



**NONRESIDENT
TRAINING
COURSE**

December 2001



Aviation Boatswain's Mate H

NAVEDTRA 14311

NOTICE

Page 8-20 must be printed on a COLOR printer.

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

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.

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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: Provides information on tools and equipment, aircraft handling equipment, aircraft handling, aircraft firefighting, and crash and salvage.

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.

*2001 Edition Prepared by
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AND TECHNOLOGY CENTER

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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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ASSIGNMENT QUESTIONS follow the Index.

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: n315.products@cnet.navy.mil
Phone: Comm: (850) 452-1001, ext. 1779
DSN: 922-1001, ext. 1779
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC N315
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 9 points. (Refer to *Administrative Procedures for Naval Reservists on Inactive Duty*, BUPERSINST 1001.39, for more information about retirement points.)

Student Comments

Course Title: Aviation Boatswain's Mate H

NAVEDTRA: 14311 Date: _____

We need some information about you:

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

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

Your comments, suggestions, etc.:

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.

NETPDTC 1550/41 (Rev 4-00)

CHAPTER 1

TOOLS AND EQUIPMENT

Routinely, as an ABH, you are assigned tasks involving the use of hand tools or power tools. Therefore, it is to your advantage that you become familiar with the tools you need to accomplish these tasks quickly and SAFELY. *Use and Care of Hand Tools and Measuring Tools*, NAVEDTRA 12085, should be read for more detailed information on the proper use of each particular hand tool. For example, using a screwdriver as a cold chisel is extremely dangerous and a mark of poor workmanship and judgment. "The right tool for the right job" is an old proverb, but it is a time proven one.

SAFETY is paramount when using any tool. Special care should be used with a wood or metal cutting tool. Safety glasses must be in place before cutting tools are used. An organized tool control program will also increase safety for personnel and equipment. Never use the crash tool roll kit for general maintenance, always use the tools designated for divisional use.

Power tools can be dangerous and should only be used by a person who has been fully familiarized and checked out in their use and proper operation by competent authority. Safety cannot be overemphasized in the use of hand tools or power tools. See OPNAVINST 5100.19 for safety precautions, as well as the manufacture's safety precautions.

Upon completion of this chapter, you will be able to select, use, and maintain tools required for maintenance of equipment; identify the uses for wire rope and various lines; and determine safe work load and breaking strength values of wire rope and various lines.

HAND TOOLS

OBJECTIVES: Identify the different types of hand tools. Describe the proper care of hand tools.

Tools are designed to make a job easier and enable you to work very efficiently. Tools are a craftsman's best friend. (A *craftsman* is skillful in any one of a number of trades, such as machinist, carpenter, plumber, builder, or steelworker). If the tools are not used properly or cared for, their advantages will be lost.

Regardless of the type of work you have to do, you must use the correct tools to do your work quickly, accurately, and safely. When you do not use the proper tool, you waste time, reduce your efficiency, and may injure yourself. This section explains the specific purposes, correct use, and proper care of hand tools. Figures 1-1 and 1-2 illustrate some of the hand tools you will use.

SCREWDRIVERS

Screwdrivers are frequently abused as a tool. They should only be used for driving and removing screws. They are not designed for scraping or mixing paint, cleaning padeyes, use as a pry bar or chisel, or testing an electrical circuit.

Standard Screwdriver

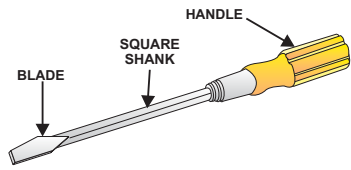
Three main parts make up the construction of the standard screwdriver: the handle, the shank, and the end. The end (called the blade) fits into the screw slot. When you are using a screwdriver, select the proper size blade for the job intended. A blade too large or too small causes the screwdriver blade and the screw head to become damaged. For a proper fit, the blade should fill at least 75 % of the slot. A standard screwdriver is shown in view A of figure 1-1.

Phillips Head Screwdriver

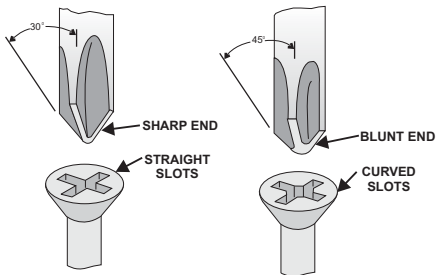
Phillips head screwdrivers, figure 1-1, view B, differ in construction from standard screwdrivers only in that the tip is shaped to fit the special cavity in the Phillips screw head. A standard screwdriver must never be used in a Phillips screw head, as damage will occur to the driver. For a proper fit, the blade should fill 100% of the cavity.

Reed and Prince Screwdriver

Reed and Prince screwdrivers look like, but are not interchangeable with, Phillips screwdrivers. Therefore, always use a Reed and Prince screwdriver with Reed and Prince screws and a Phillips screwdriver with Phillips screws, or a ruined tool or ruined screw head will result.

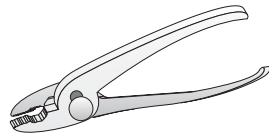


A. HEAVY DUTY (STANDARD)

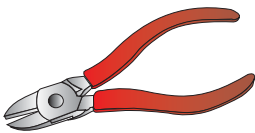


B. PHILLIPS

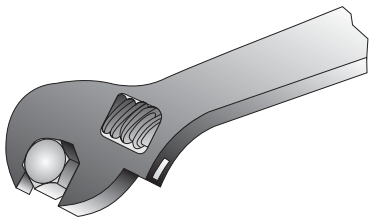
C. REED AND PRINCE



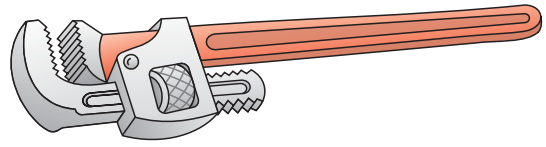
D. COMBINATION-JOINT PLIERS



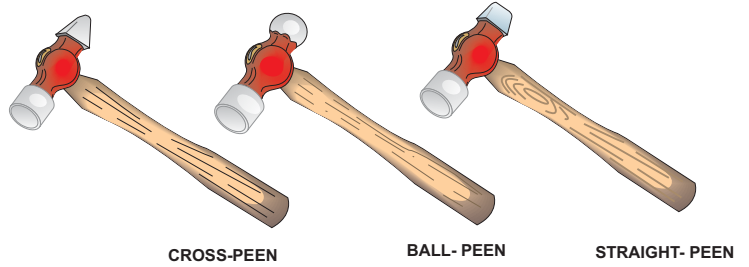
E. DIAGONAL CUTTING PLIERS



F. ADJUSTABLE CRESCENT WRENCH



G. ADJUSTABLE PIPE WRENCH

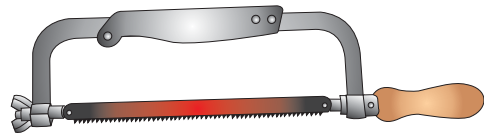
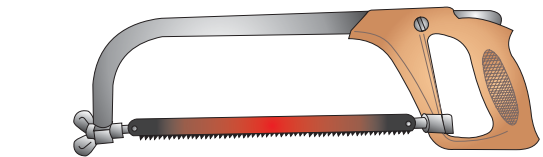


CROSS-PEEN

BALL-PEEN

STRAIGHT-PEEN

H. HAMMERS



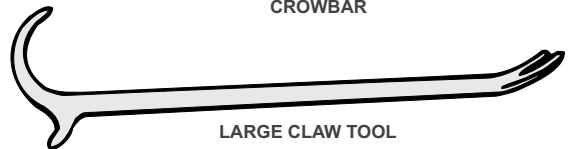
I. HACKSAWS



SMALL CLAW TOOL



CROWBAR



LARGE CLAW TOOL

J. WRECKING BARS

ABH0101

Figure 1-1.—Hand tools.