



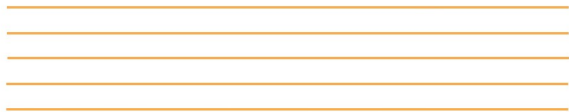
**U.S. NAVAL
SEA CADET CORPS**
ADVANCED CADET SUBMARINE SCHOOL

NavPers 16160

Produced for ComSubLant by
Standards and Curriculum Division
Training, Bureau of Naval Personnel



**THE
FLEET TYPE**



SUBMARINE



ACSS REQUIRED COURSEWORK
REFORMATTED & ANNOTATED TEXT
RETOUCHED & REWORKED IMAGES
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RESTRICTED

PREFACE TO THE SEA CADET VERSION



Completing the five assignments on the Fleet Type Submarine (NAVPERS 16160) is the first requirement for the Advanced Cadet Submarine School training. You may at first question why you must learn about an “antique” instead of the latest in UUV’s (Unmanned Underwater Vehicle). You will learn about UUV’s but only at the unclassified level. You will notice at the bottom of every page of the coursework the word RESTRICTED , meaning the material was classified but has been declassified. Material that is unclassified is of a general nature, not specific in details. You will be learning the detailed operation of submarine systems from a declassified manual.

This submarine coursework is in the same format as the BMR and Seaman coursework you have already completed. Assignments 1-5 consist of multiple choice and true/false questions whose answers you can find in the chapters covered by that assignment. The questions, for the most part are STEM* related. You will need to calculate values to answer some of the questions or choose the value from a chart. Other questions will require you to look at the numerous colored diagrams to determine the function or location of a particular component. Still other questions will help you understand the broader relationship between systems on the submarine, e.g., what is the effect of securing the after section of a system on a forward component.

When you get to the submarine base to start your one or two week training, you will already have a fundamental understanding of the operation of most major submarine systems. Ballast tanks, hydraulic systems, diesel engines, electrical generators and compensation tanks work almost the same on a 1946 Fleet Type submarine or a Block IV Virginia class submarine. You will learn how electric driven propulsion systems work. No U.S. submarine has used electric propulsion in the past forty years and yet the proposed USS Columbia, replacement for the Ohio class will have, you guessed it, an electric propulsion system. You will learn in detail how an electrical propulsion system works in Chapter 6.

On the right side of the coursework there is a sidebar where supplemental information has been placed. You will learn things like how deck guns did not become obsolete, they just moved to the Coast Guard vessels that escort submarines in coastal waterways. You can also use this space to take notes if you print the material.

Use the standard Sea Cadet answer sheet to complete your assignments. (NSCTRG 028) Scan or take a legible photo with your smart phone and email to ACSS@lexdiv.org

While this coursework has been reformatted for Sea Cadet use, there were others involved in taking the manual from an aging hard cover book to its current format. Bonnie Steigler provided typing services, and IKON Office Solutions (now Ricoh US) scanned and did the OCR conversion of the text. Mr. Shelly Shelstad scanned, retouched and reassembled the colored schematic diagrams. Our deepest appreciation to these individuals, without whom you would not have access to this material.

From the Preface of NAVPERS 16160:

*Science, Technology, Engineering and Math)

The Submarine School, Submarine Base, New London, Connecticut, and other activities of Submarines Atlantic Fleet, have collaborated in the preparation of this manual. It is designed to serve as both an instruction and an operation manual.

Since, in wartime, changes in design and construction developed rapidly as a result of battle experience, it became increasingly difficult to incorporate into this text all classes of submarines. Therefore, the USS Perch, or SS313, was selected as representative of the class discussed and described in the text. In some instances, however, it was found desirable to make reference to later units and to describe and illustrate these newer installations so that a more complete text would result.



The manual on the fleet type submarine includes descriptive information covering:

- a. Submarine history and development
- b. Submarine construction
- c. Submarine systems
- d. Submarine operations
- e. Submarine training

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