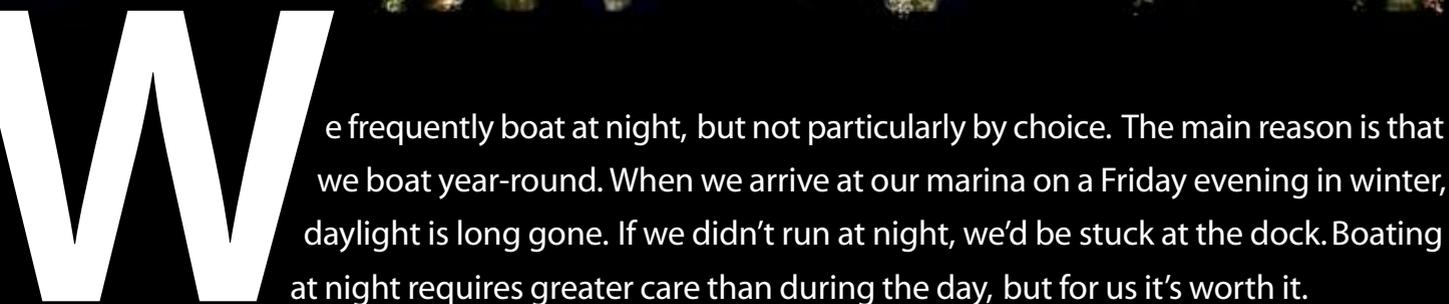




Navigating At Night

Veteran night cruisers
show how to safely find
your way in the dark

BY JENNIFER AND JAMES HAMILTON



We frequently boat at night, but not particularly by choice. The main reason is that we boat year-round. When we arrive at our marina on a Friday evening in winter, daylight is long gone. If we didn't run at night, we'd be stuck at the dock. Boating at night requires greater care than during the day, but for us it's worth it.

Much of what we do is the same night and day, limited visibility or clear. Having systems in place that we always use means we can concentrate on the exceptional aspects of exceptional circumstances.

Night is not the time to be learning how to operate radar or other equipment—there's already enough to manage. We generally avoid running to or mooring in new places at night. Most of our night runs are through waters and to places that we're familiar with. The fact that we do anchor frequently at night means that if we must anchor in an unfamiliar locale after dusk, we have those systems to guide us. The exceptional part becomes the new moorage.

PREPARING TO GET UNDERWAY Have the mechanicals in good shape before you set off—you don't want to deal with equipment failures in the dark. If you haven't run the boat in a while, running at night may not be a good idea. Consider rescheduling.

Before leaving the marina, have all systems up and running, including depth sounder, chart plotter, radar, VHF radio and running lights. Ensure that all running lights are shining. Once underway, it's important to concentrate on navigation, not equipment. Except for the navigation lights, we follow the same procedure and use the same equipment in daylight.

The person handling and stowing lines and fenders always wears a lifejacket with a signal mirror, whistle and emergency strobe light attached. Again, this is our standard procedure, but it's particularly important at night.

UNDERWAY Our power boat has an upper and lower helm with all electronics available at both, including radar, chart plotter, depth sounder and VHF radio. We always navigate from the upper helm when underway at night or in poor visibility. Height is a real advantage when looking for hazards, and we can hear better outside. Plus, the tinted glass in our lower helm diminishes visibility at night. If we had an upper helm enclosure, we'd roll up the plastic for maximum visibility. If conditions are too rough or stormy for us to be outside, we stay put. Should conditions deteriorate while we're underway, however, we stay outside.

To protect our night vision, we keep the upper helm dimly lit. We set our chart plotter and radar to night mode to reduce their brightness. Because we run up top at night, our lower helm is not equipped with red nightlights. We use a red-bulbed flashlight to read paper charts. These flashlights are sold with astronomy supplies; stargazers use them to read star charts at night.

When underway after dark, we're both at the helm most of the time. That second set of eyes improves our chances of spotting other vessels, or hazards such as logs and buoys. If we're not both at the helm, we monitor each other's whereabouts. Falling overboard is always a risk, but the danger is greater at night because locating a person in the water is so much harder.

Navigating at night, even to very familiar places, can be disorienting. We find that objects are closer than they appear to be—just like those notices on car side-view mirrors state. We depend predominately, but not entirely, on a

chart plotter for navigation. We look for and time the light characteristics of each nearby light, ensuring that they match the charts to verify our position. We find the passage less stressful when we feel confident in our position with respect to physical marks, and not just GPS.

Before embarking on your first night cruise, record the characteristics of each light that you will encounter, then you can match them up as you proceed.

SPOTLIGHTS might help you see at night, but they must be mounted high enough to be useful. And you must take care not to blind other boaters or obscure your own navigation lights, which will impede safe navigation.

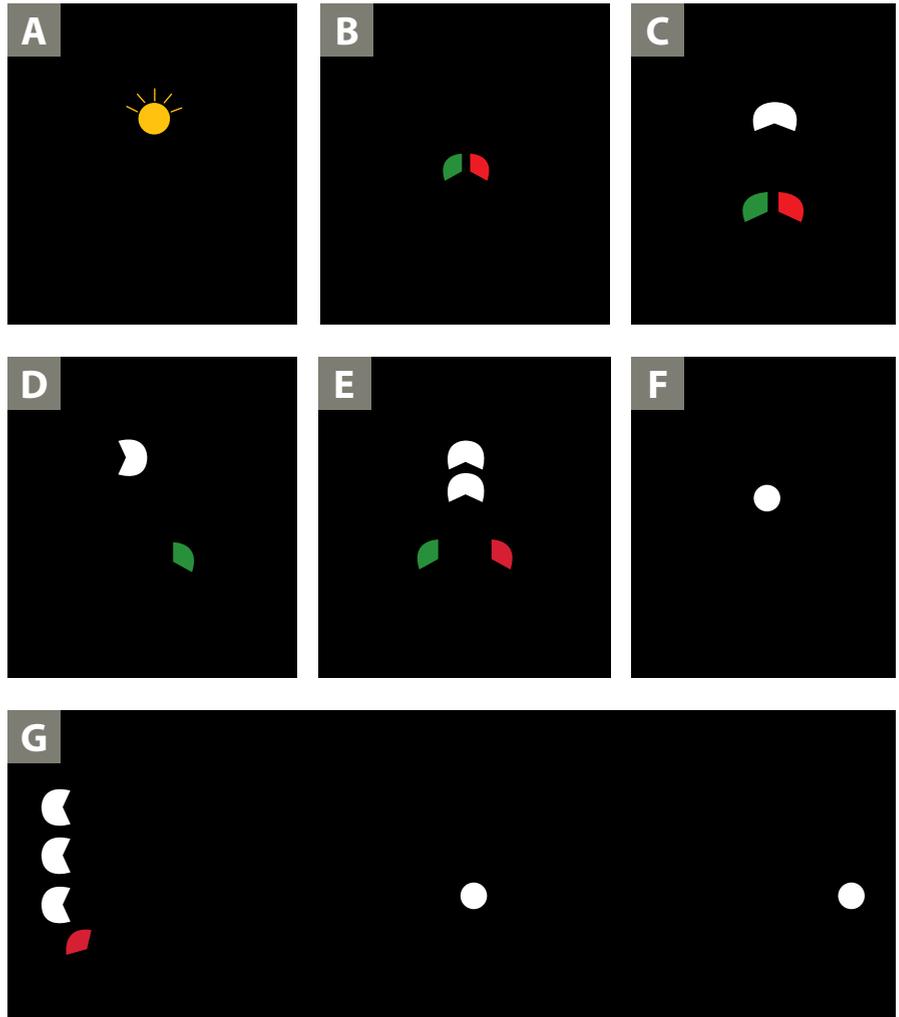
Our boat has a spotlight at the bow. However, the beam illuminates only a few feet ahead of the vessel—we don't find it helpful and never use it. Instead, we carry a high-powered spotlight with a long extension cord that plugs into the upper helm. This gives us full range of motion in directing the beam. When navigating at night, this is an important piece of safety equipment. For example, if someone goes overboard, you'll want to illuminate the area immediately.

We've tried shining the handheld spotlight from the upper helm to see hazards in the water while underway. This helps in some situations, but mostly hinders due to blinding backscatter. We rarely use it underway.

MARINE COMMUNICATIONS AND TRAFFIC SERVICE (MCTS) The closest anchorages from our marina are across commercial shipping traffic lanes. These lanes, monitored by the Coast Guard's

HOW WELL DO YOU UNDERSTAND LIGHTS ON OTHER VESSELS?

- A:** An all-round flashing yellow light, flashing 120 or more times per minute
- B:** Red and green sidelights, both showing at once
- C:** Red and green sidelights, with a masthead light above
- D:** Masthead light and starboard sidelight
- E:** Red and green sidelights, with two stacked masthead lights
- F:** A solid, all round white light
- G:** Three masthead lights and two lights (often dim) astern



MCTS carry large ships, and navigating around them adds stress to nighttime navigation. Having commercial traffic lanes nearby, however, can be helpful because all boats larger than 20 metres (66 feet) must participate and check in frequently. As a result, we can know what's out there and roughly where they'll be.

We turn the VHF radio on before leaving our moorage to be aware of nearby traffic as soon as possible. Day or night, at a minimum we scan channels 16, 22a and 13, plus the appropriate VTS channel for our area [Note: As of this past spring, the working channel for the Coast Guard, Pacific Region has switched from channel 22a to channel 83a; see last month's CURRENTS for details.]. By the time we leave the marina, we often know if any ships are moving nearby. We've not done it, but any size vessel can report to the MCTS centre and request information about traffic in the area.

TRAFFIC We rely on radar, sight and the MCTS channel to track commercial and other vessel traffic in our vicinity. We monitor radar and frequently sight all around us for other vessels or navigation lights.

Radar is invaluable at night for monitoring other vessels. Near cities, navigation lights can disappear into background light. Small boats often run quickly, sometimes without navigation lights. Relying on sight alone means we might not spot these vessels. Without radar,

big ships in particular seem to close in more quickly at night because our visible range is shorter. Vessels longer than 50 metres must display a masthead light that is visible for six miles, and side and stern lights that are visible for three miles. In other words, if a ship is approaching at 20 knots, the time between our discerning its sidelights and a collision could be as little as nine minutes. If we're moving toward that ship, the time will be even less. Radar gives us valuable advanced warning.

We know people who will only use their radar from inside the lower helm due to cancer concerns. But according to the World Health Organization, these concerns are largely unfounded—in most situations, exposure levels are a small percentage of current public safety standards.

Though familiar with most navigation light configurations, we do sometimes encounter patterns we're unsure about, so we give other vessels plenty of space and look up the unknown configuration. We like *Quick Reference Navigation Rules* (Davis Instruments, 1991) and—for a more detailed discussion—*Chapman Piloting: Seamanship & Boat Handling* (64th edition, Hearst Books, 2003), an excellent all-around reference that we think every boater should carry.

Tugs are a particular hazard at night because their tows are dimly lit and can be difficult to spot. And the tow might be a quarter-mile behind the tug. When we see a tug displaying towing lights, we make sure we can see his tow. The tows are usually visible on radar, but we prefer to sight them also.

ANSWERS
A: A hovercraft **B:** Most likely a vessel under sail approaching head on. Could also be a vessel propelled by oars. **C:** A power-driven vessel approaching head on. **D:** A power-driven vessel traveling left to right, showing its starboard side. **E:** A power-driven vessel of 50 metres or more approaching head on. A potential collision situation. **F:** A vessel at anchor less than 50 metres in length. Could also be a vessel propelled by oars. **G:** In our waters, this would most likely represent a tug towing a log boom of 200 metres or more. The lights affixed to the forward and aft end of the booms are often hard to spot because they are so dim.



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We cannot overstate the importance of matching tug and tow, particularly in heavy traffic or with background light. After the annual fireworks in Vancouver's English Bay several years ago, a departing pleasure craft carrying a large family group passed between a tug and its tow. The vessel caught on the towline and flipped. Several on board drowned.

Fishing vessels with gear in the water are another potential—albeit less common—hazard. If you're not confident that you can recognize the various navigation lights, carry an easily accessible reference.

BE SEEN Besides knowing where other vessels are, we also want them to be aware of us. We've permanently mounted a radar reflector to be a good radar target. Some people put the reflector up only when needed. We've never understood the rationale for that; a radar reflector is a valuable safety system that works all the time and requires no power. It's important to keep in mind, however, that not all vessels carry radar. Ensure that your navigation lights are bright and functional, and carry spare bulbs. Our navigation lights were undersized for our vessel so we swapped for a size up and are much happier with the increased brightness.

COLLISION AVOIDANCE The risk of a collision increases at night. We give all other traffic an extra-wide berth and ensure that we are confident of their intended course.

If you have concerns regarding a possible collision with another vessel, you can communicate your intentions via radio. However, this carries its own danger. You must ensure that the identity and location are clear for both vessels. Many accidents have occurred in limited visibility due to mistaken identity—the two vessels that communicated via radio and agreed on how to avoid each other were not the same two vessels about to collide. Note that active MCTS participants are not required to monitor VHF Ch 16.

As a last resort, the prescribed warning signal is at least five short and rapid horn blasts. You may supplement these with at least five short and rapid light flashes. Light signals can be more obvious at night than sound signals—another



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reason to have a high-powered spotlight handy at the helm when navigating at night.

ANCHORING We enter a harbour at night dead slow with both of us at the upper helm looking for hazards. Mooring buoys and crab traps can be difficult to see until the boat is almost on top of them. Entire vessels can be invisible from 100 feet away in a dark harbour. Radar is useful here, too. We set the radar to very short-range maximum detail with the gain properly adjusted. Depending on the radar, this will find most buoys and should find all boats.

In selecting an anchorage location, we use radar to judge our distance from shore and other objects such as boats or docks. We do the same thing in daylight too, but this is particularly important at night. Distances at night seem farther. After anchoring in the dark, we've often risen in the morning and been surprised by how much closer a given object actually was than had seemed by sight.

Before dropping the anchor, we make a quick 360-degree sweep around the boat with a bright spotlight to ensure that we haven't missed any hazards. That hand-held spotlight with a long extension cord is useful here.

For handling ground tackle, we use a big, square, hardware-store flashlight. For close-up viewing, we find a flashlight works best. A spotlight produces too much blinding backscatter. Our flashlight is rimmed with a thick rubber strip that holds the light securely on deck for initial hands-free use. Once the anchor is released and ready to deploy, the person handling the tackle directs the beam on the chain to read the rode markers as it goes out. Instead of a flashlight, a head-mounted lamp would also probably work well for handling the tackle. The main downside is the potential for ruining the night vision of the person at the helm should the wearer face them.

We typically don't venture far at night, but by travelling after dark we can spend Friday night on the hook and wake up Saturday morning swinging gently at anchor. With winter's later daybreak, we often watch the sun rise while eating breakfast. Nothing could be finer. ☺

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