being performed on the blank line.

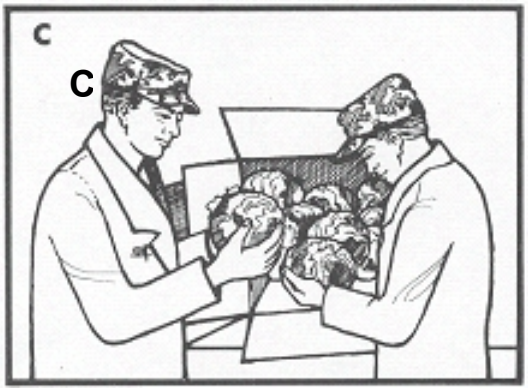
Government-owned supplies being inspected before shipment to another installation.

_____
(Name and category of inspection)



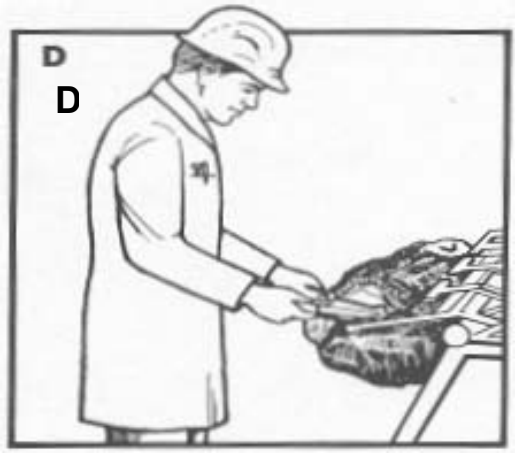
Live animal being inspected before slaughter.

_____
(Name and category of inspection)



Inspection of foods upon arrival from one commissary to another commissary

_____
(Name and category of inspection)



An inspector examines a beef head immediately after slaughter.

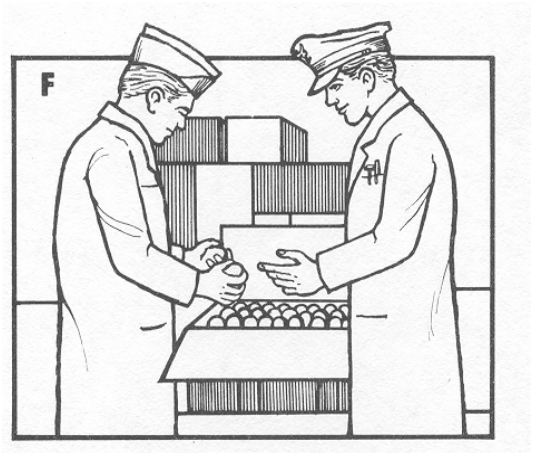
_____

(Name and category of inspection)

These are contractor-owned food supplies being inspected at origin.

_____

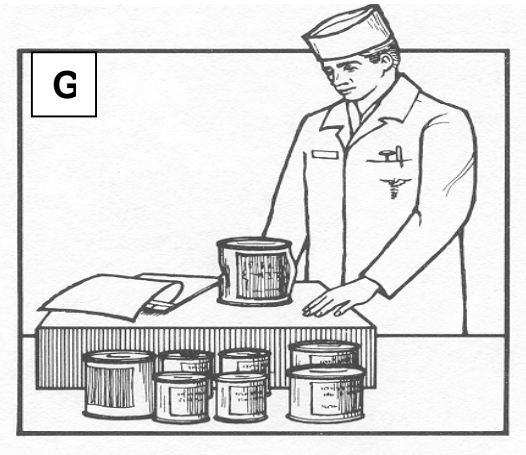
(Name and category of inspection)



Government-owned food received directly from contractor.

_____

(Name and category of inspection)



Inspection of government-owned foods stored in a commissary.

_____

(Name and category of inspection)

Contractor-owned eggs being inspected at time of delivery at a military installation.

_____

(Name and category of inspection)

Check Your Answers on Next Page

SOLUTIONS TO EXERCISES, LESSON 1

1. Category I (para 1-2a)

2. Antemortem (para 1-2a(1))

3. Postmortem (para 1-2b(1))

4. Category I, Origin Acceptance Inspection
   Category II, Receipt Inspections
   Category III, Surveillance Inspections (para 1-1)

5. United States Department of Agriculture (para 1-2b(2))

6. United States Military (Veterinary Services) (para 1-2b(2))

7. Wholesome
   Unadulterated
   Fit for intended purpose
   Do not pose a danger to public health
   Are not in violation of contractual requirements (paras 1-2d(1) through (5))

8. Officers Mess
   Noncommisioned Officer Club
   Snack Bar (para 1-6d(6))

9. On Delivery at Purchase
   Any Receipt Except Purchase (paras 1-3a, d)

10. Approved Sources
    Sanitation
    Wholesomeness
    Condition
    Quality factors (paras 1-3a(1) through (5)).

11. Destination, ownership, food, transferred, government, recommendation, accept, reject (para 1-3b)

12. Category II, Any Receipt Except Purchase (para 1-3d)

13. Detect any damage during transit
    Make recommendations on keeping qualities and warehousing requirements
    Detect faulty handling and transportation to prevent future loss
    Verify origin inspection results on shipments received directly from vendor
    Detect nonconforming products within the warranty period
    (paras 1-3d(1) through (5))

14. Sugar, Salt, Coffee (para 1-3f)

15. No, they have their own food inspectors/public health personnel. (para 1-3h(2))

16. Wholesome and suitable for further storage, shipment, issue, sale, and consumption (para 1-4a)

17. Evidence of actual or potential deterioration or spoilage due to contamination (naturally or intentional) by microorganisms or their toxins.
An exposure to chemicals, radioactive materials, or other foreign toxins.
Suitability of the item for the purpose intended.
Aesthetic considerations.
Rodent and/or insect infestation. (paras 1-4a(1) through (5))

18. Prior to Shipmen
At Issue or sale
In-Storage (paras 1-4b(1) through (3))

19. Certificate of Serviceability (para 1-4e)

20. Categories of inspection:

    a. Category III. Prior to Shipment (Surveillance) (para 1-4b(1))
    b. Category I. Antemortem (Origin) (para 1-2a(1))
    c. Category II. Any Receipt Except Purchase (Receipt) (para 1-3d)
    d. Category I. Postmortem (Origin) (para 1-2b)
    e. Category I. In-plant (Origin) (para 1-2d)
    f. Category II. Any Receipt Except Purchase (Receipt) (para 1-3d))
    g. Category III. At Issue or sale (Surveillance) (para 1-4(b)(2))
    h. Category II. On Delivery at Purchase (Receipt) (para 1-3a)

If you would like to broaden your knowledge--and reinforce what you have learned from this lesson--read AR 40-657, Veterinary/Medical Food Inspection and Laboratory Service.

End of Lesson 1

LESSON ASSIGNMENT

LESSON 2	Stamping Procedures.
TEXT ASSIGNMENT	Paragraphs 2-1 through 2-8.
LESSON OBJECTIVES	After completing this lesson, you should be able to:

2-1. Identify the types of DOD inspection stamps.

2-2. Identify the identification and dating information on a stamp impression.

2-3. Identify the procedures for stamping inspected subsistence using a DOD PIA or CIA stamp.

2-4. Identify actions required to maintain security of DOD inspection stamps.

SUGGESTION After studying the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.

LESSON 2

STAMPING PROCEDURES

2-1. INTRODUCTION

Official DOD inspection stamps are used worldwide to show that a product has been inspected. By using the inspection stamps, veterinary food inspection personnel are accepting responsibility for a food product (subsistence) until it is consumed. Authorization to use inspection stamps is limited to the government inspector or to personnel under his or her supervision. This lesson provides guidance concerning the use of DOD inspection stamps. Detailed, official guidance is found in TB MED 263.

2-2. IMPORTANCE OF IDENTIFYING INSPECTED FOOD PRODUCTS (SUBSISTENCE)

Uniform interservice and intraservice methods and procedures for identifying food products (subsistence) that have been inspected for the Armed Forces are important for the following reasons:

a. To indicate the inspection status of food products at every stage during processing or shipment.

b. To prevent the acceptance by the government of food products which have not been inspected.

c. To prevent the acceptance by the government of food products which do not conform to contract requirements.

d. To prevent rejection of food products which can be safely used.

e. To clearly indicate the inspection status of food products to accountable and responsible receiving or property officers, and to inspectors.

f. To provide means of relating time of inspection and the name of the inspector to specific lots or shipments of food products.

2-3. TYPES OF DEPARTMENTOF DENFENSE STAMPS

There are two types of DOD inspection stamps available for use by the veterinary food inspection specialist, the origin and the receipt inspection stamps. The two stamps used in connection with procurement inspections are the partial inspection approval (PIA) stamp and the complete inspection approval (CIA) stamp.

a. **Partial Inspection Approval Stamp**. The partial inspection approval **(**PIA) impression stamp is characterized by a circle surrounding an eagle in the center of the stamp (figure 2-1). As is implied by its name, further inspection is required on the food product. The PIA stamp is used on ***category I****, (at origin)* inspections. The PIA stamp does not indicate that the food products have been accepted by the government. The PIA indicates that the product meets specific contractual requirements.

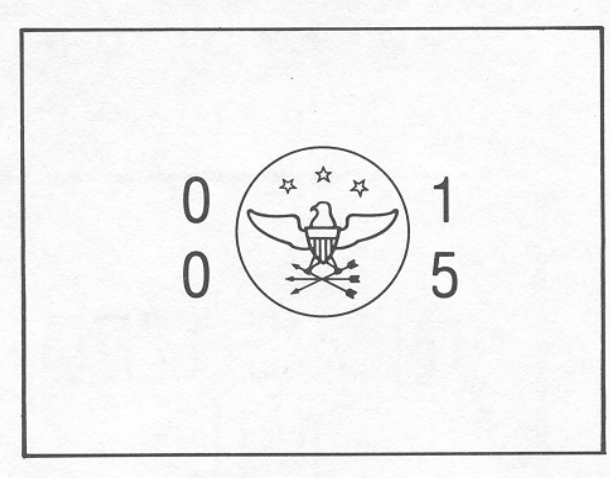


Figure 2-1. Partial inspection approval stamp.

b. **Complete Inspection Approval Stamp**. The CIA stamp has a square design surrounding an eagle in the center of the stamp (figure 2-2). This is easily distinguished from the PIA stamp, which has a circular design. The name of the stamp indicates that the inspection is complete and that the food has been accepted by the government. The CIA stamp is used on ***receipt inspections***, **(Category II)** on delivery at purchase inspections. The CIA stamp is used during the final inspection of the food product prior to transfer of ownership from the contractor to the government. Acceptance on behalf of the government is normally accomplished by placing the CIA stamp impression on the contractor's manifest or invoice, which accompanies delivery of the food product.

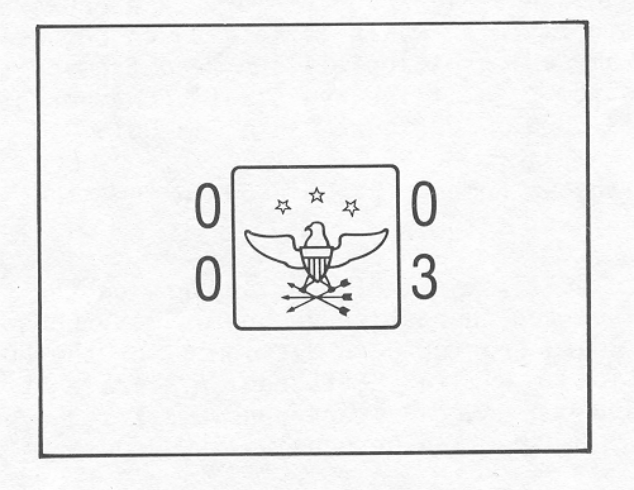


Figure 2-2. Complete inspection approval stamp.

2-4. PREPARING A PARTIAL INSPECTION APPROVAL/COMPLETE INSPECTION APPROVAL DEPARTMENT OF DEFENSE INSPECTION STAMP FOR USE

a. Department of Defense PIA and CIA inspection stamps have blank spaces where rubber numbers can be inserted.

b. When given a blank DOD PIA or CIA procurement stamp, the registration number of the stamp is located on both sides of the center design. The stamped impression will be read from bottom left to top left, to top right to bottom right. The registration number of the four-stamp impression in figure 2-2 and 2-3 is 0003. In igure 2-1 it is 0015.

c. The rubber numbers are placed in the stamp in accordance with the following guidance.

(1) The first set of four numbers on the top line above the DOD insignia indicates the Inspection Responsibility Code (IRC). Inspection Responsibility Codes are found in Section II of the HQDA (DASG--VCP) letter, subject: Location of Military Personnel Available for Inspection and Services. The Surgeon General is responsible for the publication of this "location list." Inspection Responsibility Codes are as follows:

(a) Continental United States, US Army. The four-digit numbered code for any designated veterinary activity of the US Army, CONUS is 1000-1990.

(b) Continental United States, USAF. The four-digit numbered code for any designated veterinary activity of the USAF, CONUS is 2000-2900.

(c) Caribbean commands. The digit 6 identifies the Caribbean Commands, including Panama.

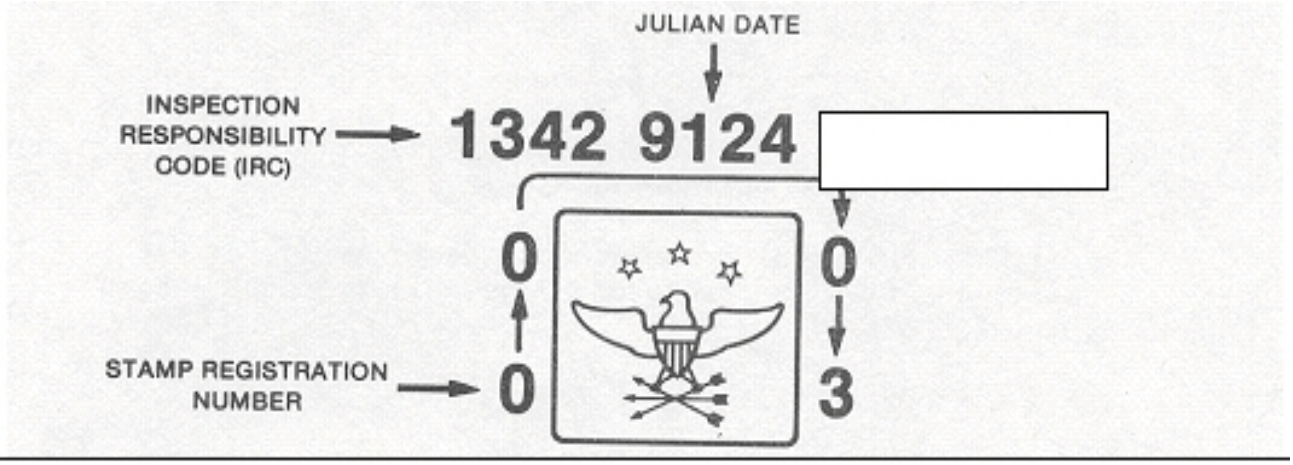


Figure 2-3. Complete inspection approval stamp prepared for use.

(d) European commands. The digit 7 identifies the European commands.

(e) Asian commands. The digit 8 identifies the Asian commands, including Alaska and Hawaii.

NOTE: When less than four digits are used to indicate the IRC, as in oversea locations, the IRC must be centered.

(2) The second set of four numbers on the top line above the DOD insignia indicates the Julian date. The Julian date is made up of the last digit of the current calendar year, followed by the sequential day of the present year. For example, in the Julian date 9001, the 9 designates 1989 and 001 designates 1 January. For the Julian date 9365, the 9 designates 1989 and 365 designates 31 December. In figure 2-3, the Julian date is 9124. This designates the year 1989 and the 124th day. The number 124 is the 4th of May. United States government calendars with Julian dates are found in most military offices.

2-5. DETERMINING WHAT TO STAMP

a. **Inspected Products**. An inspection stamp is used on inspected products only. Units of product and unit containers that have been opened and inspected must be stamped. Stamping constitutes official determination by a government inspector that the food product is in conformance with contractual requirements at the time and place of inspection.

b. **Shipping Documents**. An inspection stamp is used on shipping documents that accompany the inspected products. When food products have been inspected and accepted by a government inspector, the paperwork accompanying the products is also stamped. Examples of shipping documents are the invoice, manifest, bill of lading, or the product inspection report.

c. **Carcass Meats at Origin**. An inspection stamp is used on carcass meats at origin. If it is a 100 percent inspection, each carcass will be inspected.

d. **Caution**. Do not stamp empty containers or removable labels.

2-6. HOW TO USE AN INSPECTION STAMP

a. **Ink**. Personnel using an inspection stamp must make sure that there is enough ink on the stamp pad. Ink used is edible ink. Then, placing the stamp on the ink pad, they must check to see that all letters and numbers have sufficient ink on them.

b. **Rolling Motion**. It is important to use the correct motion when making an impression with an inspection stamp. To do this correctly, place the bottom part of the stamp on the paper first. Then, using a rolling motion, roll the bottom part toward the upper part, making a complete impression.

c. **Checking**. Always check the stamp impression you have made to see that the numbers are not inverted, that they are in proper order, that the stamp is properly dated, and that the impression is clear and readable.

2-7. STAMPING IN THE CORRECT LOCATIONS

a. **Standard Locations**. When using stamps on shipping containers, apply the stamp in the upper right-hand corner of the marked end of the shipping container. If this is not possible, apply the stamp to the lower right-hand corner of the marked end of the container.

NOTE: The inspection stamp must not cover any of the required markings on the container or any inspection stamps or legends of other official inspection agencies.

b. **Single-Stamping**. Single-stamp a portion of the shipping containers in an inspected lot to identify a lot as having been inspected and to identify the date of inspection.

c. **Double-Stamping**. Double-stamp containers from which samples have been selected; that is, stamp such containers twice, leaving identical impressions near or adjacent to each other.

d. **Documents**. When stamping documents that accompany inspected products, stamp the backs of the documents. In general, follow local unit policy.

e. **Unwrapped Carcass Meats**. Stamp carcass meats that have not yet been wrapped so that the stamped impression can be examined by unwrapping a small corner on one end, to avoid having to completely unwrap the quarter or carcass to locate the stamp. See "f" below for specific examples.

f. **Standard Locations for Carcass Meats**.

(1) Beef hindquarters. Place one stamp well down the shank, near the hock. Place the second stamp well forward on the loin.

(2) Beef forequarters. Place one stamp well back over the rib. Place the second stamp well down the shank. On wrapped forequarters, one stamp on the rib is considered sufficient.

(3) Veal sides. Place one stamp well down on the foreshank. Place the second stamp well down on the hindshank.

(4) Lamb sides. Place the stamp well down on the thigh.

(5) Wrapped carcass meats. Place the stamp on the outer wrapper after the meat has been properly packaged.

2-8. MAINTAINING SECURITY OF DEPARTMENT OF DEFENSE INSPECTION STAMPS

a. **Responsibility for Stamps**. One of the commonly assigned food inspection duties is that of safeguarding inspection stamps. It is important to prevent their use by unauthorized persons. An inspection stamp is to be used only by an inspector or personnel under his direct supervision. If a government safe is available, DOD inspection stamps will be locked in the safe when not in use. If no safe is available, the stamps will be placed in a secured area, as directed by local unit standard operating procedure (SOP).

b. **Safeguarding Department of Defense Procurement Stamps**. A record of each inspection stamp issued for procurement inspection (PIA and CIA), with the identifying serial number, is kept on a DD Form 1740, Food Inspection Stamp Record. An inspector must sign for the stamp when it is issued to him, and he accepts responsibility for safeguarding the stamp at all times, even when it is not in use. Look at the illustration of DD Form 1740 in figure 2-4. The form is used to record the identification of each inspector to whom a stamp is issued, the period of use by each inspector, and upon its becoming unserviceable for any reason, the date and manner in which it was destroyed.

c. **Theft or Loss**. If an inspection stamp is lost or stolen*, you must notify your supervisor immediately.* The facts concerning the situation will be investigated and all other veterinary units will be officially notified.

FOOD INSPECTION STAMP RECORD

1. ORGANIZATION / UNIT	2. STAMP SERIAL NUMBER

3. STAMP IMPRESSION

0 3
6 0

13408153
0 3
6 0

4. RECORD OF ISSUE AND TURN IN

a. DATE ISSUED (YYYYMMDD)	b. SIGNATURE OF ASSIGNED INSPECTOR	c. DATE TURNED IN (YYYYMMDD)
20021219	John W. Smith	

5. RECORD OF INVENTORY

a. DATE (YYYYMMDD)	b. SIGNATURE OF INVENTORY OFFICER	a. DATE (YYYYMMDD)	b. SIGNATURE OF INVENTORY OFFICER

6. FINAL DISPOSITION. THIS STAMP WAS (X one):

	LOST.
	FOUND TO BE UNSERVICEABLE AND DESTROYED.

a. DESTROYED BY (Signature)	b. DATE (YYYYMMDD)

7. VETERINARY OFFICER IN CHARGE OF DISPOSITION

a. SIGNATURE	b. GRADE

DD FORM 1740, JAN 2000 PREVIOUS EDITION IS OBSOLETE.

Figure 2-4. DD Form 1740, Food Inspection Stamp Record.

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 BEST completes the incomplete statement or by writing the answer in the space provided.

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

1. When stamping a shipping container, where should the stamp impression be applied?

   _____

   _____

2. What is the meaning of a double-stamp impression on a container?

   _____

3. Who is responsible for safeguarding a DOD inspection stamp during periods of nonuse?

   _____

4. A veterinary food inspection specialist discovers that his DOD inspection stamp is lost or misplaced. What action should he/she take?

   _____

5. What is the importance of a stamp impression on a product?

   a. Indicates the status of inspection.

   b. Serves as a means of control over inspected subsistence.

   c. Helps identify subsistence that has been inspected.

   d. All the above.

6. List the two types of DOD inspection stamps.

_____

_____

7. Where can you find the Inspection Responsibility Code (IRC) which is used in the DOD inspection stamps?

_____

8. The IRC series 2000-2900 refers to:

   a. European commands.

   b. CONUS, U.S. Army.

   c. Asian commands.

   d. CONUS, U.S. Air Force.

9. Select the year and the day for the Julian date 3040:

   a. Year: 2000. Day: 304th.

   b. Year: 2003. Day: 040th.

SPECIAL INSTRUCTIONS. For exercise items 10 through 16, identify the information provided by the DOD inspection stamp shown below.

10. This is a _____ _____ _____ DOD inspection stamp.

11. The permanent registration number of this stamp is _____.

12. This stamp was used for an inspection conducted during the calendar year _____.

13. The inspection was conducted on _____.

14. The inspection responsibility code number is _____.

15. The code number designates a veterinary activity in

    _____

16. What kind of stamp will be used for a category II (receipt inspections)?

    a. PIA.

    b. CIA.

Check Your Answers on Next Page

SOLUTIONS TO EXERCISES, LESSON 2

1. In the upper right-hand corner of the marked end of the shipping container. para 2-7a

2. That samples have been selected from the container. (para 2-7c)

3. The inspector who signs the stamp record for the inspection stamp. (para 2-8a)

4. He must notify his supervisor immediately. (para 2-8c)

5. d (para 2-2)

6. PIA
   CIA (para 2-3)

7. Section III of the HQDA (DASG-VCP) letter, subject: Location of Military Personnel Available for Inspection and Services. (para 2-4c(1))

8. d (para 2-4c(1)(b))

9. b (para 2-4c(2)

10. Complete Inspection Approval (CIA) (para 2-3b)

11. 0321 (para 2-4b)

12. 1989 (para 2-4c(2))

13. The 358th day (24th December) para 2-4 (2)

14. 8 (para 2-4 (1)

15. Asian commands (para 2-4c(1)(e)

16. b (para 2-3b)

End of Lesson 2

LESSON ASSIGNMENT

LESSON 3 Warehouse Procedures.

LESSON ASSIGNMENT Paragraphs 3-1 through 3-15.

LESSON OBJECTIVES After completing this lesson, you should be able to:

3-1. Identify basic information about semi-perishable subsistence in dry storage.

3-2. Identify factors affecting storage life in dry storage.

3-3. Identify factors affecting cold storage of perishable subsistence.

3-4. Identify good cold storage practices.

3-5. Identify basic items necessary to conduct an inspection within a cold storage area.

SUGGESTION After studying the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.

LESSON 3

WAREHOUSE PROCEDURES

Section I. DRY STORAGE

3-1. GENERAL

There are two kinds of warehouses or food storage facilities. Dry storage is available for semiperishable subsistence and cold storage for perishable subsistence that requires temperature regulation. TM 38-400, provides guidance to the veterinary food inspection specialist for product temperatures, humidity and suggested storage life of perishable and semiperishable subsistence

3-2. DEFINITIONS

a. **Storage Life**. The approximate time (days or months) of the expected life of the product when stored IAW applicable specifications and regulations. The term storage life is synonymous with shelf life.

b. **Inspection Test Date**. A future inspection date based on the known serviceability of a semiperishable subsistence item. The inspection test date is indicated by month/year and is computed on the basis of the specified number of months after the date of pack, as indicated by the known quality of a specific commodity. The initial inspection test date is provided in the contractual documents, while subsequent inspection test dates are determined by quality assurance personnel based on product and storage conditions.

3-3. SEMIPERISHABLE SUBSISTENCE

Semiperishable subsistence can be safely stored for relatively long periods of time without refrigeration. The term "semiperishable" refers to canned, dried, and dehydrated items, such as salt, sugar, flour, coffee, or cereal. These are items that do not require refrigeration. Such items should be stored on pallets in areas that are clean, dry, and well- ventilated. Shipments should be segregated and clearly marked so that the oldest lots, as packed and received, are issued first unless the newer lots show evidence of deterioration or spoilage. The proper method of storage depends on the item and type of pack. Bagged items and those requiring insect control should be stored off the floor on pallets and/or shelves. These pallets and/or shelves should be set out from the walls far enough to allow access for cleaning and inspections and to reduce insect harborages. Subsistence should not be stacked so that crushing occurs as this increases the chance of pest problems. The height, to which a product can be stacked, without bursting or crushing the bottom layers, is limited. Stacking products too high exposes them to potentially high temperatures near the ceiling. The same applies when stacked next to

steam or other heated pipes. Food inspectors and warehouse personnel must be constantly alert for evidence of damage, improper sanitation, spoilage, and insect or rodent contamination so that immediate action can be taken to correct the situation and prevent additional loss.

3-4. STORAGE LIFE

Storage time varies for different items. Length of storage for a given item is figured from the date of pack, not from the date of receipt at a storage facility. Subsistence must be grouped by item category and date of pack to aid in proper rotation of the stock, which in an ideal environment is the most effective means of preventing deterioration, spoilage, or attack by insects. The length of time a product can be stored is influenced by the temperature, humidity, protection from the elements, condition of the product when it is received, method of preservation used, condition and type of packing and packaging, and the kind of handling it receives.

3-5. FACTORS AFFECTING STORAGE LIFE

TM 38-400, Joint Service Manual for Storage and Materials Handling, lists the recommended approximate storage life for many semiperishable items stored under optimum conditions. This list should be used as a guide by the inspector in determining the shelf life of troop issue items. However, storage life becomes uncertain if the items are subjected to high humidity, poor air circulation, or extremes in temperature. The remaining storage life must always be based on a thorough inspection of the product. There are three main causes for deterioration or spoilage of semiperishable subsistence:

a. **Age**. Food deterioration due to aging is a continuous process that begins at harvest, slaughter, or manufacture and continues until the food is no longer serviceable. Good preservation and storage techniques merely reduce the rate of this process.

b. **Microorganisms**. The growth of bacteria, yeast, and molds may cause the production of gas, objectionable odors and flavors, and toxic substances. For example, swelling in canned foods may result from microbial growth.

c. **Environment**. Freezing temperatures normally do not harm dry products, such as grains, flour, sugar, starch, cereals, and dehydrated foods. However, products with large amounts of water, such as canned goods, will freeze and possibly burst. Even if the container does not rupture, the product inside may undergo changes in consistency and texture. Emulsions that separate when frozen, such as mayonnaise and mustard, can be recombined with the proper equipment. High temperatures are detrimental to canned goods and greatly shorten the storage life of all subsistence because such temperatures accelerate the natural deterioration. High temperatures also speed up chemical reactions, such as oxidation and rancidity in fatty foods. The interaction between high acid content subsistence and metal cans can cause pinholing, spangling, hydrogen

swells, or detinning. A rule of thumb commonly used is that each rise of 18°F (10°C) above the specified storage temperature doubles the rate of deterioration. Subsistence stored at high temperatures is also particularly susceptible to insect infestation and will require frequent inspections.

3-6. PRODUCTS EXCEEDING STORAGE LIFE

Although an item has reached the limit of its recommended storage period, it does not necessarily have to be condemned, salvaged, or put on a report of survey. Storage life is the total elapsed time from the date of processing to the date of issue for immediate consumption. The estimates of expected storage life are based on experience and are listed in the published guidelines identified in paragraph 3-5. Occasionally, subsistence lots may show advanced stages of quality loss prior to the end of the established storage period. For this reason, surveillance inspection procedures must be established at the time of receipt and continued until the time of issue.

Section II. COLD STORAGE

3-7. FACILITY

The ideal cold storage warehouse is divided into five rooms. Each room is designed to store similar items in order to prevent assimilation of odor. Each room must be equipped with an indicating thermometer and a 24-hour recording thermometer to ensure that the proper temperature is continuously maintained on a 24-hour basis. These instruments must be accurate and in working condition. A cold storage facility usually includes the following divisions:

a. Fresh Fruits and Vegetables Room (32-35°F/0-2°C). See TM 38-400 for fresh fruits and vegetables to be stored at this temperature and for fresh fruit and vegetable compatibilities.

b. Fresh Fruits and Vegetables Room (50°F/10°C). For fresh fruits and vegetables subject to chill injury at lower temperatures or in the early stages of ripening.

c. Eggs and Dairy Products Room (32-35°F/0-2°C).

d. Meat and Meat Products Chill Room (32-35°F/0-2°C).

e. Frozen Foods Room (0°F/-18°C or below).

3-8. RECEIVING AREA

The receiving area must be protected from the sun, dust, rain, and snow. It must also be adequately lighted and ventilated, have proper drainage, and be kept sanitary at all times.

3-9. INSPECTION ROOM

The inspection room must be accessible to both the receiving area and the cold storage facilities. The room should be large enough to permit the product to be moved in and out freely and also to facilitate inspection. The inspection room should be constructed, equipped, and maintained in conformance with the highest sanitary standards to prevent contamination of the product and inspection samples.

3-10. STORAGE AREAS

Perishable subsistence, either chilled or frozen, deteriorates rapidly if it is not refrigerated. Perishable subsistence is affected much more than semiperishable by temperature and humidity fluctuations, air circulation, and unsanitary conditions. Most perishable items deteriorate or spoil due to the growth of bacteria, yeasts, and molds. The most important factor in retarding this action is proper temperature control.

3-11. HUMIDITY

Humidity in the storage area must also be controlled. Humidity, the amount of moisture in the air at a given temperature, is measured with a psychrometer. Air can absorb only a certain amount of moisture at a given temperature; the higher the temperature, the more it can absorb. If the temperature is decreased or more moisture is added, excess water will condense and collect on the exposed surfaces of the building and the items in storage. If the humidity is too low, the air will extract moisture from the product and cause it to dry out, resulting in a lost of flavor and quality.

3-12. AIR CIRCULATION

Proper air circulation is also important. Cool air carries heat away from stored products and prevents the condensation of moisture. Proper circulation also carries away the gases given off by fresh fruits and vegetables in their respiratory process. Circulation is adequate if the recommended temperature is uniform in all parts of the refrigerated area.

3-13. GOOD STORAGE PRACTICES

Cleanliness and the use of floor racks (pallets) will retard action by micro-organisms and prevent insect and rodent infestation.

a. Unless otherwise specified in the contractual requirements, subsistence should be stored at least 12 inches (30 cm) from air ducts and ceiling-mounted blower units, at least 4 inches (10 cm) from any wall, and with at least 24 inches (61 cm) between the top of the stack and the ceiling. See figure 3-1.

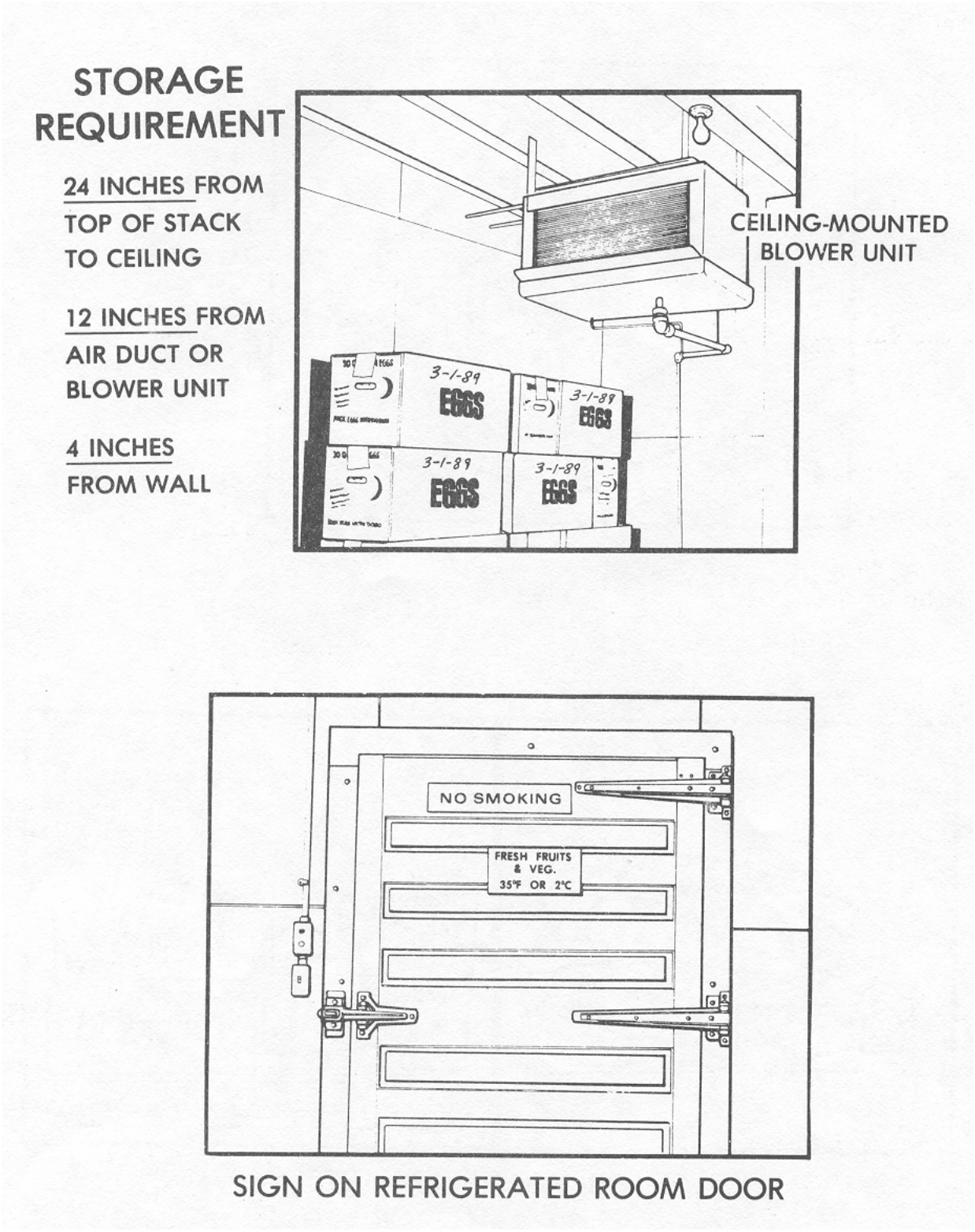


Figure 3-1. Good storage practices.

b. All containers, including sample cases, should be properly closed and strapped, with packaging and packing materials in good condition.

c. Different types of subsistence should be stored in separate areas. Products that easily absorb foreign odors, such as butter and shell eggs, must not be stored in the same area with fresh fruits and vegetables, or with cured and smoked meats. Refer to TM 38-400 for the identification of products prone to this type of problem.

d. Eating, drinking, smoking, and tobacco chewing should be prohibited in storage areas.

e. Each refrigerated room should have signs posted with the required temperature and item category on or next to the odor. See figure 3-2.

3-14. RECEIPT OF FROZEN FOODS

Frozen products cannot be accepted on a procurement inspection if they are thawed. If partially or completely thawed frozen products are government owned, but shipped by commercial transportation, and the cause of defrosting is the fault of the carrier, the product may be provisionally rejected to the carrier. In no case will a product received in a thawed state be refrozen for storage. If the product is wholesome and the quality is acceptable, it may be issued for immediate use. Cold storage facilities do not have the equipment to quick freeze; slow freezing results in a definite loss of quality.

3-15. BASIC ITEMS

Certain equipment and procedures are necessary to conduct a proper inspection.

a. **Scales**. These are used for determining net weight. They may be provided by the receiver or the veterinary activity. Currently available are electronic digital platform, overhead rail, platform dial, or platform beam scales. Electronic digital platform scales are preferred. Capacity and graduation of the scale must ensure an accurate determination of net weight and must weight in the lowest increment specified in the contract. When a scale is not being used, it must be stored in an accessible place and in such a way that its validity is not endangered. It must be checked periodically for accuracy in accordance with federal, state, and local regulations. A certificate verifying the accuracy of the scale should be prominently affixed to the face of the scale each time it is checked by proper authorities and passed. Test weights should be available and should be certified as being accurate.

b. **Knife**. This is used to cut the wrapping and packaging materials. It is issued to the inspector and should be kept clean and sharp, stored properly, and handled safely. When fabricated meat is inspected, wire or strap cutters are needed to open the master containers.

c. **Boring or Piercing Instrument**. This instrument is used to make a hole in both frozen and solid chilled products when taking the internal temperature. The hole prevents damage to the thermometer. The instrument may be an ice pick, or a drill bit.

d. **Thermometers**. These are used to determine the internal and external temperature of products and the opening temperature of carriers. They must be durable, easily sanitized, and kept in excellent condition.

(1) Metal dial. This is a hermetically sealed dial thermometer that has a pointed stem approximately 5 inches (125mm) long. The dial face is glass and the remainder is corrosion-resistant stainless steel. It measures temperatures from 0° to 250°F (-18° to 105°C), and has an accuracy of ± 2°F.

NOTE: Always recalibrate this thermometer after a discrepancy is found, take another temperature and then make a recommendation.

(2) Electronic digital. This thermometer is a hand held device and has different attachments. It can be used for hot and cold liquid or solid products. It provides the current, actual temperature in an easily readable form.

(3) Laser. This thermometer measures the surface temperature of a product and is used to detect a number of temperatures rapidly. However, it should not be used to make final recommendations. If a discrepancy is found, use a calibrated Metal dial thermometer to make final deposition.

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 BEST completes the incomplete statement or by writing the answer in the space provided.

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

1. What is the DOD Regulation that provides guidance on warehouse procedures?

   _____

2. What is another term for storage life? _____

3. Give three examples of semiperishable subsistence.

   _____

   _____

   _____

4. What is the most effective means (in dry storage warehouses) of preventing deterioration, spoilage, or attack by insects?

   _____

5. Name the three main causes for deterioration or spoilage of semiperishable subsistence.

   _____

   _____

   _____

6. A rule of thumb commonly used is that each rise of ____ degrees Fahrenheit above the specified storage temperature _____ the rate of deterioration.

7. When are surveillance inspection procedures established for dry storage?

   _____

   _____

8. How many rooms are there in an ideal cold storage warehouse?

   _____

9. List standard equipment for conducting inspections.

   _____

   _____

   _____

   _____

10. Which categories of products are stored in rooms with a temperature range between 32 and 35 degrees Fahrenheit?

    _____

    _____

    _____

11. Which category of products is stored in a room with a temperature of 50 degrees Fahrenheit?

    _____

12. Which category of products is stored in a room with a temperature of zero degrees Fahrenheit?

    _____

13. The receiving room must be adequately lighted, ventilated, and have proper drainage. However, it must also be protected from:

    _____

    _____

    _____

    _____

14. The inspection room for perishable subsistence entering a cold storage warehouse must be large enough to get the job done. But, above all, the highest _____ must be maintained.

15. The most important factor in retarding the growth of bacteria, yeasts, and molds is _____ _____ _____.

16. The amount of moisture in the air at a given temperature (humidity) is measured with a _____.

17. Why is proper air circulation especially important for fresh fruits and vegetables?

    _____

    _____

18. Two practical principles are recommended to help you maintain good cold storage practices. They are:

_____

_____

19. In cold storage warehouses, subsistence should be stored:

a. _____ inches from air ducts.

b. _____ inches from any wall.

c. With _____ inches between the top of the stack and the ceiling.

20. a. Concerning containers, you must inspect for <u>three</u> things. They must be:

_____

_____

b. The packaging and packing materials must be:

_____

21. What common personnel practices are strictly prohibited in all cold storage areas?

_____

_____

_____

_____

22. How do you know which refrigerated room to deliver a product to?

_____

_____

23. A product received at a cold storage warehouse is partially thawed, of acceptable quality, and is wholesome. What should you do with it?

_____

24. What are scales used for in a cold storage warehouse?

_____

25. During inspection procedures, what is a knife used for?

_____

26. List three kinds of thermometers that are used to monitor temperatures?

_____

_____

_____

Check Your Answers on Next Page

SOLUTIONS TO EXERCISES, LESSON 3

1. a. TM 38-400 (para3-1)

2. Shelf life. (para 3-2a)

3. Coffee. OR Canned.
   Sugar. Dried.
   Flour. Dehydrated. (para 3-3)

4. Proper rotation of the stock based on grouping by item category and date of stock. (para 3-4)

5. Age.
   Microorganisms.
   Environment. (para 3-5)

6. 18; doubles (para 3-5c)

7. At the time of receipt of subsistence--and continued until the time of issue. (para 3-6)

8. Five. (para 3-7)

9. Scales
   Knife
   Boring equipment
   Thermometers (para 3-15)

10. Fresh fruits and vegetables.
    Eggs and dairy products.
    Meat and meat products, chilled. (para 3-7 a, c, d)

11. Fresh fruits and vegetables subject to chill injury at lower temperatures. (para 3-7b)

12. Frozen foods. (para 3-7e)

13. Sun.
    Dust.
    Rain.
    Snow. (para 3-8)

14. sanitary standards. (para 3-9)

15. proper temperature control. (para 3-10)

16. psychrometer. (para 3-11)

17. It prevents the condensation of moisture.
    It carries away the gases given off in their respiratory process. (para 3-12)

18. Cleanliness.
    The use of pallets. (para 3-12)

19. a. 12
    b. 4
    c. 24 (para 3-13b)

20. a. Properly closed.
       Properly strapped.
    b. In good condition. (para 3-13c)

21. a. Eating.
    b. Drinking.
    c. Smoking.
    d. Chewing tobacco. (para 3-13c)

22. Each refrigerated room has signs posted with the required temperature and the item category. (para 3-13f)

23. It may be issued for immediate use. (para 3-14)

24. To determine net weight. (para 3-15a)

25. To cut the wrapping and packaging materials. (para 3-15b)

26. Metal dial
    Electronic digital
    Laser (para 15d)

End of Lesson 3

LESSON ASSIGNMENT

LESSON 4	Measurement of Product Temperature.
LESSON ASSIGNMENT	Paragraphs 4-1 through 4-8.
LESSON OBJECTIVES	After completing this lesson, you should be able to:

4-1. Identify a bimetallic thermometer and facts concerning its care and use.

4-2. Identify the procedure for checking the accuracy of a bimetallic thermometer.

4-3. Compute temperature conversions.

4-4. Identify how to measure the internal temperature of frozen products.

4-5. Identify methods to measure internal temperature of chilled products.

SUGGESTION After studying the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.

LESSON 4

MEASUREMENT OF PRODUCT TEMPERATURE

4-1. DETERMINING TEMPERATURES

During an inspection, the veterinary food inspection specialist determines the temperatures of frozen or chilled products and enters the information on the appropriate form. The temperature inside a shipping container may be checked or the internal temperature of the product itself. Bimetallic thermometers are issued for this purpose, which must be checked for accuracy and calibrated from time to time.

4-2. THE BIMETALLIC THERMOMETER (BABY DIAL THERMOMETER)

The bimetallic thermometer may also be called a baby dial thermometer or a direct reading thermometer. A bimetallic thermometer is used to determine temperatures of frozen or chilled food products. These thermometers have a stem that is a sensing device. It is about 6 inches long and can be inserted into a product. The end of the thermometer has a dial, which allows the inspector to read the temperature. It can measure a temperature from -40°F. to 160°F. A small hexagon nut below the dial allows the thermometer to be calibrated. For taking temperatures of chilled products (not frozen products), thermometers with a scale of 0°F to 220°F may be used. Each thermometer has a case with a pocket clip. Normally, three to five properly calibrated bimetallic thermometers are available for use. Only these thermometers may be used to determine temperature nonconformance. See figure 4-1.

4-3. CARE OF THE THERMOMETER

a. The bimetallic thermometer requires careful handling to remain accurate. It should be:

(1) Kept in its case when not in use.

(2) Cleaned after each use.

(3) Used only to take temperatures, never as a stirring rod or any other tool.

(4) Cooled down to approximately the same temperature as the product before it is used on the product.

b. The bimetallic thermometer should <u>not</u> be:

(1) Exposed to temperatures beyond its calibrated range.

(2) Forced into a frozen or hard-to-penetrate item. A boring or piercing tool should be used to make a hole for insertion of the thermometer.

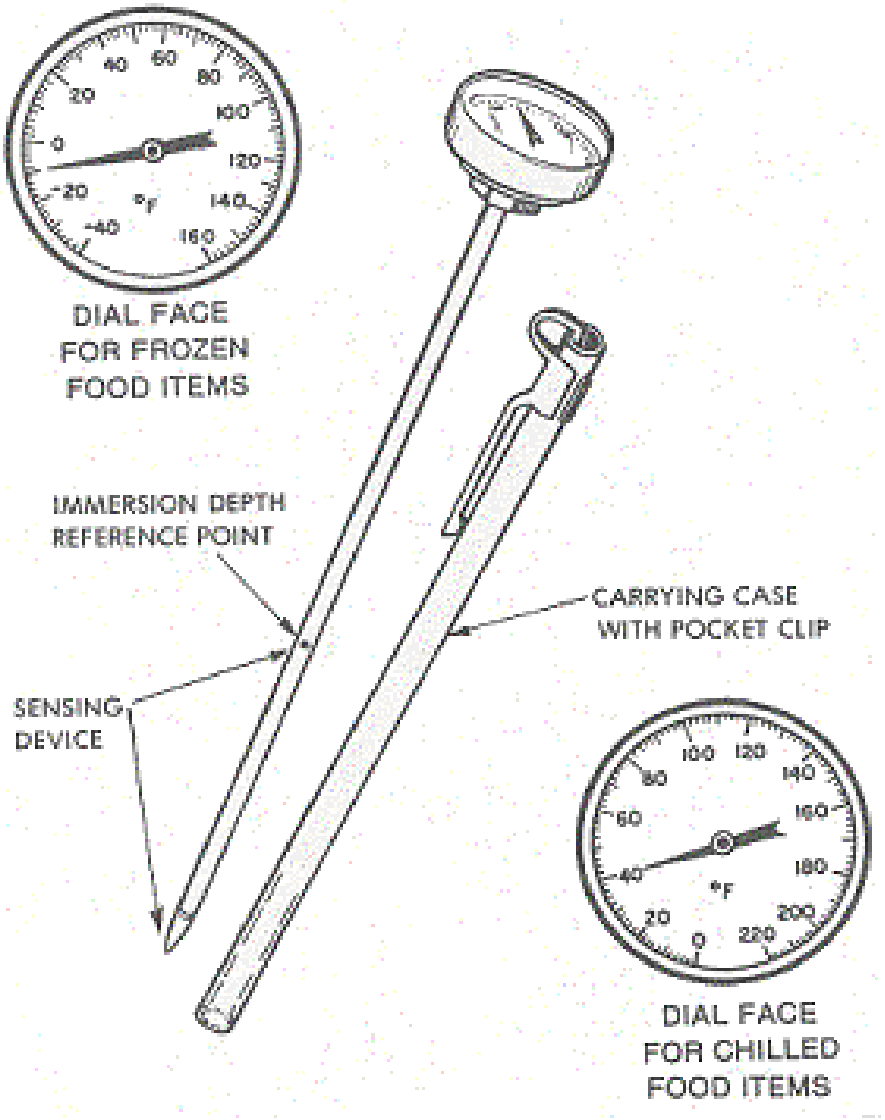


Figure 4-1. A bimetallic, direct-reading (baby dial) thermometer.

4-4. CHECKING THE ACCURACY OF THE THERMOMETER

a. **General**. The accuracy of bimetallic thermometers must be maintained, since they are used to monitor the temperature of frozen and chilled food products. All bimetallic thermometers should be calibrated at least once a week. The ice point method is used: this method permits calibration to within 0.1°F.

b. **Procedure.** The sequence of the procedure for checking the accuracy of calibrating the bimetallic thermometer follows:

(1) Obtain an insulated, one-pint container with a cap. (Suggestion: use a one-pint, wide mouth "thermos" bottle.)

(2) Drill a hole in the outer cap of the thermos bottle using an electric drill. Make sure that the size of the hole is only slightly larger than the thermometer stem.

NOTE: The purpose of the hole in the cap is to ensure a minimum clearance of one inch from the bottom or sides of the insulated container.

(3) Fill the container with a 50/50 mixture of ice and water. Screw on the cap. Allow five minutes for the water and ice mixture to stabilize.

(4) Insert the bimetallic thermometer stem (the sensing device) into the ice and water mixture to its immersion depth, which is about 2 inches from the tip of the thermometer. There is a notch on the stem that serves as a reference point to indicate the immersion depth (see figure 4-1).

(5) Stir the ice and water mixture one or two turns with the thermometer to dissipate the stem heat.

(6) Keep the bimetallic thermometer in the ice and water mixture for a minimum of one minute or until the needle is stable for 30 seconds.

(7) Turn the adjustment nut with a wrench or pliers, to read 32°F. The adjustment nut is located on the bottom of the dial face (see figure 4-1). Make the adjustment while the bimetallic thermometer is still immersed in the ice and water mixture. Be careful not to touch the stem of the thermometer with your fingers.

4-5. TEMPERATURE CONVERSIONS

a. **Fahrenheit to Celsius**. If a thermometer is calibrated on a Fahrenheit scale and a Celsius temperature reading is required for an inspection report, the temperature reading can be converted.

> Example: Temperature reading of 95° Fahrenheit. Subtract 32° from the temperature reading and then divide by 1.8.
>
> 95° F - 32° = 63°F; 63°/1.8 = 35°C

b. **Celsius to Fahrenheit**. If a thermometer is calibrated on a Celsius scale and a Fahrenheit temperature reading is required, the temperature reading can be converted by miltiplying the Celsius reading by 1.8, then adding 32° to the product.

> Example: Temperature reading of 35° Celsius. Multiply by 1.8, then add 32°.
>
> 35°C x 1.8 = 63°; 63° + 32° = 95°F

c. **Resources**. A table comparing Fahrenheit and Celsius temperatures is provided in the Graphic Training Aid (GTA) 8-81, dated 29 July 1983, HQ, DA.

4-6. MEASURING INTERNAL TEMPERATURE OF FROZEN PRODUCTS

a. **Method**. To determine the internal temperature of a frozen product, a hole must be made in the product. The hole should be made in the thickest portion of the sample unit, so as to allow the thermometer to be inserted to a minimum of 3 inches. When making the hole, make sure that you use a clean boring or piercing tool, such as an ice pick, a hand drill, or an electric drill. A mallet can be used with the ice pick. When making the hole, be sure that it is not larger than the diameter of the thermometer. The thermometer must fit snugly and the tip must be in contact with the product to ensure accurate temperature readings.

b. **Time**. After the thermometer has been in place at least 5 minutes, the inspector records the reading.

NOTE: The temperature of a product may be taken by placing the thermometer between two units inside a case. If a nonconforming temperature is observed during this procedure, an actual internal temperature must be taken by inserting the thermometer directly into the product.

4-7. MEASURING INTERNAL TEMPERATURE OF A CHILLED FLUID PRODUCT EXTRACTED FROM A BULK CONTAINER

To determine the internal temperature of a chilled fluid product extracted from a bulk container, which is a container with a capacity greater than 1/2 gallon, the sample must be removed from the container using aseptic techniques. The sample should be drawn into a chilled sampling container having a depth of at least 3 1/2 inches. See figure 4-2. The thermometer is immediately placed in the container so that the sensing portion of the stem is completely surrounded by the product. At the end of 5 minutes, the food inspector reads and records the temperature. The bulk container will be tagged or otherwise identified in order to indicate that a portion of the contents has been extracted for test purposes and that the contents should be used as soon as possible.

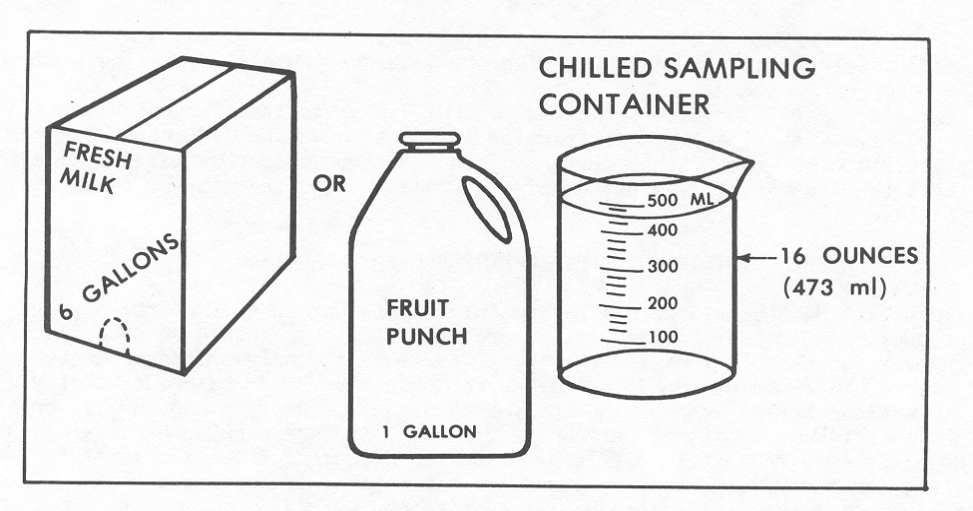


Figure 4-2. Taking internal temperature of a chilled fluid product extracted from a bulk container.

4-8. MEASURING INTERNAL TEMPERATURE OF CHILLED PRODUCTS

a. **Procedure**. To determine the internal temperature of a chilled product, the thermometer should be inserted into the thickest portion of the unit. When making the hole, a meat trier can be used for fresh meats and an ice pick for fruits and vegetables. The thermometer should fit snugly at least 3 inches into the product. After the thermometer has been in place at least 5 minutes, the inspector records the reading.

b. **Methods**. The method varies for different chilled products. (See figure 4-3).

(1) Meat items. The thermometer should not touch bones.

(2) Leafy vegetables. The thermometer is inserted into the individual item as close to the center as possible without entering the core or heart leaves.

(3) Non-leafy vegetables and fruits. The thermometer is inserted into the center of the item. Do not allow the thermometer to come in contact with the pit of stone fruits. Peaches, avocados, or plums are examples of stone fruits.

(4) Containers of fluid product of 1/2 gallon or less. The thermometer is inserted through the top of the opened container into the contents.

(5) Chilled whole poultry. The temperature should be taken in either the breast or the thigh. The thermometer is placed parallel to the long axis of the breast bone or the femur bone. Be careful not to touch the bone with the thermometer or to insert the thermometer into the body cavity.

NOTE: The temperature of a product may be taken by placing the thermometer between two units inside a case. If a nonconforming temperature is observed during this procedure, an actual internal temperature must be taken by inserting the thermometer directly into the product.

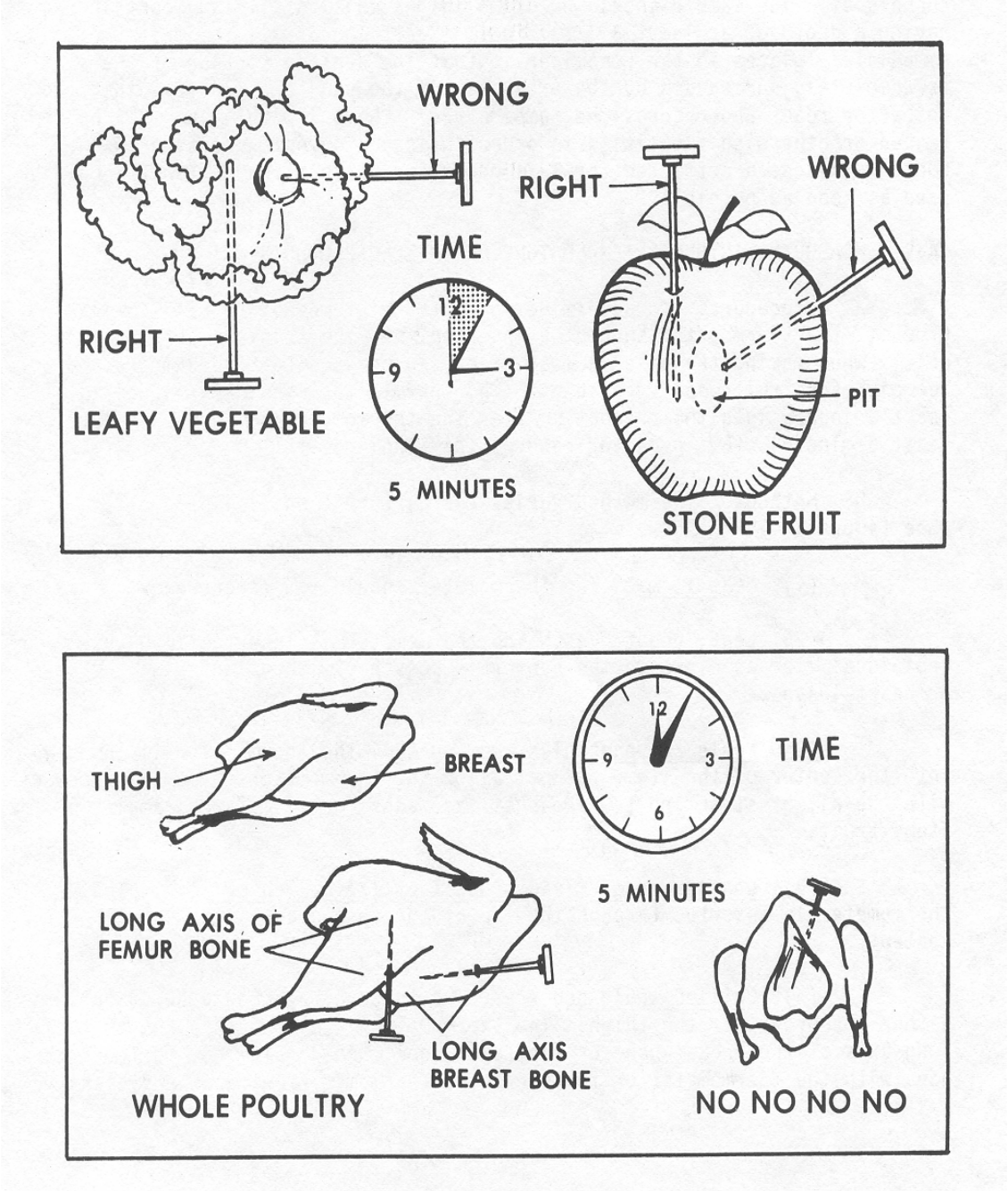


Figure 4-3. Taking internal temperature of chilled products.

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 BEST completes the incomplete statement or by writing the answer in the space provided.

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

1. The bimetallic thermometer used to measure temperatures of frozen or chilled products has a scale range from:

   a. 0°F to 220°F.

   b. -40°F to 160°F.

   c. -20°F to 180°F.

2. How often should a bimetallic thermometer be cleaned?

   _____

3. Normally, how many baby dial thermometers are calibrated and ready for use at one time?

   _____

4. Is it necessary to cool down a bimetallic thermometer before using it with a frozen or chilled product?

   a. Yes.

   b. No.

5. What type of container should be used to check the accuracy of a bimetallic thermometer?

   _____

6. How often should bimetallic thermometers be calibrated?

   _____

7. When it is being calibrated, a bimetallic thermometer should be inserted into an ice and water mixture to a depth of

   a. 2 inches.

   b. 3 inches.

   c. 5 inches.

   d. None of the above.

8. Convert a 35° Fahrenheit reading to a Celsius reading. The Celsius reading would be:

   _____

9. A hole made in a frozen product to measure internal temperature should be _____ deep.

   a. 1 inch.

   b. 2 inches.

   c. 3 inches.

   d. 4 inches.

10. You are told to take the temperature of a chilled fluid product extracted from a bulk container. How long should the thermometer be left in the sampling container?

    a. 5 minutes.

    b. 10 minutes.

    c. 3 minutes.

    d. 4 minutes.

11. When measuring the internal temperature of leafy vegetables, where should the thermometer be placed?

_____

_____

12 When measuring the temperature of chilled peaches, is it acceptable for the thermometer to touch the seed?

a. Yes.

b. No.

13. List three examples of boring or piercing instruments, which may be used to make a hole in frozen products or chilled products.

_____

_____

_____

Check Your Answers on Next Page

SOLUTIONS TO EXERCISES, LESSON 4

1. b (para 4-2)
2. After every use. (para 4-3a(2))
3. 3 to 5. (para 4-2)
4. a. (para 4-3a(4))
5. An insulated, one-pint container, such as a "thermos" bottle. (para 4-4b(1))
6. Once a week. (para 4-4a)
7. d. To its immersion depth. (para 4-5b(4))
8. 1.67 or 1.666. (35 - 32 = 3; 3 divided by 1.8 = 1.6666) (para 4-5a)
9. c (para 4-6)
10. a (para 4-7)
11. As close to the center as possible without entering the core or heart leaves. (para 4-8b(2))
12. b (para 4-8b(3))
13. Ice pick.
    Meat trier.
    Electric drill or hand drill. (para 4-6 and 4-8a)

End of Lesson 4

LESSON ASSIGNMENT

LESSON 5 Inspection of Conveyances/Carriers.

LESSON ASSIGNMENT Paragraphs 5-1 through 5-10.

LESSON OBJECTIVES After completing this lesson, you should be able to:

5-1. Identify temperature requirements for straight freeze loads, straight chill loads, or mixed chilled and frozen loads.

5-2. Identify actions taken by an inspector at the doors of conveyances/carriers.

5-3. Identify how opening temperatures are measured in conveyances/carriers.

5-4. Identify possible unsanitary conditions that an inspector may notice in conveyances/carriers.

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

LESSON 5

INSPECTION OF CONVEYANCES/CARRIERS

5-1. INSULATION REQUIREMENTS

Conveyances, or carriers, that carry perishable food products must maintain those products in a refrigerated or frozen state. They must be well-insulated, air-tight, and have tight-fitting doors. Cargo space on conveyances/carriers must be pre-cooled before the carrier is loaded and the temperatures taken and recorded. This ensures that the refrigeration equipment is functioning properly and will maintain the state of refrigeration required for the product while it is being transported. This pre-cooling also will decrease the amount of heat transfer from the conveyance/carrier to the product when it is loaded. The temperature will rise again when the doors are opened and also during loading. However, the body will have been cooled and the refrigeration capability of the conveyance/carrier determined.

5-2. TEMPERATURE REQUIREMENTS

a. **Straight Freeze Loads**. For 100-percent frozen (straight freeze) loads of food products owned by the Defense Supply Center Philadelphia (DSCP), the conveyance must be pre-cooled to 10°F or lower and maintained at 0°F or lower while in transit. For Army-owned food products, the standard is 10°F while in transit.

b. **Straight Chill Loads**. For 100-percent chilled (straight chill) loads owned by DSCP, the conveyance must be pre-cooled to 40°-50°F and maintained at 40°-50°F while in transit. For Army-owned food products, the standard is 45°F while in transit.

c. **Mixed Chilled and Frozen Loads**. When there is a mixed load, the temperature requirements for the chilled products are the same as for straight chill loads. The standard for the frozen products is 20°F, and they must be hard frozen upon arrival at destination with no signs of defrosting. To separate the frozen products from the chilled products, an insulated barrier of plywood, wood, or aluminum must be constructed, with portions of barrier material extending through the floor racks to the floor. As a minimum standard, insulated blankets, insulated tarpaulins, or heavy, insulated, waterproof barrier paper should be used to segregate the chilled and frozen products.

5-3. SIGNIFICANCE OF TEMPERATURE DISCREPANCY

If conveyances/carriers that are transporting food products have temperatures above or below requirements, this indicates possible high/low product temperature and should clue the inspector to check products for possible thawing and/or freezing.

Products are not accepted or rejected on the basis of conveyance temperature but rather on the basis of internal product temperature. The opening temperature of the conveyance is only an indication that there may be a problem.

5-4. FACTORS EVALUATED DURING INSPECTION

A list of items and factors that are evaluated during an inspection of a conveyance/carrier follows. These will be discussed in subsequent paragraphs.

a. Doors.

b. Air leaks.

c. Opening temperature.

d. Sanitary conditions.

e. Air circulation.

5-5. DOORS

Before entering a conveyance/carrier, the doors are checked to see that they are tight-fitting and to verify the security of the load while in transit. The inspection report should note any discrepancies.

a. **Seals and Padlocks**. If seals are on the doors, the inspector records the numbers on the inspection report. At a category I inspection point, all railroad cars should be sealed upon arrival. Inspectors should verify the seal numbers by comparing them with those listed in the shipping documents. Seals on trucks are optional, since the driver is held responsible for the truck's contents. Padlocks may also be used.

b. **Commercial Truck Standards**. Many short-haul truck shipments arrive without padlock or seal. Whether or not commercial trucks use seals depends on the policy of the controlling agency.

5-6. AIR LEAKS

When taking opening temperature of conveyances/carriers, the inspector should ensure that the cargo space is completely enclosed. This can be done by closing the doors and checking for possible air leaks while still inside. Air leaks can be identified by light entering through sides, bottom, or top.

5-7. OPENING TEMPERATURES

Opening temperatures are taken by the inspector to make sure that the conveyance/carrier complies with the temperature requirements.

a. **Trucks**. When determining the temperature of trucks, the temperature is taken in the center of the truck's body, with the thermometer hung by a string from the ceiling, at least 5 feet from the floor. The thermometer used is the bimetallic direct-reading thermometer. See figure 5-1. If unable to suspend the thermometer, as described above, select an area as close to the center as possible to preclude contact with contents or conveyance. Then, using the thermometer case as a holder, place the thermometer on top of cartons or crates. Make sure that the dial of the thermometer is face down and the stem upright. The truck door should be closed and the thermometer left at least 10 minutes for a true reading.

b. **Railcars**. Temperatures of railcars are determined midway between the doors and the end of the railcar, about 5 feet from the floor. As in trucks, the thermometer should be left in place with the doors closed for at least 10 minutes. Some railcars and trucks have a permanent temperature device, normally near the cooling engine, which may be looked at for comparison.

c. **Ships**. Determining temperatures aboard ships depends on the construction of the vessel. Some modern ships have automatic recording thermometers that may be read at a central area. Some have thermometers attached to each refrigerated compartment. Some older ships still use mercurial thermometers.

5-8. SANITARY CONDITIONS

The veterinary food inspection specialist inspects conveyances for sanitary conditions, such as objectionable odors, trash, debris, excessive moisture, animal and vegetable waste matter, and mold growth.

a. **Insulation**. Completely enclosed or refrigerated vehicles are used for transporting perishable products where dust and temperature rise above recommended levels or where other detrimental effects are encountered. The cargo space of the carrier must be completely tight when the doors are closed. When canvas-covered vehicles are used, the rear flap must be lowered and secured.

b. **Vehicle Cleanliness**. Vehicles must be designed, constructed, and operated so as to protect contents from contamination and deterioration. They must be easy to keep clean and to keep in good repair.

(1) Interior. The interior of the truck must be free of foreign odors and debris. Side walls and floor racks must be clean

(2) Barriers. Blankets or other equipment used as barriers must be clean and odorless.

(3) Stacking. Loads should be stacked so as to allow proper circulation of air.

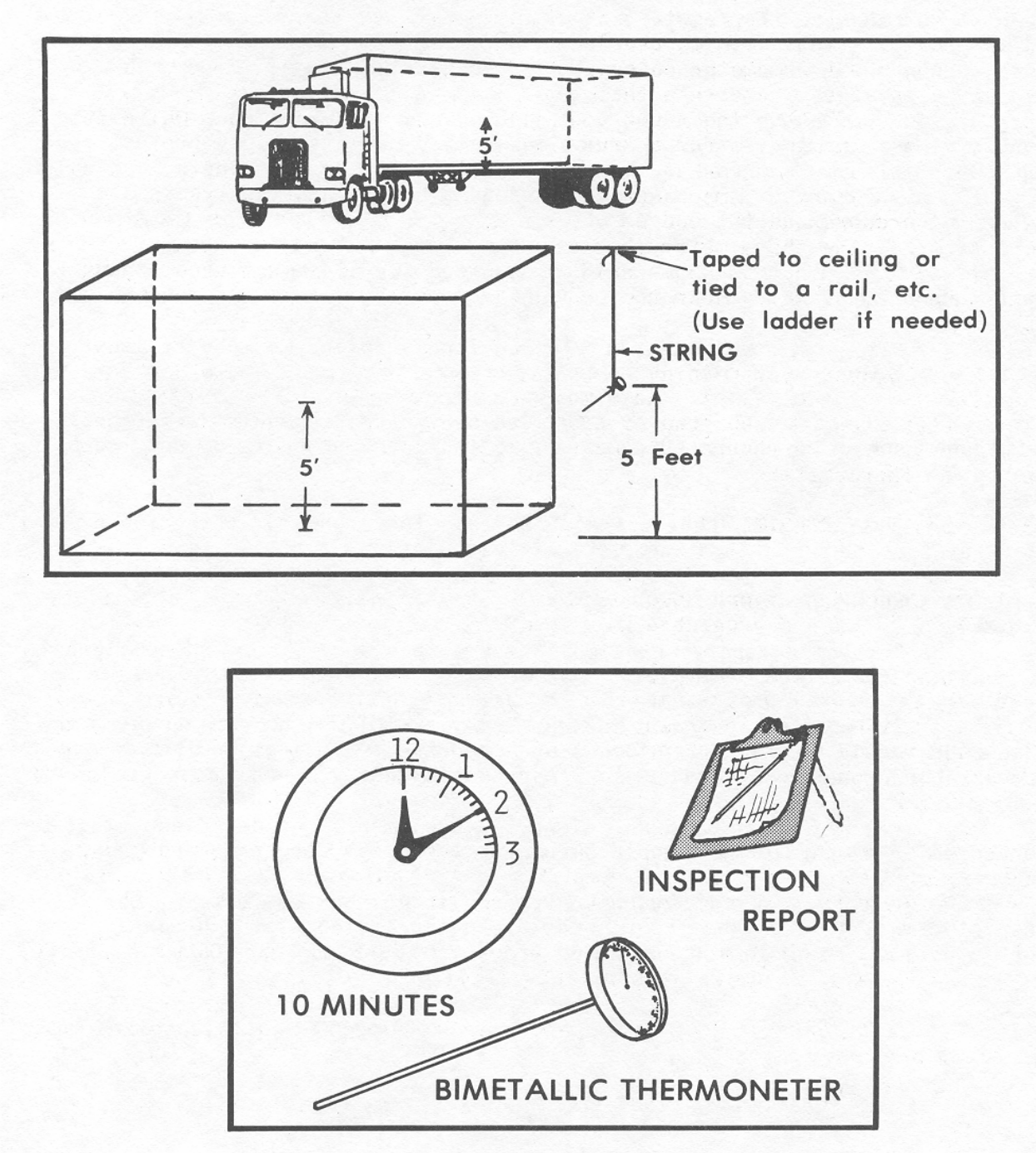


Figure 5-1. How to measure opening temperature in a truck.

c. **Cross-Contamination**. Vehicles used to transport food must not be used concurrently to carry trash, garbage, petroleum products, or other materials that might contaminate food supplies.

5-9. AIR CIRCULATION

Conveyances are inspected for air circulation.

a. **Floor Board or Ribbing**. Floor boards are racks upon which food products are stacked. They are sometimes called pallets. They protect food supplies from damage caused by leaking cans, bottles, or containers and allow air to circulate under the stacks. Ribbing is built into the floors and serves a similar purpose.

b. **Separation of Product**. Chilled beef carcasses or sides of beef should be hung using hooks, or tied up, so that beef products do not touch each other.

c. **The Top**. Ten inches of air space is the standard at the top of a stack of food products for adequate air circulation.

5-10. A NONCOMPLYING CONVEYANCE

The inspector reports noncompliances to his supervisor and completes appropriate forms.

a. If a conveyance does not fully comply with requirements, the inspector should detain the shipment and report his findings to the accountable property officer of the responsible agency.

b. If there is a deficiency in equipment, the deficiency must be corrected or a satisfactory replacement for the conveyance provided.

c. If a non-complying conveyance is authorized for use, the inspector must ensure that the responsible authority notes the deviation and the authority for deviation on the Government Bill of Lading (GBL).

Continue with Exercises

EXERCISES, LESSON 5

INSTRUCTIONS: The following exercises are to be answered by marking the lettered response that BEST answers the question or BEST completes the incomplete statement or by writing the answer in the space provided.

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

1. _____ will maintain the state of refrigeration required for the product and ensure that the refrigeration equipment is functioning properly.

   a. Inspection.

   b. Seals.

   c. Insulation.

   d. Pre-cooling.

2. For DSCP, the temperature requirement while in transit is _____ for straight freeze and _____ for straight chill.

   a. 20° F; 40° F.

   b. 0° F; 40° to 50° F.

   c. 10° F; 45° F.

3. For the Army, the temperature requirement while in transit is _____ for straight freeze and _____ for straight chill.

   a. 20° F; 40° F.

   b. 0° F; 40° to 50° F.

   c. 10° F; 45° F.

4. In mixed chilled and frozen loads, is 10° F the temperature requirement for frozen products?

   a. Yes.

   b. No.

5. Between chilled and frozen products in the same conveyance, there should be an insulated _____.

6. If seals are on the door of a conveyance, the inspector:

   a. Records the seal numbers.

   b. Verifies the seal numbers.

   c. Removes the seals.

   d. "a", "b", and and "c."

   e. "a" and "b."

7. Conveyances are inspected for sanitary conditions. List four specific items that an inspector might notice.

   _____

   _____

   _____

   _____

8. When determining the opening temperature of conveyances, the inspector should leave the thermometer in place for:

   a. 20 minutes.

   b. 15 minutes.

   c. 10 minutes.

   d. 5 minutes.

9. The requirement for air space at the top of a stack is _____ inches.

10. In a truck/van, the opening temperature in the _____ of the truck's body, with the thermometer hung by a _____from the ceiling. It should be at least _____ feet from the floor.

11. Products may be accepted or rejected on the basis of conveyance temperature. Is this statement true?

    a. Yes.

    b. No.

Check Your Answers on Next Page

SOLUTIONS TO EXERCISES, LESSON 5

1. d. (para 5-1)

2. b. (para 5-2a, b)

3. c. (para 5-2a, b)

4. b (20°F) (para 5-2c)

5. Barrier. (para 5-2c)

6. e. (para 5-5a)

7. 4 items from the following list:
   objectionable odors
   trash
   debris
   excessive moisture
   animal and vegetable waste matter
   mold growth. (para 5-8)

8. c (para 5-7a, b)

9. 10. (para 5-9c)

10. Center; string; 5. (para 5-7a; figure 5-1)

11. b. (para 5-3)

End of Lesson 5

LESSON ASSIGNMENT

LESSON 6	Inspection of Product.
LESSON ASSIGNMENT	Paragraphs 6-1 through 6-7.
LESSON OBJECTIVES	After completing this lesson, you should be able to:

6-1. Distinguish between inspection for identity, condition, and quantity.

6-2. List five types of condition inspections.

6-3. Identify and interpret information related to product freshness.

6-4. Identify the terms quality assurance representative (QAR) and nonconformance.

6-5. List the three alternatives available when disposing of food samples.

SUGGESTION After studying the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.

LESSON 6

INSPECTION OF PRODUCT

6-1. INTRODUCTION

After the carrier is inspected, the food product is off-loaded and inspected by the veterinary food inspection specialist. It is inspected for product identity, product condition, and product quantity. Product quality, particularly the age of a product, is one of the conditions that is checked. If an inspector finds a discrepancy or a nonconforming product, he has the responsibility to officially report the finding.

6-2. PRODUCT IDENTITY

The veterinary food inspection specialist determines that the product delivered is the product specified in the purchasing documents. These are gathered and studied before delivery of the product. If an inspector cannot determine identity, as in cans or packages, he must open the container and physically examine its contents. If he suspects substitution or fraud, he will inspect additional units to determine to what extent, if any, the shipment has been tampered with.

6-3. PRODUCT CONDITION

The veterinary food inspection specialist determines that the product is in the condition required by the purchasing documents.

a. **Sample Selection**. Samples of the product, packaging, and packing will be selected at random and inspected. 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. Selection of a random sample is the personal responsibility of the inspector, the veterinary food inspection specialist

b. **Types of Condition Inspection**. The veterinary food inspection specialist inspects a product for the various types of conditions that may be specified in the purchasing documents. This is to ensure the wholesomeness of the product.

(1) Product-specific inspection. For example, lettuce would be; fresh, not wilted or wilted and red meats would be, not off-condition or off condition.

(2) Container inspection. The purpose is to see if the product has been protected during storage and distribution. For example, not leaking, as in the case of dairy products. Packaging refers to the unit container and packing to the shipping container.

(3) Visual and olfactory inspection. The purpose is to determine that the product is free of storage deterioration, spoilage (bacterial action), insect or rodent damage, contamination, and foreign or objectionable odors.

(4) Inspection of internal temperature. The purpose is to ensure that the acceptable temperature recommended for a particular product is maintained.

(5) Inspection for age requirement. The inspector determines the age of the product.

6-4. PRODUCT QUANTITY

The inspector checks on the number of items per pound or container and checks on (verifies) the net weight of the product. The inspector may be required to physically count each sample. Net weight may be verified on any item. Test weighing is required only if it was not performed at origin. Inspection for quantity is part of destination inspection.

6-5. AGE OF PRODUCT

a. **Manufacturer's Code**. Code dates are placed on food products by manufacturers to assure quality. Veterinary personnel use the information provided by code dates during the inspection for product condition. Code dates are used to:

(1) Guarantee the freshness of perishable products that are received and offered for sale to the consumer.

(2) Provide guidance on rotation of stock, or, where applicable, exchange or disposal of out-of-date stock.

NOTE: In addition, food inspection personnel must be able to explain the codes to anyone who has a question.

b. **Location of Codes**. The inspector must be able to locate the product code on the product's outer covering (packaging). Sometimes this is not easy to do. (See figure 6-1.)

(1) Code book. If the product's code is not easily located, the inspector can look in a code book or in a data base on the Intranet. The manufacturer's code book may be kept in the veterinary food inspection office.

(2) Packing container. The product code may be placed on the packing container instead of on the outer packaging. For example, pork loins are not individually marked because the code appears on the packing.

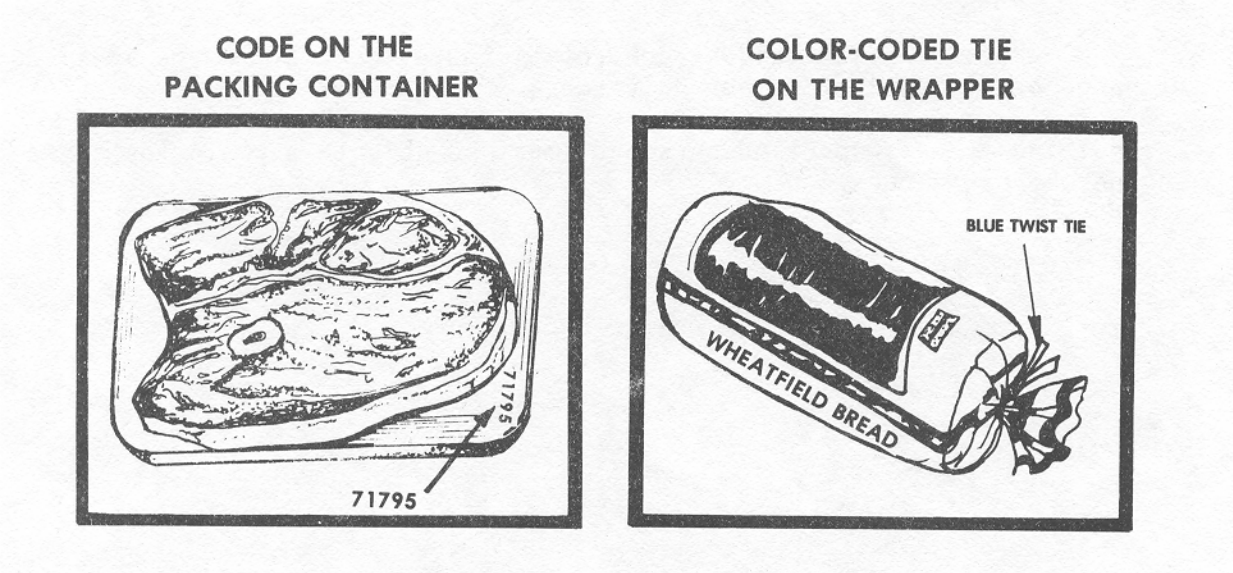


Figure 6-1. Location of manufacturer's code.

(3) Other than numbers. The code is not always numbers. The code may appear as letters, letters and numerals, raised (embossed) markings, or color-coded ties. For example, bread uses color-coded ties. The codes may be placed in various locations on the outer covering.

c. **Types of Code Dating**. The manufacturer may use open dating or closed dating. The veterinary food inspection specialist must determine the type of code that is used.

(1) Closed dating. Closed dating information is used on various items, but usually on canned items. The codes may appear as numbers or letters of symbols, or even as colors. The inspector must know the coding system to determine the age of the product. (See figures 6-2 and 6-3.)

(2) Open dating. Open dating information is clearly printed on the product so that the consumer may read it. (See figure 6-4.) A normal, recognizable calendar date is used. The information provided may be the pull date ("best when used by" date), expiration date, or the date of pack (pack date). Open dating is for fresh products only. Open dating is intended for chilled products, to ensure that the consumer receives fresh products of assured quality.

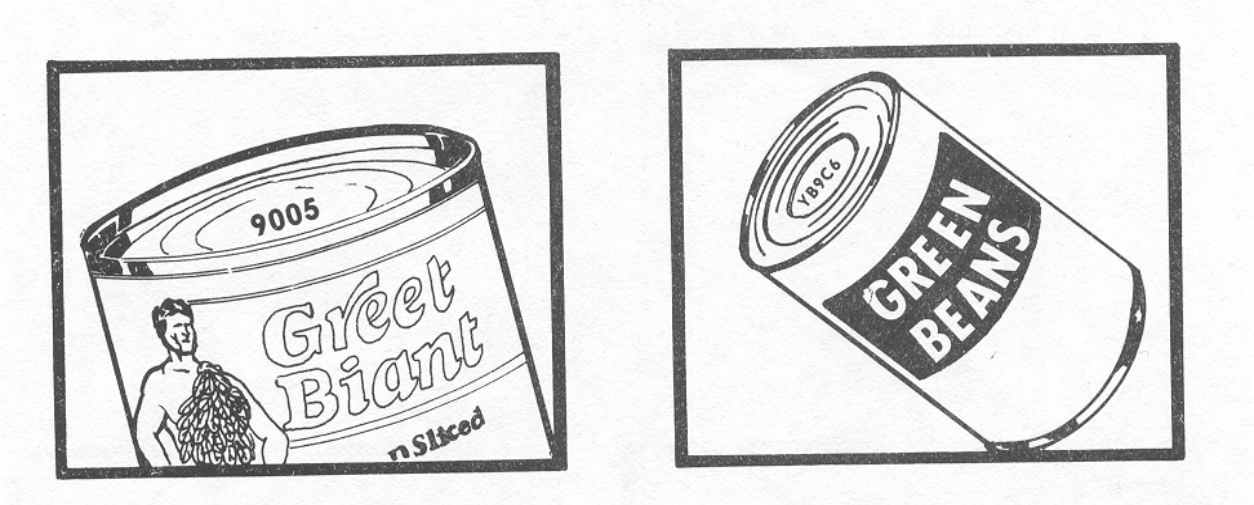


Figure 6-2. Closed dating, manufacturer's code.

YB9C6

Y- ATLANTA

B- BEANS, GREEN

9- 1989

C- MARCH

6- SIXTH DAY

NOTE: If this code represents the DOP, the product was produced in Atlanta on 06 March 1989

Figure 6-3. Manufacturer's code explained.

Figure 6-4. Open dating.

d. **Definition of Terms**.

(1) Pull date/"Best when used by" date. The dating information is marked on the product. It indicates how long a product will be at peak quality, according to the estimate of the processor. This information is provided for the consumer. This date is the last day that the product may be sold as fresh. When the pull date arrives, the product does not have to be considered "bad" or "stale", as there is still reasonable shelf life in the product. The manufacturer's code is usually marked "Best when used by (date)."

(2) Date of pack/pack date. This indicates the date the product was processed or packaged for sale. It does not provide shelf life information.

(3) Expiration date. This indicates the last day that a product may be offered for sale to the consumer.

(4) Shelf life. This is the normal time that a product can be offered for sale and maintain a standard of wholesomeness, without deterioration of the product. The dating information assumes that proper storage techniques were used in handling the product. Note that veterinary food inspection personnel will normally accept the shelf life of the product as stated by the manufacturer, unless proven otherwise.

e. **Determining the Age of the Product**. There are two ways to determine the age of the product. One uses the pack date and the other uses the pull date.

(1) Date of pack (pack date). The Julian date is used for the calculation involved. The Julian date of pack is determined. The Julian date of pack is subtracted from the Julian date of the day of inspection. The result is the age of the product.

(2) Determine Julian date. The Julian date is simply the day of the year. For example, the Julian date for January 01 is 001. The Julian date for January 02 is 002 and so on. However, during a leap year the days will change slightly. A leap year will be divisible by 4. For example, 2000, 2004, 2006 are leap years. Use the charts on the next two pages to determine the Julian date and the age of the product.

EXAMPLE: Make sure the dates below are correct **(note some dates will be leap years)**

DATE	**Julian Date**
May 7, 2001	127
July 12, 2002	193
October 17, 2003	290
November 10, 2004	315
December 26, 2004	361

EXAMPLE: Today's Date Minus Date of Pack = Age of Product

3= year and 165 = the Julian date (165 – 003 = 162)

3165 -- 3003 = 162 days old
(14 June 2003) (3 Jan 2003)

(3) Pull date. A DOD standard publication is kept by each veterinary food inspection office. Information from this publication is compared with the pull date to determine if the product meets age requirements.

Julian Calendar - Perpetual

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	1	32	60	91	121	152	182	213	244	274	305	335	**1**
2	2	33	61	92	122	153	183	214	245	275	306	336	**2**
3	3	34	62	93	123	154	184	215	246	276	307	337	**3**
4	4	35	63	94	124	155	185	216	247	277	308	338	**4**
5	5	36	64	95	125	156	186	217	248	278	309	339	**5**
6	6	37	65	96	126	157	187	218	249	279	310	340	**6**
7	7	38	66	97	127	158	188	219	250	280	311	341	**7**
8	8	39	67	98	128	159	189	220	251	281	312	342	**8**
9	9	40	68	99	129	160	190	221	252	282	313	343	**9**
10	10	41	69	100	130	161	191	222	253	283	314	344	**10**
11	11	42	70	101	131	162	192	223	254	284	315	345	**11**
12	12	43	71	102	132	163	193	224	255	285	316	346	**12**
13	13	44	72	103	133	164	194	225	256	286	317	347	**13**
14	14	45	73	104	134	165	195	226	257	287	318	348	**14**
15	15	46	74	105	135	166	196	227	258	288	319	349	**15**
16	16	47	75	106	136	167	197	228	259	289	320	350	**16**
17	17	48	76	107	137	168	198	229	260	290	321	351	**17**
18	18	49	77	108	138	169	199	230	261	291	322	352	**18**
19	19	50	78	109	139	170	200	231	262	292	323	353	**19**
20	20	51	79	110	140	171	201	232	263	293	324	354	**20**
21	21	52	80	111	141	172	202	233	264	294	325	355	**21**
22	22	53	81	112	142	173	203	234	265	295	326	356	**22**
23	23	54	82	113	143	174	204	235	266	296	327	357	**23**
24	24	55	83	114	144	175	205	236	267	297	328	358	**24**
25	25	56	84	115	145	176	206	237	268	298	329	359	**25**
26	26	57	85	116	146	177	207	238	269	299	330	360	**26**
27	27	58	86	117	147	178	208	239	270	300	331	361	**27**
28	28	59	87	118	148	179	209	240	271	301	332	362	**28**
29	29		88	119	149	180	210	241	272	302	333	363	**29**
30	30		89	120	150	181	211	242	273	303	334	364	**30**
31	31		90		151		212	243		304		365	**31**
Day	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Day**

Julian Calendar - Leap Year

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	1	32	61	92	122	153	183	214	245	275	306	336	**1**
2	2	33	62	93	123	154	184	215	246	276	307	337	**2**
3	3	34	63	94	124	155	185	216	247	277	308	338	**3**
4	4	35	64	95	125	156	186	217	248	278	309	339	**4**
5	5	36	65	96	126	157	187	218	249	279	310	340	**5**
6	6	37	66	97	127	158	188	219	250	280	311	341	**6**
7	7	38	67	98	128	159	189	220	251	281	312	342	**7**
8	8	39	68	99	129	160	190	221	252	282	313	343	**8**
9	9	40	69	100	130	161	191	222	253	283	314	344	**9**
10	10	41	70	101	131	162	192	223	254	284	315	345	**10**
11	11	42	71	102	132	163	193	224	255	285	316	346	**11**
12	12	43	72	103	133	164	194	225	256	286	317	347	**12**
13	13	44	73	104	134	165	195	226	257	287	318	348	**13**
14	14	45	74	105	135	166	196	227	258	288	319	349	**14**
15	15	46	75	106	136	167	197	228	259	289	320	350	**15**
16	16	47	76	107	137	168	198	229	260	290	321	351	**16**
17	17	48	77	108	138	169	199	230	261	291	322	352	**17**
18	18	49	78	109	139	170	200	231	262	292	323	353	**18**
19	19	50	79	110	140	171	201	232	263	293	324	354	**19**
20	20	51	80	111	141	172	202	233	264	294	325	355	**20**
21	21	52	81	112	142	173	203	234	265	295	326	356	**21**
22	22	53	82	113	143	174	204	235	266	296	327	357	**22**
23	23	54	83	114	144	175	205	236	267	297	328	358	**23**
24	24	55	84	115	145	176	206	237	268	298	329	359	**24**
25	25	56	85	116	146	177	207	238	269	299	330	360	**25**
26	26	57	86	117	147	178	208	239	270	300	331	361	**26**
27	27	58	87	118	148	179	209	240	271	301	332	362	**27**
28	28	59	88	119	149	180	210	241	272	302	333	363	**28**
29	29	60	89	120	150	181	211	242	273	303	334	364	**29**
30	30		90	121	151	182	212	243	274	304	335	365	**30**
31	31		91		152		213	244		305		366	**31**
Day	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Day**

6-6. PRODUCT NONCONFORMANCE

The veterinary food inspection specialist is the government's QAR and follows standard procedures in deciding to accept of reject a product. When a product is rejected by the QAR, the product does not conform to the requirements of the purchasing documents, and it is called a nonconformance. The inspector (QAR), reports all non-conformances to the supervisor and to the accountable officer.

6-7. DISPOSING OF FOOD SAMPLES

After the inspection is completed, there may be food samples left. These must not be eaten by the inspectors or given away. Veterinary food inspection personnel have to decide if the food samples are usable (serviceable) or not. There are three alternatives that may be recommended to the supervisor.

a. **Return**. Usable (serviceable) samples may be returned to the accountable officer for general distribution.

b. **Test**. Samples may be submitted to a laboratory for testing, if applicable.

c. **Destroy**. Unusable (unserviceable) samples must be destroyed. When food samples are denatured or destroyed, veterinary food inspection personnel follow guidelines and a supervisor must witness the action taken and sign & date the food sample record.

Continue with Exercises

EXERCISES, LESSON 6

INSTRUCTIONS: The following exercises are to be answered by marking the lettered response that BEST answers the question or BEST completes the incomplete statement or by writing the answer in the space provided.

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

1. A veterinary food inspection specialist determines that the product is free of storage deterioration. He also performs container inspection and product-specific inspection. What is the inspection for?

   _____

2. You determine that the product delivered is the product specified in the purchasing documents. What are you inspecting for?

   _____

3. The inspector checks on the number of items per pound and the net weight of the product. What is he inspecting for?

   _____

4. List five types of condition inspection.

   _____

   _____

   _____

   _____

   _____

5. If you cannot find the location of the code on a food product, what should you do?

   _____

6. What is the main difference between open and closed dating codes?

_____

7. List three kinds of dates that may be indicated by the manufacturer's code dates.

_____

_____

_____

8. The Julian date of pack is 3336. The date of the day of inspection is 3357. What is the age of the product?

_____

9. A veterinary food inspection specialist is conducting a destination inspection. Is he the QAR?

   a. Yes.

   b. No.

10. During a destination inspection, a product is rejected by the QAR. Is it a nonconformance?

    a. Yes.

    b. No.

11. When inspectors are disposing of food samples after an inspection, there are three courses of action available. List the three alternatives.

_____

_____

_____

Check Your Answers on Next Page

SOLUTIONS TO EXERCISES, LESSON 6

1. Condition. (para 6-3)

2. Identity. (para 6-2)

3. Quantity. (para 6-4)

4. Product-specific inspection.
   Container inspection.
   Visual and olfactory inspection.
   Inspection for internal temperature.
   Inspection for age requirement. (para 6-3)

5. Look in the code book in the veterinary food inspection office.
   (para 6-5b(1))

6. For closed codes, the inspector must know the coding system to determine the age of the product. (para 6-5c)

7. Pull date.
   Date of pack.
   Expiration date. (para 6-5d)

8. 21 days. (para 6-5e)

9. a (para 6-6)

10. a (para 6-6)

11. Return.
    Test.
    Destroy. (para 6-7)

End of Lesson 6