



ENLISTED SURFACE WARFARE SPECIALIST (ESWS) COMMON CORE TUTORIAL

Welcome to the ESWS Common Core PQS questions and answers. This study guide was designed to aid instructors and students alike. All of the questions were answered from instructions and directives found in NAVEDTRA 43901, Personnel Qualification Standard (PQS), Enlisted Surface Warfare Specialist (ESWS), Common Core.

The bulk of the material was supplied by MA2 Nicholas E. Pecci and AZ1 (AW/NAC) Kimberly Herring.

The ESWS (Core) program was designed to encompass basic areas of study applicable to the entire Navy. Just click on the section of the PQS that you would like to review. Good luck and study hard!

**For practice exam, inputs, or if you are interested in developing a web page for your communities'
EAWS specific PQS, or comments, contact:**

flygal46@yahoo.com

AZ1(AW/NAC) Kimberly Herring

DSN: 739-7800 ext: 212

817-782-7800 ext: 212

For more information on the Acrobat format, please contact

blackcat@iname.com

AE1(AW) Thomas Coleman

DSN: 492-6804

ESWS Core PQS Sections

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ACRONYMS USED IN THIS PQS

Not all acronyms or abbreviations used in this PQS are defined here. The Subject Matter Experts from the Fleet who wrote this Standard determined the following acronyms or abbreviations may not be commonly known throughout their community and should be defined to avoid confusion. If there is a question concerning an acronym or abbreviation not spelled out on this page nor anywhere else in the Standard, use the references listed on the line item containing the acronym or abbreviation in question.

AOR	Area of Responsibility
ASI/RAD	Automated Shore Interface/Revised Alternative Dataflow
ATT	Aviation Training Team
BMOW	Bostwain's Mate of the Watch
CASREP	Casualty Reports
CAT	Command Assessment Team
CDC	Combat Direction Center
CIC	Combat Information Center
CINC	Commander In Charge
CMEO	Command Managed Equal Opportunity
CNO	Chief of Naval Operation
COSAL	Coordinated Shipboard Allowance List
CRAMSI	Consolidated Residual Asset Management System Inventory
CSTT	Combat Systems Training Teams
CTT	Command Training Team
DCPO	Division Damage Control Petty Officer
DCTT	Damage Control Training Team
DLRS	Depot Level Repairables
DTG	Date Time Group
EA	Electronic Attack
EDVR	Enlisted Distribution Verification Report
EEFI	Essential Elements of Friendly Information
EHF	Extremely High Frequency
EMCON	Emission Control
EP	Electronic Protect
ES	Electronic Support
ETT	Engineering Training Team
HF	High Frequency
ISIC	Immediate Supervisor in Command
ITT	Integrated Training Team
LCPO	Leading Chief Petty Officer
LPO	Leading Petty Officer
LRTP	Long Range Training Plan
MOV	Material Obligation Validation
MSC	Military Sealift Command
NOAP	Navy Oil Analysis Program
NR & R	Navy Rights and Responsibilities
NRFI	Not Ready for Issue
OOD	Officer of the Deck
POA & M	Plan of Action and Milestones
QMOW	Quartermaster of the Watch
RIP	Remain in Place
SERT	Ship's Electronic Readiness Team
SHF	Super High Frequency
SORTS	Status of Resources and Training System
SRTS	Short Range Training Schedule
SSIC	Standard Subject Identification Code
STREAM	Standard Tension Replenishment Alongside Method
STT	Seamanship Training Team
TAR	Training and Administration of Reserves
TYCOM	Type Commander
UHF	Ultra High Frequency
VHF	Very High Frequency

101 PROFESSIONAL LIBRARY

101.1 SUGGESTED READING

NO SINGLE BOOK OR GROUP OF BOOKS CONTAINED IN THIS FUNDAMENTAL SECTION IS INTENDED TO BE A MANDATORY READING ITEM WHEN COMPLETING THIS PQS MANUAL.

101.1.1 RECOMMENDED READING: - None.

101.2 SUPPLEMENTAL READING:

THE FOLLOWING LIST IS INCLUDED AS A SOURCE OF SUPPLEMENTAL READING FOR PERSONNEL WHO DESIRE TO OBTAIN ADDITIONAL INFORMATION WHICH SUPPORTS THE HERITAGE AND DOCTRINE FUNDAMENTALS CONTAINED IN THIS COMMON CORE PQS MANUAL. NO SINGLE BOOK OR GROUP OF BOOKS CONTAINED IN THIS LIST IS INTENDED TO BE A REQUIRED READING ITEM WHEN COMPLETING THIS PQS MANUAL. ADDITIONALLY, THE INFORMATION CONTAINED IN THESE SUGGESTED READING BOOKS SHOULD NOT BE USED AS WRITTEN OR ORAL BOARD TESTING MATERIAL.

The MCPON's "Naval Heritage and Core Values" Reading List, Parts "A" and "B"

AS THE MCPON READING LIST IS UPDATED ANNUALLY, THE MOST CURRENT VERSION CAN BE FOUND IN THE MCPON DIRECTLINE PUBLICATION OR THROUGH THE INTERNET AT EITHER OF THE FOLLOWING WEB ADDRESSES:

<http://www.chinfo.navy.mil/navpalib/mcpon/readguide.htm>

<http://www.history.navy.mil/faqs/faq46-7.htm>

102 Naval Aviation Heritage And Doctrine Fundamentals

References:

- [a] Naval Doctrine Publication 1, Naval Warfare
- [b] Naval Doctrine Publication 4, Naval Logistics
- [c] Naval Doctrine Publication 5, Naval Planning
- [d] Naval Doctrine Publication 6, Naval Command and Control
- [e] The Bluejackets' Manual, Twenty-First Edition
- [f] NAVEDTRA 12043, Basic Military Requirements

102.1 State the six areas of naval doctrine. [ref. a]

1. **Naval Warfare**, describes the inherent nature and enduring principles of naval forces.
2. **Naval Intelligence**, points the way for intelligence support in meeting the requirements of both regional conflicts and operations other than war.
3. **Naval Operations**, develops doctrine to reaffirm the foundation of U.S. Navy and Marine Corps expeditionary maritime traditions.
4. **Naval Logistics**, addresses the full range of logistical capabilities that are essential in the support of naval forces.
5. **Naval Planning**, examines force planning and the relationship between our capabilities and operational planning in the joint and multinational environment.
6. **Naval Command and Control**, provides the basic concepts to fulfill the information needs of commanders, forces, and weapon systems.

102.2 Discuss the following:

a. Command and control [ref. d]

Naval Command and Control, provides the basic concepts to fulfill the information needs of commanders, forces, and weapon systems.

b. Naval planning [ref. c]

Naval Planning, examines force planning and the relationship between our capabilities and operational planning in the joint and multinational environment.

c. Naval Intelligence [ref. b]

Naval Intelligence, points the way for intelligence support in meeting the requirements of both regional conflicts and operations other than war.

102.3 State the seven principles of Naval Logistics. [ref. b]

1. Responsiveness:

Providing the right support at the right time, at the right place. This is the most important principle of logistics. Ensuring that adequate logistics resources are responsive to operational needs should be the focus of logistic planning. Such planning requires clear guidance from the commander to his planners; also, it requires clear communication between operational commanders and those who are responsible for providing logistic support. The operational commander's concept of operations must be thoroughly familiar to the supporting elements—to ensure responsive, integrated support. Responsiveness is a product of logistic discipline, as well. Commanders and logisticians who consistently overestimate their requirements—in quantity and priority – risk slowing the systems ability to respond.

2. Simplicity:

Avoiding unnecessary complexity in preparing, planning and conducting logistic operations. Providing logistics support never is simple, but the logistics plans that utilize the basic standard support systems usually have the best chance for success. Mission-oriented logistics support concepts and standardized procedures reduce confusion. The operational commander must simplify the logistic task by communicating clear priorities, and forecasting needs based on current and accurate usage data.

3. Flexibility:

Adapting logistics support to changing conditions. Logistics must be flexible enough to support changing missions, evolving concepts of operations, and the dynamic situations that characterize naval operations. A thorough understanding of the commanders intent enables logistic planners to support the fluid requirements of naval operations. In striving for flexibility, the logistic commander considers such factors as alternative planning, anticipation, the use of reserve assets, and redundancy. The task-organization of combat service support units is an example of flexible tailoring of logistic support resources to meet anticipated operational requirements.

4. Economy:

Employing logistic support assets effectively. Accomplishing the mission requires the economical use of logistic support resources. Logistic assets are allocated on the basis of availability and the commanders objectives. Effective employment further the operational commander to decide which resources must be committed immediately and which should be kept in reserve. Additionally, the commander may need to allocate limited resources to support conflicting and multiple requirements. Prudent use of limited logistics resources ensures that support is available where and when it is most needed. Without economy, operational flexibility becomes comprised.

5. Attainability:

Acquiring the minimum essential logistic support begin combat operations. Risk is defined as the difference between the commanders desired level of support and the absolute minimum needed to satisfy mission requirements. The commander must determine the minimum essential requirements and ensure that adequate logistic support levels have been attained before initiating combat operations. In some cases time will permit building up support levels beyond minimum essential requirements. During Operation Desert Shield, for example, the coalition retained the operational initiative and delayed the commencement of combat operations until a six-month supply of material was in theater and available to the operating forces. In this case, the commander was able to attain the level needed to satisfy mission requirements.

6. Sustainability:

Providing logistic support for the duration of the operation. Sustaining the logistic needs of committed forces in a campaign of uncertain duration is the greatest challenge to the logistician. Every means must be taken to maintain minimum essential material levels at all times. This requires effective support planning that incorporates economy, responsiveness and flexibility. Sustainability also is influenced by our ability to maintain and protect the ships and aircraft that move material to and from the operational theater.

7. Survivability:

Ensuring that the logistic infrastructure prevails in spite of degradation and damage. Logistic support units and installations, lines of communication, transportation nodes and industrial centers are high-value targets that must be protected by both active and passive measures. For example—since we may not always have the luxury of conducting replenishment in protected rearward areas.

102.4 What was the first navy ship named after an enlisted man? [ref. e]

Osmond Ingram (DD 255). It was launched 28 Feb 1919. Ingram was the first enlisted man killed in action in World War I, lost when the destroyer Cassin (DD 43) was torpedoed in October 1917.

102.5 Discuss the following military customs and courtesies: [ref. e]

a. Hand salute The hand salute is centuries old, and probably originated when men in armor raised their helmet visors so they could be identified. Salutes are customarily given with the right hand, but there are exceptions. A sailor with his right arm or hand encumbered may salute left-handed, while people in the Army or Air Force never salute left-handed. On the other hand, a soldier or airman may salute sitting down or uncovered; in the Navy, a sailor does not salute when uncovered, but may salute when seated in a vehicle.

Women follow the same customs and rules as men, with one exception. A woman in uniform indoors, where men customarily remove their hats, does not remove her hat, nor does she salute. She does use the proper spoken greeting, just as she would outdoors.

Salute from a position of attention. Your upper arm should be parallel to the deck or ground, forearm inclined at a 45-degree angle, hand and wrist straight, palm slightly inward, thumb and fingers extended and joined, with the tip of the forefinger touching the cap beak, slightly to the right of the right eye. Hold the salute until the officer has returned or acknowledged it, then bring your hand smartly to your side.

Salute all officers, men and women, of all U.S. services and all allied foreign services.

When chief or senior chief petty officers perform duties normally assigned to an officer- such as standing JOOD watches or taking a division muster- they rate the same salute as an officer.

b. Saluting the Ensign

Each person in the naval service, upon coming on board a ship of the Navy, shall salute the national ensign. He shall stop on reaching the upper platforms of the accommodation ladder, or the shipboard end of the brow, face the national ensign, and render the salute, after which he shall salute the officer of the deck. On leaving the ship, he shall render the salutes in inverse order. The officer of the deck shall return both salutes in each case.

When passed by or passing the national ensign being carried, uncased, in a military formation, all persons in the naval service shall salute. Persons in vehicles or boats shall also be rendered to foreign national ensigns and aboard foreign men-of-war.

c. Dipping the Ensign

Merchant ships "salute" Navy ships by dipping their ensigns. When a merchant ship of any nation formally recognized by the U.S. salutes a ship of the U.S. Navy, it lowers its national colors to half-mast. The Navy ship, at its closest point of approach, lowers the ensign to half-mast for a few seconds, then closes it up, after which the merchant ship raises its own flag. If the salute is made when the ensign is not displayed, the Navy ship will hoist her colors, dip for the salute, close them up again, and then haul them down after a suitable interval. Naval vessels dip the ensign only to answer a salute; they never salute first.

d. Gun salute

In olden days it took as much as 20 minutes to load and fire a gun, so that a ship that fired her guns in salute did so as a friendly gesture, making herself powerless for the duration of the salute.

The gun salutes prescribed by Navy Regs are fired only by ships and stations designated by the Secretary of the Navy. A national salute of 21 guns is fired on Washington's Birthday, Memorial Day, and Independence Day, and to honor the President of the United States and heads of foreign states. Salutes for naval officers are:

Admiral: 17 guns Vice Admiral: 15 guns Rear Admiral: 13 guns Commodore: 11 guns

Salutes are fired at intervals of 5 seconds, and always in odd numbers.

102.6 What three classes of naval vessels existed at the inception of the navy? [ref. f]

a. Ships-of-the-line:

The battleships of the sailing days. These ships were the largest of all sailing warships. These battleships carried 64 to 100 guns of various sizes.

b. Frigates:

The cruisers of the 18th century. These cruisers were next in size, usually smaller than average ships-of-the-line and usually faster. They carried 28 to 44 guns.

c. Sloops-of-war:

The small sailing warships. These ships carried 10 to 20 guns.

102.7 Discuss the importance of the following conflicts as they relate to Manual History:

a. Battle of Coral Sea [ref. f]

7-8 May 1942: Thanks to the breaking of the Japanese Navy code, the U.S. was alerted to a large Japanese force moving to the Coral Sea to seize Port Moresby on the southwest coast of New Guinea. It was to be the first step of a planned invasion of Australia. The Japanese operation centered around three aircraft carriers and dozens of troop transports, but the Americans met them with two carriers of their own. On May 7, the Japanese planes sank two minor ships, while U.S. planes sank an isolated enemy carrier. The next day, both sides launched all their planes against the other. The aircraft passed each other unseen in the clouds, in the world's first carrier versus carrier battle. One Japanese carrier was damaged. The U.S. carrier Lexington was sunk, and the carrier Yorktown was damaged. After this action, both sides withdrew. Although a tactical victory, Coral Sea was a strategic set-back for the Japanese who never again threatened Australia.

b. Voyage of the Great White Fleet [ref. e]

In pre-World War I days, the Navy carried out its role as a diplomatic arm of the government. On December 16, 1907, the Great White Fleet left Hampton Roads, Virginia, for a round-the-world cruise to show the flag. The exercise demonstrated the strength of the U.S. Navy

c. Battle of Normandy [ref. e]

The Navy's most notable Atlantic action may have been its part in the June 6, 1944, invasion of Normandy-the largest amphibious operation in history. The greatest armada ever assembled carried out minesweeping, shore-bombardment, and amphibious operations and transported supplies and troops. Those operations enabled the Allies to complete D-Day landings successfully and eventually push on to Germany.

d. Midway [ref. e]

3-5 June 1942: Midway was the turning point of the Pacific war. The U.S. breaking of the Japanese naval code was again the key element as it had been at Coral Sea a month earlier. A huge Japanese armada of 160 warships was involved, but commander-in-chief Admiral Yamamoto split his force, sending some ships north to the Aleutian Islands in a diversionary attack. The Japanese retained superior numbers approaching Midway which included 4 aircraft carriers and 11 battleships. At Midway the U.S. had 3 carriers and no battleships. The Americans knew what was coming because of the broken codes, and Admiral Nimitz positioned his 3 carriers, the Hornet, Enterprise, and Yorktown, out of Japanese reconnaissance range. As the Japanese carriers launched their planes to assault the Midway defenses, the U.S. planes headed for the enemy carriers. It took attack after attack, but finally the U.S. crews got through and sank 3 Japanese carriers. The next day the fourth carrier was sunk. Japanese planes sank the Yorktown. In one day Japan lost its bid for control of the Pacific.

e. Guadalcanal [ref. e]

13-15 November 1942: After three days of bitter fighting, the Japanese naval forces retreated and U.S. Marines were able to secure the island of Guadalcanal. The Japanese lost 2 cruisers and 6 destroyers. The U.S.S. Juneau was involved in the battle. Navy policy was to place members of the same family on different ships, but the five [Sullivan brothers](#), from Waterloo, Iowa, insisted on staying together. An exception was made and they all became crewmen onboard the Juneau. The Juneau was damaged during the battle in a close-range night encounter. As it limped off for repairs, it was torpedoed. The Sullivan's along with 700 others were lost. Because of this tragedy, Navy policy concerning family member separations was reinstated. A [ship](#) was later named in their honor. With the fall of the island, the southern Solomon's came under Allied control and Australia was in less danger of attack.

f. Battle of Leyte Gulf [ref. e]

The final blow to the Japanese navy came October 23, 1944. In a last-chance effort to salvage the Philippines, the Japanese sent a naval force to Leyte Gulf to attack the U.S. Fleet. Their plan backfired and the operation was a complete failure-the deciding catastrophe for their navy. The loss of the Philippines severed their empire, and the homeland was cut off from its main source of supply from the south. With the losses at Okinawa and Iwo Jima, the war in the Pacific was approaching its final days.

102.8 Discuss the conditions that led to the formation of the U.S. Navy. [ref. a, ch. 1]

The areas of our country that became the 13 original states were colonies of England in the mid-1700's. The king of England allowed the colonies to trade only with England. Problems arose between the colonists and England as the years passed. English Parliament passed several tax laws that affected the colonists in a problem known as "taxation without representation". The colonists formed Committees of Correspondence to communicate the problems to England. They convened a Continental Congress to discuss these problems. This first congress met in 5 September 1774. At the meeting, the Congress produced a statement of rights it believed England should grant to the colonists. Then in October of 1774 the statement of rights was presented to the king. A second Continental Congress convened on 10 May 1775. The colonists appointed George Washington as Commander in Chief of the Continental American army on 15 June 1775. The Continental Congress felt forced to act as the provisional government for the colonies. They issued money, established a postal service, and created a Continental navy. The U.S. Navy has its birth on 13 October 1775. On this date the Second Continental Congress authorized the purchase of two vessels. The first commander in chief was Esek Hopkins, who put the first squadron of the Continental Navy to sea in February 1776.

102.9 State the qualities that characterize the Navy/Marine Corps team as instruments to support national policies. [ref. a, ch. 1]

Naval forces have been organized for fighting at sea - or from the sea - for more than two thousand years. The qualities that characterize most modern naval forces as political instruments in support of national policies are the same as those that define the essence of our naval Services today. These qualities are readiness, flexibility, self-sustainability, and mobility. They permit naval forces to be expeditionary - that is, being able to establish and maintain a forward-based, stabilizing presence around the world. Naval expeditionary operations are offensive in nature, mounted by highly trained and well-equipped integrated task forces of the Navy and Marine Corps, organized to accomplish specific objectives. Naval expeditionary forces draw upon their readiness, flexibility, self-sustainability, and mobility to provide the National Command Authorities⁴ the tools they need to safeguard such vital national interests as the continued availability of oil from world producers and maintenance of political and economic stability around the globe. Through these qualities, naval forces reassure allies and friends, deter aggressors, and influence uncommitted and unstable regimes.

102.10 State the three levels of war. [ref. a, ch. 2]

The concept of "levels of war" can help us visualize the relative contribution of military objectives toward achieving overall national goals and offer us a way to place in perspective the causes and effects of our specific objectives, planning, and actions. There are three levels: **tactical, operational, and strategic** - each increasingly broader in scope. Although the levels do not have precise boundaries, in general we can say that the tactical level involves the details of individual engagements; the operational level concerns forces collectively in a theater; and the strategic level focuses on supporting national goals. World War II, for example, a strategic-level and global war, included operational-level combat in the Pacific theater consisting primarily of U.S. led maritime, air, and supporting allied land campaigns. Within each specific campaign were a series of important and often decisive battles. At the tactical level, each contributed to the achievement of that campaign's objectives. The culmination of these campaign objectives resulted in overall victory in the Pacific theater.

102.11 State the mission of Naval Logistics. [ref. c, ch. 1]

Sustained naval and joint operations are made possible by a logistic support system that has two major components: fleet-based sustainment assets and strategic sustainment assets. Fleet-based sustainment assets include replenishment ships of the combat logistics force providing direct fleet support, combat service support units, mobile repair facilities, and advanced logistic support hubs. Strategic sustainment is provided by air and sea assets that are shared by all Services. Successful global response to contingencies depends upon our ability to project and sustain U.S. forces in all theaters of operations. Integrated support resources in the form of fleet-based sustainment assets and strategic assets provide naval expeditionary forces and joint and multinational forces the ability to operate in peacetime and in war wherever and whenever our national interests demand. Our ability to move and sustain forces at great distances from our shores is critical to the forward presence component of our military strategy.

102.12 State the importance of planning to Naval Operations. [ref. d, ch. 1]

When military action is one of the potential responses to a situation threatening U.S. interests, a plan is prepared using either the joint deliberate-planning process or crisis-action procedures¹⁰. Although military flexibility demands a capability to conduct short-notice crisis planning when necessary, U.S. military strength is best enhanced by deliberate peacetime analysis, planning, and exercises. An operation plan is a commander's complete description of a concept of operation. It is based on the commander's preparation of the battlespace,¹¹ a formal evaluation, supported by intelligence, that integrates enemy doctrine with such factors as physical and environmental conditions. From this evaluation, the commander identifies the forces and support needed to execute the plan within a theater of operations. Naval forces operation plans are integrated into the complete inventory available to the Joint Force Commander. For execution, plans become operation orders. Operation plans include: the theater strategy or general concept and the organizational relationships; the logistics plan shows ways the force will be supported; and the deployment plan sequences the movement of the force and its logistical support into the theater. Elements of planning that produce a concept of operations include the commander's estimate, deciding possible courses of action, preparation of the mission statement and its execution strategy, situation analysis, and formulation of the commander's intent. These elements are applicable up, down, and across chains of command.

My appreciation to ET2 A. Groat, USS Saipan, who provided the information available on question 102.3.

103 U. S. Navy Organization Fundamentals

References:

[a] NAVEDTRA 12043, Basic Military Requirements

[b] Bluejackets Manual, Rev. 12

[c] OPNAVINST 1306.2, Fleet, Force, and Command Master Chief Program

103.1 Discuss the responsibilities of the following: [ref. a, ch. 3]

a. Commander in Chief (President)

is the head of the Armed Forces as mandated by the Constitution. He is responsible for initiating military action in support of our national interests. He can submit to Congress the intent to declare war which Congress must approve in order to actually wage war.

b. Secretary of Defense

Principal defense advisor to President. Formulation of general defense policy and policy related to DOD.

c. Secretary of the Navy

Policies and control of DON organization, admin, ops and efficiency.

d. Chief of Naval Operations (CNO)

Navy rep of JCS. Keeps SECNAV informed of UCS activities and responsible to the President and SECDEF for external DON duties.

e. Fleet Commander In Charge (CINC)

Operating forces - ships, crafts classified and organized into command by type.

f. Type Commander (TYCOM)

Responsible for the ships that make up the operational numbered fleets.

103.2 Discuss the role of the following:

a. MCPON [ref. c]

Navy's senior enlisted member. Serves as senior enlisted rep of the Navy and as senior enlisted adviser to the CNO in all matters pertaining to enlisted personnel and their families.

b. Fleet Master Chief [ref. b]

is the principal enlisted advisor to the Fleet CINC.

c. Force Master Chief [ref. c]

Principal enlisted advisers to commanding officers. Have the responsibility of keeping the CO up to date on situations, procedures, and practices that affect the welfare, morale, and well-being of the enlisted crew.

d. CMC [ref. c]

Enlisted adviser to CO. Keeps the CO up to date on situations, procedures, and practices that affect the welfare, morale, and well-being of the enlisted crew and their families.

103.3 Discuss the function of the following operational commands: [ref. a, ch. 3]

- a. **Atlantic Fleet-** 2nd fleet
- b. **Pacific Fleet-** 3rd & 7th fleets
- c. **Naval Forces, Europe-** 6th fleet
- d. **Military Sealift Command (MSC)-** Provides immediate sealift capability in the time of emergency.

103.4 State the geographic Area of Responsibility (AOR) for the following: [ref. a, ch. 3]

a. 2nd Fleet- the Atlantic ocean

Headquarters is in Norfolk, Virginia.

b. 3rd and 7th Fleets

The Pacific and Indian oceans. 3rd fleet headquarters is in San Diego, California while 7th fleet is in Yokosuka, Japan.

c. 5th Fleet

The Persian gulf. Headquarters is in Manama, Bahrain.

d. 6th Fleet

The Mediterranean. Headquarters is in Gaeta, Italy.

e. Military Sealift Command

Worldwide. Headquarters is in Washington DC.

103.5 State the purpose and content of the following [ref. a, ch. 3]

a. Standard Organization and Regulations of the U.S. Navy

To provide all units with the same basic organization, regardless of their mission.

b. Ship's/Command's Organization and Regulations Manual

Governs the coordination of evolutions and emergency procedures and the conduct of personnel in the unit. Purpose is to provide a ready source of info concerning the duties, responsibilities, and authority of unit personnel.

103.6 Discuss the inter-relationship between the following: [ref. a, ch. 3]

a. Naval Air Squadrons

b. Naval Surface Forces

c. Naval Sub-Surface Forces

d. Naval Amphibious Forces

Each is responsible for waging war in the air, on the sea, under the sea, and in land from the sea. Each may wage war on their own depending upon the mission but more frequently each interfaces and coordinates with one another to conduct total war.

103.7 Discuss the following: [ref. b, app. A]

a. Naval Reserve

Mission is to provide trained units and qualified individuals for active duty in time of war or national emergency and at other times required by national security.

b. Ready Reserve

The total compliment of reservists in the SELRES, TAR, and IRR programs.

c. Selected Reserve

Subject to involuntary recall for war or national emergency, or by the president up to 90 days to support operational requirements without the declaration of national emergency.

d. TAR

Serve on full-time active duty in support of the Naval Reserve.

e. Individual Ready Reserves

Subject to involuntary recall for war or national emergency. Members are not required to train.

104 Shipboard Organization And Admin Fundamentals

References:

- [a] OPNAVINST 3120.32, Standard Organization and Regulations of the U. S. Navy
- [b] OPNAVINST 5354.1D, Navy Equal Opportunity Manual
- [c] NAVEDTRA 10047, Military Requirements for Chief Petty Officer
- [d] NAVPERS 15560, Naval Military Personnel Manual
- [e] 1080#4 UM-01, Enlisted Distribution and Verification Report Users Manual
- [f] NAVEDTRA 12147, Engineering Administration
- [g] BUPERSINST 1430.16, Advancement Manual
- [h] SECNAVINST 1650.1, Navy and Marine Corps Awards Manual
- [i] NAVPERS 15909, Enlisted Transfer Manual
- [j] NAVEDTRA 12801, Radioman Communications
- [k] NAVEDTRA 12609, Legalman
- [l] SECNAVINST 5216.5D, Correspondence Manual
- [m] BUPERSINST 1610.10, Evaluation and Fitness Reports
- [n] OPNAVINST 3500.39, Operational Risk Management

104.1 Discuss the shipboard organizational structure and the duties, responsibilities and authority of:

a. CO [ref. a, ch. 3]

The responsibilities of the CO are absolute until he is relieved by competent authority. May delegate authority to subordinates, but such delegation does not relieve him of his continued responsibility for the safety and efficiency of the entire command. The CO must exert every effort to maintain his command in a state of maximum effectiveness for war service. CO's position is quasi-judicial. It is legislative, judicial, and executive. His power is authoritarian and complete. He has the ultimate responsibility for the ship and everything pertaining to the ship. Power is vested to the CO by the UCMJ to impose limited punishment. This power may not be delegated.

b. XO [ref. a, ch. 3]

Direct rep of the CO in maintaining the military and general efficiency of the ship. All department heads, other officers, and enlisted personnel are under the Ox's orders in all matters pertaining to operation and maintenance of the ship and to the preservation of good order and discipline. Arranges and coordinates all ship's work, drills and exercises, the personnel organization, policing of the ship, and inspections. XO sits as head of the planning board for training.

c. CMC [ref. a, ch. 3]

Principal enlisted advisers to commanding officers. Have the responsibility of keeping the CO up to date on situations, procedures, and practices that affect the welfare, morale, and well being of the enlisted crew.

d. Department Head [ref. a, ch. 3]

Representative of the CO in all matters pertaining to the department. Conforms to the policies and complies with orders of the CO. Reports to the CO for the operational readiness of the department. Reports to the XO for admin matters and keeps the XO informed of reports made to the CO.

e. Division Officer [ref. a, ch. 3]

Responsible under the dept head for the proper performance of the duties assigned his division and performance of his subordinates. Enlisted person's major link in the Chain of Command.

f. LCPO/LPO [ref. a, ch. 3]

Senior petty officer assigned to the division/dept. Assists the div/dept in the administration, supervision, and training of the div/dept.

g. Work Center Supervisor [ref. a, ch. 3]

Senior petty officer in charge of a maintenance group. Responsible to the dept head via the divo for 3-M system operation within the work center.

h. DCPO [ref. a, ch. 3]

Responsible for damage control functions of the division and related equipment.

i. Command Career Counselor [ref. a, ch. 3]

Responsible for Retention training, Career Training and assisting the crew in conversions and career paths.

j. Ship's 3-M Coordinator [ref. a, ch. 3]

Responsible to the CO for the completion of all Maintenance and the training and testing of all maintenance men.

k. OMBUDSMAN [ref. c, ch. 6]

Liaison between the CO and the family/dependants of all personnel.

l. Financial Specialist [ref. c, ch. 5]

Advise crewmembers in budgeting, savings, and basic money management.

m. DAPA [ref. a, ch. 3]

Advise the CO and XO on all matters concerning the Navy Drug and Alcohol Program. Provides onboard screening, education, prevention, counseling, aftercare, and referrals.

n. Quality Assurance Coordinator [ref. f, ch. 8]

o. Medical Department [ref. a, ch. 5]

Responsible for the health and well-being of the entire crew and any other persons embarked onboard.

p. Safety Officer [ref. a, chs, 3, 7]

Responsible to the CO for the identifying safety problems and training the crew on proper safety procedures for all evolutions. Investigates all mishaps and provides a Mishap report to the NAVSAFCEN via the CO.

q. Divisional Safety Petty Officer [ref. a, ch. 3]

Responsible to the Safety Officer for identifying safety problems and completing safety mishap reports.

r. Security Manager [ref. a, ch. 3]

Responsible for the safe handling of all sensitive material.

104.2 Discuss the purpose of a shipboard battle organization in relation to the following: [ref. a]

a. Command and Ship Control [ch. 4]

To provide central decision making point during battle situations. To provide for the orderly movement of the ship during battle.

b. Operations Control [ch. 4]

To provide a capability for detection, communications, electronic warfare, electronic repair, and ship handling/maneuvering during battle conditions.

c. Weapons Control [ch. 4]

To provide offensive/defensive weapons capability during battle conditions.

d. Engineering control [ch. 4]

To provide propulsion and maneuverability during battle.

e. Damage Control [ch. 4]

To provide damage repair capability during battle conditions.

f. Primary Flight Control [ch. 6]

To provide a capability for offensive and defensive actions, emergency situations, or the debarkation of troops during an amphibious assault.

g. Mine Countermeasures Control [ch. 6]

To provide standards for combating mines.

h. Debarkation Control [ch. 6]

To provide orderly debarkation of troops/equipment during an amphibious assault.

104.3 State the purpose of the following bills: [ref. a, ch. 6]

a) Administrative

Establishes uniform policy for assignment of personnel, berthing, maintenance, visiting, recall and zone inspections.

b) Operational

Sets forth policies and procedures in such areas as the boat bill, cold weather, darken ship EMCON, etc...

c) Emergency

Provide and organize prescribed procedures and assign responsibilities for controlling the effects of major emergency or disaster suffered by the ship.

d) Special

Assign responsibility for a promulgated procedures for defense against sneak/swimmer attack, evacuate civilians, prisoner of war, etc.

e) Battle

Assign personnel and stations necessary to fight the ship.

f) Watch quarter and station bill

Each person in the division is listed by billet number displaying his assignments for battle, watch, operational, and emergency bills.

104.4 State the purpose of the following reports: [ref. a, ch. 6]

a) 8 o'clock reports

Reports received shortly before 1830 (Underway) by the Executive Officer from the department heads.

b) 12 o'clock reports

Reports received by the OOD (Inport) and delivered by messenger of the watch prior 1200. Reports include aviation fuel, boat, chronometer, draft, fuel & water, magazine temp, muster report.

104.5 Discuss the purpose and general rules for counseling:

a. Personnel [ref. c, ch. 4]

There are times when a person has special problems that will require special help. These problems should be handled by specialists such as the chaplain, legal, and/or medical officer. Effective personal counseling will recognize situations in which referral is necessary. Your first duty in counseling is to recognize whether the problem is beyond your ability to help or not. This can be determined during counseling.

b. Performance [ref. m, app. C]

Counsel your personnel on a regular basis to let them know how they are doing and where they need to improve.

104.6 Describe the effects of enlisted evaluations on the following:

a. Types of discharges: [ref. d, sec. 3610200]

Honorable
General (Under Honorable Conditions)
Other Than Honorable
Bad Conduct Discharge
Dishonorable

b. Advancement: [ref. g, ch. 3]

Requirements are: proper time in rate, same grouping (e.g. FN, SN, AN, Group), advancement courses, pars, military requirements, and most of all "CO's recommendation".

c. Good conduct awards: [ref. h, ch. 4]

Every three years starting 01Jan96. Hash mark still counts 4 yrs each.

d. Eligibility for reenlistment [ref. d, sec. 1040300]

A member with marks under 3.0 will not normally be able to reenlist. Decision weights on the discretion of the CO.

e. Assignments: Type of duty assignments are: [ref. i, ch. 9]

Certain assignments require good evaluations. Some of these assignments may be Instructor duty, Recruit Company Commander, Formal Schools, etc. However, an overall 3.0 average is required and approval is at the discretion of Naval Military Personnel Command (NMPC).

- 1- Conus shore duty
- 2- Conus shipboard duty
- 3 - Overseas shore duty but counted sea duty for rotational purposes
- 4 - Overseas shipboard duty
- 5 - Neutral duty
- 6 - Preferred Overseas shore duty.

104.7 Explain the use of the following:

a. Naval message [ref. j, ch. 6]

Used for all messages and correspondence regarding official matters.

b. E-mail [ref. l, sec. d]

Used for personal messages of a non-official status.

104.8 Explain the purpose of the following message components: [ref. j, ch. 6]

a. Date time group (DTG)

The Date-Time-Group (DTG) is assigned for identification and file purposes only. The DTG consists of six digits. The first two digits represent the date, the second two digits represent the hour, and the third two digits represent the minutes. Next follows the month followed by the year. Example: 220001Z NOV 98

b. From line

It is identified by the originator prosign FM (meaning "FROM") and contains the designation of the originating station.

c. To line

It is identified by the action prosign "TO" and contains the designation's of the Action addressee's.

d. Info line

It is identified by the prosign "INFO" and contains the designation's of the information addressee's.

e. Classification/declassification line

The classification line is the first line of the text and immediately follows the BT that separates the heading and text. This line indicates the message classification and provides the Standard Subject Identification Code (SSIC).

f. Standard subject identification code (ssic)

The Standard Subject Identification Code (SSIC) identifies the subject matter of the message. The SSIC is preceded and followed by two slant signs; also the SSIC always contains five digits corresponding to the particular subject matter, preceded by the letter N. Example: UNCLAS //N02000//

g. Subject line

The subject line indicates the basic contents of the message

h. Passing instructions

Specific elements at the beginning of the text, these elements may be flag words, code words, subject lines, for, from, pass to and outgoing/incoming message references. These elements are a means of indicating that the text of the message is to receive the attention of the indicated individual or office without necessarily limiting the normal distribution.

i. Reference line

Reference lines are used to avoid repeating lengthy quotations or references within the text of a message. A reference may be any message, document, correspondence, or telephone conversation that is pertinent to the message.

j. Amplifying information line

Used for a single reference.

k. Narrative information line

Used for multiple references.

l. Text

The part of the message that contains the thought or idea that the drafter desires to communicate.

104.9 Explain what each of the following enlisted service record pages are and what entries are made on each. [ref. d, sec. 5030220]

Page 2 - (Dependent Application/Emergency Data Form)

Page 4 - NAVPERS 1070/604 (Awards & Qualifications)

Page 13 - Administrative Remarks

104.10 State the purpose and discuss the contents of (EDVR). [ref. e, ch. 1]

List all personnel assigned to the unit in addition protecting gains and losses. "It's a manning document". It contains 12 sections.

104.11 Explain the use of a Report and Disposition of Offenses (NAVPERS 1626/7). [ref. k, ch. 5]

Court Memorandum: Page 7 of the enlisted service record. It shall be used to record court-martial and nonjudicial punishment that affect pay.

104.12 Define the following in reference to a personal misconduct determination: [ref. k, ch. 13]

a. In line of duty

(e.g. Drunk driving and service member suffered significant injury that cause him to miss 3 months of military duty and may have incurred a permanent disability.

b. Not in line of duty, not due to member's own misconduct

Determination would occur when misconduct is not involved, but an injury or disease is contracted by a service member which falls within one of four other exceptions to the LOD presumption (desertion; UA; confinement as a result of a civilian conviction; or confinement pursuant to sentence by a general court-martial that included an unremitted dishonorable discharge. (e.g. A service member has been UA for 8 months and is injured while lawfully crossing a street. The injuries were not the result of negligence.

c. Not in line of duty, due to member's own misconduct

A determination of "misconduct" always requires a determination of "not in the line of duty."

104.13 Discuss the purpose of the Command Managed Equal Opportunity (CMEO) Program in relation to: [ref. b]

a. Command Training Team [secs. ES, III]

Every command with 50 or more permanently assigned personnel is required to have a CTT to present command specific training, Navy Rights and Responsibilities (NR&R) workshops, annual sexual harassment training, and other EO training as may be required. Members shall be appointed in writing and shall complete with 6 months, the formal CTT Indoc course.

b. Command Assessment Team [secs. ES, III]

Every command with 50 or more personnel is required to have a CAT to conduct command assessments. The XO chairs the CAT which includes the CMC, CCC, PO, LO, CMEO Officer, CTT leader and at least one dept head. The CAT meets quarterly (minimum)

c. Navy Rights and Responsibilities (NR&R) Workshop [sec. I]

Is conducted by the CTT for all personnel within 90 days of check-in and annual refreshers in conjunction with the command assessment.

d. Command Assessment [sec. III]

Command assessment are required within 6 months following change of command and at minimum annually thereafter.

e. Plan of Action and Milestone (POA & M) [sec. III]

Personnel are routinely informed of the status resulting from the annual command assessment.

f. Immediate Superior in Command [sec. III]

COMPHIBGRU ONE; ISICS are required to inspect EO as a special interest item during subordinate command inspections.

104.14 Discuss the concept of Operational Risk Management (ORM) [ref. n]

a. Is a decision making tool used by people at all levels to increase operational effectiveness by anticipating hazards and reducing the potential for loss, thereby increasing probability of a successful mission.

b. Increases our ability to make informed decisions by providing the best baseline of knowledge and experience available. c. Is an effective tool for maintaining readiness in peacetime and success in combat without infringing upon the prerogatives of the Commander.

104.15 Explain the following terms as they apply to ORM. [ref. n]

a. Identify hazards

Begin with an outline or chart of the major steps in the operation or operational analysis. Next, conduct a preliminary hazard analysis by listing all of the hazards associated with each step in the operational analysis along with possible causes for those hazards.

b. Assess hazards

For each hazard identified, determine the associated degree of risk in terms of probability and severity. Although not required, the use of a matrix may be helpful in assessing hazards.

c. Make risk decisions

Develop risk control options. Start with the most serious risk first and select controls that will reduce the risk to a minimum consistent with mission accomplishment. With selected controls in place, decide if the benefit of the operation outweighs the risk. If risk outweighs benefit or if assistance is required to implement controls, communicate with higher authority in the chain of command.

d. Implement controls

The following measures can be used to eliminate hazards or reduce the degree of risk. These include: Engineering controls, administrative controls, and personnel protective equipment.

e. Supervise

Conduct follow-up evaluations of the controls to ensure they remain in place and have the desired effect. Monitor for changes, which may require further ORM. Take corrective action when necessary.

105 Supply Organization Fundamentals

References:

[a] NAVEDTRA 10269-K1, Storekeeper 3&2

[b] NAVEDTRA 12652, Storekeeper 1&C

[c] NAVEDTRA 12100, Boatswain's Mate

[d] COMNAVSURFLANT/COMNAVSURFPACINST 4400.1H, Surface Force Supply Procedures

[e] NAVSUP P 485, Afloat Supply Procedures Manual, Revision 2, Change 8

[f] NAVSUP P 487, Ship's Store Afloat, Revision 3, Change 4

[g] NAVSUP P 486, Food Service Management – General Messes, Revision 3

[h] OPNAVINST 5100.19C, Navy Occupational Safety and Health Program (NAVOSH)

105.1 Explain the importance of the Coordinated Shipboard Allowance List (COSAL) in relationship to the ship's mission and sustainability. [ref. a, ch. 5; ref. b, ch. 2]

Coordinated Shipboard Allowance List. List of equipment on hand that may be needed.

105.2 Discuss the following processes in reference to the COSAL:

a. Validating [ref. a, ch. 5; ref. b, ch. 2]

Every 2-3 years download everything & validating during ILO. Reconciliate what is supported and what is not.

b. Updating [ref. a, ch. 5; ref. b, ch. 2]

Modifications, additions, and deletions.

c. Automated Shore Interface/Revised Alternative Dataflow (ASI/RAD) [ref. d, ch. 6]

Receive monthly from NAVSEA in a sequence numbered tape. Provides updates, configurations, a report update. Tells what is missing at the end of each month.

105.3 Explain how frequently ordered parts effect demand processing. [ref. e, ch. 6]

Verified 2x monthly. Demand is recorded. If an item is listed 2 times in a 6 month period, it becomes a higher priority item and is stocked onboard.

105.4 Discuss the purpose of the Material Obligation Validation (MOV) program. [ref. d, ch. 2]

SNAP NAVCOM 2155. Reconciliation of the RPPO and the SUADAPS stores. Contains Julian date, serial #, nomenclature, and running balance.

105.5 Discuss the Depot Level Repairables (DLRs) program. [ref. a, ch. 6]

Manages high value items (advice # 7H, 7E, 7X, 7G, AND 7Q). Cannot repair and reuse.

105.6 Explain the procedures on NRFI DLRs in regard to the following situations: [ref. d, app. D]

a. Turn-in- For exchange basis only. Advice code is 5g.

b. Remain in Place (RIP)- Turned into Supply when new item is in place. (Advice code 5S) DLR items reflect 2 prices, 1 is Standard Price and 1 is Net Unit Price.

105.7 Define the purpose of the following: [ref. b, ch. 8]

a. Maintenance Assist Modules (MAMs)

Usually DLR's. Used for troubleshooting only. If for permanent use must be approved by CO.

b. Bulkhead ready spares

Bulky items that are stored in the actual spaces that they will be used.

105.8 Discuss the Battle Group Asset Management System (BAMS) concept. [ref. d, ch. 6]

Database to assist force commanders by providing TOTAL ASSETS of Battle group.

105.9 Explain the difference between the two components of the OPTAR: [ref. d, ch. 7]

a. Equipment Maintenance Related Material (EMRM)

Parts and parts repair consumables required for maintenance of equipment. Y series for repair parts.

b. Other

Administrative and housekeeping items.

105.10 Explain the effects of the following on ships OPTAR:

a. Departmental budget [ref. d, ch. 7]

Basis for annual financial management plan. Distribution of money.

b. Consolidated Residual Asset Management System Inventory (CRAMSI) [ref. d, ch. 7]

Database managed by NAVSEALOGCEN.

c. Hazardous material reutilization [ref. h, ch. B-3]

The process of reusing hazmat.

d. Defense Reutilization Marketing Office (DRMO) [ref. e, ch. 3]

Free issue for government use.

105.11 State how credit is distributed for parts when they are turned back in to supply. [ref. d, ch. 7]

Item goes back to stock. Turned in to DRMO. Credit is given to TYCOM who has a large pool of money that is distributed accordingly at the end of the fiscal year.

105.12 Define the UMMIPS and the role it plays with the Priority Designator (PD). [ref. d, ch. 5]

For priority 2 and 5 items. Not to exceed 70% priority items for each month.

105.13 What is the purpose of the following messages: [ref. d, ch. 3]

a. Fleet freight/cargo- Dates and ports & material info for items to be sent.

b. Main- Generated by the fleet commander. Includes dates & places of port visit. Ask where you want your supplies to go.

105.14 Discuss the purpose of ship's store afloat. [ref. f, ch. 1]

Provide comfort for the crew. Generates funds for MWR. Sells items at lowest possible price.

105.15 Explain endurance loading of subsistence and how it effects the ship's mission and sustainability. [ref. g, ch. 4]

Determined by TYCOM. Normally for 45 days. Allows for continuous operation of the ship.

105.16 Define and describe the BDF and state how it effects each crewmember. [ref. g, ch. 2]

\$5.91 per person per day. Excess is turned back into meals for the crew.

105.17 Describe the principle quarterly foodservice report and where it is submitted. [ref. g,ch. 7]

Monthly report (Form 1357).

Contains number fed, cost, and breakdown of costs.

Quarterly report (Form 1358).

Compilation of 3 1357's. Efficiency is determined by Navy Food Service System Office (NFSSO).

105.18 State what kind of rations are utilized during battle stations when the galley or galley personnel are not available. [ref. g, ch. 3]

Marines will eat C-rats. When the ship is in battle quarters, the mess decks will deliver "battle messing" to the GQ stations.

106 Deck Fundamentals

References:

- [a] The Bluejackets' Manual, Twenty-First Edition
- [b] Knight's Modern Seamanship, Eighteenth Edition
- [c] NAVEDTRA 12016, Seaman
- [d] NAVEDTRA 12100, Boatswain's Mate
- [e] NAVEDTRA 12120, Quartermaster
- [f] Navigation Rules, USCG Commandant Instruction M16672.2C
- [g] NWP 3-50.1, Naval Search and Rescue (SAR) Manual
- [h] NWP 4-01.4, Replenishment at Sea
- [i] OPNAVINST 3120.32C, Standard Organization and Regulations Manual of the U. S. Navy
- [j] Seamanship Fundamentals for the Deck Officer (1981)
- [k] Watch Officer's Guide, Eleventh Edition

106.1 State the measuring standard for the following: [ref. j, ch. 7]

- a. **Line:** Measured in circumference.
- b. **Wire rope:** Measured in diameter.

106.2 Discuss the difference between three strand and double braid synthetic mooring line, with respect to the following: [ref. d, ch. 2]

- a. **Strength:** Double braid is stronger than three strand.
- b. **Breaking characteristics:** Double braid has higher breaking characteristics.
- c. **Durability:** Double braid is more durable.

106.3 Explain the meaning of the following line-handling commands: [ref. d, ch. 2]

- a. **Hold:** Secure the line so it doesn't allow slippage.
- b. **Check:** Let the line surge a little at a time to prevent the line from parting.
- c. **Ease:** Let the line out smoothly but keeping it taught.
- d. **Slack:** To allow a line to run out using hand over hand method keeping it out of the water.
- e. **Take-in:** Bring the line onboard.
- f. **Cast-off:** Remove the line from the bitt.
- g. **Avast:** Hold the line, do not slack or heave around.
- h. **Heave around:** Pull on the line.

106.4 Define the following: [ref. e, ch. 12]

- a. **Swing circle:** Amount of chain released, distance hawspipe plus ships length.
- b. **Drag circle:** Amount of chain released, distance hawspipe to pelorus.

106.5 Define the following terms as applied to small boats: [ref. d, app. 1]

- a. **Sea painter:** A line led well forward on the ship to a boat alongside.
- b. **Steady lines:** Lines used to steady the boat during hoisting and lowering.
- c. **Manropes (monkey lines):** A safety line made up with a series of overhand or figure eight knots evenly spaced to assist personnel climbing up and down.

106.6 Describe the purpose of the following as applied to ground tackle: [ref. a, ch. 5]

- a. **Bit:** Make a lines fast that have been faired through chocks.
- b. **Chock:** Smooth surface which mooring lines are led to prevent them from chafing.
- c. **Cleat:** Used for belaying a line or wire.
- d. **Bullnose:** A hole in the bow used for being towed or mooring to a buoy.
- e. **Hawse pipe:** Pipe where the anchor is hawsed.
- f. **Chain:** Hold the ship in place when at anchorage.
- g. **Turnbuckle:** Used on the stopper assembly to secure the anchor.
- h. **Gypsy head:** Used to heave around on the lines and wires.

- i. Capstan:** Used to heave in on mooring lines and wires.
- j. Detachable link:** Used to connect links of chain together.
- k. Chain marking:** Lets you know how much chain you have out on deck.
- l. Anchor:** Used to hold ships position.
- m. Chain stopper:** Used to secure the chain and anchor.
- n. Pelican hook:** Part of the stopper that actually secures the chain.
- o. Wildcat:** Used for hoisting and controlled lowering of the anchor.
- p. Anchor brake:** Keeps the chain from paying out.
- q. Anchor buoy:** Identifies where anchor is when at anchor.

106.7 Define the following as applied to marlinespike seamanship: [ref. c]

- a. Hawser : [app. 1]** Any heavy line or wire used for towing or mooring.
- b. Line: [ch. 3]** Any rope that is not wire.
- c. Wire: [ch. 3]** Rope made of metal, used in various ways.
- d. Spring line: [app. 1]** Six strands of wire wrapped around a fiber core.
- e. Small stuff: [ch. 3]** Line 1 ¾ or smaller.
- f. Flemish: [ch. 3]** Line coiled flat and tight.
- g. Coil: [app. 1]** Make a circle with line and pile it on top of itself.
- h. Fake: [ch. 3]** The act of disposing of line, wire, or chain by laying it out in long, flat bights, alongside the other.
- i. Heaving lines: [app. 1]** A line with a weight at one end, heaved across an intervening space for passing over a heavier line.
- j. Monkey fist (heaving ball): [ch. 3]** The heavy end of the heaving line.
- k. Marlin: [ch. 3]** Two strand left laid tarred hemp small stuff.
- l. Bight: [ch. 3]** A loop of rope, line, or chain.
- m. Bitter end: [ch. 3]** The end of a line.
- n. Eye: [ch. 3]** Hole in the end of a line used for mooring.
- o. Eye splice: [ch. 3]** Used to make an eye at the end of a line.
- p. Long splice: [ch. 3]** Used to join two pieces of line with out changing its circumference.
- q. Short splice: [ch. 3]** Used to join two pieces of line.
- r. Marlinespike: [app. 1]** Tapered steel tool used to open the strands of wire for splicing.
- s. Fid: [app. 1]** Wooden spike shaped tool used in splicing line.
- t. Mousing: [app. 1]** Wire wrapped around a hook used to strengthen and prevent the load from slipping off.

106.8 Discuss the purpose of the following line handing safety precautions:

- a. Direction of line pull danger area: [ref. i, ch. 2]**

To keep people from being hit if line parts.

- b. Safe distance from blocks, cleats, gypsy heads, capstans, etc.[ref. h, ch. 2]**

Far away as possible.

- c. Removal of all loose objects (ie. rings, watches, keys, etc.): [ref. h, ch. 2]**

Prevent snagging and loss of appendages.

- d. Whenever possible remain forward/inboard of lines and wires: [ref. h, ch. 2]**

Prevent from getting hurt.

- e. Line handling using the "hand-over-hand" rule: [ref. h, ch. 2]**

Prevent rope burns and snagging.

106.9 Define and discuss the following as applied to mooring: [ref. d, ch. 2]

a. Mooring line:	Line used in tying up the ship.
b. Breast line:	Line used in keeping ship from moving in and out.
c. Forward spring line:	Keeps the ship from moving aft.
d. After spring line:	Keeps the ship from moving forward.
e. Bow head line:	Line that runs through the bullnose.
f. Stern line:	Runs through stern chock and holds the stern in.
g. Storm line/wire:	Extra line used in storms to add extra strength to the ship's moore.
h. Tattletale line:	Lets you know when the lines safe working load has been reached.
i. Round turn:	Complete turn around a bitt.
j. Figure eight turn:	Line put on bitts in a figure eight fashion to secure mooring line.
k. Dip the eye:	Second eye is led through first eye and put on the bitt.
l. Single up:	Putting out first line or bringing in second line.
m. Double up:	Putting out second line.
n. Heavy strain:	Line is tight and popping.
o. Moderate strain:	To the point of just being taught.
p. Light strain:	No strain on the line at all.
q. Frap:	Wrapping mooring line snugly with small stuff holding the lines together.
r. Rat guards:	Circular metal disc lashed together.
s. Chafing gear:	Canvas wrapped around the area of line where the rat guards is placed.
t. Rat-tail stopper:	Line used to hold the mooring line while it is being secured to bitts.
u. Safe working load (swl):	Where the line stretches to a certain point /any farther may cause injury.

106.10 Discuss the following terms in regard to replenishment at sea: [ref. d, ch. 10]

a. Underway replenishment(unrep):	Means of transferring fuel, ammo, and supplies from one vessel to the next.
b. Vertical replenishment (vertrep):	Same as above but done by the use of helo's.
c. Connected replenishment (conrep):	Two ship's steam side by side fuel hoses and wire are used to transfer fuel, ammo, supplies, and personnel

106.11 Define the following in regards to replenishment operations: [ref. h, ch. 2]

a. Replenishment course:	The responsibility of the otc to select a suitable course and speed taking into consideration the mission of the group and the condition of the sea.
b. Replenishment speed:	About 12 knots.
c. Control ship:	Usually the delivering ship
d. Approach ship:	Receiving ship.
e. Delivery ship:	The control ship.
f. Transfer station:	Station which sends the product.
g. Receiving ship:	Approach ship.

106.12 Discuss the use of the following during underway replenishment: [ref. h]

a. Inhaul/outhaul line: [ch. 4]

A line used to recover any piece of gear, such as a paravane or a trolley block/a line used to haul a piece of gear from a ship.

b. Messenger: [ch. 2]

Line used to get the span wire across to the ship.

c. Phone and distance line: [ch. 2]

Line sent to the other ship with phone line in the middle so communications can be established and tells the distance the ship's are apart.

d. Riding line: [ch. 3]

Line used to hold the probe in place.

e. Tiedown: [ch. 3]

Used for securing things.

f. Easing outline: [ch. 3]

Line that is faired through the eye of the weak link and secured to a cleat and is used to ease out the span wire till clear of the ship.

g. Span wire/highline: [ch. 3]

Wire that is tensioned and the fuel rig is sent over/wire that is tensioned and the cargo rigs are sent over.

h. Probe/robb coupling: [ch. 3]

Devices used to send fuel through.

i. Station-to-station phone line: [ch. 2]

Phone line sent over to other ship for comms from station to station.

106.13 Discuss the use of the following equipment in underway replenishment: [ref. d, ch. 10]

- | | |
|--------------------------------------|---|
| a. Winch: | Mechanical device used to slack off heave in on saddle whips and span wire. |
| b. Bolo: | Led weight attached to by shotline and heaved over to the receiving ship. |
| c. Line-throwing gun: | Gun used to shoot shotline over. |
| d. Fair-lead block: | Block that line passes through to give direction of pull. |
| e. Snatch block: | Block that one side opens up to allow bight of line to be put on. |
| f. Contour lights: | Gives definition of ship while approaches are made. |
| g. Saddle whips: | Wire attached to the saddles. |
| h. Hose saddles: | Device used to connect hoses and attached to a trolley. |
| i. Ram tensioner: | Keeps the spanwire/highline tensioned. |
| j. Trolley: | Device used to attach the saddle to wire and allows smooth movement. |
| k. STREAM: | Replenishment conducted while wire is under tension. |
| l. Cargo drop reel: | Takes the place of a sliding padeye used on ship's that don't have a sliding padeye. |
| m. Sliding pad eye: | Device used for receiving cargo. |
| n. STREAM support leg: | A carrier will usually use this type of rig. |
| o. End fitting: | Fitting at the end of the span wire or whips or highline. |
| p. Star assembly: | All tensioned wire rig with the highline and the inhaul and outhaul lines being tended by winches in the delivering ship. |
| q. Pendant receiving station: | Used for connecting stream cargo transfer rigs. |
| r. Traveling surf: | An all tensioned wire rig with highline, inhaul, and outhaul lines being tended by winches in the delivering ship. |
| s. Surf block: | |
| t. Day/night station markers: | Used to identify the stations products. |
| u. Replenishment checklist: | List used to ensure all items are on station and station is ready to go. |
| v. STREAM transfer head: | |
| w. Chem lites: | Lights used to illuminate stations and fittings. |

106.14 Explain the duties of the following replenishment personnel/hard hat colors: [ref. d, ch. 10]

- | | |
|---|--|
| a. Safety observer (station and bridge): | Watches for safety violations. white with green cross. |
| b. Rig captain: | Person in charge of station. Yellow. |
| c. Riggers: | Responsible for rigging station. blue. |
| d. Signalman: | Delivers signals to other ship. green. |
| e. Corpsman: | On station for personnel casualty. white with red cross. |
| f. Gunner's mate: | Used to shoot shotline over. red. |
| g. Winch operator: | Operates the winches. brown. |
| h. Phone taker: | Communicates with bridge and other ship. green. |

106.15 Discuss the meaning of whistle signals between the delivery and receiving stations. [ref. d, ch. 10]

- a. Preparing to shoot shot line
- b. Ready to receive shotline
- c. Shooting shotline

106.16 Discuss the following flag hoist signals when displayed by the delivery and/or receiving ship: [ref. d, ch. 10]

- a. **Romeo at the dip:** steady on course and speed preparing to take you alongside/ready to come alongside.
- b. **Romeo close up:** ready for your approach/commencing approach.
- c. **Romeo hauled down:** when messenger is in hand/when messenger in hand.
- d. **Prep at the dip:** receiving ship only expect to disengage in 15 min.
- e. **Prep close up:** replenishment completed.
- f. **Prep hauled down:** all lines clear.
- g. **Bravo at the dip:** temporarily ceased pumping/stopped receiving temporarily.
- h. **Bravo close up:** transferring/receiving.
- i. **Bravo hauled down:** unrep complete/unrep complete.

106.17 Discuss the differences between emergency and standard breakaway. [ref. d, ch. 10]

Same as standard just faster and no permission is asked from the bridge.

106.18 State the purpose of the following:

- a. **Special sea and anchor detail:** [ref. i, ch. 6] Used for mooring or anchoring evolutions.
- b. **Plane guard:** [ref. g, ch. 6] Lookout for planes to ensure they are safe.
- c. **Low visibility detail:** [ref. i, ch. 4] Add to lookouts in area's where visibility is bad.
- d. **Flight quarters:** [ref. i, ch. 2] Set when ship wants to launch aircraft.
- e. **Restricted maneuvering:** [ref. f] Used when ship is in close to land.

106.19 Discuss abandon ship procedures, including the following: [ref. a, ch. 4]

- a. **Who orders "abandon ship":** Commanding Officer.
- b. **Word to be passed:** Bearing to land, distance, temperature of water, friendly or foe.
- c. **Actions of the crew:** Grab co2 life jackets and proceed to abandon ship station.
- d. **Life boats:** 2 LCPLS.
- e. **Life rafts:** MK. 6, MOD 2, 25 man.

106.20 Explain how the following are used during the recovery of a "man over board". [ref. j, ch. 5]

- a. **Life ring/buoy:** Throw out as close to the man as possible.
- b. **Smoke float:** Activate it and throw in the vicinity of the man.
- c. **Strobe light:** Attached to the life ring and when in the water blinks.
- d. **Dead reckoning tracer (DRT):** Scale dropped to 200:1 and is designed to keep track of man overboard.

106.22 State the three common types of "man-overboard" recovery. [ref. j, ch. 5]

- a. Air
- b. Ship
- c. Boat

106.22 Define the following emergency conditions: [ref. f]

- a. **Collision:** An act or instance of colliding.
- b. **Aground:** Resting or lodged on the bottom.

106.23 Define the following terms:

a. Advance/transfer: [ref. e, ch. 11]

Distance the vessel moves in the direction of the original course from when the rudder is put over until the new course is reached. The distance the vessel moves perpendicular to the original course during the turn

b. Pivot point: [ref. e, ch. 11]

The point on the centerline between the bow and the center of gravity at which the ship appears to rotate on after the ship has assumed it's drift angle in a turn.

c. Acceleration/deceleration: [ref. e, ch. 11]

Tables derived from own ships tactical data to determine distance traveled by the ship at various speeds.

d. Turning circle: [ref. k, ch. 6]

The path described by the pivot point of the vessel as it makes a turn of 360 degrees with constant rudder and speed.

106.24 Define the following terms/acronyms:

a. True bearing: [ref. j, ch. 4]

Based on a circle of degrees with true north 000 degrees.

b. Relative bearing: [ref. j, ch. 4]

Circle drawn around the ship herself with bow 000 degrees.

c. DIW: [ref. c, app. 1]

Dead in the water.

d. Head on: [ref. f, rule 14]

When two power driven vessels are meeting on reciprocal or nearly reciprocal courses so as involve risk of collision.

e. Crossing: [ref. f, rule 15]

When two power driven vessels are crossing so as o involve risk of collision the vessel which has the other on her stbd shall keep out of the way and shall if circumstances of the case admit avoid crossing ahead of the other vessel.

f. Overtaking: [ref. f, rule 13]

A vessel deemed to be overtaking when coming up with another vessel from a direction more than 22.5 degrees abaft her beam.

g. Stand on: [ref. f, rule 17]

Vessel with the right of way.

h. Give way: [ref. f, rule 16]

Vessel that has to alter course or reduce speed to allow other vessel to pass.

106.25 Describe the navigational lights shown under the following: [ref. e, ch. 11]

a. Underway:

Port/stbd running lights, mast light, and stern light.

b. In-port, moored:

Aircraft warning lights, and anchor light.

c. Engaged in special operations:

Red over white over red.

d. Man overboard:

Two blinking red lights on the yardarm.

e. Not under command:

Red over red.

f. Anchored:

Aircraft warning light. anchor light

106.26 Describe the various low visibility sound signals and what they indicate. [ref. d, ch. 7]

1 prolonged blast not exceeding 2 minutes when underway. Bell or gong when at anchor. Rapid bell 5 seconds followed by gong and repeated each minute.

106.27 Discuss the following storm warning signals: [ref. d, ch. 7]

a. Gales:

DAY- 2 red pennants, night white over red. winds that are 39 to 54 mph.

b. Storms:

DAY- Red flag with black square center, night red over red. winds 55 to 73 mph.

c. Hurricanes/typhoons:

DAY-2 red flags with black square center, night red over white over red. winds 74+ mph.

d. Small craft:

DAY- 1 red pennant, night red over white. wind 38 mph sea conditions dangerous for small craft.

106.28 Discuss the following equipment used in ship handling/navigation:

a. Binoculars: [ref. c, ch. 2]

Magnified glasses used for lookouts.

b. Stadimeter: [ref. e, ch. 9]

Measures the distance of an object of known height such as a mast.

c. Sextant: [ref. e, ch. 8]

Precision instrument that can measure angles in degrees, minutes, seconds.

d. Chronometer: [ref. e, ch. 5]

Highly accurate clock.

e. Bearing circle: [ref. e, ch. e]

Metal ring that fits over a compass bowl.

f. Telescopic alidade: [ref. e, ch. 2]

Telescope equipped with cross hairs, level vial, polarizing light filter and internal Focusing.

g. Parallel motion protractor (PMP): [ref. e, ch. 2]

An instrument consisting of a protractor so that the movement of the arms is everywhere parallel.

h. Parallel rulers: [ref. e, ch. 2]

An instrument for transferring a line parallel to itself. consists of two parallel rulers connected.

i. Chart: [ref. e, ch. 1]

Show ocean areas and shorelines used to navigate the open waters.

j. Gyrocompass: [ref. e, ch. 2]	Used for keeping the ship on course.
k. Magnetic compass: [ref. e, ch. 2]	Secondary course in case the gyro goes down.
l. RADAR: [ref. b, ch. 8]	Means for detecting and approaching targets in warfare.
m. Fathometer: [ref. b, ch. 8]	Determines the depth of water the ship is in.
n. Satellite navigation (SATNAV): [ref. b, ch. 8]	An artificial satellite used in a system which determines positions based upon signals received from the satellite.
o. Global positioning system (GPS): [ref. b, ch. 8]	System which provides highly accurate positions and velocity information in 3 dimensions and precise time and time interval on a global basis continuously.

106.29 Define the following navigational terms/acronyms:

a. LOP: [ref. e, ch. 8]

Line of position. A plotted line on which a vessel is located.

b. EP: [ref. e, ch. 8]

Estimated position. The most probable position of a craft determined from incomplete data or data of questionable accuracy.

c. Fix: [ref. e, ch. 8]

A position that has been accurately established. common intersection of two or more lop's obtained from simultaneous observations.

d. Latitude: [ref. b, ch. 8]

Angular distance measured northward or southward through 90 degrees from the equator.

e. Longitude: [ref. b, ch. 8]

Angular distance between the prime meridian and the meridian of a point on earth measured eastward or westward.

f. DR: [ref. e, ch. 8]

Dead reckoning is a method of navigation in which position is determined by plotting the direction and distance traveled from a known point of departure.

g. Set/drift: [ref. e, ch. 11]

Refers to the currents & ship's direction/ refers to the currents & ship's speed.

h. GMT/Coordinated universal standard time: [ref. e, ch. 5]

Greenwich mean-time, Zulu time.

i. Time zones: [ref. e, ch. 5]

An area in all parts of which the same time is kept 22 time zones, a thru z except "j".

j. Variation/deviation: [ref. d, ch. 6]

Difference between geographic north and magnetic north/error caused by the magnetic effect of any metal near the compass.

k. Iala (a/b) buoyage system: [ref. d, ch. 6]

A red buoy to port entering. b-red to stbd entering.

l. Cardinal system: [ref. d, ch. 6]

Used in conjunction with the compass to indicate where the mariner may find the best navigable water.

106.30 Discuss the different methods of attaining a ship's position. [ref. e, ch. 8]

106.31 Discuss the purpose of dead reckoning (DR). [ref. e, ch. 8]

Determining the position of a vessel by adding to the last fix the ship's course and speed for a given time.

106.32 Describe the purpose of range/channel markings. [ref. e, ch. 4]

Determine his position relative to the track by evaluating the alignment of the markers forming the range.

106.33 Explain the duties of the following bridge watch personnel: [ref. e, ch. 11]

- | | |
|---|--|
| a. Officer of the deck (OOD): | Responsible for the ship and to the Commanding officer. |
| b. Conning officer: | Gives the orders to the helm/leehelm and responsible to the ood. |
| c. Boatswain's mate of the watch (BMOW): | Responsible for the watch team. |
| d. Helmsman/lee helmsman: | Steer the ship/ makes changes as ordered to the eot. |
| e. Lookouts: | Scan the surface and air for contacts and reports any contacts to the OOD on the bridge. |
| f. Quartermaster of the watch (QMOW): | Plots the courses and takes fixes as needed. |

106.34 Explain the purpose of the following:

a. Barometer: [ref. e, app. 1]

An instrument for measuring atmospheric pressure.

b. Psychrometer: [ref. e, app. 1]

An instrument used for determining atmospheric humidity consisting of dry-bulb and wet-bulb thermometers.

c. Voice tubes: [ref. c, ch. 2]

Tubes that run from one watch station to the other where you talk in to it so you can talk to another station.

d. JX/JL circuits: [ref. c, ch. 2]

JX circuits are used for battle and jl circuits are lookout comms.

e. Bull horn: [ref. c, ch. 2]

Used to make the voice louder and legible.

f. Telltale panel: [ref. c, ch. 2]

Panel which indicates ship's running light configuration, also indicates whether running lights are on primary or secondary filaments, using red, amber and buzzer modes.

107 Operations Fundamentals

References:

- [a] NWP 10-1-10 (A), Operational Reports
- [b] OPNAVINST 3100.6F, Special Incident Reporting
- [c] NWP 10-1-11 (A), Status of Resources and Training System (SORTS)
- [d] OPNAVINST 5510.1H, DON Information and Personnel Security Program Regulation
- [e] NAVEDTRA 10105, Operations Specialist 3
- [f] NAVEDTRA 10106, Operations Specialist 2
- [g] NAVEDTRA 12126, Operations Specialist 1 & C
- [h] NAVEDTRA 12104, Signalman
- [i] NAVEDTRA 12801, Radioman Communications
- [j] CNSL/CNSPINST 3502.2C, Surface Force Training Manual
- [k] Allied Maritime Tactical Instructions and Procedures, (ATP 1 (C), Vol. 1
- [l] Allied Maritime Tactical Signal and Maneuvering Book , (ATP 1 (C), Vol. 2
- [m] Jane' s Fighting Ships 1995-96
- [n] Dutton' s Navigation and Piloting, 14 th Edition
- [o] Non-Combatant Evacuation Operations (NEO), EXTAC 1010
- [p] TACNOTE ZZ0050-1-94, Maritime Interception Operations (MIO), Surface Force Standing

107.1 Describe the duties, responsibilities and authority of the following personnel: [ref. g,ch. 1]

- a. **Operations Officer** Responsible to the CO for all facets of the Operations Department.
- b. **(CIC)/(CDC) Officer** Responsible for getting timely information to the TAO.
- c. **Communications Officer** Responsible for all external communications.

107.2 Discuss the primary and secondary missions of CIC/CDC. [ref. e, ch. 1]

Primary - To provide the organized collection, display, evaluation, and dissemination of pertinent tactical information and intelligence to command and control stations.

Secondary - To control and/or assist in specific operations as delegated.

107.3 Explain the following basic information flow functions of CIC/CDC: [ref. e, ch. 1]

- a. **Gathering** Derived inputs from all sensors.
- b. **Processing** Convert the data to useful information.
- c. **Display** The information reaching status boards or radar scopes.
- d. **Evaluation** Determining what info is or what it means to the ship.
- e. **Dissemination** Getting the info to the stations that require it.
- f. **Control and assist** Such evolutions as sea and anchor and beach landings where CIC makes recommendations and provides specific information.

107.4 Discuss the general duties of the following watchstations in CIC/CDC: [ref. g, ch. 2]

- a. **Tactical Action Officer (TAO)** Direct advisor from the display/decision area.
- b. **CIC Watch Officer (CICWO)** Responsible for the coordination of all CIC functions.
- c. **Electronic Warfare Supervisor (EWS)** Collection and display of all available EW info.
- d. **Air Warfare Coordinator (AWC)** Responsible for the Aviation tracks.
- e. **Surface Warfare Coordinator (SUWC)** Responsible for all surface tracks.
- f. **Undersea Warfare Coordinator (USWC)** Responsible for sub-surface information.
- g. **Air Controllers (ASTAC/AIC/HDC)** Responsible for positive control of all aircraft assigned for the completion of any assigned mission.
- h. **CIC Watch Supervisor (CICWS)** Supervises overall control of all watch stations in CIC.
- i. **Radar Operator** Operates the SPA-26.
- j. **Shipping Officer** Responsible for the close in surface picture, while close to shore. Manned during Sea and Anchor.
- k. **Piloting Officer** Manned during Sea and Anchor. Assists the Bridge in Navigation.

107.5 Discuss the information contained in the following: [ref. g, ch. 7]

- | | |
|--|--|
| a. Operational Order (OPORDER) | Order sent to command by the chain of command. |
| b. Operational Plan (OPLAN) | Plan formulated by command to execute the order. |
| c. Operational Tasking (OPTASK) | Execution of the plan. |

107.6 Define the following: [ref. f, ch. 3]

- a. Task Force**
- b. Task Group**
- c. Task Unit**
- d. Task Element**
- e. Battle Force**
- f. Battle Group**
- g. Amphibious Ready Group**

107.7 Describe the following CIC/CDC plots and status boards, and discuss the functions: [ref. e, ch. 1]

a. Strategic plot

A large area picture display showing position, movement, and strength of own and enemy sea, land, and air forces within a prescribed area of operation.

b. Geographic plot

A true display of positions and movement of all friendly, enemy, and unidentified surface, subsurface, and certain air contacts.

c. Surface Summary plot

A comprehensive relative display of positions and tracks of friendly, enemy, and unidentified surface and subsurface contacts.

d. Air Summary plot

Normally covers an area having a radius of 200 nautical miles from own ship.

e. Surface status board

Displays a summary of surface data, such as formation designation, screen composition, zig-zag plan in effect, base course and speed, wind direction, and sea state.

f. Equipment status board

Up to date info on ship's own equipment.

g. Communications status board

A display indicating radio circuits, assigned frequencies, equipment being used, circuit designators, listing of programmable channelization of patched UHF equipment for "quick dial" capability, down equipment, etc.

h. EW Information board

Displays info on intercept and radar, guard assignments, any EMCON conditions in effect, radiation characteristics of equipment on own ship and ship's in company.

107.8 Discuss the requirements and reasons for maintaining a navigational plot in CIC/CDC: [ref. e, ch. 10]

While within the range of land, CIC assists the navigator in determining the ship's position in order to help the ship remain in safe water. The nav plot assists in making landfall and in identifying land masses through the supply of radar info. Aids in SAR, shore bombardment, and amphib operations.

107.9 Explain the function of Tactical Data System (TDS) in a task force environment. [ref. f, ch. 8]

Overall theatre. What is going on around us.

107.10 Discuss the purpose of data links. [ref. f, ch. 4]

Secured transmission lines to capable ships. 4 types of lines:

- Type 4:** 1 way. Ship to ship
- Type 11:** Secure 2 way. Ship to ship.
- Type 14:** 1 way non-secure. NTDS to non ntds.
- Type 16:** Replacing all others. Secure 2 way. Sends tracks to another system.

107.11 Explain the function of the following equipment specific to CIC/CDC:

a. Identification Friend or Foe (IFF) [ref. e, ch. 7]

Crystal loaded. Changed every 2 days. 4 modes. Mode 4 is the most positive identification.

b. Tactical Air Navigation (TACAN) [ref. n, ch. 31]

Tactical Air Navigation. Provides course guidance to and from the transmitting station.

c. Gyro repeater [ref. e, ch. 9]

Shows bearing and true north. Defines course.

d. Radar repeaters [ref. e, ch. 6]

Shows the picture emitted from the radar.

e. Dead-Reckoning Tracer (DRT) [ref. e, ch. 9]

Display of tracking from the ship.

f. Radiotelephones [ref. e, ch. 3]

Patched in. Assigned different channels. RADIO controls the frequencies.

107.12 Discuss how the following factors affect radar operations: [ref. f, ch. 1]

- a. Atmospheric conditions** Depending on conditions can either increase or decrease returns.
- b. Sea return** Large waves can show up on the screen.
- c. Weather** Hot air improves radar speed and range. Fog can show on the radar.
- d. Height of antenna and target** Radar is basically line of sight so the higher the better.

107.13 Discuss the operational relationship CIC/CDC has with the following stations: [ref. e, ch. 1]

- a. Pilot house** Assists in safe navigation.
- b. Signal bridge** Works with CIC to verify visually the info obtained electronically.
- c. Radio central** Provides CIC with radio telephone circuits.
- d. Weapons stations** Exchange info with CIC regarding defense of the ship.
- e. Lookouts** Notify CIC of all contacts.

107.14 Explain the purpose of Emission Control (EMCON). [ref. e, ch. 1]

EMCON is the reduction of use of signals throughout the frequency spectrum. Can be implemented on a reduced basis through only certain frequency ranges, or can be implemented on a total basis, when no signals of any kind are transmitted from the ship.

107.15 Define the following terms: [ref. e, ch. 1]

- a. **Electronic Support (ES)** Detects radar signals.
- b. **Electronic Attack (EA)** Jamming the radar signal emitted.
- c. **Electronic Protect (EP)** Countermeasure to jam the person who is jamming your signal.

107.16 Define the following warfare areas: [ref. k]

- a. **Air Warfare (AW) [ch. 7]**
- b. **Surface Warfare (SUW) [ch. 8]**
- c. **Undersea Warfare (USW) [ch. 9]**
- d. **Command and Control Warfare (C2W) [ch. 5]**
- e. **Amphibious Warfare [ch. 11]**
- f. **Mine Warfare (MIW) [ch. 13]**

107.17 Discuss the following special operations:

- a. **Maritime Interdiction Operations (MIO) [ref. p, ch. 1]** Enforcing UN sanctions.
- b. **Non-Combatant Evacuation Operations (NEO) [ref. o, ch. 2]** Evacuate US citizens from hostile areas.
- c. **Search and Rescue (SAR) [ref. e, ch. 1]** Search for person in water.

107.18 Explain the missions and characteristics of the following platforms: [ref. m]

- a. **CV/CVN** Multi-purpose aircraft carrier.
- b. **CG** Guided-missile cruiser.
- c. **DD** Destroyer.
- d. **DDG** Guided-missile destroyer.
- e. **FFG** Guided-missile frigate.
- f. **T-AO** Transport oiler.
- g. **T-AE** Transport ammunition ship.
- h. **AOE** Fast combat support ship.
- i. **AFG** Miscellaneous command ship.
- j. **ATF** Fleet ocean tug.
- k. **ARS** Salvage ship.
- l. **LCC** Amphibious communications ship.
- m. **LHA** Amphibious assault ship(general purpose).
- n. **LHD** Amphibious assault ship(multi purpose).
- o. **LPH** Amphibious assault ship (helicopters)
- p. **LPD** Amphibious transport dock.
- q. **LSD** Dock-landing ship.
- r. **LST** Tank-landing ship.
- s. **MCS** Mine counter measure support control ship. Only 1: USS INCHON.
- t. **MCM** Mine counter measures ship.
- u. **MHC** Coastal minehunter.
- v. **PC** Patrol craft.

107.19 State the primary mission of the following submarines: [ref. m]

- a. **SSN** Fast attack submarine.
- b. **SSBN** Ballistic submarine, deterrence.

107.20 State the primary mission of the following fixed-wing aircraft: [ref. m]

- a. **F/A-18 Hornet** All weather fighter-attack fighter.
- b. **F-14 Tomcat** All weather fighter-interceptor.
- c. **EA-6B Prowler** Tactical electronic warfare.
- d. **S-3 Viking** All weather, longrange, submarine hunter.
- e. **ES-3 Shadow** Reconnaissance version of the S-3 Viking.
- f. **E-2 Hawkeye** All weather airborne early warning and battle group command and control.
- g. **P-3 Orion** Overwater antisubmarine patrol plane.
- h. **AV-8 Harrier** Light attack, close air support.
- i. **C-2 Cod** Carrier onboard delivery.

107.21 State the primary mission of the following rotary-wing aircraft: [ref. m]

- | | |
|--------------------------------|--|
| a. CH-53 Super Stallion | Lift and movement of cargo, passengers, and heavy equipment. |
| b. MH-53 Sea Dragon | Minesweeping, mine spotting, and channel marking. |
| c. UH-46 Sea Knight | Vertical replenishment. |
| d. SH-60 Sea Hawk | Inner antisubmarine-zone helicopter. |
| e. SH-2 Sea Sprite | Homing torpedoes and air-to-air missiles. |
| f. AH-1 Sea Cobra | Air/ground support attack helo, air-to-air combat. |
| g. UH-1 Huey | Reconnaissance/some troop movement. |

107.22 State the primary mission of the following landing craft: [ref. m]

- | | |
|----------------|--|
| a. LCAC | Landing Craft Air Cushion (40 + advertised speed)(250 miles max range)(Over the horizon) |
| b. LCU | Land Craft Utility (10 knots, 1000 miles max range) |
| c. LCM | N/A |

107.23 Discuss the following methods of visual communications: [ref. h. ch. 9]

- | | |
|---|--|
| a. Flags/pennants/day shapes | Primarily for transmitting tactical info between ships. |
| b. Flashing light (directional/omni-directional) | Utilizes Morse code by means of an interrupting light. |
| c. Semaphore | Sends messages at short range using the positions of the senders arms. |
| d. Flares/pyrotechnics | Flares, red, white and green that are fired from the boat. |
| e. Infrared | Used when secrecy is important, may be sent the same manner as flashing light. |

107.24 Describe the day shapes used for the following: [ref. h. ch. 9]

- | | |
|---|---------------------|
| a. Vessel at anchor | One black ball |
| b. Vessel not under command | two black balls |
| c. Restricted in ability to maneuver | ball, diamond, ball |
| d. Vessel aground | three black balls |
| e. Constrained by draft | N/A |

107.25 Describe and discuss the flags/pennants used for the following:

- | | |
|--|---------------------------------|
| a. Refueling/ammunition handling | Bravo |
| b. Senior Officer Present Afloat (SOPA) | Starboard |
| c. Breakdown | Five |
| d. Personnel recall | Papa |
| e. Boat recall | Quebec |
| f. Divers | Code Alpha |
| g. Personnel working aloft/over the side | Kilo |
| h. Hazards of EM Radiation to Ordnance (HERO) | Lima |
| i. Ready to receive a ship alongside | Romeo, at sea (India, in port) |
| j. Man overboard | Oscar |
| k. Anchoring | Uniform |
| l. Absentee pennants- | |
| | First Sub - Flag officers |
| | Second Sub - CSO |
| | Third Sub - CO |
| | Fourth Sub - Civilian diplomats |

107.26 Discuss how a message is prepared via semaphore and flashing light. [ref. h, ch. 8]

The message is taken to the signal bridge after the originator has it released by the proper authority and precedence is assigned. The SM's then prepare the message for transmission by constructing the proper call signs and/or heading/ending.

107.27 Discuss the following as they apply to radio/voice messages: [ref. e, ch. 3]

- a. Flash (Z)** 10 minutes or less process time.
- b. Immediate (O)** 30 minutes
- c. Priority (P)** 3 hours.
- d. Routine (R)** 6 hours.

107.28 DEFINE THE FOLLOWING TERMS:

a. “MINIMIZE” [ref. i, ch. 6]

The condition imposed in a specific communications area to reduce voice and record traffic so that essential traffic can be efficiently handled. Usually required due to some contingency condition (i.e. hostile environment, open conflict, and/or natural disaster).

b. Essential Elements of Friendly Information (EEFI) [ref. e, ch. 3]

Identify specific items of information which, if revealed and correlated with other information, would degrade the security of military operations, projects, or missions in the applicable area.

c. “BEADWINDOW” [ref. e, ch. 3]

A term describing a real time procedure used to alert circuit operators that an unauthorized disclosure has occurred. Only proper response when receiving a beadwindow from another station is “Roger Out”.

d. “GINGERBREAD” [ref. e, ch. 3]

A term advising-net participants that there may be a possible intruder on the radio net.

107.29 DISCUSS THE METHODS OF SHIP-TO-SHORE AND SHIP-TO-SHIP COMMUNICATIONS [ref. i, ch. 11]

A. BELLEAU WOOD

Has a variety of ways to communicate via narrative message traffic and voice traffic to other ships or shore stations.

1a. NAVMACS II

Naval Modular Automated Communications Subsystem. Is the primary system onboard used to send and receive narrative messages and teletype messages. Receives inputs from SHF/UHF circuits including MARCEMP, CUDIXS, Fleet Broadcast, NOVA and ATG TTY

1b. CUDIX

Common User Digital Information Exchange Subsystem, is a UHF satellite circuit that is one of our main methods of communicating via Narrative Message Traffic with the shore. It’s crypto device is the KG-84A.

1c. Broadcast

Is a receive only, multi-channel system used to receive narrative message traffic which is disseminated via various satellite channels by the NCTAMS. All messages for each channel are processed on a First In First Out (FIFO) by precedence. It’s crypto device is the KWR-46.

1d. ARG TTY

Amphibious Ready Group Teletype, is a satellite or HF teletype circuit in which Belleau Wood can communicate via abbreviated messages or narrative messages with ships within our battlegroup or ships in company. The crypto device used for this circuit is the KG-84C.

1e. Voice

Satellite, UHF, HF, VHF, and EHF are different methods of communicating via voice with either shore station or other ships. A variety of crypto devices are used for voice circuits. They are:

Satellite	ANDVT
UHF	KY-58
HF	ANDVT
VHF	KY-58
EHF	ANDVT

107.30 DISCUSS THE FOLLOWING WITH RESPECT TO FREQUENCY AND RANGE: [ref. i, ch. 11]

a. High Frequency (HF)

FREQ: 3 - 30 MHZ RANGE: Maximum 1500 miles, depending on radio wave propagation and power output

b. Very High Frequency (VHF)

FREQ: 30 - 300 MHZ RANGE: Approx 20-30 miles, depending on radio wave propagation and power output

c. Ultra High Frequency (UHF)

FREQ: 300 MHZ - 3 GHZ RANGE: Approx 20-30 miles, depending on radio wave propagation and power output

d. Super High Frequency (SHF)

FREQ: 3 - 30 GHZ RANGE: Directional Beam

e. Extremely High Frequency (EHF)

FREQ: 30 - 300 GHZ RANGE: Directional Beam

107.31 DISCUSS COMMUNICATIONS SECURITY (COMSEC) AND THE ROLE OF THE COMMUNICATIONS SECURITY MATERIAL (CMS) SYSTEM CUSTODIAN [ref. i, ch. 7]

a. The purpose of Communications Security Material (COMSEC)

Is designated to keep unauthorized persons from obtaining any information of value relating to National Security which might be derived from a study of communication material.

b. The CMS custodian

Is the person designated in writing by the Commanding Officer to maintain the CMS account for the command. Their duties include receiving, inventorying, destroying, and issuing COMSEC material and equipment to authorized users and local holders. They are also responsible for training all personnel involved in CMS and submitting required COMSEC report to the proper authority in a timely manner. They also are primarily involved in planning, coordinating, managing, and documenting Communication Department portion of the Emergency Action Plan.

107.32 DISCUSS THE FOLLOWING TERMS: [ref. d]

a. ACCESS [ch. 24]

Navy uses principle of "circulation control" to maintain security of classified information. This means that knowledge of possession of material or info is permitted only by persons requiring access in the interest of national security. Access is literally the ability to gain or obtain something.

b. CLASSIFICATION [ch. 6]

There are 4 classifications of material; UNCLASSIFIED, CONFIDENTIAL, SECRET, AND TOP SECRET

c. CLEARANCE [ch. 23]

A security clearance is required prior to granting access to classified information. A national agency check or background investigation is completed on a person requiring clearance, depending on level needed. If no doubt is determined, a person's loyalty is assumed to be consistent with the interests of national security.

d. COMPROMISE [ch. 4]

The disclosure of classified info to a person who is not authorized access to that information. This disclosure could have occurred knowingly, willfully, or accidentally-through negligence. There are two types of compromise, suspected and confirmed. Suspected - believe material has been compromised but cannot definitely prove. (example: temporary loss of control). Confirmed - definite proof material is compromised. (example: lost material)

e. NEED TO KNOW [app. b]

A person cannot be granted access to classified info based solely on his/her rank or position. There is a requirement to determine the level of access necessary for the person to perform his or his official duties (need to know). Need to know means a person must have access to the material to perform their duties.

f. RESTRICTED AREA [ch. 13]

To provide for an effective and efficient method to restrict access and control movement where classified material is stored or used, such areas will be designated Restricted Areas and only those persons whose duties actually require access and who have been granted appropriate security clearance will be allowed freedom of movement within the area.

107.33 DEFINE THE FOLLOWING SECURITY CLASSIFICATION CATEGORIES: [ref. d, ch. 6]

a. CONFIDENTIAL

This classification of info requires protection, but no as much as Secret or Top Secret material. If compromised, the unauthorized disclose of Confidential material could reasonably be expected to cause damage to our nation, and or embarrassment to the United States and/or its allies.

b. SECRET

This info requires a substantial amount of protection, and, if compromised, could cause serious damage to the national security.

c. TOP SECRET

Refers to that national security information or material which requires the highest degree of protection. If Top Secret material is compromised, it could result in exceptionally grave damage to our national security.

107.34 Describe the Naval Warfare Publications Library (NWPL) with respect to the following: [ref. d, ch. 10]

a. Handling, accountability, storage

b. Changes and corrections

c. Reference value

107.35 DISCUSS YOUR RESPONSIBILITIES UPON DISCOVERY OF A COMPROMISE OF A SUSPECTED COMPROMISE [ref. d, ch. 4]

a. BWD

Report compromise to the CMS Custodian or Security Manager during normal working hours. After working hours post a sentry and notify the Command Duty Officer. Example: An open security container which has classified material inside. Do not close any containers in this circumstance.

b. OPNAVINST 5510.1H

Individual who become aware of the loss, compromise or suspected compromise of classified information or material is to immediately notify their security manager or commanding officer. If the circumstances of discovery make such notification impractical, the individual is to notify the nearest NCIS field office or the most readily available command.

107.36 DEFINE THE TERM “EMERGENCY DESTRUCTION” [ref. d, ch. 17]

Emergency Destruction

Is a plan for ships and overseas stations to provide efficient, complete destruction of classified material in the event of an emergency. Examples would be a ship under duress, hostile fire, imminent boarding, etc.

107.37 Discuss the purpose of the information contained in the following Casualty Reports [ref. a, ch. 4]

- a. Initial**
- b. Update**
- c. Correction**
- d. Cancellation**

107.38 Explain the information required on a CASREP from the following: [ref. a, ch. 8]

- a. Initiating department**
- b. Operations**
- c. Supply**

107.39 Discuss the significance of the relationship between the casualty category and the mission. [ref. a, ch. 4]

107.40 Explain the purpose of and information contained in the following: [ref. a]

a. Logistics Request (LOGREQ) [ch. 7]

To make known the logistics requirements of the ship during an inport period.

b. Movement Report (MOVREP) [ch. 9]

Report is submitted every 12 hours via message. Will assist the Chain-of-Command in tracking all vessels for operational/emergency use.

107.41 Explain the purpose of the information contained in the following: [ref. b, ch. 2]

a. OPREP-3 Pinnacle

Severe incident involving a foreign national, especially involving death, any incident with high medial level interest, severe oil spill, defections or asylum requests, Also accidents with nuclear weapons, reports of armed attack on U.S. or allied personnel or territories, or reports of nuclear detonations of any kind. Each of these last have special passwords to be used.

b. OPREP-3 Navy Blue

Minor but newsworthy incidents involving foreign nationals, less severe oil spills, reports of collisions or grounding, or any other' event generating high Navy level interest but falling short of national interest. Also, nuclear weapons incidents short of accidents, or incidents involving Navy nuclear reactor power plants, Each of these last have special passwords to be used.

c. Unit Situation Report (SITREP)

Minor incidents which the CO wants to lay out in detail to the chain of command, such as fights on base, bomb threats evaluated as a hoax, serious injury or casualty onboard.

107.42 Explain the purpose of and the information contained in SORTS message. [ref. c, ch. 1]

107.43 Discuss the following phases in a ship's training cycle: [ref. j, ch. 2]

- a. Basic**
- b. Intermediate**
- c. Advance**

107.44 Discuss the ship's training cycle as it applies to the following terms: [ref. j, ch. 2]

- a. Light Off Assessment (LOA)**
- b. Command Assessment of Readiness and Training (CART)**
- c. Tailored Ship's Training Availability (TSTA)**
- d. Final Evaluation Problem (FEP)**

107.45 Explain the purpose of the Planning Board for Training (PBFT). [ref. j, ch. 3]

107.46 Discuss the following: [ref. j, ch. 3]

- a. Long Range Training Plan (LRTP)**
- b. Short Range Training Schedule (SRTS)**

107.47 Discuss the organization, duties and responsibilities of the following: [ref. j, ch. 3]

- a. Combat Systems Training Teams (CSTT)**
- b. Ship's Electronic Readiness Team (SERT)**
- c. Engineering Training Team (ETT)**
- d. Damage Control Training Team (DCTT)**
- e. Seamanship Training Team (STT)**
- f. Aviation Training Team (ATT)**
- g. Integrated Training Team (ITT)**

108 Combat Systems Fundamentals

References:

- [a] NAVSEA OP-4, Ammunition Afloat, Revision 5
- [b] NAVEDTRA 12443, Gunner's Mate
- [c] NAVEDTRA 10276-1, Fire Controlman Third Class
- [d] NAVSEA OP-3347, United States Navy Ordnance Safety Precautions
- [e] NAVEDTRA 12497, Sonar Technician G 3&2, Vol. 1
- [f] The Bluejackets' Manual, Twenty-First Edition
- [g] CNSL 4790.20A/CNSP 4790.9B, Implementation and Utilization of the Combat System Operational Sequencing System (CSOSS)
- [h] Naval Command and Control, Naval Doctrine Publication 6
- [i] NAVEDTRA 10278, Fire Controlman First Class
- [j] NAVEDTRA 12497, Sonar Technician G 3&2, Vol. 2
- [k] Naval Doctrine Publication 1, Naval Warfare
- [l] NAVEDTRA 12406, Fire Controlman, Fire Control Maintenance Concepts, Vol. 4
- [m] NAVEDTRA 82160, Interior Communication, Electrician, Vol. 1

108.1 Explain the following terms as they pertain to Combat system missions:

a. Detect to engage: [ref. i, ch. 3]

Detect hostile inbound target, report Range and Bearing to TAO, TAO gives weapons release authority. Self-Defense Weapons Coordinator designates target to Weapons Delivery System and destroys target.

b. Command and Control Warfare (C2W): [ref. k]

The direction of forces and weapons to achieve a mission or goal.

c. Naval Surface Fire Support (NSFS): [ref. i, ch. 4]

Gun fire support for troops landing or conducting operations on the beach.

108.2 Define the following acronyms:

a. RADAR [ref. c, ch. 4]

Radio detection and ranging

b. SONAR [ref. e, app. I]

Sound navigation and ranging

108.3 State the two warfare areas that utilize naval gun systems. [ref. c, ch. 3]

- a. Air Warfare
- b. Surface Warfare

108.4 State the four warfare areas that utilize naval missile systems. [ref. c, ch. 3]

- a. Air Warfare
- b. Undersea Warfare
- c. Surface Warfare
- d. Strike Warfare

108.5 State the purpose of fire control. [ref. c, ch. 1]

To control weapon fire to ensure maximum kill probability.

108.6 Explain the purpose of the following weapons:

a. Harpoon [ref. b, ch. 9]

High subsonic, anti ship, tactical surface to surface cruise missile.

b. Tomahawk [ref. b, ch. 9]

Guidance is by terrain matching and inertial navigation.

c. Vertical launched ASROC [ref. b, ch. 9]

Anti-submarine.

d. Standard missiles [ref. b, ch. 9]

Medium range/extended range SM-2.

e. Torpedo [ref. f, ch. 3]

Anti-ship, anti-submarine.

108.7 State the navy ships' self defense weapon systems. [ref. c, chs. 1, 3]

a. NATO Sea Sparrow

b. Basic Point Defense Missile System

c. MK 31 RAM

d. MK 15 CIWS

108.8 Discuss the purpose of the following radars: [ref. c, ch. 3]

a. Air search Search the air for contacts.

b. Surface search Search the surface for contacts.

c. Fire control For the use of the weapons systems.

d. Navigation Provides information for safe navigation.

108.9 Explain the difference between 2 dimensional and 3 dimensional radars. [ref. c, ch. 3]

2 dimensional radars show range and bearing only while 3 dimensional radars show range, bearing, and altitude.

108.10 Describe the purpose of the Combat Systems Operational Sequencing System (CSOSS). [ref. g, ch. 1]

Provide detailed step-by-step plans for accomplishing functions.

108.11 Describe general duties of the following CSOSS watch standers: [ref. g, ch. 1]

a. Combat Systems Readiness Officer

Ensure that maintenance is performed on all systems to maintain the equipment at peak readiness.

b. Combat Systems Officer of the Watch

Ensure that all members are performing the duties.

c. Area supervisor (air, surface, undersea, electronic)

Responsible for the personnel performing the watches of that specific area.

108.12 Discuss the purpose of torpedo countermeasure systems. [ref. j, ch. 1]

To decoy torpedo's fired at the ship.

108.13 Explain the difference between active and passive sonar's. [ref. f, ch. 17]

Active sonar's ping while passive sonar's listen only.

108.14 Discuss how the following factors affect sonar operations: [ref. e, app. 1]

a. Temperature

Range/Distance through the water due to a one degree change in temperature causes a proportional 6 fps change in sound velocity.

b. Pressure

Range/Distance through the water due to a 100 ft depth change causes a proportional 2 fps change in sound velocity.

c. Salinity

Range/Distance through the water due to a 1ppm salinity change causes a proportional 4 fps change in sound velocity.

108.15 Discuss the safety precautions for entering a magazine. [ref. a, ch. 2]

Ensure that you remove all spark producing items.

108.16 Discuss the following terms and the hazards associated with each:

a. Hang fire [ref. a, app. A]

The round is caught in the weapon.

b. Mis-fire [ref. a, app. A]

The weapon did not fire.

c. Hot gun [ref. a, app. A]

Over 300 rounds in 5 minutes.

d. Train warning circle [ref. d, ch. 1]

Circle painted outside the radius of the gun for safety.

108.17 Define the acronyms and discuss the use of the following projectiles: [ref. b, ch. 2]

- | | |
|-----------------------|---|
| a. HE-PD | High explosive point detonating. Detonates on contact. |
| b. HE-VT | High explosive variable time. Set to detonate at a preset time. |
| c. HE MT-PD | High explosive mechanical time, point detonating. |
| d. VT non-FRAG | Used for training against air targets. |
| e. RAP | Extended range. |
| f. BL&P | Blind loaded and plugged. Filled with sand for practice. |
| g. HE-IR | High explosive, infrared. Has a heat sensor that attracts it to a target. |
| h. WP | White phosphorous. Hits the target and starts a fire. |
| i. HE-CVT | High explosive, controlled variable time. Anti-air round. |

108.18 Discuss the following components of a weapon system: [ref. b, ch. 9]

- | | |
|-----------------------|--|
| a. Detection | Identifying a target. |
| b. Direction | Aiming of the weapon towards the target. |
| c. Delivery | Firing of the round. |
| d. Destruction | Detonation of the round. |

108.19 Explain the purpose of Hazards of Electromagnetic Radiation to Ordnance (HERO). [ref. c, ch. 9]

To reduce the amount of frequencies being used. These High Frequencies may detonate a round.

108.20 Explain the term C4. [ref. h]

Command, control, computers, and communication.

108.21 State the two primary gun weapon systems found on navy surface combatants. [ref.b, ch. 6]

MK31 CIWS and MK86 GFCS

108.22 State the purpose of blue color coding in regards to ammunition. [ref. b, ch. 2]

Designates the round as a dummy round.

108.23 State the purpose of the electronic cooling systems. [ref. l, ch. 6]

To keep the system within operating temperatures.

108.24 State the purpose of the ships' gyro as it relates to weapon systems: [ref. m, ch. 4]

Trains on a target and remains constant.

109 Engineering Fundamentals

References:

- [a] NSTM S9086-S9-STM-000/CH-562, Surface Ship Steering System
- [b] NSTM S9086-H7-STM-010/CH-262, Lubricating Oils, Greases, Specialty Lubricants and Lubricating Systems
- [c] NSTM S9086-SN-STM-010/CH-541, Ships' Fuel and Fuel Systems
- [d] NSTM S9086-HN-STM-010/CH-243, Propulsion Shafting
- [e] NSTM S9086-HN-STM-010/CH-244, Propulsion Bearings and Seals
- [f] NSTM S9086-HP-STM-010/CH-245, Propellers
- [g] NSTM S9086-SE-STM-010/CH-533, Potable Water Systems
- [h] NSTM S9086-RH-STM-010/CH-503, Pumps
- [i] NSTM S9086-SC-STM-010/CH-531, V-1, Desalination Low Pressure Distilling Plants
- [j] NAVEDTRA 10539, Engineman 3
- [k] NSTM 0901-LP-420-0002/CH-9420, Propulsion Reduction Gears, Couplings and Associated Equipment
- [l] Engineering Department Organization and Regulations Manual (EDORM)
- [m] NSTM S9086-CZ-STM-000/CH-090, Inspections, Tests, Records and Reports
- [n] Engineering Operational Sequencing System (EOSS)
- [o] NSTM S9086-S3-STM-010/CH-555, V-1, Surface Ship Firefighting
- [p] NAVEDTRA 12147, Engineering Administration
- [q] Ships' Information Book (SIB)
- [r] NAVEDTRA 10572, Damage Controlman 3&2
- [s] NAVEDTRA 12164, Electrician's Mate
- [t] NAVEDTRA 12001, Fireman
- [u] OPNAVINST 5100.19C, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat
- [v] NAVEDTRA 12219, Hull Maintenance Technician

109.1 Brief describe the general duties and responsibilities of each of the following:

a. Chief Engineer (CHENG) [ref. t, ch. 1]

Head of the Engineering Dept responsible, under the CO, for the operation, care, and maintenance of all propulsion and auxiliary machinery, the control of damage, and upon request of the head of the dept concerned, the accomplishment of repairs beyond their capabilities.

b. Main Propulsion Assistant (MPA) [ref. t, ch. 1]

Operation, care, and maintenance of the ship's propulsion machinery and such other auxiliaries as may be assigned.

c. Engineering Officer of the Watch (EOOW) [ref. t, ch. 1]

Responsible for the proper performance of engineering plant and safety while underway. In charge of main propulsion plant and associated auxiliaries. Reports to the OOD.

d. Engineering Duty Officer (EDO) [ref. l, ch. 1]

Responsible to the CDO for the watches and care of equipment while inport. Also in charge of the fire party.

e. Cold Iron watch/In-port equipment monitor [ref. t, ch. 1]

Maintains watch on operating auxiliary systems and equipment. Acts as a security watch in the engine room: also a fire and flooding watch. Makes frequent inspections of his assigned areas and reports any unusual conditions to the OOD. Watch is located in the FWD and AFT Main.

f. Sound and Security watch [ref. t, ch. 1]

Conducts a continuous patrol of unmanned spaces taking periodic soundings of tanks and spaces.

g. Oil King/Water King [ref. t, ch. 1]

Responsible for the water and fuels onboard.

h. Gas Free Engineer [ref. t, ch. 1]

Responsible for the testing of all spaces that may have been overrun by gases. Only the gas free engineer can certify space safe to enter. DCA is the gas free engineer.

i. Fire Marshall [ref. l, ch. 1]

Responsible to the CDO for the inport Fire Party.

109.2 Discuss the purpose and content of each of the following:

a. Engineering log [ref. l, app. C]

A complete daily record of events involving engineering. Record of all pertinent information pertaining to the operation of the ship's propulsion system. A legal document that is held onboard for a period of 3 years. Maintained by EOOW.

b. Engineering bell book [ref. l, app. C]

Contains all changes of speed to the ship's main engines in RPM and other orders received by the throttleman regarding propeller RPM. A legal document.

c. Engineering night orders [ref. l, ch. 2]

Orders written by the CHENG covering any special instructions and comments, normally covering the time between 2000 and 0800.

d. Liquid load plan (draft report) [ref. r, ch. 3]

Contains draft of ship forward, aft, and mean draft. Submitted daily to the CO.

e. Daily fuel and water report [ref. m, sec. 2]

Report of ship's liquid load, including amount of fuel, lube oil, and water on hand. Also includes the previous day's feed and potable water, results of tests on water, and steaming hour. Signed by CHENG, MPA, and Oil King.

f. Naval Ships' Technical Manual (NSTM) [ref. l, ch. 2]

Manuals containing instruction and guidance concerning shipboard procedures, equipment repairs, testing, and overall management of materials, equipment and systems.

g. Engineering standing orders [ref. l, ch. 2]

Standardized sequence of procedures for the normal operation of the ship's propulsion plant, including normal evolutions.

h. Ships' Information Book (SIB) [ref. q, Foreward]

Document covering general info about the ship, such as length, beam, ship's mission, equipment held onboard, general description, etc.

i. Engineering Operational Sequencing System (EOSS) [ref. t, ch. 1]

EOP and EOCC.

j. Engineering Department Organization Manual (EDORM) [ref. l]

Maintained at the department level, contains the duties of personnel, organizational chain of command, and basically what is expected of each individual in the department.

k. Main Space Fire-Fighting Doctrine [ref. o, vol. 1, sec. 10]

Detailed instruction for fighting a fire in the main space, including personnel, plant reconfiguration and methods. Copies are held in DC Central, Repair lockers, Main Control, and the QD.

l. Boat report [ref. m, sec. 2]

Report submitted by the BM's stating the equipment status on the boats.

m. Operational logs [ref. l, app. C]

Individual equipment log. Allows to establish a history.

109.3 Discuss the following evolutions in the engineering plant:

a. Jacking over main engine/reduction gears, shafting and propellers [ref. n]

Main engines are engaged with jacking gear to turn the shaft at a very slow speed. This is done to keep the shaft from warping.

b. Stopping and locking the shaft [ref. n]

A casualty and control measure taken to minimize damage if necessary to secure engineering plant while underway.

c. Refueling operations [ref. c, sec. 1]

Split-plant operation would be used during refueling, to ensure max safety of vessel in case of engineering casualty.

d. Full power trial [ref. s, ch. 13]

Split plant operation would be used when max reliability is required.

109.4 Describe the 4 phases of the basic steam cycle. [ref. t, ch. 3]

1. Generation

Changing liquid to a gas. The generation function takes place in the boiler, where fuel is burned to produce heat. When the water becomes hot enough, "bubbles" form and rise through the water in the boiler tubes. These bubbles are a vapor (steam). The steam collects in the upper part of the steam drum. The saturated steam leaves the steam drum and passes through the tubes of the superheater section of the boiler.

2. Expansion

Changing thermal energy into mechanical energy. The high-pressure, high-temp steam is carried from the superheater outlet of the boiler to the HP turbine of the main engine. The superheated steam passing through the turbine expands with the turbine, where the thermal energy is converted to mechanical energy to turn the rotor of the turbine. The steam exhausted from the HP turbine is sent to the inlet of the LP turbine, where it is allowed to expand even more as it passes through the LP turbine blades.

3. Condensation

Changing a gas to a liquid. The exhaust steam from the LP turbine goes into the main condenser, where the condensation phase begins. As the steam passes over the tubes in the condenser, heat flows out of the steam into the seawater, which carries the energy away from it on its way out of the main condenser. When enough heat has been extracted from the steam, the molecules change back into liquid.

4. Feed

A combination of distilled water and condensate used by the boiler in the process of making steam.

109.5 Discuss the operation of the following prime movers: [ref. t]

a. Internal combustion engine

b. Gas turbines

c. Steam turbines

109.6 Explain the purpose and inter-relationship of the prime mover and reduction gears. [ref. t, ch. 8]

The main shafting transfers torque generated from the main engine to the propeller. The bearings are used as guides or supports on the rotating shaft. The propeller pushes the ship through the water, using the end result of the mechanical energy produced.

109.7 State the function of the following:

a. Reduction gear [ref. k, sec. 2]

Connects the turbines and shafts. Reduces the high RPMs of the turbines to a working, more efficient speed. Reduces the speed to allow proper RPM at the propellers.

b. Lube oil pumps [ref. b, sec. 3]

Provide lubrication for the turbine bearings and the reduction gears.

c. Shaft turning (jacking) gear [ref. k, sec. 3]

Used to turn shaft and prevent bowing of the shaft when shaft is idle for long periods of time.

109.8 Discuss the function of the following:

a. Main thrust bearing [ref. e, sec. 3]

Absorbs thrust of the propeller via the shaft. Attached to the reduction gear.

b. Shafting [ref. d, sec. 1]

Transmits power from the main reduction gears to the propellers.

c. Line shaft bearings [ref. e, sec. 2]

Transmits power from the main reduction gears to the propellers.

d. Bulkhead stuffing boxes [ref. e, sec. 6]

Located where shaft penetrates a bulkhead. Provides watertight integrity.

e. Stern tube stuffing box [ref. e, sec. 6]

Located in the shaft ally where shaft penetrates the hull of the ship.

f. Shaft seal [ref. e, sec. 6]

Located in the stern tube. Mechanical seal used to seal the shaft as it penetrates the hull, preventing water from entering the ship.

g. Inflatable shaft seal [ref. e, sec. 6]

Located in the stern tube. Used to allow maintenance by inflating with air, sealing the shaft.

h. Stern tube bearing [ref. e, sec. 4]

Rubber strip bearing at each end of the stern tube, water lubricated.

i. Strut bearing [ref. e, sec. 4]

Outside the hull of the ship. Last support device for the shaft before the propeller.

j. Propeller [ref. f, sec. 1]

Uses the mechanical energy produced to move the ship through the water.

109.9 Define the following compressed air systems parameters: [ref. t, ch. 10]

a. High pressure

Compressed air between 600-5000 psi. Usually located in the auxiliary sections of engineering spaces.

b. Medium pressure

Compressed air normally set at 500 psi. Not used on BWOOD.

c. Low pressure

Compressed air, usually between 100-125 psi, used to operate ship's whistle, siren, fresh water pressurizing, etc.

109.10 State the purpose of the following: [ref. j, ch. 14]

- | | |
|------------------------------------|---|
| a. Vital air/non-vital air | Components that are needed/not needed for operation of ship. |
| b. Priority valves | Shuts automatically, securing air to nonvital components when pressure drops. |
| c. Air receivers/flask | Storage tanks for housing air compressors. |
| d. Dehydrators | Dries compressed air by removing moisture. |
| e. HP/LP air cross connect- | |

109.11 Explain the basic function of the Potable Water Service/Transfer system. [ref. g, sec. 1]

Fresh water can be distilled from sea water when the ship is underway/at anchor, or can be taken from the pier. The potable water can be transferred between storage tanks via internal piping system for purposes of ship's stability, or for the needs of separate areas of the ship.

109.12 State the function of the following major components:

a. Potable water storage tanks [ref. g, sec. 2]

Used exclusively for storage of fresh water.

b. Valve manifold [ref. g, sec. 2]

A filling, transfer, and suction manifold is provided in pump suction line to allow the pump to take suction while tanks are being filled from distillation plant, or from shore connection.

c. Fresh water pumps [ref. h, sec. 2]

Takes suction from any of the storage tanks and discharges to either fitting/transfer mains or service mains. Pressurizes the system.

d. Hypochlorinators/brominator [ref. g, sec. 3]

Used to treat stored water, freeing them from contaminants.

e. Potable water risers [ref. g, sec. 2]

Used for connection for obtaining fresh water from pier/outside source, and for the discharge of the system.

109.13 Explain the special handling and storage requirements for calcium hypochlorite. [ref. g, sec. 3]

Must be stowed in cool, dry, vented locker in ventilated space. It can only be mixed with water. Avoid contact with eyes and skin. Contact with grease, oil, etc. may cause fire.

109.14 What are the three types of naval distilling plants. [ref. i, sec. 1]

1. Flash-type
2. Submergible tube
3. Vapor Compression

109.15 Explain the safety/sanitation requirements for handling shore source fresh water. [ref. g, sec. 3]

Do not have the same persons handling sewage and fresh water.

109.16 Explain the special handling and storage requirements for bromide cartridges. [ref. g, sec. 3]

Face shield, rubber gloves, rubber apron, and well ventilated area.

109.17 State the purpose of the Ships' Service Electrical Distribution system. [ref. s, ch. 3]

To maintain power at all times. Underway the power is generated by the SSTGs, inport it is hooked to shore power.

109.18 State the function of the following major components: [ref. s, ch. 3]

- | | |
|---|---|
| a. Ship's service/emergency generators | Generates auxiliary electricity. |
| b. Switchboards | Controls/monitors/distributes power. |
| c. Bus ties | Connects 2 or more switchboards so that generators can be operated in parallel. |
| d. Disconnect links | Separates the system so as to be able to isolate a portion in case of damage. |
| e. Circuit breakers | Safety measure to regulate current. |
| f. Automatic Bus Transfer (ABT) | Links one switchboard to another. |
| g. Manual Bus Transfer (MBT) | Links one switchboard to another. |

109.19 State the purpose of: [ref. j]

a. Air conditioning plants [ch. 17]

Provide air conditioning throughout the ship.

b. Refrigeration plants [ch. 16]

Used to cool the ship's stores, cargo, water, and for AC.

109.20 Discuss the following components of the air conditioning and refrigeration plants: [ref. j, ch. 16]

a. Compressor

Takes low pressure freon gas and compresses it into higher pressure liquid. Located in each air conditioning room or unit. Pumps heat from the cold side to the hot side of the system.

b. Evaporator/cooling coil

Evaporation takes place when a liquid is changed into a vapor or gas.

c. Condenser/heat exchanger

Converts the freon from gas to liquid.

d. Receiver

Stores the liquid refrigerant coming from the condenser.

e. Thermal expansion valve

Metering device that measures the amount of refrigerant allowed into the evaporator and chiller.

109.21 State the purpose of the Steering system. [ref. a, sec. 2]

To provide for the turning of the ship.

109.22 State the function of the following: [ref. j, ch. 18]

- | | |
|---------------------------|--------------------|
| a. Steering motors | Turns the pump. |
| b. Steering pumps | Move the fluid. |
| c. Steering gear | Turns the rudders. |

109.23 Explain the different methods of operating the steering gear (controlling the rudders). [ref. a, sec. 9]

1. Bridge
2. Secondary con (ACC Room)
3. Emergency Steering
4. Trick Wheel
5. Racket Assembly

109.24 State the purpose of the Degaussing system. [ref. s, ch. 10]

Reduces the effects of a ship's magnetic field.

109.25 State the purpose of the ship's degaussing folder. [ref. p, ch. 2]

Navigator keeps a folder that relates all changes, deletions, etc. to the degaussing system. The Degaussing Folder is an official ship's log. It contains information on the magnetic treatment of the ship, instructions for operating the shipboard Degaussing System, degaussing charts with the values for the current and loop settings, installation information forms, compass compensation forms, and a log section showing details of the magnetic treatment of the action taken on the ship's Degaussing System. The folder is prepared by the degaussing range when the ship's system is initially calibrated.

109.26 State the purpose of the Fuel Oil Quality Management Program. [ref. l, ch. 4]

Provides procedures for the receipt and transfer of fuel; stripping and inspection of tanks; safety precautions for handling fuel; laboratory analysis of fuel samples; and accountability logs and test record requirements.

109.27 State the purpose of the Lube Oil Quality Management Program. [ref. l, ch. 4]

To establish policy, define objectives, assign responsibility, and provide requirements and procedures for the monitoring and analysis of the quality of lubricating and hydraulic oils used in machinery aboard ships and service craft.

109.28 State the purpose of Navy Oil Analysis Program (NOAP). [ref. b, sec. 4]

Covered by PMS. Samples are sent to NOAP for analysis.

109.29 State the purpose of the Shipboard Oil Pollution Abatement Program. [ref. t, ch. 13]

To avoid environmental damage due to contamination by oil from the ship.

109.30 State the purpose of the following: [ref. t, ch. 13]

a. Oil spill containment kit

Consists of absorbent mats, herding agent, rags, buckets, swabs, etc.

b. Oil spill containment boom/trawler

Used to surround and contain the oil spill until it can be cleaned.

109.31 State the purpose of marine sanitation devices. [ref. u, ch. C15]

To protect the environment from any contaminants disposed of by the ship.

109.32 List the equipment, protective clothing and disinfectants used during sewage spill clean-up operations.
[ref. v, ch. 17]

Coveralls, rubber boots, rubber gloves, and hair covering. Wash down with detergent.

110 Hazardous Material/Hazardous Waste (HM/HW) Fundamentals

References:

[a] OPNAVINST 5100.19C, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Vol. 1

[b] COMNAVSURFLANT/COMNAVSURFPACINST 4400.1H, Surface Force Supply Procedures

110.1 What are the six categories of hazardous material? [ref. a, sec. B-3, par. B0301.d]

1. Flammable/combustible
2. Aerosol containers
3. Toxic materials
4. Compressed gases
5. Oxidizing materials
6. Corrosive materials

110.2 Explain incompatible material and describe an example. [ref. a, sec. B-3]

Refers to two (2) or more different substances that when mixed could/will cause a reaction in some form. The way for identifying incompatible materials is using the MSDS for the material, Hazardous Material Users Guide, or the incompatibility chart located in OPNAVINST 5100.19C Appendix c-23A.

Example: OBA Canister (Oxygen) HMUG Group 18 and;
Petroleum based materials/fuels HMUG Group 8,9, 10

Reaction: Explosion hazard

110.3 Explain the information and procedures to be followed when a HM/HW spill is discovered. [ref. a, sec. B-3]

The skeleton structure that must be followed when dealing with hazardous material spill response:

1. Discovery and notification
2. Initiation of action
3. Evaluation
4. Containment and damage control
5. Dispersion of gases/vapors
6. Cleanup and decontamination
7. Disposal of contaminated materials
8. Certification of re-entry
9. Follow-up reports

110.4 State the personal protection equipment required when handling HM/HW. [ref. a, sec. B-12, par. B1203]

This can be found in one or all of three sources:

MSDS Sheet

Health and Safety data and PPE recommended sections will tell you what are the minimum requirements for a particular material.

HMUG

Has a reference guide in the index that will tell you the noun name and Group of the material and will give you the general information on PPE required for that Group class material.

PMS Card

Required PPE will be listed under the Tools/Materials section.

110.5 Discuss the underway and import discharge limitations for the following:

a. Trash [ref. b, ch. 11]

Inport Trash to pier. Local Guidelines.
Underway All non-food waste inside 25nm.

b. Garbage [ref. b, ch. 11]

Inport Garbage to pier. Local Guidelines.
Underway Food waste outside of 12nm.

c. Plastic [ref. b, ch. 11]

Inport Plastic to pier. Local Guidelines.
Underway Non-contaminated retain last 20 days
Contaminated retain last 3 days
CNO notified if you discharge any plastic
Process and retain onboard

d. Sewage [ref. b, ch. 11]

Inport Sewage CHT collection to pier/ovbd discharge
Underway Not inside 3nm

e. Oily waste [ref. a, sec. B-3]

Inport Oily waste, no sheen. Less than 15 ppm
Underway Disposal is permitted 50 nm from land

f. Paint/mineral spirits [ref. a, sec. B-3]

Inport Paint -Turn into HAZWASTE facility.
Underway No discharge permitted

LIST OF REFERENCES USED IN THIS PQS

Allied Maritime Tactical Instructions and Procedures (ATP) (C), Vol. 1
Allied Maritime Tactical Signal and Maneuvering Book (ATP 1 (C), Vol. 2
Blue Jackets Manual, Rev. 12
BUPERSINST 1430.16, Advancement Manual
BUPERSINST 1610.10, Evaluation and Fitness Reports
CNSL 4790.20A/CNSP 4790.9B, Implementation and Utilization of the Combat System Operational Sequencing System (CSOSS)
CNSL/CNSPINST 3502.2C, Surface Force Training Manual
COMNAVSURFLANT/COMNAVSURFPACINST 4400.1H, Surface Force Supply Procedures
Dutton' s Navigation and Piloting (14 th Edition)
Enlisted Distribution and Verification Report, 1080# U-01, Users Manual
Jane' s Fighting Ships 1995-96
Knight' s Modern Seamanship (Eighteenth Edition)
Maritime Interception Operation (MIO) (Surface Force Standing TACNOTE ZZ0050-1-94)
Naval Doctrine Publication 1, Naval Warfare
Naval Doctrine Publication 4, Naval Logistics
Naval Doctrine Publication 5 ,Naval Planning
Naval Doctrine Publication 6, Naval Command and Control
NAVEDTRA 10047, Military Requirements for Chief Petty Officer
NAVEDTRA 10105, Operations Specialist 3
NAVEDTRA 10106, Operations Specialist 2
NAVEDTRA 10276-1, Fire Controlman Third Class
NAVEDTRA 10278, Fire Controlman First Class
NAVEDTRA 10539, Engineman 3
NAVEDTRA 12001, Fireman
NAVEDTRA 12016, Seaman
NAVEDTRA 12043, Basic Military Requirements
NAVEDTRA 12100, Boatswain' s Mate
NAVEDTRA 12104, Signalman
NAVEDTRA 12120, Quartermaster
NAVEDTRA 12126,Operations Specialist 1&C
NAVEDTRA 12147, Engineering Administration
NAVEDTRA 12164, Electrician' s Mate
NAVEDTRA 12219, Hull Maintenance Technician
NAVEDTRA 12406, Fire Controlman, Fire Control Maintenance Concepts, Volume 4
NAVEDTRA 12443, Gunner Mate
NAVEDTRA 12497, Sonar Technician G 3&2, Vol. 2
NAVEDTRA 12497, Sonar Technician G 3&2. Vol. 1
NAVEDTRA 12609, Legalman
NAVEDTRA 12652, Storekeeper 1&C
NAVEDTRA 1269-K1, Storekeeper 3&2
NAVEDTRA 12801, Radioman Communications
NAVEDTRA 82160, Interior Communication, Technician Vol. 1
Navigation Rules, USCG Commandant Instruction M16672.2C
NAVPERS 15560, Naval Military Personnel Manual
NAVPERS 15909, Enlisted Transfer Manual
NAVSEA OP-3347, United States Navy Ordnance Safety Precautions
NAVSEA OP-4, Ammunition Afloat, Revision 5
NAVSUP P 485, Afloat Supply Procedures Manual, Revision 2, Change 8
NAVSUP P 486, Food Service Management-General Messes, Revision 3
NAVSUP P 487, Ship Shore Afloat, Revision 3, Change 4
Non-Combatant Evacuation Operations (NEO) (Extac 1010)
NSTM 0901-LP-420-0002/CH-9420, Propulsion Reduction Gears, Couplings and Associated Equipment
NSTM S9086-CZ-STM-000/CH-090, Inspections, Tests, Records and Reports
NSTM S9086-H7-STM-010/CH-262, Lubricating Oils, Greases, Specialty Lubricants and Lubricating Systems
NSTM S9086-HM-STM-010/CH-243, Propulsion Shafting
NSTM S9086-HN-STM-010/CH-244, Propulsion Bearings and Seals
NSTM S9086-HP-STM-010/CH-245, Propellers

NSTM S9086-RH-STM-010/CH-503, Pumps
NSTM S9086-S3-STM-010/CH-555, Surface Ship Firefighting, Vol. 1
NSTM S9086-S9-STM-000/CH-562, Surface Ship Steering System
NSTM S9086-SC-STM-010/CH-531, Desalination Low Pressure Distilling Plants, Vol. 1
NSTM S9086-SE-STM-010/CH-533, Potable Water Systems
NSTM S9086-SN-STM-010/CH-541, Ship' s Fuel and Fuel Systems
NWP 4-01.4, Replenishment At Sea
NWP 10-1-10 (A), Operational Reports
NWP 10-1-11, Status of Resources and Training System (SORTS)
OPNAVINST 1306.2, Fleet, Force, and Command Master Chief Program
OPNAVINST 3100.6F, Special Incident Reporting
OPNAVINST 3120.32, Standard Organization and Regulations of the U. S. Navy
OPNAVINST 3120.32C, Standard Organization and Regulations Manual of the U.S. Navy
OPNAVINST 5100.19C, Navy Occupational Safety and Health Program (NAVOSH)
OPNAVINST 5354.1D, Navy Equal Opportunity Manual
OPNAVINST 5510.H, DON Information and Personnel Security Program Regulation
Seamanship Fundamentals for the Deck Officer (1981)
SECNAVINST 1650.1, Navy and Marine Corps Awards Manual
SECNAVINST 5216.5D, Correspondence Manual
The Bluejackets' Manual (Twenty-First Edition)
Watch Officer' s Guide, Eleventh Edition