



**NONRESIDENT
TRAINING
COURSE**



October 1992

Construction Mechanic, Advanced

NAVEDTRA 14050

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: n314.products@cnet.navy.mil
Phone: Comm: (850) 452-1001, Ext. 1826
DSN: 922-1001, Ext. 1826
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC (CODE 314)
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 17 points. These points will be credited in units, as follows:

Unit 1 - 12 points upon satisfactory completion of assignments 1 through 7.

Unit 2 – 5 points upon satisfactory completion of Assignment 8 through 11.

(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: The Public Works Transportation Shops Supervisor; The ALFA Company Shops Supervisor; Engine Troubleshooting and

Overhaul; Troubleshooting Electrical Systems; Fuel System Overhaul; Inspecting and Troubleshooting Brake Systems; Clutches and Automatic Transmissions; Air Compressor Overhaul; The Shop Inspector; Hydraulics; Troubleshooting Transmissions, Transfer Cases, and Differentials; Wheel and Track Alignment; and Air-Conditioning Systems.

Student Comments

Course Title: Construction Mechanic, Advanced

NAVEDTRA: 14050 **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

PUBLIC WORKS

TRANSPORTATION SHOPS SUPERVISOR

A supervisor should possess a large amount of TACT and DIPLOMACY. Directing shop activities requires that you contact all types of people; for example, the mechanics who work for you, the personnel (military and/or civilian) who operate the equipment, and the officer (or civilian) to whom you are responsible. You must be careful not to let prejudices interfere with your good judgment.

A transportation maintenance shop supervisor will need all of his past experience in diagnosing mechanical troubles accurately, scheduling and planning repair work skillfully, using all kinds of repair equipment, and directing the many activities in maintaining transportation and earth-moving equipment.

At some time during your career in the Navy, you may be assigned as a foreman in a public works (PW) transportation maintenance shop. You may also have to serve as supervisor of a Construction Battalion equipment maintenance shop. Because of the variation in the two different types of duty, the responsibilities of a foreman in a PW transportation maintenance shop will be discussed in this chapter, and the battalion equipment company shops supervisor's responsibilities will be discussed in the following chapter. Although many of the positions have the same basic duties, the methods of doing the work may differ considerably. Certain areas of cost control vary a great deal. Duty in a transportation maintenance shop includes work of a continuing nature. Therefore, to provide continuity, civil service personnel are also employed.

PUBLIC WORKS TRANSPORTATION DEPARTMENT FUNCTIONAL ORGANIZATION

A PW transportation department of a naval shore facility is generally stationary. As a

supervisor in the PW maintenance branch, you would probably not have to plan and construct a new transportation shop, but, rather, would supervise the repair of equipment. However, if you are involved in the establishment of a new base, you will probably be consulted about the location and layout of the maintenance shops. You can obtain detailed information on the physical layout of the buildings by referring to *Naval Facilities Planning Guide*, P-437, Facilities Number 214 20B, Drawing 6028198. The location of tools and shop equipment depends on the amount and type of equipment to be maintained.

The PW transportation organization discussed in this chapter is typical of the type usually found within a public works activity. The titles and organization may vary from activity to activity. To learn more about these organizations, you should obtain and study current NAVFAC instructions and publications that pertain to the public work centers and public work departments. By referring to figure 1-1, you can see that the

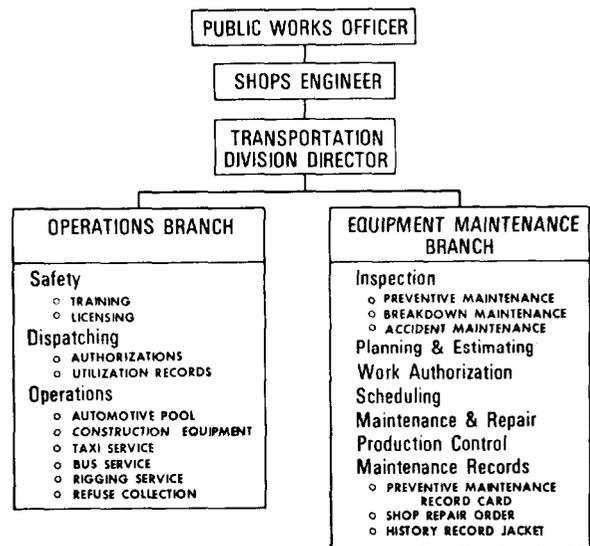


Figure 1-1.—Functional organization for transportation management.

transportation division is broken down into two branches: operations branch and equipment maintenance branch. Note that both come under the control of the transportation division director, who reports through a chain of command to the public works officer (PWO).

DUTIES AND RESPONSIBILITIES OF SUPERVISORY PERSONNEL

This phase of our discussion deals with the duties and responsibilities of various supervisory personnel within the maintenance branch. The individual assignments depend upon the needs of the activity and the skill and experience of personnel available. The public works officer makes the final decision.

TRANSPORTATION DIVISION DIRECTOR

As head of the transportation division, the transportation director exercises full technical, managerial, and administrative responsibility for organizing, directing, and controlling the work of the division. The director also functions as the technical advisor within and outside the activity in planning and procuring vehicle/equipment requirements for the activity and other supported customers.

The transportation director exercises complete managerial responsibilities for the efficient, economical, and timely administration of the divisions; directs operations assignments; manages scheduled preventive maintenance (PM) as well as repair/overhaul; and is charged with the requisition and disposition of automotive vehicles, construction equipment, materials-handling equipment, and miscellaneous specialized equipment.

MANAGER OF THE EQUIPMENT MAINTENANCE BRANCH

The manager of the maintenance branch is responsible for planning, work direction, and administration, and acts as, and assumes the duties of, the transportation director in case of the absence of that person. The maintenance branch's responsibilities include the following:

1. Preparing and submitting the maintenance division fiscal financial budget
2. Scheduling work for subordinate supervisors and planning for the efficient use of materials and equipment
3. Organizing, coordinating, and directing the work activities of personnel and units supervised

4. Maintaining a balanced workload for subordinate work units by shifting personnel effectively among the units

5. Coordinating the work in areas of responsibilities with other activities and department/division supervisory personnel to maintain a balanced scheduled work flow

6. Reviewing and analyzing production, cost, and personnel utilization records to evaluate the progress of work and to control or reduce costs

7. Reviewing completed work records (Shop Repair Order, NAVFAC Form 9-11200/3A, shown in figure 1-2, and other computer reports) to assure that production and quality standards are met

8. Inspecting the shop areas periodically and checking safety conditions, cleanliness, security, requirements for materials, and shop equipment

9. Acting on any personnel matter concerning subordinates and assisting in the resolution of grievances referred by subordinate supervisors

10. Promoting safety programs within the immediate organization, reviewing the safety performance of the supervisors, and initiating corrective action as required

11. Seeing that progress, production, cost, and other records are prepared, maintained, and consolidated

12. Developing training programs for employees and subordinate supervisors

PRODUCTION CONTROL SUPERVISOR

The production control supervisor is responsible for receiving, inspecting, and classifying, within applicable Navy codes, all new and used equipment; preparing reports on equipment received; scheduling equipment into the shop for its first servicing; and arranging for its inclusion into the PM program. Additionally, the production control supervisor determines parts and tools required to support equipment during its life cycle; directs the inspection of vehicles coming into the shop to find the nature and extent of repair or PM service required; and determines the most economical means and methods of repairs. The production control supervisor applies standard hours and cost estimates on individual equipment jobs; initiates shop repair orders; and schedules work into the various work centers/shops for orderly accomplishment. Finally, the production control supervisor directs the inspection of the mechanics' work while in progress; ensures a quality inspection upon