



**NONRESIDENT  
TRAINING  
COURSE**



April 1994

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# **Mess Management Specialist 3 & 2**

**NAVEDTRA 14164**

Although the words “he,” “him,” and “his” are used sparingly in this course to enhance communication, they are not intended to be gender driven or to affront or discriminate against anyone.

## PREFACE

By enrolling in this self-study course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the total Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program.

**THE COURSE:** This self-study course is organized into subject matter areas, each containing learning objectives to help you determine what you should learn along with text and illustrations to help you understand the information. The subject matter reflects day-to-day requirements and experiences of personnel in the rating or skill area. It also reflects guidance provided by Enlisted Community Managers (ECMs) and other senior personnel, technical references, instructions, etc., and either the occupational or naval standards, which are listed in the *Manual of Navy Enlisted Manpower Personnel Classifications and Occupational Standards*, NAVPERS 18068.

**THE QUESTIONS:** The questions that appear in this course are designed to help you understand the material in the text.

**VALUE:** In completing this course, you will improve your military and professional knowledge. Importantly, it can also help you study for the Navy-wide advancement in rate examination. If you are studying and discover a reference in the text to another publication for further information, look it up.

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## **Sailor's Creed**

“I am a United States Sailor.

I will support and defend the Constitution of the United States of America and I will obey the orders of those appointed over me.

I represent the fighting spirit of the Navy and those who have gone before me to defend freedom and democracy around the world.

I proudly serve my country's Navy combat team with honor, courage and commitment.

I am committed to excellence and the fair treatment of all.”

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# INSTRUCTIONS FOR TAKING THE COURSE

## ASSIGNMENTS

The text pages that you are to study are listed at the beginning of each assignment. Study these pages carefully before attempting to answer the questions. Pay close attention to tables and illustrations and read the learning objectives. The learning objectives state what you should be able to do after studying the material. Answering the questions correctly helps you accomplish the objectives.

## SELECTING YOUR ANSWERS

Read each question carefully, then select the BEST answer. You may refer freely to the text. The answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking the course.

## SUBMITTING YOUR ASSIGNMENTS

To have your assignments graded, you must be enrolled in the course with the Nonresident Training Course Administration Branch at the Naval Education and Training Professional Development and Technology Center (NETPDTC). Following enrollment, there are two ways of having your assignments graded: (1) use the Internet to submit your assignments as you complete them, or (2) send all the assignments at one time by mail to NETPDTC.

**Grading on the Internet:** Advantages to Internet grading are:

- you may submit your answers as soon as you complete an assignment, and
- you get your results faster; usually by the next working day (approximately 24 hours).

In addition to receiving grade results for each assignment, you will receive course completion confirmation once you have completed all the

assignments. To submit your assignment answers via the Internet, go to:

<http://courses.cnet.navy.mil>

**Grading by Mail:** When you submit answer sheets by mail, send all of your assignments at one time. Do NOT submit individual answer sheets for grading. Mail all of your assignments in an envelope, which you either provide yourself or obtain from your nearest Educational Services Officer (ESO). Submit answer sheets to:

COMMANDING OFFICER  
NETPDTC N331  
6490 SAUFLEY FIELD ROAD  
PENSACOLA FL 32559-5000

**Answer Sheets:** All courses include one “scannable” answer sheet for each assignment. These answer sheets are preprinted with your SSN, name, assignment number, and course number. Explanations for completing the answer sheets are on the answer sheet.

**Do not use answer sheet reproductions:** Use only the original answer sheets that we provide—reproductions will not work with our scanning equipment and cannot be processed.

Follow the instructions for marking your answers on the answer sheet. Be sure that blocks 1, 2, and 3 are filled in correctly. This information is necessary for your course to be properly processed and for you to receive credit for your work.

## COMPLETION TIME

Courses must be completed within 12 months from the date of enrollment. This includes time required to resubmit failed assignments.

## **PASS/FAIL ASSIGNMENT PROCEDURES**

If your overall course score is 3.2 or higher, you will pass the course and will not be required to resubmit assignments. Once your assignments have been graded you will receive course completion confirmation.

If you receive less than a 3.2 on any assignment and your overall course score is below 3.2, you will be given the opportunity to resubmit failed assignments. **You may resubmit failed assignments only once.** Internet students will receive notification when they have failed an assignment--they may then resubmit failed assignments on the web site. Internet students may view and print results for failed assignments from the web site. Students who submit by mail will receive a failing result letter and a new answer sheet for resubmission of each failed assignment.

## **COMPLETION CONFIRMATION**

After successfully completing this course, you will receive a letter of completion.

## **ERRATA**

Errata are used to correct minor errors or delete obsolete information in a course. Errata may also be used to provide instructions to the student. If a course has an errata, it will be included as the first page(s) after the front cover. Errata for all courses can be accessed and viewed/downloaded at:

<http://www.advancement.cnet.navy.mil>

## **STUDENT FEEDBACK QUESTIONS**

We value your suggestions, questions, and criticisms on our courses. If you would like to communicate with us regarding this course, we encourage you, if possible, to use e-mail. If you write or fax, please use a copy of the Student Comment form that follows this page.

## **For subject matter questions:**

E-mail: n313.products@cnet.navy.mil  
Phone: Comm: (850) 452-1001, Ext. 2167  
DSN: 922-1001, Ext. 2167  
FAX: (850) 452-1370  
(Do not fax answer sheets.)  
Address: COMMANDING OFFICER  
NETPDTC (CODE 313)  
6490 SAUFLEY FIELD ROAD  
PENSACOLA FL 32509-5237

## **For enrollment, shipping, grading, or completion letter questions**

E-mail: fleetservices@cnet.navy.mil  
Phone: Toll Free: 877-264-8583  
Comm: (850) 452-1511/1181/1859  
DSN: 922-1511/1181/1859  
FAX: (850) 452-1370  
(Do not fax answer sheets.)  
Address: COMMANDING OFFICER  
NETPDTC (CODE N331)  
6490 SAUFLEY FIELD ROAD  
PENSACOLA FL 32559-5000

## **NAVAL RESERVE RETIREMENT CREDIT**

If you are a member of the Naval Reserve, you will receive retirement points if you are authorized to receive them under current directives governing retirement of Naval Reserve personnel. For Naval Reserve retirement, this course is evaluated at 12 points. (Refer to *Administrative Procedures for Naval Reservists on Inactive Duty*, BUPERSINST 1001.39, for more information about retirement points.)

## **COURSE OBJECTIVES**

In completing this nonresident training course, you will demonstrate a knowledge of the subject matter by correctly answering questions on the following: sanitation; receipt, inspection, expenditure, and storage of food items; accounting; foodservice equipment; food preparation; meat, poultry, and seafood; nutrition and menu planning; breads and desserts; foodservice; quarters afloat and ashore; and field kitchens.



# CHAPTER 1

## SANITATION

In a foodservice operation nothing can rival the importance of the sanitary aspects of food preparation and service. Carelessly handled food is easily contaminated with pathogenic organisms that may lead to illness. This chapter discusses the methods of preventing illnesses arising from poor sanitary practices in the preparation and service of food.

In addition to the hazards of food contamination, which Mess Management Specialist (MS) personnel have always contended with, modern warfare has added other hazardous chemical, biological, and radiological agents that may be used in any future war. Protection of the food supply and decontamination measures in the galley and messing areas are vital to the defense of the ship or station.

### FOOD-BORNE ILLNESSES

Food-borne illnesses can incapacitate large numbers of personnel in a short period of time. In addition to the toxins or poisons produced by bacterial growth, certain foods are inherently or naturally poisonous. The poisons in these foods tend to attack the nervous system resulting in such symptoms as weakness or paralysis, numbness, tingling of the ears, apprehension, and even death.

Food-borne illnesses can be classified into the three following basic types: natural or chemical food poisoning, food intoxication, and food infection.

### NATURAL OR CHEMICAL FOOD POISONING

Both natural and chemical food poisonings are caused by man; man's carelessness, indifference, or ignorance. Natural and chemical food poisonings are grouped together as one food-borne illness because they both occur naturally. The characteristics that differentiate natural and chemical poisonings are discussed next.

**Natural Food Poisoning.** In this type of food-borne illness, the food in its natural state contains elements poisonous to humans. As an MS, you will learn of many new foods that are not common to the United States.

Some of these foods are from plants and animals that can cause severe illness and even death when consumed.

Every effort is made to keep poisonous plants off a ship. But sometimes they do get aboard. Toadstools, hemlock mussels (such as those found on the West Coast during the summer), tropical fish (such as toadfish, puffing fish, and certain members of the jack fish family), and in tropical waters, at certain seasons of the year, barracuda can cause poisoning and death. Some types of mushrooms also contain natural poisons. Only an expert can decide whether or not a certain mushroom is fit to eat. The safest rule is to never use unfamiliar foods unless your medical officer approves their use.

**Chemical Food Poisoning.** Some food-borne illnesses are caused by chemical poisons. In the case of chemical food poisoning, the poisons are introduced into the food accidentally. The following types of chemical poisoning may be experienced in foodservice operations.

### Antimony Poisoning

Antimony poisoning is caused by eating food cooked in poorly coated or chipped enameled cooking utensils.

### Cadmium Poisoning

Cadmium poisoning may take place if chilled acid foods or drinks are allowed to stand in cadmium-plated metal containers before they are served. Illness may strike 10 to 15 minutes after the food is eaten. Lemonade, fruit punch, tomatoes, raspberry gelatin dessert, and tea containing lemon juice can be contaminated by cadmium. Also, ice trays and metal pitchers plated with cadmium can cause chemical poisoning when filled with cold acid foods.

### Cyanide Poisoning

Cyanide poisoning may result if silverware is not properly washed and sanitized after detarnishing.

## **Zinc Poisoning**

Zinc poisoning in food is rare. It may occur when acid foods are cooked in galvanized iron kettles. Outbreaks have occurred when apples have been cooked in this type of kettle.

## **Lead and Arsenic Poisonings**

Lead and arsenic sometimes used to spray vegetables may cause these foods to become poisonous. Be sure all fresh fruits and vegetables are thoroughly washed before you cook them, or before they are eaten raw. Lead poisoning may also result from the ingestion of food or water that has been in contact with lead pipes, lead-plated equipment, and lead-soldered pots and pans. Lead is a cumulative poison; the accumulation of small doses in the body will eventually cause chronic lead poisoning.

## **Fluoride Poisoning**

Fluoride poisoning is caused by sodium fluoride, a substance often used to get rid of cockroaches. It is a white powder that can be easily mistaken for powdered milk. Keep all containers of such poison out of the galley and bakeshop.

## **Methyl Chloride Poisoning**

Methyl chloride poisoning is caused by leaking mechanical refrigerators. Check your equipment for such leaks and request scheduled planned maintenance service (PMS) from the engineering division to detect faulty equipment.

## **FOOD INTOXICATION**

This type of illness is caused by toxins. Under favorable conditions certain bacteria produce chemical compounds called toxins, which, if ingested, cause food intoxication. Staphylococcus is the most commonly reported food intoxication.

### **Staphylococcus**

The staphylococcus germ is found in the throat, on the skin in pimples and boils, and in great abundance in the postnasal drip of people recovering from colds. Consequently, the most prevalent carrier of food intoxication is foodservice personnel. People with any of these symptoms must not be allowed to work in food preparation spaces in any capacity.

Foods most associated with outbreaks of staphylococcus are pork products and fowl. Ham is also susceptible to staphylococcus poisoning and must not be sliced too far in advance of serving unless properly refrigerated.

Other foods commonly involved are potted meats, fish, cheese, milk products (including cream- and custard-filled pastries), and potato and macaroni salads. Foods can contain sufficient toxin to cause food poisoning and yet have no odor of spoilage and no abnormal taste. Even when food has been properly refrigerated, it can become contaminated by bacteria while it is being prepared or while it is standing in the galley before it is served.

### **Botulism**

Botulism is a second type of food intoxication. This disease, usually fatal, is caused by the toxin produced by the rod-shaped bacterium called clostridium botulinum. Botulinum organisms are found in the soil and gain access to foods through contact with soil, dust, and possibly water.

The foods most often responsible for botulism are either canned or fermented foods in which the preserving process has not succeeded in destroying the bacteria in the food. The botulinum grows and multiplies in an airtight container. However, when cans are damaged, leak, bulge, or are sprung, the contents are presumed to be unsafe.

The botulinum organisms sometimes produce a gas and cheesy odor in food, but the absence of these signs does not necessarily mean that the bacteria are not present.

### **FOOD INFECTION**

This type of food illness is caused by microorganisms such as the salmonella, shigella, and clostridium species and the streptococcus, bacillus, and typhoid fever bacteria. A large percentage of food infections are transmitted by foods that have been allowed to remain at room temperature for a prolonged period of time.

The great majority of outbreaks of food infection is caused by meat (poultry, particularly turkey) and meat mixtures. For this reason, poultry dressing should not be served as a leftover. Other foods that may be involved are custards, milk cream, ice cream, seafood, meat, eggs, meat products, shellfish, salads, mayonnaise,