Course Workbook

Practical Navigator

Post-Class Checklist:

- **Sea Time:** Company Letterhead (Civilian), Small Vessel Service Form 719S (Civilian) or Transcript of Sea Service (Military)
- **Transportation Worker Identification Card:** obtained through your local Transportation Security Administration office.
- **Pay Fees to USCG at Pay.gov:** Evaluation, Issuance (Fees waived for military with command memo)
- **Conviction Statement:** If applicable
- **719B Application:** You are seeking an "Original Officer Endorsement"
- **Medical Form 719K:** Be sure to pay attention to detail or it will be rejected!
- **Drug Testing Letter:** On USCG 719P form or on Company Form (Civilian), or from your command (Military)
- **Training Certificates:** Scan and send electronically.
- **Send all this to the Nearest Regional Exam Center:** Your nearest REC is _____.

Need help? contact@practicalnavigator.org

Summary of Requirements for Various License Levels

Operator of Uninspected Passenger Vessel (6 pack)

- 18 years old
- 90 days of sea time in the last 3 years (civilian) or 7 years (military)
- Near Coastal: 360 days in the operation of vessels with 90 in NC
- Great Lakes: 360 days of service in the Great Lakes
- Inland: 360 days on any waters

100 Ton Master, Near Coastal

- 19 years old
- 90 days of sea time in the last 3 years (civilian) or 7 years (military)
- 720 days in the deck department in NC/Oceans waters
    - For tonnage:
        - 100-ton license = 180 days over 51 tons
        - 50-ton license = 180 days over 25 tons
        - 25-ton license = 541 days over 5 tons
- For sail endorsement – 360 days on auxiliary sail vessels

100 Ton Master, Great Lakes or Inland

- 19 years old
- 90 days of sea time in the last 3 years (civilian) or 7 years (military)
- 360 days of sea time in the deck department
    - For tonnage:
        - 100-ton license = 180 days over 51 tons
        - 50-ton license = 180 days over 25 tons
        - 25-ton license = 541 days over 5 tons
- For sail endorsement – 180 days on auxiliary sail vessels

200 Ton Master, Near Coastal

- 19 years old
- 90 days of sea time in the last 3 years (civilian) or 7 years (military)
    - Engine department time may count towards recency
- 720 days of sea time in any position or department
- 360 days as master, mate (DWO)
    - For tonnage:
        - 200-ton license = 180 days over 101 tons
        - 100-ton license = 180 days over 51 tons
        - 50-ton license = 180 days over 25 tons
        - 25-ton license = 541 days over 5 tons
- For sail endorsement – 360 days on auxiliary sail vessels
- Celestial course to upgrade to Oceans license

General Modules:

Deck General, Deck Safety, and Navigation General are all background knowledge modules. The exams are 50 questions with a required passing score of 70%.

The best study strategy is to complete all course materials and the practice exam.

Versions of the practice exams without answers are provided in the course.

Deck General Study Guide

Seamanship & Watchstanding • Vessel Handling • Maritime Law & Ship's Business

Section 1: Seamanship & Watchstanding

• Understand how the twist or "lay" of a line affects its construction and use.
• Know which rope types are best suited for mooring, towing, or floating applications.
• Be familiar with the care of natural fiber lines and differences in modern synthetic materials like Dyneema.
• Identify signs of wear or damage on wire rope and understand standard maintenance procedures.
• Learn the purpose and application of knots: bowline, clove hitch, square knot, whipping, etc.
• Understand terms like "belay," "ease," and "haul" in relation to line handling.
• Know tackle system components, how to calculate mechanical advantage, and what "two-blocked" means.
• Practice calculating Safe Working Load using breaking strength and safety factors.
• Maintain a proper lookout at all times; understand duties and how to properly relieve the helm.
• Know and interpret helm commands such as "ease the rudder" and "shift your rudder."
• Take appropriate action in reduced visibility and during watch transitions.

Section 2: Vessel Handling & Maneuvering

• Learn how river currents affect water depth near bends and bars.
• Understand squat effects, rudder sluggishness, and changes in stopping distance in shallow water.
• Know what causes bank cushion and suction and how to counteract them.
• Recognize the maneuvering differences of single vs. twin-screw vessels, including docking strategy.
• Calculate proper anchor chain scope and identify anchor windlass components.
• Know proper anchoring procedures and signs of dragging anchor.
• Study the effect of wave period on rolling and how synchronous rolling occurs.
• Learn the best course and speed settings in rough weather for safety and comfort.
• Understand advance and transfer, pivot points, and how vessels behave in turns.
• Know how to reduce wake in narrow channels and who is responsible for damages.
• Review rescue procedures including liferaft deployment, helicopter hoisting, and survivor retrieval.

Section 3: Maritime Law & Shipboard Safety

• Understand the structure and purpose of MARPOL and U.S. pollution prevention laws.
• Know how to use and maintain an Oil Record Book and when to report oil spills.
• Learn documentation requirements for various vessel certificates and radio operation permits.
• Review crewing documents, credentialing rules, and discharge paperwork.

• Know where to find official vessel identification and what is legally required onboard.
• Understand proper procedures for safe fuel transfers and spill response.
• Learn sanitation protocols, pest prevention, and water treatment methods aboard ship.
• Review hot work safety practices and the role of marine chemists in certifying tanks.
• Identify key responsibilities of shipyard supervisors and proper PPE and electrical safety training.

Deck General
100 Ton Master

Version Practice

Rules of the Exam:

Do not write in the exam book
Write your name and test version on the bubble sheet

No electronic devices
No leaving your desk

50 Questions
70% passing score required

Signal the proctor when finished

Seamanship and Watchkeeping

1. The "lay" of a natural fiber line refers to ____.
    a. Its normal location of stowage
    b. The direction of twist in the strands
    c. The way it is coiled
    d. The way it is rigged

2. Which of the following lines is commonly used for towing or mooring lines?
    a. Nylon
    b. Manila
    c. Cotton
    d. Styrene

3. Modern lines such as Amsteel/Dyneema 12-strand lines have similar elastic elongation properties as ___.
    a. Manila
    b. Nylon
    c. Wire
    d. Chain

4. Which of the following lines has the greatest breaking strength for a given diameter?
    a. Cotton
    b. Sisal
    c. Nylon
    d. Dyneema/Amsteel

5. Which of the following terms relates to maintaining wire rope?
    a. Slushing
    b. Bending
    c. Forming
    d. Juicing

6. A vessel is docked, and deckhands are conducting maintenance over the side. What should be available on deck nearby?
    a. Fire extinguisher
    b. Ring life buoy
    c. Stokes Litter
    d. EPIRB

7. Avast" means ____.
    a. Proceed
    b. Stop
    c. Let go
    d. Pull

8. To “warp” a vessel means ____.
    a. To move the vessel by hauling on lines
    b. To end for end the mooring lines
    c. To bring the head into the wind
    d. To clean the weather decks

9. What is the name for this?

    a. Bowline
    b. Square knot
    c. Stage hitch
    d. Whipping

10. bowline is used to ___.
    a. Join lines of different diameters
    b. Form an eye/loop in the end of a line
    c. Act as a stopper
    d. Keep a line from fraying

11. A block that can be opened at the hook or shackle end to receive the line is called a ____.
    a. Snatch block
    b. Foot block
    c. Elbow block
    d. Heel block

12. The grooved wheel inside a block is called a ____.
    a. Cheek
    b. Gypsy
    c. Heel
    d. Sheave

13. Using a safety factor of 6, what is the safe working load of a line with a breaking strength of 10,000 pounds?
    a. 1550 pounds
    b. 1666 pounds
    c. 1874 pounds
    d. 2022 pounds

14. Your vessel has entered reduced visibility. Which is a prudent action?
    a. Increase speed to ensure the vessel is on plane
    b. Sound a continuous fog signal
    c. Extinguish the navigation lights and put up the dayshapes
    d. Maintain a proper lookout by sight as well as sound

15. When relieving the helm, the new helmsperson should know ____.
    a. The maximum rudder angle previously used
    b. The course per steering compass
    c. The gyrocompass error
    d. The magnetic variation

Vessel Maneuvering and Handling

16. When navigating in a river bend, the deepest water is generally found ___.
    a. Toward the inside of the bend
    b. Toward the outside of the bend
    c. In the center of the river
    d. Perpendicular to the original heading

17. A common occurrence when a vessel is running into shallow water is that ___.
    a. The wake is less pronounced
    b. The vessel is more responsive
    c. Squat will increase and cause a decrease in the bottom clearance
    d. All of the above

18. Which will most likely occur when entering shallow waters?
    a. The rudder will become more effective
    b. The list will change
    c. The trim will change
    d. The speed will increase

19. How does the effect known as bank suction act on a single screw vessel proceeding along a narrow channel?
    a. It pulls the stern towards the bank
    b. It pulls the bow towards the bank
    c. It pulls the entire vessel towards the bank
    d. None of the above

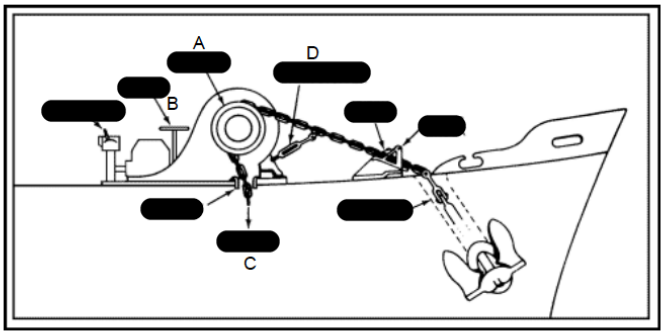
20. Single screw vessels with right-handed propellers generally have an easier time docking port side to the dock because ___.
    a. The prop walk brings the stern in
    b. The prop walk brings the stern out
    c. Archimede's Principle brings the boat sideways
    d. Bernoulli's Principle increases the squat

21. When backing a single screw vessel, the rudder is most effective ____.
    a. when there is no momentum
    b. when there is sternway
    c. when there is a current on the side
    d. when the engine is clutched in

22. The most effective line when docking a vessel is generally ___.
    a. An aft leading spring line
    b. A breast line
    c. A storm line
    d. An anchor line

23. You are anchoring in 27 feet of water in calm weather conditions. What is an appropriate amount of anchor chain to use?
    a. 35 feet
    b. 50 feet
    c. 65 feet
    d. 85 feet

24. One "shot" of anchor chain is equal to ___.
    a. 15 feet
    b. 45 feet
    c. 90 feet
    d. 120 feet



25. In the diagram, what is part D?
    a. Wildcat
    b. Brake
    c. Chain locker
    d. Chain stopper

26. On an anchor windlass, the wheel over which the chain passes is called the ___.
    a. Capstan
    b. Chain stopper
    c. Pelican hook
    d. Wildcat

27. The best holding for traditional anchors is ___.
    a. Mud
    b. Grass
    c. Shells
    d. Rubble

28. You are on-scene with a vessel on fire. You should position your vessel ___.
    a. Leeward of the distressed vessel
    b. Windward of the distressed vessel
    c. Alongside the distressed vessel
    d. None of the above

29. The distance gained at a right angle from the vessel's original course when making a turn is called ___.
    a. Advance
    b. Transfer
    c. Pitch
    d. Headreach

30. When dead in the water, the pivot point of the vessel is generally ___.
    a. At the bow
    b. At the stern
    c. At the lateral center of the vessel
    d. Over the rudder

31. To reduce your wake in a narrow channel, you should ____.
    a. Increase speed
    b. Decrease speed
    c. Shift weight astern
    d. Apply rudder evenly to counteract the current

32. What is meant by the term "veering" anchor chain?
    a. Letting more out
    b. Taking some in
    c. Heaving on the line to increase the tension
    d. Heating the chain to release the swivel

33. To check visually if an anchor is dragging, you should take a visual bearing to an object ___.
    a. Abeam
    b. Ahead
    c. Astern
    d. Overhead

34. Your vessel is pounding into heavy seas; it is wise to ___.
    a. Increase speed
    b. Decrease speed
    c. Anchor the vessel
    d. None of the above

35. You can inflate a raft in the water by ____.
    a. Waiting 30 minutes
    b. Allowing the water to activate the salt tablets in the raft
    c. Pulling on the painter cord
    d. Twisting the hydrostatic release clockwise

36. When being hoisted from a raft, survivors should ___.
    a. Turn off all raft lights
    b. Deflate the floor to increase stability
    c. Inflate the floor to increase drift speed
    d. Remove life jackets to prepare for transfer

37. You are trying to rescue survivors from a boat on fire. You should approach ___.
    a. At a speed to match the distressed vessel
    b. From windward
    c. From leeward
    d. On a similar heading as the distressed vessel

Maritime Law, Ship's Business, Management & Training

38. Which certificate is issued by the American Bureau of Shipping?
    a. Certificate of Inspection
    b. Load Line Certificate
    c. Permit to Proceed
    d. Certificate of Documentation

39. What is the minimum size of vessel that can be federally documented?
    a. 5 tons
    b. 100 tons
    c. 20 meters
    d. 50 meters

40. You can find the number of required able seafarers (domestic) on the vessel's ____.
    a. Certificate of Inspection
    b. Federal Documentation
    c. Tonnage Certificate
    d. Survey

41. Who has responsibility for maintaining the oil record book?
    a. Master
    b. Mate
    c. Engineer
    d. Designated Person Ashore

42. The international convention for the prevention of pollution from ships is also known as ____.
    a. MARPOL
    b. ICPP
    c. Garbage Log
    d. Oil Convention

43. Regardless of local rules, all oil spills must be reported to _____.
    a. National Response Center
    b. National Maritime Center
    c. Federal Law Enforcement Training Facility
    d. Officer in Charge, Marine Inspection

44. You are refueling your vessel and notice diesel coming out of the tank vent. What is the FIRST thing you should do?
    a. Notify the Coast Guard
    b. Shut down the fuel supply
    c. Open the scuppers
    d. Retrieve an ABC fire extinguisher

45. Sea service expires ____.
    a. After 1 year
    b. After 5 years
    c. After 10 years
    d. Never

46. A written agreement between a mariner and a vessel/company is commonly called ____.
    a. Shipping articles
    b. Certificate of Inspection
    c. FCC License
    d. Transportation Worker Credential

47. Which chemical is typically used in the potable water system to treat the drinking water safely?
    a. Nitrogen
    b. Chlorine
    c. Carbon
    d. Oxygen

48. Before welding is permitted on a fuel tank, it must be certified or declared as ____.
    a. Safe for personnel
    b. Safe for hot work
    c. Safe for oxygen
    d. Safe for atmosphere

49. All electrical appliances aboard a vessel should be grounded to ____.
    a. Protect personnel from shock
    b. Increase operating efficiency
    c. Prevent unauthorized personnel from using them
    d. Prevent them from falling overboard

50. If your vessel is equipped with a radiotelephone, what must also be aboard?
    a. Certificate of Inspection
    b. List of ship stations
    c. Copy of ship to shore channels
    d. FCC ship's station radio license

Deck Safety Study Guide

1. Stability and Marine Engineering

• Know the difference between gross tonnage (total internal volume), net tonnage (cargo volume) and displacement — focus on what each one measures.
• Understand the relationship between center of gravity (G), center of buoyancy (B), metacenter (M), and righting arm (GZ). Be able to interpret these from diagrams.
• Identify actions that improve or reduce vessel stability (e.g., shifting weight lower, securing watertight doors).
• Know how free surface effect impacts stability and what causes it.
• Learn how weight shifts affect the vessel's balance. Use the formula: $\Delta G = (w \times d) / W$.
• Be able to calculate metacentric height (GM) from beam and rolling period using: GM = [(0.44 × B)/T]^2.
• Understand basic functioning and safety features of diesel engines and why they're safer than gasoline engines.
• Know how to interpret signs of normal vs. abnormal engine exhaust and when to check lubricating oil.
• Learn the function of a thrust block, fuel filters, starter motors, and governors.
• Know how overspeed trips and solenoids protect engine components.

2. Fire Prevention and Appliances

• Know the five classes of fire (A, B, C, D, K) and what materials or sources each includes.
• Review the fire triangle (heat, oxygen, fuel) and fire tetrahedron (adds chemical chain reaction).
• Understand which type of extinguisher is best for each fire class (e.g., CO_2 for electrical, foam for oil).
• Know how Halon and CO_2 systems work, their hazards, and safety protocols before discharge.
• Study how foam extinguishes fires (by smothering and cooling).
• Know the features and locations of fire detection systems required on T-boats.
• Review fire equipment requirements from 46 CFR Part 181, including extinguisher types, weight, locations, and fire axe storage.
• Learn what's checked during annual fire extinguisher servicing.
• Know what to do immediately upon discovering a fire.
• Understand the importance of ventilation control, compartment boundaries, and drills for fire response.

3. Emergency Signals and Procedures

• Know the definition of a Serious Marine Incident and when to report it.

• Understand immediate actions after collisions, explosions, or equipment failure.
• Learn methods for shoring, stabilizing flooded compartments, and reducing flooding.
• Be able to identify which issues to address first in a multi-casualty event.
• Know what must be included in pre-departure safety briefings.
• Understand the use of watch bills and emergency billet responsibilities.
• Know proper response to fires or explosions in various compartments.
• Understand abandonment procedures, group survival techniques, and when to abandon ship.
• Review first actions during a man overboard situation and the importance of drills.
• Know correct line terminology and best practices when towing or passing lines to another vessel.
• Understand distress communication categories: Mayday, Pan-Pan, Securité.
• Know VHF channel functions (e.g., 16 for distress, 13 for bridge-to-bridge).
• Identify approved visual and audio distress signals.

4. Lifesaving

• Learn CPR basics and how to respond to shock, frostbite, and gas poisoning.
• Know where to apply chest compressions and signs of breathing emergencies.
• Understand liferaft deployment, hydrostatic releases, and the role of the sea painter.
• Identify the purpose of water pockets, signaling equipment, and survival priorities in liferafts.
• Know lifejacket requirements, storage standards, and exemptions.
• Understand immersion suit features and usage.
• Know how EPIRBs function (via satellite, 406 MHz) and how often they must be inspected.
• Familiarize with 46 CFR 180–185 and Subchapters T & U on small passenger vessel lifesaving gear.
• Know the required number of flares, ring buoys, paddles, and lifejackets based on vessel size and route.

Deck Safety
100 Ton Master

Version Practice

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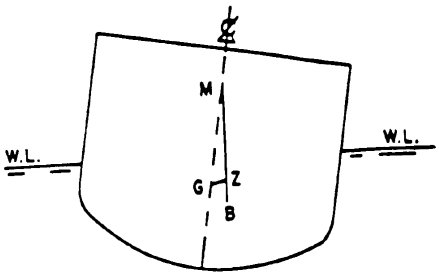
Stability and Marine Engineering

1. Net tonnage focuses on the ____ capacity of the vessel.
    a. Cargo carrying
    b. Personnel and lodging
    c. Overall construction weight
    d. Fuel



2. In the attached diagram, which represents the righting arm?
    a. M
    b. B
    c. GZ
    d. GM

3. Jettisoning weight from topside _____.
    a. returns the vessel to an even keel
    b. reduces free surface effect
    c. lowers the center of gravity
    d. raises the center of buoyancy

4. You are towing a vessel which has an extremely long rolling period. This is an indication of ____.
    a. Free communication effect
    b. Large GM
    c. Poor stability
    d. Heavy gross tonnage

5. In the absence of external forces, the center of buoyancy of an inclined vessel is vertically aligned directly below the _____.
    a. center of gravity
    b. amidships station
    c. center of flotation
    d. geometric center of the waterplane area

6. Shifting weight to one side of the vessel will cause:
    a. list until the center of buoyancy is aligned vertically with the center of gravity
    b. decrease draft at the center of flotation
    c. trim to the side opposite TCG until all moments are equal
    d. heel until the angle of loll is reached

7. The rolling period is 4 seconds. The vessel is 19 feet in beam. What is the metacentric height?
    a. 4.37 feet
    b. 4.21 feet
    c. 4.55 feet
    d. 4.64 feet

8. You shift 10 tons of weight from the main deck to the fish hold, a vertical distance of 8 feet. The total displacement of the vessel is 85 tons. What is the shift in the vessel's center of gravity?
    a. 0.82 feet
    b. 0.94 feet
    c. 1.08 feet
    d. 1.13 feet

9. Maintaining good working order of fuel pumps and injectors in a diesel engine requires the use of _____.
    a. Fuel and water separators
    b. Day tanks
    c. Injector test stands
    d. Fuel filters

10. Before putting any engine in operation, you should first _____.
    a. Ventilate the compartment
    b. Ensure rotating machinery is free of obstructions
    c. Check for leaks
    d. All of the above

Fire Prevention and Appliances

11. The most effective way to ensure a proper response to a shipboard fire is ____.
    a. Frequent and efficient drills
    b. Hiring overqualified crew
    c. Always maintaining extra crewmembers
    d. An efficient portable radio system

12. An engine room fuel oil fire is classified as class ____.
    a. A
    b. B
    c. C
    d. D

13. An aluminum powder fire is classified as class ____.
    a. A
    b. B
    c. C
    d. D

14. The fire triangle includes which of the following?
    a. Electromagnetism
    b. Gravity
    c. Heat
    d. Strong Nuclear Force

15. The most important thing to do in an electrical fire is to ____.
    a. Stop ventilation
    b. Stop the vessel
    c. Apply water to the fire
    d. De-energize the circuit

16. Which portable fire extinguisher should be used on a class C fire on board a vessel?
    a. Carbon dioxide
    b. Water (stored pressure)
    c. Foam
    d. Carbon tetrachloride

17. Convection spreads a fire by _____.
    a. the transfer of heat across an unobstructed space
    b. burning liquids flowing into another space
    c. transmitting the heat of a fire through the metal surfaces of the ship
    d. heated gases flowing through ventilation systems

18. Fixed CO2 systems work by ____.
    a. Displacing the oxygen fueling a fire
    b. Removing heat from the space
    c. Condensing into H2O in the presence of heat
    d. All of the above

19. Small passenger vessels have certain spaces required to have fixed fire detection systems. Among these is ___.
    a. A space containing dry stores
    b. Each space containing components for vehicles
    c. A space containing spare engineering belts and hoses
    d. Each overnight accommodation space

20. A small passenger vessel which is required to carry a fire axe must stow it such that is located ___.
    a. In or adjacent to the primary operating station
    b. In the steering compartment
    c. Adjacent to the accommodation section
    d. Within 6 feet of the boarding area

21. You enter the galley and find the trash bin heavily on fire. The FIRST thing you should do is ____.
    a. Engage the stove fixed CO2 system
    b. Sound the alarm
    c. Open the ventilation
    d. Close the fuel system

22. To prevent the spread of fire by CONDUCTION you should ___.
    a. Remove all combustibles from direct exposure
    b. Close all openings to the area
    c. Shut off all electrical powe
    d. Cool the bulkheads around the fire

23. What danger exists when discharging a CO2 extinguisher in an enclosed space?
    a. Suffocation
    b. Drowning
    c. Electrical shock
    d. Damaged eardrums

24. You should use foam to fight which fire?
    a. Electrical fire
    b. Lithium-ion battery fire
    c. Oil fire
    d. Combustible metal fire

25. You have extinguished a fire using a large amount of water. An important action to take next is to ____.
    a. Test the salinity of the water
    b. Open all watertight doors and hatches
    c. Dewater the space
    d. Calculate the new center of gravity

Emergency Signals and Procedures

26. Which of the following would be a "serious marine incident?"
    a. The death of a crewmember
    b. The total loss of a vessel over 100 tons or an inspected vessel from collision
    c. Injury to a passenger requiring treatment beyond first aid
    d. All of the above

27. You have completely flooded a compartment, but the bulkheads are holding. You can stabilize them by ____.
    a. Adding a second bilge pump
    b. Rigging shoring
    c. Opening the watertight door or hatch
    d. Wetting the boundaries with a fire hose

28. The document which provides crew guidance on their watch station and emergency billet is called the ____.
    a. Certificate of Inspection
    b. Watch bill
    c. Certificate of Documentation
    d. Stability letter

29. After an explosion, temporary repair of machinery should be conducted ____.
    a. Immediately
    b. After fire is controlled
    c. By the Coast Guard
    d. In the nearest shipyard

30. Important information to share with the crew prior to abandoning ship includes ____.
    a. The watch schedule
    b. The date and time
    c. The geographic location
    d. The next low tide

31. The key to successful crew overboard rescues is ____.
    a. High powered engines
    b. State of the art communications equipment
    c. Well-conducted drills
    d. Weekly liferaft inspections

32. When towing alongside, a line led from the bow of the towing vessel aft to the vessel being towed would be called _____
    a. Backing line
    b. Towing line
    c. Stern line
    d. Breast line

33. Mayday broadcasts are used to indicate ___.
    a. Information
    b. Uncertainty
    c. Distress
    d. None of the above

34. Which of the following channels is a recreational VHF channel?
    a. 13
    b. 16
    c. 22A
    d. 69

35. Most VFH radios have high and low power settings for broadcasting. What is the low power setting?
    a. 1 watt
    b. 25 watts
    c. 10 kilowatts
    d. 25 gigawatt

Lifesaving

36. The MOST important element in administering CPR is _____.
    a. having the proper equipment for the process
    b. starting the treatment quickly
    c. administering of oxygen
    d. treating for traumatic shock

37. When providing first aid to a victim of gas poisoning, the MOST important symptom to check for is _____.
    a. suspension of breathing
    b. unconsciousness
    c. slow and weak pulse
    d. cold and moist skin

38. Drinking salt water will ___.
    a. Prevent seasickness
    b. Dehydrate you
    c. Protect against heat cramps
    d. Be safe if mixed 50/50 with fresh water

39. Each ring life buoy with a floating water light on a small passenger vessel must have a lanyard of what length?
    a. 1 foot
    b. 3 feet
    c. 6 feet
    d. 12 feet

40. On small passenger vessels, all life jackets must be stored in ____.
    a. In the same vicinity as the liferaft
    b. Convenient places distributed throughout accommodation spaces
    c. Overhead at least 7 feet
    d. In locked stowage containers

41. Each survival craft on a small passenger vessel must be secured to the vessel by a painter with ___.
    a. Red stripe
    b. Polypropylene line
    c. Float free link
    d. Pelican hook

42. Small passenger vessels are required to carry survival craft equipment for life floats if equipped. Each life float painter must have a breaking strength of ___.
    a. 500 pounds
    b. 1000 pounds
    c. 1500 pounds
    d. None of the above

43. Small passenger vessel owners must notify the nearest Coast Guard Marine Inspection Office if the vessel is engaged in a marine casualty consisting of ___.
    a. An unintended grounding
    b. A delay of more than 2 hours
    c. Illness of more than 2 crewmembers
    d. All of the above

44. Each officer employed on any small passenger vessel must ___.
    a. Have their merchant mariner credential onboard
    b. Renew their merchant mariner credential annually
    c. Always carry their merchant mariner credential while on watch
    d. None of the above

45. What is the purpose of the hydrostatic release on an inflatable liferaft?
    a. To release the raft from the cradle automatically as the ship sinks
    b. To inflate the raft automatically
    c. To test the rafts hydrostatically
    d. None of the above

46. The line which attaches a liferaft to the vessel when deployed is called the ___.
    a. Hydrostatic release
    b. Sea painter
    c. Weak link
    d. Tie down strap

47. Which of the following equipment is commonly found in liferafts?
    a. Flares
    b. Knife
    c. Repair kit
    d. All of the above

48. Buoyant work vests are designed for ____.
    a. Taking the place of a required personal floatation device
    b. Carrying out deck duties near the water's edge
    c. Firefighting duties
    d. Low profile vessels

49. Which statement is TRUE about immersion suits ____.
    a. They should be tight fitting
    b. They provide sufficient floatation to keep a user face up
    c. Clothing should not be worn underneath
    d. All of the above

50. A satellite beacon which works on 406 MhZ is known as a(n)_____.
    a. SART
    b. RACON
    c. EPIRB
    d. NTM

Navigation General Study Guide

1. Aids to Navigation and Publications

• Understand the IALA Buoyage System — including the shapes, colors, and light characteristics of lateral, cardinal, safe water, isolated danger, and special marks.
• Know the meaning of topmarks and color schemes (e.g., black and red = isolated danger).
• Study how to identify light characteristics such as Fl, Oc, and Mo(A), and understand which buoys use each.
• Be able to identify dayboards by their Light List codes and understand what KBR or similar abbreviations mean.
• Review how to interpret visibility ranges of lights, including luminous, nominal, and geographic ranges. Use the formula: Geographic Range = 1.17 × (√height of light + √height of eye).
• Become familiar with AIS-AtoN (automatic identification systems for aids), and know how virtual aids are transmitted (via VHF/AIS).
• Study VHF channel assignments and their designations for bridge-to-bridge, distress, and Coast Guard communications.
• Use the Light List and Coast Pilot to find details on lighthouses, buoy heights, and characteristics.
• Understand the publication hierarchy: Coast Pilot (local/regional info), Light List (aid characteristics), and Notices to Mariners (updates and corrections).

2. Compasses, Instruments, and Electronic Navigation

• Understand magnetic compass fundamentals, including deviation and variation. Learn how to calculate true and magnetic headings using: True = Magnetic + Variation.
• Know that deviation is caused by onboard materials; variation is caused by Earth's magnetic field.
• Practice using deviation tables and solving for compass error using true course, magnetic course, and variation.
• Study the function of electronic navigation instruments like radar, AIS, ARPA, fathometers, and anemometers.
• Know how to differentiate vector charts from raster charts, and what each type displays in ECDIS.
• Understand how GPS, radar, and depth sounders work and what units they measure (e.g., depth in fathoms/feet).
• Review AIS properties including range (~20 miles), data frequency (VHF), and how it differs from ARPA.

3. Meteorology and Oceanography

• Understand how wind is created and how pressure gradients and the Coriolis effect affect

direction.
• Study local wind patterns (land breeze, sea breeze) and general patterns in the mid-latitudes (e.g., west to east).
• Know common weather instruments (anemometer, barometer) and what they measure.
• Identify clouds and what they indicate: cumulonimbus = thunderstorms, altocumulus = mid-level clouds.
• Study the effects of barometric pressure on weather systems (e.g., low pressure = stormy conditions).
• Learn fog formation conditions and types (advection fog, radiation fog).
• Interpret weather charts and symbols (e.g., cold fronts = blue triangles, occluded fronts = purple).
• Practice reading NWS bulletins and determining best actions for mariners based on warnings and bulletins.

4. Tides and Currents

• Review tide types (diurnal, semidiurnal, mixed) and tidal terminology (e.g., range, mean high water, datum).
• Know how to use tide tables to determine height of tide at a given time and location.
• Study current directions and speeds using tidal current tables and local predictions (e.g., flood vs. ebb).
• Practice set and drift calculations based on fixes and DR positions. Remember: Set = direction; Drift = distance/time.
• Use height of tide and charted depth to calculate depth beneath keel: (Charted Depth + Height of Tide) - Vessel Draft.
• Understand slack water, flood, and ebb, and how to time transits based on current predictions.
• Use NOAA and Coast Pilot info to plan safe transits in tidal areas like Woods Hole and the Cape Cod Canal.

Navigation General
100 Ton Master

Version Practice

Rules of the Exam:

Do not write in the exam book
Write your name and test version on the bubble sheet

No electronic devices
No leaving your desk

50 Questions
70% passing score required

Signal the proctor when finished

Aids to Navigation

1. Preferred channel markers are ___.
    a. Odd numbered
    b. Even numbered
    c. Alternate numbered
    d. May be lettered

2. Aids marking the intracoastal waterway display ___.
    a. Red and green circles
    b. Red, black, and green triangles
    c. Yellow symbols to distinguish them from aids marking other waters
    d. No separate symbols

3. The buoy shown indicates ____.
    a. Safe water all around
    b. Isolated danger
    c. A special mark
    d. Preferred channel

4. When lighted what color are ranges?
    a. Red
    b. Green
    c. White
    d. Any color

5. A sound signal or electronic aid to navigation that is out of service due to malfunction is ___.
    a. Extinguished
    b. Off station
    c. Inoperative
    d. Alternating

6. AIS-ATON can be used to ____.
    a. Autonomously broadcast metadata about aids to navigation
    b. Provide ship courses and speeds for passing vessels
    c. Warn mariners of near-future grounding
    d. Determine the most effective SAR asset for an emergency

7. The maximum distance a light can be seen in clear weather is the ____.
    a. Luminous range
    b. Nominal range
    c. Geographic range
    d. Height of eye

8. Point Judith Light, Rhode Island is 65 feet heigh. What is the approximate geographic range if your height of eye is 62 feet (18.9 meters)?
   a. 9.6 nm
   b. 16.5 nm
   c. 18.6 nm
   d. 20.7 nm

9. A light has a nominal range of 20 miles. The meteorological visibility is Code 5. At what maximum range can you see the light?
   a. 3.5-6 miles
   b. 6.6-10 miles
   c. 10-15 miles
   d. Greater than 15 miles

10. What is the nominal range of Watch Hill Light?
    a. 2.5 miles
    b. 9 miles
    c. 14 miles
    d. 22.5 miles

11. Watch Hill Light has what light characteristic?
    a. AL RW 5s
    b. FL (2+1)
    c. FL W 2.5s
    d. FL R 10s

Publications

12. ____ are issued by each Coast Guard District Commander for the waters under their jurisdiction, usually weekly.
    a. Local Notice to Mariners
    b. Security Zone Update
    c. Special Broadcast
    d. Coast Pilot

13. An aid to navigation with an abbreviation LBB is termed ___.
    a. Light Broadcast Buoy
    b. Lighted Bell Buoy
    c. Lower Bridge Building
    d. Lesser Buoy

14. Any spilling, leaking, pumping, pouring, emitting, emptying, or dumping is called ___.
    a. Discharge
    b. Pollution
    c. Sanitation
    d. Effusing

15. Clearance gauges are required for drawbridges across navigable waters of the United States discharging into the Atlantic Ocean south of _____.
    a. The Canadian border
    b. Cape Cod
    c. New York
    d. Delaware Bay

16. Vessels over 65 feet are subject to speed restrictions to protect which type of whale?
    a. North Atlantic Right Whale
    b. Humpback Whale
    c. Sei Whale
    d. Fin Whale

17. According to the Coast Pilot, NOAA Weather Radio broadcasts on which VHF-FM frequency from Hyannis, MA?
    a. 162.475
    b. 162.55
    c. 162.40
    d. 161.755

18. Information about the currents for the Atlantic Coast of the U.S. are found in the _____.
    a. Ocean Current Tables
    b. Nautical Almanac
    c. Tide Tables
    d. Tidal Current Tables

19. If you were crossing the North Pacific and were interested average percentages of gale force conditions in the Bering Sea, you could consult the ___.
    a. Pilot Chart
    b. Coast Pilot
    c. Notice to Mariners
    d. None of the above

20. The Coast Guard publishes which of the following documents?
    a. Light List
    b. Coast Pilot
    c. Notice to Mariners
    d. All of the above

Compasses, Instruments, and Electronic Navigation

21. Deviation in a compass is caused by the _____.
    a. vessel's geographic position
    b. vessel's heading
    c. earth's magnetic field
    d. influence of the magnetic materials of the vessel

22. Variation is not constant; it is different with every change in _____.
    a. speed
    b. vessel heading
    c. geographical location
    d. cargo

23. When changing from a compass course to a true course you should apply _____.
    a. variation
    b. deviation
    c. variation and deviation
    d. a correction for the direction of current set

24. Magnetic information on a chart may be _____.
    a. found in the center(s) of the compass rose(s)
    b. provided by a notice to mariners
    c. found in a note on the chart
    d. All of the above

25. The true course is 120° T. Variation is 14° W. You are steering course 136° psc. What is the deviation of the magnetic compass?
    a. 2° E
    b. 2° W
    c. 3° E
    d. 3° W

26. A sounder is used to determine ____.
    a. Speed of your vessel
    b. Range to targets
    c. Depth of water
    d. Distance to targets

27. The radar tool which calculates target vessel course and speed is called ____.
    a. AIS
    b. ARPA
    c. ALAT
    d. None of the above

28. AIS transmits data on which frequency?
    a. HF
    b. VHF
    c. UFH
    d. SSB

29. A marine instrument used to measure the time is called a(n) ____.
    a. Chronometer
    b. Stadimeter
    c. Fathometer
    d. Anemometer

30. The two common types of electronic navigational chart are _____.
    a. Vector and Raster
    b. Pilot and Coastal
    c. Geographic and Luminous
    d. Synoptic and Forecast

Meteorology and Oceanography

31. The coastal warning display noted here indicates ___.

a. Small craft advisory
b. Gale warning
c. Storm warning
d. Hurricane warning

32. A very light breeze that causes ripples on a small area of still water is a _____.
a. cat's paw
b. hog's breath
c. williwaw
d. chinook

33. The rise and fall of the ocean's surface due to a distant storm is known as _____.
a. sea
b. waves
c. fetch
d. swell

34. Cloud formations are minimal when the _____.
a. Barometric pressure is high
b. Wind is strong
c. Barometric pressure is very low
d. Relative humidity is very high

35. Fog forms when the air _____.
a. is 50% water saturated
b. is 90% water saturated
c. temperature is greater than the dew point temperature
d. temperature is equal to, or below the dew point temperature

36. On a weather map, an occluded front is represented by which color line?
a. Red
b. Blue
c. Alternating red and blue
d. Purple

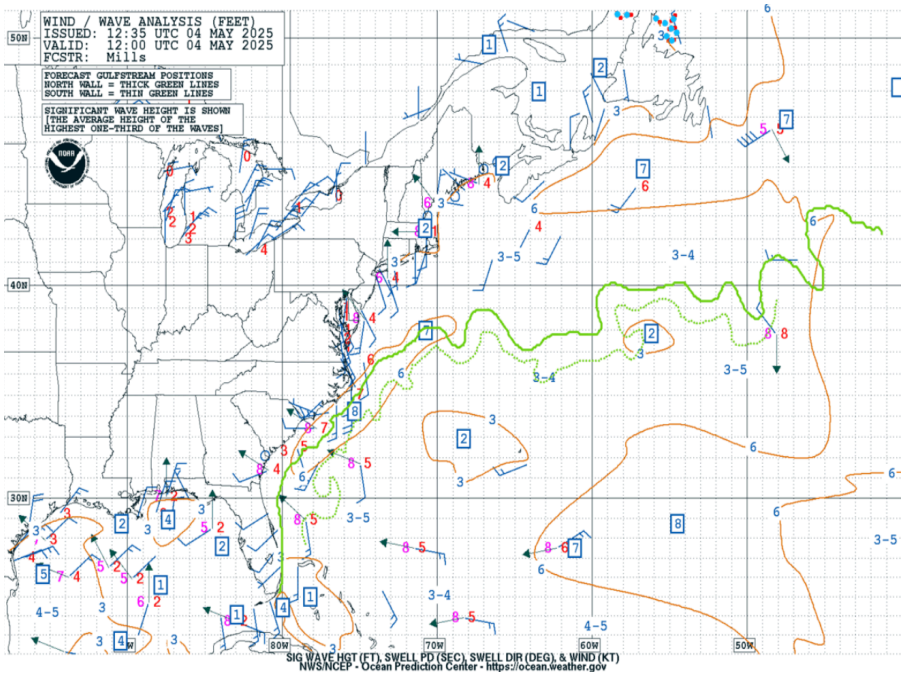
37. Fetch is the _____.
    a. distance a wave travels between formation and decay
    b. stretch of water over which a wave-forming wind blows
    c. time in seconds required for two crests to pass a given point
    d. measurement of a wave's steepness

38. You are underway east of Puerto Rico. You receive the attached bulletin from the National Weather Service. What is the best course of action?
    a. Remain underway but move to deep water
    b. Remain underway but move to shallow water
    c. Anchor in a harbor protected from the north
    d. No action is necessary

```
ZCZC
WECA40 PHEB 300425
TSUCAR

TSUNAMI MESSAGE NUMBER 4
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1225 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300625-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...THE TSUNAMI WATCH IS CANCELED AND A TSUNAMI WARNING IS NOW IN
EFFECT...


AUDIENCE
--------

  * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO
    RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN
    ISLANDS.


UPDATES IN THIS MESSAGE
-----------------------

  * THE TSUNAMI WATCH IS CANCELED AND A TSUNAMI WARNING IS NOW IN
    EFFECT FOR PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE
    BRITISH VIRGIN ISLANDS.

  * THE EARTHQUAKE PARAMETERS HAVE BEEN REVISED.

  * THE GENERATION OF TSUNAMI WAVES IS CONFIRMED.


EVALUATION
----------


* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED
  NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29
  2016.

* A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

* BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF
  HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN
  PUERTO RICO AND THE VIRGIN ISLANDS.

* THE EARLIEST ESTIMATED TIME THAT TSUNAMI WAVE ACTIVITY AND
  FLOODING MAY BEGIN WITHIN THE PUERTO RICO AND VIRGIN ISLANDS
  REGION IS

        616 AM AST ON SATURDAY JANUARY 30 2016
```

39. You are recovering boosters for a space launch company east of Cape Canaveral, Florida. You download the latest NWS Wind/Wave analysis before getting underway. What sea conditions can you expect offshore in the recovery area north of the Bahamas?

a. Calm
b. 1-3 feet
c. 3-5 feet
d. 5-8 feet



40. You are operating near Point Judith, so you download the weekly Local Notice to Mariners. What is the status of Point Judith Harbor of Refuge East Entrance Light 3?

a. Missing
b. Watching properly
c. Destroyed
d. Extinguished

Plymouth Harbor

Federal Discrepancies

NAME	LLNR	STATUS	AID TYPE
Plymouth Harbor Channel Buoy 11	12920	MISSING	FD
Plymouth Beach Jetty Daybeacon	12935	MISSING	FD

Point Judith Harbor Of Refuge

Federal Discrepancies

NAME	LLNR	STATUS	AID TYPE
Point Judith Harbor of Refuge East Entrance Light 3	19490	STRUCT DEST/TRLB	FD
Point Judith Harbor of Refuge West Entrance Light 2	19500	STRUCT DEST/TRLB	FD

Federal Discrepancies Corrected

NAME	LLNR	STATUS	AID TYPE	CORRECTION DATE
Point Judith Harbor of Refuge West Entrance Light 3	19505	WATCHING PROPERLY	FD	2025-04-21

Additional MSI Categories

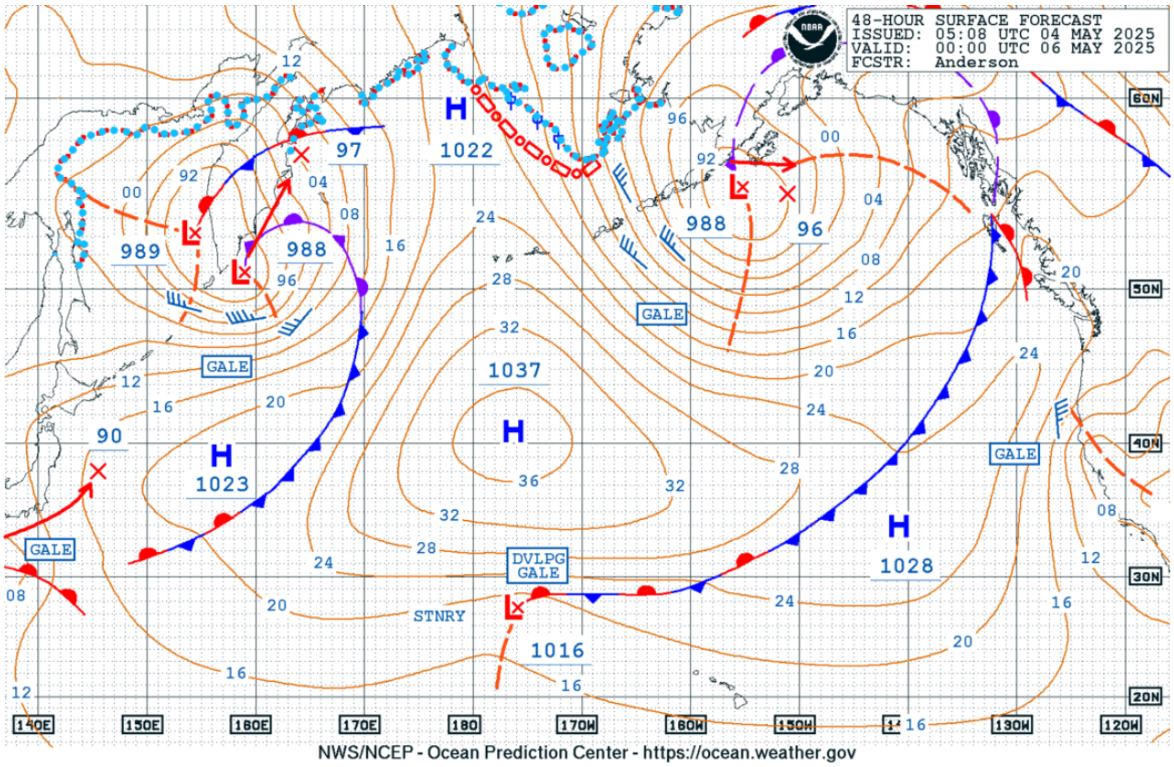
TITLE	SUBCATEGORY	DESCRIPTION	LOCATION
West Passage - Point Judith Harbor Of Refuge/General/Hazards To Navigation/Hazards	Hazards To Navigation	General/Hazards To Navigation/Hazards From: 2024-12-20 To: 2025-06-18 A seasonal 2.75-acre kelp farm has been established in the Point Judeth Harbor of Refuge, from November 1, 2024 to May 1, 2025. Mariners are advised to transit the harbor at their slowest safe speed and avoid anchoring in the vicinity of these kelp beds.	

Point Judith Pond

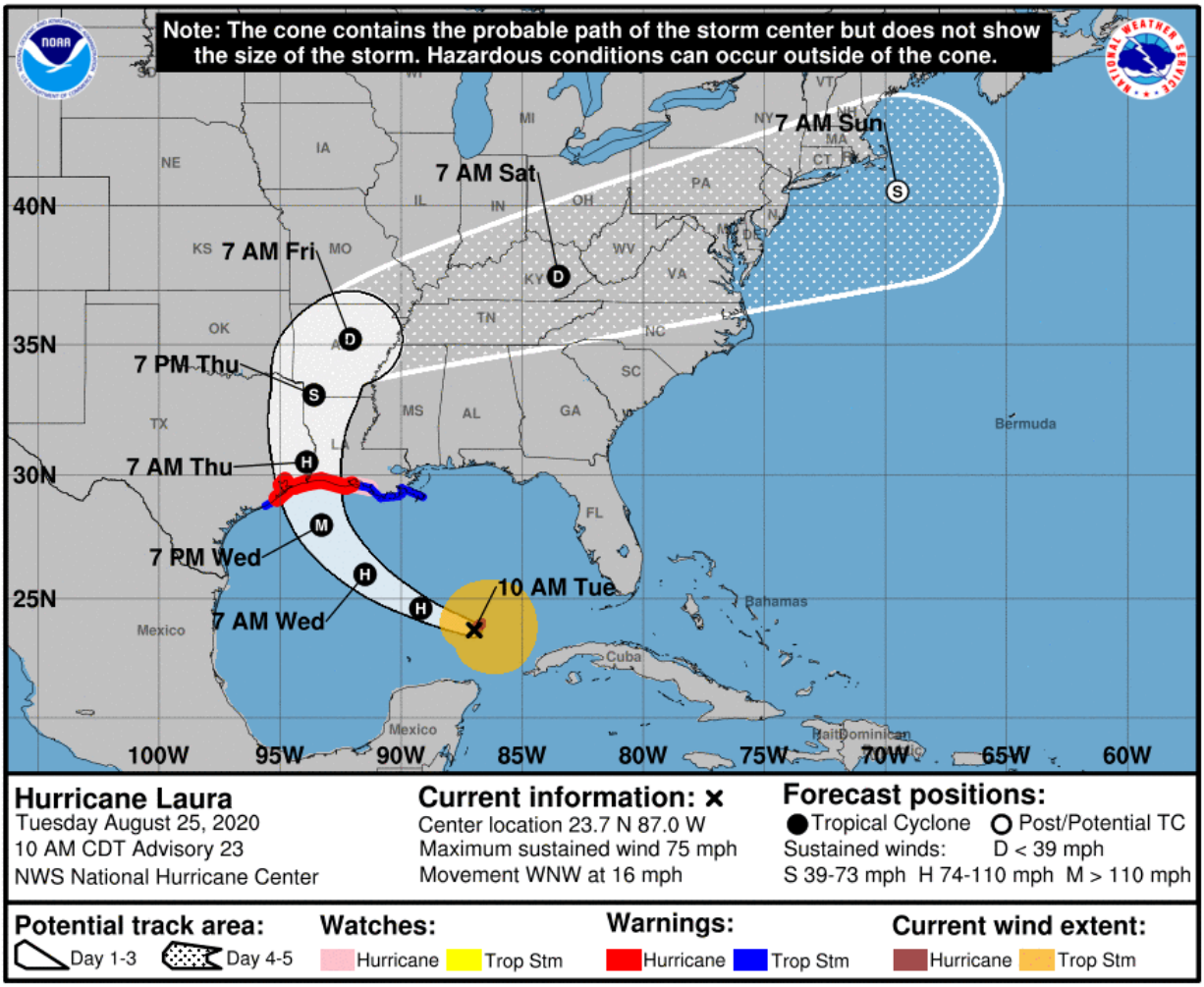
Additional MSI Categories

TITLE	SUBCATEGORY	DESCRIPTION	LOCATION
Point Judith Harbor Of Refuge - Point Judith Pond/General/Hazards To Navigation/Shoaling Reported	Hazards To Navigation	General/Hazards To Navigation/Shoaling Reported From: 2024-09-12 To: 2039-10-11 RI-BLOCK ISLAND SOUND AND APPROACHES (CHART 13205)-POINT JUDITH POND Shoaling has been observed within the channel to a least depth of 4.0 feet MLW in approximate position 41 22'48"N, 071 33'55"W between Point Judith Pond Channel Buoy 2 (LLNR 19555) and Point Judith Pond Channel Buoy 4 (LLNR 19560). Shoal is encroaching from the East side of the channel and protruding west. Shoaling has also been identified in several other areas north of buoy 2, below charted depth, extending into the upper pond. Mariners without local knowledge are advised to transit with extreme caution, paying particular attention to tidal range. Mariners are urged to use caution while transiting the area.	

41. You have downloaded the latest 48-hour surface forecast for the Pacific. What is the predicted wind speed off the southern Oregon coast?
    a. 15 knots
    b. 25 knots
    c. 35 knots
    d. 45 knots



42. What does the hurricane cone predict?
    a. The region to be impacted by the storm
    b. The probable path of the center of the storm only
    c. The area of maximum rainfall
    d. The region with winds greater than 39mph



Tides and Currents

43. Neap tides occur when the _____.
    a. Moon is in its first quarter and third quarter phases
    b. Sun and Moon are on opposite sides of the Earth
    c. Moon's declination is maximum and opposite to that of the Sun
    d. Sun and Moon are in conjunction

44. The difference between slack and maximum flood is called _____.
    a. range
    b. period
    c. velocity
    d. distance

45. Which statement is TRUE concerning tides?
    a. The height of tide is the distance above or below the tidal datum
    b. They occur when the Moon is at maximum declination north or south.
    c. Tidal high and slack water always occurs at the same time
    d. High water is used as the basis for soundings on charts

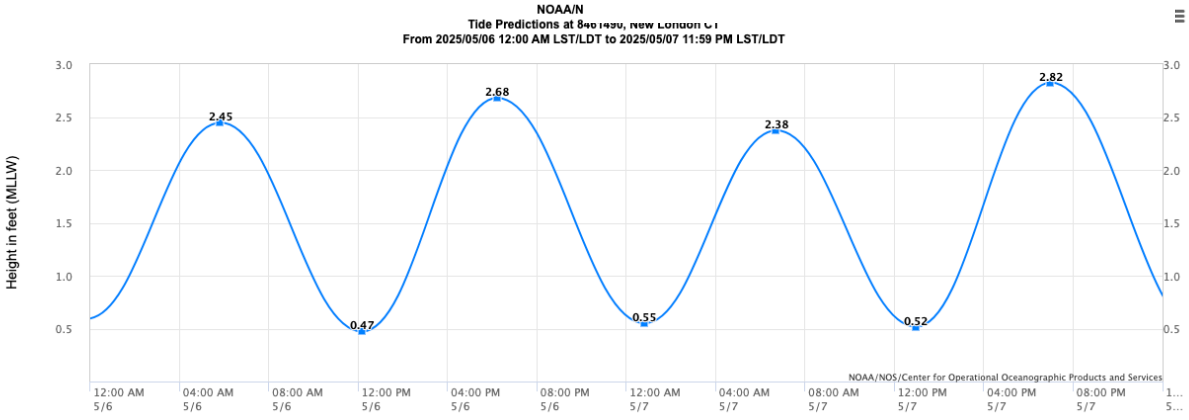
46. The shoreline on charts generally represents the mean _____.
    a. high water line
    b. low water line
    c. low water spring line
    d. tide level

47. You are getting underway from New London Harbor at 0400 on 6 May. What is the expected height of tide?
    a. 2.5 feet
    b. 2.0 feet
    c. 1.5 feet
    d. 1.0 feet

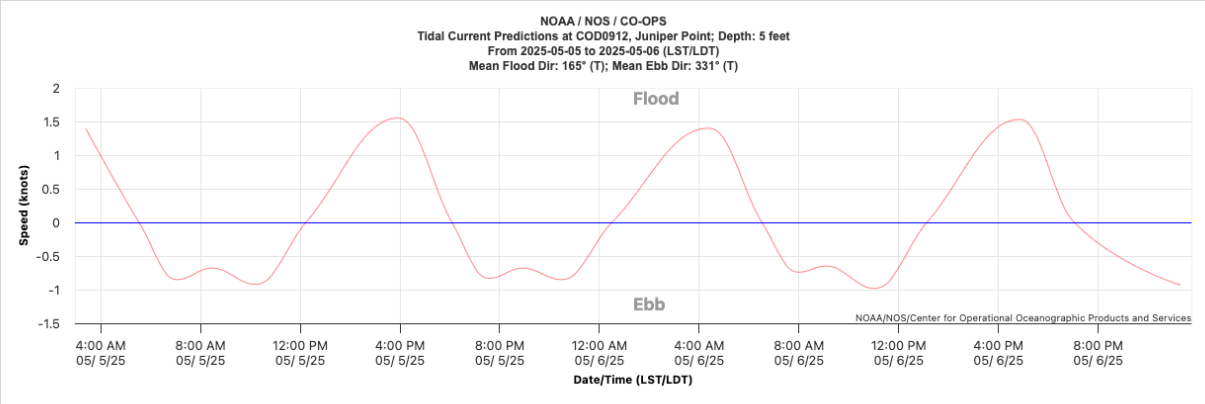
New London, CT – Station ID: 8461490

Station Info | Today's Tides | Photos | Sensor Information | Observations

Established:	Jun 11, 1938
Time Meridian:	0° E
Present Installation:	Oct 19, 2020
Date Removed:	N/A
Water Level Max (ref MHHW):	7.53 ft. Sep 21, 1938
Water Level Min (ref MLLW):	-4.00 ft. Feb 02, 1976
Mean Range:	2.56 ft.
Diurnal Range:	3.05 ft.
Latitude	41° 22.3 N
Longitude	72° 5.7 W
Met Site Elevation:	8.00 ft. above MSL



48. What is the direction of the ebb current at Woods Hole, MA?
    a. 020° T
    b. 165° T
    c. 223° T
    d. 331° T



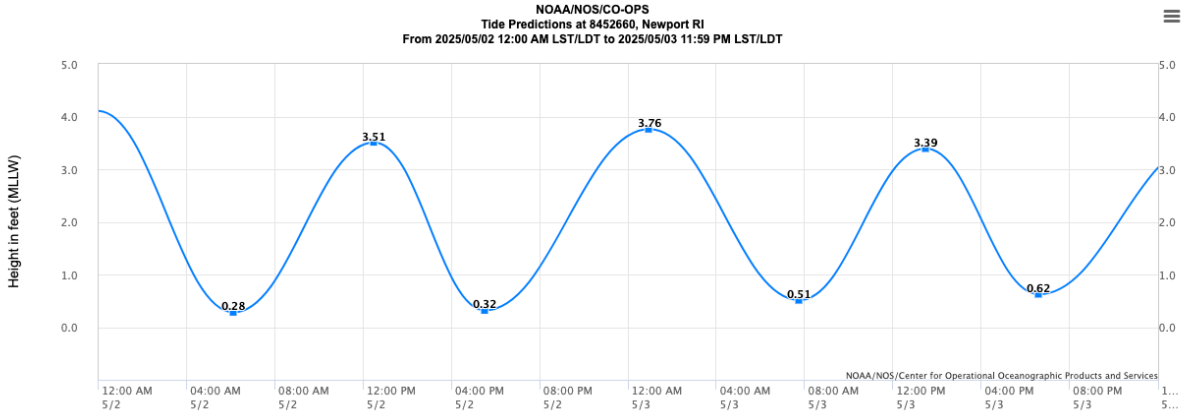
Disclaimer: The predictions from NOAA Current Predictions are based upon the latest information available as of the date of your request.

49. You are docking at Newport, RI, on 2 May. The depth alongside is 12 feet at MLLW. What is the expected depth of water alongside at 1200?
    a. 3.5 feet
    b. 8.5 feet
    c. 12 feet
    d. 15.5 feet

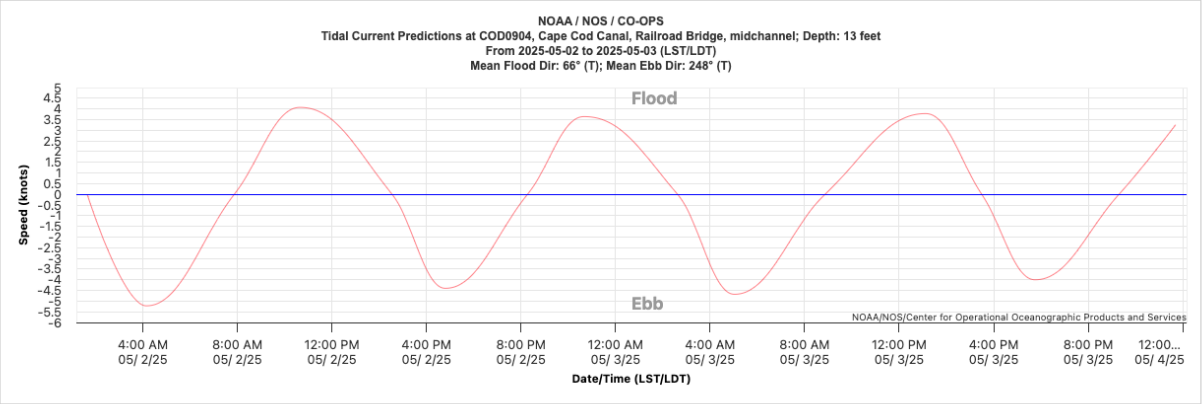
Newport, RI – Station ID: 8452660

Station Info | Today's Tides | Photos | Sensor Information | Observations

Established:	Sep 11, 1930
Time Meridian:	0° E
Present Installation:	Sep 23, 1991
Date Removed:	N/A
Water Level Max (ref MHHW):	9.46 ft. Sep 21, 1938
Water Level Min (ref MLLW):	-3.09 ft. Feb 03, 1976
Mean Range:	3.47 ft.
Diurnal Range:	3.85 ft.
Latitude	41° 30.3 N
Longitude	71° 19.6 W
Met Site Elevation:	7.30 ft. above MSL



50. You are transiting the Cape Cod Canal from west to east, along a trackline of 066° T near the Railroad Bridge. How will the current affect you on 2 May at 1600?
    a. You will experience a following current
    b. You will experience a head current
    c. You will experience a set from port to starboard
    d. You will experience a set from starboard to port



Disclaimer: The predictions from NOAA Current Predictions are based upon the latest information available as of the date of your request.

Challenge Modules:

Rules of the Road and Chart Plot both require a score of 90%, which is challenging to achieve. The best study strategy is to complete all course materials.

For Rules of the Road, it's recommended to read the entire text of the COLREGS, and practice as many questions as possible. There is no practice exam – focus on the specific rules instead of the exam itself and the rule quizzes.

For Chart Plot, it's recommended to complete all the practice problems, followed by several or all the practice exams.

Chart Plot Practice Problems

These practice problems serve as fundamental training on chart plotting. After this, take the practice exams, which combine these skills into larger problems.

Accuracy: You should aim for accuracy of 0.5 knots in all speed calculations, 20° in all bearing calculations, 0.5° to 1.0° in compass problems, and 5 minutes for all time calculations.

Deviation Table Questions

1. What is the deviation for a heading of 090° magnetic?

   a. 4° W
   b. 3° W
   c. 2° W
   d. 1° W

2. What is the deviation for a heading of 135°M?

   a. 1° W
   b. 1.5°W
   c. 2° W
   d. 2.5° W

3. What is the deviation for a heading of 165°M?

   a. 1° W
   b. 0°
   c. 1° E
   d. 2° E

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

Coast Pilot Lookup Questions

1. According to the Coast Pilot, which of the following is true about Montauk Point?

   a. It is a high sandy bluff
   b. The land is covered by trees
   c. The nearby light is located on a low saddle of land
   d. It marks the western extremity of Long Island

2. Fishers island ____.

   a. Has a prominent green sports stadium
   b. Features radar antenna on Mount Harvest
   c. Is hilly and sparsely wooded
   d. Is flat and sandy

3. What is true about Race Rock?

   a. It is on the southwest side of The Race
   b. It is nearly 600 yards in diameter
   c. It is located 2nm west of The Race
   d. It has a depth of 8 feet

Depth Questions

1. You intend to anchor in 25 feet of water. The range of tide is negligible. You desire a scope of 3:1. How much chain do you put out?

   Solution:
   Datum 25
   Tide NA
   Total 25
   Scope 3:1 → 75

   a. 75 feet
   b. 90 feet
   c. 105 feet
   d. 120 feet

2. You intend to anchor in 33 feet of water. The range of tide is 2 feet. You desire a scope of 4:1. How much chain do you use?

   Solution:
   Datum 33
   Tide 2
   Total 35
   Scope 4:1 → 140

   a. 130 feet
   b. 140 feet
   c. 150 feet
   d. 160 feet

3. You are going to anchor in 40 feet of water. The range of tide is 5 feet. You desire a scope of 6:1. How much chain do you put out?

   Solution:
   Datum 40
   Tide 5
   Total 45
   Scope 6:1 → 270

   a. 240 feet
   b. 270 feet
   c. 300 feet
   d. 330 feet

Speed Distance Time Problems

1. It is 1345. You are making 12.5 knots and have 4.7nm to travel. What is your ETA to your destination?

   Solution: S=D/T
   S = 12.5
   D = 4.7
   T = 0.376 hours = 23 minutes → 1408

   a. 1353
   b. 1401
   c. 1408
   d. 1415

2. Waypoint X is located at XXXXXN, XXXXXW. It is now 2230. What is your ETA at waypoint X if you are making good 10 knots and the distance is 4.6nm?

   Solution:
   S= 10
   D = 4.6nm
   T = 0.46 hours = 27.6 minutes → 2258

   a. 2244
   b. 2252
   c. 2258
   d. 2306

3. Based on a speed of 8 knots and a distance of 6.1nm, what is the duration of transit to waypoint X?

   Solution:
   S= 8
   D= 6.1
   T= 0.7625 hours = 46 minutes

   a. 41 minutes
   b. 46 minutes
   c. 51 minutes
   d. 58 minutes

Chart Feature Questions

1. What does the charted symbol “sft” indicate for a bottom type?

a. Soft
b. Hard
c. Mud
d. Sand

2. What does the bottom type “M” indicate?

a. Mud
b. Sand
c. Hard
d. Gravel

3. You are going to anchor over a chart symbol that says “hrd.” What does this indicate?

a. Soft
b. Hard
c. Mud
d. Sand

4. Where can you find the radio broadcast frequencies on chart 12354TR?

a. Bottom right
b. Top left
c. Bottom center
d. Top right

Bearing Problems

1. What is the true course from RG “TE” buoy to RW “CF” buoy?

    a. 069° T
    b. 071° T
    c. 073° T
    d. 074° T

2. What is the true course from RG “TE” buoy to Falkner Island Light?

    a. 298° T
    b. 295° T
    c. 293° T
    d. 290° T

3. What is the true course from Stratford Shoal Middle Ground Light to RW “NH” buoy?

    a. 45° T
    b. 47.5° T
    c. 50° T
    d. 52.5° T

4. What is the true bearing from Stratford Shoal Middle Ground to the entrance to Port Jefferson?

    a. 179° T
    b. 177.5° T
    c. 176° T
    d. 175.5° T

5. What is the true course into the New Haven harbor entrance outer channel?

    a. 330° T
    b. 332° T
    c. 334° T
    d. 336° T

Course to Steer Problems

1. The true course between two waypoints is 268° T. What is the course to steer per steering compass (psc)?
   Solution:
   T 268
   V 14W
   M 282
   D 3E
   C 279psc

   a. 265° psc
   b. 272° psc
   c. 279° psc
   d. 289° psc

2. What is the course to steer from waypoint X to waypoint Y if a north wind is causing 2° of leeway? The base course from the chart is 320° T
   Solution:
   T 320
   V 14W
   M 334
   D 1E
   C 333
   Leeway 335

   a. 325° psc
   b. 328° psc
   c. 331° psc
   d. 335° psc

3. As you approach waypoint X, you plot your course to the next waypoint, Y, which is located at XXXX, on a bearing of 73° T. What is the course to steer from waypoint X to waypoint Y?
   Solution:
   T 73
   V 14W
   M 87
   D 4W
   C 91

   a. 91° psc
   b. 88.5° psc
   c. 84° psc
   d. 81.5° psc

Light List Lookup and Visibility of Light questions

1. What is the luminous range of Falkner Island Light if the visibility is 1nm?

   Solution:
   NR 13
   Vis 1
   LR 2.5nm

   a. 1 nm
   b. 2.5 nm
   c. 4 nm
   d. 6.5 nm

2. *For training purposes, assume you are located exactly at RG "TE" buoy.* You are heading due east at 10 knots. Visibility is 5.5nm. Which of the following is true?

   Solution:
   NR 13
   Vis 5.5
   LR 8nm

   a. You cannot see Falkner Island Light
   b. You can see Falkner Island Light but will lose sight in approximately 0.5 nm
   c. You can see Falkner Island Light but will lose sight approximately 3nm
   d. You can see Falkner Island Light for 13nm

3. At 0430 you are located 1nm due north of RW "CF" buoy, heading west at 6 knots. Visibility is 11 miles. At what time will you first sight Falkner Island Light?

   Solution:
   NR 13
   Vis 11
   LR 13nm – you can almost see the light at the waypoint. If not, do SDT

   a. 0430-0435
   b. 0435-0450
   c. 0450-0455
   d. 0455-0500

Latitude and Longitude Questions

1. What is the position of RW "PI" buoy?

    a. 41° 13.1' N, 72° 11.0'W
    b. 41° 13.2' N, 72° 10.9'W
    c. 41° 13.3' N, 72° 10.8'W
    d. 41° 13.4' N, 72° 10.7'W

2. What is the position Stratford Shoal Middle Ground Light?

    a. 41° 03.3' N, 73° 06.3'W
    b. 41° 03.4' N, 73° 06.2'W
    c. 41° 03.5' N, 73° 06.2'W
    d. 41° 03.6' N, 73° 06.1'W

3. What is the position of RW "NH" buoy?

    a. 41° 12.3' N, 72° 53.9' W
    b. 41° 12.1' N, 72° 53.8' W
    c. 41° 11.9' N, 72° 53.7' W
    d. 41° 11.7' N, 72° 53.6' W

Visual and Radar Bearings Questions

1. Stratford Shoal Middle Ground Light bears 270° T from your position. The range is 2.8nm. What is the charted depth?

   a. 93 ft
   b. 104 ft
   c. 117 ft
   d. 124 ft

2. Stratford Shoal Middle Ground Light bears 256° T at 4.6nm. What is the charted depth?

   a. 91 feet
   b. 97 feet
   c. 104 feet
   d. 109 feet

3. Bartlett Reef Light bears 354° T at 2.1nm What is the charted depth?

   a. 121 feet
   b. 148 feet
   c. 195 feet
   d. 249 feet

4. Bartlett Reef Light bears 079° T from your position. The range is 6.0nm. What is the charted depth?

   a. 50 feet
   b. 55 feet
   c. 88 feet
   d. 96 feet

5. Little Gull Island Light is ranged at 3.4nm. Bartlett Reef Light is ranged at 3.7nm. What is the nearest aid to navigation?

   a. RW “CF”
   b. RW “PI”
   c. RG “TE”
   d. RW “NH”

6. Hammonasset Point is ranged at 6.0nm. Rocky Point is ranged at 7.0nm. Horton Point bears 145° T. What is the closest aid to navigation?
   a. RW “CF”
   b. RW “PI”
   c. RG “TE”
   d. RW “NH”

Basic Set and Drift Problems

1. You are on track from RG "TE" to RW "CF". Horton Point bears 165° T at 4.6nm. Which of the following is true?

   a. You are being set to the left
   b. You are on track
   c. You are being set to the right
   d. You cannot determine the set

2. You have departed RG "TE" bound for RW "CF". Horton Point Light bears 173° T at 5.0nm. Which of the following is true?

   a. You are being set to the left
   b. You are on track
   c. You are being set to the right
   d. You cannot determine the set

3. You are enroute RG "TE" having recently departed RW "CF". Horton Point Light bears 173° T. Rocky Point Lookout Tower bears 109° T. RG "TE" is 2.3nm away. Which of the following is true?

   a. You are being set to the left
   b. You are on track
   c. You are being set to the right
   d. You cannot determine the set

Advanced Set and Drift Problems (CMG/SMG Style)

Steps:

- **Plot desired course and speed (1)**
- **Plot course made good and speed made good (2)**
- **Measure bearing and range from (1) to (2)**

1. Your desired course is 080° T at 8 knots. The course made good is 076° T at 7.5 knots. What is the set and drift of the current?

   a. 303° T at 1.0 knots
   b. 303° T at 1.6 knots
   c. 123° T at 1.0 knots
   d. 123° T at 1.6 knots

2. Your desired course is 340° T at 6 knots. The course made good is 344° T at 6.8 knots. What is the set and drift of the current?

   a. 192° T at 0.9 knots
   b. 192° T at 1.5 knots
   c. 012° T at 0.9 knots
   d. 012° T at 1.5 knots

3. Your desired course is 165° T at 8 knots. The course made good is 171° T at 7.1 knots. What is the set and drift of the current?

   a. 309° T at 0.8 knots
   b. 309° T at 1.2 knots
   c. 129° T at 0.8 knots
   d. 129° T at 1.2 knots

Advanced Set and Drift Questions (Course to Steer Style)

Steps:

- **Plot the set and drift (1)**
- **Plot the desired course and speed (2)**
- **Measure bearing and range from (1) to (2)**

1. The set and drift of the current is 120° T at 1 knot. You desire to make good a course of 000° T at 8 knots. What is the course to steer and speed to turn for?

   a. 354° T at 8.7 knots
   b. 354° T at 7.8 knots
   c. 176° T at 8.7 knots
   d. 176° T at 7.8 knots

2. The set and drift of the current is 085° T at 1.5 knots. You desire to make good a course of 045° T at 9 knots. What is the course to steer and speed to turn for?

   a. 039° T at 8 knots
   b. 045° T at 8 knots
   c. 057° T at 6.5 knots
   d. 077° T at 10 knots

3. The set and drift of the current is 260° T at 2.5 knots. You desire to make good a course of 185° T at 8.5 knots. What is the course to steer and speed to turn for?

   a. 150° T at 7 knots
   b. 161° T at 7 knots
   c. 168° T at 8 knots
   d. 185° T at 8 knots

Advanced Set and Drift Problems (DR style)

Steps:

- **Plot your initial fix**
- **Plot your DR for the time of new fix**
- **Plot your new fix**
- **Measure from DR to new fix for set.**
- **Measure from DR to new fix, <u>divided by time elapsed</u>, for drift.**

If you choose to do this on a maneuvering board, simply take bearings and ranges to recreate the situation above on a maneuvering board.

1. You are on course 090° T at 8 knots. At 1300 you take a fix. At 1345 you take another fix. The second fix bears 105° T at 6 miles from the first fix. What is the set and drift of the current?

   a. 190° T at 2.1 knots
   b. 190° T at 1.5 knots
   c. 010° T at 2.1 knots
   d. 010° T at 1.5 knots

2. You are on course 045° T at 7 knots. At 1400 you take a fix. At 1430 you take another fix. The second fix bears 040° T at 4 miles from the first fix. What is the set and drift of the current?

   a. 310° T at 1.6 knots
   b. 330° T at 0.8 knots
   c. 000° T at 1.2 knots
   d. 025° T at 0.8 knots

3. You are on course 265° T at 9 knots. At 1515 you take a fix. At 1555 you take another fix. The second fix bears 273° T at 5.2 nm from the first fix. What is the set and drift of the current?

   a. 032° T at 1.1 knots
   b. 044° T at 1.7 knots
   c. 061° T at 1.7 knots
   d. 085° T at 1.1 knots

Chart Plotting
100 Ton Master

Version Practice (Multiple Exams)

Rules of the Exam:

Do not write in the exam book
Write your name and test version on the bubble sheet

No electronic devices
No leaving your desk

10 Questions
90% passing score required

Signal the proctor when finished

Practice Exam 1

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

1. You arrive on watch and according to the night orders, you are anchored in position 41° 14.9'N, 72° 35.2'W near Hammonasset Point, waiting out a strong northerly wind. What is the bottom type?

   Category: GPS Fix, chart features

   Solution: plots on hrd bottom

   a. Hard
   b. Soft
   c. Mud
   d. Sand

2. After taking the watch, you note that Falkner Island bears 240° T at 3.7nm. Which of the following is true?

   Category: Visual fix, radar fix

   Solution: Visual bearing plots south of the GPS position

   a. You are at your designated anchorage
   b. You have dragged anchor towards the north
   c. You have dragged anchor towards the west
   d. You have dragged anchor towards the south

3. You get underway bound for waypoint L which is located 1nm due north of RG "TE" buoy. What is the base course to steer from anchorage to waypoint L?

   Category: CTS, TVMDC

   Solution:
   T 143
   V 14W
   M 157
   D 0.5W
   C 157.5psc

   a. 154° psc
   b. 157.5° psc
   c. 160.5° psc
   d. 165° psc

4. At 0335 you arrive at waypoint L and change course towards waypoint J, which is located 1nm due north of RW "CF" buoy. Visibility is reduced so you are transiting at 6 knots. What is the ETA to waypoint J?

   Category: ETA

   Solution:
   S = 6
   D = 6.4
   T = 1.067 hours = 1 hour 4 minutes = 0439

   a. 0431
   b. 0435
   c. 0439
   d. 0444

5. Shortly after, you note that Falkner Island Light bears 287° T at 8.4nm and Horton Point Light bears 165° T. What is true?

   Category: Visual fix, radar fix, set and drift

   Solution: Plots south of track

   a. You are being set left of track
   b. You are on track
   c. You are being set right of track
   d. You are in danger of running aground imminently based on your draft

6. You are bound for The Race and then for sea. What is the direction of flood at the Race?

   Category: Coast Pilot Lookup

   Solution: CP Page 256, article 107

   a. 100° T
   b. 210° T
   c. 295° T
   d. 355° T

7. Waypoint H is located 1nm due north of RW "PI" buoy. What is the latitude and longitude of this position?

   Category: distance off, GPS fix

   Solution: Plots on waypoint H

   a. 41° 14.4'N, 72° 10.8'W
   b. 41° 14.5'N, 72° 10.9'W
   c. 41° 14.6'N, 72° 10.6'W
   d. 41° 14.7'N, 72° 10.7'W

8. What is the course to steer from waypoint J to waypoint H?

   Category: CTS, TVMDC

   Solution:
   T 77.5
   V 14W
   M 91.5
   D 4W
   C 95.5psc

   a. 95.5° psc
   b. 91.5° psc
   c. 87° psc
   d. 81° psc

9. Visibility is 2 nm. At what distance can you expect to first sight Barlett Reef Light?

   Category: LL Lookup, visibility of Lights

   Solution:
   NR 8
   Vis 2
   LR 3nm

   a. 1nm
   b. 2nm
   c. 3nm
   d. 4nm

10. At which frequency do you tune to hear the latest NOAA weather broadcast for your area?

    Category: Chart features

    Solution: on chart

    a. 162.55 MHz
    b. 162.475 MHz
    c. 162.40 MHz
    d. 162.22 MHz

Practice Exam 2

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

1. You are underway eastbound in Long Island Sound, approaching waypoint L, which is located at 41° 10.25'N, 72° 30.4'W. Visibility is 5.5nm. What is true regarding Falkner Island Light?

   Category: LL Lookup, Visibility of Lights

   Solution:
   NR 13
   Vis 5.5
   LR 8nm

   a. You will lose sight of the light approximately 1nm east of waypoint L
   b. You cannot see the light as you approach waypoint L
   c. You will lose sight of the light approximately 3nm east of waypoint L
   d. You will be able to see the light at least 6nm past waypoint L

2. At 0235 you reach waypoint L. You are considering anchoring in the lee of land to wait out the weather conditions. If you anchor in 30 feet of water and the range of tide is 5 feet, and you desire a scope of 6:1, how much chain will you put out?

   Category: Depth, trivia

   Solution:
   Datum 30
   Tide 5
   Total 35
   6:1 = 210

   a. 180 feet
   b. 210 feet
   c. 240 feet
   d. 270 feet

3. The visibility appears to have opened so you continue east. Waypoint J is 1nm due north of RW "CF" buoy. What is the course to steer per steering compass (psc) from waypoint L to waypoint J if a north wind is causing 5° of leeway?

   Category: CTS, TVMDC, Leeway

   Solution:
   T 072
   V 14W
   M 086
   D 4W
   C 090
   Leeway 085° psc

   a. 072° psc
   b. 079° psc
   c. 085° psc
   d. 092° psc

4. What is the ETA at waypoint J if you make good 7 knots?

   Category: ETA

   Solution:
   S = 7
   D = 6.4
   T = 0.91 hours = 55 minutes → 0330

   a. 0321
   b. 0330
   c. 0338
   d. 0345

5. At 0245, you note that Horton Point Light bears 167° T at a range of 5.7nm. Rocky Point is ranged at 5.8nm. Which of the following is true?

   Category: Radar fix, visual fix, set and drift

   Solution: This plots south of track

   a. You are being set to the left
   b. You are on track
   c. You are being set to the right
   d. You have not yet reached waypoint L

6. You are eventually bound for Niantic Bay. Which of the following is true?

   Category: Coast Pilot Lookup

   Solution: Per Coast Pilot page 279, article 120

   a. Green Rock is on an islet on the south side of the entrance to Niantic Bay
   b. Niantic Bay provides protection from southerly winds
   c. The entrance is 1.5 miles wide and dangers are marked by buoys or show above water
   d. The general depths are 60-80 feet, shoaling towards the southern end

7. As you approach waypoint J, you plot your course to the next waypoint, H, which is located at 41° 14.4'N, 72° 10.8'W. What is the course to steer from waypoint J to waypoint H?

   Category: CTS, TVMDC

   Solution:
   T 77.5
   V 14W
   M 91.5
   D 4W
   C 95.5

   e. 95.5° psc
   f. 91.5° psc
   g. 87° psc
   h. 83° psc

8. You increase speed to 10 knots. At 0345, you note the following:
   Horton Point Light bears 216° T
   Rocky Point is ranged at 4.7nm
   Orient Point is ranged at 5.3nm
   What is your position?

   Category: Visual fix, radar fix

   Solution: Plots at below coordinates

   a. 41° 13.0'N, 72° 19.2'W
   b. 41° 12.9'N, 72° 19.6'W
   c. 41° 12.8'N, 72° 19.4'W
   d. 41° 12.7'N, 72° 19.6'W

9. Which is the correct radio frequency for NOAA-VHF weather broadcasts for your area?

   Category: Chart features

   Solution: on chart

   a. 162.55 MHz
   b. 162.475 MHz
   c. 162.40 MHz
   d. 162.22 MHz

10. From your 0345 fix, what is the duration of transit at 10 knots to waypoint H?

    Category: SMG

    Solution
    S= 10
    D= 6.7
    T = 0.67 hours = 40 minutes

    a. 33 minutes
    b. 40 minutes
    c. 47 minutes
    d. 54 minutes

Practice Exam 3

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

1. At 1445, you are underway at waypoint E, in position 41° 13.0'N, 72° 05.0'W. Your next waypoint, H, is located 1nm due north of RW "PI" buoy. What is the course to steer per steering compass (psc)?

   Category: GPS Fix, CTS, TVMDC

   Solution:
   T 286
   V 14W
   M 300
   D 2E
   C **298 psc**

   a. 270° psc
   b. 272° psc
   c. 298° psc
   d. 302° psc

2. If you are making good 12.5 knots, what is the ETA at waypoint H?

   Category: ETA

   Solution: S=D/T
   S = 12.5
   D = 4.7
   T = 0.376 hours = 23 minutes → 1508

   e. 1453
   f. 1501
   g. 1508
   h. 1515

3. During the transit from waypoint E to waypoint H, which of the following is true?

   Category: chart features

   Solution: refer to COLREGS demarcation line

   a. You are subject to the inland rules during the entire transit
   b. You are subject to the inland rules for a majority of the transit
   c. You are subject to the international rules for a majority of the transit
   d. You are subject to the international rules during the entire transit

4. At 1500, the range to Bartlett Reef Light is 2.5nm. The range to Little Gull Island is 2.7nm. Which of the following statements is true?

   Category: Radar fix, set

   Solution: the given range is north/right of track

   a. You are on track
   b. You are being set to the right of track
   c. You are being set to the left of track
   d. You are in danger of going aground

5. You arrive at waypoint H and intend to anchor at waypoint I near Niantic Bay at 42° 17.8'N, 72° 11.4'W. To accommodate the range of tide of 5 feet and a scope of 5:1, how much anchor chain will you put out?

   Category: GPS Fix, Depth/Sounder, trivia

   Solution: 23 feet datum, + 5 = 28 feet. X5 = 140 feet of chain

   a. 110 feet
   b. 120 feet
   c. 130 feet
   d. 140 feet

6. On your new track, you are experiencing 3° of leeway from a westerly wind. What is the course to steer per steering compass (psc) to make good your course to anchorage?

   Category: CTS, leeway, TVMDC

   Solution: Base course 352° T
   T 352
   V 14W
   M 006
   D 0
   C 006 psc → 003 with leeway

   a. 351° psc
   b. 358° psc
   c. 003° psc
   d. 007° psc

7. According to the Coast Pilot, which of the following is true about Niantic Bay?

   Category: Coast Pilot Lookup

   Solution: Per Coast Pilot page 279

   e. Niantic Bay is a good anchorage in southerly winds
   f. The general depth of the bay is 40-60 feet, shoaling southward
   g. The entrance is 1.5 miles wide and dangers are marked by buoys or show above water
   h. Orange Rock is on an islet on the west side of the entrance to Niantic Bay

8. You have dropped anchor and take a round of bearings. The stack at Millstone Point bears 052° T. Bartlett Reef Light bears 117° T at a range of 2.7nm. What is the bottom type that you anchored in?

   Category: Visual Fix, Radar Fix, Chart Features

   Solution: plots directly on the soft bottom type

   a. Soft
   b. Mud
   c. Sand
   d. Hard

9. A dense fog has rolled in overnight. Bartlett Reef Light has a nominal range of 8nm. According to the National Weather Service, the meteorological visibility is 1nm. What is the luminous range of Bartlett Reef Light?

   Category: Visibility of Lights, Light List Lookup

   Solution: Using Luminous Range Diagram, the LR is 2 miles.

   a. 1 nm
   b. 2 nm
   c. 3 nm
   d. 4 nm

10. To listen to the NOAA-VHF weather forecast for your area, which frequency would you tune to?

    Category: Chart trivia

    Solution: located at bottom right of chart

    e. 162.55 MHz
    f. 162.475 MHz
    g. 162.40 MHz
    h. 162.22 MHz

Practice Exam 4

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

1. At 1300 you are located at waypoint D. Your position is 41° 10.2'N, 72° 04.1'W. Your desired course over ground is 346° T. What is the course to steer per steering compass (psc)?

   Category: CTS, TVMDC

   Solution:
   T 346
   V 14W
   M 000
   D 0
   C **000° psc**

   a. 356° psc
   b. 358° psc
   c. 000° psc
   d. 002° psc

2. You are inbound to New London Harbor. At 1320, you note the following:
   Little Gull Island 240° T at 1.3nm
   Bartlett Reef Light 325° T at 4.3nm
   What is your position?

   Category: Visual Fix, Radar Fix

   Solution: per bearings/ranges this is waypoint E

   a. 41° 13.4'N, 72° 04.6'W
   b. 41° 13.2'N, 72° 04.8'W
   c. 41° 13.0'N, 72° 05.0'W
   d. 41° 12.8'N, 72° 05.2'W

3. From 1300 to 1320, what was your speed made good?

   Category: SMG

   Solution:
   S = 8.4
   D = 2.8nm
   T = 20 minutes, 0.333 hours

   a. 7.9 kts
   b. 8.4 kts
   c. 9.0 kts
   d. 9.6 kts

4. At 1320 you mark yourself at waypoint E and change course bound for waypoint F, which is located between gated pair "1" and "2" at the entrance to New London Harbor. You also increase speed to 10 knots. What is your ETA at waypoint F?

   Category: ETA, CTS

   Solution:
   S= 10
   D= 4.6nm
   T = 0.46 hours = 27.6 minutes → 1348

   a. 1344
   b. 1348
   c. 1353
   d. 1359

5. You are concerned about potential decreased visibility. The NOAA-VHF weather forecast for your area is on which frequency?

   Category: Chart trivia

   Solution: located at bottom right of chart

   a. 162.55 MHz
   b. 162.475 MHz
   c. 162.40 MHz
   d. 162.22 MHz

6. As you approach New London Harbor, there are several marked anchorages. Which is true about Anchorage F?

   Category: Coast Pilot Lookup

   Solution: Coast Pilot page 56, article 941.

   a. It is a general anchorage
   b. It is reserved for Cross-Sound Ferries
   c. It is reserved for naval vessels
   d. It is for barges and small vessels drawing less than 12 feet

7. During your transit from waypoint E to waypoint F, Bartlett Reef Light is ranged at 2.3nm, and Goshen Point is ranged at 1.8nm. Which of the following are true?

   Category: Set and drift, radar fix

   Solution: per ranges, you are west of track

   a. You are being set left of track
   b. You are being set right of track
   c. You are on track
   d. You are past waypoint F already

8. What is true about Bartlett Reef Light if the meteorological visibility is 11nm?

   Category: Visibility of Lights, Light List Lookup

   Solution:
   NR: 8nm
   Vis: 11nm
   Luminous range: 8nm

   a. The luminous range is 8nm
   b. The geographic range is 6 nm
   c. The light has a characteristic of Fl (R) 2s
   d. The nominal range is 35 nm

9. You arrive at waypoint F and enter the New London Harbor channel. You take a visual bearing of the range boards, exactly in line, at 008° psc. What is the deviation in the compass?

   Category: Visual bearings, deviation determination, or Coast Pilot

   Solution:
   T 354T
   V 14W
   M 008
   D 0
   C 008

   a. 2° W
   b. 0°
   c. 2° E
   d. 4° E

10. At 1415 you are approaching general anchorage C, to the west of New London Harbor channel. The range of tide is 5 feet. You desire a scope of 5:1. How much chain will you put out?

    Category: Chart features, trivia

    Solution:
    Datum = 27
    Tide = 5
    Total = 32
    Scope = 5:1
    Total = 160 feet

    a. 120 feet
    b. 140 feet
    c. 160 feet
    d. 180 feet

Practice Exam 5

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

1. It is 2330 and you are just underway from New London Harbor at waypoint F, located between entrance buoy "1" and "2."

   To check the steering compass, you take a visual bearing of the range boards, exactly in line, at 008° psc. What is the deviation in the compass?

   Category: Visual bearings, deviation determination

   Solution:
   T 354T
   V 14W
   M 008
   D 0
   C 008

   a. 2° W
   b. 0°
   c. 2° E
   d. 4° E

2. Waypoint E is located at 41° 13.0'N, 72° 05.0'W. What is your ETA at waypoint E if you are making good 10 knots?

   Category: GPS fix, ETA

   Solution:
   S= 10
   D = 4.6nm
   T = 0.46 hours = 27.6 minutes → 2358

   e. 2344
   f. 2352
   g. 2358
   h. 0006

3. Visibility has decreased, so you slow to 6 knots. At 0015, you note the following:
   Bartlett Reef Light bears 325° T at 4.3nm
   Little Gull Island bears 240° T at 1.3nm
   Which of the following is true?

   Category: Visual fix, Radar fix

   Solution: This plots right on waypoint E

   a. You are at waypoint E
   b. You are subject to the inland navigation rules
   c. You are in danger of going aground imminently
   d. Your speed made good was 10.2 knots from waypoint F

4. According to the Coast Pilot, what is the direction of the flood current in The Race?

   Category: Coast Pilot Lookup

   Solution: CP Page 256, article 107

   e. 100° T
   f. 210° T
   g. 295° T
   h. 355° T

5. From waypoint E, you change course to 166° T towards waypoint D, which is located at 41° 10.2'N, 72° 04.1'W. If the meteorological visibility is 1nm, what is true of Little Gull Island Light?

   Category: Light List Lookup, Visibility of Lights

   Solution
   NR: 14
   Vis: 1
   LR: 2.75 max

   a. You will not see Little Gull Island at all during your transit to waypoint D
   b. The luminous range is 4nm
   c. The geographic range is 6.2nm
   d. You will lose sight of Little Gull Island in the vicinity of waypoint D

6. You arrive at waypoint D at 0030. Waypoint C bears 262° T at 5.0nm. A short time later, your GPS indicates your position as 41° 09.9'N, 72° 05.7'W. Which of the following is true?

   Category: GPS Fix, Bearing/Range. Set/Drift

   Solution: position plots south of track

   a. You are being set to the right of track
   b. You are on track
   c. You are being set to the left of track
   d. You have overshot waypoint C

7. You anchor for the evening seeking shelter from a southeast wind. You take a round of radar ranges:

North point of Gardiners Island is	1.1nm
South point of Plum Island is	3.7nm
Orient Point is	4.6nm

   What is the anchorage position?

   Category: Radar fix

   Solution: ranges plot in described position

   a. 41° 06.9'N, 72° 09.2'W
   b. 41° 07.0'N, 72° 09.3'W
   c. 41° 07.1'N, 72° 09.4'W
   d. 41° 06.8'N, 72° 09.5'W

8. As the wind picks up, you decide to veer more chain such that the scope of chain is a total of 7:1. The range of tide is 4 feet. How much chain do you put out, in total?

   Category: Depth, chart features, trivia

   Solution:
   Datum 26 feet
   Range 4 feet
   Total 30 feet
   Scope 7:1 = 210

   a. 180 feet
   b. 210 feet
   c. 240 feet
   d. 270 feet

9. Gardiners Island is ____.

   Category: Coast Pilot Lookup

   Solution: CP page 258, article 141

   a. Partly wooded and has an elevation of 130 feet
   b. Narrow, low and sandy
   c. A former fishing village, now a yacht club
   d. A military bombing sight

10. From your anchorage position, what is the course to steer per steering compass (psc) towards the green "1" entrance buoy of Shelter Island, Coecles Harbor?

    Category: CTS, TVMDC

    Solution
    T 242
    V 14W
    M 256
    D 3E
    C 253 psc

    a. 242° psc
    b. 248° psc
    c. 253° psc
    d. 257° psc

Practice Exam 6

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

1. You are anchored in position 41° 13.4'N, 72° 45.0'W. What is the bottom type?

   Category: Chart features

   Solution: Chart reads sft

   a. Hard
   b. Rocky
   c. Rubble
   d. Soft

2. You weigh anchor and are bound for New Haven. At 1945 you take the following observations:

   Falkner Island Light 072° T at 5.7nm
   Branford Reef Light 327° T at 2.8nm

   What is your position?

   Category: Visual Fix, Radar Fix

   Solution: This plots at waypoint T

   a. 41° 10.9'N, 72° 46.4'W
   b. 41° 10.8'N, 72° 46.6'W
   c. 41° 10.7'N, 72° 46.2'W
   d. 41° 10.6'N, 72° 46.0'W

3. From this point, you set course for waypoint E, located 1nm due south of the RW "NH" buoy. What is the ETA at 12 knots?

   Category: SMG

   Solution:
   S = 12
   D = 5.6nm
   T = 0.46 hours = 28 minutes = 2013

   a. 2009
   b. 2013
   c. 2018
   d. 2023

4. If the visibility is 5.5nm, what is true of Falkner Island Light during your transit to waypoint E?

   Category: LL Lookup, Visibility of lights

   Solution:
   NR 13
   Vis 5.5
   LR 8nm

   a. You will lose sight of Falkner Island Light during the transit
   b. Falkner Island Light is obscured by Branford Reef
   c. You can see Falkner Island Light during the entire transit
   d. Your height of eye prohibits you from seeing Falkner Island Light at all

5. If a north wind is causing 3 degrees of leeway, what is the course to steer per steering compass (psc) from your 1945 fix towards waypoint E?

   Category: CTS, TVMDC, Leeway

   Solution
   T 272 T
   V 14W
   M 286
   D 2E
   C 284 psc
   Leeway → 287psc

   a. 272° psc
   b. 279° psc
   c. 287° psc
   d. 294° psc

6. At 2000, you take a radar range to Branford Reef Light at 2.8nm. The range to New Haven Light is 5.1nm. What is true?

   Category: Set and drift, radar fix

   Solution: this plots south of track

   a. You are being set to the right
   b. You are on track
   c. You are being set to the left
   d. You have overshot waypoint E

7. What is the course to steer from waypoint E to the gated buoy pair "1" and "2" marking the entrance to New Haven Harbor?

   Category: CTS

   Solution:
   T 346T
   V 14W
   M 000
   D 0
   C 000° psc

   a. 346° psc
   b. 352° psc
   c. 356° psc
   d. 000° psc

8. What is true of New Haven?

   Category: CP Lookup

   Solution: Page 290 article 320

   a. A federal project provides for an entrance depth of 35 feet
   b. Surveys and channel reports are available from the American Bureau of Shipping
   c. There are no prominent features on approach in clear weather
   d. Anchorage is available for vessels up to a 40-foot draft inside the breakwater

9. You observe the New Haven range boards directly in a line at a compass bearing of 347° psc. What is the deviation in the compass?

   Category: TVMDC, deviation

   Solution
   T 333
   V 14W
   M 347
   D 0
   C 347

   a. 5° E
   b. 2.5° E
   c. 0°
   d. 2.5° W

10. What chart would you shift to as you enter New Haven Harbor?

Category: Chart features, Coast Pilot

Solution: on chart

a. 12354
b. 12362
c. 12373
d. 12371

Practice Exam 7

Variation	**14° W**
Draft	**8.5 feet**
Height of Eye	**15 feet**

Heading Mag	Deviation	Heading Mag	Deviation	Heading Mag	Deviation
000°	**0°**	**120°**	**2° W**	**240°**	**3° E**
030°	**1° W**	**150°**	**1° W**	**270°**	**3° E**
060°	**2° W**	**180°**	**1° E**	**300°**	**2° E**
090°	**4° W**	**210°**	**2° E**	**330°**	**1° E**

1. You are underway on a voyage from New York to New Haven. You are currently 1nm due south of Stratford Shoal Middle Ground Light. What is your position?

   Category: Bearing and Range, LL Lookup

   Solution: This plots on waypoint A but be careful of the buoy just south of the light which is commonly mistaken.

   a. 41° 02.4'N, 73° 06.1'W
   b. 41° 02.6'N, 73° 06.0'W
   c. 41° 02.7'N, 73° 05.9'W
   d. 41° 02.8'N, 73° 05.8'W

2. Waypoint E is located 1nm due south of the RW "NH" buoy. What is the course to steer per steering compass (psc)?

   Category: CTS, TVMDC

   Solution:
   T 047
   V 14W
   M 061
   D 2W
   C 063psc

   a. 051° psc
   b. 057° psc
   c. 063° psc
   d. 068° psc

3. Assuming you make good 8 knots, what is the duration of travel to waypoint E?

   Category: ETA, SMG

   Solution
   S = 8
   D = 12.6
   T = 1.575 hours = 1 hour 35 minutes

   a. 1 hour 22 minutes
   b. 1 hour 28 minutes
   c. 1 hour 35 minutes
   d. 1 hour 41 minutes

4. Based on the Coast Pilot, what is true of New Haven Harbor?

   Category: CP Lookup

   Solution: Page 290 article 320

   a. The US Coast Guard is responsible for dredge reports
   b. A federal project provides for an entrance depth of 35 feet
   c. It is a small fishing settlement at the mouth of the Thames River
   d. Anchorage is unavailable for vessels of your draft

5. Visibility decreases to 5.5 nm, so you reduce speed to 4 knots. What is true of Stratford Shoal Middle Ground Light?

   Category: LL Lookup, Visibility of Lights

   Solution
   NR 13
   Vis 5.5
   LR 8

   a. You cannot see the light at all during your voyage
   b. You will lose sight of the light approximately 4nm before waypoint E
   c. You will lose sight of the light approximately 8nm before waypoint E
   d. You can see the light for a distance of 13 miles

6. You arrive at waypoint E, but due to the reduced visibility you decide to go to anchor. Your anchorage is in position 41° 13.1'N, 72° 58.3'W. You will use a scope of 4:1 and the range of tide is 3 feet. How much chain will you put out?

   Category: GPS Fix, Depth, Trivia

   Solution:
   Depth 28 feet
   Tide 3 feet → 31 feet total
   4:1 = 124 feet

   a. 90 feet
   b. 105 feet
   c. 125 feet
   d. 150 feet

7. What is the course to steer to anchorage?

   Category: CTS, TVMDC

   Solution:
   T 300T
   V 14W
   M 314
   D 1.5E
   C 312.5 psc

   a. 300° psc
   b. 305.5° psc
   c. 312.5° psc
   d. 317° psc

8. New Haven Light is ranged at 1.0nm, and Merwin Point is ranged at 1.9nm. Which is true?

   Category: Radar fix, set and drift

   Solution: this plots south of track

   a. You are being set to the left of track
   b. You are on track
   c. You are being set to the right of track
   d. You have overshot your anchorage point

9. You successfully anchor. After allowing the visibility to open, you get back underway en route New Haven. During your transit, you note the following:
   New Haven Light bears 350° T at 0.9nm
   Branford Reef Light bears 081° T at 6.2nm
   What is your position?

   Category: Visual fix, radar fix

   Solution: this plots on the coordinates given

   a. 41° 12.2'N, 72° 56.6'W
   b. 41° 12.3'N, 72° 56.5'W
   c. 41° 12.4'N, 72° 56.4'W
   d. 41° 12.5'N, 72° 56.3'W

10. From this position, what is the distance to buoy gate "1" and "2" at the entrance to New Haven Harbor?

    Category: distance off

    Solution: this plots to the solution

    a. 1.7nm
    b. 1.9nm
    c. 2.1nm
    d. 2.3nm

Rules of the Road

About the Test

The Rules of the Road test is generally 50 questions with a required passing score of 90%. Each question is multiple choice with four options to choose from. There are occasional diagrams that you must interpret for certain questions.

Each question also begins with one of the following:

BOTH INTERNATIONAL AND INLAND.
INLAND ONLY.
INTERNATIONAL ONLY.

These prompts are important because there are different Rules in certain areas. International Rules (or COLREGS – Collision Avoidance Regulations) are found outside the demarcation line around American waters.

Inland Rules apply inside the COLREGS demarcation line and are a uniquely American nuance to the Rules. It is important to note that not all areas near shore are Inland Rules. For example, most of Maine, all of Alaska, and Puget Sound are areas where the International Rules apply. The COLREGS demarcation line can be found on most charts, or a geographic description is found within the US Rules of the Road book.

Study Strategy

Your best chance of passing the exam comes from thorough preparation. This book is meant to be used with the video course "Rules of the Road for USCG Exams" provided by Practical Navigator Training (www.practicalnavigator.org).

Students should carefully read each Rule and note any differences between the Inland and International version of the Rules. Then, students should take practice quizzes and exams until they can reliably score above 90% on their tests. One time-tested strategy is to simply read hundreds of questions and answers until the answers appear to "jump off the page."

This book and the companion course are designed to present the Rules of the Road information in a practical, no-nonsense way to aid students studying for their exam.

The latest version of the COLREGS and Inland Rules is found on the USCG Navigation Center's website, www.navcen.uscg.gov

Rule 1: Application

The Rule (International):
(a) These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.

(b) Nothing in these Rules shall interfere with the operation of special Rules made by an appropriate authority for roadsteads, harbors, rivers, lakes, or Inland waterways connected with the high seas and navigable by seagoing vessels. Such special Rules shall conform as closely as possible to these Rules.

(c) Nothing in these Rules shall interfere with the operation of any special Rules made by the Government of any State with respect to additional station or signal lights, shape or whistle signals for ships of war and vessels proceeding under convoy, or with respect to additional station or signal lights or shapes for fishing vessels engaged in fishing as a fleet. These additional stations or signal lights, shapes or whistle signals shall, so far as possible, be such that they cannot be mistaken for any light, shape, or signal authorized elsewhere under these Rules.

(d) Traffic separation schemes may be adopted by the Organization for the purpose of these Rules.

(e) Whenever the Government concerned shall have determined that a vessel of special construction or purpose cannot comply fully with the provisions of any of these Rules with respect to number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, such vessel shall comply with such other provisions in regard to number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, as the Government shall have determined to be the closest possible compliance with these Rules in respect to that vessel.

Note – Submarines may display, as a distinctive means of identification, an intermittent flashing amber (yellow) beacon with a sequence of one flash per second for three seconds followed by three second off period.

The Rule (Inland):
(a) These Rules apply to all vessels upon the Inland waters of the United States, and to vessels of the United States on the Canadian waters of the Great Lakes to the extent that there is no conflict with Canadian law. These Rules have preemptive effect over State or local regulation within the same field.

(b)(i)These Rules constitute special Rules made by an appropriate authority within the meaning of Rule 1(b) of the International Regulations for Preventing Collisions at Sea, 1972, including annexes currently in force for the United States ("International Regulations").

(ii) All vessels complying with the construction and equipment requirements of the International Regulations are considered to be in compliance with these Rules.

(c) Nothing in these Rules shall interfere with the operation of any special Rules made by the Secretary of the Navy with respect to additional station or signal lights and shapes or whistle signals for ships of war and vessels proceeding under convoy, or by the Secretary with respect to additional station or signal lights and shapes for fishing vessels engaged in fishing as a fleet. These additional station or signal lights and shapes or whistle signals shall, so far as possible, be such that they cannot be mistaken for any light, shape or signal authorized elsewhere under these Rules. Notice of such special Rules shall be published in the Federal Register and, after the effective date specified in such notice, they shall have effect as if they were a part of these Rules.

(d) Traffic separation schemes may be established for the purposes of these Rules. Vessel traffic service regulations may be in effect in certain areas.
(e) Whenever the Secretary determines that a vessel or class of vessels of special construction or purpose cannot comply fully with the provisions of any of these Rules with respect to the number, position, range, or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, the vessel shall comply with such other provisions in regard to the number, position, range, or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, as the Secretary shall have determined to be the closest possible compliance with these Rules. The Secretary may issue a certificate of alternative compliance for a vessel or class of vessels specifying the closest possible compliance with these Rules. The Secretary of the Navy shall make these determinations and issue certificates of alternative compliance for vessels of the Navy.

(f) The Secretary may accept a certificate of alternative compliance issued by a contracting party to the International Regulations if it determines that the alternative compliance standards of the contracting party are substantially the same as those of the United States.

(g) The operator of each self-propelled vessel 12 meters or more in length shall carry, on board and maintain for ready reference, a copy of these Rules.

Any Post January 2018 hard copy of this Amalgamation or of Appendix B of the United States Coast Pilot may serve as a ‘copy of these Rules’.

Note – Submarines may display, as a distinctive means of identification, an intermittent flashing amber (yellow) beacon with a sequence of one flash per second for three seconds followed by three second off period.

Discussion: Regrettably, one of the longest Rules is the first one in the book and it also has the largest difference between Inland and International Rules. However, students should take it one provision at a time.

One of the key points in this Rule is the fact that the Rules apply in different areas. In the back of the Rules book there are lists of where this “demarcation line” is. For example, all of Maine (with the exception of Casco Bay) is in International Rules. Likewise, all of Alaska and Puget Sound are under the International Rules. It is also important to note that the legal definitions of Internal Waters, Territorial Seas, and High Seas have nothing to do with the Navigation Rules definitions of International and Inland waters – they are separate concepts.

Another key point is that vessels may, if necessary, alter the configuration of lights due to the construction of the vessel, as long as the vessel's government assents to the change. Finally, there is a buried provision in the Rule regarding submarines and their special amber light.

Test Strategy: There are about 10 questions in the database regarding this question, most of which will deal with special construction or submarines.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. The masthead light may be displaced from the centerline on which of the following vessels?

A. A power-driven vessel 12 meters in length
B. An air cushion vessel in non-displacement mode
C. A vessel of special construction
D. A vessel engaged in trolling

BOTH INTERNATIONAL AND INLAND. An authorized light to assist in the identification of submarines operating on the surface is a(n) ____.

A. Flashing sidelight
B. Blue rotating light
C. Intermittent flashing amber/yellow light
D. Flashing white light

INLAND ONLY. You are on a vessel that the Secretary has determined cannot comply with the spacing requirements for masthead lights. What is required in this situation?

A. The vessel must be altered to permit full compliance with the Rules
B. An all-around light should be substituted for the after masthead light and the stern light
C. The vessel must carry only the lights that comply with the Rules; others may be omitted
D. The vessel's lights must comply as closely as possible

INTERNATIONAL ONLY. Where do the International Rules of the Road apply?

A. Only to waters outside the territorial waters of the United States
B. Only to waters where foreign vessels travel
C. Upon the high seas and connecting waters navigable by seagoing vessels
D. To all waters which are not Inland waters

Rule 2: Responsibility

The Rule: (a) Nothing in these Rules shall exonerate any vessel, or the owner, master, or crew thereof, from the consequences of any neglect to comply with these Rules or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

(b) In construing and complying with these Rules due regard shall be had to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels involved, which may make a departure from these Rules necessary to avoid immediate danger.

Discussion: This Rule is often described as the "special circumstances" Rule. An often-cited example is multiple vessels converging which involve risk of collision – the Rules don't provide for that situation except for Rule 2, and mariners must use the Rules of good seamanship to avoid collisions in this case.

Regardless of the number of vessels or the situation, Rule 2 is better described as the Rule which forbids all collisions at sea. Under this Rule, responsibility for avoiding collision is allocated to all vessels, whether stand-on, give-way, or otherwise.

Test Strategy: It would be rare to see a question from Rule 2 specifically on the exam, however, the words "special circumstances" often appear as incorrect answers for other Rules.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. Which situation would be a "special circumstance" under the Rules?

- **A. More than two vessels meeting**
- B. Speed in the fog
- C. Two vessels crossing
- D. Vessels at anchor

BOTH INTERNATIONAL AND INLAND. According to the Navigation Rules, you may depart from the Rules when ____.

- A. Out of sight of land
- **B. You are in immediate danger**
- C. No vessels are in sight visually
- D. No vessels are visible on radar

Rule 3: Definitions

The Rule:
For the purpose of these Rules, except where the context otherwise requires:

(a) The word "vessel" includes every description of watercraft, including non-displacement craft, WIG craft, and seaplanes, used or capable of being used as a means of transportation on water.

(b) The term "power-driven vessel" means any vessel propelled by machinery.

(c) The term "sailing vessel" means any vessel under sail provided that propelling machinery, if fitted, is not being used.

(d) The term "vessel engaged in fishing" means any vessel fishing with nets, lines, trawls, or other fishing apparatus which restrict maneuverability, but does not include a vessel fishing with trolling lines or other fishing apparatus which do not restrict maneuverability.

(e) The term "seaplane" includes any aircraft designed to maneuver on the water.

(f) The term "vessel not under command" means a vessel which through some exceptional circumstance is unable to maneuver as required by these Rules and is therefore unable to keep out of the way of another vessel.

(g) The term "vessel restricted in her ability to maneuver" means a vessel which from the nature of her work is restricted in her ability to maneuver as required by these Rules and is therefore unable to keep out of the way of another vessel. The term "vessels restricted in their ability to maneuver" shall include but not be limited to:
(i) A vessel engaged in laying, servicing, or picking up a navigational mark, submarine cable or pipeline;
(ii) A vessel engaged in dredging, surveying or underwater operations;
(iii) A vessel engaged in replenishment or transferring persons, provisions or cargo while underway;
(iv) A vessel engaged in the launching or recovery of aircraft;
(v) A vessel engaged in mine clearance operations;
(vi) A vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course.

International Only
(h) The term "vessel constrained by her draft" means a power-driven vessel which because of her draft in relation to the available depth and width of navigable water is severely restricted in her ability to deviate from the course she is following.

(i) The word "underway" means that a vessel is not at anchor, or made fast to the shore, or aground.

(j) The words "length" and "breadth" of a vessel mean her length overall and greatest breadth.

(k) Vessels shall be deemed to be in sight of one another only when one can be observed visually from the other.

(l) The term “restricted visibility” means any condition in which visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms, or any other similar causes.

(m) The term “Wing-In-Ground (WIG)” craft means a multimodal craft which, in its main operational mode, flies in close proximity to the surface by utilizing surface-effect action.

Inland Only
(n) "Western Rivers" means the Mississippi River, its tributaries, South Pass, and Southwest Pass, to the navigational demarcation lines {30 CFR 80} dividing the high seas from harbors, rivers and other Inland waters of the United States, and the Port Allen-Morgan City Alternate Route, and that part of the Atchafalaya River above its junction with the Port Allen-Morgan City Alternate Route including the Old River and the Red River.
(o) "Great Lakes" means the Great Lakes and their connecting tributary waters including the Calumet River as far as the Thomas J. O'Brien Lock and Controlling Waters (between mile 326 and 327), the Chicago River as far as the east side of the Ashland Avenue Bridge (between mile 321 and 322), and the Saint Lawrence River as far east as the lower exit of Saint Lambert Lock.
(p) "Secretary" means the Secretary of the Department in which the Coast Guard is operating.
(q) "Inland Waters" means the navigable waters of the United States shoreward of the navigational demarcation lines {30 CFR 80} dividing the high seas from harbors, rivers and other Inland waters of the United States and the waters of the Great Lakes on the United States side of the International Boundary.

Discussion: This Rule is quite long but very important to the remainder of the book. Students should refer often to Rule 3 when studying other sections of the Rules. Here are some key points from Rule 3 in plain language:

Vessels are anything that can be used to carry people or cargo on the water. Presumably, this includes autonomous vehicles.

Power Driven Vessels are those propelled by machinery. Sailing Vessels are those propelled by sails. When a sailboat uses its engine, even if the sails are up and filling, it is a power-driven vessel.

Vessels Engaged in Fishing are those whose maneuverability is restricted by its fishing gear. However, these vessels show specific lights and shapes for fishing to separate them from other vessels restricted in maneuverability. Trolling vessels, such as a typical sportfishing boat, is a power-driven vessel.

Vessels Restricted in their Ability to Maneuver (VRAM) are those who cannot maneuver easily due to the nature of their work.

Vessels Not Under Command (NUC) are those who cannot maneuver easily due to some exceptional circumstance.

Restricted Visibility is anything that reduces vision such as snow, rain, fog, etc. It does not include night.

In Sight means that vessels can actually see each other and does not include detection by radar.

Underway means not anchored, aground, or tied to a pier. Drifting without propulsion engaged is still "underway."

Constrained by Draft vessels are only found in International Rules and are only power-driven vessels. Presumably this is because Inland waters are generally shallower, and most vessels are constrained by draft in these cases.

Test Strategy: It is very important to memorize these definitions, particularly the key definitions listed above. When prompted with "VRAM" your brain should go immediately to "Nature of Her Work." When prompted with "NUC" your brain should go immediately to "Some Exceptional Circumstance." Test questions are plentiful and varied regarding this Rule; there are over 50 in the database and you will certainly see some questions on your exam.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. Which vessel is "underway" according to the Rules?

A. A vessel engaged in towing, not making way
B. A pilot vessel at anchor
C. A vessel made fast to a single point mooring buoy
D. A vessel which has run aground

BOTH INTERNATIONAL AND INLAND. A vessel restricted in her ability to maneuver is one which ____.

A. Through some exceptional circumstance is unable to maneuver as required by the Rules
B. Due to adverse weather conditions is unable to maneuver as required by the Rules
C. Has lost steering and is unable to maneuver
D. From the nature of her work is unable to maneuver as required by the Rules

BOTH INTERNATIONAL AND INLAND. A vessel is "engaged in fishing" when ____.

A. She is using fishing apparatus which restricts her maneuverability
B. She has any fishing gear on board
C. Her gear extends more than 100 meters from the vessel
D. She is using any type of gear other than lines

BOTH INTERNATIONAL AND INLAND. A vessel is being propelled by both sail and engines. Under the Rules, she is ____.

A. A power-driven vessel
B. A sail vessel
C. Not covered in any category
D. A "special circumstance" vessel

BOTH INTERNATIONAL AND INLAND. According to the Navigation Rules, all of the following are engaged in fishing except a vessel ____.

A. Trolling
B. Setting nets
C. Trawling
D. Using a dredge net

BOTH INTERNATIONAL AND INLAND. The Navigation Rules define a vessel not under command as a vessel which ____.

A. From the nature of her work is unable to keep out of the way of another vessel
B. Is moored, aground, or anchored in a fairway
C. By taking action to contrary to the Rules has created a special circumstance situation
D. Through some exceptional circumstance is unable to maneuver as required by the Rules

INTERNATIONAL ONLY. Which statement is true concerning a vessel constrained by her draft?

A. She is not under command
B. She may be a vessel being towed
C. She is hampered because of her work
D. She must be a power-driven vessel

BOTH INTERNATIONAL AND INLAND. According to the Rules, which vessel is not restricted in her ability to maneuver?

A. A vessel servicing a navigational marker
B. A sailing vessel
C. A vessel mine clearing
D. A vessel dredging

INLAND ONLY. The term “Great Lakes” as defined by the Inland Rules of the Road includes part of the _____.

A. Calumet River
B. Chicago River
C. St. Lawrence River
D. All of the above

Review: Part A

Part A has only three Rules, but each are important for understanding and interpreting later Rules. Most questions you see on your exam will come from Rule 3. Here is a practice set of questions from Part A.

BOTH INTERNATIONAL AND INLAND. For identification purposes at night, US Navy submarines on the surface may display an intermittent flashing light of which color?

A. White
B. Blue
C. Red
D. Amber (Yellow)

INLAND ONLY. Which statement is true concerning the Inland Navigation Rules?

A. They define moderate speed
B. They list requirements for Traffic Separation Schemes
C. They require communication by radiotelephone to reach a passing agreement
D. All of the above

BOTH INTERNATIONAL AND INLAND. What would be a "special circumstance" under the Rules?

A. Vessel at anchor
B. Speed in fog
C. Two vessels meeting
D. More than two vessels crossing

BOTH INTERNATIONAL AND INLAND. Which vessel is to be regarded as a vessel "restricted in her ability to maneuver"?

A. A vessel which has lost the use of her steering gear
B. A vessel fishing with trawls
C. A vessel with a draft of such depth that she cannot change her course
D. A vessel engaged in mine clearing

BOTH INTERNATIONAL AND INLAND. What does the word "length" refer to?

A. Registered length
B. Waterline length
C. Length overall
D. Length between the perpendiculars

BOTH INTERNATIONAL AND INLAND. Which of craft is a “power driven vessel” under the Rules of the Road?

A. A trawler on her way to the fishing grounds
B. An auxiliary sail vessel using her engine
C. A canoe propelled by a small outboard engine
D. All of the above

INLAND ONLY. Which tern is not defined in the Inland Navigation Rules?

A. Restricted visibility
B. Underway
C. Vessel constrained by draft
D. Seaplane

BOTH INTERNATIONAL AND INLAND. Which vessel is not to be regarded as “restricted in her ability to maneuver”?

A. A vessel transferring provisions while underway
B. A vessel launching aircraft
C. A pushing vessel and a vessel being pushed when connected as a composite unit
D. A vessel servicing a navigational mark

Rule 4: Application

The Rule: Rules 4-10 apply to vessels in any condition of visibility.

Discussion: Remember that "visibility" is not defined, but "restricted visibility" is defined in Rule 3. This section of Part B applies to vessels whether they are in restricted visibility or in sight of one another.

Test Strategy: There are no test questions from this Rule in the database.

Sample Questions: There are no test questions from this Rule.

Rule 5: Lookout

The Rule: Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

Discussion: This is a short Rule which has a lot packed into it. It is better to think of the phrase "lookout" as a system rather than an individual person. Here are a couple key points.

- "at all times" – this means that the lookout is a 24/7 responsibility and cannot be paused, stopped, or forgotten.

- "proper" – a proper lookout is one who is trained, experienced, rested and physically capable of completing the lookout duties. The lookout should also be positioned in the best place on the ship based on the situation. For example, in the fog they should be placed forward and low on most vessels.

- "as by all available means" – lookouts are not just lonely people on the bow of the ship gazing into the distance. The responsibility rests with the vessel operator. There may be a person dedicated to lookout outward, but this "all available means" phrase indicates radar, ARPA, AIS, VHF radios, ECDIS, and GPS are all valid means of keeping a lookout.

- "prevailing circumstances and conditions" – the intensity of the lookout system should be geared to the situation the vessel finds itself in. A lookout is required at all times but is clearly less intense while at anchor than while motoring in the fog. During the day, it may be appropriate to have a person on the bridge lookout out, while at night the glare of screens may make it more prudent to station that person on the bridge wing or foredeck.

The lookout Rule is short but critical. A majority of collisions have a "failure to maintain a proper lookout" as a causative factor.

Test Strategy: There are less than 10 questions in the database for this Rule.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. When shall a proper lookout be maintained?

- **A. At all times**
- B. Only at night
- C. At night and during restricted visibility
- D. Only during restricted visibility.

BOTH INTERNATIONAL AND INLAND. When does the Rule regarding lookouts apply?

- A. In restricted visibility
- B. Between dusk and dawn
- C. In heavy traffic
- **D. All of the above.**

Rule 6: Safe Speed

The Rule: Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions. In determining a safe speed, the following factors shall be among those taken into account:

(a) By all vessels:

(i) The state of visibility;
(ii) The traffic density including concentrations of fishing vessels or any other vessels;
(iii) The maneuverability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions;
(iv) At night, the presence of background light such as from shore lights or from back scatter from her own lights;
(v) The state of wind, sea and current, and the proximity of navigational hazards;
(vi) The draft in relation to the available depth of water.

(b) Additionally, by vessels with operational radar:

(i) The characteristics, efficiency and limitations of the radar equipment;
(ii) Any constraints imposed by the radar range scale in use;
(iii) The effect on radar detection of the sea state, weather and other sources of interference;
(iv) The possibility that small vessels, ice and other floating objects may not be detected by radar at an adequate range;
(v) The number, location and movement of vessels detected by radar;
(vi) The more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.

Discussion: One key part of this Rule for USCG exams is that you will often be required to list one of the particular factors from the Rule, so these factors must be memorized before testing. Safe speed is not listed in knots or any other measure but is left to the mariner. The courts have made determinations in collision cases and it is often quoted that being able to stop in "half the distance of visibility" is a good rule of thumb for safe speed. However, that is not written in the Rules, and there are actually questions with that phrase as an incorrect answer. Safe speed must be continually evaluated and must is a key element in risk assessment and is related to the effectiveness of the lookout system aboard, but operators must consider the listed elements in the Rule. Finally, remember that safe speed applies to speeds both over ground and through the water, and that vessels are responsible for damage their wake causes.

Test Strategy: There are about 10 questions in the database for this Rule. At least the first 6 specific elements should be memorized because questions often ask for specific elements to be named.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. The Rules state that certain factors are to be taken into account when determining safe speed. Which is one of the factors?

A. Temperature
B. Maximum speed of your vessel
C. Radio communications that are available
D. Current

BOTH INTERNATIONAL AND INLAND. When is your vessel travelling at a safe speed as defined in the Rules?

A. When you are traveling slower than surrounding vessels
B. When you can stop within your visibility range
C. When no wake comes from your vessel
D. When you can take proper and effective action to avoid collision

BOTH INTERNATIONAL AND INLAND. The Rules state that a vessel shall be operated at a safe speed at all times so she can be stopped within _____.

A. ½ the distance of visibility
B. The distance that it would require for the propeller to go from full ahead to full astern
C. The distance of visibility
D. A distance appropriate to the existing circumstances and conditions

BOTH INTERNATIONAL AND INLAND. Which factor is listed in the Rules as one which must be taken into account when determining safe speed?

A. The maneuverability of the vessel
B. The construction of the vessel
C. The experience of vessel personnel
D. All of the above must be taken into account

Rule 7: Risk of Collision

The Rule:
(a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.

(b) Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.

(c) Assumptions shall not be made on the basis of scanty information, especially scanty radar information.

(d) In determining if risk of collision exists the following considerations shall be among those taken into account:

> (i) Such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change.
> (ii) Such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.

Discussion: This Rule is probably the most important Rule in the book for vessel operators. Many other Rules stem from this risk of collision decision. By far the best way to determine if risk of collision exists is to use "bearing drift." This means standing in the same spot on your vessel, and without changing course and speed, simply watch the other vessel over the course of a minute or longer. If the target vessel appears to drift to the left or right, the vessel has reduced risk of collision. Certainly, the rate of this "bearing drift" is important, but the most consequential target vessels are those that have no bearing drift and are getting closer to you. This definitely means there is risk of collision, and unless one vessel alters course or speed, you will collide. This is often referred to as "CBDR" or "constant bearing, decreasing range."

The key phrase in this Rule follows:

"all available means" – vessels should use vision, binoculars, compass bearings, radar, radar plotting tools such as maneuvering boards, ARPA, AIS, the VHF radio, and any other tool to aid in assessing the risk.

Test Strategy: There are about 20 question in the database regarding this Rule, and most will involve constant bearing, decreasing range, or asking you about doubt in this situation (if in doubt, risk of collision exists).

Sample Questions:

BOTH INTERNATIONAL AND INLAND. When is "risk of collision" considered to exist?

A. A vessel has a steady bearing at a constant range
B. There is any doubt that a risk of collision exists
C. Four vessels are nearby
D. A special circumstance situation is apparent

BOTH INTERNATIONAL AND INLAND. Which statement is true concerning risk of collision?

A. The stand on vessel must keep out of the way of the other vessel when risk of collision exists
B. Risk of collision may exist when the compass bearing of an approaching vessel is changing appreciably
C. Risk of collision always exists when two vessels pass within one mile of each other
D. Risk of collision always exists when the compass bearing of an approaching vessel changes appreciably

BOTH INTERNATIONAL AND INLAND. In which situation would risk of collision definitely exist?

A. A vessel is 22 degrees on your port bow, range increasing, bearing changing slightly to the right
B. A vessel is broad on your starboard beam, range decreasing, bearing changing rapidly to the right
C. A vessel is 22 degrees abaft your port beam, range increasing, bearing is constant
D. A vessel is on your starboard quarter, range decreasing, bearing is constant

BOTH INTERNATIONAL AND INLAND. Which statement is true concerning a vessel equipped with operational radar?

A. **She must use this equipment to obtain early warning of risk of collision**
B. The use of radar excuses a vessel from the need of a lookout
C. The radar equipment is only required to be used in restricted visibility
D. The safe speed of such a vessel will likely be higher than that of vessels without radar

BOTH INTERNATIONAL AND INLAND. When do the Rules state that risk of collision shall be deemed to exist?

A. **If the bearing of an approaching vessel does not appreciably change**
B. Whenever two vessels approach from opposite directions
C. If one vessel approaches another so as to be overtaking
D. Whenever a vessel crosses ahead of the intended track of another vessel

Rule 8: Action to Avoid Collision

The Rule:
(a) Any action taken to avoid collision shall be taken in accordance with Rules 4-19 and shall if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.

(b) Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.

(c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close-quarters situation.

(d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.

(e) If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.

(f)(i) A vessel which, by any of these Rules, is required not to impede the passage or safe passage of another vessel shall, when required by the circumstances of the case, take early action to allow sufficient sea room for the safe passage of the other vessel.

(ii) A vessel required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision and shall, when taking action, have full regard to the action which may be required by Rules 4-19.

(iii) A vessel, the passage of which is not to be impeded remains fully obliged to comply with Rules 4-19 when the two vessels are approaching one another so as to involve risk of collision.

Discussion: This Rule begins a new section in the Rules which describe actions to be taken once risk of collision (Rule 7) has been determined. Each element of this Rule is important, and students should carefully read each. The key element of this Rule is that any action taken should be large, early and clearly display your intentions to other vessels. For example, part (c) of the Rule states that course changes may be sufficient to avoid collision. If doing so, mariners should make large course changes – large enough that to another vessel, your intentions are clear. While a certain degree cannot be stated, course changes of 30° are readily apparent to nearby vessels.

While a speed change, or a succession of small course changes could accomplish the same effect, to nearby vessels these changes are less obvious. Good seamanship dictates that if you are to avoid another vessel, you should make your action early and obvious to others, to help remove doubt and ambiguity in the situation.

Test Strategy: There are about 10 questions related to this Rule in the database. However, this is a fundamental Rule that mariners should understand and impacts many other Rules.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. What is a requirement for any action taken to avoid collision?

A. The action taken must include change the speed of the vessel
B. The action must be positive and made in ample time
C. When in sight of another vessel, any action taken must be accompanied by sound signals
D. All of the above.

BOTH INTERNATIONAL AND INLAND. When action taken to avoid a close quarters situation is taken, a course change alone may be the most effective action provided that _____.

A. It is a large course change
B. The course change is to starboard
C. It is done in a succession of small course changes
D. It is not done too early

BOTH INTERNATIONAL AND INLAND. When in sight of another vessel and there is sufficient sea room, any action taken to avoid collision must _____.

A. Not result in another close quarters situation
B. Be accompanied by sound signals
C. Include a speed change
D. All of the above

BOTH INTERNATIONAL AND INLAND. When you take action to avoid collision, you should ____.

A. Not make any large speed changes
B. Not make any large course changes
C. Make sure the action is taken in enough time
D. All of the above

Rule 9: Narrow Channels

The Rule:
a) (i) A vessel proceeding along the course of a narrow channel or fairway shall keep as near to the outer limit of the channel or fairway which lies on her starboard side as is safe and practicable.

Inland
(ii) Notwithstanding Rule 9(a)(i) and Rule 14(a), a power-driven vessel operating in narrow channel or fairway on the Great Lakes, Western Rivers, or waters specified by the Secretary, and proceeding downbound with a following current shall have the right-of-way over an upbound vessel, shall propose the manner and place of passage, and shall initiate the maneuvering signals prescribed by Rule 34(a)(i), as appropriate. The vessel proceeding upbound against the current shall hold as necessary to permit safe passing.

(b) A vessel of less than 20 meters in length or a sailing vessel shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway.

(c) A vessel engaged in fishing shall not impede the passage of any other vessel navigating within a narrow channel or fairway.

(d) A vessel shall not cross a narrow channel or fairway if such crossing impedes the passage of a vessel which can safely navigate only within that channel or fairway. The latter vessel may use the signal prescribed in Rule 34(d) if in doubt as to the intention of the crossing vessel.

International	Inland
(e)(i) In a narrow channel or fairway when overtaking can take place only if the vessel to be overtaken has to take action to permit safe passing, the vessel intending to overtake shall indicate her intention by sounding the appropriate signal prescribed in Rule 34(c)(ii). The vessel to be overtaken shall, if in	(e)(i) In a narrow channel or fairway when overtaking, the power-driven vessel intending to overtake another power-driven vessel shall indicate her intention by sounding the appropriate signal prescribed in Rule 34(c) and take steps to permit safe passing. The power-driven vessel being overtaken, if in

agreement, sound the appropriate signal prescribed in Rule 34(c)(i) and take steps to permit safe passing. If in doubt she may sound the signals prescribed in Rule 34(d).	agreement, shall sound the same signal and may, if specifically agreed to, take steps to permit safe passing. If in doubt she shall sound the signal prescribed in Rule 34(d).

(e)(ii) This Rule does not relieve the overtaking vessel of her obligation under Rule 13.

(f) A vessel nearing a bend or an area of a narrow channel or fairway where other vessels may be obscured by an intervening obstruction shall navigate with particular alertness and caution and shall sound the appropriate signal prescribed in Rule 34(e).

(g) Any vessel shall, if the circumstances of the case admit, avoid anchoring in a narrow channel.

Discussion: The term "narrow channel" is not defined in the Rules, either as part of Rule 3 or otherwise. It is left to the mariner to determine what a narrow channel is. For example, a narrow channel may mean one thing to a tanker and another to a small recreational boat. It is safe to assume that if the maneuverability of the vessel is restricted in the channel, and if the vessel must use the channel to navigate safely, it is a narrow channel to that vessel. In general, vessels (sailing, fishing, anchored and power vessels less than 20m) shall not impede vessels who can navigate only in the narrow channel.

This Rule also features a few key differences between the Inland and the International Rules. The first difference is in part (a). Generally, vessels should keep to the right, and pass port-to-port in a narrow channel. However, the Inland Rules state that in the Great Lakes, rivers, and other such waterways give special privilege to the "down bound vessel." That is to say, if a vessel is proceeding with a following current in a river, for example, it suffers from a relative lack of steering and maneuverability compared to an up-bound vessel. Therefore, it has the right of way and shall propose the manner of passage to vessels it passes.

Another key difference is in overtaking situations (Rule 13). When one vessel wishes to overtake (pass) another vessel in a narrow channel, the International and Inland Rules are different. The difference lies in whether vessel *being overtaken* needs to alter course. In International waters, if the slower vessel does not need to make room, no whistle signals are required. If the same slower vessel must alter course, whistle signals must be exchanged. However, in Inland waters, whistle signals are required regardless, and the slower vessel's permission is required via whistle signal.

Finally, in a narrow channel that features a blind corner or bend, a prolonged whistle signal is required.

Test Strategy: There are about 60 questions in the database regarding narrow channels. For this topic, you must pay close attention to whether the question is in International or Inland waters. Most questions try to test your ability to understand overtaking whistle signals, so you should

carefully study Rule 34 and Rule 13 as well. Other questions will refer to blind corners, Inland down-bound vessels, or vessels that shall not impede others.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. A vessel proceeding along a narrow channel shall ____.

A. Not overtake any vessels in the channel
B. When nearing a bend in the channel, sound a long blast of the whistle
C. Avoid crossing the channel at right angles
D. Keep as near as safe and practicable to the limit of the channel on her starboard side

BOTH INTERNATIONAL AND INLAND. In narrow channels, vessels of less than what length shall not impede the safe passage of vessels which can navigate only inside that channel?

A. 50 meters
B. 100 meters
C. 65 meters
D. 20 meters

BOTH INTERNATIONAL AND INLAND. You are approaching a narrow channel. Another vessel in the channel can only be navigated safely in that channel. You should ____.

A. Sound three short blasts, and take all way off your vessel
B. Hold your course and speed if she is on your port bow
C. Not cross the channel if you might impede the other vessel
D. Sound two prolonged blasts followed by one short blast

BOTH INTERNATIONAL AND INLAND. You are on vessel "A" engaged in fishing in a narrow channel as shown in illustration 37. Vessel "B" is a tanker proceeding in the narrow channel. Vessel "B" sounds five short and rapid blasts. What action should you take?

A. Sound one prolonged followed by two short blasts
B. Not answer the whistle signal from "B"
C. Not impede the passage of "B"
D. Maintain course and speed

INLAND ONLY. Two power driven vessels are meeting in a narrow channel on the Great Lakes as shown in illustration 37. Vessel "A" is down bound with a following current. Vessel "A" shall do which of the following?

A. Have the right of way
B. Initiate the maneuvering signals
C. Propose the manner of passage
D. All of the above

INLAND ONLY. A power-driven vessel crossing a river on the Western Rivers has the right of way over which vessel?

A. All vessels ascending or descending the river
B. Vessels ascending the river
C. Vessels descending the river
D. None of the above

INTERNATIONAL ONLY. A sailing vessel is overtaking a power-driven vessel in a narrow channel, so as to pass on the power-driven vessel's port side. The overtaken vessel will have to move to facilitate the passage. The sailing vessel is the ____.

A. Give way vessel and would sound no whistle signal
B. Stand on vessel and would sound two short blasts
C. Give way vessel and would sound two prolonged blasts followed by two short blasts
D. Stand on vessel and would sound no whistle signal

Rule 10: Traffic Separation Schemes

The Rule: (a) This Rule applies to traffic separation schemes and does not relieve any vessel of her obligation under any other Rule.

(b) A vessel using a traffic separation scheme shall:

(i) Proceed in the appropriate traffic lane in the general direction of traffic flow for that lane.
(ii) So far as is practicable keep clear of a traffic separation line or separation zone.
(iii) Normally join or leave a traffic lane at the termination of the lane, but when joining or leaving from either side shall do so at as small an angle to the general direction of traffic flow as practicable.

(c) A vessel, shall so far as practicable, avoid crossing traffic lanes but if obliged to do so shall cross on a heading as nearly as practicable at right angles to the general direction of traffic flow.

(d)(i) A vessel shall not use an inshore traffic zone when she can safely use the appropriate traffic lane within the adjacent traffic separation scheme. However, vessels of less than 20 meters in length, sailing vessels and vessels engaged in fishing may use the inshore traffic zone.

(ii) Notwithstanding Rule 10(d)(i), a vessel may use an inshore traffic zone when en route to or from a port, offshore installation or structure, pilot station or any other place situated within the inshore traffic zone, or to avoid immediate danger.

(e) A vessel, other than a crossing vessel or a vessel joining or leaving a lane shall not normally enter a separation zone or cross a separation line except:

(i) in cases of emergency to avoid immediate danger;
(ii) to engage in fishing within a separation zone.

(f) A vessel navigating in areas near the terminations of traffic separation schemes shall do so with particular caution.

(g) A vessel shall so far as practicable avoid anchoring in a traffic separation scheme or in areas near its terminations.

(h) A vessel not using a traffic separating scheme shall avoid it by as wide a margin as is practicable.

(i) A vessel engaged in fishing shall not impede the passage of any vessel following a traffic lane.

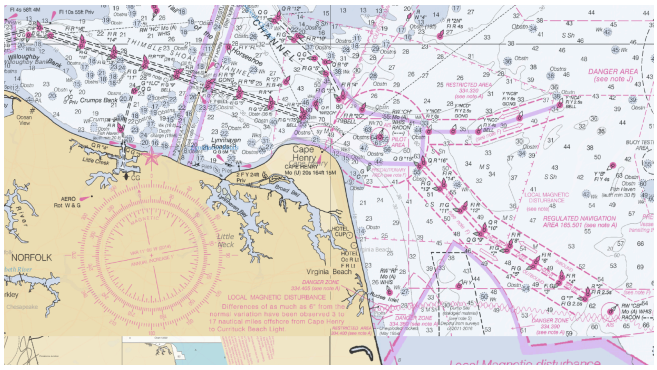
(j) A vessel of less than 20 meters in length or a sailing vessel shall not impede the safe passage of a power-driven vessel following a traffic lane.

(k) A vessel restricted in her ability to maneuver when engaged in an operation for the maintenance of safety of navigation in a traffic separation scheme is exempted from complying with this Rule to the extent necessary to carry out the operation.

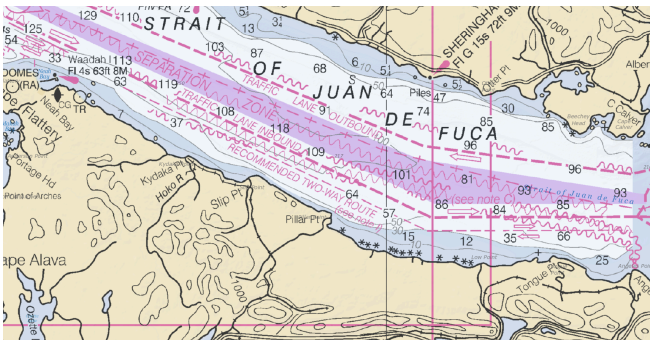
(l) A vessel restricted in her ability to maneuver when engaged in an operation for the laying, servicing or picking up of a submarine cable, within a traffic separation scheme, is exempted from complying with this Rule to the extent necessary to carry out the operation.

Discussion: This Rule is quite lengthy, but students are best served by reading each element individually and slowly.

First, what does a Traffic Separation Scheme look like? Here are a few images of schemes in the USA. The upper image is the approaches to Chesapeake Bay, and shows a large precautionary area with northbound and southbound lanes exiting it.



The second picture is in Washington State and shows the Strait of Juan de Fuca, which features an inshore and an offshore traffic lane.



These lanes are magenta on charts, have a magenta separation zone designated, and according to the Rules should be followed by all vessels. It is important to note that the rest of the Navigation Rules still apply in traffic separation schemes except where specifically described in this Rule.

In general, the Rule can be read as similar to the narrow channel Rule (Rule 9) in that fishing vessels, small vessels, anchored vessels, etc. should not impede the passage of vessels using the traffic lanes. Vessels should be particularly careful at the termination of lanes, because vessels will be approaching from a variety of directions and could increase the risk of collision. Each specific element of the Rule illustrates certain restrictions that are important to study.

Other key points to this Rule are that vessels should join traffic separation schemes at a shallow angle and should cross traffic separation schemes at a perpendicular angle. This is to best facilitate risk of collision in the lanes: joining vessels will be overtaking or be overtaken at shallow angles and crossing vessels will minimize their time in the lanes.

Test Strategy: There are about 10 questions in the database regarding traffic separation schemes and there are no differences between the Inland and the International Rules.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. A vessel using a traffic separation scheme shall _____.

- **A. Avoid anchoring in areas near the termination of the scheme**
- B. Use the separation zone for navigating through the scheme if she is hindering other traffic due to her slower speed
- C. Only anchor in the separation zone
- D. Avoid crossing traffic lanes, but if obliged to do so, shall cross on as small an angle as is practical

BOTH INTERNATIONAL AND INLAND. In a traffic separation scheme, when joining a traffic lane from the side, a vessel shall do so _____.

- A. Only in the case of an emergency or to engage in fishing within the zone
- B. Never
- **C. At as small an angle as possible**
- D. As nearly as practical at right angles to the general direction of traffic flow

BOTH INTERNATIONAL AND INLAND. There are two classes of vessels which, to the extent necessary to carry out their work, do not have to comply with the Rule regarding traffic separation schemes. One of these is a vessel _____.

- A. Towing another
- B. Engaged in fishing in a traffic lane
- C. Engaged on pilot duty
- **D. Servicing a submarine cable**

BOTH INTERNATIONAL AND INLAND. A sailing vessel shall not impede the safe passage of a _____.

- A. Law enforcement vessel
- B. Pilot vessel en route to a pilot station
- **C. Power driven vessel following a traffic lane**
- D. All of the above

Review: Part B, Section 1 – Conduct of Vessels in Any Condition of Visibility

This section refers to vessels whether in sight of each other or in restricted visibility. These Rules describe the general behavior of vessels including lookouts, safe speed and how to determine risk of collision. This section also describes specific actions to avoid collision, narrow channels and traffic separation schemes.

BOTH INTERNATIONAL AND INLAND. When shall a proper lookout be maintained?

A. At all times
B. Only at night
C. At night and during restricted visibility
D. Only during restricted visibility.

BOTH INTERNATIONAL AND INLAND. In determining "safe speed" all of the following must be taken into account except the _____.

A. Draft of your vessel
B. Maximum horsepower of your vessel
C. Presence of background lights at night
D. Maneuverability of your vessel

BOTH INTERNATIONAL AND INLAND. Risk of collision is considered to exist if ____.

A. A special circumstances situation is apparent
B. Four vessels are nearby
C. A vessel has a steady bearing at a constant range
D. There is any doubt that a risk of collision situation exists

BOTH INTERNATIONAL AND INLAND. Risk of collision may exist _____.

A. If you observe both sidelights of a vessel ahead for an extended period of time
B. If the compass bearing of an approaching vessel does not appreciably change
C. Even when an appreciable bearing change is evident, particularly when approaching a vessel at close range
D. All of the above

BOTH INTERNATIONAL AND INLAND. Under the Rules, any vessel may slacken her speed, stop, or reverse her engines to ____.

A. Allow more time to assess the situation
B. Attract the attention of another vessel
C. Create a crossing situation
D. All of the above

BOTH INTERNATIONAL AND INLAND. When underway in a channel, you should keep to the ____.

A. Side of the channel that has the widest turns
B. Port side of the channel
C. Middle of the channel
D. Starboard side of the channel

BOTH INTERNATIONAL AND INLAND. Which vessel shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway?

A. A vessel dredging
B. A sailing vessel
C. A vessel servicing an aid to navigation
D. All of the above

INLAND ONLY. When two power-driven vessels are meeting on the Great Lakes, Western Rivers, or waters designated by the Secretary, where there is a current, which vessel shall sound the first passing signal?

A. Either vessel
B. The vessel that is towing regardless of the current
C. The vessel going upstream stemming the current
D. The vessel down bound with a following current

INTERNATIONAL ONLY. In which case would an overtaking vessel sound a whistle signal of two prolonged followed by one short blast?

A. When no other vessels are in the immediate area
B. When overtaking in a narrow channel
C. When overtaking in open waters
D. When overtaking in restricted visibility

BOTH INTERNATIONAL AND INLAND. A traffic separation zone is that part of a traffic separation scheme which ____.

A. Is designated as an anchorage area
B. Separates traffic proceeding in one direction from traffic proceeding in the opposite direction
C. Is located between the scheme and the nearest land
D. Contains all the traffic moving in the same direction

Rule 11: Application

The Rule: Rules 11 through 18 apply to vessels in sight of one another.

Discussion: Rule 3 describes “in sight” which means that vessels can actually see each other, not including radar.

Test Strategy: There are no test questions from this Rule in the database.

Sample Questions: There are no test questions from this Rule.

Rule 12: Sailing Vessels

The Rule: (a) When two sailing vessels are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other as follows:

> (i) when each has the wind on a different side, the vessel which has the wind on the port side shall keep out of the way of the other;
> (ii) when both have the wind on the same side, the vessel which is to windward shall keep out of the way of the vessel which is to leeward;
> (iii) if a vessel with the wind on the port side sees a vessel to windward and cannot determine with certainty whether the other vessel has the wind on the port or on the starboard side, she shall keep out of the way of the other.

(b) For the purposes of this Rule, the windward side shall be deemed to be the side opposite that on which the mainsail is carried or, in the case of a square-rigged vessel, the side opposite to that on which the largest fore-and-aft sail is carried.

Discussion: This Rule is much maligned by those who don't sail but is still required knowledge for your exam. Section (b) describes how the wind flows over a vessel. For example, if the wind passes over the port side of the vessel first, the vessel is on a port tack. If the wind flows from the starboard side to the port side, it is in on a starboard tack. You can tell which tack a vessel is on by looking at her largest "fore and aft" sail, or the largest sail that runs parallel to the vessel itself.

This Rule is governed by the maneuverability of sailing vessels. During sail races, you might hear a yacht yell "starboard" which indicates that the vessel has the wind on the starboard side and is therefore the privileged vessel. In this case the vessel is asserting its rights according to the Rules.

When the wind is on the same side for each vessel, the one to windward, or upwind, has to keep clear. This is because that vessel has more maneuverability than the vessel downwind. It dates to the days of combat under sail…the ship to windward had the "weather gauge" and could determine when to proceed into combat, while the vessel downwind could do nothing to control the timing of the battle because they were "stuck" downwind.

Remember that these Rules are modified in narrow channels or when overtaking.

Test Strategy: There are about 10 questions regarding the sailing Rules specifically, but there are more questions that involve sailing vessels in terms of responsibilities between vessels or lighting configuration.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. If two sailing vessels are running free with the wind on the same side, which one must keep clear of the other?

A. The one with the wind closer to the stern
B. The one to leeward
C. The one to windward
D. The one with the wind closest abeam

BOTH INTERNATIONAL AND INLAND. You are under sail making 5 knots. The apparent wind is broad on the port beam at 10 knots. You see another sailing vessel dead ahead on a meeting course. What action is correct?

A. Both vessels must maneuver to avoid collision
B. Only the other vessel must maneuver to avoid collision
C. You are only required to maneuver if collision cannot be avoided by maneuver of the other vessel
D. You must keep out of the way of the other vessel

BOTH INTERNATIONAL AND INLAND. You are on a sailing vessel with the wind on the starboard side and are approaching another vessel with the wind on the port side. Which action should you take?

A. Maintain course and speed
B. Reduce sail and hold course
C. Alter course away from the other vessel
D. Any maneuver to avoid collision

Rule 13 – Overtaking

The Rule:
(a) Notwithstanding anything contained in the Rules 4-18, any vessel overtaking any other shall keep out of the way of the vessel being overtaken.

(b) A vessel shall be deemed to be overtaking when coming up with a another vessel from a direction more than 22.5 degrees abaft her beam, that is, in such a position with reference to the vessel she is overtaking, that at night she would be able to see only the stern light of that vessel but neither of her sidelights.

(c) When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly.

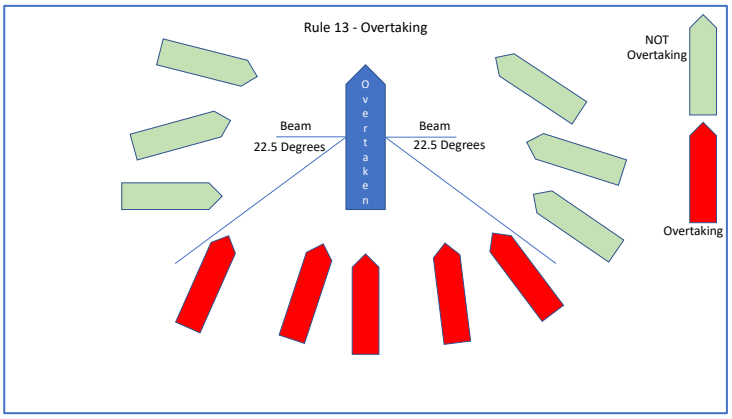
(d) Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

Discussion: This Rule is the first of three common maneuvering situations, and it is listed first because it is the most restrictive. One key point to this Rule is the phrase 22.5° abaft the beam. Refer to the diagram to understand what this phrase is referencing.

Another key point is that overtaking can occur between any vessels. Most maneuvering situations are only governed between power-driven vessels (Rules 14 and 15), or between vessels of different class (Rule 18). However, *any* vessel overtaking another vessel is by default the give way vessel. For example, a vessel restricted in her ability to maneuver overtaking a power-driven vessel is the give way.

Finally, remember that as the vessels change relative angle, there is no change to the situation – once an overtaking vessel, you remain so until the situation is past and clear.

Test Strategy: There are about 30 questions in the database for overtaking situations, but there are many other questions that feature overtaking situations as part of another topic. Refer to the diagram for examples of vessels that are and are not overtaking.



Sample Questions:

BOTH INTERNATIONAL AND INLAND. An overtaking situation would be one in which one vessel is approaching another from more than how many degrees abaft the beam?

A. 0°
B. 22.5°
C. 10°
D. None of the above

BOTH INTERNATIONAL AND INLAND. A vessel approaching from your 235° relative is in what type of situation?

A. Passing
B. Overtaking
C. Meeting
D. Crossing

BOTH INTERNATIONAL AND INLAND. A vessel is overtaking when she can see which light(s) of the vessel ahead?

A. Only a sidelight of the vessel
B. One sidelight and a masthead light of the vessel
C. The masthead light of the vessel
D. Only the stern light of the vessel

BOTH INTERNATIONAL AND INLAND. Sailing vessels are the stand on over power-driven vessels except _____.

A. On the Inland waters of the USA
B. In a meeting situation
C. When they are the overtaking vessel
D. In a crossing situation

BOTH INTERNATIONAL AND INLAND. The Rules state that a vessel overtaking another vessel is relieved of her duty to keep clear when ____.

A. She is forward of the other vessels port beam
B. The overtaking situation becomes a crossing situation
C. She is past and clear of the other vessel
D. The other vessel is no longer in sight

BOTH INTERNATIONAL AND INLAND. You are the watch officer on a large power-driven vessel and notice a large sailing vessel approaching form astern. You should ____.

A. Slow down
B. Sound one short blast and change course to starboard
C. Hold your course and speed
D. Sound two prolonged blasts and change course to port

Rule 14 – Head On Situation

The Rule:

(a) * When two power-driven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision each shall alter her course to starboard so that each shall pass on the port side of the other.

**Unless otherwise agreed in Inland Rules*

(b) Such a situation shall be deemed to exist when a vessel sees the other ahead or nearly ahead and by night she could see the masthead lights of the other in a line or nearly in a line and/or both sidelights and by day she observes the corresponding aspect of the other vessel.

(c) When a vessel is in any doubt as to whether such a situation exists she shall assume that it does exist and act accordingly.

Inland Only: (d) Notwithstanding Rule 14(a), a power-driven vessel operating on the Great Lakes, Western Rivers, or waters specified by the Secretary, and proceeding downbound with a following current shall have the right-of-way over an upbound vessel, shall propose the manner of passage, and shall initiate the maneuvering signals prescribed by Rule 34(a)(i), as appropriate.

Discussion: This Rule is the second of three maneuvering situations. Certain elements must be met for this Rule to take effect. For example, it must be two power-driven vessels. Additionally, the vessels must be meeting on nearly opposite courses and there must be risk of collision.

Also note the Inland only provisions regarding pre-arranged passages and the Lakes/River clause.

Test Strategy: There are about 20 questions directly regarding this Rule, but many other questions use the head on situation as an element of another question. Common errors include not remembering that the vessels must be power-driven.

Sample Questions

BOTH INTERNATIONAL AND INLAND. Rule 14 describes the action to be taken by vessels meeting head on. Which of the following conditions must exist in order for this Rule to apply?

A. Both vessels must be power-driven
B. The situation must involve risk of collision
C. They must be meeting on reciprocal or nearly reciprocal courses
D. All of the above

BOTH INTERNATIONAL AND INLAND. In which situation do the Rules required both vessels to maneuver?

A. Two power-driven vessels meeting head on
B. Two power-driven vessels crossing when it is apparent to the stand on vessel that the give way vessel is not taking appropriate action
C. Two sailing vessels crossing with the wind on the same side
D. All of the above

BOTH INTERNATIONAL AND INLAND. A "head on" situation shall be deemed to exist at night when a power-driven vessel sees another power-driven vessel ahead and _____.

A. Both sidelights and masthead light(s) are visible
B. The vessels will pass closer than half a mile
C. One sidelight and the masthead light are visible
D. Both vessels sound one prolonged blast

BOTH INTERNATIONAL AND INLAND. Two vessels are approaching each other near head on. What action should be taken to avoid collision?

A. The first vessel to sight the other should give way
B. Both vessels should alter course to starboard
C. The vessel making the slower speed should give way
D. Both vessels should alter course to port

Rule 15 – Crossing Situation

The Rule:
(a) When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

International Only: (b) Notwithstanding Rule 15(a), on the Great Lakes, Western Rivers, or water specified by the Secretary, a power-driven vessel crossing a river shall keep out of the way of a power-driven vessel ascending or descending the river.

Discussion: This Rule describes situations in which vessels are neither overtaking or meeting, but that risk of collision exists. Another way to look at this is if two vessels are closing together and each is less than 22.5 degrees abaft the beam to almost all the way dead ahead, a crossing situation applies. This Rule is third in the listing of the three main maneuvering Rules because it requires the most interpretation of the Rules.

Often, students think of two power driven vessels crossing at night, and they imagine themselves on each vessel – which sidelights would you see at night? If you see the red light, you are the give way vessel, and if you see the green sidelight you are the stand on vessel. This memory aid is helpful but incomplete and requires an understanding of Part C of the Rules.

Another key point is that the vessels must both be power-driven vessels. If they are not, other Rules (namely Rule 18) will govern the situation. Also remember that risk of collision must exist for this Rule to be in effect. Finally, note the International only provision regarding power-driven vessels on rivers – similar to Narrow Channels, but more explicit.

Test Strategy: There are about 20 questions in the database for this Rule specifically, but many other questions use crossing situations as an element of the question. For example, shapes, lights, sounds and other signals are often included in crossing situation questions.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. When two power-driven vessels are crossing, the vessel which has the other to starboard must keep out of the way if _____.

A. The vessels will pass within a half mile of each other
B. She is the faster vessel
C. Whistle signals have been exchanged
D. The situation involves risk of collision

BOTH INTERNATIONAL AND INLAND. Every vessel that is to keep out of the way of another vessel in a crossing situation must take positive early action to comply with this obligation and must, if the circumstances of the case admit, _____.

A. Avoid passing astern of the other vessel
B. Sound one prolonged blast to indicate compliance
C. Avoid crossing ahead of the other vessel
D. Alter course to port for a vessel on her port side

BOTH INTERNATIONAL AND INLAND. When two power-driven vessels are crossing, which vessel is the stand on vessel?

A. The vessel which is to port of the other vessel
B. The vessel which is to starboard of the other vessel
C. The vessel that sounds the first whistle signal
D. The larger vessel

BOTH INTERNATIONAL AND INLAND. Vessel "A" and vessel "B" are crossing as show in illustration 26. Which statement is true?

A. Vessel A must keep clear of vessel B
B. Vessel B should alter course to the right
C. The vessels should pass starboard to starboard
D. Vessel B should pass just under the stern of vessel A

BOTH INTERNATIONAL AND INLAND. Underway at night you see the red sidelight of a vessel well off your port bow. Which statement is true?

A. You are required to alter course to the right
B. You are on a collision course with the other vessel
C. You may maintain course and speed
D. You must stop engines

Rule 16 – Action by the Give Way Vessel

The Rule: Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear.

Discussion: This is quite short and simply directs the give way vessel to keep clear. Note the words “early and substantial” action which dovetails with Rule 8 – Action to Avoid Collision

Test Strategy: There are no test questions from this Rule

Sample Questions: There are no test questions from this Rule

Rule 17: Action by the Stand On Vessel

The Rule
(a) (i) Where one of two vessels is to keep out of the way, the other shall keep her course and speed.

(ii) The latter vessel may, however, take action to avoid collision by her maneuver alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

(b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

(c) A power-driven vessel which takes action in a crossing situation in accordance with Rule 17(a)(ii) to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.

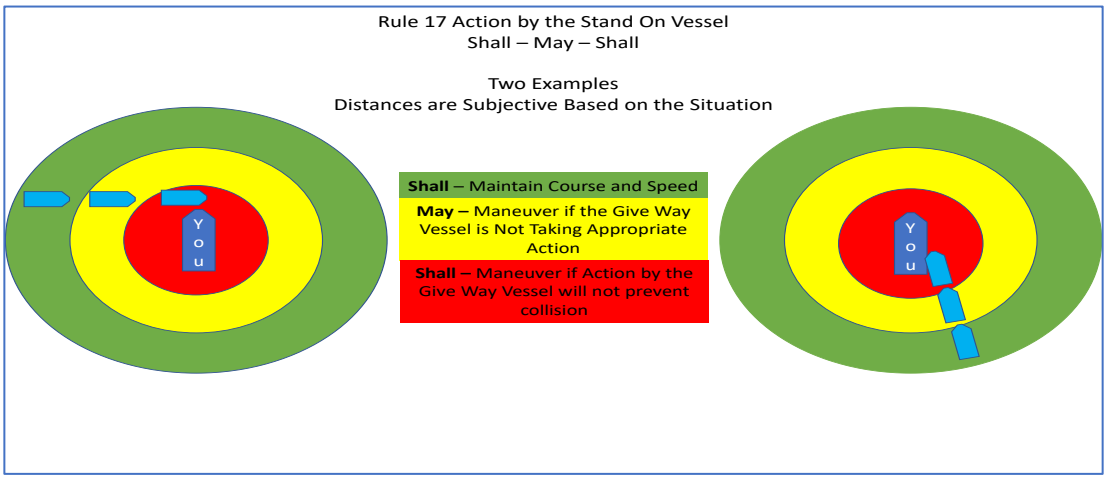
(d) This Rule does not relieve the give-way vessel of her obligation to keep out of the way.

Discussion: This Rule describes what actions you can take if you are the stand on vessel in any kind of situation. This Rule, if followed, means there should never be a collision at sea, even if the other vessel is at fault. Think of the Rule in three phases, with the phrase Shall – May – Shall to help you remember:

Shall (Phase 1) – If you are the stand on vessel in any situation, you shall hold your course and speed.

May (Phase 2) – If you are the stand on vessel, and the give way vessel appears not to be taking action as required, you may maneuver if you see fit.

Shall (Phase 3) – When in extremis, and even if the give way vessel took action (albeit late), you shall maneuver to avoid collision.



Test Strategy: The phrase to remember for this Rule is "Shall – May – Shall" and some people prefer to make a short diagram of a hypothetical situation. There are about 20 questions in the database from this Rule.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. A stand on vessel is _____.

A. Required to give way in a crossing situation
B. Required to sound the first passing signal in a meeting situation
C. Free to maneuver in any crossing situation or meeting situation since it has the right of way
D. Required to maintain course and speed in a crossing situation but may take action to avoid collision

BOTH INTERNATIONAL AND INLAND. For a stand on vessel to take action to avoid collision, she shall if possible, not ____.

A. Increase speed
B. Decrease speed
C. Turn to port for a vessel on her port side
D. Turn to starboard for a vessel on her port side

BOTH INTERNATIONAL AND INLAND. If you are the stand on vessel in a crossing situation, you may take action to avoid collision by your maneuver alone. When may this action be taken?

A. When you determine that your present course will cross ahead of the other vessel
B. When it becomes apparent to you that the give way vessel is not taking appropriate action
C. Only when you have reached extremis
D. At any time you feel it is appropriate

BOTH INTERNATIONAL AND INLAND. The Rules require that a stand on vessel shall take action to avoid collision when she determines that ____.

A. The other vessel will cross ahead of her
B. The other vessel is not taking appropriate action
C. Risk of collision exists
D. Collision cannot be avoided by the give way vessel's maneuver alone

Rule 18 – Responsibilities Between Vessels

The Rule:

Except where Rules 9, 10, and 13 otherwise require:

(a) A power-driven vessel underway shall keep out of the way of:

(i) a vessel not under command;
(ii) a vessel restricted in her ability to maneuver;
(iii) a vessel engaged in fishing;
(iv) a sailing vessel.

(b) A sailing vessel underway shall keep out of the way of:

(i) a vessel not under command;
(ii) a vessel restricted in her ability to maneuver;
(iii) a vessel engaged in fishing.

(c) A vessel engaged in fishing when underway shall, so far as possible, keep out of the way of:

(i) a vessel not under command;
(ii) a vessel restricted in her ability to maneuver.

International Only:

(d)(i) Any vessel other than a vessel not under command or a vessel restricted in her ability to maneuver shall, if the circumstances of the case admit, avoid impeding the safe passage of a vessel constrained by her draft, exhibiting the signals in Rule 28.

(ii) A vessel constrained by her draft shall navigate with particular caution having full regard to her special condition.

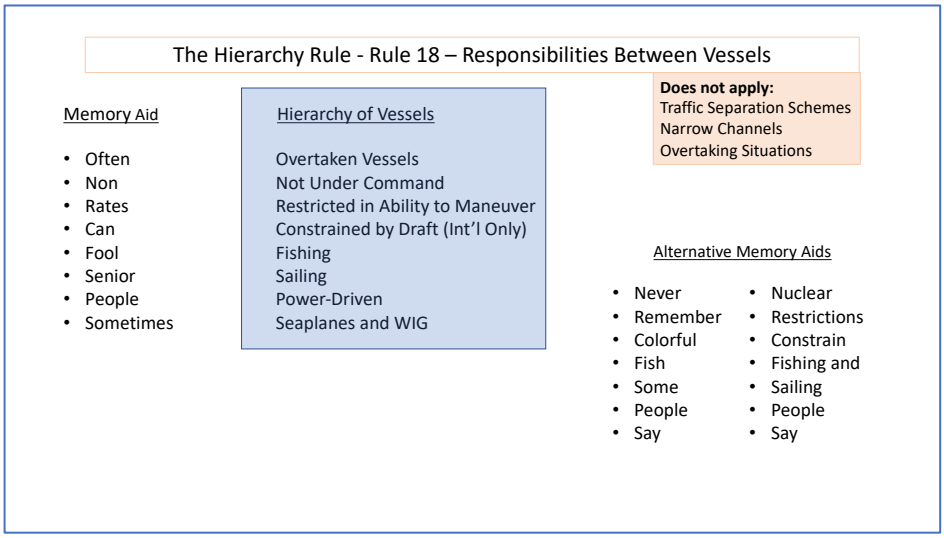
(e) A seaplane on the water shall, in general, keep well clear of all vessels and avoid impeding their navigation. In circumstances, however, where risk of collision exists, she shall comply with Rules 4-19.

(f)(i) A WIG craft shall, when taking off, landing and in flight near the surface, keep well clear of all other vessels and avoid impeding their navigation;

(ii) a WIG craft operating on the water surface shall comply with Rules 4-19 as a power-driven vessel.

Discussion: This Rule is best memorized with a diagram. However there are a couple other points to remember. First, remember that constrained by draft vessels do not exist in the Inland Rules, and therefore Rule 18 only applies to constrained by draft vessels in International waters.

Second, the exemptions for Rule 9 (Narrow Channels), Rule 10 (Traffic Separation Schemes) and Rule 13 (Overtaking) are important to remember – each has special provisions for who is privileged and who is burdened in these cases. Finally, remember that this Rule applies when vessels are "in sight" and therefore does not apply when considering Rule 19 (Conduct of Vessels in Restricted Visibility).



Test Strategy: Many people have success coming up with a phrase they can remember and then regurgitate onto a blank piece of paper during the test to help them remember the hierarchy of vessels. There are about 50 questions in the database specifically referring to this Rule but remember that other questions could use this Rule as a part of the question. You will likely see 3-5 questions from this Rule on your exam.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. A fishing vessel is approaching a vessel not under command. Which statement is true?

A. If the vessel not under command is a power-driven vessel, she must keep clear of the fishing vessel
B. Both vessels are required to take action to stay clear of each other
C. They must exchange whistle signals
D. The fishing vessel must keep clear of the vessel not under command

BOTH INTERNATIONAL AND INLAND. A power-driven vessel is underway and fishing with trolling lines. This vessel ____.

A. Must sound one prolonged, two short blasts in restricted visibility
B. Is the stand on vessel when overtaking power-driven vessels
C. Must keep out of the way of sailing vessels
D. All of the above

BOTH INTERNATIONAL AND INLAND. A sailing vessel is not required to keep out of the way of _____.

A. Power-driven vessel
B. Vessel not under command
C. Vessel engaged in fishing
D. Vessel restricted in her ability to maneuver

BOTH INTERNATIONAL AND INLAND. In open water, a vessel fishing is in a crossing situation with a sailing vessel. The sailing vessel is located on the fishing vessel's starboard side. Which vessel is the stand on vessel?

A. The fishing vessel because it is to port of the sailing vessel
B. The sailing vessel because it is sailing
C. The fishing vessel because it is fishing
D. The sailing vessel because it is to starboard of the fishing vessel

BOTH INTERNATIONAL AND INLAND. The Rules state that a seaplane shall _____.

A. Not be regarded as a vessel
B. Proceed at a slower speed than surrounding vessels
C. When making way show the lights for a vessel not under command
D. In general, keep well clear of all vessels

BOTH INTERNATIONAL AND INLAND. Your power-driven vessel is not making way but is not in any way disabled. Another power-driven vessel is approaching you on your starboard beam. Which statement is true?

A. Your vessel is the give-way vessel in a crossing situation
B. You should be showing the lights or shapes for a vessel restricted in her ability to maneuver
C. You should be showing the lights or shapes for a vessel not under command
D. The other vessel must give way since your vessel is stopped

INTERNATIONAL ONLY. Which statement is true according to the Rules?

A. A vessel constrained by her draft shall keep out of the way of a vessel engaged in fishing
B. A vessel not under command shall keep out of the way of a vessel restricted in her ability to maneuver
C. A vessel engaged in fishing while underway shall, so far as possible, keep out of the way of a vessel restricted in her ability to maneuver
D. A vessel not under command shall avoid impeding the safe passage of a vessel constrained by her draft

INTERNATIONAL ONLY. Of the vessels listed, which must keep out of the way of all the others?

A. A vessel on pilotage duty
B. A vessel constrained by draft
C. A vessel restricted in her ability to maneuver
D. A vessel engaged in fishing

Part B, Section 2 Quiz

This section refers to Rules for vessels "in sight" of each other. Remember that "in sight" means that the vessels can actually see each other, and are not operating in or near an area of restricted visibility.

BOTH INTERNATIONAL AND INLAND. What is true regarding sailing vessels?

A. When both vessels have the wind on the same side, the vessel to leeward shall keep out of the way
B. A sailing vessel with the wind forward of the beam on her port side shall keep out of the way of a sailing vessel with the wind forward of the beam on her starboard side
C. A sail vessel with the wind abaft the beam must keep out of the way of a vessel sailing into the wind
D. None of the above

BOTH INTERNATIONAL AND INLAND. A sailing vessel is overtaking a tug and tow. Which statement is correct?

A. The tug is the stand on vessel because it is towing
B. The sailing vessel is the stand on vessel because it is sailing
C. The tug is the stand on vessel because it is being overtaken
D. The sailing vessel is the stand on vessel because it is overtaking

BOTH INTERNATIONAL AND INLAND. Which statement is true in an overtaking situation?

A. Any later change of bearing between the two vessels shall not making the overtaking vessel a crossing vessel
B. An overtaking situation exists when one vessel is approaching another vessel from anywhere abaft the beam
C. It is the duty of the vessel being overtaken to get out of the way
D. All of the above

BOTH INTERNATIONAL AND INLAND. Two power-driven vessels meeting in a head on situation are directed by the Rules to ____.

A. Alter course to starboard and pass port to port
B. Slow to bare steerageway
C. Alter course to port and pass starboard to starboard
D. Decide on which side the passage will occur by matching whistle signals

BOTH INTERNATIONAL AND INLAND. What describes a head on situation?

A. Seeing two forward white towing lights in a vertical line on a towing vessel directly ahead
B. Seeing both sidelights of a vessel directly ahead
C. Seeing one red light of a vessel directly ahead
D. Seeing both sidelights of a vessel directly off your starboard beam

BOTH INTERNATIONAL AND INLAND. You are the give way vessel in a crossing situation. What should you not do in obeying the Rules?

A. Make a large course change to starboard
B. Slow your vessel
C. Back your vessel
D. Cross ahead of the stand on vessel

INLAND ONLY. You are in charge of a power-driven vessel crossing on the Western Rivers. You must keep out of the way of which vessel?

A. Sail vessel ascending the river
B. Sail vessel descending the river
C. Power driven vessel ascending the river
D. All of the above

BOTH INTERNATIONAL AND INLAND. If your vessel is the stand on vessel in a crossing situation, _____.

A. You may change course and speed as the other vessel must keep clear
B. You must keep your course and speed
C. Both vessels must keep their course and speed
D. The other vessel must keep her course and speed

BOTH INTERNATIONAL AND INLAND. The Rules required that a stand on vessel shall take action to avoid collision when she determines that _____.

A. The other vessel will cross ahead of her
B. The other vessel is not taking appropriate action
C. Risk of collision exists
D. Collision cannot be avoided by the action of the give way vessel's maneuver alone

BOTH INTERNATIONAL AND INLAND. A sailing vessel is not required to keep out of the way of a _____.

A. Power driven vessel
B. Vessel not under command
C. Vessel engaged in fishing
D. Vessel restricted in her ability to maneuver

BOTH INTERNATIONAL AND INLAND. A vessel underway and fishing shall keep out of the way of a _____.

A. Vessel sailing
B. Power driven vessel underway
C. Vessel not under command
D. Vessel engaged on pilotage duty

Rule 19: Conduct of Vessels in Restricted Visibility

The Rule:

(a) This Rule applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.

(b) Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility. A power-driven vessel shall have her engines ready for immediate maneuver.

(c) Every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with Rules 4-10.

(d) A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing and/or risk of collision exists. If so, she shall take avoiding action in ample time, provided that when such action consists of an alteration in course, so far as possible the following shall be avoided:

> (i) An alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken;
> (ii) An alteration of course toward a vessel abeam or abaft the beam.

(e) Except where it has been determined that a risk of collision does not exist, every vessel which hears apparently forward of her beam the fog signal of another vessel, or which cannot avoid a close-quarters situation with another vessel forward of her beam, shall reduce her speed to be the minimum at which she can be kept on her course. She shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over.

Discussion: This Rule has a few key points. First, remember that this applies to vessels not in sight, and also operating in or near restricted visibility. So, refer to Rule 3 for the definition of "restricted visibility" and "in sight" and refer to Rules 4-18 for conduct of vessels in any condition of visibility and in sight. The bottom line is that if you are in the fog, but you can see another vessel, this Rule does not apply. It only applies to detection of a vessel by radar or sound that you cannot see.

Second, the discussion of safe speed is a legacy from the historical Rules of the Road – Rule 6 is a relatively recent addition, and the old Rules only reference safe speed in restricted visibility. But it is a good reminder anyway, and court cases have held that this potential speed reduction is necessary *near* an area of restricted visibility too.

Third, paragraph (e) implies that one must be proficient in radar plotting or have an ARPA system to validate that radar contacts are not a risk of collision. Otherwise, one must reduce speed to bare steerageway (the minimum in which you can maintain control of your vessel) when detecting a radar or sound contact forward of the beam.

Finally, if you consider all the provisions of this Rule, it is good practice to question any decision you or your watch officers make to turn the ship to the left in restricted visibility. The only case this would be defensible for contact avoidance is if the radar contact is on your starboard quarter or when clearly overtaking. Otherwise, left turns are prohibited by Rule 19 for contact avoidance. However, it is important to note the first thing we discussed – this only applies in restricted visibility when the vessels are not in sight. If you subsequently become "in sight," different Rules apply.

Test Strategy: While there are only about 25 questions in the database regarding Rule 19 specifically, remember that there will be other questions testing your knowledge of sound signals in restricted visibility (Rule 35), so it will seem that you'll see lots of fog questions. Read the provisions of the Rule, understand the difference between "in sight" and "not in sight" and practice until you can reliably answer questions correctly. There are no Inland/International differences in this Rule.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. What is true when operating in fog and other vessels are detected by radar?

A. Long range scanning will provide early warning of all other vessels when within radar range
B. You should make an ample change to port for a vessel crossing on the starboard bow
C. You should determine the course and speed of all radar contacts at 6-minute intervals
D. You should maneuver in ample time if a close-quarters situation is developing

BOTH INTERNATIONAL AND INLAND. You hear the fog signal of another vessel forward of your beam. Risk of collision may exist. You must _____.

A. Begin a radar plot
B. Stop your engines
C. Take all way off, if necessary
D. All of the above

BOTH INTERNATIONAL AND INLAND. A vessel hearing a fog signal forward of her beam has not determined if risk of collision exists. What shall she reduce speed to?

A. Moderate speed
B. Bare steerageway
C. Safe speed
D. Half speed

BOTH INTERNATIONAL AND INLAND. What is required of a vessel navigating near an area of restricted visibility?

A. If she detects another vessel by radar she shall determine if risk of collision exists
B. A power-driven vessel shall have her engines ready for immediate maneuver
C. She must sound appropriate sound signals
D. All of the above

BOTH INTERNATIONAL AND INLAND. Which statement concerning maneuvering in restricted visibility is false?

A. A vessel which cannot avoid a close quarters situation with a vessel forward of her beam shall reduce her speed to bare steerageway
B. A vessel which hears a fog signal forward of the beam shall navigate with caution
C. A vessel which hears a fog signal forward of her beam shall stop her engines
D. If a vessel determines by radar that a close quarters situation is developing, she shall take avoiding action in ample time

BOTH INTERNATIONAL AND INLAND. Which vessel is the stand on vessel when two vessels crossing in the fog are not in sight of one another?

A. The vessel which has the other on her own port side
B. Neither vessel is the stand on vessel
C. The vessel which hears the other vessel's fog signal first
D. The vessel which has the other on her own starboard side

BOTH INTERNATIONAL AND INLAND. You are underway in heavy fog. You hear the fog signal of a vessel which is somewhere ahead of your vessel. You must _____.

A. Slow to moderate speed and navigate with caution
B. Stop engines and navigate with caution
C. Maintain speed and sound the danger signal
D. Slow to bare steerageway and navigate with caution

Part B Overall Quiz

BOTH INTERNATIONAL AND INLAND. In determining "safe speed," all of the following must be taken into account except _____.

A. Draft of your vessel
B. Maximum horsepower of your vessel
C. Presence of background lights at night
D. Maneuverability of your vessel

BOTH INTERNATIONAL AND INLAND. You are watching another vessel approach and her compass bearing is not changing. This means that _____.

A. Risk of collision exists
B. The other vessel is dead in the water
C. A special circumstance exists
D. You are the stand on vessel

BOTH INTERNATIONAL AND INLAND. Under the Rules, any vessel may slacken her speed, stop, or reverse her engines to _____.

A. Allow more time to assess the situation
B. Attract the attention of another vessel
C. Create a crossing situation
D. All of the above

BOTH INTERNATIONAL AND INLAND. Which vessel is directed not to impede the passage of a vessel which can only navigate inside a narrow channel?

A. A vessel not under command
B. A vessel engaged in surveying
C. A vessel of less than 20 meters or a sailing vessel
D. All of the above

INLAND ONLY. A power-driven vessel proceeding downstream in a narrow channel on the Western Rivers sights another power-driven vessel moving upstream. Which vessel has the right of way?

A. The vessel sounding the first whistle signal
B. The vessel moving downstream with a following current
C. The vessel located more towards the channel centerline
D. The vessel moving upstream against the current

BOTH INTERNATIONAL AND INLAND. A vessel using a traffic separation scheme shall not _____.

A. Enter the separation zone
B. Cross a traffic lane
C. Engage in fishing in the separation zone
D. Proceed in an inappropriate lane

BOTH INTERNATIONAL AND INLAND. If a sailing vessel with the wind on the port side sees a sailing vessel to windward and cannot tell whether the other vessel has the wind on the port or starboard side, she shall _____.

A. Sound the danger signal
B. Turn to port and come into the wind
C. Hold course and speed
D. Keep out of the way of the other vessel

BOTH INTERNATIONAL AND INLAND. A vessel shall be deemed to be overtaking when she can see at night _____.

A. A sidelight and one masthead light of the vessel
B. Only the stern light of the vessel
C. Any lights except the masthead light of the vessel
D. Only a sidelight of the vessel

BOTH INTERNATIONAL AND INLAND. Two power-driven vessels meeting in a "head on" situation are directed by the Rules to _____.

A. Alter course to starboard and pass port to port
B. Slow to bare steerageway
C. Alter course to port and pass starboard to starboard
D. Decide on which side the passage will occur by matching whistle signals

BOTH INTERNATIONAL AND INLAND. You are underway on a power-driven vessel at night and see the red sidelight of another power-driven vessel well off your port bow. Which statement is true?

A. You are required to alter course to the right
B. You are on a collision course with the other vessel
C. You may maintain course and speed
D. You must stop engines

BOTH INTERNATIONAL AND INLAND. If it becomes necessary for the stand on vessel to take action to avoid collision, she shall not, if possible, _____.

A. Decrease speed
B. Increase speed
C. Turn to starboard for a vessel on her own port side
D. Turn to port for a vessel on her one port side

BOTH INTERNATIONAL AND INLAND. A power-driven vessel has on her port side a sailing vessel which is on a collision course. The power-driven vessel is to _____.

A. Sound one blast and turn to starboard
B. Maintain course and speed
C. Stop her engines
D. Keep clear, passing at a safe distance

BOTH INTERNATIONAL AND INLAND. When navigating in restricted visibility, what action shall a power-driven vessel take?

A. When making way, sound one prolonged blast at intervals of not more than one minute
B. Have her engines ready for immediate maneuver
C. Stop her engines when hearing a fog signal forward of her beam, even if risk of collision does not exist
D. Operate at a safe speed to be able to stop in the distance of her visibility

Part C: Lights and Shapes

The largest section of the Rules is dedicated to the myriad lights and dayshapes that vessels may show to identify themselves to other vessels. Lights are shown at night or in periods of restricted visibility, and shapes are shown from sunrise to sunset.

The key to this Part is remembering that a vessel needs to be identified from all 360° around it. Although the colors and arc of visibility may change, there is never an instance when there is a gap in light coverage. Additionally, sidelights and a sternlight are common on most vessels, but identification lights are often unique to certain vessel classes. It is useful for students to differentiate between sidelights/sternlight and other identification lights when studying this Part.

Rule 20: Applicability

The Rule
(a) Rules 20-31 shall be complied with in all weathers.

(b) The Rules concerning lights shall be complied with from sunset to sunrise, and during such times no other lights shall be exhibited, except such lights which cannot be mistaken for the lights specified in these Rules or do not impair their visibility or distinctive character, or interfere with the keeping of a proper look-out.

(c) The lights prescribed by these Rules shall, if carried, also be exhibited from sunrise to sunset in restricted visibility and may be exhibited in all other circumstances when it is deemed necessary.

(d) The Rules concerning shapes shall be complied with by day.

(e) The lights and shapes specified in these Rules shall comply with the provisions of Annex I of these Rules.

Inland Only: (f) A vessel's navigation lights and shapes may be lowered if necessary, to pass under a bridge.

Discussion: This Rule describes the times and situations in which lights and shapes are displayed. That is to say, lights are shown at night and periods of restricted visibility, and shapes are shown during the day. Day and night are defined as related to sunrise and sunset. There is also a key provision regarding other lights being shown in addition to the navigation lights, and an Inland provision allowing for lights to be lowered for bridge crossings.

Test Strategy: There are a handful of questions in the database regarding this Rule, all of which are very straightforward if you have read the Rule.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. A vessel may exhibit lights other than those prescribed by the Rules as long as the additional lights _____.

A. Have a lesser range of visibility than the prescribed lights
B. Do not impair the visibility or distinctive character of the prescribed lights
C. Are not the same color as either side light
D. All of the above

BOTH INTERNATIONAL AND INLAND. Day shapes must be shown _____.

A. Between sunset and sunrise
B. During daylight house except in restricted visibility
C. Only between 8am and 4pm daily
D. During daylight hours

BOTH INTERNATIONAL AND INLAND. When must the lights required by the Rules be shown?

A. From sunrise to sunset in restricted visibility
B. Whenever a lookout is posted
C. At all times
D. Only from sunset to sunrise

Rule 21: Definitions

The Rule

(a) "Masthead light" means a white light placed over the fore and aft centerline of the vessel showing an unbroken light over an arc of the horizon of 225 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on either side of the vessel

Inland Only: *except that on a vessel of less than 12 meters in length the masthead light shall be placed as nearly as practicable to the fore and aft centerline of the vessel.*

(b) "Sidelights" means a green light on the starboard side and a red light on the port side each showing an unbroken light over an arc of the horizon of 112.5 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on its respective side. In a vessel of less than 20 meters in length the sidelights may be combined in one lantern carried on the fore and aft centerline of the vessel

Inland Only: *except that on a vessel of less than 12 meters in length the sidelights when combined in one lantern shall be placed as nearly as practicable to the fore and aft centerline of the vessel.*

(c) "Sternlight" means a white light placed as nearly as practicable at the stern showing an unbroken light over an arc of the horizon of 135 degrees and so fixed as to show the light 67.5 degrees from right aft on each side of the vessel.

(d) "Towing light" means a yellow light having the same characteristics as the "sternlight" defined in Rule 21(c).

(e) "All-round light" means a light showing an unbroken light over an arc of the horizon of 360 degrees.

(f) "Flashing light" means a light flashing at regular intervals at a frequency of 120 flashes or more per minute.

Inland Only: *(g) "Special flashing light" means a yellow light flashing at regular intervals at a frequency of 50 to 70 flashes per minute, placed as far forward and as nearly as practicable on the fore and aft centerline of the tow and showing an unbroken light over an arc of the horizon of not less than 180 degrees nor more than 225 degrees and so fixed as to show the light from right ahead to abeam and no more than 22.5 degrees abaft the beam on either side of the vessel.*

Annex V:

(a) Law enforcement vessels may display a flashing blue light when engaged in direct law enforcement or public safety activities. This light must be located so that it does not interfere with the visibility of the vessel's navigation lights.

(b) The blue light described in this section may be displayed by law enforcement vessels of the United States and the States and their political subdivisions.

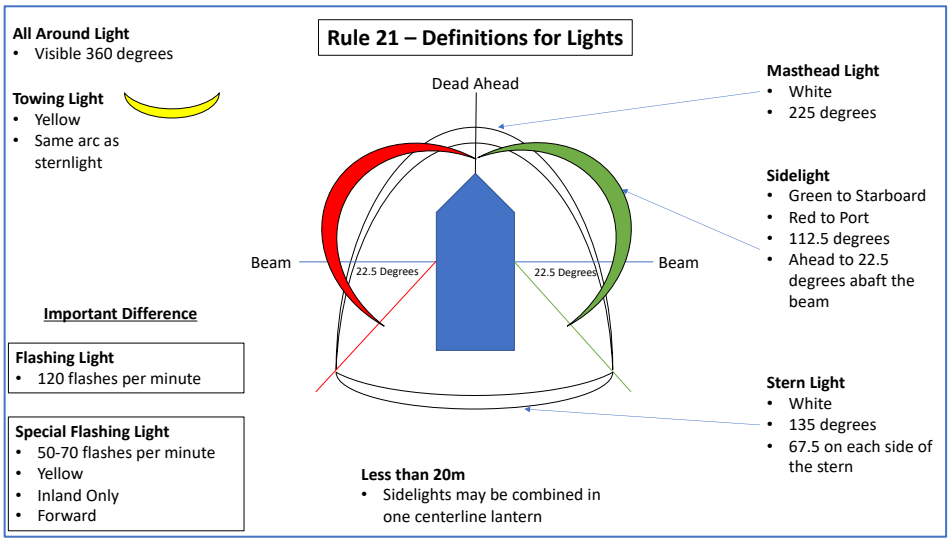
(a) Vessels engaged in government sanctioned public safety activities, and commercial vessels performing similar functions, may display an alternately flashing red and yellow light signal. This identification light signal must be located so that it does not interfere with the visibility of the vessel's navigation lights. The identification light signal may be used only as an identification signal and conveys no special privilege. Vessels using the identification light signal during public safety activities must abide by the Inland navigation Rules, and must not presume that the light or the exigency gives them precedence or right of way.

(b) Public safety activities include but are not limited to patrolling marine parades, regattas, or special water celebrations; traffic control; salvage; firefighting; medical assistance; assisting disabled vessels; and search and rescue.

Discussion: This Rule describes the various lights we will discuss in the next section of the Rules. There are a few key points in this Rule. First, there are significant Inland differences regarding "Special Flashing Lights" as compared to the "Flashing Light," and this is often a testable point on exams. Second, previously buried Rules in Annex V have been recently published in the Inland Rules, regarding law enforcement and public safety vessels. See the description of Annex V for more information. Finally, Inland Rules have a couple of provisions for vessels less than 12 meters that don't appear in the International Rules.

A diagram is helpful when memorizing the arc of visibility of lights described in this Rule.

Test Strategy: There are a surprising number of questions from this Rule and you can expect to see 1-3 questions on your exam from this Rule. Most questions regard definitions of lights, the differences between Inland and International Rules, or the arc of visibility of a light.



Sample Questions:

BOTH INTERNATIONAL AND INLAND. A towing light _____.

A. Shows an unbroken light over an arc of the horizon of not less than 180° nor more than 225°
B. Flashes at a regular interval of 50-70 flashes per minute
C. Is yellow in color
D. All of the above

BOTH INTERNATIONAL AND INLAND. A "flashing light" is a light that _____.

A. Is visible over an arc of the horizon of not less than 180° nor more than 225°
B. Is yellow in color
C. Flashes at regular intervals at a frequency of 120 flashes or more per minute.
D. All of the above

INLAND ONLY. What is true of a "special flashing light"?

A. It is optional below the Baton Rouge Highway Bridge
B. It may show through an arc of not less than 180°
C. It flashes at the rate of 120 flashes per minute
D. All of the above

INLAND ONLY. Which is correct regarding a special flashing light?

A. It must not show through an arc of more than 225°
B. It must be yellow in color
C. It must be placed as far forward as possible
D. All of the above

BOTH INTERNATIONAL AND INLAND. The Towing Light is a(n) _____.

A. All around yellow light
B. Yellow light with the same characteristics as the stern light
C. Yellow light with the same characteristics as the masthead light
D. Flashing amber light

INLAND ONLY. The masthead light may be located at other than the fore and aft centerline on which power-driven vessel?

A. Less than 12 meters in length
B. Engaged in fishing
C. Which has separate sidelights carried on the outboard extremes of the vessel's breadth
D. Less than 20 meters in length

BOTH INTERNATIONAL AND INLAND. The white masthead light required for a power-driven vessel under the Rules is visible over how many degrees of the horizon?

A. 225°
B. 22.5°
C. 360°
D. 112.5°

BOTH INTERNATIONAL AND INLAND. The arc of visibility for sidelights is from right ahead to _____.

A. 22.5° abaft the beam
B. 22.5° forward of the beam
C. 135° abaft the beam
D. Abeam

BOTH INTERNATIONAL AND INLAND. The stern light shall be positioned such that it will show from dead astern to how many degrees on each side of the vessel?

A. 135°
B. 112.5°
C. 67.5°
D. 22.5°

Rule 22: Visibility of Lights

The Rule

The lights prescribed in Rules 20-31 shall have an intensity as specified in Annex I to these Rules so as to be visible at the following minimum ranges:

(a) In vessels of 50 meters or more in length:

(i) a masthead light, 6 miles;
(ii) a sidelight, 3 miles;
(iii) a towing light, 3 miles;
(iv) a white red, green or yellow all-round light, 3 miles.
***Inland Only**: (vi) a special flashing light, 2 miles.*

(b) In vessels of 12 meters or more in length but less than 50 meters in length;

(i) a masthead light, 5 miles; except that where the length of the vessel is less than 20 meters, 3 miles;
(ii) a sidelight, 2 miles;
(iii) a sternlight, 2 miles;
(iv) a towing light, 2 miles;
(v) a white, red, green or yellow all-round light, 2 miles.
***Inland Only**: (vi) a special flashing light, 2 miles.*

(c) In vessels of less than 12 meters in length:

(i) a masthead light, 2 miles;
(ii) a sidelight, 1 miles;
(iii) a towing light, 2 miles;
(iv) a white red, green or yellow all-round light, 2 miles.
***Inland Only**: (vi) a special flashing light, 2 miles.*

(d) In inconspicuous, partly submerged vessels or objects being towed; a white all-round light; 3 miles.

Discussion: This Rule describes the distances at which lights must be visible. It is more of a Rule geared towards vessel construction and not to the Rules of the Road test.

Test Strategy: There are no specific questions about the distance of light visibility on the test.

Sample Questions: There are no questions from this Rule on the exam.

Rule 23 – Power Driven Vessels Underway

The Rule:
(a) A power-driven vessel underway shall exhibit:

(i) a masthead light forward;
(ii) a second masthead light abaft of and higher than the forward one; except that a vessel of less than 50 meters in length shall not be obliged to exhibit such a light but may do so;
(iii) sidelights; and,
(iv) a sternlight.

(b) An air-cushion vessel when operating in non-displacement mode shall, in addition to the lights prescribed in Rule 23(a) exhibit an all-round flashing yellow light

***Inland Only**: The light in section (b) must be shown where it can best be seen.*

(c) A WIG craft only when taking off, landing and in flight near the surface shall, in addition to the lights prescribed in Rule 23(a), exhibit a high intensity all-round flashing red light.

(d)(i) A power-driven vessel of less than 12 meters in length may in lieu of the lights prescribed in Rule 23(a) exhibit an all-round white light and sidelights.

***International Only:** (ii) a power-driven vessel of less than 7 meters in length whose maximum speed does not exceed 7 knots may in lieu of the lights prescribed in Rule 23(a) exhibit an all-round white light and shall, if practicable, also exhibit sidelights.*

(iii) the masthead light or all-round white light on a power-driven vessel of less than 12 metres in length may be displaced from the fore and aft centre line of the vessel if centreline fitting is not practicable, provided that the sidelights are combined in one lantern which shall be carried on the fore and aft centre line of the vessel or located as nearly as practicable in the same fore and aft line as the masthead light or the all-round white light.

***Inland Only:** (e) A power-driven vessel when operating on the Great Lakes may carry an all-round white light in lieu of the second masthead light and sternlight prescribed in Rule 23(a). The light shall be carried in the position of the second masthead light and be visible at the same minimum range.*

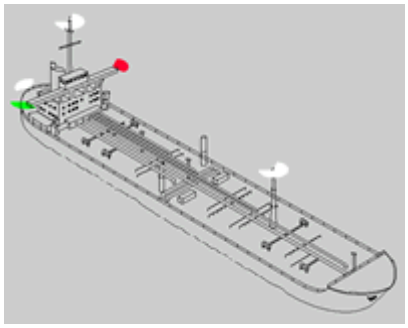
Discussion: This Rule describes lights for power-driven vessels while underway. When anchored or aground, there are separate lights. Here are the key points:

- All power-driven vessels require sidelights, a sternlight, and a masthead light
- When over 50m, add a second masthead light
- If less than 12m, can use an all-around white light instead of masthead/sternlight
- Air cushion vessels (hovercrafts) and WIG craft show the same lights, but an additional flashing yellow (air cushion) or red (WIG) light as appropriate
- On the Great Lakes (Inland), power-driven vessels can combine the second masthead light and sternlight if desired.

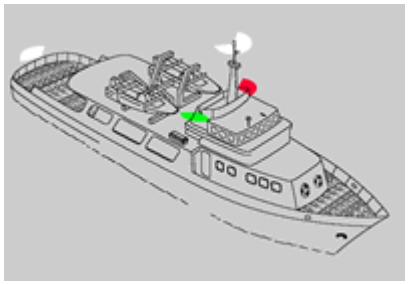
- In the International Rules, there are two minor provisions for small vessels which should be read directly from the Rule.

Test Strategy: The best way to learn these lights is through diagrams and study guides. However, it is important to actually read the Rule as well. There are about 30 questions in the database for this Rule.

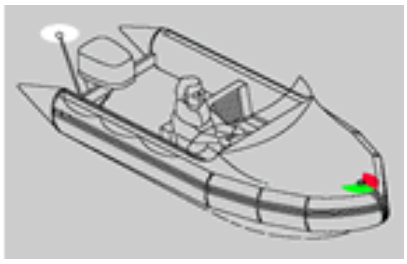
Selected Illustrations:



Power Driven Vessel Underway, over 50m



Power Driven Vessel Underway, less than 50m



Power Driven Vessel Underway, less than 12m

Sample Questions:

BOTH INTERNATIONAL AND INLAND. An all-around flashing yellow light may be exhibited by a(n) _____.

A. Vessel towing a submerged object
B. Vessel not under command
C. Air cushion vessel in non-displacement mode
D. Vessel engaged in diving operations

INTERNATIONAL ONLY. A vessel displaying a high-intensity all-around flashing red light is _____.

A. In distress
B. Engaged in dredging
C. WIG craft
D. Restricted in its ability to maneuver

BOTH INTERNATIONAL AND INLAND. At night, a power-driven vessel less than 12 meters in length may, instead of the normal navigation lights, show sidelights and one _____.

A. Yellow light
B. Flashing white light
C. Flashing yellow light
D. White light

BOTH INTERNATIONAL AND INLAND. At night, power-driven vessels less than 12 meters in length may, instead of normal navigation lights, show which lights?

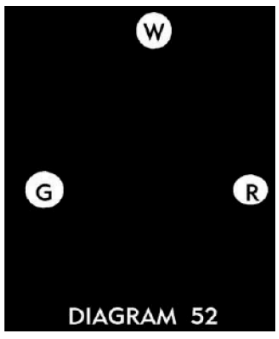
A. Masthead light only
B. Stern light only
C. Sidelights and stern light
D. One all-around white light and sidelights

INTERNATIONAL ONLY. At night, a power-driven vessel less than 7 meters in length, with a maximum speed of less than 7 knots must show when underway at least _____.

A. Sidelights and a stern light
B. The lights required of a vessel less than 12 meters
C. One 360° white light
D. A white light on the near approach of another vessel

BOTH INTERNATIONAL AND INLAND. At night, a vessel is displaying the lights shown in diagram 52. Which of the following describes this vessel?

A. Underway
B. Aground
C. At anchor
D. Transferring dangerous cargo



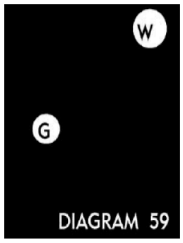
BOTH INTERNATIONAL AND INLAND. The minimum length of a power-driven vessel that must show forward and after masthead lights is _____.

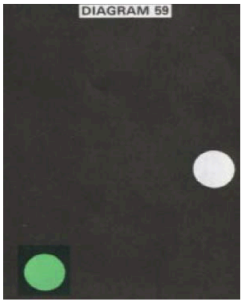
- **A. 50 meters**
- B. 100 meters
- C. 75 meters
- D. 30 meters

INLAND ONLY. Which statement is true concerning lighting requirements for the Great Lakes vessels?

- **A. An all-around white light may be carried in lieu of the second masthead light and stern light**
- B. Sidelights for vessels over 50 meters are required to have only a 2-mile range of visibility
- C. The showing of a forward masthead light is optional for vessels under 150 meters
- D. Great Lakes vessels are exempted from the requirements to show yellow towing lights

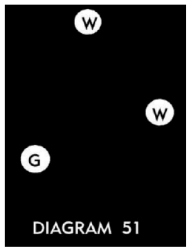
BOTH INTERNATIONAL AND INLAND. You are on watch and sight a vessel showing only the lights in illustration 59. What type of vessel do these lights represent?

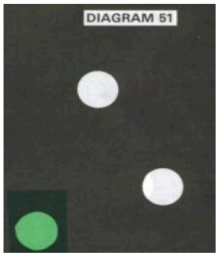




- **A. Power-driven vessel**
- B. Sailing vessel
- C. Mine clearance vessel
- D. Vessel engaged in trawling

BOTH INTERNATIONAL AND INLAND. You are on a vessel heading due north. You see the lights shown in illustration 51. The lights are one point off your port bow. What direction could this vessel be heading in?





- A. SW
- B. NE
- **C. SE**
- D. NW

Rule 24 – Towing and Pushing Part 1 - International

The Rule (International)

(a) A power-driven vessel when towing shall exhibit:

(i) instead of the light prescribed in Rule 23 (a)(i) or (a)(ii), two masthead lights in a vertical line. When the length of the tow, measured from the stern of the towing vessel to the after end of the tow exceeds 200 m, three such lights in a vertical line;

(ii) sidelights;

(iii) a sternlight;

(iv) a towing light in a vertical line above the sternlight;

(v) when the length of the tow exceeds 200 m, a diamond shape where it can best be seen.

(b) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and exhibit the lights prescribed in Rule 23.

(c) A power-driven vessel when pushing ahead or towing alongside, except in the case of a composite unit, shall exhibit:

(i) instead of the light prescribed in Rule 23 (a)(i) or (a)(ii), two masthead lights in a vertical line;

(ii) sidelights;

(iii) a sternlight.

(d) A power-driven vessel to which paragraph (a) or (c) of this Rule applies shall also comply with Rule 23 (a)(ii).

(e) A vessel or object being towed, other than those mentioned in paragraph (g) of this Rule, shall exhibit:

(i) sidelights;

(ii) a sternlight;

(iii) when the length of the tow exceeds 200 m, a diamond shape where it can best be seen.

(f) Provided that any number of vessels being towed alongside or pushed in a group shall be lighted as one vessel,

(i) a vessel being pushed ahead, not being part of a composite unit, shall exhibit at the forward end, sidelights.

(ii) a vessel being towed alongside shall exhibit a sternlight and at the forward end, sidelights.

(g) An inconspicuous, partly submerged vessel or object, or combination of such vessel or objects being towed, shall exhibit:

(i) if it is less than 25 m in breadth, one all-round white light at or near the forward end and one at or near the after end except that dracones need not exhibit a light at or near the forward end;

(ii) if it is 25 m or more in breadth, two additional all-round white lights at or near the extremities of its breadth;

(iii) if it exceeds 100 m in length, additional all-round white lights between the lights prescribed in sub-paragraphs (i) and (ii) so that the distance between the lights shall not exceed 100 m.

(iv) a diamond shape at or near the aftermost extremity of the last vessel or object being towed and if the length of the tow exceeds 200 m an additional diamond shape where it can best be seen and located as far forward as is practicable.

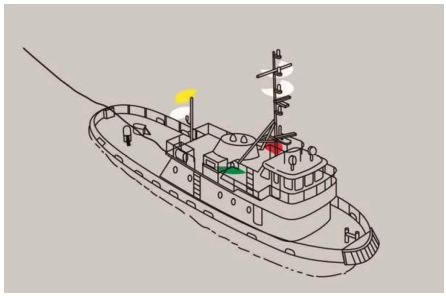
(h) Where from any sufficient cause it is impracticable for a vessel or object being towed to exhibit the lights or shapes prescribed in paragraph (e) or (g) of this Rule, all possible measures shall be taken to light the vessel or object towed or at least to indicate the presence of such vessel or object.

(i) Where from any sufficient cause it is impracticable for a vessel not normally engaged in towing operations to display the lights prescribed in paragraph (a) or (c) of this Rule, such vessel shall not be required to exhibit those lights when engaged in towing another vessel in distress or otherwise in need of assistance. All possible measures shall be taken to indicate the nature of the relationship between the towing vessel and the vessel being towed as authorized by Rule 36, in particular by illuminating the towline.

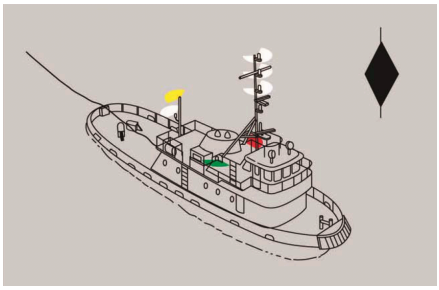
Discussion: In this textbook, we've broken Rule 24 into individual International and Inland parts because it is such a large Rule. This section refers only to the International towing lights and shapes, but much of the language of the Rule is the same for Inland. Focusing on International first will enable you to better understand the Inland Rules. The key to understanding towing lights is remembering the definitions of each type of light and remembering that the vessel needs to be identifiable from all directions. Start with the base sidelights and sternlight and build from there.

Test Strategy: Rule 24 has over 100 questions in the database and is a challenging topic for many people. However, there are only about 10 that are INTERNATIONAL ONLY. Using flashcards or study guides is helpful, as well as spending a decent amount of time dedicated to this Rule.

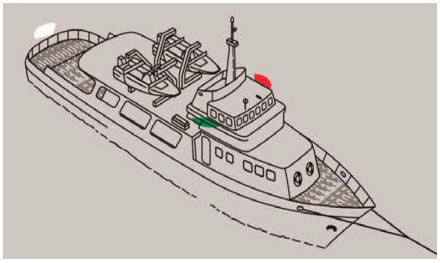
Illustrations – Both International and Inland



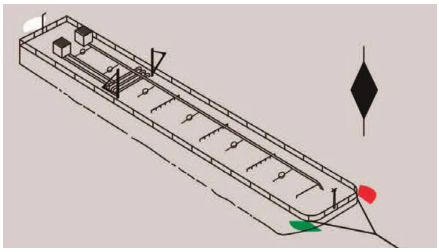
Towing astern, less than 50m, tow less than 200m



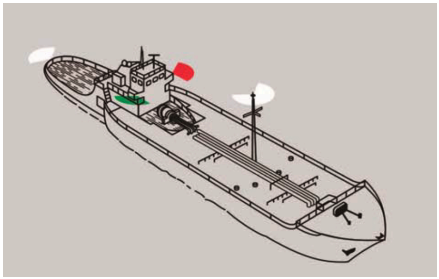
Towing astern, less than 50m, tow more than 200m



Being towed, tow less than 200m

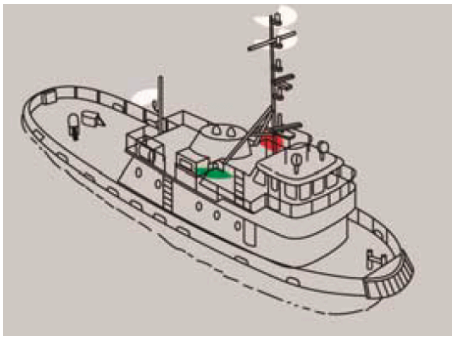


Being towed, tow more than 200m

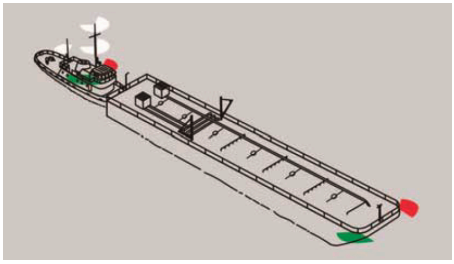


Composite unit, less than 50m

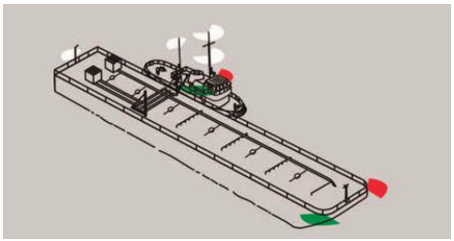
Illustrations – International Only



Towing alongside or pushing ahead



Being pushed ahead



Being towed alongside

Sample Questions:

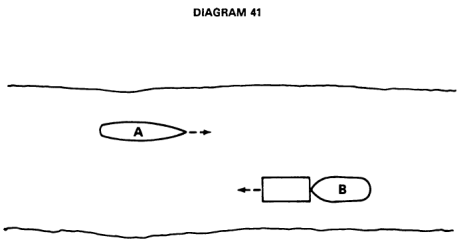
INTERNATIONAL ONLY. A 20-meter power-driven vessel pushing ahead or towing alongside will display _____.

A. A single white light forward
B. Two masthead lights in a vertical line
C. Two all-around red lights where they can best be seen
D. Two towing lights in a vertical line

INTERNATIONAL ONLY. A single vessel being towed alongside shall show _____.

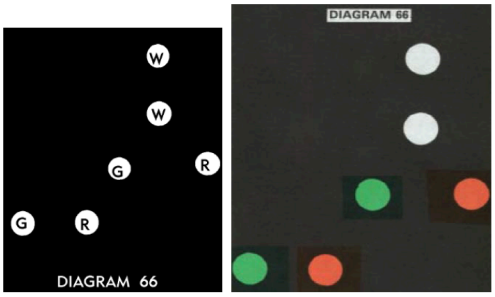
A. A masthead light, sidelights, and a stern light
B. Only the outboard sidelight and a stern light
C. One all-around light
D. Sidelights and a sternlight

INTERNATIONAL ONLY. Vessels A and B are meeting on a river as shown in illustration 41. They will pass ¼ mile apart. If you are on vessel A, in addition to the sidelight, which other light(s) will you see on vessel B?



A. Two white masthead lights in a vertical line
B. Special flashing yellow light
C. Two towing lights
D. None of the above

INTERNATIONAL ONLY. At night you sight the lights shown in illustration 66. What do the lights indicate?



A. Two towing vessels pair trawling
B. A vessel engaged in fishing
C. A ship being assisted by a tug
D. A tug with a tow alongside

INTERNATIONAL ONLY. A partially submerged object towed by a vessel, during the day, must display which of the following shapes?

A. A black ball only when the length of the tow exceeds 200m in length
B. A diamond shape when the length of the tow exceeds 200m in length
C. A black ball
D. A diamond shape when the length of the tow is 200 meters or less

Rule 24: Towing and Pushing Part 2 – Inland

The Rule (Inland)

(a) A power-driven vessel when towing astern shall exhibit:

(i) Instead of the light prescribed either in Rule 23(a)(i) or 23(a)(ii) (§§ 83.23(a)(i) and (ii)), two masthead lights in a vertical line. When the length of the tow, measuring from the stern of the towing vessel to the after end of the tow exceeds 200 meters, three such lights in a vertical line;

(ii)Sidelights;

(iii) A sternlight;

(iv) A towing light in a vertical line above the sternlight; and

(v) When the length of the tow exceeds 200 meters, a diamond shape where it can best be seen.

(b) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and exhibit the lights prescribed in Rule 23 (§ 83.23).

(c) A power-driven vessel when pushing ahead or towing alongside, except as required by paragraphs (b) and (i) of this Rule, shall exhibit:

(i) Instead of the light prescribed either in Rule 23(a)(i) or 23(a)(ii) (§ 83.23(a)(i) or (ii)), two masthead lights in a vertical line;

(ii)Sidelights; and

(iii) Two towing lights in a vertical line.

(d) A power-driven vessel to which paragraphs (a) or (c) of this Rule applies shall also comply with Rule 23(a) (i) and 23(a)(ii)(§ 83.23(a)(i) or (ii)).

(e) A vessel or object other than those referred to in paragraph (g) of this Rule being towed shall exhibit:

(i)Sidelights;

(ii) A sternlight; and

(iii) When the length of the tow exceeds 200 meters, a diamond shape where it can best be seen.

(f) Provided that any number of vessels being towed alongside or pushed in a group shall be lighted as one vessel, except as provided in paragraph (f)(iii) of this Rule.

(i) A vessel being pushed ahead, not being part of a composite unit, shall exhibit at the forward end, sidelights and a special flashing light.

(ii) A vessel being towed alongside shall exhibit a sternlight and at the forward end, sidelights and a special flashing light.

(iii) When vessels are towed alongside on both sides of the towing vessel, asternlight shall be exhibited on the stern of the outboard vessel on each side of the towing vessel, and a single set of sidelights as far forward and as far outboard as is practicable, and a single special flashing light.

(g) An inconspicuous, partly submerged vessel or object, or combination of suchvessels or objects being towed, shall exhibit:

(i) If it is less than 25 meters in breadth, one all-round white light at or near each end;

(ii) If it is 25 meters or more in breadth, four all-round white lights to mark its length and breadth;

(iii) If it exceeds 100 meters in length, additional all-round white lights between the lights prescribed in paragraphs (g)(i) and (ii) of this Rule so that the distance between the lights shall not exceed 100 meters: provided, that any vessels or objects being towed alongside each other shall be lighted as onevessel or object;

(iv) A diamond shape at or near the aftermost extremity of the last vessel or object being towed; and

(v) The towing vessel may direct a searchlight in the direction of the tow to indicate its presence to an approaching vessel.

(h) Where from any sufficient cause it is impracticable for a vessel or object being towed to exhibit the lights or shapes prescribed in paragraph (e) or (g) of this Rule, all possible measures shall be taken to light the vessel or object towed or at least to indicate the presence of such vessel or object.

(i) Where from any sufficient cause it is impracticable for a vessel not normally engaged in towing operations to display the lights prescribed by paragraph (a), (c), or (j) of this Rule, such vessel shall not be required to exhibit those lights when engaged in towing another vessel in distress or otherwise in need of assistance. All possible measures shall be taken to indicate the nature of the relationship between the towing vessel and the vessel being assisted. The searchlight authorized by Rule 36 (§ 83.36) may be used to illuminate the tow.

(j) Notwithstanding paragraph (c) of this Rule, on the Western Rivers (except below the Huey P. Long Bridge at mile 106.1 Above Head of Passes on the Mississippi River) and on waters specified by the Secretary, a power-driven vesselwhen pushing ahead or towing alongside, except as paragraph (b) of this Rule applies, shall exhibit:

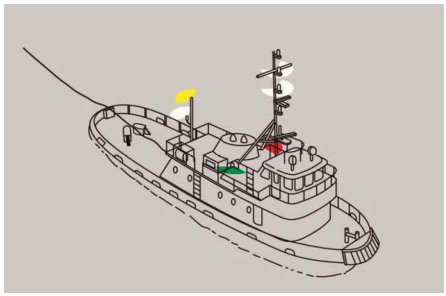
(i)Sidelights; and

(ii) Two towing lights in a vertical line.

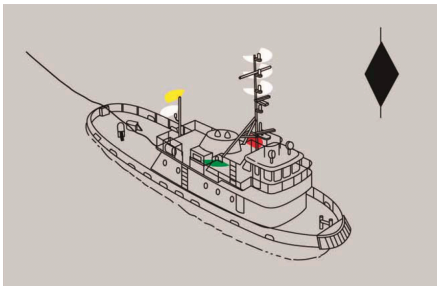
Discussion: In this textbook, we've broken Rule 24 into individual International and Inland parts because it is such a large Rule. This section refers only to the Inland towing lights and shapes, but much of the language of the Rule is the same for International. The key to understanding towing lights is remembering the definitions of each type of light and remembering that the vessel needs to be identifiable from all directions. Start with the base sidelights and sternlight and build from there.

Test Strategy: Rule 24 has over 100 questions in the database and is a challenging topic for many people. There are about 40 that are INLAND ONLY. Using flashcards or study guides is helpful, as well as spending a decent amount of time dedicated to this Rule.

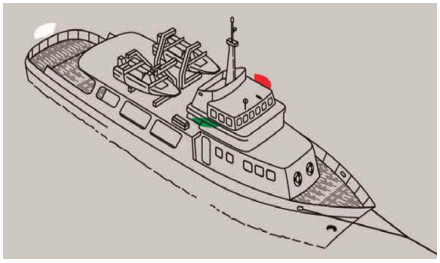
Illustrations – Both International and Inland



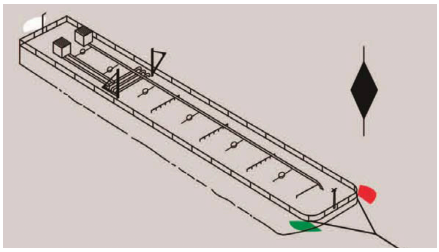
Towing astern, less than 50m, tow less than 200m



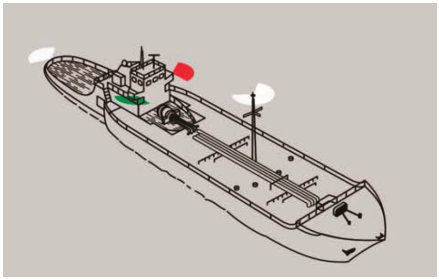
Towing astern, less than 50m, tow more than 200m



Being towed, tow less than 200m

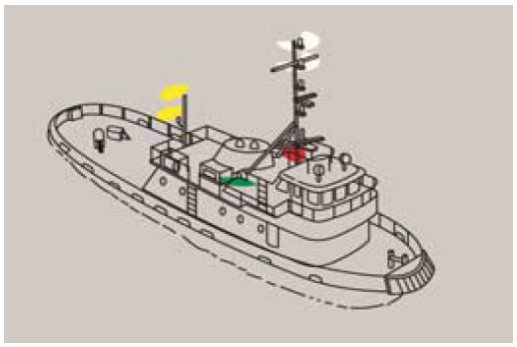


Being towed, tow more than 200m

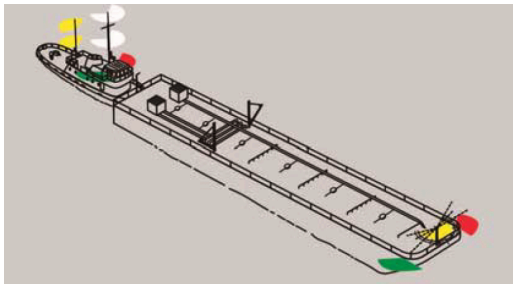


Composite unit, less than 50m

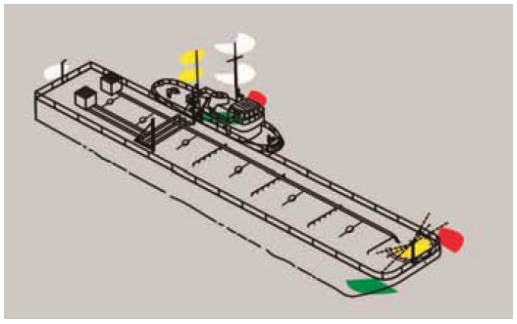
Illustrations – Inland Only



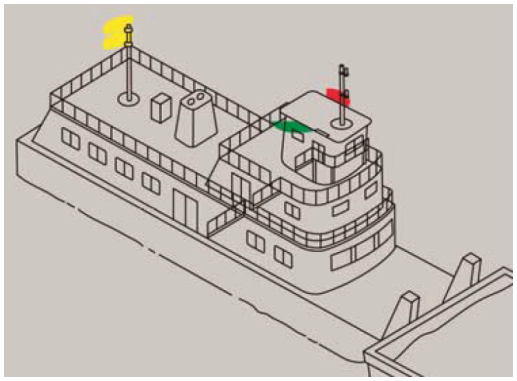
Towing alongside or pushing ahead



Being pushed ahead



Being towed alongside



Pushing ahead or towing alongside, Western Rivers

Sample Questions:

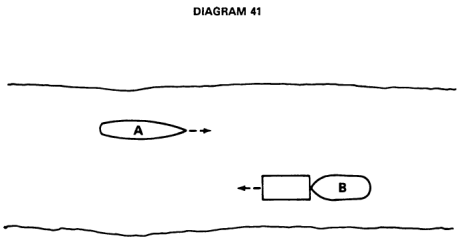
INLAND ONLY. What must a partially submerged object towed by a vessel show during the day?

A. Black ball only when the length of the tow exceeds 200m
B. Diamond shape regardless of the length of tow
C. Black ball
D. Diamond shape only when the length of the tow exceeds 200m

INLAND ONLY. Which indicates the presence of a partly submerged object being towed?

A. A diamond shape on the towed vessel
B. An all-around light at each end of the towed object
C. A searchlight beamed from the towing vessel in the direction of the tow
D. All of the above

INLAND ONLY. Vessels A and B are meeting on a river as shown in illustration 41. They will pass ¼ mile apart. If you are on vessel A, in addition to the sidelight, which other light(s) will you see on the tug and barge?



A. A special flashing light
B. Green sidelights
C. White masthead lights in a vertical line
D. All of the above

INLAND ONLY. At night you see the lights shown in illustration 75. These lights are shown by what type of vessel?

A. Barge being pushed ahead
B. Barge being towed astern
C. Tug towing a barge astern
D. Tug pushing a barge ahead

INLAND ONLY. You are meeting "head on" a tug towing a barge alongside about a mile away. In addition to the white masthead lights, which other lights do you see on the tug and tow combined?

A. One green and one red sidelight and a special flashing light
B. One green and one red sidelight on the outside of the unit
C. The green and red sidelights marking each vessel and a special flashing light
D. Only the green and red sidelights marking each vessel

INLAND ONLY. If your tug is pushing a barge ahead at night and it is not a composite unit, which light(s) should show aft on your vessel?

A. A white stern light
B. Two towing lights
C. Two red lights
D. A towing light over the stern light

Rule 24: Towing and Pushing – Both International and Inland

The Rule: See the individual sections for International and Inland

Discussion: While there are many differences between Inland and International towing lights, there are also many similarities. This section discusses questions that feature both International and Inland lights and shapes.

Test Strategy: Flashcards and study guides are helpful to remember towing lights.

Illustrations: See the individual sections for International and Inland.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. A vessel being towed at night must show _____.

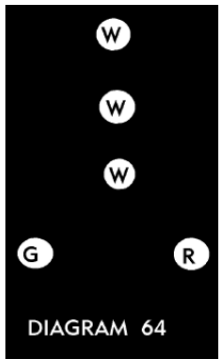
A. An all-around white light only
B. Sidelights and a sternlight
C. Forward and after masthead lights
D. A flashing yellow light only

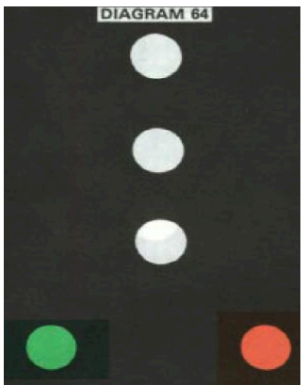
BOTH INTERNATIONAL AND INLAND. A towing vessel pushing a barge ahead and rigidly connected in a composite unit shall show the lights of _____.

A. A vessel pushing ahead
B. A power-driven vessel not towing
C. A barge being pushed ahead
D. Either answer A or answer B

BOTH INTERNATIONAL AND INLAND. You see the display of lights shown in illustration 64. These lights could indicate which of the following?

A. Tug unable to maneuver as required by the Rules
B. 60-meter tug pushing a barge ahead
C. Range marking a channel beneath a drawbridge
D. 40-meter tug with a tow exceeding 200m





BOTH INTERNATIONAL AND INLAND. You see the display of lights shown in illustration 64. These lights could indicate which of the following? (*Same question as previous)*

A. 55-meter tug towing astern length of tow exceeds 200m
B. Dredge working at anchor
C. 65-meter tug, length of two 150 meters
D. Dredge restricted in its ability to maneuver

BOTH INTERNATIONAL AND INLAND. A power-driven vessel towing astern shall show ____.

A. Two towing lights in a vertical line
B. A small white light in lieu of the stern light
C. Two towing lights in addition to the stern light
D. A towing light in a vertical line above the stern light

BOTH INTERNATIONAL AND INLAND. A vessel showing a yellow light over a white light at night is _____.

A. In distress
B. Engaged in fishing
C. Engaged in piloting
D. Towing astern

BOTH INTERNATIONAL AND INLAND. A tugboat displaying a diamond shape is which of the following?

A. Has a tow exceeding 200 meters
B. Is at anchor
C. Has a tow carrying dangerous cargo
D. Is not under command

BOTH INTERNATIONAL AND INLAND. At night you are towing a partly submerged object 20 meters in length and 4 meters in breadth. What lights must you display on the towed vessel?

A. A white light at the stern
B. Two red lights in a vertical line at the after end
C. Two white lights side by side at the stern
D. A white light forward and a white light aft

BOTH INTERNATIONAL AND INLAND. Lighting requirements in Inland waters are different than for those in International waters for _____.

A. Vessels pushing ahead
B. Barges being towed astern
C. Vessels not under command
D. All of the above

BOTH INTERNATIONAL AND INLAND. Lighting requirements in Inland waters are different than for those in International waters for _____. (*Same question as previous)*

A. Vessels being towed alongside
B. Barges being pushed ahead
C. Vessels pushing ahead
D. All of the above

Rule 25 – Sailing Vessels and Vessels Under Oars

The Rule

(a) A sailing vessel underway shall exhibit:

(i) sidelights;
(ii) a sternlight.

(b) In a sailing vessel of less than 20 meters in length the lights prescribed in Rule 25(a) may be combined in one lantern carried at or near the top of the mast where it can best be seen.

(c) A sailing vessel underway may, in addition to the lights prescribed in Rule 25(a), exhibit at or near the top of the mast, where they can best be seen, two all-round lights in a vertical line, the upper being red and the lower green, but these lights shall not be exhibited in conjunction with the combined lantern permitted by Rule 25(b).

(d)(i) A sailing vessel of less than 7 meter in length shall, if practicable, exhibit the lights prescribed in Rule 25(a) or (b), but if she does not, she shall ***(Inland Only: exhibit an all-around white light)*** or have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision.

(ii) A vessel under oars may exhibit the lights prescribed in this Rule for sailing vessels, but if she does not, she shall ***(Inland Only: exhibit an all- around white light)*** or have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision.

(e) A vessel proceeding under sail when also being propelled by machinery shall exhibit forward where it can best be seen a conical shape, apex downwards. ***Inland Only: A vessel of less than 12 meters in length is not required to exhibit this shape but may do so.***

Discussion: This Rule describes sailing vessels, kayaks, rafts, canoes, and other vessels under oars. Refer to Rule 3 regarding the definition of "sailing vessel," that is to say it is a vessel not being propelled by machinery. The key points of this Rule are:

- 20m or less, vessels can combine sidelights and sternlight into one light atop the mast
- Red over Green all-around lights are optional and in addition to the sidelights and sternlight
- Small vessels less than 7m must, in essence, have some means of making a white light visible. For International Rules, it can be a flashlight, for Inland Rules it must be an all-around light.
- The dayshape for motorsailing vessels is a cone, apex downwards, required for all vessels other than those less than 12m in Inland Rules.

Test Strategy: There are about 30 questions in the database regarding sailing vessels and vessels under oars. Most of them test your ability to recall the dayshape or clarify the various lengths of vessels permitted to show special lights.

Illustrations:

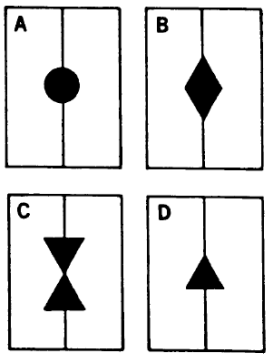
Sailing vessel underway

Optional combined tri-color light, less than 20m

Optional Red over Green all-around light

Sample Questions:

DIAGRAM 16



BOTH INTERNATIONAL AND INLAND. You are on a sailing vessel. While under sail you decide to use your engine to assist in propulsion. Which of the day shapes show in illustration 16 would you display?

A. D
B. C
C. B
D. None of these are correct

BOTH INTERNATIONAL AND INLAND. A 22-meter sailing vessel when also being propelled by machinery shall show during daylight hours a _____.

A. Basket
B. Black diamond
C. Black ball
D. Black cone

BOTH INTERNATIONAL AND INLAND. If a rowboat underway does not show the lights specified for a sailing vessel underway, it shall show which of the following?

A. Combined lantern showing green to starboard and red to port and shown in sufficient time to prevent a collision
B. All around yellow light
C. Combined lantern showing green to starboard and red to port from sunrise to sunset
D. A white light in sufficient time to prevent collision

BOTH INTERNATIONAL AND INLAND. Which statement is true regarding a vessel under oars?

A. She must show the day shape of a black cone
B. She is allowed to show the same lights as a sailing vessel
C. She must show a flashing all-around white light
D. She must show a stern light

BOTH INTERNATIONAL AND INLAND. At night you sight a single green light. This is a ____.

A. Sailing vessel
B. Small motorboat underway
C. Vessel drifting
D. Vessel at anchor

BOTH INTERNATIONAL AND INLAND. Which vessel may combine her sidelights and sternlight in one lantern on the fore and aft centerline of the vessel?

A. 28-meter sailing vessel
B. 25-meter power-driven vessel
C. Any non-self-propelled vessel
D. 16-meter sailing vessel

BOTH INTERNATIONAL AND INLAND. A 15-meter sailing vessel would be required to show ____.

A. Sidelights and stern light but they may be combined in a lantern on the mast
B. Separate sidelights and stern light
C. Sidelights, stern light, and a red light over a green light on the mast
D. Sidelights only

BOTH INTERNATIONAL AND INLAND. A sailing vessel is not allowed to show the all-around red over green lights on the mast if _____.

A. Her sidelights and stern light are combined in one lantern on the mast
B. She is showing a stern light
C. She is showing sidelights
D. Her sidelights are combined and shown on the fore and aft centerline of the vessel

BOTH INTERNATIONAL AND INLAND. Your 18-meter vessel is under sail at night displaying sidelights, a sternlight, and a red over green all-around light at the masthead. If you start the engine and engage the propeller, you must ____.

A. Show two green lights instead of a red over green at the masthead
B. Turn off the red over green turn on the white masthead light
C. Display a white light in sufficient time to prevent collision
D. Turn your stern light off

Rule 26 – Fishing Vessels

The Rule:

(a) A vessel engaged in fishing, whether underway or at anchor, shall exhibit only the lights and shapes prescribed in this Rule.

(b) A vessel when engaged in trawling, by which is meant the dragging through the water of a dredge net or other apparatus used as a fishing appliance, shall exhibit:

(i) two all-round lights in a vertical line, the upper being green and the lower white, or a shape consisting of two cones with their apexes together in a vertical line one above the other;
(ii) a masthead light abaft of and higher than the all-round green light; a vessel of less than 50 meters in length shall not be obliged to exhibit such a light but may do so;
(iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

(c) A vessel engaged in fishing, other than trawling, shall exhibit:

(i) two all-round lights in a vertical line, the upper being red and the lower white, or a shape consisting of two cones with their apexes together in a vertical line one above the other;
(ii) when there is outlying gear extending more than 150 meters horizontally from the vessel, an all-round white light or a cone apex upwards in the direction of the gear.
(iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

***International Only**: (d) The additional signals described in Annex II to these Regulations apply to a vessel engaged in fishing in close proximity to other vessels engaged in fishing.*

(e) A vessel not engaged in fishing shall not exhibit the lights or shapes prescribed in this Rule, but only those prescribed for a vessel of her length.

Inland Only (note this is the same as Annex 2):

(f) Additional signals for fishing vessels fishing in close proximity:

(i) The lights mentioned herein shall be placed where they can best be seen. They shall be at least 0.9 meters apart but at a lower level than lights prescribed in this Rule. The lights shall be visible all-round the horizon at a distance of at least 1 mile but at a lesser distance from the lights prescribed by paragraphs (a) through (c) of this Rule for fishing vessels.

(ii)Signals for trawlers.

(1)Vessels when engaged in trawling, whether using demersal or pelagic gear, may exhibit:

(A) When shooting their nets: Two white lights in a vertical line;

(B) When hauling their nets: One white light over one red light in a vertical line;

(C) When a net has come fast upon an obstruction: Two red lights in a vertical line.

(2) Each vessel engaged in pair trawling may exhibit:

(A) By night, a searchlight directed forward and in the direction of the other vessel of the pair;

(B) When shooting or hauling their nets or when their nets have come fast upon an obstruction, the lights prescribed in paragraph (f)(ii)(1) of this Rule.

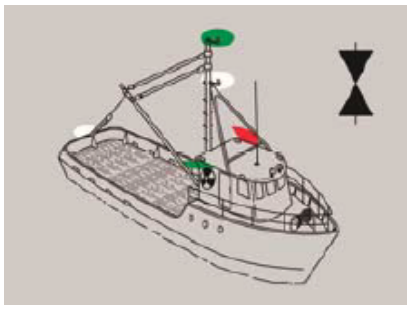
(iii)Signals for purse seiners.

(1)Vessels engaged in fishing with purse seine gear may exhibit two yellow lights in a vertical line. These lights shall flash alternately every second and with equal light and occultation duration. These lights may be exhibited only when the vessel is hampered by its fishing gear.

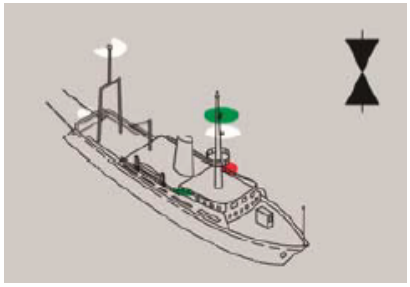
Discussion: This Rule is actually shorter than you might think. Provisions (a), (b), and (c) deal with almost everything important. After that, just note that fishing vessels, when not fishing, must show lights as a power-driven vessel. And finally, the rest of the material is directly reproduced from Annex 2 in the Rules which discusses vessels fishing in close proximity or purse seiners. The International and Inland Rules each describe these signals in a unique way, but the signals themselves are the same – it is best to refer to Annex 2 rather than Rule 26 for those lights because the format is simpler.

Test Strategy: There are about 50 questions regarding this Rule in the database, most of which describe the identification lights, the Annex 2 provisions or the difference between lights for fishing vessels making way versus stopped and not making way. Note that fishing vessels are one of four classes of vessel that extinguish their sidelights and sternlight when engaged in their work *and* stopped and making no way.

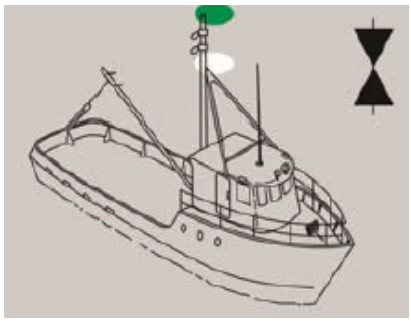
Illustrations:



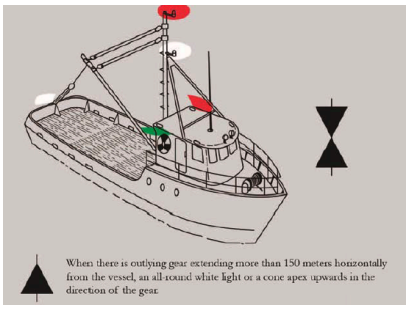
Trawling, less than 50m, making way



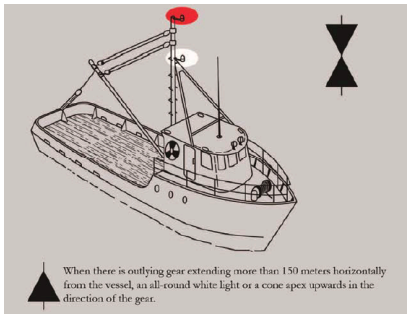
Trawling, over 50m, making way



Trawler, less than 50m, stopped and not making way



Fishing, any size, making way



Fishing, any size, stopped and not making way

Sample Questions:

BOTH INTERNATIONAL AND INLAND. Which identification lights would you see at night for a vessel fishing other than trawling?

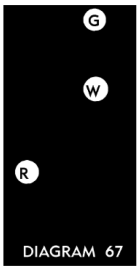
A. A white light over a red light
B. Two red lights, one over the other
C. A green light over a red light
D. A red light over a white light

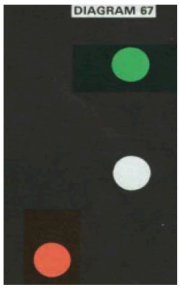
BOTH INTERNATIONAL AND INLAND. Which lights shall a vessel trawling display?

A. A white light over a green light
B. A green light over a white light
C. A red light over a green light
D. A yellow light over a red light

BOTH INTERNATIONAL AND INLAND. Which vessel must display a masthead light abaft of and higher than her identifying lights?

A. A 100-meter vessel not under command
B. A 55-meter fishing vessel
C. A 20-meter vessel engaged in pilot duty
D. A 55-meter trawling





BOTH INTERNATIONAL AND INLAND. Which is true for a fishing vessel displaying the lights show in illustration 67?

A. The vessel is anchored
B. The vessel is fishing by trawling
C. It is tending a small fishing boat
D. It is underway but not fishing

BOTH INTERNATIONAL AND INLAND. When is a vessel which is fishing required to show sidelights and a sternlight?

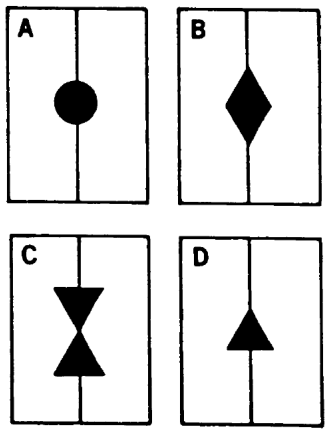
A. When underway and making way
B. When at anchor
C. If underway
D. When dead in the water

BOTH INTERNATIONAL AND INLAND. Which light(s) is a vessel engaged in fishing at anchor required to display?

A. Sidelights and a stern light
B. Three lights in a vertical line, the highest and lowest being red, the middle being white
C. An anchor light
D. None of the above

BOTH INTERNATIONAL AND INLAND. You are on a 30-meter trawler. Which identification shape shown in illustration 16 must you show while trawling?

DIAGRAM 16



A. A
B. B
C. C
D. None of these are correct

BOTH INTERNATIONAL AND INLAND. You are on a vessel engaged in fishing other than trawling and have gear extending out more than 150 meters horizontally from your vessel. Which of the shapes shown in illustration 16 must you show in the direction of the outlying gear?

A. A
B. B
C. C
D. D

BOTH INTERNATIONAL AND INLAND. 25-meter trawling vessel is required to show which shape?

A. A cone, apex downward and outboard
B. A basket
C. Two balls
D. Two cones, apex together

INTERNATIONAL ONLY. Additional light signals are provided in the annexes for which of the following vessels?

A. Engaged in towing
B. Not under command
C. Under sail
D. Engaged in fishing

INLAND ONLY. Vessels engaged in fishing may show the additional signals described in Rule 26 when they are in which of the following situations?

A. Trolling
B. In close proximity to other vessels engaged in fishing
C. Fishing in a traffic separation zone
D. In a narrow channel

INLAND ONLY. Which of the following may be exhibited by a vessel trawling in close proximity to other fishing vessels?

A. A red light over a white light in a vertical line
B. Two white lights in a vertical line
C. Two fixed yellow lights in a vertical line
D. All of the above

BOTH INTERNATIONAL AND INLAND. Which signal may at some time be exhibited by a vessel trawling?

A. A white light over a red light in a vertical line
B. Two white lights in a vertical line
C. Two red lights in a vertical line
D. All of the above

Rule 27 – Vessels Not Under Command and Restricted in Ability to Maneuver

The Rule:

(a) A vessel not under command shall exhibit:

(i) two all-round red lights in a vertical line where they can best be seen;
(ii) two balls or similar shapes in a vertical line where they can best be seen;
(iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

(b) A vessel restricted in her ability to maneuver, except a vessel engaged in mine clearance operations, shall exhibit:

> (i) three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be white;
> (ii) three shapes in a vertical line where they can best be seen. The highest and lowest of these shapes shall be balls and the middle one a diamond.
> (iii) when making way through the water, a masthead light(s), sidelights and a sternlight in addition to the lights prescribed in Rule 27(b)(i);
> (iv) when at anchor, in addition to the lights or shapes prescribed in Rule 27(b)(i) and (ii), the light, lights, or shapes prescribed in Rule 30.

(c) A power-driven vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course shall, in addition to the lights or shape prescribed in Rule 27(b)(i) and (ii), exhibit the lights or shape prescribed in Rule 24.

(d) A vessel engaged in dredging or underwater operations, when restricted in her ability to maneuver, shall exhibit the lights and shapes prescribed in Rules 27(b)(i), (ii) and (iii) and shall in addition when an obstruction exists, exhibit:

> (i) two all-round red lights or two balls in a vertical line to indicate the side on which the obstruction exists;
> (ii) two all-round green lights or two diamonds in a vertical line to indicate the side on which another vessel may pass; and
> (iii) when at anchor, the lights or shapes prescribed in this paragraph instead of the lights or shapes prescribed in Rule 30.

Inland Only: *(iv) Dredge pipelines that are floating or supported on trestles shall display the following lights at night and in periods of restricted visibility.*

(1) One row of yellow lights. The lights must be:

(A) Flashing 50 to 70 times per minute,
(B) Visible all around the horizon,
(C) Visible for at least 2 miles,
(D) Not less than 1 and not more than 3.5 meters above the water,
(E) Approximately equally spaced, and
(F) Not more than 10 meters apart where the pipeline crosses a navigable channel. Where the pipeline does not cross a navigable channel, the lights must be sufficient in number to clearly show the pipeline's length and course.

(2) Two red lights at each end of the pipeline, including the ends in a channel where the pipeline is separated to allow vessels to pass (whether open or closed). The lights must be:

(A) Visible all around the horizon, and
(B) Visible for at least 2 miles, and
(C) One meter apart in a vertical line with the lower light at the same height above the water as the flashing yellow light.

(e) Whenever the size of a vessel engaged in diving operations makes it impracticable to exhibit all lights and shapes prescribed in Rule 27(d), the following shall be exhibited:

(i) Three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be white;
(ii) a rigid replica of the International Code flag "A" not less than 1 meter in height. Measures shall be taken to ensure its all-round visibility.

(f) A vessel engaged in mine clearance operations shall, in addition to the lights prescribed for a power-driven vessel in Rule 23 or to the lights or shape prescribed for a vessel at anchor in Rule 30 as appropriate, exhibit three all-round green lights or three balls. One of these lights or shapes shall be exhibited near the foremast head and one at each end of the fore yard. These lights or shapes indicate that it is dangerous for another vessel to approach within 1000 meters of the mineclearance vessel.

(g) Vessels of less than 12 meters in length, except those engaged in diving operations, shall not be required to exhibit the lights and shapes prescribed in this Rule.

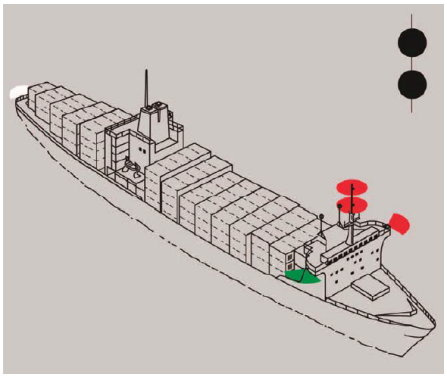
(h) The signals prescribed in this Rule are not signals of vessels in distress and requiring assistance. Such signals are contained in Annex IV to these Rules

Discussion: This Rule is quite long and describes vessels not under command, restricted in their ability to maneuvering, mineclearing, diving, dredging, and in some cases towing. This Rule lends itself particularly well to flashcards or study guides, but the important points are:

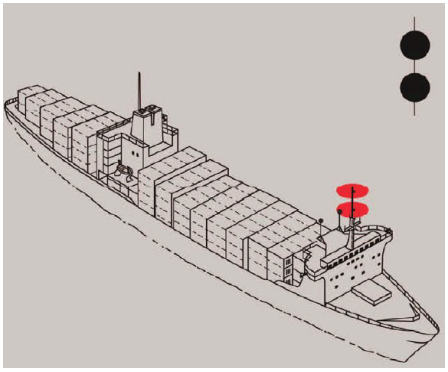
- Not Under Command (NUC) and Vessels Restricted in their Ability to Maneuver (VRAM) have unique identification lights and dayshapes, and do not show sidelights or sternlights unless actually making way through the water. Both can also show their identification lights at anchor in place of anchor lights.
- When towing *and* restricted in ability to maneuver, vessels are authorized to show both sets of lights.
- Dredges have complex lighting configuration but in essence show VRAM lights, sidelights and a sternlight when making way, and "stop/go" lights as appropriate. These "stop/go" lights are all around red or green double lights showing the good and bad sides for vessels to pass. The dayshapes correspond to the light configuration and the memory aide "diamonds are a boaters best friend" may be helpful for remembering the side to pass a dredge.
- There is a large Inland provision for dredge pipelines including frequent flashing yellow lights to mark the pipelines, and double red lights at the ends or in "channels" where vessels can pass.
- Small diving vessels can simply show VRAM lights or the Morse Alfa flag as necessary. Note the International red and white diving flag commonly flown by divers is not a Rules of the Road authorized signal.
- Mine clearing vessels (e.g. Naval vessels) can show the Green Triangle when engaged in mineclearance.

Test Strategy: This is a challenging Rule for many students due to the large number of variables. Flashcards or "cheat sheets" are helpful to internalize the various lighting configurations. Remember that VRAM and NUC are not required to show sidelights and sternlights when stopped and making no way. It is helpful to carefully study the dredge Rules and create a study guide to help you remember the way that you learn best.

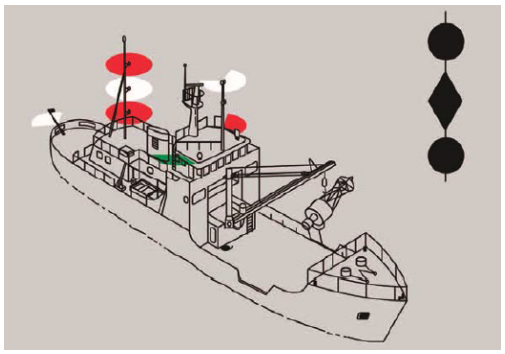
Illustrations:



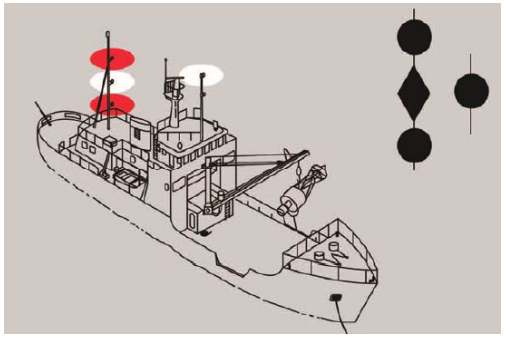
Not under command, making way



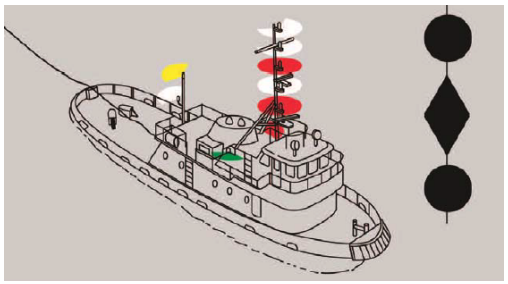
Not under command, not making way



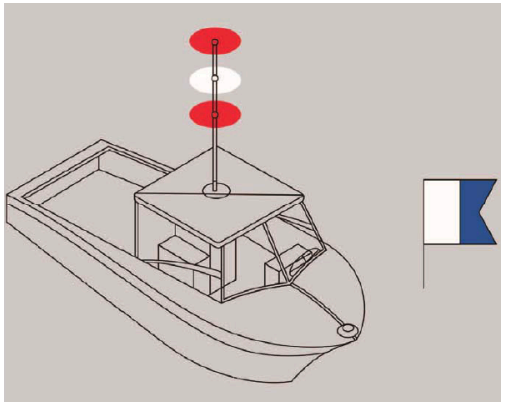
Restricted in Ability to Maneuver, making way



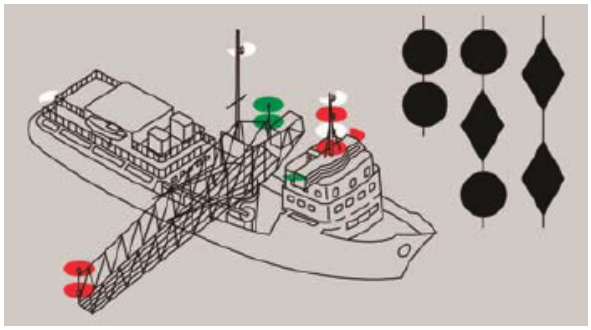
Restricted in Ability to Maneuver, anchored



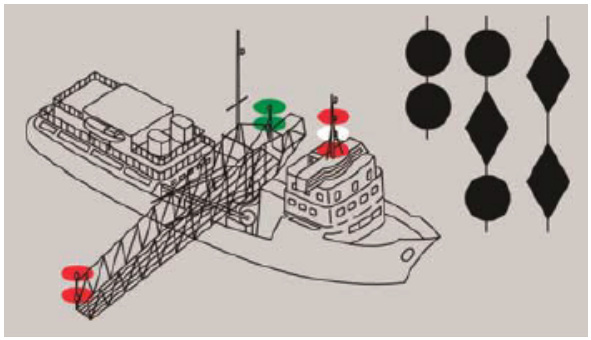
Restricted in Ability to Maneuver, towing



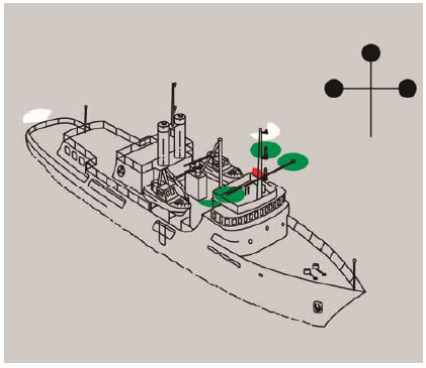
Small vessels engaged in diving operations



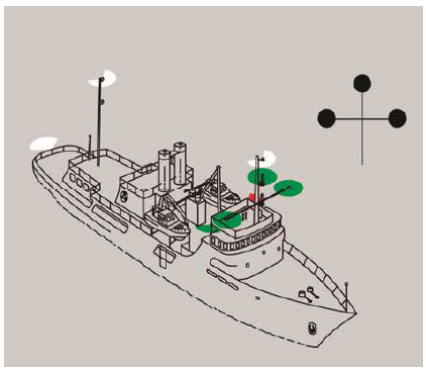
Dredging/Underwater operations, making way



Dredging/Underwater operations, not making way



Mineclearing, less than 50m



Mineclearing, greater than 50m

Sample Questions:

BOTH INTERNATIONAL AND INLAND. Which vessel would exhibit sidelights when underway and not making way?

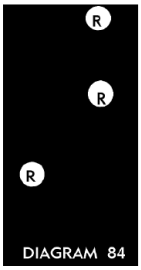
- **A. Pilot vessel**
- B. Vessel not under command
- C. Vessel restricted in her ability to maneuver
- D. Vessel trawling

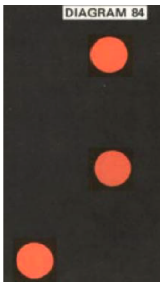
BOTH INTERNATIONAL AND INLAND. Which shall a vessel not under command display?

- A. Three red lights at night and two black balls during the day
- B. Three red lights at night and three black balls during the day
- C. Two red lights at night and three black balls during the day
- **D. Two red lights at night and two black balls during the day**

BOTH INTERNATIONAL AND INLAND. Which of the following describes a vessel exhibiting the lights in illustration 84?

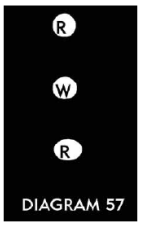
- A. Towing
- B. Dredging
- C. Showing improper lights
- **D. Not under command**

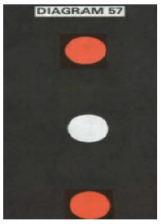




BOTH INTERNATIONAL AND INLAND. Which of the following describes a vessel displaying the lights shown in illustration 57?

- A. A pilot vessel underway and making way on pilotage duty
- B. A vessel towing and making way
- **C. A vessel restricted in her ability to maneuver and not making way**
- D. A vessel engaged in fishing and not making way





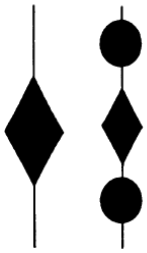
BOTH INTERNATIONAL AND INLAND. An anchored vessel is servicing an aid to navigation and is restricted in her ability to maneuver. Which lights will she show?

- A. Three lights in a vertical line, the highest and lowest red, and the middle white only
- **B. Three lights in a vertical line, the highest and lowest red, and the middle white and anchor lights**
- C. Anchor lights and sidelights only
- D. Anchor lights only

BOTH INTERNATIONAL AND INLAND. A vessel towing astern is severely restricted in its ability to maneuver. Which lights shall it show while underway?

A. The masthead lights for a towing vessel
B. Sidelights, stern light, and towing light
C. The lights for a vessel restricted in its ability to maneuver
D. All of the above

DIAGRAM 22



BOTH INTERNATIONAL AND INLAND. Which vessel is indicated by the day signal shown in illustration 22?

A. A dredge indicating the side with the obstruction
B. A tug with a tow exceeding 200m which limits her ability to maneuver
C. A fishing vessel with gear extending more than 150 meters horizontally
D. A vessel engaged in underwater operations with a diver down

BOTH INTERNATIONAL AND INLAND. You are approaching a dredge during the day and see two balls in a vertical line on the port side of the vessel. What do these shapes represent?

A. The dredge is moored
B. You should pass on the port side of the dredge
C. There is an obstruction on the port side of the dredge
D. The dredge is not under command

BOTH INTERNATIONAL AND INLAND. During the day, which shape is required for a dredge to exhibit to indicate the side on which it is safe to pass?

A. Two diamonds in a vertical line
B. Diamond, ball, diamond in a vertical line
C. A single black ball
D. Two balls in a vertical line

INLAND ONLY. While underway you sight the lights shown in illustration 81. The yellow lights are flashing. These lights indicate which of the following?

A. Vessel not under command
B. Dredge pipeline
C. Mine clearance vessel
D. Vessel aground

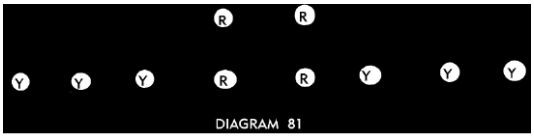
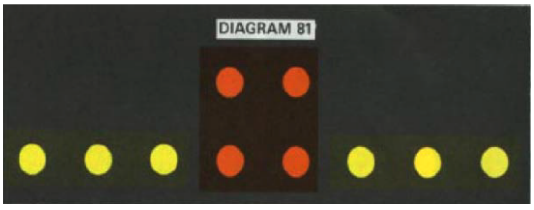


DIAGRAM 81



INLAND ONLY. While underway you sight the lights shown in illustration 81. The yellow lights are flashing. What action should you take?

A. Stop until the red lights turn green
B. Wait until the vessel ahead of you crosses your bow
C. Proceed leaving all the lights on your starboard side
D. Pass between the two sets of vertical lights

BOTH INTERNATIONAL AND INLAND. When it is impracticable for a small vessel engaged in diving operations to display the shapes for a vessel engaged in underwater operations, which shall she display?

A. Three black balls in a vertical line
B. A rigid replica of the International Code flag "A"
C. Two red balls in a vertical line
D. A black cylinder

BOTH INTERNATIONAL AND INLAND. Which shapes is a vessel conducing mineclearance operations require to exhibit?

A. Two balls in a vertical line
B. Three balls in a vertical line
C. One diamond near the foremast head and one ball at each fore yard
D. One ball near the foremast and one ball at each fore yard

BOTH INTERNATIONAL AND INLAND. A vessel engaged in mineclearance operations shows special identity lights _____.

A. Which are green and all-around
B. Which mean that other vessels should not approach within 1000 meters
C. In addition to the lights required for power-driven vessels
D. All of the above

Rule 28 – Vessels Constrained by Draft

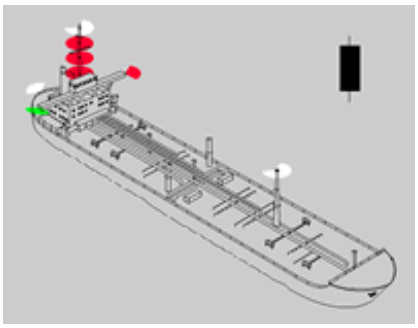
The Rule:

A vessel constrained by her draft may, in addition to the lights prescribed for power-driven vessels in Rule 23, exhibit where they can best be seen three all-round red lights in a vertical line, or a cylinder.

Discussion: This Rule describes the lights and dayshapes for vessels constrained by their draft in International Rules. The memory aids "Red-Red-Red, Rudder-Rubbing-Rocks" is sometimes helpful to remember this Rule. Also remember that there are no vessels constrained by draft in Inland Rules.

Test Strategy: There are a handful of questions regarding the lights and shapes of a vessel constrained by draft. If you see a question that states INLAND ONLY, remember that there are no constrained by draft vessels in Inland Rules.

Illustrations:



Sample Questions:

INTERNATIONAL ONLY. If a vessel displays three all-around red lights in a vertical line at night, during the day she may show _____.

A. Two diamonds in a vertical line
B. A cylinder
C. Three balls in a vertical line
D. Two cones, apex together

INTERNATIONAL ONLY. If you sighted three red lights in a vertical line on another vessel at night, it would be a vessel _____.

A. Dredging
B. Constrained by draft
C. Moored over a wreck
D. Aground

Rule 29 – Pilot Vessels

The Rule:

(a) A vessel engaged on pilotage duty shall exhibit:

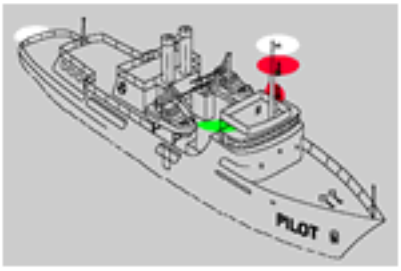
(i) at or near the masthead, two all-round lights in a vertical line, the upper being white and the lower red;
(ii) when underway, in addition, sidelights and a sternlight;
(iii) when at anchor, in addition to the lights prescribed in Rule 29(a)(i), the light, lights, or shape prescribed in Rule 30 for vessels at anchor.

(b) A pilot vessel when not engaged on pilotage duty shall exhibit the lights or shapes prescribed for a similar vessel of her length.

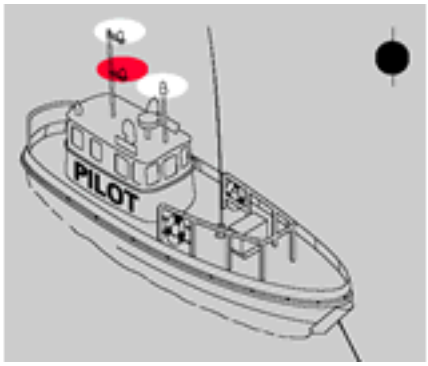
Discussion: This Rule describes pilot vessels, which are simply power-driven vessels performing pilotage duties. Although you may consider these vessels "working" they are not otherwise restricted in their ability to maneuver. The memory aid "White over Red, Pilot Ahead" may be helpful for this Rule.

Test Strategy: There are a handful of questions from this Rule mostly testing your ability to understand the identity signal and the necessity of sidelights. Remember that a pilot vessel can be carrying out its duties while at anchor.

Illustrations



Pilot vessel underway



Pilot vessel at anchor, working

Sample Questions:

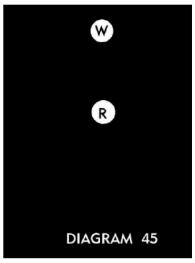
BOTH INTERNATIONAL AND INLAND. An anchored vessel on pilotage duty must show which lights at night?

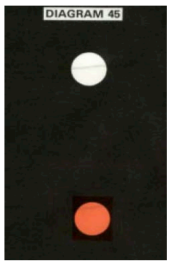
A. A white light over a red light only
B. A white light over a red light and anchor lights
C. Anchor lights only
D. A stern light only

BOTH INTERNATIONAL AND INLAND. A pilot vessel on pilotage duty at night will show sidelights and a sternlight _____.

A. Only when identifying lights are not being shown
B. Only when making way
C. When at anchor
D. At any time when underway

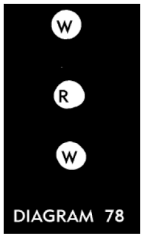
BOTH INTERNATIONAL AND INLAND. A vessel is showing only the lights show in in illustration 45. What type of vessel is this?

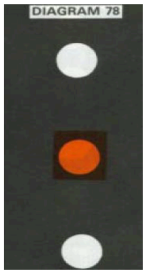




A. Vessel engaged in dredging at anchor with an obstruction on one side
B. Vessel engaged in fishing
C. Pilot vessel less than 50 meters underway and not engaged in pilotage duty
D. Vessel aground less than 50 meters

BOTH INTERNATIONAL AND INLAND. At night you see the lights in illustration 78. This would indicate a vessel _____.





A. Not under command
B. On pilotage duty and underway
C. Restricted in her ability to maneuver
D. Engaged in fishing and making way

Rule 30 – Anchored Vessels and Vessels Aground

The Rule:

(a) A vessel at anchor shall exhibit where it can best be seen:

(i) in the fore part, an all-round white light or one ball;
(ii) at or near the stern and at a lower level than the light prescribed in Rule 30(a)(i), an all-round white light.

(b) A vessel of less than 50 meters in length may exhibit an all-round white light where it can best be seen instead of the lights prescribed in Rule 30(a).

(c) A vessel at anchor may, and a vessel of 100 meters and more in length shall, also use the available working or equivalent lights to illuminate her decks.

(d) A vessel aground shall exhibit the lights prescribed in Rule 30(a) or (b) and in addition, if practicable, where they can best be seen;

(i) two all-round red lights in a vertical line;
(ii) three balls in a vertical line.

(e) A vessel of less than 7 meters in length, when at anchor not in or near a narrow channel, fairway or where other vessels normally navigate, shall not be required to exhibit the lights or shape prescribed in Rule 30(a) and (b).

(f) A vessel of less than 12 meters in length, when aground, shall not be required to exhibit the lights or shapes prescribed in Rule 30(d)(i) and (ii).

Inland Only:

(g) A vessel of less than 20 meters in length, when at anchor in a special anchorage area designated by the Coast Guard, shall not be required to exhibit the anchor lights and shapes required by this Rule.

(h) The following barges shall display at night and if practicable in periods of restricted visibility the lights described in Rule 30(i):

(i) Every barge projecting into a buoyed or restricted channel.
(ii) Every barge so moored that it reduces the available navigable width of any channel to less than 80 meters.
(iii) Barges moored in groups more than two barges wide or to a maximum width of over 25 meters.
(iv) Every barge not moored parallel to the bank or dock.

(i) Barges described in Rule 30(h) shall carry two unobstructed all-round white lights of an intensity to be visible for at least 1 nautical mile and meeting the technical requirements as prescribed in Annex I.

(j) A barge or a group of barges at anchor or made fast to one or more mooring buoys or other similar device, in lieu of the provisions of Rule 30, may carry unobstructed all-round white lights of an intensity to be visible for at least 1 nautical mile that meet the requirements of Annex I and shall be arranged as follows:

> *(i) Any barge that projects from a group formation, shall be lighted on its outboard corners.*
> *(ii) On a single barge moored in water where other vessels normally navigate on both sides of the barge, lights shall be placed to mark the corner extremities of the barge.*
> *(iii) On barges moored in group formation, moored in water where other vessels normally navigate on both sides of the group, lights shall be placed to mark the corner extremities of the group.*

(k) The following are exempt from the requirements of Rule 30:

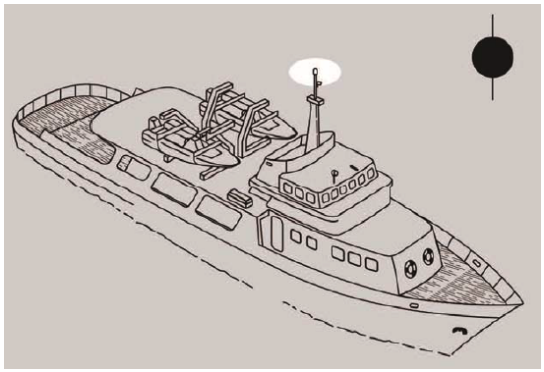
(i) A barge or group of barges moored in a slip or slough used primarily for mooring purposes.
(ii) A barge or group of barges moored behind a pierhead.
(iii) A barge less than 20 meters in length when moored in a special anchorage area designated in accordance with 33 CFR 109.10.

(l) Barges moored in well-illuminated areas are exempt from the lighting requirements of Rule 30. These areas are as follows: (Certain geographic locations, refer to CFR or ROTR book for this provision).

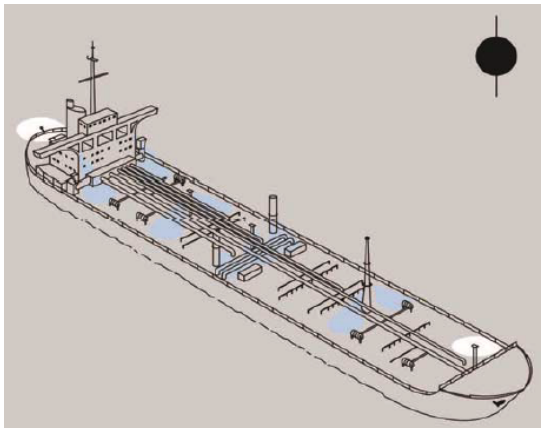
Discussion: This Rule is fairly straightforward for anchored and aground vessels, but the challenge for many students is the Inland provisions for moored barges. A careful reading of the Rule and perhaps a sketch of the moored barge situation often helps. A second challenge is for exemptions to the lighting requirements. In the International and Inland Rules, vessels less than 12m can skip the aground signal, and a vessel less than 7m anchored in a remote anchorage can skip the lights. In the Inland Rules, a vessel in a "special anchorage" less than 20m can omit the anchor lights.

Test Strategy: There are about 30 questions in the database from this Rule. More challenging questions include moored barges and special anchorages, so pay particular attention to those provisions. A great memory aid is NUC-AL head. If you run aground, you are a "knucklehead" and you should show Not Under Command and Anchor Lights.

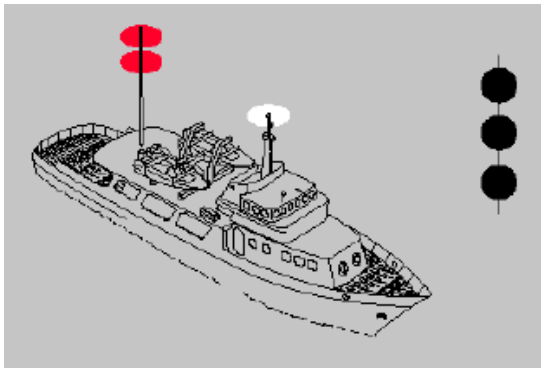
Illustrations:



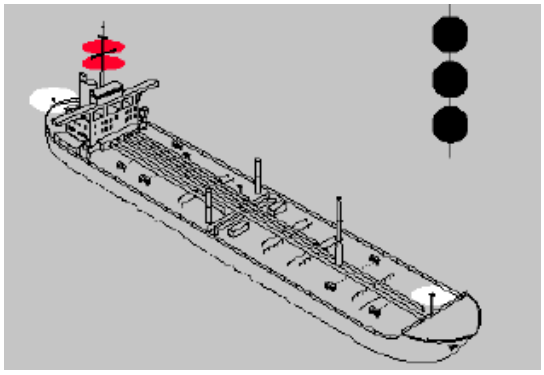
Anchored, less than 50m



Anchored, more than 50m



Aground, less than 50m



Aground, more than 50m

Sample Questions:

BOTH INTERNATIONAL AND INLAND. If you anchor your 25-meter vessel in a harbor, what light(s) must you show?

A. All the deck house lights
B. One all around red light
C. Two all-around white lights
D. One all-around white light

BOTH INTERNATIONAL AND INLAND. What is the minimum length of vessels required to show two anchor lights?

A. 40 meters
B. 50 meters
C. 60 meters
D. 70 meters

BOTH INTERNATIONAL AND INLAND. Which statement is true concerning a vessel of 75 meters in length at anchor?

A. She must show an all-around white light forward
B. She must show a second all-around light aft
C. She may use her working lights to illuminate the decks
D. All of the above

BOTH INTERNATIONAL AND INLAND. An anchor ball need not be exhibited by an anchored vessel if she is _____.

A. Rigged for sail
B. Under 50 meters in length and anchored in an anchorage
C. Less than 7 meters in length and not near or in an area where other vessels normally navigate
D. Over 150 meters in length

BOTH INTERNATIONAL AND INLAND. A vessel aground is required to show two red lights in a vertical line in addition to which lights?

A. Sidelights and a stern light
B. Anchor lights
C. Not under command lights
D. Restricted in her ability to maneuver lights

BOTH INTERNATIONAL AND INLAND. A vessel at anchor will show a _____.

A. Cone
B. Ball
C. Cylinder
D. Double cone, apex together

BOTH INTERNATIONAL AND INLAND. Which dayshape must be shown for a vessel 25 meters in length aground during daylight hours?

A. One black ball
B. Two black balls
C. Three black balls
D. Four black balls

INLAND ONLY. What lights are required at night on barges moored in a group formation more than two barges wide?

A. Two unobstructed all-around red lights
B. Two unobstructed all-around white lights
C. Two yellow lights in a vertical line at the corner extremities of the group
D. All-around yellow lights placed at corners of each barge in the group

INLAND ONLY. A fleet of moored barges extends into a navigable channel. What is the color of the lights on the barges?

A. Yellow
B. White
C. Amber
D. Red

INLAND ONLY. Which of the following is true for a vessel less than 20m in length at anchor at night in a "special anchorage" area designated by the Secretary?

A. Must show one white light
B. Need show only a light on approach of another vessel
C. Need not show any lights
D. Must show two white lights

INLAND ONLY. A barge more than 50m long is required to show how many white anchor lights when anchored in a Secretary approved "special anchorage" area?

A. 2
B. 1
C. 3
D. None

Rule 31 – Seaplanes

The Rule: Where it is impracticable for a seaplane or a WIG craft to exhibit lights or shapes of the characteristics or in the positions prescribed in Rules 20-31 she shall exhibit lights and shapes as closely similar in characteristics and position as is possible.

Discussion: This Rule is very short and simply describes seaplanes and wing in ground craft. Remember that WIG craft also show a red flashing light when taking off or landing per Rule 23.

Test Strategy: It would be rare to see a question from this Rule on your exam but do remember that WIG craft are also covered under several other Rules, such as Rule 3, 18, and 23.

Sample Questions:

INTERNATIONAL ONLY. A wing in ground craft cannot comply with the spacing requirements for masthead lights. What is required in this situation?

A. The WIG must be altered to permit full compliance the Rules
B. The WIGs lights must comply as closely as possible, as determined by her government
C. The WIG must carry only the lights that comply with the Rules, the others may be omitted
D. An all-around light should be substituted for the after masthead light and the stern light

Part C Overall Quiz

BOTH INTERNATIONAL AND INLAND. A vessel may exhibit lights other than those prescribed by the Rules as long as the additional lights _____.

A. Are not the color of either sidelight
B. Have a lesser range than the prescribed lights
C. **Do not interfere with the keeping of a proper lookout**
D. All of the above

BOTH INTERNATIONAL AND INLAND. As defined by the Rules, a towing light is a yellow light having the same characteristics as _____

A. All-around light
B. Stern light
C. Masthead light
D. Sidelight

INLAND ONLY. Which is a characteristic of a "special flashing light?"

A. It must show through an arc of not less than 180° and not more than 225°
B. It is required for all vessels being pushed ahead as part of a composite unit
C. It must be of the same character and construction as the masthead light
D. All of the above

BOTH INTERNATIONAL AND INLAND. At night, power-driven vessels less than 12 meters in length may, instead of the underway lights for a vessel less than 50m show which lights?

A. Masthead light only
B. Stern light only
C. Sidelights and stern light
D. One all-around white light and sidelights

BOTH INTERNATIONAL AND INLAND. A 45-meter tug is pulling a 210-meter tow. She may exhibit _____.

A. Three masthead lights and one aft
B. Three masthead lights and none forward
C. A masthead light forward, and two masthead lights in a vertical line aft
D. Two masthead lights forward and no after masthead lights

INLAND ONLY. Which of the following must exhibit a special flashing light?

A. When at anchor in a fairway
B. When being towed alongside
C. When towed astern
D. All of the above

BOTH INTERNATIONAL AND INLAND. A lantern combining the two sidelights and a stern light may be shown on _____.

A. 25-meter pilot vessel
B. 10-meter sailing vessel
C. 20-meter vessel engaged in fishing and making way
D. 25-meter power-driven vessel engaged in trolling

BOTH INTERNATIONAL AND INLAND. You are underway at night and sight a red light over a white light. Which of the following could this be?

A. A pilot vessel not making way through the water
B. A fishing vessel not making way through the water
C. A fishing vessel underway and making way
D. A pilot vessel not engaged on pilotage duty

BOTH INTERNATIONAL AND INLAND. You are crossing a narrow channel in a 10-meter power-driven vessel. To starboard, you sight a vessel displaying three lights in a vertical line. The upper and lower are red, and the middle is white. What action should you take in this situation?

A. Maintain course and speed
B. Not impede the vessel to your starboard
C. Sound the danger signal
D. Stop your engines

INTERNATIONAL ONLY. A vessel displaying a cylinder during the day would display which identity signal at night?

A. Three red lights in a vertical line
B. Two red lights in a vertical line
C. Two red lights with a white light in between
D. A red light over a white light

BOTH INTERNATIONAL AND INLAND. Which vessel exhibits sidelights when underway but not making way through the water?

A. Vessel engaged in dredging
B. Vessel not under command
C. Vessel trawling
D. A pilot vessel

BOTH INTERNATIONAL AND INLAND. You are approaching a dredge during the daytime. On the port side of the dredge are two black balls in a vertical line. On the starboard side of the dredge are two black diamonds in a vertical line. What action should you take?

A. Pass on the port side of the dredge
B. Pass on the starboard side of the dredge
C. Do not approach the dredge within 1000 meters
D. Wait for the dredge to remove the black day shapes and then pass

INTERNATIONAL ONLY. Yellow lights are not used to identify _____.

A. Purse seiners
B. Dredge pipelines
C. Submarines
D. Seaplanes

Part D: Sounds and Lights

The Sound and Light Part of the Rules of the Road covers six Rules. The first two deal with definitions and equipment. Rule 34 and 35 are the majority of questions you will see and these deal with sound signals for maneuvering and restricted visibility. The final two Rules deal with distress and signals to attract attention. It is important to also read Annex III for this Rule – it isn't testable, but good to know.

Rule 32 – Definitions

The Rule:
(a) The word "whistle" means any sound signaling appliance capable of producing the prescribed blasts and which complies with the specifications in Annex III to these Rules.

(b) The term "short blast" means a blast of about one seconds duration.

(c) The term "prolonged blast" means a blast of from four to six seconds duration.

Discussion: This is fairly self-explanatory, but it is important to note that many vessel operators sound incorrect signals – 4 seconds is longer than you think! Annex III of the Rules is dedicated to "Technical Details of Sound Signal Appliances" and does not need to be studied in order to pass a Rules of the Road test, but should be referenced when building, buying, or operating a vessel.

Test Strategy: There are only about 5 questions in the database specific to this Rule, however understanding the duration of the blasts is important for other Rules.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. The term "prolonged blast" means a blast of ____.

A. Two to four seconds
B. Six to eight seconds
C. Eight to ten seconds
D. Four to six seconds

BOTH INTERNATIONAL AND INLAND. The duration of each blast of the whistle signals used in meeting and crossing situations is _____.

A. 2 or 4 seconds
B. About 1 second
C. 8 to 10 seconds
D. 4 to 6 seconds

BOTH INTERNATIONAL AND INLAND. Each prolonged blast on whistle signals used by a power-driven vessel in the fog, whether making way or underway but not making way is _____.

A. 2-4 seconds
B. 4-6 seconds
C. 8-10 seconds
D. About 1 second

Rule 33 – Equipment for Sound Signals

The Rule:
(a) A vessel of 12 meters or more in length shall be provided with a whistle, a vessel of 20 meters or more in length shall be provided with a bell in addition to a whistle, and a vessel of 100 meters or more in length shall, in addition be provided with a gong, the tone and sound of which cannot be confused with that of the bell. The whistle, bell and gong shall comply with the specifications in Annex III to these Regulations. The bell or gong or both may be replaced by other equipment having the same respective sound characteristics, provided that manual sounding of the prescribed signals shall always be possible.

(b) A vessel of less than 12 meters in length shall not be obliged to carry the sound signaling appliances prescribed in Rule 33(a) but if she does not, she shall be provided with some other means of making an efficient signal.

Discussion: This is best summarized in a table of which vessels are required to have certain equipment. Also, Annex III of the Rules is dedicated to "Technical Details of Sound Signal Appliances" and does not need to be studied in order to pass a Rules of the Road test, but should be referenced when building, buying, or operating a vessel.

Vessel Class	Any Sound Producing Device Required	Whistle Required	Bell Required	Gong Required
Less than 12 meters	x			
12-20 meters		x		
20-100 meters		x	x	
100 meters or more		x	x	x

Test Strategy: There are about 10 questions in the database for this Rule. Students should memorize the table of required equipment, but Annex III is not required for passing the test.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. A vessel 25 meters in length must have which sound signaling appliance onboard?

A. Whistle only
B. None is required
C. Whistle and bell only
D. Whistle, bell and gong

BOTH INTERNATIONAL AND INLAND. What equipment for fog signals is required for a vessel 15 meters in length?

A. Whistle only
B. Bell only
C. Whistle, bell, and gong
D. Whistle and bell only

BOTH INTERNATIONAL AND INLAND. Which statement is true regarding equipment for bell and gong signals?

A. Signals must be able to be sounded manually and automatically
B. A vessel of less than 12 meters in length need not have any sound signaling equipment
C. Any vessel over 12 meters in length must be provided with a gong
D. Manual sounding of the signals must always be possible

Rule 34 – Maneuvering and Warning Signals

The Rule (International)

(a) When vessels are in sight of one another, a power-driven vessel under way, when maneuvering as authorized or required by these Rules, shall indicate that maneuver by the following signals on her whistle:

1. one short blast to mean "I am altering my course to starboard";
2. two short blasts to mean "I am altering my course to port";
3. three short blasts to mean "I am operating astern propulsion".

(b) Any vessel may supplement the whistle signals prescribed in paragraph (a) of this Rule by light signals, repeated as appropriate, whilst the maneuver is being carried out:

1. (i) these signals shall have the following significance:
    - one flash to mean "I am altering my course to starboard";
    - two flashes to mean "I am altering my course to port";
    - three flashes to mean "I am operating astern propulsion".
2. (ii) the duration of each flash shall be about one second, the interval between flashes shall be about one second, and the interval between successive signals shall not be less than ten seconds.
3. (iii) the light used for this signal shall, if fitted, be an all-round white light, visible at a minimum range of 5 miles, and shall comply with the provisions of Annex I to these Regulations.

(c) When in sight of one another in a narrow channel or fairway:

- (i) a vessel intending to overtake another shall in compliance with Rule 9 (e)(i) indicate her intention by the following signals on her whistle.
    - two prolonged blasts followed by one short blast to mean "I intend to overtake you on your starboard side";
    - two prolonged blasts followed by two short blasts to mean "I intend to overtake you on your port side".
- (ii) the vessel about to be overtaken when acting in accordance with 9(e)(i) shall indicate her agreement by the following signal on her whistle:
    - one prolonged, one short, one prolonged and one short blast, in that order.

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by at least five short and rapid flashes.

(e) A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. Such signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.

(f) If whistles are fitted on a vessel at a distance apart of more than 100 meters, one whistle only shall be used for giving maneuvering and warning signals.

The Rule (Inland)

(a) When power-driven vessels are in sight of one another and meeting or crossing at a distance within half a mile of each other, each vessel underway, when maneuvering as authorized or required by these Rules:

(i) Shall indicate that maneuver by the following signals on her whistle:

(1) One short blast to mean "I intend to leave you on my port side";

(2) Two short blasts to mean "I intend to leave you on my starboard side"; and

(3) Three short blasts to mean "I am operating astern propulsion".

(ii) Upon hearing the one or two blast signal of the other shall, if in agreement, sound the same whistle signal and take the steps necessary to effect a safe passing. If, however, from any cause, the vessel doubts the safety of the proposed maneuver, she shall sound the signal specified in paragraph (d) of this Rule and each vessel shall take appropriate precautionary action until a safe passing agreement is made.

(b) A vessel may supplement the whistle signals prescribed in paragraph (a) of this Rule by light signals:

(i) These signals shall have the following significance:

(1) One flash to mean "I intend to leave you on my port side";

(2) Two flashes to mean "I intend to leave you on my starboard side";

(3) Three flashes to mean "I am operating astern propulsion";

(ii) The duration of each flash shall be about 1 second; and

(iii) The light used for this signal shall, if fitted, be one all-round white or yellow light, visible at a minimum range of 2 miles, synchronized with the whistle, and shall comply with the provisions of Annex I to these Rules (33 CFR part 84).

(c) When in sight of one another:

(i) A power-driven vessel intending to overtake another power-driven vessel shall indicate her intention by the following signals on her whistle:

(1) One short blast to mean "I intend to overtake you on your starboard side";

(2) Two short blasts to mean "I intend to overtake you on your port side"; and

(ii) The power-driven vessel about to be overtaken shall, if in agreement, sound a similar sound signal. If in doubt she shall sound the signal prescribed in paragraph (d) of this Rule.

(d) When vessels in sight of one another are approaching each other and, from any cause, either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately

indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

(e) A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. This signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.

(f) If whistles are fitted on a vessel at a distance apart of more than 100 meters, one whistle only shall be used for giving maneuvering and warning signals.

(g) When a power-driven vessel is leaving a dock or berth, she shall sound one prolonged blast.

(h) A vessel that reaches agreement with another vessel in a head-on, crossing, or overtaking situation, as for example, by using the radiotelephone as prescribed by the Vessel Bridge-to-Bridge Radiotelephone Act (85 Stat. 164; 33 U.S.C. 1201et seq.), is not obliged to sound the whistle signals prescribed by this Rule, but may do so. If agreement is not reached, then whistle signals shall be exchanged in a timely manner and shall prevail.

Discussion: This Rule features the largest number of differences between the International and Inland Rules, but the good news is that it is easily summarized in a table below.

The key points are:

- Ultimately if the vessel is altering course to the right (whether to simply change course or to "leave someone" to starboard), the signal is one short blast. Likewise, if a vessel is altering course to the left (whether to simply change course or to "leave someone" to port), the signal is two short blasts. Aboard ship, odd numbers are for the starboard side of the vessel (#1 engine, #1 raft, etc.) whereas even numbers are for the port side of the vessel (#2 engine, #2 raft, etc.).
- These basic signals are modified – when overtaking in a narrow channel in International waters, add a prefix of two prolonged blasts. When overtaking in Inland waters, no prefix is necessary.
- International and Inland Rules have different agreement signals for being overtaken, whether in a narrow channel in International waters, or anywhere in Inland waters.
- The danger signal of 5 or more short blasts is always available to mariners, can be sounded by any vessel at any time that they are in doubt.
- These signals only apply to power-driven vessels in Inland waters, but any vessel in International waters.
- These signals may be supplemented by a light signal (all around white in International waters, all around yellow or white in Inland waters).
- Finally, in Inland waters, whistle signals are optional if arrangements are made on the radio.

International Rules Signals of Action	Maneuvering and Warning Signals Power-Driven Vessels In Sight	Inland Rules Signals of Intent
I am altering my course to starboard	●	I intend to leave you on my port side
I am altering my course to port	● ●	I intend to leave you on my starboard side
I am operating astern propulsion	● ● ●	I am operating astern propulsion
Doubt/Danger/Failure to Understand	● ● ● ● ●	Doubt/Danger/Failure to Understand
Approaching a Bend in a Narrow Channel	▬	Approaching a Bend in a Narrow Channel, Leaving a Dock or Berth
In a narrow channel or fairway		Anywhere
▬ ▬ ●	I intend to overtake you on your starboard side	●
▬ ▬ ● ●	I intend to overtake you on your port side	● ●
▬ ● ▬ ●	Agreement for being overtaking	Similar signal to intent signal

- Whistle signals are optional if arrangements are made on the radio
- Return signals are required for all passing arrangements

Test Strategy: There are over 150 questions in the database for Rule 34 and you can expect to see at least 5 questions on your test regarding sound signals. Additionally, this Rule has the highest chance of seeing an INLAND ONLY or an INTERNATIONAL ONLY question, so you must pay attention to the question. Your best strategy is to internalize the table above or create your own study guide. Read many practice questions and get familiar with the types of tricks you can see on the exam. Then, relax and trust your memory.

Sample Questions (Inland Only):

INLAND ONLY. Your power-driven vessel is overtaking another power-driven vessel in a narrow channel. You wish to overtake her on her starboard side. You should sound a whistle signal of ____.

A. One prolonged and one short blast
B. One short blast
C. At least five short blasts
D. Two prolonged blasts followed by one short blast

INLAND ONLY. You are overtaking another power-driven vessel in a narrow channel. The other vessel will have to move to allow you to pass. You wish to overtake the other vessel on her starboard side. Your first whistle signal should be ____.

A. Two short blasts
B. Two prolonged blasts followed by one short blast
C. Two prolonged blasts followed by two short blasts
D. One short blast

INLAND ONLY. You are overtaking another power-driven vessel and sound a whistle signal indicating that you intend to pass the vessel along her starboard side. If the other vessel answers your signal with five short and rapid blasts, you should _____.

A. Sound 5 short and rapid blasts and pass along her starboard side
B. Pass the other vessel on her starboard side
C. Not overtake the other vessel until she sounds another 5 short and rapid blast signal
D. Not overtake the other vessel until both vessels exchange the same passing signal

INLAND ONLY. You are meeting another power-driven vessel in Inland waters, and she sounds one short blast on the whistle. This means that she ____.

A. Is changing course to port
B. Desires to depart from the Rules
C. Intends to leave you on her port side
D. Is changing course to starboard

INLAND ONLY. When power-driven vessels are in sight of one another, passing signals shall be sounded when _____.

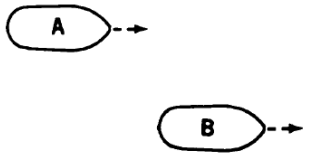
A. Meeting or crossing within a half mile of each other
B. Meeting or crossing at any distance
C. Meeting within one mile of each other
D. Crossing within one mile of each other

INLAND ONLY. Two power-driven vessels are meeting on a clear day and will pass less than half a mile apart. In this situation, whistle signals _____.

A. Must be exchanged
B. Must be exchanged only if course changes are required by either vessel
C. May be exchanged
D. Must be exchanged if passing arrangements have not been made by radio

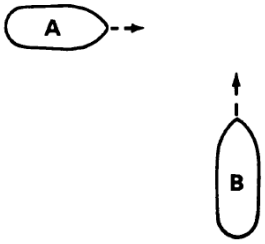
INLAND ONLY. Vessel "A" is power-driven and overtaking power-driven vessel "B" as shown in illustration 17 and will pass without changing course. What signal should vessel A sound?

DIAGRAM 17



A. One short blast
B. Two short blasts
C. No signal
D. One prolonged blast

INLAND ONLY. Two power-driven vessels are crossing within one half mile of each other as shown in illustration 42. Vessel "A" sounds one short blast on the whistle. What should vessel "B" sound?

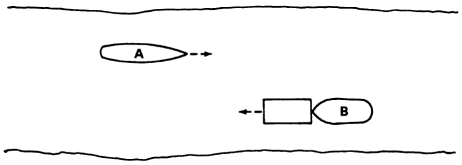


A. Three short blasts
B. Two short blasts
C. Two prolonged blasts followed by two short blasts
D. One short blast

INLAND ONLY. Power-driven vessel "A" and "B" are meeting on a river as shown in illustration 41 and will pass about ¼ mile apart. Which action should the vessels take?

A. The vessels should continue on course and pass without sounding signals
B. The vessels should exchange two blast whistle signals and pass starboard to starboard
C. The vessels should exchange one blast whistle signals and pass starboard to starboard
D. The vessels should pass starboard to starboard and must sound whistle signals only if either vessel changes course

DIAGRAM 41



INLAND ONLY. The light used to signal passing intentions must be _____.

A. Alternating white and yellow
B. Alternating red and yellow
C. An all-around white or yellow light
D. An all-around white light only

Sample Questions (International Only):

INTERNATIONAL ONLY. The light which may be used with a vessel's whistle must be ____.

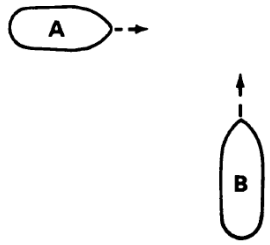
A. A white light
B. Used only at night
C. Used when the whistle is broken
D. Used prior to sounding the whistle

INTERNATIONAL ONLY. Two power-driven vessels are meeting. A two-blast whistle signal by either vessel means _____.

A. I desire to pass starboard to starboard
B. I intend to alter course to port
C. I am altering course to port
D. I desire to pass port to port

DIAGRAM 42

INTERNATIONAL ONLY. Two power-driven vessels are crossing within one half mile of each other as shown in illustration 42. Vessel "A" sounds one short blast of the whistle. What signal should vessel "B" sound?



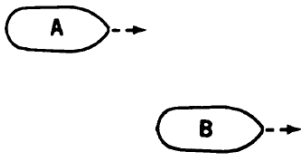
A. Two short blasts
B. One prolonged, one short, one prolonged, one short
C. One short blast
D. None of the above

INTERNATIONAL ONLY. Two prolonged blasts followed by one short blast on the whistle is a signal which would be sounded by a vessel _____.

A. Engaged in mine clearance
B. Anchored
C. Engaged in fishing
D. Overtaking another in a narrow channel

DIAGRAM 17

INTERNATIONAL ONLY. Vessel "A" is overtaking vessel "B" on open waters as shown in illustration 17 and will pass without changing course. What action should vessel "A" take?



A. Sound two short blasts
B. Need not sound any whistle signal
C. Sound one long blast
D. Sound the danger signal

INTERNATIONAL ONLY. When moving from a berth alongside a wharf, a vessel must sound ____.

A. A prolonged blast
B. Three short blasts
C. A long blast
D. No signal is required

INTERNATIONAL ONLY. You are on a power-driven vessel maneuvering as authorized and are in sight of another vessel. You put your engines astern. Which statement is true concerning whistle signals?

A. You must sound three short blasts
B. You need not sound any whistle signal
C. You must sound whistle signals only if the vessels are meeting
D. You must sound one blast if backing to starboard

INTERNATIONAL ONLY. A signal of one prolonged, one short, one prolonged, and one short blast in that order is given by a vessel _____.

A. Being overtaken in a narrow channel
B. Engaged on pilotage duty
C. At anchor
D. In distress

Sample Questions (Both International and Inland):

BOTH INTERNATIONAL AND INLAND. Your vessel is approaching a bend. You hear a prolonged blast from around the bend. You should _____.

A. Sound the danger signal
B. Stop your engines and drift
C. Answer with one prolonged blast
D. Back your engines

BOTH INTERNATIONAL AND INLAND. While underway in the fog, you hear a vessel ahead sound two prolonged blasts on the whistle. You should _____.

A. Sound whistle signals only if you change course
B. Sound only fog signals until the other vessel is sighted
C. Not sound any whistle signals until the other vessel is sighted
D. Sound two short blasts and change course to the left

BOTH INTERNATIONAL AND INLAND. While underway and in sight of another vessel, less than one half mile away, you put your engines astern. Which statement is true concerning whistle signals?

A. You must sound three short blasts
B. You need not sound any whistle signal
C. You must sound one blast if backing to starboard
D. You must sound whistle signals only if the vessels are meeting

BOTH INTERNATIONAL AND INLAND. Which vessel may sound the danger signal?

A. The give way vessel in a crossing signal
B. A vessel at anchor
C. Either vessel in a meeting situation
D. All of the above

BOTH INTERNATIONAL AND INLAND. A light signal consisting of three flashes means ____.

A. I desire to overtake you
B. I am operating astern propulsion
C. I am in doubt as to your intentions
D. My engines are full speed astern

Rule 35 – Sound Signals in Restricted Visibility

The Rule

In or near an area of restricted visibility, whether by day or night the signals prescribed in this Rule shall be used as follows:

(a) A power-driven vessel making way through the water shall sound at intervals of not more than 2 minutes one prolonged blast.

(b) A power-driven vessel underway but stopped and making no way through the water shall sound at intervals of no more than 2 minutes two prolonged blasts in succession with an interval of about 2 seconds between them.

(c) A vessel not under command, a vessel restricted in her ability to maneuver **(whether underway or at anchor)**, a vessel constrained by her draft, a sailing vessel, a vessel engaged in fishing and a vessel engaged in towing or pushing another vessel shall, instead of the signals prescribed in Rule 35(a) or (b), sound at intervals of not more than 2 minutes three blasts in succession, namely one prolonged followed by two short blasts. ***Inland Only:***

International Only: *(d) A vessel engaged in fishing, when at anchor, and a vessel restricted in her ability to maneuver when carrying out her work at anchor, shall instead of the signals prescribed in Rule 35(g) sound the signal prescribed in Rule 35(c).*

Special Note: *The Inland Rules cover this provision in part (c), so the meaning is the same.*

(e) A vessel towed or if more than one vessel is towed the last vessel of the tow, if manned, shall at intervals of not more than 2 minutes sound four blasts in succession, namely one prolonged followed by three short blasts. When practicable, this signal shall be made immediately after the signal made by the towing vessel.

(f) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and shall give the signals prescribed in Rule 35(a) or (b).

(g) A vessel at anchor shall at intervals of not more than 1 minute ring the bell rapidly for about 5 seconds. In a vessel 100 meters or more in length the bell shall be sounded in the forepart of the vessel and immediately after the ringing of the bell the gong shall be sounded rapidly for about 5 seconds in the after part of the vessel. A vessel at anchor may in addition sound three blasts in succession, namely one short, one long and one short blast, to give warning of her position and of the possibility of collision to an approaching vessel.

(h) A vessel aground shall give the bell signal and if required the gong signal prescribed in Rule 35(g) and shall, in addition, give three separate and distinct strokes on the bell immediately before and after the rapid ringing of the bell. A vessel aground may in addition sound an appropriate whistle signal.

(i) A vessel of 12 meters or more but less than 20 meters in length shall not be obliged to give the bell signals prescribed in Rule 35(g) and (h). However, if she does not, she shall make some other efficient sound signal at intervals of not more than 2 minutes.

(j) A vessel of less than 12 meters in length shall not be obliged to give the above mentioned signals but, if she does not, shall make some other efficient sound signal at intervals of not more than 2 minutes.

(k) A pilot vessel when engaged on pilotage duty may, in addition to the signals prescribed in Rule 35(a), (b) or (g), sound an identity signal consisting of four short blasts.

Inland Only: *(l) The following vessels shall not be required to sound signals as prescribed in Rule 35(g) when anchored in a special anchorage area designated by the Coast Guard:*
(i) a vessel of less than 20 meters in length; and
(ii) a barge, canal boat, scow, or other nondescript craft.

Discussion: This Rule is another key Rule for your exam. Many questions on your test will come from this Rule, and the best way to memorize this Rule is by using a diagram or a study guide. Note the special anchorage provision for Inland Rules.

Test Strategy: There are over 120 questions in the database regarding Rule and you can expect 5-7 restricted visibility sound signal question on a typical exam.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. What is the optional whistle signal which may be sounded by a vessel at anchor?

A. One short followed by two prolonged blasts
B. Two prolonged blasts followed by one short blast
C. Four short blasts
D. One short, one prolonged, followed by one short blast

BOTH INTERNATIONAL AND INLAND. You are operating in restricted visibility and hear a signal of a rapidly ringing bell followed by the rapid sounding of a gong. It could be _____.

A. 30-meter sailing vessel at anchor
B. 150-meter power driven vessel aground
C. Vessel in distress
D. 300-meter power driven vessel at anchor

BOTH INTERNATIONAL AND INLAND. A 200-meter vessel is aground in fog. Which signal is optional?

A. Bell signal
B. Whistle signal
C. Gong signal
D. All of the above are mandatory

BOTH INTERNATIONAL AND INLAND. A fog signal of one prolonged blast followed by four short blasts would indicate the presence of _____.

A. Vessel being towed
B. Power driven pilot vessel on duty underway
C. Vessel at anchor warning of her location
D. Fishing vessel engaged in trawling

BOTH INTERNATIONAL AND INLAND. A pilot vessel may continue to sound an identity signal in fog if she is _____.

A. At anchor
B. No longer on pilotage duty
C. No longer on pilotage duty
D. Not under command

BOTH INTERNATIONAL AND INLAND. A power-driven vessel at anchor, not fishing or otherwise restricted in its ability to maneuver, sounds her fog signal at intervals of not ____.

A. Less than 2 minutes
B. More than 3 minutes
C. More than 2 minutes
D. More than 1 minute

BOTH INTERNATIONAL AND INLAND. A sailing vessel with the wind abaft the beam is navigating in the fog. She should sound ____.

A. Three short blasts
B. One prolonged and two short blasts
C. Two prolonged blasts
D. One prolonged blast

BOTH INTERNATIONAL AND INLAND. A tug is towing three barges astern in restricted visibility. The second vessel of the two should sound _____.

A. One prolonged and three short blasts
B. One prolonged and two short blasts
C. One short blast
D. No fog signal

BOTH INTERNATIONAL AND INLAND. A vessel engaged in fishing underway sounds the same fog signal as a _____.

A. Vessel being towed
B. Vessel restricted in her ability to maneuver at anchor
C. Sailing vessel at anchor
D. Power-driven vessel stopped and making no way through the water

BOTH INTERNATIONAL AND INLAND. All fog signals shall be sounded every two minutes with the exception of a vessel _____.

A. Underway or making way
B. Anchored or aground
C. Under sail or tow
D. Not under command or restricted in her ability to maneuver

BOTH INTERNATIONAL AND INLAND. If practical, when shall a manned vessel being towed sound her fog signal?

A. As close to the mid-cycle of the towing vessels signals as possible
B. Immediately before the towing vessel sounds hers
C. At any time as long as the interval is correct
D. Immediately after the towing vessel sounds hers

BOTH INTERNATIONAL AND INLAND. What is the fog signal for a vessel 75 meters in length, restricted in her ability to maneuver, at anchor?

A. Four short blasts at intervals of not more than 2 minutes
B. Five second rapid ringing of a bell at intervals of not more than 1 minute
C. Five second ringing of a bell and five second sounding of a gong at intervals of not more than 1 minute
D. One prolonged blast followed by two short blasts at intervals of not more than two minutes

BOTH INTERNATIONAL AND INLAND. Which vessel does not sound a fog signal of one prolonged blast followed by two short blasts?

A. A vessel dredging
B. A vessel being towed
C. A sailing vessel
D. A vessel engaged in fishing

BOTH INTERNATIONAL AND INLAND. While underway your vessel encounters fog. You stop your engines and the vessel is dead in the water. What fog signal do you sound?

A. Three short blasts every two minutes
B. One prolonged blast every two minutes
C. Two prolonged blasts every two minutes
D. One prolonged and three short blasts every two minutes

BOTH INTERNATIONAL AND INLAND. You are proceeding under sail and engine power with the propeller engaged in the fog. Which statement is true?

A. You must sound one prolonged blast every 2 minutes
B. You must display a black diamond forward during the day
C. If most of the propelling power comes from the sails, you are considered a sailing vessel
D. You must display a red light over a green light at the masthead

INLAND ONLY. What is true of a barge 35 meters in length anchored in a "special anchorage" approved by the Secretary?

A. No fog signal is required
B. The vessel shall sound three blasts on the whistle every 2 minutes
C. The vessel shall sound one blast of the whistle every 2 minutes
D. The vessel shall ring a bell for 5 seconds every minute

Rule 36 – Signals to Attract Attention

The Rule
If necessary to attract the attention of another vessel, any vessel may make light or sound signals that cannot be mistaken for any signal authorized elsewhere in these Rules, or may direct the beam of her searchlight in the direction of the danger, in such a way as not to embarrass any vessel.

International Only: Any light to attract the attention of another vessel shall be such that it cannot be mistaken for any aid to navigation. For the purpose of this Rule the use of high intensity intermittent or revolving lights, such as strobe lights, shall be avoided.

Discussion: This Rule is fairly straightforward. One may desire to attract attention to another vessel for a variety of reasons, and this Rule describes ways in which to do so.

Test Strategy: There are only a couple questions in the database, and it would be rare to see a question on your exam from this Rule.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. Which signal, other than a distress signal, can be used by a vessel to attract attention?

A. Burning barrel
B. Orange smoke signal
C. Searchlight beam
D. Continuous sounding of a fog signal apparatus.

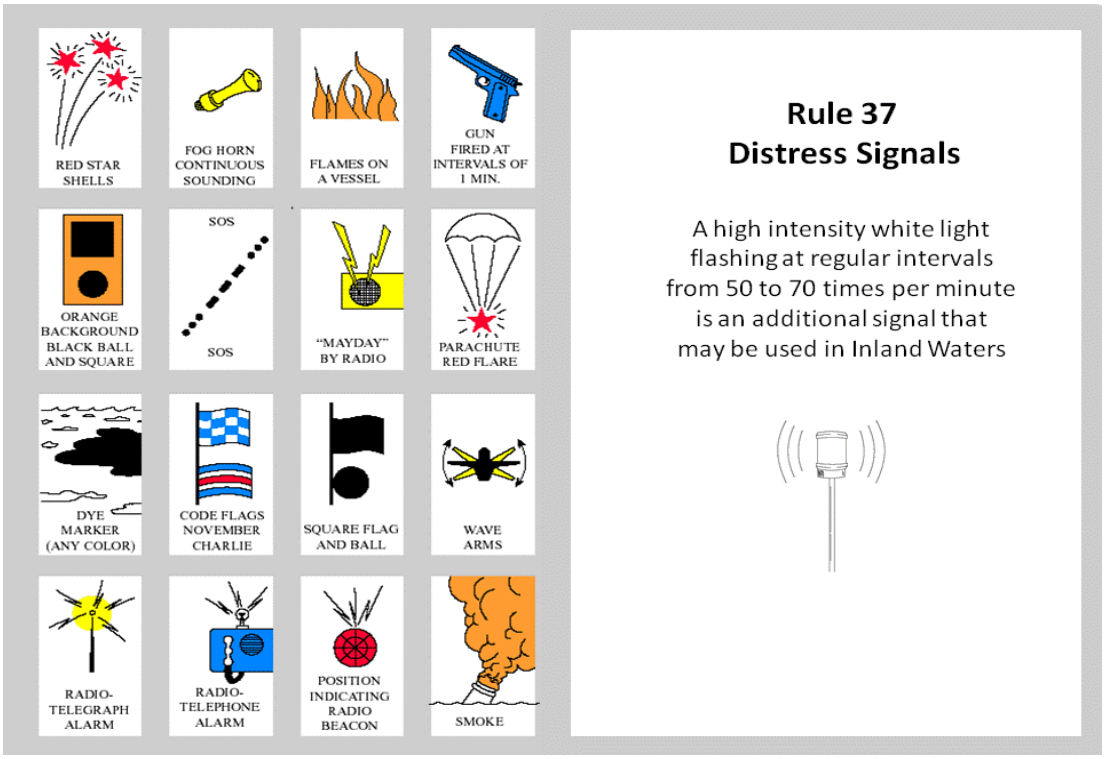
Rule 37 – Distress Signals

The Rule
When a vessel is in distress and requires assistance, she shall use or exhibit the signals described in Annex IV to these Rules.

Discussion: This Rule is best memorized using the provided picture of 16 distress signals. Annex IV simply lists these methods out in written form.

Test Strategy: These 16 distress methods must be memorized for the exam, or you should at least be familiar with what they are until you are able to answer Rule 37 questions accurately.

Illustration:



Sample Questions:

BOTH INTERNATIONAL AND INLAND. What is not a distress signal?

A. Continuous sounding of the for signaling appliance
B. International Code Signal November over Charlie
C. Basket hanging in the rigging
D. Red flares or red rockets

BOTH INTERNATIONAL AND INLAND. When a vessel signals her distress by means of a gun or other explosive signal, the firing should be at intervals of approximately _____.

A. 1 minute
B. 3 minutes
C. 10 minutes
D. 1 hour

BOTH INTERNATIONAL AND INLAND. Which is a distress signal?

A. Sounding 5 short blasts on the whistle
B. Firing of green star shells
C. Answering a one blast whistle signal with two blasts
D. A flaming barrel of oil on deck

Part D Review

This Part of the Rules deals with sound and light signals used either to attract attention, indicate distress, communicate location and identity in restricted visibility or indicate maneuvering situations. Most of the questions on your exam will come from Rule 34 and Rule 35, but there are usually some questions about distress or definitions as well.

Part D Quiz

BOTH INTERNATIONAL AND INLAND. What is the minimum sound signaling equipment required aboard a vessel 24 meters in length?

A. Any means of making an efficient sound signal
B. A bell only
C. A bell and a whistle
D. A whistle only

BOTH INTERNATIONAL AND INLAND. In a crossing situation, which vessel may sound the danger signal?

A. Stand on vessel
B. Either vessel
C. Give way vessel
D. Neither vessel

INLAND ONLY. You are underway and in sight of another vessel more than 0.5 miles away. You put your engines astern. Which statement is true concerning whistle signals?

A. You must sound three short blasts
B. You need not sound any whistle signal
C. You must sound whistle signals only if the vessels are meeting
D. You must sound one short blast if backing to starboard

INLAND ONLY. A power-driven vessel intends to overtake another power-driven vessel on the overtaken vessel's port side. Which whistle signal should be sounded in order to state this intention?

A. 2 short blasts
B. 2 prolonged and 1 short blast
C. 1 short blast
D. 2 prolonged and 2 short blasts

INLAND ONLY. At night, a light signal consisting of two flashes by a vessel indicates ____.

A. That the vessel is in distress
B. An intention to leave another vessel to port
C. An intention to communicate over radiotelephone
D. An intention to leave another vessel to starboard

INTERNATIONAL ONLY. A power-driven vessel leaving a dock or berth must sound what signal?

A. Three short blasts
B. A prolonged blast
C. No signal is required
D. A long blast

INTERNATIONAL ONLY. On open water, two vessels are in an overtaking situation. The overtaking vessel has just sounded one short blast on the whistle. What is the meaning of this whistle signal?

A. I am changing course to starboard
B. I request permission to pass you on my port side
C. On which side should I pass?
D. I will maintain course and speed and pass you on your starboard side

INTERNATIONAL ONLY. When two vessels are in sight of one another, all of the following signals may be given except _____.

A. Two short blasts
B. One prolonged, one short, one prolonged, and one short blast
C. A light signal of at least 5 short and rapid flashes
D. Four short blasts

BOTH INTERNATIONAL AND INLAND. A 95-meter vessel aground in the fog sounds which fog signal?

A. A rapid ringing of a bell for 5 seconds every 2 minutes
B. A whistle signal of one short, one prolonged, one short, and one prolonged
C. A rapid ringing of a bell for 5 seconds, preceded and followed by three separate and distinct strokes of the bell
D. A prolonged blast every 1 minute

BOTH INTERNATIONAL AND INLAND. A tug is towing three manned barges in a line in the fog. The third barge of the tow should sound ____.

A. No fog signals
B. One prolonged and two short blasts
C. One prolonged and three short blasts
D. One prolonged, one short, and one prolonged blast

BOTH INTERNATIONAL AND INLAND. When underway in restricted visibility, you might hear at intervals of two minutes, any of the following except ____.

A. Two prolonged blasts
B. One prolonged and two short blasts
C. One prolonged blast
D. Ringing of the bell for 5 seconds

BOTH INTERNATIONAL AND INLAND. Which is not a distress signal?

A. The firing of green star rockets

B. A signal sent by radiotelephone consisting of the spoken word “mayday”

C. A continuous sounding with any fog signal apparatus

D. An International code signal of NC

Annexes and Exemptions

The Rule: See the USCG Navigation Center website for the latest version of the Annexes and Exemptions portion of the Rules.

Discussion: In the latest version of the Rules as of 2019, on the USCG Navigation Center website, the previous Annex Rules for fishing vessels in close proximity have been captured in Rule 26. However, on USCG exams, there are old annex questions that appear from time to time including law enforcement, public safety, and moored barges.

Study Strategy: There are only a few topics that fall into this category: public safety vessels, law enforcement vessels, moored barges, and fishing trawlers in close proximity. These Rules are being migrated to the main body of the book, but for testing purposes are collected here.

Sample Questions:

BOTH INTERNATIONAL AND INLAND. Which signal may at some time be exhibited by a vessel trawling?

A. Two red lights in a vertical line
B. A white light over a red light in a vertical line
C. Two white lights in a vertical line
D. All of the above

BOTH INTERNATIONAL AND INLAND. Additional light signals are provided in the Annexes to the Rules for vessels _____.

A. Not under command
B. Engaged in towing
C. Engaged in fishing
D. Under sail

INLAND ONLY. Which of the following signals may be exhibited by a vessel trawling in close proximity to other fishing vessels?

A. Two fixes yellow lights in a vertical line
B. Two white lights in a vertical line
C. A red light over a white light in a vertical line
D. All of the above

INLAND ONLY. A commercial vessel engaged in public safety activities may display a(n) identity light(s). Which of the following is appropriate for these activities?

A. Flashing yellow light
B. Flashing blue light
C. Alternately flashing red and yellow light
D. Alternately flashing blue and red light

INLAND ONLY. A flashing blue light is used to identify which of the following vessels?

A. Law enforcement
B. US Submarines
C. Dredge pipelines on trestles
D. Air cushion vessels in the non-displacement mode

INLAND ONLY. You are the stand-on vessel in an overtaking situation. The other vessel is showing an alternately flashing red and yellow light. What action should you take?

A. Give way
B. Heave to
C. Stand on
D. Alter course to assist

5 Most Common Challenges the ROTR Exam

As you begin the study phase of the Rules of the Road preparation, here are a few topics that students often struggle with, and therefore deserve more attention.

1. **Underway but not making way.** The definition of underway is "not at anchor, made fast to the shore, or aground." Some vessels are underway but not "making way," that is to say they are drifting or doing work of some variety. These vessels have a few differences to note from the standard Rules:
    a. Sound signals in restricted visibility – power driven vessels underway in restricted visibility sound one prolonged blast every two minutes. When they stop and are not making way, they sound two prolonged blasts every two minutes
    b. Lights – Vessels Not Under Command, Fishing, Trawling, or Restricted in their Ability to Maneuver only show sidelights and a sternlight when they are making way through the water. If you think about it, these vessels often have to stop to conduct their "work" and extinguishing sidelights can help mariners figure out what is going on.
2. **Towing Lights.** The Towing and Pushing section of Part C (Lights and Shapes) often gives students trouble. One recommendation is to make your own flashcards or study guide: try to simplify and encapsulate all elements of Rule 24 for yourself, it is a great learning process. A couple tips:
    a. Yellow over Yellow is only seen in Inland Rules for pushing ahead and towing alongside, and the Special Flashing Light (yellow) is also only seen in Inland Rules.
    b. Towing lights are the same as stern lights, but yellow, and are what indicate the presence of a tow. Masthead lights are what indicates the length of the tow.
3. **Particular Things to Memorize.** A large percentage of the Rules simply need to be memorized, but beyond that useless advice, it is particularly helpful to memorize the 6 elements of Rule 6 for Safe Speed, all of Rule 19, Distress Signals from Rule 37, and all Lights, Shapes, and Sounds. Focusing on those will get you through many questions.
4. **Shall-May-Shall.** There are often several questions about Rule 17, Action by the Stand On Vessel. Remembering the mnemonic Shall-May-Shall will help you remember who can take action to avoid collision and when. Many of these questions are worded particularly tricky. Revisit this Rule in this Guidebook for a handy illustration.
5. **Sound Signals for Overtaking.** The difference in sound signals for overtaking in Inland vs. International Rules often confuses students. Like other topics, it is helpful for you to make your own study guide to remember the specifics but do remember that the overtaking sound signals in International Rules depends on the situation being a Narrow Channel or Fairway, with action required by the Give Way vessel. If it is in "open water" the International Rules simply say to sound signals of action (e.g. one or two short blasts for altering course). Revisit this Rule in this Guidebook for a hand illustration.

Key Differences Between Inland and International Rules

Here are the most significant differences between the Inland and International Rules for ready reference. Not all differences are included here, but rather those most likely to appear on your ROTR exam.

1. Rule 1 – Where the Rules apply. The Inland Rules also specify that vessels over 12m must carry a copy of the Rules underway.

2. Rule 3 – Definitions of the Western Rivers, Great Lakes, and Secretary. Note that the Western Rivers and Great Lakes are worth reviewing carefully for your exam. Also remember that vessels Constrained by Draft only appear in the International Rules.

3. Rule 9 – Narrow Channels. Rule 9 describes why vessels in the Inland Rules with a following current and proceeding down bound have the right of way, shall propose the manner of passage, and shall initiate sound signals.

4. Rule 14 – Head on Situations on the Western Rivers and Great Lakes. Similar to Rule 9, the down bound vessel has the right of way.

5. Rule 15 – Crossing on the Western Rivers and Great Lakes. Similar to Rule 9 and 14, a power-driven vessel must avoid impeding the passage of another power-driven vessel ascending or descending the River.

6. Rule 18 – Constrained by Draft hierarchy. Just a technical difference regarding the hierarchy Rule for International Rules with vessels Constrained by Draft.

7. Rule 21 – Lights and Shapes differences. A few provisions in this Rule differ between International and Inland Rules, including vessels less than 12 meters light configurations and the definition of a Special Flashing Light, which only appears in Inland Rules.

8. Rule 23 – Small vessels. This Rule allows vessels less than 7 meters travelling less than 7 knots to display reduced lighting requirements. There are additional specifications for vessels less than 12 meters. Finally, the Inland Rules discuss special lights for power-driven vessels on the Great Lakes due to their typical construction.

9. Rule 24 – Towing and Pushing lights. The main difference in this Rule is that Inland Rules describe two towing lights on a vessel pushing ahead or towing alongside, and a special flashing light on a vessel being pushed ahead or towed alongside. Additionally, there is a difference regarding sidelight configuration for multiple barges, and a reduced masthead light requirement for Inland Rules above the Huey P. Long Bridge. Finally, there are a few differences between International and Inland Rules for towing partially submerged objects, but these differences are rarely tested.

10. Rule 26 – Fishing in Close Proximity. The Rules for vessels fishing in close proximity are described in the Annexes for International Rules and in Rule 26 for the Inland Rules, but the meaning is largely the same.

11. Rule 27 – Dredge Pipelines. The Inland Rules describe lights for dredge pipelines, including yellow lights and double red lights for channels.

12. Rule 28 – Constrained by Draft. Similar to Rule 3 and 18, vessels Constrained by Draft are only featured in the International Rules.

13. Rule 30 – Special Anchorages and Barges. The Inland Rules describe reduced light requirements for vessels anchored in Secretary approved Special Anchorages. They also describe lighting requirements for moored barges which was previously found in the Annexes.

14. Rule 34 – Maneuvering and Warning Signals. Rule 34 has the most differences between Inland and International Rules due to the difference meanings of sound signals. This Rule should be read carefully with particular focus on overtaking, the literal meaning of sound signals, and leaving a dock or berth (Inland Only). Finally, the Inland Rules also specify a distance of ½ mile for sound signal exchanges unless agreed by radio.

15. Rule 35 – Sound Signals in Restricted Visibility. There is a technical difference regarding where requirements are found for vessels working at anchor, but the meaning and signal is the same. Also, there are reduced sound requirements for vessels anchored in a Secretary approved Special Anchorage in Inland waters.

16. Rule 37 – Flashing Lights. The Inland Rules allow a white flashing light to serve as a distress signal, but this does not appear in International Rules.

This non-exhaustive list is focused mostly on preparing for an exam and features the most significant differences between the Inland and International Rules.