



**NONRESIDENT
TRAINING
COURSE**



September 1994

**Mineman, Volume 3
(MN 1 & C)**

NAVEDTRA 14155

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.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

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.

COURSE OVERVIEW: In completing this course, you will demonstrate a knowledge of the Underwater Mine Maintenance System and mine handling and storage.

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.

*1994 Edition Prepared by
MNCM M. D. Femrite*

Published by
NAVAL EDUCATION AND TRAINING
PROFESSIONAL DEVELOPMENT
AND TECHNOLOGY CENTER

**NAVSUP Logistics Tracking Number
0504-LP-026-8080**

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 MINEMAN TRAINING SERIES

This series of training manuals was developed to replace the *Mineman 3 & 2* and *Mineman 1 & C* manuals. The content is directed toward personnel working toward advancement in the Mineman rating.

The five volumes in this series are based on major topic areas with which the Mineman should be familiar. Their topics include the following areas:

Volume 1: Mine warfare, operations, and organization.

Volume 2: Mine shop administration and supply.

Volume 3: Mine maintenance and explosive materials.

Volume 4: Mines and mine components.

Volume 5: Exercise and training mines.

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: n311.products@cnet.navy.mil
Phone: Comm: (850) 452-1548
DSN: 922-1548
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC N311
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 N331
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32559-5000

NAVAL RESERVE RETIREMENT CREDIT

If you are a member of the Naval Reserve, you may earn retirement points for successfully completing this course, if authorized 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.)

Student Comments

Course Title: Mineman, Volume 3 (MN 1 & C)

NAVEDTRA: 14155 **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

UNDERWATER MINE MAINTENANCE SYSTEM

LEARNING OBJECTIVES

Upon completing this chapter, you should be able to do the following:

1. Identify the different levels of mine maintenance and maintenance schedules.
2. Describe the requirements for the recording and reporting of the maintenance on mines and associated equipment.
3. Recognize the types and causes of corrosion and the common types of materials available for use in corrosion prevention and protection against moisture.
4. Identify the proper shop procedures in torquing, power tool usage, maintenance of power tools, and mine assembly equipment.

The Underwater Mine Maintenance System is designed to ensure that all mine weapons systems are reliable and ready for issue. The system is used to prevent equipment failures that might otherwise result in repeated corrective maintenance actions.

As a Mineman, whether a supervisor or a worker assigned to the mine assembly division, you will encounter different levels of maintenance. This chapter defines each level as it applies to underwater mines and destructors and indicates the action assigned to each level. It also provides the rationale for the assignment of such actions.

Topics in this chapter include mine maintenance levels, recording and reporting maintenance, corrosion control, and shop procedures.

MINE MAINTENANCE LEVELS

The Underwater Mine Maintenance System is organized under the standard Department of Defense

Maintenance System and contains three levels. All maintenance actions are to be performed under one of these levels.

Because of the many tasks associated with the corrective maintenance of mines and associated equipment, you should refer to *Underwater Mine Maintenance System*, NAVSEA SW550-FO-PMS-010; appropriate mine assembly manuals; and assembly-level items, class-B criteria manuals for additional information.

This section discusses organizational-level maintenance, depot-level maintenance, intermediate-level maintenance, programmed maintenance, and other maintenance cycles.

ORGANIZATIONAL-LEVEL MAINTENANCE

Organizational-level maintenance is the lowest level of maintenance. Performed by the user organization on its assigned equipment, it consists of inspecting,

servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies.

Once the weapons have been delivered to the planting vehicle and regardless of who performs the task, the following actions are organizational-level maintenance functions:

- Visual inspections
- Flight gear reorientation
- Safety device removal (safety pins, lanyards, etc.)

Mines in the custody of the using organizations are relatively maintenance free. Whether on board ships or stations for specific minefield planning missions or for contingency purposes, mines are off-loaded if the mission is aborted or if programmed maintenance is required. As an exception, actions to change a mine's short-cycle maintenance period, in lieu of off-loading and performing programmed maintenance, are permitted when operational or tactical situations dictate. These actions must be approved by the operational commander in accordance with chapter 3 of NAVSEA SW550-FO-PMS-010 and must be performed by Mobile Mine Assembly Group (MOMAG) personnel.

The organizational-level function of delivering surface- or submarine-laid mines pierside for shipment in assembly configuration A is performed by shore-based activities. These mines normally do not require further assembly or maintenance, other than visual inspections, by personnel assigned to the using organization. The mines remain on board only for the duration of a specific mission and are returned ashore for programmed maintenance if the mission is aborted or canceled.

Aircraft-laid mines are delivered to air stations for planting by shore-based aircraft and are returned to an intermediate-level mine assembly activity if the mission is aborted. For planting by carrier-based aircraft, mines delivered on board maybe accompanied by detachments of MOMAG teams. These teams, when required by operational commanders, are equipped to complete final preparations or make operational setting changes to the mines before their release to carrier personnel, who then load the mines on aircraft. Again, such consignments are normally for the duration of a specific mining mission

only, the mines require no maintenance for that duration except visual inspection. The mines are returned to an intermediate-level maintenance site if the mission is aborted or when programmed maintenance is required.

DEPOT-LEVEL MAINTENANCE

Depot-level maintenance of mines includes the support of intermediate-level maintenance activities. Depots have more extensive industrial facilities and equipment than are available at intermediate-level activities.

Supported by technical repair standards (TRSS) and overhaul, screening, and repair specifications (OSRS) documents, the following actions are depot-level maintenance functions with regard to assembly-level items, test equipment, and support equipment: repair, alteration, modification, modernization, overhaul, reclamation, and reconstruction.

Depot-level maintenances performed only at specific shore-based military or contracting facilities. Although depot-level maintenance, as applied to mine weapons systems, consists of component maintenance, intermediate-level functions that are performed ashore may be performed at depots. When that is done, the functions remain intermediate-level functions; that is, intermediate-level maintenance on depot-stored assembled mines may be performed at naval weapons stations.

A depot may have MOMAG teams assigned in support of operational requirements. In that case, intermediate-level mine maintenance remains intermediate, regardless of where it is performed.

INTERMEDIATE-LEVEL MAINTENANCE

Intermediate-level maintenance is performed by MOMAG activities responsible for providing direct-and general-support mine maintenance to using organizations. To the extent authorized by proper authority, the following actions are intermediate-level maintenance functions:

- Assembly, disassembly, maintenance, and testing of mines