CHAPTER 5

WEAPONS EXERCISES

LEARNING OBJECTIVES

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

1. Discuss the personnel training and fleet exercises necessary to test personnel and equipment readiness.
2. Identify the publications that contain antiair warfare, antisubmarine warfare, and antisurface warfare exercises.
3. Describe the naval gunfire support qualifications process.
4. Describe the documentation required during missile-firing exercises.

INTRODUCTION

This chapter discusses how combat systems/weapons personnel are trained, certified, and qualified. All ships have certain operational capabilities that provide invaluable training for the ship's combat systems/weapons teams.

Operational ships are in a competitive cycle controlled by their type commander (TYCOM). During each cycle, a ship is required to complete many graded exercises and inspections and to maintain qualifications in designated capabilities. All these requirements apply toward the department and ship battle efficiency "E" awards. Proficiency in these graded requirements is a result of preparation and extensive training. The survival of any ship in any hostile encounter is directly related to the proficiency and training level of its crew.

As a Fire Controlman supervisor, you will be responsible for ensuring that your division is fully capable of completing all required combat systems/ weapons exercises.

TRAINING AND EXERCISES

The complex interrelationships between combat systems/weapons elements, compounded by the normal attrition of personnel, require that combat systems/weapons training programs be developed and practiced to maintain a high state of personnel readiness.

Combat systems/weapons personnel readiness is sustained through frequent gunnery, missile, electronic warfare, and combat information center (CIC) exercises. This includes a continuing program of individual and team training consisting of (1) ship and fleet operational training exercises, (2) training programs and simulators/stimulators, and (3) test programs and procedures.

OPERATIONAL TRAINING EXERCISES

Ship and fleet operational training exercises are designed to meet a variety of training objectives. The basic exercise objective is the demonstration of the

ship's personnel proficiency in detecting, tracking, and successfully engaging hostile threats.

The instructions that set forth specific training requirements include training and evaluation procedures for conducting (1) readiness and operational evaluations, (2) composite training unit exercises, (3) fleet exercises, and (4) battle readiness exercises.

Readiness and Operational Evaluations

Readiness and operational evaluations are a major part of fleet exercises to provide advanced training and to examine fleet capabilities and limitations in warfare aspects. Normally, the duration of the exercise is 8 to 10 days, with the first 3 or 4 days devoted to warm-up operations. The exercise scenario and the emphasis on particular warfare areas are adjusted to the number, type, and training state of the participants. Specific accomplishment objectives in a given readiness and operational evaluation are published in the instruction letter for that exercise.

All readiness and operational evaluation exercises have the following broad objectives:

- To train the fleet in various aspects of naval warfare and confrontation at sea, with emphasis on improving command and control.
- To provide specialized predeployment training for anticipated fleet operations.
- To identify, measure, and analyze the practicable extent of fleet performance, capabilities, and limitations, and to develop appropriate recommended corrective action.
- To develop and test new tactics and doctrine.

Composite Training Unit Exercises

The composite training unit exercise has the following overall goals:

- To enhance the readiness of participating units.
- To provide predeployment training.
- To test and evaluate new doctrine and procedures.
- To stimulate development of new concepts in naval warfare.

Ships participating in composite training unit exercises should make maximum use of underway time to the operating area for training and drilling. This en route period is an excellent opportunity for the combat systems/weapons team and participating units to perfect their skills in the tactics and procedures of the upcoming exercise.

In addition to intraship training, the units can also train in multiship operations and evolutions in preparation to accomplish the stated exercise objectives.

A composite training unit exercise has the following specific objectives:

- To permit participants to conduct exercises in a multithreat environment to enhance readiness.
- To complete the maximum feasible type commander exercises required to achieve unit training readiness levels and special predeployment requirements;
- To achieve unit familiarity and expertise in fleet report requirements and procedures required by higher authority.
- To train in operations under the minimum radiation concept, radiating electronic and communications equipment necessary to accomplish a specific mission or task, while, at the same time, ensuring safety.
- To identify all levels of performance degradation due to ship and system incompatibilities.
- To train and increase proficiency in all aspects of operational security.

Fleet Exercises

Fleet exercises are held in accordance with fleet exercise publications (FXPs), which combine the training prescribed for crews of all ship types. There are three FXPs.

- FXP 1, *Antisubmarine Warfare (ASW) Exercises,* contains submarine and antisubmarine exercises. It also contains exercises to familiarize ASW personnel with basic doctrine, tactics, and weapons; exercises to train air and surface units in coordinated operation against submarines; and exercises to train air, surface, and submarine forces to operate under the direction of shore-based headquarters.

- FXP 2, *Antiair Warfare (AAW) Exercises,* contains air and antiair warfare exercises. It also contains exercises to train and evaluate gunnery personnel in detecting, tracking, and destroying air targets; exercises to train and evaluate missile weapon subsystems personnel in detecting, tracking, and destroying air targets and antiship missiles; and exercises to evaluate CIC personnel in intercept control and AAW operations.

- FXP 3, *Strike Warfare (STW), AntiSurface Ship Warfare (ASQ), Intelligence (INT), Electronic Warfare (ELW), and Command, Control, and Communications (CCC) Exercises,* contains ship exercises. It also contains exercises for training gunnery personnel in naval gunfire support, surface firing, and spotting; exercises for antimine defense and surface-to-surface missile training; exercises for CIC and EW personnel training; and exercises to detect and combat antiship missile threats.

In addition, each publication contains safety precautions and exercise evaluation procedures. The force commander, the unit commanders, and the commanding officers are encouraged to use these publications to develop training programs to maintain maximum proficiency in the applicable mission of each ship.

Battle Readiness Exercises

Battle Efficiency Competition, CINCLANTFLTINST 3590.11, outlines the requirements for training exercises and inspections that units must establish and maintain to ensure high battle readiness. This directive also contains the prerequisites and requirements that individual ships must satisfy to earn battle efficiency awards within the force. The evaluation of battle readiness is administered to accomplish the readiness objective in as flexible a manner as possible.

This evaluation is based on the following actions:

- Minimizing formal reporting on the conduct of exercises.

- Providing for self-observing exercises at the discretion of the unit commander.

- Providing for operational equivalents in lieu of conduct of required exercises.

- Providing for maximum application of unit commander judgment in supervising the program to achieve the readiness objective.

The exercise and inspection requirements prescribed are drawn from appropriate volumes of the FXP series and fleet instructions and are modified or extended with the appropriate performance standards and instructions for data collecting, evaluation, and reporting. The exercises specified are minimum requirements.

TRAINING PROGRAMS AND SIMULATORS/STIMULATORS

The proficiency exhibited by combat systems/weapons personnel during high-level operational training exercises is often a reflection of the degree of competent training obtained at the subsystem

level and the ability of the personnel to work together as a team. Various systems and subsystems can employ computer training programs and simulators/stimulators to provide equipment and systems operators with simulated operational environments for training purposes.

As a supervisor, you should be familiar with the training programs and simulators/stimulators applicable to your ship's equipment or systems configuration. And you should make maximum use of the capabilities to fine-tune your operators and combat systems team. This training can be very effective when a ship is not actively operating.

Combat Direction Systems Operator Training

A variety of training is available for combat direction systems operators who perform duties in the combat information center (CIC). Team training is available at land-based facilities, as well as aboard ship, Land-based facilities combine classroom instruction and hands-on team training by using system mock-ups. Fleet technical support centers (FTSCs) may provide onboard team training by using the ship's actual equipment. Ship personnel may run individualized and team training by using training programs and simulators/stimulators aboard ship.

Ships that are equipped with naval tactical data systems (NTDSs) may conduct individualized training on the basic operation of CIC consoles with hands-on instruction combined with the lesson translator (L-TRAN) program. Further training is best accomplished with a combination of individualized and team training.

Combat systems team training is accomplished by using a variety of simulation/stimulation systems. These systems simulate data, commands, and responses required for real-time testing, training, and evaluation. They are (1) land-based, (2) part of the ship's equipment, or (3) a combination of both.

Additional team training may be conducted in pierside vans, such as the 20B5 or other pierside trainers, to provide coordinated stimulation of the ship's sensors with a variety of scenarios. The advantage of onboard training is that the operators can use the equipment in its own configuration, which is not always possible at land-based facilities.

Combat Systems/Weapons Operator Training

Combat systems/weapons operator training is essential to an effective combat climate. In gun and missile fire-control systems, a test mode usually provides simulated targets and jamming. The targets can be tracked, and simulated engagements can be conducted.

The combat systems/weapons equipment, including gun mounts and missile launchers, can be exercised by using simulated targets. Guided-missile training rounds that incorporate a guided-missile simulator are used with the missile launchers to simulate tactical missiles.

Many of the tests designed to verify operational capabilities of the combat systems and individual subsystems provide operational training of equipment operators by using procedural instructions identical or similar to the actual tactical operating procedures. The degree of training provided for each subsystem varies with the function of the equipment used and the testing philosophy of each subsystem.

NAVAL GUNFIRE SUPPORT QUALIFICATION

All ships assigned shore bombardment or naval gunfire support (NGFS) have a required operational capability to maintain an NGFS qualification. Generally, this requirement includes ships with 5-inch-caliber and larger guns.

Unless revoked, qualification normally lasts for 15 months. For example, if a ship were to complete the first of several required exercises in January 1995 and the last required exercise in February 1995, it would be qualified until 30 April 1996. All exercises do not need to be completed at the same time, although that is encouraged for the maximum use of

the qualification period. Once qualified, the ship is expected to maintain its proficiency level throughout the qualification period. Frequent firing exercises are encouraged to maintain proficiency.

Type commanders (TYCOMs) require that the basic NGFS team training course be completed when (1) 30 percent of the NGFS team (less gun-mount personnel) have been reassigned to other duties or permanently transferred, or (2) more than 90 days have passed since the last NGFS exercise was fired.

NGFS qualification maybe terminated for any of the following reasons:

- When a ship is graded "unsatisfactory" for any NGFS exercise conducted for score. (This does not include exercises conducted as rehearsals or for proficiency training.)

- When a ship fires unsatisfactorily during a major exercise.

- When a ship commits a serious safety violation at any time.

QUALIFICATION PREREQUISITES

Ships are required to routinely maintain a high state of material and gunnery readiness. As a result, the ships must comply with following prerequisites before conducting live firing exercises for NGFS qualification:

- All required gunnery and gunfire control planned maintenance system (PMS) must be current.

- All records of alignment checks must be properly recorded in the smooth fire-control log.

- Formal team training, either at an NGFS trainer site or on board by an FTSC, must be completed within 90 days before firing qualification exercises.

- All ships with the design capability of acquiring the radar beacon must successfully complete the radar beacon acquisition (RBA) exercise within 30 days of firing qualification exercises.

In addition, other prerequisites may be required by the TYCOM. If so, refer to the appropriate TYCOM instructions.

QUALIFICATION RULES

NGFS qualification is based on the satisfactory completion of various elements and/or exercises. Both a numerical score and a grade of satisfactory or unsatisfactory are awarded. A score of 62.0 (60.0 SURFPAC) or higher is required for a satisfactory grade for each exercise or event.

The final qualification score is the average of the last score attained in each of the required exercises or events. The final score must be at least 62.0. SURFPAC allows a score of less than 60,0 on no more than one event, excluding the counter battery event, to qualify.

Only one exercise may be fired by unqualified ships during each range visit. This ensures efficient range use and maintains high qualification standards. All subsequent exercises are fired for score.

Exercises in progress maybe aborted because of foul range, ammunition malfunction, or equipment failure. Exercises may also be aborted to save time when, because of penalties or other point loss, the score will be unsatisfactory.

During a range visit, a ship achieving a satisfactory grade on an exercise fired for score may not refire that exercise to improve its score until all other required exercises have been satisfactorily completed.

EXERCISE DOCUMENTATION

TYCOMs and fleet commanders have specific data recording and reporting requirements for their exercises. Appropriate exercise manuals and applicable instructions identify the reporting requirements

and formats. In addition to the exercise reporting requirements, the Naval Sea Systems Command (NAVSEASYSCOM) requires additional data collection and firing reports for surface missile systems.

DATA COLLECTION

Before firings, during firings, and immediately after intercepts, data should be collected from various sources on the firing ship. In addition, telemetric (TIM) data should also be recorded; however, TLM is normally collected by other sources.

Data are collected from the fire-control systems by a combination of chart recorders, teletype printouts, and digital data extractions recorded on magnetic tapes. Additional data may be collected in video recordings of radar displays and charts plotting engagement data. The specific forms of data collection required vary with the fire-control systems and the TYCOMs.

Data extraction should start when a director is designated to a target. It should continue until the missile destructs (intercept plus approximately 10 seconds). Teletype printouts should cover the same time interval. Complete instructions for data collection by missile systems are available from range personnel.

STANDARD MISSILE SYSTEM FIRING REPORTS

Standard missile system (SMS) firing reports are required for each missile firing (with the firing key closed with the intent to fire). In addition to the firing report data, an SMS firing report message is required to be submitted within 48 hours for each firing test.

Performance analysis of Navy missile weapons systems is a complex task that requires specific data that are furnished on SMS firing reports. These data can be obtained from missile firing ranges and missile firing ships.

The STANDARD MWTARTAR missile firing report for DDG-, FFG-, CGN-, and CG-ship classes is a five-page form that is required to be submitted within 4 days of each exercise. Other missile systems have similar requirements.

ABORTED EXERCISE MESSAGES

An aborted exercise message must be submitted after a commitment of range or target services to a firing unit, and before firing the key closure.

This message contains the following information:

1. The applicable data elements of the firing report.

2. The number of valid target presentations.

3. The reason for failure to fire.

4. The identification of the equipment, the nature of the casualty, and the date-time-group (DTG) of the casualty report (CASREP), if applicable, if the reason for no-fire is a ship equipment casualty.

5. A brief narrative of the exercise.

All pertinent firing report information should also be entered into the fire-control smooth log and into the applicable equipment logs.

RECOMMENDED READING LIST

NOTE: Although the following references were current when this TRAMAN was published, their continued currency cannot be assured. Therefore, you need to ensure that you are studying the latest revision.

Antiair Warfare (AAW) Exercises, FXP 2, Chief of Naval Operations, Washington, DC, 1987.

Antisubmarine Warfare (ASW) Exercises, FXP 1, Chief of Naval Operations, Washington, DC, 1992.

Strike Warfare (SW), Intelligence (INT), Electronic Warfare (ELW), and Command, Control, and Communications (CCC) Exercises, FXP 3, Chief of Naval Operations, Washington, DC, 1987.

APPENDIX I

REFERENCES USED TO DEVELOP THIS TRAMAN

Antiair Warfare (AAW) Exercises, FXP 2, Chief of Naval Operations, Washington, DC, 1987.

Antisubmarine Warfare (ASW) Exercises, FXP 1, Chief of Naval Operations, Washington, DC, 1992.

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