
THE BASICS OF COASTAL CRUISING

A reference guide to major topics of interest to coastal cruisers



Prepared by Atlanta's Boating Club

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THE BASICS OF COASTAL CRUISING

INTRODUCTION

Coastal cruising is a boating experience quite different from lake boating. Lake boaters who are highly qualified often find themselves unprepared for the challenges the coastal waters can provide. Most find those challenges to be a positive thing and use their experiences to enhance their boating skills.

The intent of this paper is to provide insights into the basic knowledge and skills needed on the coast that typically aren't required in inland lakes and waterways. It is arranged topically so that boaters can reference those sections they need.

WHAT IS COASTAL CRUISING?

Coastal cruising is boating in the Intracoastal Waterway (ICW) or near-coastal offshore waters. It generally involves a multi-day excursion with overnights in designated anchorages or marinas.

The focus of this paper will be on the southeastern ICW as that is where the challenges of tides and tidal currents is greatest. However, the material discussed here is equally applicable to southern and western Florida, and the Gulf of Mexico.



TIDES AND TIDAL CURRENTS



The biggest difference in coastal cruising and inland boating are tides and tidal currents.

The coasts of the Carolinas, Georgia and northern Florida experience diurnal tides with a range of four to eight feet.

Diurnal: two times per day. There are two high tides and two low tides each day.

Tidal range: the difference in water depth at successive high and low tides. For example, if at a given location water depth is 20 feet at low tide, and 25 feet at the following high tide, the tidal range is five feet.

Because tidal flow is primarily determined by the moon's gravitational influence, the flow tends to be greatest when the lunar phase is full or new. A location that has a 4.5 foot tidal range when the moon is half-illuminated

might see a 5.5-6 foot range at the following new or full moon.

Tidal charts indicating the time and the height of tides are readily available on-line.

Two useful sites: <http://co-ops.nos.noaa.gov> and <http://tbone.biol.sc.edu/tide>

The tidal height shown on these charts is relative to charted depths in the vicinity of the location the chart depicts. For example, the tide chart might show the following:

Edisto Beach, Edisto Island, South Carolina						
May-10						
		High	Low	High	Low	High
Date	Day	Time/Height	Time/Height	Time/Height	Time/Height	Time/Height
9-May	Sun	04:54 / 5.20 ft	11:02 / 0.65 ft	17:17 / 5.81 ft	23:37 / 1.05 ft	
10-May	Mon	05:43 / 5.26 ft	11:47 / 0.42 ft	18:04 / 6.10 ft		

At the time of high tide at 5:43 on May 10 depths in the vicinity of Edisto Beach will be 5.26 feet more than the depth shown on the nautical charts.

Cruisers should always consult tidal charts and compare them to the charted depths in the area they plan to cruise to be aware of tidal flows during the time they plan to be on the water.

These significant variations in water depth are reasons for careful cruise planning. Cruisers should plan to be on the ICW on a rising tide whenever possible. Since that's not always possible, use extra caution when cruising in the ICW two hours either side of low tide.

Tidal duration; i.e., the time between a low tide and the next high tide, or vice-versa, is about six hours and twenty minutes.

An incoming tidal flow that will result in a high tide is called a flood tide. Conversely, an outgoing flow that results in a low tide is called an ebb tide. The point at which the tide changes from flood to ebb or vice-versa is called slack tide.

Because much of the ICW consists of relatively narrow creeks and canals, the flow of the large volume of tidal waters in and out of these waterways causes significant currents, which change direction as the tide floods and then ebbs.

Tidal current is zero at slack tide. The current increases as the flow ebbs or floods, and decreases again as the next slack tide occurs.

Depending on the location and the tidal range at the time, the tidal currents can be quite strong. Typical tidal currents on the southeastern ICW are 1.5-3 knots. The direction and speed of these currents (called "set" and "drift" respectively) will be a primary consideration when docking or leaving a marina, or anchoring.

Lake boaters tend to be primarily concerned with wind, and winds are a factor on the coast as well. However, a good rule of thumb to remember is the following:

EXCEPT AT OR NEAR SLACK TIDE, THE CURRENT ALWAYS WINS.

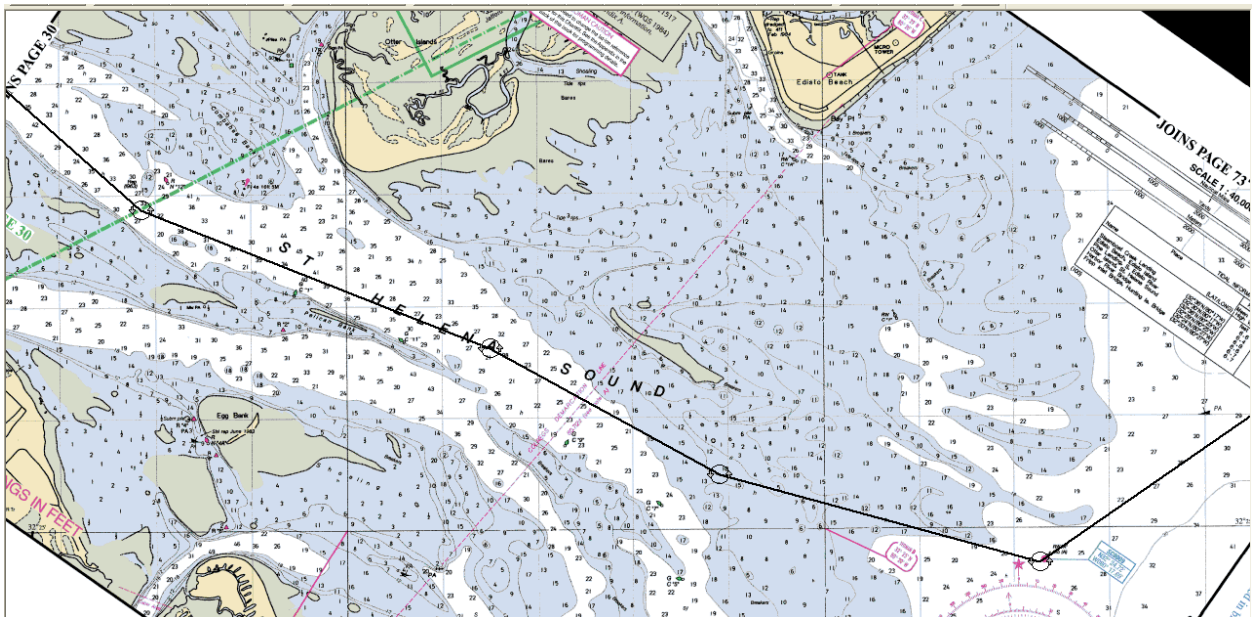
Even though you can feel the wind and tend to correct for it's effects, the effect of tidal currents will almost always overcome the wind. The current's effect on each particular boat will be a function of hull design (deeper, displacement-type hulls are affected more than shallower, flat-bottomed hulls). Depending on relative current set and drift and wind speed and direction, the effects may tend to offset one another, amplify one another, or give you two different force vectors to deal with.

CHARTS AND PLOTTING COURSES

Most cruisers use electronic charts and chartplotters these days, and these are an indispensable item to have on board. The key points to remember regarding charts are the following:

- Even though you have a good GPS or chartplotter aboard, and maybe even a back-up, do not venture out without paper charts on board.
- Ensure your charts – paper and electronic – are up-to-date. It is not uncommon for new Aids to Navigation to be placed, or for Aids to be re-numbered.
- Always check the latest Notice to Mariners a day or two before departing, and weekly along the way if you are on an extended cruise. The NTM provides the latest information about damaged, missing or misplaced Aids to Navigation. NTM can be accessed at <http://www.navcen.uscg.gov/lnm/default.htm>

It is important to plot your intended course by inserting waypoints into your electronic navigation device and connecting them to make routes, by drawing course lines and headings on your paper charts, or both. Without a course line to reference, it can be confusing when crossing large open bodies of water with many Aids to Navigation marking several different channels.



GOING AGROUND

The adage shared by experienced coastal cruisers is: *If you say you haven't run aground you're either lying or you forgot to say 'yet'.*

The tides and tidal currents cause shoaling that can make the depth contours shown on your charts pretty much irrelevant – especially where two waterways merge. For this and many other reasons it's not uncommon even for experienced and cautious coastal cruisers to occasionally run aground.



The best prevention is to plan cruising time around high tides if possible, and to maintain vigilance on the depth sounder.

An excellent source of information about “skinny water” trouble spots along the southeastern ICW is Claiborne Young’s Cruiser’s Net at <http://cruisersnet.net/>

Maintaining towing insurance is a good idea for boaters who plan to do a fair amount of coastal cruising.

If you feel your hull bump the bottom, place the engines immediately in neutral. Then try to reverse out the same path that you followed in. However, if you're stuck don't try to power yourself off. That can cause your raw water intake to ingest mud and sand and damage your engine.

If you go aground, the most effective tool in your toolbox is patience. The general case is that you've bumped into a sandbar and eventually the flood tide will float you off. If you get stuck a couple of hours past low tide and the tide is flooding, you may only have to wait only an hour or two. On the other hand, if you get stuck a couple of hours before low tide, your wait could be much longer. And of course, if you get stuck at or near high tide, just go ahead and call a towing service.

If you find yourself aground, follow these rules:

- Instruct your crew and passengers to put on life jackets at least until you can complete damage assessment.
- Check for injuries to the crew and passengers.
- Check for damage to hull or propulsion system and for water encroachment.
- If you're taking on water or if someone aboard is seriously injured, call for assistance immediately. Signal other boats in the area by radio or by visual or audible signals that you are in distress. (See section on radio procedures.)
- Put out your anchor to prevent wind from pushing you into a more dangerous position. Preferably, place the anchor in the direction the rising tide will come from, and that may be behind the stern. However, do not attach the anchor to the stern; keep it attached at the bow. You may be able to literally walk it out to a suitable setting spot. If not, use a

flotation device (on the anchor and yourself) to float it out. If that's not practical, just drop it with several feet of chain directly below the bow. As the water starts to rise, you may need to let out more scope until you float off.

- Assuming you have sustained no injuries or major damage to the vessel, just wait.
- Continuously monitor sea conditions and radio traffic.

If you have injuries and/or serious damage to the vessel, call the Coast Guard on VHF channel 16. They will probably ask you to switch to channel 22A.

If you determine you need towing assistance, hail SeaTow or TowBoatUS on channel 16, or by cell phone if possible.

Once you are floating freely again, check again for leaks. Bring the boat slowly up to cruising and be attentive for new noises or vibrations. Turn the boat in a full circle both directions to ensure there is no damage to the steering mechanism.

RADIO OPERATIONS



The marine VHF radio is one of the greatest assets a coastal cruiser can have aboard. Channel 16 is universally monitored by recreational and commercial boaters, fishermen, marinas, the Coast Guard, towing services – almost everyone with an interest in the waterway. This is so important that carrying a back-up is a very worthwhile precaution. Many cruisers have a fixed radio in their boat and also carry a handheld VHF for convenient access and for back-up.

There are rules of operation and etiquette for using the marine VHF. First and foremost, it is not a CB radio and should not be used like one.

VHF Marine Channels:

Weather channels

Channel	Frequency (MHz)
1 (WX1)	162.550
2 (WX2)	162.400
3 (WX3)	162.475
4 (WX4)	162.425
5 (WX5)	162.450
6 (WX6)	162.500
7 (WX7)	162.525

Channel numbers, e.g. (WX1, WX2) etc. have no special significance but are often designated this way in consumer equipment. Other channel numbering schemes are also prevalent.

These “WX” channels broadcast continuous local weather information. Not all seven channels will be received in every location.

Working channels

Channel Number	Ship Transmit MHz	Ship Receive MHz	Use
01A	156.050	156.050	Port Operations and Commercial, VTS. Available only in New Orleans/Lower Mississippi area.
05A	156.250	156.250	Port Operations or VTS in the Houston, New Orleans and Seattle areas.
6	156.300	156.300	Intership Safety
07A	156.350	156.350	Commercial
8	156.400	156.400	Commercial (Intership only)
9	156.450	156.450	Boater Calling. Commercial and Non-Commercial. (Many bridge tenders monitor 9)
10	156.500	156.500	Commercial
11	156.550	156.550	Commercial. VTS in selected areas.
12	156.600	156.600	Port Operations. VTS in selected areas.
13	156.650	156.650	Intership Navigation Safety (Bridge-to-bridge). Ships >20m length maintain a listening watch on this channel in US waters.
14	156.700	156.700	Port Operations. VTS in selected areas.

15	--	156.750	Environmental (Receive only). Used by Class C EPIRBs.
16	156.800	156.800	International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel.
17	156.850	156.850	State Control
18A	156.900	156.900	Commercial
19A	156.950	156.950	Commercial
20	157.000	161.600	Port Operations (duplex)
20A	157.000	157.000	Port Operations
21A	157.050	157.050	U.S. Coast Guard only
22A	157.100	157.100	Coast Guard Liaison and Maritime Safety Information Broadcasts. Broadcasts announced on channel 16.
23A	157.150	157.150	U.S. Coast Guard only
24	157.200	161.800	Public Correspondence (Marine Operator)
25	157.250	161.850	Public Correspondence (Marine Operator)
26	157.300	161.900	Public Correspondence (Marine Operator)
27	157.350	161.950	Public Correspondence (Marine Operator)
28	157.400	162.000	Public Correspondence (Marine Operator)
63A	156.175	156.175	Port Operations and Commercial, VTS. Available only in New Orleans/Lower Mississippi area.
65A	156.275	156.275	Port Operations
66A	156.325	156.325	Port Operations
67	156.375	156.375	Commercial. Used for Bridge-to-bridge communications in lower Mississippi River. Intership only.
68	156.425	156.425	Non-Commercial
69	156.475	156.475	Non-Commercial
70	156.525	156.525	Digital Selective Calling (voice communications not allowed)
71	156.575	156.575	Non-Commercial
72	156.625	156.625	Non-Commercial (Intership only)
73	156.675	156.675	Port Operations
74	156.725	156.725	Port Operations
77	156.875	156.875	Port Operations (Intership only)
78A	156.925	156.925	Non-Commercial
79A	156.975	156.975	Commercial. Non-Commercial in Great Lakes only
80A	157.025	157.025	Commercial. Non-Commercial in Great Lakes only
81A	157.075	157.075	U.S. Government only - Environmental protection operations.
82A	157.125	157.125	U.S. Government only
83A	157.175	157.175	U.S. Coast Guard only
84	157.225	161.825	Public Correspondence (Marine Operator)
85	157.275	161.875	Public Correspondence (Marine Operator)
86	157.325	161.925	Public Correspondence (Marine Operator)
87A	157.375	157.375	Public Correspondence (Marine Operator)
88A	157.425	157.425	Commercial, Intership only.
AIS 1	161.975	161.975	Automatic Identification System (AIS)
AIS 2	162.025	162.025	Automatic Identification System (AIS)

As noted in the chart, always monitor channel 16, and use 16 for hailing another vessel, a marina, etc. as described below.

If traveling with a group, decide in advance on a “chat channel”. This is a convenient way to communicate with other boats in the fleet without interfering with channel 16. The chat channel is preferably 68, 69, 71, 72 or 78. Choose the channel after monitoring local radio traffic on that channel and choose the one with the least traffic.

RADIO ETIQUETTE:

- When hailing another party, say the name of the name of the target vessel three times, followed by “this is [your boat’s name]”.
 - “Sea trek, Sea Trek, Sea Trek, this is Quintessence”
 - “Northbound sailing vessel at marker 25, northbound sailing vessel at marker 25, northbound sailing vessel at marker 25, this is the Enterprise.”
 - “Charleston City Marina, Charleston City Marina, Charleston City Marina, this is Pricey Waterhouse.”
- When the other party replies, ask them to acknowledge and switch and answer a non-commercial channel – or they may ask you to do the same.
- Switch to the designated channel, reestablish communication and complete your conversation.
- Never have conversations of more than a few seconds on channel 16.
- Do not use “CB lingo” or “10-codes” on marine VHF.
 - Don’t say “Breaker, breaker...” Instead, monitor channel 16 for silence then use the hailing sequence described above.
 - Don’t say “10-4” to acknowledge. Say “Roger” or “Roger wilco” (I understand and will comply).
 - Don’t say “what’s your twenty” Say “what is your location”
 - Etc.
- Requesting a radio check is valid only if you have reason to suspect a problem with your radio.
- You may be asked to report your position.
 - If the requestor is another recreational vessel, report in a manner similar to this: “This is [your boat’s name]. We are northbound on the Stono River just past red marker 20.”
 - If the requestor is the Coast Guard or a commercial vessel, report in a manner similar to this: “This is [your boat’s name]. We are northbound on the Stono River at latitude 32 tack 46 decimal 09 (32⁰46.09’), longitude 80 tack 01 decimal 14 (80⁰01.14’).”
- Emergencies
 - There are three types of emergency calls: Sécurité (pronounced seh-kur-e-tay), Pan-Pan (pronounced pahn-pahn) and Mayday.
 - Sécurité is primarily an informational broadcast about objects floating in the water, work operations in the channel, a military vessel entering or leaving port, etc.
 - Pan-Pan is an emergency broadcast in which the emergency does not involve immediate danger to the vessel or crew. Examples of Pan-Pan calls are vessels lost steerage, vessels lost propulsion, vessel hard aground, vessel unsure of position, etc.
 - Mayday is an emergency broadcast used when the vessel or the lives of crew members are in immediate danger such as in a major collision, taking on water,
 - In any emergency call, the procedure is similar to the Mayday example below. Substitute “Sécurité” or “Pan-Pan” for Mayday :

Procedure

- Call on channel 16.

- Distress signal "MAYDAY", spoken three times.
- The words "THIS IS", spoken once.
- Name of vessel in distress (spoken three times) and call sign or boat registration number, spoken once.
- Repeat "MAYDAY" and name of vessel, spoken once.
- Give position of vessel by latitude or longitude or by bearing (true or magnetic, state which) and distance to a well-know landmark such as a navigational aid or small island, or in any terms which will assist a responding station in locating the vessel in distress. Include any information on vessel movement such as course, speed and destination.
- Nature of distress (sinking, fire etc.).
- Kind of assistance desired.
- Number of persons onboard.
- Any other information which might facilitate rescue, such as length or tonnage of vessel, number of persons needing medical attention, color hull, cabin, masks, etc.
- The word "OVER"

Stay by the radio if possible. Even after the message has been received, the Coast Guard can find you more quickly if you can transmit a signal on which a rescue boat or aircraft can home in.

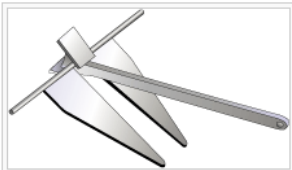
An example of a Mayday call:

MAYDAY-MAYDAY-MAYDAY
 THIS IS BLUE DUCK-BLUE DUCK-BLUE DUCK WA1234
 CHARLESTON LIGHT BEARS 020 DEGREES MAGNETIC-DISTANCE 5 MILES
 STRUCK SUBMERGED OBJECT
 NEED PUMPS-MEDICAL ASSISTANCE AND TOW
 THREE ADULTS, TWO CHILDREN ONBOARD
 ONE PERSON COMPOUND FRACTURE OF ARM
 ESTIMATE CAN REMAIN AFLOAT TWO HOURS
 BLUE DUCK IS THIRTY TWO FOOT CABIN CRUISER-WHITE HULL-BLUE DECK
 HOUSE
 OVER

ANCHORING IN COASTAL WATERS

The tidal currents introduce additional considerations when anchoring in coastal waters. This discussion will focus on anchoring in the tidal creeks and estuaries along the ICW. When anchoring for several hours or overnight, you must consider that the current set will shift approximately 180° while you are “on the hook.”

The first consideration is the type of anchor you'll be using.



Fluke or Danforth anchor

Although common on the lakes, fluke, or Danforth anchors are not the best choice for the coast. They tend to break free and reset when wind or current change the direction of force – not good when you know the direction of force will change as the tide ebbs and floods. They also do not set well in hard mud and or clay.



Plough anchor

The CQR (Clyde Quick Release) or plough anchor is the type used most commonly on coastal cruisers. It works well on most bottoms, but is not exceptional on any. The CQR design has a hinged shank, allowing the anchor to turn with direction changes rather than breaking out, and also arranged to force the point of the plough into the bottom if the anchor lands on its side. Another more recent commercial design, the Delta uses an unhinged shank and a plough with specific angles to develop slightly superior performance. Both can be stored in most regular anchor roller systems.



Claw or Bruce anchor

The Bruce, or claw anchor is another popular design. It was intended to address some of the problems of the only general-purpose option then available, the plough. Claw-types set quickly in most seabeds and although not an articulated design, they have the reputation of not breaking out with tide or wind changes, instead slowly turning in the bottom to align with the force.

Another consideration is the location in which to anchor. There are three items to think about: (1) Will the boat at anchor be a safe distance away from the channel; (2) Will there be sufficient depth at low tide; and (3) Is there sufficient area to accommodate the boat swinging as the currents and winds shift direction? Safe anchorages are indicated in most cruising guides.

When the location is selected, drop anchor with your bow into the current (remember: the current always wins). Put out at least a 7:1 scope. Check carefully to ensure you have a good set. If your GPS has an anchor alarm, use it.

CRUISING ETIQUETTE

When overtaking another vessel

- Hail and request a “slow pass on your port/starboard”. If you are the first of several boats, let the overtaken vessel know how many boats will pass.
- Pass at as slow a speed as possible to minimize wake
- After passing, thank the captain of the overtaken vessel

Being overtaken: Slow down and move to the right, if possible

Meeting and passing in opposite directions in narrow channels

- Stay as far to the right as possible
- Slow down to low wake in time for your wake to dissipate before the oncoming vessel has to cross it.

Passing docks: Within 200 ft , or with vessel moored – slow/no wake

Passing marinas and under bridges - no wake

MARINA COURTESY

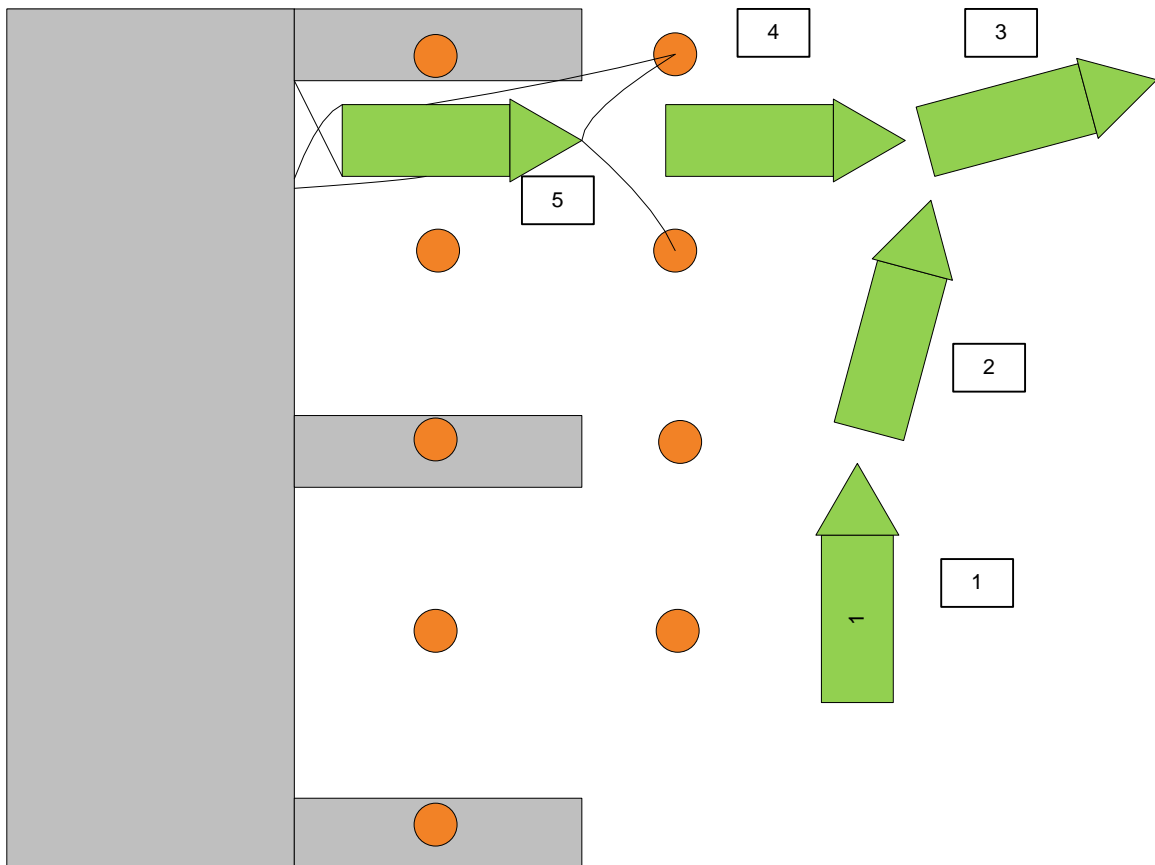
- Whenever possible, contact the marina by telephone at least a day ahead of time and reserve a transient slip. Let them know your estimated time of arrival.
- When the marina is in sight and you are 10-15 minutes away, hail the marina as described in the Radio Etiquette section. Then switch and answer the alternate channel as directed.
- If the marina is busy, be patient.
- Describe your boat – name, type, length – and request docking instructions. Let the dockmaster know if you need fuel and/or a pump-out.
- Be sure you understand the dockmaster’s instructions and follow them exactly.
- Rig fenders and a bow, spring (off the mid-ship cleat) and stern line on the appropriate side of the boat as instructed by the dockmaster.



- Stand off and do not approach for docking until all lines and fenders are rigged.
- If you are docking bow into the current, toss your bow line first. If you are docking stern into the current (backing in), toss the stern line first. Sometimes the dock hands will request a spring line first.
- Tip your dockhands. \$5-\$10 shared by all dockhands per docking is typical.
- Once secured in your slip, be sure your fenders are properly adjusted, your lines are neat, and your shore power and other connections are arranged in a safe manner.
- Observe marina rules for quiet times.

DOCKING WITH PILINGS

Many coastal marinas have fixed docks and pilings instead of floating docks we are accustomed to on lakes. The technique for docking is a slip with pilings is shown below. For the two bow lines, put the bitter end of the line through the spliced loop to form a large loop. As you back into the slip, step 4, use your boat hook or lassoing technique to put the large loop over the piling on either side. Attach the bitter ends of the bow lines to the bow cleat. Proper tie-up configuration is shown below: 2 bow lines, 2 crossed stern lines, and a fore and aft spring line.



WEATHER

Keeping close tabs on the weather is another important consideration for coastal cruisers. Lake boaters often have to deal with pop-up thunderstorms and occasional rain showers, and of course these same events occur on the coast. However, there are a couple of additional considerations when encountering adverse weather on the coast.



The general rule is to check weather conditions and forecasts for the area you will be cruising. If there is a high probability of thunderstorms or a small craft advisory, then wait until conditions improve before departing.

The ICW runs generally north-south and can be a relatively narrow waterway for long stretches. The thunderstorms that come along tend to move southwest to northeast, and they tend to generate heavy rain and strong winds. That means you can find yourself in a narrow channel with strong, gusty winds on your beam and little visibility.

Thunderstorms on the water can be an intense experience. The good news is that these storms usually pass fairly quickly – although that 10 minutes can seem like an hour.

Follow these rules if you encounter a thunderstorm while underway.

- Ahead of time, assign a radio operator, helms-person, navigator, and 2 lookouts. If you have a smaller crew, some will have to do double-duty.
- As you see the storm approaching, the crew should secure your vessel, put on foul weather gear and life jackets.
- When the storm hits, slow immediately to idle speed.
- Check that everyone has on life jackets.
- Turn on navigation lights.
- Maintain radio contact with the boats ahead of and behind you. Respond promptly to requests for information and status. Do not engage in unnecessary radio chatter.
- Check weather channels on your VHF radio for information. Be alert for tornado warnings, especially in the spring.
- Keep a lookout posted for the boats immediately ahead of and behind you, and for other boats on the waterway. Notify others of any problems they encounter.
- Follow your plotted course, not the boat ahead of you.
- Be aware of the wind effects and maintain a proper Course Over Ground.

If conditions are too bad to continue, move as far to the right of the channel as you feel safe, put your bow into the wind and drop anchor. Make sure the navigation lights are on. Sound two long blasts on your horn every two minutes until visibility clears sufficiently to see and be seen.

The other major weather concern on the coast is tropical cyclones: depressions, storms and hurricanes. If these storms are in your cruising area, you don't want to be cruising there. Secure your boat and head inland.

CRUISING CHECKLIST

- Marina reservations
- Verify insurance coverage includes cruising area and time of year
- Current charts for cruising area
 - NOAA Charts
 - <http://www.nauticalcharts.noaa.gov/mcd/OnLineViewer.html>
 - Maptech chart kit
 - www.maptech.com
- Current Notice to Mariners
 - <http://www.navcen.uscg.gov/LNM/d7/default.htm>
- Tide tables for ports of call
- Cruising guide
- Binoculars
- Foul weather gear
- GPS, chartplotter
- Handheld VHF radio
- Adequate sized fenders: fenders should be 6-inch diameter or larger
- Docklines
 - 4 lines equal to boat length
 - 2 lines 1.5 times boat length
- Anchor and ground tackle
- Spare filters, impellers, belts
- Oil for all engines
- Spare batteries for all electronics
- Tools
- First aid kit
- Sunscreen
- Provisions

