

Spyglass Marine Services, Inc.

Key Terms, Formulas, and General Stuff

Right of Way Order of Priority

"Nuclear restrictions constrain fishing and sailing, people say."

Nuclear	Not Under Command
Restrictions	Restricted Maneuverability
Constrain	Constrained By Draft (Not Inland)
Fishing	Fishing Vessels
Sailing	Sailing Vessels Underway
People	Power-Driven
Say	Seaplanes

(Man-Powered has right of way over sail, power and seaplanes)

Additional Priorities

Anchored	Anchored, stopped or moored boats must be avoided by all vessels
Overtaken	Boats being overtaken have the right of way over the overtaking vessel
Downriver	Vessels proceeding downriver have the right of way over up river and crossing vessels
Traffic Zone	Vessels in a traffic-separation scheme have right of way over non-participating vessels (Crossing traffic must do so at right angles)

Right Of Way

Under the Rules Of The Road, one boat is the stand-on vessel; the other is the give-way vessel. Generally, the boat on the starboard (right) side is the stand-on vessel (has the right of way). The boat on the port side is the give-way vessel and must yield or alter speed or course. The stand-on vessel is expected to maintain course and speed. While being overtaken, you are the stand-on vessel. The overtaking vessel is the give-way vessel and must Keep Clear. While meeting head-on, both vessels should alter course to starboard and pass port to port. Generally, sailboats (underway by sail alone) have the right of way over powerboats. Sailboats under power are simply powerboats. Vessels engaged in fishing by nets have the right of way over sailing and powerboats.

Remember, "might has right", stay clear of very large vessels



Navigation Formulas

Timid Virgins Make Dull Company, Add Whiskey

True plus Variation equals *M*agnetic headings. Add *D*eviation to get *C*ompass heading. (Add westerly variations)

True	Plot on the chart
Variation	Difference between Magnetic and True (found inside compass rose)
Magnetic	Magnetic heading
Deviation	Correction card for your compass
Compass Error	Variation and deviation combined
Compass	Heading you actually steer by



$S = D \times 60 / T$	S = Speed in nautical miles	1 minute = 1 nautical mile (Latitude scale)
$T = D \times 60 / S$	T = Time in minutes	
$D = S \times T / 60$	D = Distance in nautical miles	1 degree = 60 nautical miles

Time, Speed, and Distance

Chart General

Compass Rose	Outside scale is True, inside scale is Magnetic. Difference is Variation
Dead Reckoning	Course plot without correction for Set and Drift Takes into account vessel Heading, Speed and Time Labeled on chart by a semi-circle (half) and "DR"
Estimated Position	DR plot that has been corrected for Set (direction) and Drift (speed) Labeled on chart by semi-circle (half) and "EP"
Fix	Known position (using 2 or more fixed bearings) Labeled on chart by cross with full circle
Relative Bearing	Refers to bearing from vessel heading or direction of advance. Vessel is always 000 degrees, Port bearing is 270, Starboard bearing is 090
Latitude Scale	Vertical scale on left or right of chart to measure distance 1 degree equals 1 nautical mile.
Abbreviations	"C" Course or Heading, "ETA" Estimated Time of Arrival, LOP Line of Position "PSC" Per Ships Compass, "CTS Course To Steer

Sound Signals

1 Short	I intend to pass you on your starboard side (Leave you on my port side)
2 Short	I intend to pass you on your port side (Leave you on my starboard side)
3 Short	I intend to go abaft (reverse propulsion)
5 Short	Danger
1 Prolong	Vessel leaving dock

Sound Signals to be used in reduced visibility: While Underway

Power vessel underway, making way	1 prolonged every two minutes
Power vessel underway, not making way	2 prolonged every two minutes
Handicapped vessel (NUC, Towing, Sail)	1 prolonged, 2 short, every two minutes
Being towed (if manned)	1 prolonged, 3 short, every two minutes

Sound Signals to be used in reduced visibility: At Anchor

Anchored vessels less than 12 meters	Exempt but must make some sound every 2 minutes
Anchored vessels less than 100 meters	Ring bell rapidly for 5 seconds every minute
Anchored vessels greater than 100 meters	Add another 5 seconds of ringing a gong
Anchored vessel to warn another of her position	1 short, 1 prolonged, 1 short

A vessel heading downstream and nearing a bend announces its presence by sounding one prolonged blast. An upstream vessel responds in kind.

Bouy System

Lateral Aids to Navigation when entering from seaward: Red, right, returning...

Green	“cans”	odd numbers	square daymark	port side
Red	“nuns”	even numbers	triangle daymark	starboard side

Diamond shapes Warn of restriction or danger. Usually a **white** marker with **orange** signage.

Circle marks “Controlled as indicated.” Usually a **white** marker with **orange** signage.

Red and White Indicates safe water, mid-channel or fairway

Yellow Indicates special marks; anchorage, traffic separation, fish net area

Black and Red Indicates an isolated danger

White with **Black** vertical stripes indicates the center of the channel.

Navigation Lights

Your own Port vessel light is **Red** (Port Red Wine), your Starboard light is **Green**

When all three lights I see ahead, I turn to Starboard and show my red

Green to Green or Red to Red... Perfectly safe to go ahead

If to Starboard Red appears, it is my duty to stay clear

Recreational vessels are required to display navigational lights between sunset and sunrise and other periods of reduced visibility.

Vessels under oars: must carry a flashlight or lantern that can show a light in sufficient time to prevent a collision.

Vessels 16 feet or more: should be equipped with the correct *manufacturer installed* navigational lights.

Vessels less than 23 feet and under 7 knots maximum speed: may display an all-round white light.

Vessels less than 39.4 feet: may show an all around white light in addition to side lights.

Vessels greater than 39.4 feet: must show a 225 degree masthead light and a 135 degree stern light in addition to appropriate side lights.

Lines

Nylon	High strength with built-in “stretch ability” Used for towing astern, mooring or anchor lines Be aware that nylon will whip violently if snapped under pressure
Braided Nylon	Most common mooring line, has the most comfortable “feel” Strongest, comes in a variety of colors Stretches 15% before it is in danger of breaking
Three-Strand Twisted Nylon	Most common anchor rode Stretches the most, stiffer feel and is least expensive Stretches 35% before it is in danger of breaking
Polypropylene	Floats. Low cost with excellent abrasion resistance Commonly used with PFD throw rings and recreation skiing/tubing
Dacron	Does not stretch. Best for hip towing

Basic First Aid

Normal breathing rates:	12 per minute for adults, 20 per minute for children
Normal pulse rates:	60-100 beats per minute
Basic CPR	Check victim for responsiveness. Call 911 Tilt head back, pinch nose and cover mouth with yours Blow gently until you see the chest rise. Give 2 breaths Chest compressions; Push down 1-2” between nipples 30 compressions at a 100/minute rate then 2 rescue breaths

Carbon Monoxide Poisoning; be sure to not mistake symptoms for simple seasickness. Ventilate and give oxygen.

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