U.S. Department of Homeland Security

United States Coast Guard

Shipboard Lookout Manual

COMDTINST M9450.1A
September 2014

U.S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

US Coast Guard Stop 7324
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COMDTINST M9450.1A
SEP 25, 2014

COMMANDANT INSTRUCTION M9450.1A

Subj: SHIPBOARD LOOKOUT MANUAL

1. PURPOSE. This Manual is to be used as a guide for personnel assigned as a lookout aboard cutters and boats of the U. S. Coast Guard.

2. ACTION. All Coast Guard unit commanders, commanding officers, officers in charge, deputy/assistant commandants, and chiefs of headquarters staff elements shall comply with the provisions of this Manual. Internet release is not authorized.

DISTRIBUTION – SDL No. 165

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3. DIRECTIVE AFFECTED. Shipboard Lookout Manual, COMDTINST M9450.1 is cancelled.

4. DISCUSSION. This Manual has been printed in a small size so that it may be carried in the watchstanders pocket for quick reference.

5. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is intended to provide operational guidance for Coast Guard personnel and is not intended to nor does it impose legally-binding requirements on any party outside the Coast Guard.

6. MAJOR CHANGES. A section has been included to assist the lookout in identifying and reporting marine species.

7. IMPACT ASSESSMENT. The requirements of this Manual apply to enlisted and officer personnel assigned as lookouts or Deck Watch Officers (DWOs) in accordance with the cutters Watch, Quarter and Station Bill (WQSB) or unit Personnel Allowance List (PAL). Onboard training requirements are being reduced by the implementation of associated Watchstation Qualification Standards (WQS) training modules created and funded by Commandant (CG-751). There are no additional unit funding requirements.

8. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. This action will not result in any

significant adverse environmental impacts as described in the National Environmental Policy Act of 1969 (NEPA). The proposed action has been reviewed by the USCG and has determined this action to be categorically excluded from further environmental documentation under current USCG Categorical Exclusion # 33, in accordance with National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, COMDTINST M16475.1 (series).

9. DISTRIBUTION. Paper distribution will be made of this Manual in accordance with the Standard Distribution List, COMDTNOTE 5605. An electronic version will also be located on the CG Portal at: https://cgportal2.uscg.mil/library/directives/SitePages/Home.aspx.

10. PROCEDURE. Designated lookouts and DWOs shall refer to this Manual and complete the current WQS module for shipboard lookouts in accordance with Chapter 5 of the Cutter Training and Qualification Manual, COMDTINST M3502.4 (series) when qualifying for their assigned watchstations.

11. RECORDS MANAGEMENT CONSIDERATIONS. This Manual has been thoroughly reviewed during the directives clearance process, and it has been determined there are no further records scheduling requirements, in accordance with Federal Records Act, 44 U.S.C. 3101 et seq., NARA requirements, and Information and Life Cycle Management Manual, COMDTINST M5212.12 (series). This policy does not make any significant or substantial change to existing records management requirements.

12. FORMS/REPORTS. None.

13. REQUEST FOR CHANGES. Change recommendations should be routed via memo through the chain of command to the Office of Cutter Forces, Commandant (CG-751).

Mark E. Butt /s/
Rear Admiral, U.S. Coast Guard
Assistant Commandant for Capability (CG-7)

RECORD OF CHANGES			
CHANGE NUMBER	DATE OF CHANGE	DATE ENTERED	ENTERED BY WHOM

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Importance

As a lookout, your job is to see and report all ships, aircraft, marine species and other objects within the visual range of your vessel. As a lookout, you are the eyes and ears of the ship, and your alertness and skill ensures the safety of the ship. The unexpected must be seen and reported in the minimum amount of time.

There are still some objects that are difficult or impossible to detect by electronic means. Smoke, some buoys, small life rafts, flares, oil slicks, debris, protected marine life such as whales, turtles, manatees, or persons in the water are a few examples where electronic detection is extremely difficult or impossible. As a lookout you must be particularly watchful for these objects. You must see all objects, report what you see and where you see them.

Your report will be directed to the Officer of the Deck (OOD) and, in some cases, to other control centers as well. Your report will be most useful if you make it quickly and accurately. Never assume that the OOD or others have already seen what you see, "MAKE THE REPORT".

Physical Qualifications of Lookouts

Physical qualifications are extremely important when considering the duties of those personnel assigned as lookouts. The good lookout must have sharp vision, good hearing, clear speech, and an alert mind. Then they need to

learn how to get the maximum benefit from these senses to maintain a vigilant watch, whether the going is easy or rough.

Sharp vision means acquiring and maintaining visual contact of an object in daylight or in periods of low visibility. But most important, the lookout must know how to use their eyes to obtain that sharp vision.

Seeing is a skill, like baseball or swimming, and you must train yourself in that skill. Just as practice will make you a better athlete, practice will make you a better lookout. An important part of this booklet is to tell you how to train that skill and how to use your eyes to better advantage.

When steaming in fog or darkness, sighting something is difficult or impossible, but hearing something can frequently be of value. You can hear foghorns, buoys, and ships that you may not be able to see. Like your eyes, your ears can be trained to pick up sounds your “civilian” ears could never recognize. It is even possible in fog or darkness to tell by sound alone whether an object is close or distant and in what direction.

Clear speech is important for all lookouts and must be trained along with your eyes and ears. Training will improve your speech by making it clearer, louder, and more distinct. You may be reporting over phones under adverse conditions and your reports must always get through in an understandable manner. Clarity is of the utmost importance so learn and use number pronunciation and the phonetic alphabet.

One other thing that will help you as a lookout is to keep in top physical condition. If you're tired, you're apt to doze off, and then you will be asking for trouble, not only for yourself, but also for your ship and shipmates. You owe it to your shipmates to keep physically fit and on your toes every second of your lookout watch.

Be sure you report everything you see or hear that is unusual or is new to the scene. You will never be ridiculed or reprimanded for being mistaken about a shadow, a light or a noise. But you can be in serious trouble (and perhaps

responsible for a loss of life and property) if you fail to report a sighting quickly and correctly.

Equipment for Sighting Contacts

Eyes. Your trained human eye is far superior to the most sophisticated equipment. In lookout work, your eyes are invaluable, but only if you use them right. You have already learned a good deal about proper use of the eyes, in night scanning and day scanning. However you still have much to learn about scanning and the equipment you are required to operate.

Binoculars. Binoculars are the most commonly used optical equipment. They give a wide range of vision and are best suited for searching over a wide area or for following a swift moving target. They require the use of both eyes, and as both eyes do not always have the same vision, it is best to adjust the focus of each lens individually. Proper focus is essential. If the focus is off, things look blurred, eyestrain is greatly increased, and the maximum efficiency will not be obtained. Adjust your binoculars during daylight hours as it is nearly impossible to adjust them accurately at night.

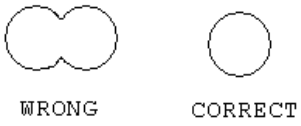
To get the proper focus for each eye, turn both scales to the +4 setting. Hold the binoculars firmly against your eyebrows. To get the focus for the left eye (only one eye can be focused at a time), cup the right hand over the right lens, cutting out all light to that eye. Be sure both eyes are open, since closing one eye will give an incorrect focus.

Train the binoculars on a small, well defined object. Slowly turn the eyepiece from its +4 setting until the object stands out in sharp detail.

The reading on the scale will give you the correct focus for your left eye. Now do the same for the right eye. The chances are that the settings will be different for each eye.

Once you get the binoculars focused, remember the settings, you will need them when adjusting your binoculars for nighttime use. The correct night focus for binoculars is usually a minus 1 setting from your day focus for each eye.

The other adjustment for binoculars is the inter-pupillary distance (IPD) adjustment. Most Coast Guard binoculars have the IPD scale on the hinge between the barrels. Find out what your IPD is by adjusting the distance between the binocular barrels until you see only one circle, then look at the scale to see your setting. If the IPD is incorrect, you will see a double circle. At night, if you have the wrong IPD setting, you will cut out a lot of light that should be going to your eyes.



Proper IPD Setting

Take a look through a pair of binoculars that is not adjusted for your eyes and then look through a pair that is

properly adjusted. Notice the great difference. Keep this in mind when you see binoculars that belong to the captain, navigator, or OOD and NEVER touch them.

The Care of Binoculars. Your binoculars are your most important single piece of equipment. They will do a fine job for you if you use them properly, otherwise they will only hinder you. Here are some suggestions:

- Treat them carefully. They are fragile, and will break or get out of adjustment if banged around.
- Don't leave them in the sun; and don't expose them to sudden changes in temperature. The cement between the lenses will crack if you do.
- Keep them short-strapped around your neck when not in use so they do not dangle and get knocked against ladders and rails.
- Above all, keep your binoculars clean! You wouldn't drive with a dirty windshield. You shouldn't scan with dirty binocular lenses. Both are dangerous! Here is how to get the best results in cleaning lenses:
    - Blow off the loose dust.
    - Breathe on the lenses to moisten them (never breathe on the glass in freezing weather) To remove grease or dried salt spray residue, moisten a cleaning tissue slightly with alcohol.
    - Use lens tissue, or other soft, clean tissue (never use your sleeve or t-shirt, or anything

that has the slightest amount of grit or grease on it). With a circular motion, gently rub the surface of the lens until it is dry and clean.

- When not in use, see that your binoculars are properly stowed.

Night Vision Goggles (NVGs). Just like binoculars night vision goggles also need to be focused and adjusted to match your IPD distance. The correction used for your binoculars in the daytime should also work for the NVGs.

NVGs are very sensitive pieces of equipment and must be handled with extreme care. Here are some suggestions to help keep your NVGs working properly:

- Treat them carefully. They are fragile, and will break or get out of adjustment if banged around.
- Ensure you have adequate battery power. Change the batteries if needed.
- Keep them short-strapped around your neck when not in use so they do not dangle or turn them off and stow them in their carrying case.
- Only clean the lenses in accordance with the manufacturer's instructions. Improper cleaning can damage them.
- Use only from dusk to dawn.

Sun Glasses. Sun glasses cut down daylight glare, protect the eyes and make it easier to see in bright areas. It's particularly important to wear sunglasses when

scanning the sky for objects in bright light. Never try to use binoculars while wearing sunglasses.

Wind Goggles. Wind goggles are a special type of goggle made of clear glass or plastic, and fit snug to protect your eyes from wind, rain, and heavy spray.

Dark Adaptation Goggles. The facts about dark adaptation and the use of dark-adaptation goggles have been covered in the section of night vision; however, here are the highlights. Always wear dark adaptation goggles for thirty minutes before going on watch. Remember these goggles are not 100 percent effective; you need a final 5 minutes without the goggles at your lookout position to put the finishing touches on your night vision. Once you are dark adapted, keep a pair handy, to put on in case you have to go temporarily into a lighted compartment or other bright area.

The Sound-Powered Phone. Next to the binoculars, probably the most important piece of lookout equipment is the sound-powered phone. All lookouts should be qualified telephone talkers.

Foul Weather Gear. Under the best conditions, the lookout's job is tough enough. But in rough weather, your duties become extremely difficult. For this reason it is essential that adequate foul or special weather gear is available and utilized to ensure that you can perform your duties efficiently.

What Every Lookout Must Know

You can see that a good lookout has to be sharp in many areas. Here are some of the things that will be expected of you. As you read on, be thinking about each point. Lookouts must know:

- The types of lookouts and how they work.
- How to search correctly, night and day.
- How to properly make a report.
- The estimation of bearing, position angle, target angle and range.
- The need for a good telephone talker.

Lookout Organization

Lookouts on watch, normally, are under the direct charge of the boatswain's mate of the watch (BMOW). The BMOW assigns them to their stations and sees that they are properly clothed, instructed and equipped.

The number of lookouts, their stations and the sectors they are to search vary with the type of ship, its mission and the weather conditions. The lookout alone is responsible for seeing and reporting everything that appears in their area. Lookout duties are rotated at frequent intervals to ensure maximum effectiveness. Each lookout is stationed at the location where they can best

cover the surface and sky within their zone. During normal steaming they are usually stationed on the flying bridge or bridge wings and equipped with binoculars.

On larger ships, lookouts may be classified as horizon, surface and sky. However, a combination of these may be assigned to any one lookout. Under certain circumstances, SPECIAL lookouts (fog, special sea detail) are added to, or may replace, those already on watch.

The horizon lookout is so named because their first duty is to detect objects near or beyond the horizon before they are visible from lower positions on the ship. On all ships it is essential that the horizon lookout have the highest position possible because the higher they are the further they can see.

Surface lookouts are so named because they keep their attention on the surface of the sea within their assigned sectors. They report everything within view, from the ship to the horizon. They must be able to detect and recognize a great variety of objects such as ships, land, rocks, shoals, periscopes, discolored water, buoys, beacons, lighthouses, floating objects, small life rafts, marine life such as whales, turtles, manatees, or sea lions or anything else of interest to the Officer of the Deck.

Sky lookouts bring another dimension into the picture—the angle an object in the sky makes with the flat plane of the ship, as well as its relative bearing to the fore and aft line of the keel. Sky lookouts scan their sectors rapidly. They cover a large area in a short time, because planes they

spot will often be at closer range than those detected by the horizon or surface lookouts. They use binoculars only to identify planes that have been spotted with the naked eye.

Fog or restricted visibility conditions are the mariner's particular curse. Things become pretty tense at the Conn when the cold, gray blanket closes in. When a ship is running through fog, it is in an extremely blind condition and danger from collision is greatest. Special lookouts are immediately stationed on the bow, on the bridge wings, and on the fantail. The lookouts forward keep a sharp watch off either side of the bow, and the lookouts on the bridge wings watch from ahead to abeam. Those on the fantail scan for anything that might overhaul the ship from astern. Each must continue peering in their assigned sector. Sometimes a swirl of wind thins the mist for a second; long enough to look around and possibly spot a previously undetected hazard, preventing disaster in the nick of time.

Sound carries much farther in fog than on clear days, so one must listen closely for the sound of whistles, bells, buoys, etc., especially if they are on the bow. Even the wash of water against the ship's stem carries a long distance in a fog. A fog lookout must keep turning in every direction, maintain absolute silence, and quiet anyone near them who makes any unnecessary noise.

They don't wait to figure out where a sound is coming from before they report it. Fog plays tricks. Noise may

appear to be coming from a direction other than the bearing of the actual source.

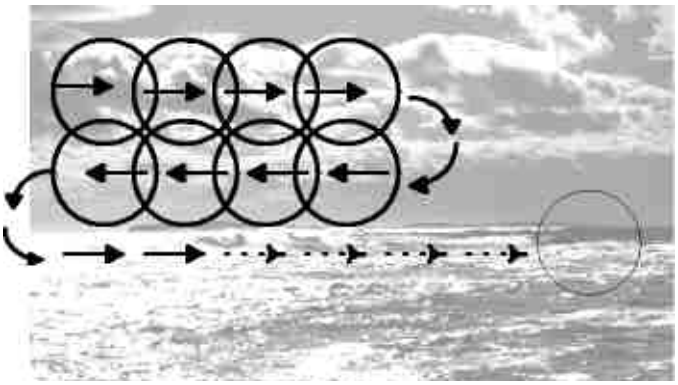
Lookouts are the eyes of the ship. Not only does the safety of the ship and its crew depend on them, but other vessels and personnel in distress may benefit from their alertness. For example, a life raft that has just sent up its last distress flare may be solely dependent on such a lookout for its detection.

Procedures for Sighting Contacts

"Sighting contacts" sounds easy, but searching requires special skills to be effective throughout a watch. A well-trained lookout is able to spot and identify objects more quickly and at a greater distance than a "green" lookout. Lookouts, in good weather, can easily pick up planes with the naked eye at fifteen miles. With binoculars, lookouts have detected planes at fifty miles. At night, skilled lookouts will detect objects the inexperienced wouldn't even dream were there.

The lookout's method of eye search is called scanning. Scanning is a step-by-step method of looking, and it's the only efficient and sure way of doing the job. In the day-time the eyes have to rest on an object to really see it. Try sweeping your eyes around the room or across the water—as long as your eyes are in motion you will see almost nothing. Now let your eyes move in short steps—like reading a line of type—jumping from object to object.

Now you can really see what is there. Scanning doesn't come naturally. You must concentrate on the job and learn to scan through practice.



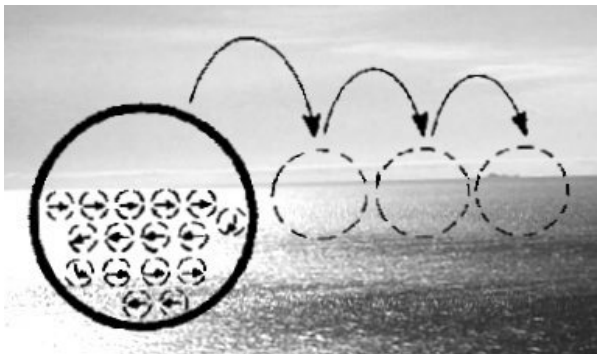
Scanning, using the step-by-step method.

The Surface Lookout

The Surface Lookout scans as follows:

- Start scanning in that part of your sector nearest the bow. In case you have a stern sector, scan from left to right. Hold the binoculars steady so that the horizon is in the top third of the binocular field. Direct your eyes just below the horizon. Now for 5 seconds take as many steps as you can across the binocular field, without moving the binoculars.

- Shift the binoculars 5 degrees and scan again within the field for 5 seconds. Repeat the process until you reach the end of your sector.
- Upon reaching the end of your sector make a return sweep with the naked eyes and start over again.
- Whenever you sight an object, keep your binoculars on the target. Take your eyes from it only long enough to determine the relative bearing. Get back on the target and stay there until your report has been properly acknowledged.



SURFACE LOOKOUT
Horizon to ship

As a surface lookout you may be directed to search closer to the ship with the naked eye after one search with the binoculars. When directed to do so, follow these rules:

- Direct your eyes just below the horizon. Move them across your sector in as small steps as possible.
- Cover your sector in about 10 seconds, if your sector is 100 degrees or less, or about 10 degrees per second.
- When you reach the end of your sector, rest your eyes by blinking for a few seconds. Then go back to the beginning and repeat.
- Whenever you pick up a contact, report it, then use your binoculars, if necessary, to identify it.

….use your binoculars, if necessary,
to identify it….

Horizon Lookouts

If they are posted, follow the same pattern of binocular search used by surface lookouts except that they search the horizon by keeping it in the center of the binocular field.

Fog Lookouts

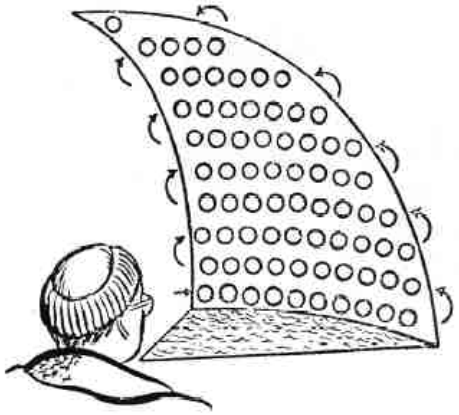
Fog lookouts scan with the naked eye. They rely greatly on their ears and are posted where they can hear as well as see, usually at the bow, bridge and stern of the ship. Fog lookouts do not wear phones.

…..are posted where they can hear as well as see,
usually at the bow ….

Sky Lookouts

As a sky lookout, always search with the naked eye. In order to pick up planes under all conditions, search as follows:

- Move your eyes in quick steps across your sector just above the horizon.
- Shift your eyes upward about 10 degrees and move them in quick steps across your sector.
- Continue in this way up to the zenith.
- Whenever you pick up a contact, report it, and then use binoculars to identify it, if necessary.



SKY LOOKOUT

Night Vision

If you were to go on night watch directly from a lighted compartment, you would seem to be almost blind for a few minutes. This is the same experience as walking from a lighted theater lobby into the darkened theater. Gradually your vision improves as your eyes become accustomed to the weak light. After 10 minutes you may think you see fairly well. But, it takes nearly 30 minutes for you to reach your best night vision. This improvement of vision in dim light is called DARK-ADAPTATION.

To prepare your eyes for darkness, spend at least 30 minutes in darkness or use specially designed red goggles, also known as dark adaptation goggles. You should wear the goggles for at least 30 minutes without interruption followed by at least 5 minutes on deck without the goggles before relieving the watch. The last 5 minutes allow your eyes to adjust to the level of light you have to work with and provides you with your best night vision.

After your eyes are dark-adapted, you must learn to use your "night eyes." In the daytime, you look directly at an object to see it best. In the dark, you have to look AWAY FROM or to one side of an object to see it. You use off-center vision. The reason for the differences between day and night vision is due to the construction of the eye.

The retina (on which images are projected) contains about a million nerve cells called cones and rods. The cones, located in the center of the retina, are very keen and can detect sharp details and colors. Since the cones give us the sharpest images, we use them for daytime vision. And, since they are located at the center of the retina opposite the lens, we must look directly at an object to see it best. At night, this spot is blind.

However, nature has provided us with rods, which though less acute than cones, contains a special pigment called visual purple, which is very sensitive to light.

Bright light causes the visual purple to turn yellow and the rods to lose their sensitivity. In the dark, the visual purple starts to form again, and the eye becomes "dark-adapted." The rods are located around the outside of the retina; therefore, we must use off-center vision at night. That is, we must look above, below, or to the one side of an object to see it. Also at night it is easier to locate a moving object than one standing still. However, since most objects on or in the water have a relatively slow speed, we must move our eyes instead, and the effect is nearly as good. Thus, while scanning at night, a lookout moves their eyes in slow sweeps across their area, rather than stopping their eyes to search a section at a time.

At some point during a nighttime watch the lookout may need to use a flashlight. To minimize loss of night vision, the lookout should be reminded to use a flashlight covered with a red lens. Now that you know the facts about night

vision, your next step is to learn how to use your eyes best in night searching.

Night Scanning With the Naked Eye

Scanning at night with the naked eye can be described in three simple rules:

- Move your eyes on a level about 10 degrees above the horizon, or above what you want to see.
- Scan swiftly across your sector, in about 10 seconds, taking steps of about 10 degrees.
- At the end of your sector, blink your eyes, but don't rub them.

Night Scanning With Binoculars

Using binoculars at night increases your range of vision about four times over that without binoculars, but only if you know how to use them. The rules are simple, but the procedure they outline must become habit.

- Shift your line of sight in a circular path around the inside of the binocular field. This keeps the eyes moving and forces you to use your off center vision.
- When you think you see an object, look all around it—not at it. The chances are it will appear in dim outline. That's night vision for you. Objects never appear in clear detail.

- Your rate of scanning should be about 5 seconds per binocular field. Every 5 seconds shift your binoculars 5 degrees, and repeat the process.
- When you reach the end of your sector, take your binoculars down. Blink your eyes to rest them, but don't rub them.

Night Scanning With Night Vision Goggles (NVGs)

Night vision goggles can aid a lookout on dark moonless nights by increasing what little light energy there is on average several thousand times. NVGs do not require much light to produce an image. Light as faint as starlight or low-level moonlight will suffice. Too much light could result in a "washout" or halo effect.

NVGs create a visible image, normally green in color, which is displayed on a screen viewed through the eyepieces. This single color display will reduce your depth perception and make judging distances very difficult and prolonged use of NVGs may reduce your night vision.

When using NVGs use the same scanning technique as you would for the daytime.

Scanning for Marine Species

As a Lookout you should be observant of all surroundings including marine species such including marine mammals and turtles. It is important to observe the

area for marine species in order to avoid the taking of them. A “take” is defined by the Marine Mammal Protection Act as meaning “to harass, hunt, capture or kill any marine mammal.” Additionally, the Endangered Species Act defines “take” as, “…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” While most whales and some other marine species are highly maneuverable and generally detectable (in daylight) at long ranges by lookouts, collisions do occur. In order to minimize disturbance to whales and aid in reporting whale sightings or whale strikes, the Coast Guard has created a Whale Wheel to help aid in the sighting and identification of whales. All cutters received an initial distribution in FY13. For additional or replacement Whale Wheels, cutters should work with their Education Service Officer (ESO) to order them via the Coast Guard Institute Training and Academia Customer Care Tracking System (TACCTS). The ESO must request these items via the video order section using course code #0819.

The Whale Wheel includes ten different species of whales and their typical behaviors. Underneath each whale species is a picture of its fin, what its typical blow looks like and its flukes. Below this is a picture of the whale and general information about its behaviors and locations. Also located on the Whale Wheel are tips for insuring protective measures for both the whale and the ship. In case of an incident where there is physical contact between a Coast Guard vessel and a whale, the whale wheel contains

information on how to report such incidents. All instances of physical contact or suspected physical contact between Coast Guard vessels and whales or other protected marine species must be reported. While avoiding take of whales is a big concern for the Coast Guard, you will also need to be on the lookout for sea turtles, dolphins/porpoises, manatees, sea lions, walrus, seals, sea otters, and, yes, even polar bears.

Having a good marine life field guide, a whale wheel, a camera, and a pen and paper in hand to take notes and make sketches will be very useful to you as you try to identify the different marine animals at sea. You should be aware of where the whale wheel is located on the vessel if you do not have it on your person.

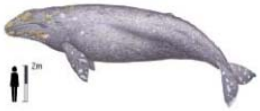
For further information regarding protected marine species, see Protected Living Marine Resources Program, COMDTINST 16475.7 (series) and/or Vessel Environmental Manual, COMDTINST M16455.1 (series), Chapter 11. The information on the next few pages comes from the Whale Wheel:

Whales

Right Whale

- **Behavior**: Slow Swimmers; may be seen breaching, flipper slapping and lobtailing.
- Approachable, playful and inquisitive.
- Seen in small groups.
- **Note**: Be on special alert entering / leaving Atlantic ports. Additional protective measures apply to the Atlantic Coast during calving season (15 Nov - 15 Apr).

Gray Whale



- **Behavior**: Spyhopping, lobtailing and breaching commonly observed.
- Often found in very shallow water.
- Seen in small groups.
- **Note**: Very approachable. Be on special alert during migration periods- southbound Oct-Feb; northbound Feb-July.

Humpback Whale

- **Behavior**: May breach, lobtail and flipper slap several times in a row. Often spyhops.
- Slow swimmers.
- Often spyhops.
- Seen in small groups.
- **Note**: Shows little fear of boats and may be inquisitive.

Fin Whale

- **Behavior**: Can be fast swimmers.
- Dives typically last 5-15 minutes.
- Spyhops and breaches.
- Seen in small groups.
- **Note**: May approach ships.

Sei Whale

- **Behavior**: Can be fast swimmers.
- Dives typically last 5-15 minutes.
- Spyhops and breaches.
- Seen in small groups.
- **Note**: May approach ships.

Minke Whale

- **Behavior**: Can be fast swimmers.
- Dives typically last 5-15 minutes.
- Spyhops and breaches.
- Seen in small groups.
- **Note**: May approach ships.

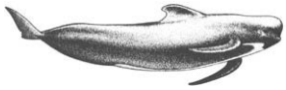
Blue Whale

- **Behavior**: Can be fast swimmers.
- Dives typically last 5-15 minutes.
- Spyhops and breaches.
- Seen in small groups.
- **Note**: May approach ships.

Sperm Whale

- **Behavior**: Dives for long periods.
- Often resting/logging at surface.
- Frequently breaches and lobtails.
- Group sizes vary 1 – 50+.
- **Note**: Often resting/logging at the surface.

Pilot Whale



- **Behavior**: Gregarious by nature. Relatively easy to approach.
- Group sizes vary from 50 – 1,000+.
- **Note**: Some species have been known to approach ships.

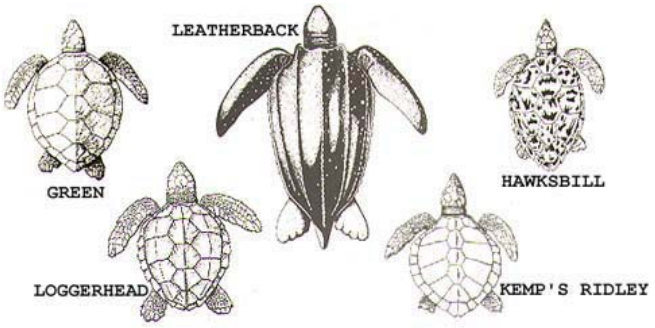
Beaked Whale

- **Behavior**: Very deep divers; some staying submerged for 45 min or longer and are difficult to sight.
- Some species are known to avoid vessels.
- **Note**: There are approximately 21 species that spend relatively little time at the surface and occur almost exclusively in deep waters beyond the continental shelf.

Killer Whale

- **Behavior**: Acrobatic and active at the surface. Often breach, spyhop and slap the surface with their flukes or flippers.
- Group sizes vary from 3-25.
- Seen worldwide often in cooler waters within 500 miles of shoreline. Generally, no significant migration patterns.
- **Note**: Inquisitive and approachable. Endangered in the Pacific Northwest (Puget Sound).

Turtles



All sea turtles are listed as threatened or endangered under the Endangered Species Act (ESA). Sea turtles are NOT restricted to tropical or warm temperate waters and can be found as far north as Newfoundland on the east coast and Alaska on the west coast. They will migrate long distances from their feeding grounds to nesting beaches. Juvenile sea turtles of most species migrate to bays, estuaries, and shallow coastal waters but can be found in deep offshore waters. Adults are often found on rocky ledges and reefs in shallow coastal waters, but they are also found in deeper offshore waters.

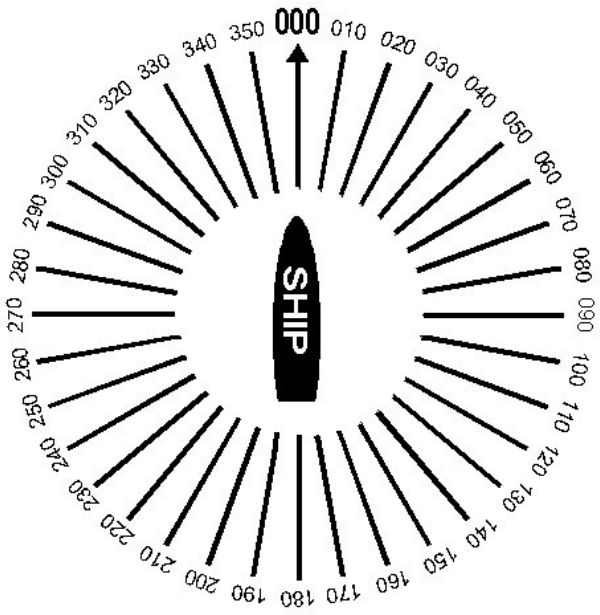
Lookout Reports

Just seeing is not enough. You must promptly report the object and its location.

Relative Bearing. Report the direction of objects you see in relative bearings only. This means that the bearings are RELATIVE to the fore and aft line of the ship's keel.

These bearings run clockwise from zero degrees (000) or dead ahead, through one-eight-zero degrees (180) or dead astern, to three-six-zero degrees (360) or dead ahead again.

Study the relative bearing diagram, below, until you have a picture in your mind of the complete circle of relative bearings around your ship in tens of degrees. As a lookout, you won't normally be expected to estimate much closer than that.



Relative Bearings

To prevent confusion, a definite way of reporting the relative bearing of an object has been established. Moreover, to make sure one number is not mistaken for another, the following pronunciation is required:

Numeral	Spoken as	Numeral	Spoken as
0	ZERO	5	FI-YIV
1	WUN	6	SIX
2	TOO	7	SEVEN
3	THUH-REE	8	ATE
4	FO-WER	9	NINER

Bearings are always reported in three digits and spoken digit by digit. Referring to the following diagram, here is how you would report bearings around the ship:

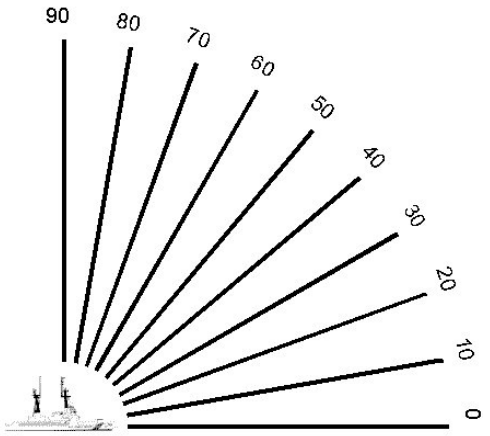
Bearing	Spoken as
000°	ZERO ZERO ZERO
045°	ZERO FO-WER FI-YIV
090°	ZERO NINER ZERO
135°	WUN THUH-REE FI-YIV
180°	WUN ATE ZERO
225°	TOO TOO FI-YIV
315°	THUH-REE WUN FI-YIV

How would you report a ship sighted a little to port of dead ahead? If you got excited and said “I see a ship out there!” and pointed to it, your report would not help if you were speaking over the phone, or standing where the

Officer of the Deck could not see you. But if you say "Ship bearing THUH-REE FI-YIV ZERO," everyone would know exactly where to look.

Position Angle. We have just explained that you locate an object by means of its relative bearing from the ship. What about objects in the sky: lights, smoke and aircraft?

Sky objects are located by their relative 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 zero (0) degrees and directly overhead is ninety (90) degrees. The position angle can never be more than 90 degrees.



Position Angles

Unlike relative bearings, which use three digits, position angles are given in only one or two digits. The words "position angle" are always spoken before the numerals.

Position Angle	Spoken as
0	Position angle ZERO
5	Position angle FI-YIV
10	Position angle TEN
15	Position angle FIF-TEEN
27	Position angle TWEN-TY-SEVEN
85	Position angle EIGHTY-FIVE
90	Position angle NINETY

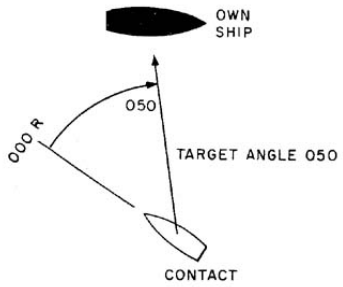
When you sight an object in the sky, report not only its relative bearing but also its position angle, and its direction of flight; thus "Aircraft bearing ZERO SIX ZERO, position angle FIF-TEEN, heading aft," would be a correct report. If you can identify the type of aircraft you must include that fact in your report. Time is absolutely of the essence with aircraft because of the speed at which they travel.

With all lookout reports, be certain that you repeat your report until it has been heard and acknowledged.

Target Angle. When the object sighted is a ship, the target angle is included in your report. The purpose of reporting target angle is to tell the OOD the approximate course of the sighted ship.

Target angle is the relative bearing of your ship, as seen from the target ship. It may help you in reporting target angles to imagine yourself as a lookout on the target ship. From your imagined position on the target ship, figure the relative bearing of your own ship. That's about all there is to it.

Target Angle



Target angles are reported in degrees, just the same as relative bearings. They are estimated to the nearest 10 degrees. The report of target angle follows the report of relative bearing, like this: "Tanker, bearing ZERO ATE ZERO (080) target angle ZERO FY-YIV ZERO (050)."

Range. Most of the time, if you give reasonably good bearings and position angles, the OOD can quickly find the ship or plane you are reporting. But suppose it is a submarine periscope, a man overboard, discolored water, or an unidentified object in the water?

In such cases valuable time would be lost if the OOD started to sight along the horizon or close aboard when the object was elsewhere. A range report given in yards would be invaluable, but estimating ranges over water is difficult for the uninitiated, for distances are deceptive.

Until you have been instructed in one of the several methods of estimating ranges, you can render the best services by using phrases as: "Close aboard;" "on the horizon;" "hull down;" "appears to be one-half (two-thirds, three-fourths, etc.) of the distance to the horizon." You need not report the range to objects in the sky, since the combination of bearing and position angle locates it.

Ranges can be reported in yards or nautical miles. Pass ranges in yards for objects close aboard, and nautical miles for distant objects.

Here are some examples of reports giving information that includes ranges:

"DISCOLORED WATER (bearing) THUH-REE FOWER ZERO, (range) SEVEN HUNDRED YARDS."

(Discolored water on a bearing of 340 degrees relative at a distance of seven hundred yards.)

"VESSEL (bearing) WUN NINER FI-YIV, (range) SIX MILES, TARGET ANGLE TOO TOO ZERO."

(Vessel on a bearing of 195 degrees relative at a distance of six nautical miles, with a target angle of 220 degrees.)

Note that the words “bearing” and “range” may be left out, but the phrase “target angle” is spoken. The phrase “position angle” must be spoken as well.

The sequence of your report is important in order to prevent confusion. The sequences OBJECT-BEARING-RANGE, OBJECT-BEARING-RANGE and TARGET ANGLE, or OBJECT-BEARING and POSITION ANGLE are used for making reports. In other words “what” (vessel, smoke, flare, etc.), “which way” (relative bearing), “how far or high (range or position angle)”, then anything else that describes what you are seeing (target angle, lights, people waving, etc.)

Basic Rules for Lookouts

- Keep alert and attentive.
- Do not give your attention to anything but your own special duty.
- Remain at your station until you are regularly relieved or until properly ordered to leave your station.
- Do not talk with others except for making reports.
- When making a report speak loudly and distinctly.
- Repeat a report until it is properly acknowledged.
- When you are on a station, make sure you understand what you are supposed to do.
- Remember, no matter what your station may be, your duties are important and necessary.

A Good Lookout Story

Late one afternoon, a Coast Guard Cutter was underway en route to Miami, Florida. It was a day of intermittent rain squalls and visibility ranged from excellent to poor. On the flying bridge of the cutter, the lookout was having a difficult time scanning his area because of a large rain squall obliterating part of the horizon. Then he noticed a white spot at the edge of the rain squall. It wasn't like the white tops of waves. Quickly, he reported the object to the bridge. A few minutes later, he could make out that it was a small boat. Again, he made a report to the bridge. He continued to study the small boat. Finally, he was able to see two men in the boat. They were waving a small flag of some kind. Were they trying to attract attention?

The lookout made his third report to the bridge. The cutter changed course to investigate the sighting and found that the boat, because of engine failure, had been drifting helplessly for two days.

This is just one actual account of how, simply because of a good lookout, the Coast Guard saved two lives.

You are the eyes and ears of the ship!

….Report at once every object you see, or
believe you see…


750
U. S. COAST GUARD