



**NONRESIDENT
TRAINING
COURSE**



April 1999

Aerographer's Mate

Module 4—Environmental Communications and Administration

NAVEDTRA 14272

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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SUMMARY OF THE AEROGRAPHER'S MATE TRAINING SERIES

The following modules of the AG training series are available:

AG MODULE 1, NAVEDTRA 14269, *Surface Weather Observations*

This module covers the basic procedures that are involved with conducting surface weather observations. It begins with a discussion of surface observation elements, followed by a description of primary and backup observation equipment that is used aboard ships and at shore stations. Module 1 also includes a complete explanation of how to record and encode surface METAR observations using WMO and NAVMETOCCOM guidelines. The module concludes with a description of WMO plotting models and procedures.

AG MODULE 2, NAVEDTRA 14270, *Miscellaneous Observations and Codes*

This module concentrates on the observation procedures, equipment, and codes associated with upper-air observations and bathythermograph observations. Module 2 also discusses aviation weather codes, such as TAFs and PIREPs, and includes a chapter on surf observation procedures. Radiological fallout and chemical contamination plotting procedures are also explained.

AG MODULE 3, NAVEDTRA 14271, *Environmental Satellites and Weather Radar*

This module describes the various type of environmental satellites, satellite imagery, and associated terminology. It also discusses satellite receiving equipment. In addition, Module 3 contains information on the Weather Surveillance Radar-1988 Doppler (WSR-88D). It includes a discussion of electromagnetic energy and radar propagation theory, and explains the basic principles of Doppler radar. The module also describes the configuration and operation of the WSR-88D, as well as WSR-88D products.

AG MODULE 4, NAVEDTRA 14272, *Environmental Communications and Administration*

This module covers several of the most widely used environmental communications systems within the METOC community. It also describes the software programs and products associated with these systems. The module concludes with a discussion of basic administration procedures.

NOTE

Additional modules of the AG training series are in development. Check the NETPDTC website for details at <http://www.cnet.navy.mil/netpdtc/nac/neas.htm>. For ordering information, check NAVEDTRA 12061, Catalog of Nonresident Training Courses, which is also available on the NETPDTC website.

SAFETY PRECAUTIONS

Safety is a paramount concern for all personnel. Many of the Naval Ship's Technical Manuals, manufacturer's technical manuals, and every Planned Maintenance System (PMS) maintenance requirement card (MRC) include safety precautions. Additionally, OPNAVINST 5100.19 (series), *Naval Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat*, and OPNAVINST 5100.23 (series), *NAVOSH Program Manual*, provide safety and occupational health information. The safety precautions are for your protection and to protect equipment.

During equipment operation and preventive or corrective maintenance, the procedures may call for personal protective equipment (PPE), such as goggles, gloves, safety shoes, hard hats, hearing protection, and respirators. When specified, your use of PPE is mandatory. You must select PPE appropriate for the job since the equipment is manufactured and approved for different levels of protection. If the procedure does not specify the PPE, and you aren't sure, ask your safety officer.

Most machinery, spaces, and tools requiring you to wear hearing protection are posted with hazardous noise signs or labels. Eye hazardous areas requiring you to wear goggles or safety glasses are also posted. In areas where corrosive chemicals are mixed or used, an emergency eyewash station must be installed.

All lubricating agents, oil, cleaning material, and chemicals used in maintenance and repair are hazardous materials. Examples of hazardous materials are gasoline, coal distillates, and asphalt. Gasoline contains a small amount of lead and other toxic compounds. Ingestion of gasoline can cause lead poisoning. Coal distillates, such as benzene or naphthalene in benzol, are suspected carcinogens. Avoid all skin contact and do not inhale the vapors and gases from these distillates. Asphalt contains components suspected of causing cancer. Anyone handling asphalt must be trained to handle it in a safe manner.

Hazardous materials require careful handling, storage, and disposal. PMS documentation provides hazard warnings or refers the maintenance man to the Hazardous Materials User's Guide. Material Safety Data Sheets (MSDS) also provide safety precautions for hazardous materials. All commands are required to have an MSDS for each hazardous material they have in their inventory. You must be familiar with the dangers associated with the hazardous materials you use in your work. Additional information is available from your command's *Hazardous Material Coordinator*. OPNAVINST 4110.2 (series), *Hazardous Material Control and Management*, contains detailed information on the hazardous material program.

Recent legislation and updated Navy directives implemented tighter constraints on environmental pollution and hazardous waste disposal. OPNAVINST 5090.1 (series), *Environmental and Natural Resources Program Manual*, provides detailed information. Your command must comply with federal, state, and local environmental regulations during any type of construction and demolition. Your supervisor will provide training on environmental compliance.

Cautions and warnings of potentially hazardous situations or conditions are highlighted, where needed, in each chapter of this TRAMAN. Remember to be safety conscious at all times.

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.cnet.navy.mil/netpdtc/nac/neas.htm>

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: n315.products@cnet.navy.mil
Phone: Comm: (850) 452-1001, Ext. 1713
DSN: 922-1001, Ext. 1713
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC (CODE N315)
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32509-5000

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 2 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 subjects: environmental communications, environmental software programs, and administration.

Student Comments

Course Title: *Aerographer's Mate, Module 4—Environmental Communications and Administration*

NAVEDTRA: 14272 **Date:** _____

We need some information about you:

Rate/Rank and Name: _____ SSN: _____ Command/Unit _____

Street Address: _____ City: _____ State/FPO: _____ Zip _____

Your comments, suggestions, etc.:

<p>Privacy Act Statement: Under authority of Title 5, USC 301, information regarding your military status is requested in processing your comments and in preparing a reply. This information will not be divulged without written authorization to anyone other than those within DOD for official use in determining performance.</p>
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NETPDTC 1550/41 (Rev 4-00)

CHAPTER 1

ENVIRONMENTAL COMMUNICATIONS

INTRODUCTION

In the field of meteorology and oceanography, we depend heavily on information to do our jobs. We must collect raw observation reports and processed data, and both collect and disseminate forecast products. Today, we must rely heavily on computer systems to process information. Your responsibilities as an observer will include processing data received from various communications systems and retrieving environmental data for the forecaster. In addition, you will be asked to compose various types of message reports for transmission to other activities. Most of these tasks involve the use of computers and computer systems.

In this chapter, we begin with a brief discussion about communications security. We then take a look at several environmental communications systems, such as telephone systems, computer networks, and digital facsimile. Next, we discuss environmental computer workstations, naval message transmission networks, and voice radio systems. We complete the chapter with a discussion of environmental communications systems designed specifically for use aboard ship.

COMMUNICATIONS SECURITY

LEARNING OBJECTIVES: Identify the classification markings and special handling markings authorized for naval correspondence and message traffic. Identify the publication that outlines information and personnel security procedures for the Navy.

Environmental information, for the most part, is freely exchanged between countries of the world. Within the Navy and Marine Corps, some environmental information, if released to the wrong person or country, could threaten the defenses of the United States or our allies. This type of information must be classified according to Department of Defense and Department of the Navy security guidelines to prevent its unauthorized disclosure. Information evaluated for its impact on the defense of the United States is defined as either "unclassified" or "classified."

Unclassified information has been evaluated, but disclosure of the information would not effect the security of the country. *Classified* information, if disclosed, could effect national security to some degree. Access restrictions are assigned to protect classified information.

The program to protect sensitive information and to prevent its intentional or inadvertent disclosure to other nations is discussed in depth in OPNAVINST 5510.1, *Department of the Navy Information and Personnel Security Program Regulation*, often called the *Security Manual*. The manual defines three general categories of classified information in increasing order of restriction: Confidential (C), Secret (S), and Top Secret (TS). Additionally, the *Security Manual* provides definitions and guidelines for handling both unclassified and classified information and information with special-handling markings.

The Naval Telecommunications Procedure--Three (NTP 3), Telecommunications Users Manual further explains the use of special-handling markings. Some of the most common include the following:

- **EFTO (Encrypt For Transmission Only):** Used to identify and protect messages during electrical transmission that do not meet the criteria for classification but have potential value if subjected to analysis.
- **FOUO (For Official Use Only):** Unclassified material not given a security classification, but for various reasons, may not be discussed or released to the public.
- **NATO RESTRICTED:** Information treated similar to FOUO with access only for official purposes to North Atlantic Treaty Organization (NATO) member nations.
- **ALLIED RESTRICTED:** Information so marked is treated as Confidential information when received by U.S. activities.
- **NOFORN or NF (NOt releasable to FOReign Nationals):** Classified material that may not be released to any foreign government, foreign national, or non-United States citizen, even if