#### **CHAPTER 3**

### WATCH STANDING

Thank God I have done my duty.

-Admiral Horatio Nelson

In this chapter, you will learn about the basic shipboard watch organization. You will learn about a typical watch, quarter, and station bill; the terms used during watches; and some typical watches, both ashore and afloat. You will also learn about procedures for reporting bearings and using binoculars.

#### WATCH STANDING

**Learning Objectives:** When you finish this chapter, you will be able to—

- Recognize the responsibilities of personnel for the Watch, Quarter, and Station Bill.
- Identify types of watches, general orders of a sentry, procedures to follow when relieving an armed watch, and when a weapon may be fired.
- Recognize the duties of lookouts.

During a ship's entire commissioned life, it will always have Sailors on watch. There are probably more than a hundred different types of watches, depending on the ship or station.

Whatever type of watch, the watch stander must devote full attention to it. The ship's organization and the watches manned by its personnel keep the ship running smoothly 24 hours a day. Watches vary, of course, depending on both the type of ship and whether the ship is under way or in-port. Even when the ship is moored in-port and receiving hotel services (utilities, such as steam, water, and electricity) from the pier or another ship, it's necessary to maintain a watch for communications, security, and safety.

During your time in the Navy, you will be required to stand many watches. Some watches will be of a security nature, such as a pier sentry or roving patrol; others will be operational, such as a telephone talker and/or status board operator. Whatever the type of watch, you must devote your full attention to it. Inattention or negligence on your part can result in serious consequences for the ship and your fellow shipmates.

#### **DECK LOG**

Probably the most important log you will maintain is the ship's deck log. The basic requirements for maintaining the deck log are contained in the *U.S. Navy Regulations and Standard Organization* and *Regulations of the U.S. Navy*. The ship's deck log is a complete daily record, by watches, of every event of importance or interest about the crew and the operation and safety of the ship.

A ship's deck log has both historical importance and legal standing. At times, it may be used in naval, admiralty, and civil courts. In an incident involving the ship, the log may be the only available evidence on which to base a legal decision. At sea, the ship's deck log is kept by the quartermaster of the watch (QOOW). In-port, chronological entries are made, but these entries are made by the petty officer of the watch (POOW).

Entries in the ship's deck log are handwritten using a black, ball-point pen. Entries must be neat and legible. Use only standard Navy phraseology. Because the log may be used as evidence in legal proceedings, do not erase an entry. If you make a mistake, draw a single line through the original entry (so that it remains legible), insert the correct entry, and place your initials in the margin. The log is signed at the end of each watch by the OOD. The name of the officer of the deck must also be printed beneath the signature. Facsimile signature is not authorized.

The following are entries that are always recorded:

- Convening of courts-martial or fact-finding bodies
- Inspections held, including administrative, material, personnel, lower deck, and magazine inspections
- Injuries, accidents, and casualties
- Official visits
- Salutes fired and flags displayed

- Arrivals and departures of the commanding officer and executive officer and, if on board, flag officers and civil officials
- Drills held
- Observance of sunrise and sunset
- Reports made to the OOD; for example, fuel and water, chronometer, magazine temperatures, and so forth
- Equipment casualties

#### WATCH, QUARTER, AND STATION BILL

For any ship to carry out its assigned missions and tasks, it must have an administrative organization. In the organization, every person is assigned one or more tasks. Personnel are trained so they can do their jobs.

The ship's organized plan for action is contained in the battle bill. The battle bill is based on the organization manual and other publications and directives. The battle bill contains lists of stations that must be manned during battle and at other specified times. Using the organization manual and the battle bill as references, each division officer and division chief assigns qualified personnel in the division to the stations and enters their names on the watch, quarter, and station (WQS) bill.

The WQS bill displays in one place your duties for each emergency and watch condition. It also shows your administrative and operational duties.

### Contents of the Watch, Quarter, and Station Bill (WQS)

The WQS bill lists, by billet number and rate, divisional stations to be manned for various situations. The billet number consists of either four numbers or a letter and three numerals. The first number (or letter) indicates the person's division; the second number indicates the section; the last two numbers show the person's seniority in the section. Figure 3-1 shows the assignments for personnel in the first section of the first division.

Look at figure 3-1. The first column shows the billet number. The second column shows your name. Your bunk and locker numbers are usually the same. There are three columns under rate: the first column shows the

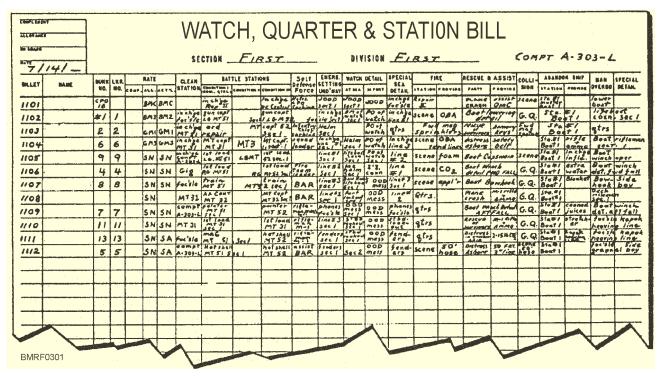


Figure 3-1.—Watch, quarter, and station bill.

wartime complement, the second the peacetime allowance (usually less than for wartime), and the third lists the rates actually on board.

Often, cleaning stations are omitted, since they are posted in a separate cleaning bill.

There are three columns under the BATTLE STATIONS—Condition I, Condition II, and Condition III. Condition I is general quarters. Under Condition I all battle stations are manned, and usually surface or air action is imminent (about to take place). Condition I is sometimes modified to let a few persons at a time rest on station or to let designated personnel draw rations for delivery to battle stations (condition IE). Condition II is a special watch used by gunfire support ships for situations such as extended periods of shore bombardment. Condition III is the normal wartime cruising watch. Normally, when cruising under Condition III, the ship's company stands watch on a basis of 4 hours on, 8 hours off; about one-third of the ship's armament is manned in the event of a surprise attack.

Assignments to the SELF-DEFENSE FORCE vary according to ship type. The purpose of the self-defense force is to provide a capability for reacting to emergency security situations aboard ship and at pierside to protect the ship, its sensitive equipment, and its personnel.

The next column, EMERGENCY GETTING UNDER WAY, is for use in-port when most of the crew is ashore and the ship must get under way before personnel can be recalled.

There are two columns under WATCH DETAIL. The **left column** is for normal peacetime cruising, or **Condition IV**. The number of watch sections depends on the type of ship and the number of personnel aboard. The **right column** lists the type of watch personnel will stand in-port (Condition V). The time of the watch is posted on a separate in-port watch list.

The SPECIAL SEA DETAIL is manned whenever the ship leaves and enters port. Because of the critical nature of mooring or anchoring, getting under way, and maneuvering in restricted waters, only the most experienced persons are assigned to these details. You can expect to be assigned to a station, however, so that you can learn what to do and how to do it.

The remaining columns of the WQS bill (except the last one) show assignments to the ship's emergency bills. Always be prepared to man your emergency station and know where to get the equipment you may be required to provide.

For a MAN-OVERBOARD situation, you go to quarters or some other designated place of muster if you are not assigned a specific detail. The final column is for assignments to such miscellaneous details as mess cooking, MAA duty, and side boys.

#### Responsibilities

It is your responsibility to check the WQS bill daily. You should check for any changes made in your assignments and to refresh your memory for assignments to seldom-used details (such as to a prize crew). When abandon ship drill is held, for instance, you should not have to take time to find out what your station is and where it is located. A shipmate's life may depend on you to be where you're assigned to be.

#### WATCHES

Most of the watches in the Navy are of 4 hours duration. Time off between watches depends on the number of sections and the number of personnel in each station. Normally, watches start on the even hours, such as 0400, 0800, or 1200. However, you should arrive at your station at least 15 minutes ahead of time to receive any pertinent information from the person you are relieving. Regardless of the type of watch you stand, observe proper military bearing. Proper grooming standards and uniform appearance is a must. Stand your watch in strict adherence to the eleven general orders of the sentry (covered later in this chapter). Know the chain of command as it relates to watch standing. If there is an emergency, it's important to know who and when to call.

#### **Military Time**

The Navy uses the 24-hour system of keeping time. The day starts at midnight. Four numbers are used to indicate the time—the first two digits indicate hours and the last two show the minutes. Midnight is expressed two ways—0000 to indicate the start of the day, and

2400 to indicate the end of the day. Each succeeding hour, starting at midnight, is increased by 100 (0000, 0100, 0200, and so on) until 2400 is reached, then a new day starts.

Time is spoken in hundreds. For example, 0100 (1:00 a.m.) is spoken "zero one hundred"; 2000 (8 p.m.) is pronounced "twenty hundred"; 2315 (11:15 p.m.) is spoken "twenty three fifteen."

Converting time on a 12-hour clock to Navy time is an easy matter. The hours from midnight to noon aren't any problem; from noon to midnight, simply add 12 hours to the time indicated.

The ship's bell may also indicate time. The bell is struck once for each half hour, with a maximum of eight bells. At 0830, for instance, one bell is sounded; at 0900, or two bells; and so on until eight bells are struck at 1200. The use of this system is usually restricted to the hours between reveille and taps.

#### **Watch Terms**

Two methods are used in identifying watches. One method uses a descriptive name that identifies the type of watch—for example, pier sentry. The other method also uses a name, but it identifies the time of the watch. Standard watch times and their names are given in the following listing:

TIME	TYPE OF WATCH
0000 to 0400	Midwatch
0400 to 0800	Morning watch
0800 to 1200	Forenoon watch
1200 to 1600	Afternoon watch
1600 to 1800	First dog watch
1800 to 2000	Second dog watch
2000 to 2400	Evening watch

The dog watches permit rotation of the watches; otherwise, personnel would stand the same watch every day. (Usually the 1600-2000 watch is dogged only at sea.) Normally, Sailors having the midwatch are permitted to sleep 1 hour past reveille (late sleepers).

Often, particularly in foreign ports when extra security precautions are required, the ship's crew is placed in two sections—port and starboard. In such instances, one of the normal three sections (usually the third) is split between the first and second sections. The resulting first section becomes the starboard section; the second section, the port section. If the crew is divided into four sections, the odd-numbered sections make up the starboard section; the even-numbered ones, the port section. The actual watches, though, conform to the times described.

#### **Types Of Watches**

Hundreds of different types of watches are required throughout the Navy, both under way and in-port. Most of them are of a professional nature; that is, they are peculiar to a specific rating or rating group. In this chapter, you will learn about the watches that are more or less of a security nature and that most Sailors stand at one time or another.

Security watches are stood to prevent sabotage, protect property from damage or theft, prevent access to restricted areas by unauthorized persons, or protect personnel. Security watches include sentry duty, barracks watches, fire watches, and watches stood under way.

#### WATCH OFFICERS

Some key assignments for officers in the watch organization include the command duty officer (CDO), officer of the deck (OOD), junior officer of the deck (JOOD), and junior officer of the watch (JOOW). (NOTE: Senior petty officers can qualify for some of the officer's assignments.)

#### **Command Duty Officer (CDO)**

Although an official watch stander, the command duty officer (CDO) may be on duty for a period of several watches. The CDO is eligible for command at sea and is designated and empowered by the captain to advise, supervise, and direct the officer of the deck (OOD) in matters concerning the general operation and safety of the ship or station.

#### Officer of The Deck (OOD)

The officer of the deck (OOD) is in charge of the ship and is responsible to the commanding officer (CO) for the safe and proper operation of the ship or station. That includes navigation, ship handling, communications, routine tests and inspections, reports, supervision of the watch, and carrying out the plan of the day (POD).

#### Junior Officer of the Deck (JOOD)

The junior officer of the deck (JOOD) is the principal assistant to the OOD. Anyone making routine reports to the OOD normally makes them through the JOOD or the JOOW.

#### Junior Officer of the Watch (JOOW)

The junior officer of the watch (JOOW), when assigned, is in training for qualification as the OOD.

# **Combat Information Center (CIC) Watch Officer**

The combat information center (CIC) watch officer supervises the operation of the CIC, which reports, tracks, and evaluates air, surface, and submarine contacts.

#### WATCH STANDERS

Senior enlisted watch standers also have a number of important assignments. While there are scores of other enlisted watch assignments, those described in the following sections are the most important and the most responsible. The majority of other enlisted watch standers report to, or through, watch officers.

#### **Quartermaster of the Watch (QMOW)**

The quartermaster of the watch (QMOW) is an enlisted assistant to the OOD while under way (and in-port on certain classes of ships). The QMOW assists the OOD in navigational matters and maintains the ship's deck log. Additional duties include reporting and recording weather changes and executing required ship's navigational lighting changes. The QMOW, who must be a qualified helmsman, supervises the helmsman if senior to the BMOW.

#### **Boatswain's Mate of the Watch (BMOW)**

The boatswain's mate of the watch (BMOW) is an enlisted assistant to the OOD during under way watches. The BMOW must see that all deck watch stations are manned with qualified personnel and all watch standers in previous watch sections are relieved. Although the section leader and the division petty officer have the duty of instructing the personnel they send on watch, the BMOW must verify that every person in the watch has been properly instructed and trained. A BMOW must be a qualified helmsman and supervises the helmsman if senior to the QMOW.

#### Lookouts, Sky and Surface

The lookout watch mans assigned lookout stations and performs duties as prescribed in the ship's lookout instructions. Lookouts should be rotated at least hourly. They are under the direct supervision of the OOD. Lookouts are trained in their duties by the CIC officer. The posting and training of lookouts will, as a minimum, conform to the requirements of the *International Regulations for Preventing Collisions at Sea*.

#### Messenger of the Watch (MOW)

The messenger of the watch stands the watch on the bridge (under way) and the quarterdeck (in-port). The MOW delivers messages, answers telephones, and carries out such duties as the OOD may direct. Messengers need to be familiar with various departments of the ship and ship's company. The underway messenger is normally assigned from the weapons/deck department.

#### **Fog Lookouts**

Fog lookouts are required during fog or reduced visibility. The watch is stood in those locations where approaching ships can best be seen or heard (normally in the bows). The fog lookouts stand a vigilant watch to detect, either by hearing fog signals or actually sighting, approaching ships or craft. Posting and training of fog lookouts will, as a minimum, meet the requirements of the International Regulations for Preventing Collisions at Sea. This watch will consist of two personnel—one phone talker and one lookout. The addition of the phone

talker allows the fog lookout to work without his or her hearing being impaired by wearing sound-powered phones. As with other lookouts, the fog lookouts are in contact with the OOD through the bridge phone talker.

#### Helmsman

The helmsman is a qualified steersman who steers courses prescribed by the conning officer. The helmsman alternates with other members of the deck watch as directed by the BMOW and as approved by the conning officer (who is generally the OOD or the JOOD). The helmsman is normally assigned from the weapons/deck department.

#### Lee Helmsman

The lee helmsman who stands watch at the engine order telegraph on the bridge rings up the conning officer's orders to the engine room, making sure all bells are correctly answered. The lee helmsman alternates with other members of the deck watch as directed by the BMOW and as approved by the conning officer. The lee helmsman is normally assigned from the weapons/deck department.

#### **After Steering Watch**

This watch, stationed in after steering, is set when positive steering control must be maintained, such as during general quarters, under way replenishment, and sea and anchor detail. During these evolutions, a qualified member from the navigation department is assigned as the after steersman along with a member from the engineering department. This watch is responsible for lining up and operating the steering engines according to orders received from the conning officer. During normal under way steaming, this watch is not usually manned, except on board the larger types of vessels (such as CVNs or LHAs).

#### **Gangway Watch**

When required, the gangway watch is posted at the foot of the brow or gangway to perform such duties as directed by the OOD. These duties normally include security of the brow and ceremonial duties.

#### **Security Watches and Patrols**

Security watches and patrols, in addition to those described elsewhere in this chapter, may be assigned at the discretion of the CO. Security watches and patrols are established to increase the physical security of the ship. Sailors assigned to security watches and patrols will be trained and qualified by the department head responsible for the areas to which specific watches and patrols are assigned. Duties of security watches and patrols include but are not limited to the following:

- Maintaining continuous patrols above decks and below decks
- Checking classified stowage, including spaces containing classified equipment
- Being alert for evidence of sabotage, thievery, and fire hazards
- Checking security of weapons magazines
- Obtaining periodic sounding of designated tanks and spaces
- Periodically inspecting damage control closures

#### **Sounding and Security Patrol**

The watch of the sounding and security patrol is regular and continuous. It is essential that only well-indoctrinated, experienced personnel are assigned this watch. The patrol follows an irregular route while conducting a continuous inspection of all spaces (except those on which a watch is posted or those spaces designated as limited or exclusion areas) to detect and prevent fire hazards, fire, flooding, theft, sabotage, or other irregularities affecting the physical security of the ship. Soundings and results of the inspection will be reported to the OOD and are logged in the ship's deck log. Any unusual conditions are reported to the OOD immediately.

#### Fire Watch

The purpose of a shipboard fire watch is to immediately extinguish fires caused by welding or burning operations. (Burning means cutting through

metal with an oxyacetylene torch.) Often two persons are assigned to this duty—one is stationed at the scene, the other in the space behind the one in which the cutting or welding is being done. Heat generated by welding or burning can pass through a bulkhead or deck and ignite material on the other side.

When assigned a fire watch, you will be given a portable fire extinguisher and eye protectors, such as goggles. If you use the fire extinguisher or if the seal is broken, be sure you inform the person who issued it so that the bottle can be weighed to determine if it needs refilling.

The fire watch may become boring, but you must remain alert at all times. For example, when undergoing a shipyard overhaul, the ship's fire mains may be inoperative. The shipyard fire department then assumes responsibility for fighting shipboard fires. If you are goofing off on your watch or are absent from your station, a fire could gain considerable headway before arrival of the fire department, resulting in extensive (and unnecessary) damage to the ship and possible personnel casualties.

#### **Barracks Security Watch**

A security watch is maintained in all barracks for protection against fire, for the safety of personnel and material, and for carrying out routines. A security watch stander is responsible for knowing and carrying out the provisions of the fire bill, emergency bill, barracks regulations, and the like. The barracks security watch stander is responsible for maintaining prescribed standards of order and discipline.

If you are standing the security watch and an officer approaches, you salute and sound off with your name and rate. The formula for sounding off may vary from place to place, but it goes something like this: "Smith, Seaman, security watch, Barracks K, Sir/Ma'am."

A barracks security watch is usually a roving one and, depending on the type of barracks, it may cover two or more wings and/or decks. You must be alert to spot any fires that may be started by personnel smoking in their bunks (which is against regulations). If you see anyone smoking in a bunk, have that person put out the cigarette. Persons returning from liberty after taps must

be prevented from disturbing the sleep of other personnel. Watch standers have the additional responsibility of making sure that unauthorized personnel don't enter the barracks. Usually, you must report periodically to the duty officer in the barracks office or, in some instances, to the OOD by telephone. Normally, you report that all is secure; however, you must report all disturbances and any unusual circumstances, such as illness or mishap. You may also have to enforce taps and hold reveille.

In the event of a fire, your duties are to do the following:

- 1. Report the fire. (Know the fire department number and the locations of the fire alarms.)
- 2. Spread the alarm—pass the word. Ensure all personnel except fire parties are clear of the area.
- If time permits, close doors and windows to confine the fire and prevent drafts. Do not endanger yourself or others in this effort.
- 4. Fight the fire if possible, using the proper equipment at hand to extinguish the fire, pending the arrival of the fire department.

#### **SENTRIES**

Sentries are required at a number of locations, such as at gates to military bases, aboard ship, along a fence, or in a hangar. Although our discussion concerns a sentry walking a post, the same provisions apply to other types of sentry watches.

Sentries are governed by two types of orders—general and special. General orders (which do not change) cover situations of a routine nature common to most sentry posts. Special orders cover a certain time or situation peculiar to a particular post and are issued in addition to the general orders. Special orders may be written or verbal. Usually, written orders are issued by the CO and remain in effect until canceled or changed with subsequent (new) orders from the CO. These instructions are called standing orders. Verbal orders may be issued by any responsible officer or petty officer. Normally, they remain in effect for a limited period of time.

#### **Eleven General Orders of a Sentry**

Normally, general orders for a sentry call for reporting to the petty officer of the guard. However, at any given station, you will make your reports to the petty officer of the watch, officer of the day, officer of the deck, or to the person designated as your immediate supervisor of the watch. Before standing watch, you need to know your chain of command for the watch.

There are 11 general orders for a sentry. They are reproduced here in **bold** letters, along with a brief explanation of each. You should memorize them word for word. You don't need to memorize the explanations, but you should understand the meaning of each order.

- 1. To take charge of this post and all government property in view. The number of the post, type of sentry duty, and limits of your post are part of your special orders. Within the limits of your post, you have authority over all persons, and it's your duty to challenge and, if necessary, detain all persons acting in a suspicious manner. You should apprehend all persons involved in disorder or discovered committing a crime. All persons detained or apprehended are turned over to the petty officer of the guard. You should fire your weapon only as a last resort. Smoking in a prohibited area, for example, is hardly a shooting offense. There are times, however, when firing at another person may be justified, but only after all means of defense or crime prevention have failed. In general, such times are as follows:
  - a. To protect your own or another's life
  - b. To prevent the escape of a person known to have committed a serious crime, such as armed robbery, rape, or murder
  - c. To prevent sabotage, espionage, arson, and other crimes against the government
  - d. If you must fire your weapon, try to wound instead of kill the person you're aiming at
- 2. To walk my post in a military manner, keeping always alert and observing everything that takes place within my sight or hearing. Keep turning your head as you walk your post, observing everything ahead and to the sides. If you hear a strange noise, investigate it.

You cannot expect to stand all your watches in fair weather. When the weather is bad, you will be issued appropriate clothing. Do not stand under a tree to keep out of the rain or stay behind a building to get out of a cold wind; during times of bad weather and darkness, you must be particularly alert.

3. To report all violations of orders I am instructed to enforce. If a person is acting from thoughtlessness, you need only remind the offender of the regulation being broken. For example, if you see a person starting to light a cigarette in a no smoking zone or a visitor blundering into a restricted area, you need only tell the person the regulation in effect. If the person is willfully violating a regulation, however, like trying to jump the fence or stealing Navy property, you must stop the person and place the offender under apprehension; then call for the petty officer of the guard. If the person tries to escape, give the order to halt. If the person does not obey, fire into the air; if the person does not stop, fire at the fleeing party's legs, subject to the limitations given under general order 1. If the offender escapes, report the matter as quickly as you can to the petty officer of the guard. In every instance, try to remember what the offender looked like so that you may identify the person. Do not leave your post to chase the offender unless immediate action is essential.

By firing your weapon and shouting, you can alert other sentries to intercept the offender. Do not fire at an offender if anyone else is around who could be hit by your shot. It is better to let the wrongdoer escape for the time being than to shoot an innocent person.

- 4. To repeat all calls from posts more distant from the guardhouse (quarterdeck) than my own. Suppose your post is number 3. To call the petty officer of the guard for any purpose other than relief, fire, or disorder, you call, "Petty officer of the guard (or corporal of the guard), post number 3." Sentry number 2 will repeat your call, giving your number, and so will sentry number 1. Thus the petty officer will know immediately which post to go to. Similarly, if sentry number 4 calls out, repeat the call, giving his or her number.
- 5. To quit my post only when properly relieved. If you aren't relieved on time, don't abandon your post, but call the petty officer of the guard for instructions. If you require a relief because of sickness or other reason,

call, "Petty officer of the guard, post number \_\_\_\_, relief."

- 6. To receive, obey, and pass on to the sentry who relieves me all orders from the commanding officer, officer of the day, and officers and petty officers of the guard only. During your tour of duty, you are subject to the orders of the CO, XO, OOD, and the officers and petty officers of the guard only. Other officers and petty officers have no authority to take or inspect your weapon, to tell you how to stand your watch, or to order you to leave your post. Such other officers, however, still have the authority to investigate your conduct and to report it. Thus an enemy agent cannot dress up in an officer's uniform and order you from your post. You obey orders only from officers whom you know are authorized to give you commands related to your sentry duty. However, a passing naval officer who believes you are standing a poor watch may ask your name and post and report any observations to your superiors.
- 7. To talk to no one except in the line of duty. When you challenge or talk with a person, take the position of port arms. Answer questions briefly but courteously. Normally, if you maintain silence and military bearing, visitors will not try to engage you in long conversations. If, however, visitors or other naval personnel show a desire to pass the time of day with you, you must say politely to them "Excuse me, I am on duty and cannot talk with you further. Please move on." If they refuse to move on or show signs of becoming disorderly, you should call for the petty officer of the guard. Remember, if your superiors see you chatting while on duty, they will hold you responsible-not your visitor.
- 8. To give the alarm in case of fire or disorder. In case of fire, you immediately call, "Fire, post number \_\_\_\_\_" and sound whatever alarm is available. When you are sure your alarm has been heard by the other sentries or by the petty officer of the guard see what you can do to put out the fire. (If you can do so safely and without leaving your post, do so; otherwise, remain where you can direct apparatus to the fire.)

Remember that the fire may be a trick to lure you away from your post. You must remain vigilant (alert), even amid the confusion and excitement that accompanies a fire.

What we have said about fire applies also for disorder. In the event of a disorder, call the guard immediately; then try to quiet the trouble. If you approach the disorder first, you might be overcome and then could not give the alarm. Sometimes you can stop a disorder before it becomes too serious by calling to the persons involved, "I have reported you to the guard, who will be along immediately. Come to order now; further trouble will make matters worse for you." The persons concerned might realize you are right and follow your orders. If they do, maintain watch over them but do not approach too closely. Keep your weapon at port arms.

- 9. To call the petty officer of the guard in any case not covered by instructions. When you do not know what to do, call the petty officer of the guard.
- 10. To salute all officers and all colors and standards not cased. As used here, colors and standards both refer to the national ensign. The ensign is called the national colors (or just colors) when it is flying from a staff or pike carried by an individual or displayed in a fixed location, as from a flagpole. When mounted on a vehicle, the ensign is called the national standard. (Colors and standards are cased when they are furled and placed in a protective covering.) For sentries, the rules for saluting are the same as those described in chapter 9 of this manual with the following modifications:
  - a. If you are walking your post or patrolling while armed with a rifle, you halt and salute by presenting arms; when at sling arms, you render the hand salute.
  - b. If you're in a sentry box, you stand at attention in the doorway when an officer approaches; if you're armed with a rifle, you present arms. If otherwise armed, render the hand salute. If you're on duty in front of a building or passageway entrance where there is heavy traffic of officers, you may render the rifle salute at order arms. If you're in conversation with an officer, you don't interrupt the conversation to salute another officer. If the officer with you salutes a senior, however, then you also salute.
  - c. During the time of challenging, you don't salute an officer until the officer has advanced and has been duly recognized. You don't salute if to do so will interfere with the proper execution of your specific duties.

11. To be especially watchful at night and during the time for challenging, to challenge all persons on or near my post, and to allow no one to pass without proper authority. When you see a person approaching your post, take the position of port arms and call, "Halt! Who is there?" The challenge must be made at a distance sufficient to prevent your being rushed by the person being challenged. If the person answers "Friend" or "Petty officer of the guard" or gives another reply indicating a friendly nature, call, "Advance (friend, and so on) to be recognized."

If you challenge a party of persons, after receiving a reply indicating the party is friendly, you call, "Advance one person to be recognized." When you have identified the one, you have the person bring up the rest of the party and identify each individual.

You must positively identify all persons challenged before permitting them to pass. If you can't identify them to your satisfaction, detain them and call the petty officer of the guard.

Never let more than one person advance at a time. If two persons approach at the same time, have them halt; then advance the senior and pass that person (if properly identified) before advancing the other person.

If the people are in a vehicle, you halt the vehicle and inspect the driver's or the passengers' credentials, as appropriate. (Normally, inspecting the driver of a military vehicle is sufficient; but for a commercial truck or taxi, you should check the passengers too.) If you believe there's something suspicious about the vehicle or its occupants, direct one of the occupants to get out and approach you for recognition. If you aren't satisfied beyond a reasonable doubt that the people are authorized to pass, detain the person or party and call the petty officer of the guard.

When challenging, advancing, and passing persons and patrols, always stand where you can get a good look at them in such a way that you are protected from a surprise attack.

#### Relieving an Armed Watch

Two methods are used for relieving armed sentries. One way (usually used ashore) is for the Petty Officer of the Watch (POOW) to fall in the reliefs and march them to their posts. Normally, each person in the relieving detail is armed with a rifle. At each post, the petty officer halts the ranks, and both the sentry being relieved and the reporting sentry come to port arms while the person being relieved passes any special orders or other information the relief should know.

In the other method (usually used aboard ship), each relieving sentry goes alone to the post. This sentry normally is unarmed and will relieve the sentry of the rifle or pistol as well as the post. The relief reports to the sentry, "I am ready to relieve you." The sentry executes inspection arms and port arms and repeats the orders; the relief says, "I relieve you." The relieving procedure is completed when the sentry being relieved passes the rifle to the relief and says, "I stand relieved."

#### **NOTE**

Refer to the ship's Standard Operating Procedures (SOP) for relieving an armed watch.

When standing an armed watch with a pistol, you must strictly observe the following additional precautions:

- 1. Keep the pistol in its holster except when the watch is relieved or circumstances require you to use it. Never engage in horseplay with the pistol—it is a deadly weapon and must always be treated as such.
- 2. Do not surrender the pistol to any unauthorized person.
- 3. The pistol normally is carried loaded aboard ship with one round in the chamber. Two loaded clips (magazines) are in the pouches attached to the pistol belt. Leave the clips in their pouches.
- 4. When being relieved, a safe area for unloading a pistol must be established. In a safe area, remove the magazine from the pistol. With the weapon pointed in a safe direction (i.e., barrel full of sand), carefully jack the slide to the rear and remove the round from the chamber. Check the chamber, ensuring no rounds are present. Release the slide and let the hammer go home (weapons terminology for returning the hammer to the uncocked position). Dry fire the weapon and then engage the safety.

## CIRCUMSTANCES UNDER WHICH A WEAPON MAY BE FIRED

**Only** the CO can authorize the use of deadly force. (The term *deadly force* is defined as that force which, if used, has the potential to cause death or serious bodily harm.) The pistol or rifle should be used only as a last resort and then only under the following conditions:

- 1. To protect your life or the life of another person where no other means of defense will be effective in the particular situation
- 2. When no other effective means is available to prevent the commission of or to prevent the escape of a person known to have committed robbery, murder, rape, arson, or kidnapping
- 3. To prevent acts of sabotage, espionage, or other crimes against the government after failure of all other available means of preventing such crime

#### **LOOKOUTS**

You may wonder why visual lookouts are needed today when U.S. Navy radar and sonar are the best. Well, there are some objects radar can't detect, and water conditions may severely limit the sonar detection range. For example, you might be able to see a submarine's periscope that's beyond sonar detection range and whose radar indication is lost in the surrounding sea return echoes.

Lookouts are important members of the ship's operating team. As mentioned above, there are some objects radar can't detect. Smoke, flares, swimmers, torpedo wakes, debris, low-flying aircraft, and life rafts are either impossible or very difficult to detect. Sometimes, radar also indicates the presence of objects that actually are not there. A lookout may be able to verify the validity of a radar contact report and identify the objects detected. During conditions of electronic silence, lookouts are the only means of detection.

The number of lookout stations varies according to the type of ship and whether it is peacetime or wartime. Naturally, large ships have more personnel available than do small ships; therefore, they can man more lookout stations. More lookouts are required in wartime than in peacetime. When enough personnel are available in peacetime, and always in wartime, three basic lookout searches are established.

- 1. **Surface lookouts**, who search from the ship to the horizon
- 2. **Low sky lookouts**, who search from the horizon to 5 degrees above it
- 3. **High sky lookouts**, who search from the horizon to the zenith (directly overhead)

Additionally, several persons may be assigned to each search, each person being responsible for a specified sector. Adjacent sectors have about 10 degrees overlap so that no area will be overlooked.

The normal peacetime lookout organization has three persons in each watch section.

- Two persons are located on the bridge or atop the pilothouse (for destroyer-type ships)—one searches to port, the other to starboard. Their sectors extend from just abaft the beam forward to dead ahead.
- The third person is stationed aft and is called the after lookout/life buoy watch. This sector extends from the starboard beam aft and around to the port beam. In addition to reporting all objects behind the ship, you would have the responsibility for promptly throwing overboard a life buoy if you see a person fall over the side, hear the cry "Man overboard," or hear cries for help coming from the water. If you are the first to see the accident, you call, "Man overboard, (port/starboard) side." You also relay reports made by others.

When you are on lookout watch, always report everything you see or hear. Trash in the water may seem unimportant to you, but it indicates a vessel has passed that way. In wartime, such a disclosure could lead to the sinking of the vessel. Discolored water may mean you are entering a shoal area. The OOD will never reprimand you for reporting objects but will reprimand you for not reporting them. There is no excuse for letting the OOD see something before you do.

REVIEW 1 QUESTIONS		Q7. How many bells are sounded at 0700?	
Q1. List the three main reasons f a watch.	or a ship to maintain		
a.		Q8. List the type of the the left.	watches for the times listed or
b.		TIME	ТҮРЕ
c.		a. 0000 to 0400	
		b. 0400 to 0800	
Q2. To find the ship's organized would look in the—	plan for action, you	c. 0800 to 1200	
Q3. What person assigns qua	lified personnel to	d. 1200 to 1600	
stations and enters their na	_	e. 1600 to 1800	
Quarter, and Station Bill?		f. 1800 to 2000	
Q4. Write the condition on the ri battle station situation on th	_	g. 2000 to 2400	
SITUATION	CONDITION	Q9. What is the purpos	se of the dog watch?
a. A special watch used by gunfire support			
o. The normal wartime cruising watch		Q10. What type of watc	h is stood by most Sailors?
e. All battle stations manned			
		Q11. The watch system is	is divided into what two parts?
Q5. You are relieving a watch. ahead of time should you ar	·	a.	
a. 15		b.	
b. 20		Q12. List four purposes	of a security watch.
c. 25		a.	
d. 30		b.	
Q6. The ship's bell is usually restricted to what hours?		c.	
		d.	

Stud	ent Notes:	
	e.	actually bear. With practice, you should be able to report a contact within 5° to 10° of its actual bearing.
	c. d.	Figure 3-2 shows the relative bearings around a ship. An object dead ahead bears 000°, while an object abeam to starboard bears 090°, and so on. Study this figure, practice pointing to various objects. Compare your estimates of their bearings to what the objects actually hear With practice, you should be able to report
	a. b.	Sometimes, all three types of bearings coincide, but such situations are rare and of a temporary nature Lookouts report objects (contacts) in degrees of relative bearing.
Q18.	List the precautions that must be strictly adhered to while standing an armed watch with a pistol.	3. Magnetic bearings use the magnetic north pole as the reference point.
		2. True bearings use true north (the geographic north pole) as the reference point.
Q17.	There are 11 general orders and these orders don't change. General orders cover what situation(s)?	1. Relative bearings use the ship's bow as a reference point.
	the (a), and the results of their inspections are logged in (b)	The direction of an object from a ship is called the <i>bearing</i> . Bearings are measured in degrees clockwise around a circle from 000° to 360°. There are three types of bearings.
Q16.	The sound and security watch reports directly to	<ul> <li>Identify the procedures to follow when using binoculars to include night vision.</li> </ul>
	b. c.	<ul> <li>Recognize the procedures to use when reporting bearings, to include scanning procedures and reports.</li> </ul>
	a.	<b>Learning Objectives:</b> When you finish this chapter you will be able to—
Q15.	List the conditions under which you would normally stand an after steering watch.	BEARING
		c.
Q14.	The fog lookout normally stands—	b.
		a.
Q13.	what person is responsible for maintaining the ship's deck log while under way?	may be used.

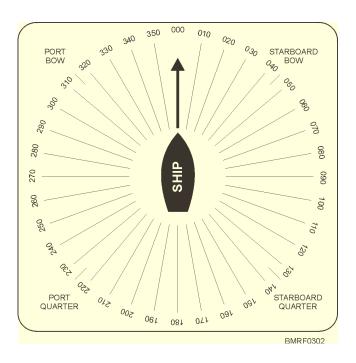


Figure 3-2.—Relative bearings.

To prevent confusion, the Navy uses a standard system for pronouncing numerals. The following list shows how numerals (numbers) are spoken:

NUMERAL	PRONOUNCED
0	Zero
1	Wun
2	Too
3	Tree
4	Fo-wer
5	Fife
6	Six
7	Seven
8	Ate
9	Niner

Bearings are always reported in three digits and spoken digit by digit, except that objects dead ahead or astern (000° or 180°), on either beam (090° or 270°), or

on either bow (045° or 315°) or quarter (135° or 225°) may be reported as such. For example, a ship bearing 090° may be reported as being "abeam to starboard."

Do not become excited when you report contacts or other sightings. Failing to use the proper terminology can result in the OOD wasting time trying to find the object. Take a few seconds to think about how you are going to report the sighting. Taking that few seconds could mean the difference between the entire bridge looking on the wrong side of the ship for a sighting that is actually on the other side. Note that the word *relative* was not included. It is understood that lookouts report only in relative bearing.

#### REPORTING TARGET ANGLE

Target angle is the relative bearing of your ship from another ship. You may wonder why you would care what your ship bears from another ship. The OOD uses target angles as an aid in determining the course of actions when another ship is sighted. (Target angles are useful during gunnery and antisubmarine operations.)

Look at figure 3-3. You are the starboard lookout and you detect a ship on your starboard bow heading at a right angle across your course. You report to the OOD, "Bridge, starboard lookout, ship broad on the starboard bow (or zero, fo-wer, fife), target angle tree wun fife." Assuming that your course is 000°, the OOD knows the other ship's course is approximately 270° and, depending upon the speed of the two ships, the possibility of collision exists. Your target angle report has alerted the OOD that a change of course or speed or both may be required. A change in target angle can mean that the contact has changed course, which is not always immediately apparent to the radar plotters in CIC.

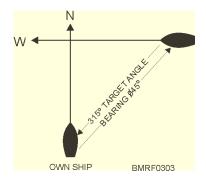


Figure 3-3.—Target angle.

#### REPORTING POSITION ANGLE

An object located in the sky is reported by its bearing and position angle. The position angle of an aircraft is its height (in degrees) above the horizon as seen from the ship. The horizon is 0° and directly overhead is 90°. A position angle can never be more than 90°, as shown in figure 3-4. Position angles are reported in one or two digits and spoken as a whole—not digit by digit.

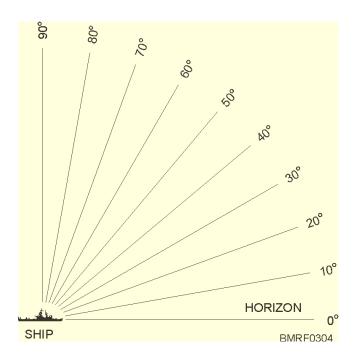


Figure 3-4.—Position angle.

Position angles should be reported on all aircraft. Look at figure 3-5. As the aircraft approaches the ship, the position angle increases. Whenever the position angle changes significantly, all stations should be informed. To help you more accurately determine an aircraft's position angle, you can use the aids shown in figure 3-6. The width of the thumb between the horizon and the aircraft is approximately 2°; the width of the closed fist, approximately 8°; and the open hand, approximately 15° (at arm's length).

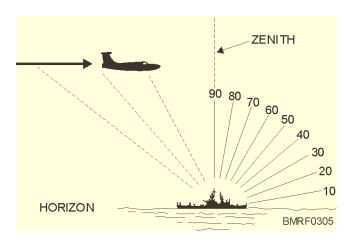


Figure 3-5.—Position angle.

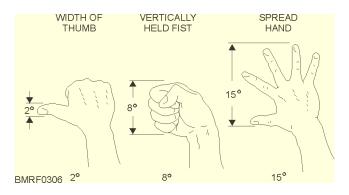


Figure 3-6.—Position angle aids.

#### REPORTING RANGES

Most of the time, if you give reasonably good bearings and position angles when reporting contacts, the OOD will have little difficulty in locating them. But suppose you sight a submarine periscope, a person, or some other object low in the water. In these instances, you can save valuable time by reporting the object's approximate distance. Ranges are always reported in yards. Estimating distances over water is difficult for the inexperienced lookout. Distances can be very deceptive.

A ship that looks like it's 1/2 mile away may actually be twice, or more than twice, that distance from you. Sometimes objects that seem to be half the distance to the horizon may actually be considerably closer.

Knowing your height above the water helps you to estimate ranges. For example, at a height of 50 feet, the distance to the horizon is about 16,000 yards (8 miles); at a height of 100 feet, the distance is about 23,000 yards (11 1/2 miles). Practice estimating distances to known objects. Until you become proficient at estimating ranges, use phrases, such as "close aboard," "on the horizon," and "hull down."

Ranges are reported in yards and spoken digit by digit, except that multiples of hundreds and thousands are spoken as such.

#### **USE OF BINOCULARS**

Using binoculars for searching isn't always better than using the naked eye. Several factors govern when and how binoculars should be used. For example, in fog binoculars should not be used. At night, they should be used quite often. Another factor is their field of view, which is about 7°. Depending on the type of search, such a narrow field may hamper proper scanning techniques.

#### **Adjusting Binoculars**

Three adjustments are required to obtain proper focus and to gain maximum benefit from the light-gathering quality of binoculars—two adjustments for focus and one for the proper distance between lenses.

To properly focus your binoculars, you should do the following:

- 1. Set both eyepieces to the +4 mark. Place the binoculars firmly against the eyebrows and locate a small, well-defined object about 1/2 mile away.
- 2. Cover one lens. (Do not touch the glass.)
- 3. Slowly turn the other eyepiece until a sharp image is obtained, then back off as far as possible without losing the sharpness. (Keep both eyes open; closing one will give an incorrect focus.)

4. Note the reading on the scale; then repeat the previous procedures two or three times to obtain the exact setting. Follow the same procedure for the opposite eye.

The final adjustment is to establish the interpupillary distance (IPD), which is the distance between your eyes. Move the barrels up and down until you see a single circle (fig. 3-7). Then note the reading on the IPD vernier between the barrels. An incorrect IPD setting will strain the eyes and waste part of the binoculars' light-gathering ability.

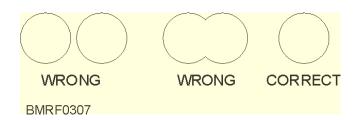


Figure 3-7.—Proper IPD setting.

You won't have your own personal binoculars. They are passed from watch to watch. Therefore, it's important for you know your focus and IPD settings so that the binoculars may be properly adjusted at night or when there are no objects on which to focus in the daytime. For nighttime use, the focus setting is one mark less than for daytime.

Daytime use of binoculars depends upon the type of search being conducted. Surface lookouts should use them to scan across their sector—they should then use the naked eye on return sweeps. Sky lookouts should use them only to identify a contact detected with the naked eye.

The binoculars should be used more frequently at night than during daylight, but searches should still be made with the naked eye. You often can see objects, particularly moving ones, out of the corner of your eye. These objects might not be detected with the binoculars because of their narrow field of view.

Binoculars should never be used in fog, rain, snow, or thick haze.

#### Care of Binoculars

Binoculars are fairly delicate instruments; they cannot stand much knocking about. Therefore, keep them on a short strap when wearing them to prevent their banging against solid objects. Always keep the strap around your neck. Never hold binoculars over the side of the ship without the strap being around your neck. Many pairs of binoculars have been lost over the side in this manner. Keep the lenses dry; otherwise, you will not be able to see properly. Don't let them become overheated; the cement around the lenses might melt. Above all, keep them clean. You must be careful, however, not to damage the lenses when cleaning them. First, blow off loose dust; then breathe on the lenses (except in freezing weather) and gently clean them with lens paper. Rags, plain paper, handkerchiefs, or your sleeve or shirttail should not be used, as they might scratch the lens. You can usually get a supply of lens paper from the QMOW.

#### **NIGHT VISION**

Have you ever walked from a lighted theater lobby into the darkened theater? You would almost be blind for a few minutes. As your eyes become accustomed to the weak light, your vision gradually improves. The same situation exists when you go on night watch directly from a lighted compartment. After 10 minutes, you can see fairly well. After 30 minutes, you reach your best night vision. This improvement of vision in dim light is called *dark adaptation*.

Specially designed red goggles are provided for you to use before you go on night lookout duty. These goggles prepare your eyes for darkness without affecting your ability to play games, write letters, or read before going on watch. You should wear them without interruption for at least half an hour before going on watch. Even then, it will still take you at least 5 minutes more in darkness to develop your best night vision.

After your eyes are dark adapted, you must learn to use your *night eyes*. In the daytime, you should look directly at an object to see it best. In the dark, you need to look above, below, or to one side of an object to see it. This is called *off-center vision*. At night, it's also easier to locate a moving object than one standing still. Because most objects on or in the water have a relatively slow speed, we move our eyes instead, and the effect is nearly as good. Therefore, while scanning at night,

lookouts move their eyes in slow sweeps across the area instead of stopping the eyes to search a section at a time.

Your ship may be equipped with night vision equipment. Before standing watch, be sure you are trained in operating the night vision equipment assigned to your ship.

#### **SCANNING PROCEDURES**

A well-trained lookout will see much more than a "green" hand would see. In good weather, lookouts can easily spot planes with the naked eye at 15 miles. With binoculars and in unusually clear weather, lookouts have detected planes at 50 miles. At night, skilled lookouts will detect objects that the untrained lookout would never suspect were there.

The lookout's technique of eye search is called *scanning*, which is a step-by-step method of looking. It is the only efficient and sure way of doing the job. Scanning does not come naturally. You must learn to scan through practice. In the daytime, your eyes must stop on an object to see it. Try moving your eyes around the room or across the water rapidly. Note that as long as your eyes are in motion, you see almost nothing. Allow your eyes to move in short steps from object to object. Now you can really see what is there.

Figure 3-8 shows how you should search along the horizon. (You also must cover the surface between your ship and the horizon.) Search your sector in 5° steps, pausing between steps for approximately 5 seconds to scan the field of view. At the end of your sector, lower the glasses and rest your eyes for a few seconds; then search back across the sector with the naked eye.

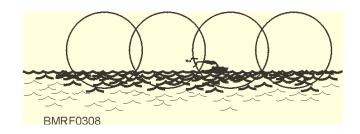


Figure 3-8.—Scanning using the step-by-step method.

Lookouts also search from the horizon to the zenith (overhead), using binoculars only to identify a contact. Move your eyes in quick steps (about 5°) across your

sector just above the horizon. Then, shift your gaze upward about  $10^{\circ}$ , and search back to the starting point. Repeat this process until the zenith is reached; then rest your eyes for a few seconds before starting over.

When searching at night, keep your eyes moving. Try to adhere to (stay with) the sector scan (and upward shift) even though the horizon may not be visible. If you spot a target (or even think you have), don't stare at it. Instead, look slightly to either side.

#### REPORTS

Every object sighted should be reported, no matter how insignificant it may seem to you. The initial report consists of two basic parts—what you see and its bearing (direction) from the ship. Aircraft sighting reports also include altitude (position angle). Report the contact as soon as you see it, then follow with an amplifying report. Include the object's identity (destroyer, periscope, log, and so on) and direction of travel (closing, crossing, and so on). Refer to the ships SOP on reporting procedures.

#### **REVIEW 2 QUESTIONS**

- Q1. Describe how bearings are measured?
- Q2. List the three different types of bearings.
  - a.
  - b.
  - c.
- Q3. Explain the difference between reporting bearing angles and position angles.

- Q4. You are using your hand as an aid to determine the position angle of an aircraft. What is the approximate width of a closed fist (in degrees)?
- Q5. If the binocular IPD is adjusted properly, what will you see when viewing through them?
  - a. One circle
  - b. Two separate circles
  - c. Two circles
- Q6. List the three adjustments that must be made when using binoculars.
  - a.
  - b.
  - c.
- Q7. The improvement of vision in dim light is known as—
- Q8. How many minutes will it take for you to reach your best night vision?
- Q9. Explain the difference between the method used for a day lookout and a night lookout.

#### **SUMMARY**

In this chapter, you learned about the basic fundamentals of the watch organization and some of the procedures associated with standing a proper watch. We also covered the importance of communications in relation to watch-standing duties. Having well-trained and competent watch standers would be useless without

a means of relaying information. You also learned how bearings are reported.

Every person in the Navy has, at one time or another, been assigned some type of watch. Your safety, and that of your shipmates, depends on how well you execute these duties. Just one moment of inattention could mean the difference between a shipmate that has fallen overboard being recovered or lost. A minute of "slacking off" as a fog lookout may be the difference in reaching home port safely or being involved in a collision at sea. No watch is more or less important than others. Every watch on board your ship or station is interdependent. The safety of all crew members depends upon each watch stander carrying out his or her assigned duties in a proper military fashion and according to the eleven orders of the sentry.

#### **REVIEW 1 ANSWERS**

- A1. The three main reasons for a ship to stand watch are
  - a. Communications
  - b. Security
  - c. Safety
- A2. The ship's organized plan for action is located in the **battle bill**.
- A3. The **division officer** and **division chief** are responsible for assigning qualified personnel to stations and entering their names on the Watch, Ouarter, and Station Bill.
- A4. The condition on the right matches the battle station situation on the left.

	SITUATION	CONDITION
a.	A special watch used by gunfire support	Condition II
b.	The normal wartime cruising watch	Condition III
c.	All battle stations manned	Condition I

- A5 When relieving a watch, you should arrive at your station **15 minutes** ahead of time.
- A6. The ship's bell is usually restricted to the hours between **reveille and taps**.

- A7. **6 bells** are sounded at 0700.
- A8. The type of the watches for the times listed.

TIME	ТҮРЕ
a. 0000 to 0400	Midwatch
b 0400 to 0800	Morning watch
c. 0800 to 1200	Forenoon watch
d. 1200 to 1600	Afternoon watch
e. 1600 to 1800	First dog watch
f. 1800 to 2000	Second dog watch
g. 2000 to 2400	<b>Evening watch</b>

- A9. The purpose of the dog watch is to **rotate** watches.
- A10. Most Sailors stand security watches.
- A11. The watch system is divided into (a) **underway** and (b) **in-port watches**.
- A12. Security watches
  - a. prevent sabotage
  - b. protect property from theft
  - c. prevent access to restricted areas
  - d. protect personnel
- A13. The **QMOW** maintains the ship's deck log while under way.
- A14. The fog lookout normally stands in the bow where approaching ships can better be seen and heard.
- A15. Normally, an after steering watch is stood under the following conditions:
  - a. General quarters
  - b. Under way replenishment
  - c. Sea and anchor detail
- A16. The sound and security watch reports directly to the (a) **OOD**, and the results of their inspections are logged in (b) ship's deck log.
- A17. General orders cover situations of a **routine nature common to most sentry posts**.

- A18. The precautions to be strictly adhered to while standing an armed watch with a pistol include
  - a. keep the pistol in the holster.
  - b. don't engage in horseplay with the pistol.
  - c. don't surrender the pistol to any unauthorized person.
  - d leave two loaded magazine clips in their pouch and remember there is one round loaded in the chamber.
  - e. when relieved, unload the pistol in a safe designated area. Remove the round from the chamber and check the chamber clear. Release the slide and let the hammer go home. Dry fire the pistol then engage the safety.

#### A19. Deadly force can be used—

- a. to protect your life or the life of another person where no other means of defense will be effective
- b when no other means is available to prevent the commission of or to prevent the escape of a person known to have committed robbery, murder, rape, arson, or kidnapping
- c. to prevent acts of sabotage, espionage, or other crimes against the government after failure of all other available means of preventing such crime

#### **REVIEW 2 ANSWERS**

- A1. Bearings are measured in degrees, clockwise around a circle from 000° to 360°.
- A2. The three different types of bearings are
  - a. Relative
  - b. True
  - c. Magnetic
- A3. Bearings are reported in **three digits, spoken digit by digit**; positions are reported in **one or two digits and spoken whole**.
- A4. When using your hand as an aid to determine the position angle of an aircraft, your closed fist is **approximately 8°**.
- A5. If the binocular IPD is adjusted properly, you will see **one circle** when viewing through them.
- A6. The three adjustments that must be made when using binoculars are to adjust each eyepiece and set the IPD.
- A7. The improvement of vision in dim light is known as **dark adaptation**.
- A8. It will take **30 minutes** for you to reach your best night vision.
- A9. The different methods used for a day lookout and a night lookout are the day lookout **moves his/her eyes in 5 steps, pausing at each step**; the night lookout **keeps moving his/her eyes**.