



**NONRESIDENT
TRAINING
COURSE**



January 1994

Gas Turbine Systems Supervisor

NAVEDTRA 14111

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.

COURSE OVERVIEW: After completing this nonresident training course, you should be able to identify the programs, reports, and records required of supervisors of gas turbine systems personnel. You also should be able to describe the procedures needed to maintain and inspect gas turbine propulsion systems.

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
GSCM(SW) Robert Kuzirian*

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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 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 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: Gas Turbine Systems Supervisor

NAVEDTRA: 14111 **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> |
|--|

NETPDTC 1550/41 (Rev 4-00)

CHAPTER 1

PROGRAMS, REPORTS, AND RECORDS

As you advance in the GS rating, you undoubtedly will find that much more of your time is spent in the training and administration of subordinates. This is as it should be, for knowledge must be passed from senior to junior. The most knowledgeable persons must be in charge. As a GS supervisor, you should not allow yourself to constantly be dragged into a maintenance position. If you do, your effectiveness as a leader will suffer. Weak leadership usually results in disharmony and, consequently, a poorly run, ineffective division or work center. This chapter addresses some of your administrative responsibilities as a First Class or Chief Gas turbine Systems Technician.

Administering and training subordinates on programs, reports, and records are never-ending responsibilities. Every day, whether you realize it or not, you administer people and programs and train junior personnel. You cannot have too much of either. (Although you can have too much paper work in your training and administration programs making them unmanageable.) Much of your training and administration is of an informal nature. A good leader uses good skills routinely and instinctively. However, formal programs in some areas of training do require more than instinct. Specific directives issued by superiors must be followed to conform to specific standards. Administration and training, whether formal or informal, are important responsibilities. They need to be taken seriously by all senior Gas turbine Systems Technicians.

TAG-OUT PROGRAM

An effective tag-out program is necessary because of the complexity of modern ships. Tag-out is also necessary to avoid the cost, delay, and hazards to personnel that could result from the improper operation of equipment. The purpose of the equipment tag-out program is to provide a procedure that prevents improper operation of components, equipment, systems, or a portion of a system isolated or in an abnormal condition. This procedure also should be used when other safety devices, such as blank flanges, are installed for testing, maintenance, or casualty isolation.

The use of **DANGER** or **CAUTION** tags is not a substitute for other safety measures, such as locking valves, pulling fuses, or racking-out circuit breakers. Tags attached to valves, switches, or other components should indicate restrictions on operation of systems or equipment, or restrictions necessary to avoid damage to safety devices. Never use danger or caution tags for identification purposes!

All procedures in the program are mandatory standardized tag-out procedures used by all ships and repair activities. The program also provides a procedure for use when an instrument is unreliable or not in a normal operating condition. It is similar to the tag-out procedure except that labels instead of tags are used to indicate instrument status. The tag-out program must be enforced during normal operations as well as during construction, testing, repair, or maintenance. Strict enforcement of tag-out procedures is required by both you and any repair activity that may be working on your equipment.

REVIEW AND MONITOR PROGRAM PROCEDURES

As stated in the previous paragraphs, strict adherence to tag-out program procedures is paramount. A brief description of the tag-out program was provided in the *Gas Turbine Systems Technician (Electrical) 3/Gas Turbine Systems Technician (Mechanical) 3*, volume 1. You should already know the program procedures as they pertain to the role of the maintenance person. Now as you move toward a more supervisory role, you will be required to have a much larger depth of knowledge. The one-sided program perception is in the past. You must now understand the program's inner workings to maintain a safe environment. A more detailed description of the required tag-out program procedures is provided in *Standard Organization and Regulations of the U. S. Navy*, OPNAVINST 3120.32 series.

REVIEW AND MONITOR PROGRAM EFFECTIVENESS

There are a couple of ways to review and monitor the tag-out program's effectiveness. The first of which

is pretty obvious. Were there any personnel injuries or damaged equipment because of violations to the tag-out program? This first method sounds good, but it is not always accurate. The second method (required) really does not take that much time if performed consistently. Use of the second method also will ensure that personnel injuries and equipment damage do not occur. What method are we referring to? It is the audit portion of the program.

As a maintenance person you probably were not concerned with the audit portion of the program. That is, unless there was a discrepancy found on an equipment tag-out that you were responsible for. But now as a GS supervisor your responsibilities have changed. You will probably be in charge of a work center, and as you continue to progress you will probably qualify as an EOOW/EDO. Eventually you will be required to know all aspects of the program. Now take a look at how tag-out audits should be conducted.

All tag-out logs (records) must be kept in the space(s) designated by your ship's instruction. Normally, these records for the engineering department will be kept in the central control station (CCS). Supervisory watch standers (EOOWs/EDOs) must review these records as part of the watch-relieving process.

Checks and audits of all tag-outs must be conducted every two weeks. However, these requirements may be superseded by your type commander (TYCOM) or even your own ship's instruction. Remember, just as with PMS, audit frequency can only be increased, not decreased.

1. All outstanding tags listed on the Tag-out Record Sheet must be checked as correctly installed by visual comparison of the information on the tag, the record sheet, and the item on which the tag is posted. When a valve or switch position is prescribed, a visual check that the item is in its proper position is made unless an operation such as removal of a cover, cap, or closure is required. No operation of a valve or switch is authorized as part of a routine tag-out audit. In addition, a spot check of installed tags should be conducted to ensure that tags so checked are effective (that is, covered by an active Tag-out Record Sheet). Report all discrepancies in the check of actual position at once to the EOOW/EDO before proceeding any further with the tag audit. The date, time, discrepancies (including corrective actions), and signature of the person conducting

the check is logged on each Tag-out Record Sheet under the last tag listed.

2. When the actual position of a DANGER-tagged valve is in question, the EOOW/EDO, with the specific permission of the responsible department head, if available, may authorize two people to independently check the position of the specific valve(s).

NOTE

Checking the position of a valve is done only by attempting to turn the valve handwheel/operator a small amount in the SHUT direction.

This is an approved exception to the prohibition on operation of DANGER-tagged equipment. This valve position check must be performed using the applicable approved procedures for valve lineup checks.

3. All outstanding Tag-out Record Sheets are audited against the Index/Audit Record section. As part of the audit, each Tag-out Record Sheet is checked as previously specified. The date, discrepancies noted, and signature of the person conducting the audit are logged by a line entry in the Index/Audit Record section of the tag-out log.
4. Checking the installation of instrument labels and auditing the logs must be conducted in the same manner as a tag-out audit.

To ensure that tag-out/label procedures are enforced properly, the cognizant department head (engineer officer) frequently checks the tag-out log, notes errors, and brings them to the attention of those responsible. The completed Tag-out Record Sheets and Instrument Logs are removed by the department head (engineer officer) after the review.

Remember, a violation of any tag compromises the entire tag-out system and could in itself have serious consequences.

All loose tags that have been removed must be destroyed.

ENVIRONMENTAL POLLUTION CONTROL PROGRAM

As the Navy and our country progress into the 21st century, a much needed and stronger emphasis has to be