



Chapter 3
Navigating With Rules
Mike Brough
Aug 15 2011



Slide 01

August 15 2011

April 18,2008
First Revision

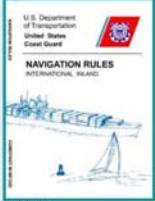
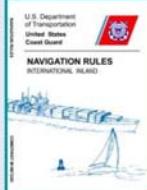
August 15, 2011

**Text converted to Tables for ease of formatting
instructor guide.**

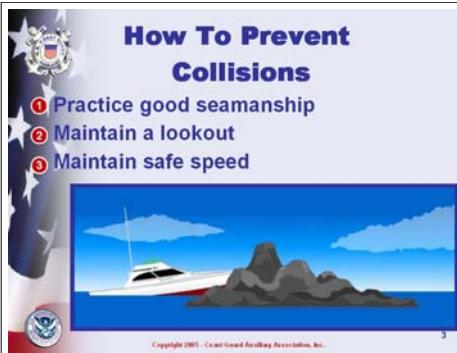
**Slide 23 Sound Signals
Corrected Danger Signal – 5 or More Short Blasts**

August 15, 2011
Added slide 26 – Sound Signals – Maneuvering
Maneuvering Circle

ABC Chapter 3 Part 1 Tables

 <p>Chapter 3 Navigating with Rules  Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 02</p>	<p>This chapter is designed for people who have small boats used in protected waters. The aids to navigation information is not all-inclusive for that reason. If other types of navigation aids are used in your boating area, by all means discuss them with the students.</p> <p>The light configurations displayed in this chapter are those commonly found on small recreational boats. If your area has large commercial traffic, by all means include light configurations that the boaters in your area might see.</p> <p>Colregs / Farwells / Self Certifying</p> <p>Did You Drive Here??</p> <p>We will cover a Subset of Common Rules Today</p>
 <p>Navigation Rules Purpose: To prevent collisions General responsibility rule<ul style="list-style-type: none">No exoneration for neglect of the rulesDeparture from rules ok to avoid collision Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 03</p>	<p>Ask: What are the Navigation Rules and what are they for? How we operate vessels in situations where risk of collisions exists</p> <p>Only to Prevent Collisions between 2 Boats</p> <p>If a Collision Occurs C.G. Assumes the Rules were not Followed</p> <p>When did the rules start</p> <p>Discuss the General Responsibility Rule</p> <p>The Rule of Good Seamanship – Follow the Rules</p> <p>2(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.</p> <p>The General Prudential Rule – Be Prudent Must Depart from the Rules When Required</p> <p>2(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.</p>

ABC Chapter 3 Part 1 Tables



Slide 04

Before bullet points are animated
Ask: What three Rules help prevent collisions?

Ask:
What is "Good Seamanship"?
What is a proper lookout?
What is the speed limit for boats in your local waters?
How would you determine what a safe speed" is?

Response: weather, crew, kind of boat, experience, other boats around, traffic, visibility,

Rule 5: 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.

Good Seamanship: The use of Superior Judgment to avoid situations where Superior Skills are needed. (Puget Sound Pilots)

Only 1 Person on board

Everyone below while boat drifts
(whoopee & lunch)

Lookout: That is the only thing that person does.

Night: Driver concentrating on water.

Heavy Traffic: Extra help needed.



Slide 05

Ask Why do we need Driving rules?
And the Nautical communication system now?
These rules are very old. Goes back to the beginning of the US government, 1790's, boats were colliding with each other in the harbors
Why does it apply to everyone who is on the water?

Steering and Sailing Rules Apply to any Condition of Visibility

1(a) These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels. (also Inland waters of the United States)

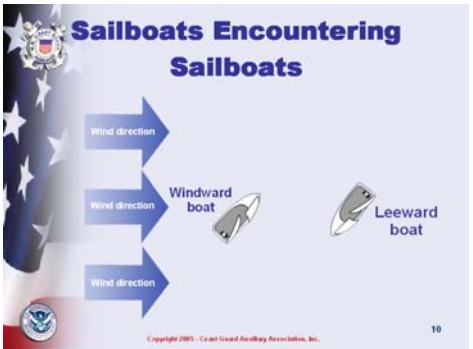
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 <h3>Navigation Definitions</h3> <ul style="list-style-type: none">① Power driven - vessel propelled by machinery② Sailing - vessel under sail (if engine is used it is a power vessel)③ Underway - not anchored, not attached to shore, a pier, or aground④ Constant bearing decreasing range - this is a collision course <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 06</p>	<p>These help to understand the navigation rules Add your own description of these navigation definitions</p> <p>Could ask What are the requirements of being a sail boat? Do the people in a boat that is floating in the water, engine off (can be started easily), have to follow the Nav rules? And why?</p>
 <h3>Meeting Other Boats</h3> <ul style="list-style-type: none">① Give way vessel – required to change course and speed② Stand on vessel – must maintain course and speed③ When do these apply? <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 07</p>	<p>Give way vessel: Required to change course and speed Early & Obvious Stand on vessel: Must maintain course and speed Until obvious the vessel required to keep clear is not taking appropriate action. When do these apply? Situation: head-on, crossing, overtaking Types of boats: sail or power</p> <p>Demonstrate the 3 situations of meeting – using “bag boats” or other</p> <p>Discuss: that a sailboat with it's engine running, either with or without sails raised, is considered by the Nav Rules to be a power-driven vessel</p> <p>17(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.</p> <p>Not required to take Privilege – But must give up early and obvious</p> <p>What is Maintaining Course & Speed? Examples USS Arthur W. Radford vs. The Saudi Riyadh Vessel following turns in VTS Vessel following a channel North entrance to Shilshole Marina</p>

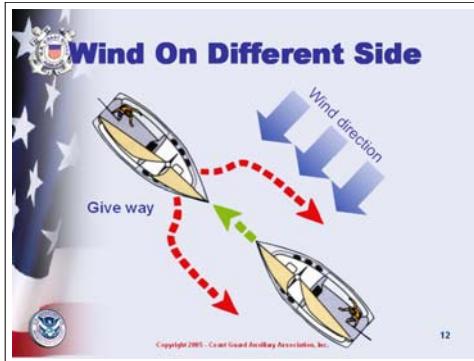
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 <p>Responsibilities Between Vessels (Hierarchy)</p> <ol style="list-style-type: none"> ① Vessel not under command ② Vessel restricted in the ability to maneuver ③ Vessel engaged in fishing (with a net) ④ Sailing vessel (no power) ⑤ Power driven vessel <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 08</p>	<p>Ask: How does understanding the hierarchy help you to interact with other boat?</p> <p>This is part of the Nav rules, certain boats have priority over others</p> <p>Have Hierarchy on flash cards. Hand out to 5 people and have them arrange themselves</p>
 <p>Meeting Head-On</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 09</p>	<p>Before animating the slide:</p> <p>Ask: If two powerboats are meeting head on, which one is the give way vessel? If one is a sailboat, which gives way?</p>
 <p>Crossing Situations</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 10</p>	<p>Before animating slide:</p> <p>Ask: If two powerboats are crossing, which one gives way? If one is a sailboat, which gives way?</p>

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 <p>Overtaking</p> <p>Give way</p> <p>Stand on</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>9</p> <p>Side 11</p>	<p>Before animating slide:</p> <p>Ask: Who gives way when one boat overtakes another? If one is a sailboat, which gives way?</p>
 <p>Sailboats Encountering Sailboats</p> <p>Wind direction</p> <p>Windward boat</p> <p>Leeward boat</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>10</p> <p>Slide 12</p>	<p>Discuss that sailboats under sail have certain rules that can be remembered by the acronym "SLO"</p> <p>Starboard</p> <p>Leeward</p> <p>Overtaken (same as powerboats)</p> <p>We'll illustrate</p> <p>Powerboats: why should you understand Sailboat Rules??</p> <p>Which Tack? Most people think side the wind is coming over.</p> <p>Rules: Side opposite the boom is carried on.</p> <p>Can you be on Port tack and have the wind on the Starboard side?</p>
 <p>Wind On Same Side</p> <p>Wind direction</p> <p>Give way</p> <p>Windward Leeward</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>11</p> <p>Slide 13</p>	<p>ASK: Which boat maintains course and speed?</p> <p>With the wind on the same side, the sailboat to Leeward (Downwind) stands on</p>

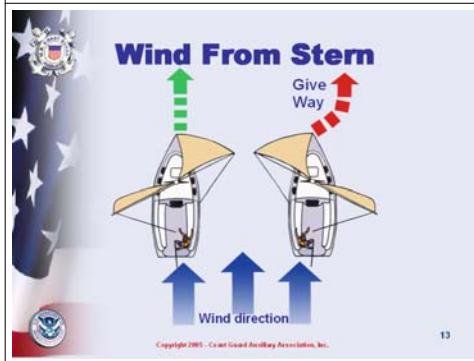
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Slide 14

ASK: which boat maintains course and speed?

The boat on the Starboard tack is the stand on vessel.



Slide 15

ASK: which boat here maintains course and speed?

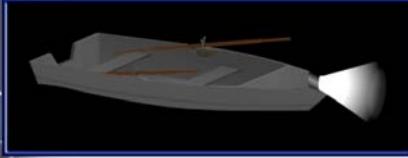
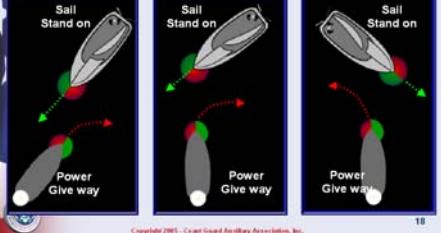
The boat with the boom over to port (Starboard Tack) is stand on

Classroom aid: use model boats to have students demonstrate meeting, crossing and overtaking situations

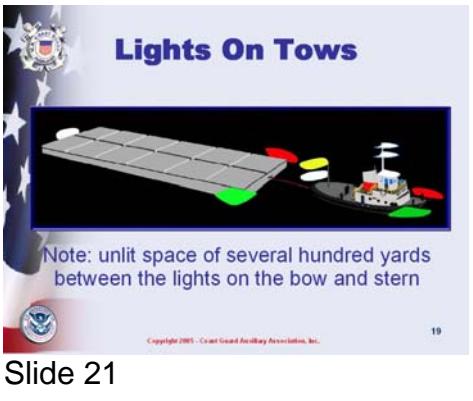
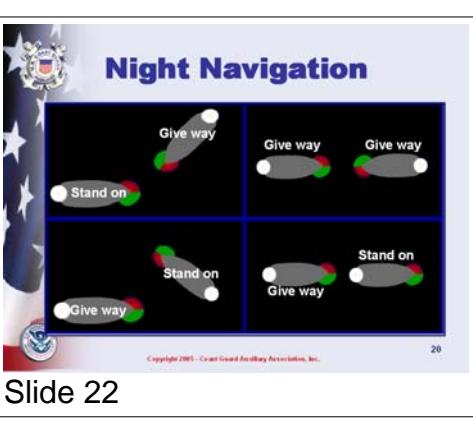
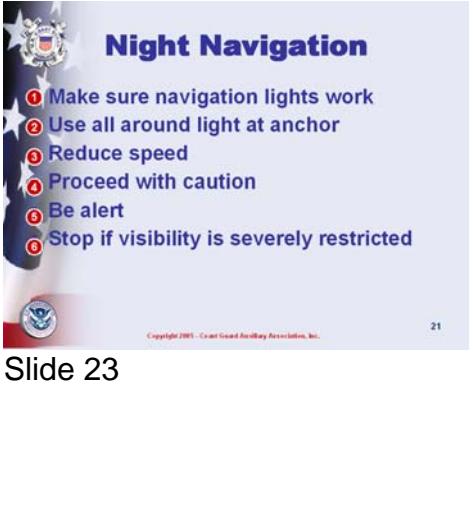
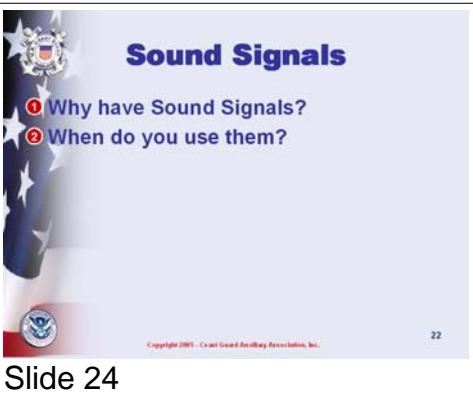
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 <p>Navigation Lights</p> <ul style="list-style-type: none"> ① Side lights ② Stern lights ③ Masthead light ④ All round white light <p>Copyright 2001 - Coast Guard Auxiliary</p>	<p>Before animating slide:</p> <p>Ask: Why do boats have lights? To identify the type of boat To identify which boat is stand on and give way. To identify which way the boat is going</p> <p>Ask: What are the colors and names of the lights you need?</p> <p>Teaching aid: Use black felt board with round colored pieces of felt</p> <p>Discuss arc of visibility for each.</p> <p>Point out that sailboats under sail do not display a masthead light.</p> <p>Side lights Red and green seen at front of boat Stern lights White seen at rear of boat Masthead light White seen from forward and sides All round white light Seen from all directions</p> <p>No other lights are allowed on the boat at night. Not allowed lights not legally entitled to or lights that can be confusing to another vessel.</p> <p>20(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 as 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.</p> <p>Visibility of Lights: Under 12 meters (39.4 ft) Masthead, 2 miles – Sidelight 1 mile = / >12 meters but < 50 meters (39.4 ft 164 ft) Masthead 5 miles unless < 20 m then 3 miles Sidelights, 2 miles 50 meters or more Masthead light 6 miles Sidelights 3 miles</p>
<p>Slide 16</p> <p>Two boats approaching each other @ 40 kts</p> <p>Perfect Visibility Masthead at 1.5 min. Sidelights at 45 seconds</p> <p>A boat @ 40kts approaching a stopped boat in the water:</p> <p>Perfect Visibility Masthead at 3.0 min. Sidelights at 1.5 min</p>	
<p>Large Freighter approaching at 22 kts</p> <p>Masthead at 16 min. Sidelights (direction) at 8min</p>	

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 <p>Lights</p> <p>Sail boats & manually powered boats less than 22 ft – single white light</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>16</p> <p>Slide 17</p>	<p>Remind all that a flashlight should be aboard all boats.</p> <p>For paddle boats a flashlight is all that is required at night</p>
 <p>Sailboat At Night</p> <p>Sailing vessel underway. Same for inland.</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>18</p> <p>Slide 18</p>	
 <p>Sailboat At Night</p> <p>① Green or red only observed • May be a sailboat under sail • Give way</p> <p>② Sailboat under sail only • Always stand-on except when overtaking</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>18</p> <p>Slide 19</p>	<p>Before bullet points are animated:</p> <p>Ask: What is unique to a sailboat's lights? How do you know it is a sailboat?</p> <p>Green or red only observed May be a sailboat under sail Give way Sailboat under sail only Always stand-on except when overtaking</p>
 <p>Give Way To Sailboat!</p> <p>① Sail Stand on ② Sail Stand on ③ Sail Stand on</p> <p>Power Give way</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>18</p> <p>Slide 20</p>	<p>Some possible powerboat-sailboat situations. Discuss how the give way vessel is determined from the lights</p>

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 <p>Lights On Tows</p> <p>Note: unlit space of several hundred yards between the lights on the bow and stern</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc. 19</p> <p>Slide 21</p>	<p>Emphasize that there may be many yards between the vessel towing and being towed and the danger of crossing between the two.</p> <p>Point out the two or three white masthead lights, indicating a vessel towing.</p> <p>Many barges trail a floating line behind the barge that can be used to pickup a secondary tow line if the main tow line breaks. Don't pass too close or you can get hung up on the line.</p>
 <p>Night Navigation</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc. 20</p> <p>Slide 22</p>	<p>Ask: students to tell why each of those is stand on or give way.</p> <p>Or use felt board and round pieces of felt</p>
 <p>Night Navigation</p> <ul style="list-style-type: none"> ① Make sure navigation lights work ② Use all around light at anchor ③ Reduce speed ④ Proceed with caution ⑤ Be alert ⑥ Stop if visibility is severely restricted <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc. 21</p> <p>Slide 23</p>	<p>Discuss these night boating safety precautions</p> <p>Dim lights to save night vision</p> <p>Red Flashlight for reading charts etc.</p> <p>Have a Bright Flashlight on board – warn other vessels – Help – see stuff in water – help at dock.</p> <p>Never shine a light into the eyes of another boat – blind the other helm.</p> <p>Rule 36 –may direct the beam of her searchlight in the direction of the danger, in such a way as to not embarrass any vessel.</p>
 <p>Sound Signals</p> <ul style="list-style-type: none"> ① Why have Sound Signals? ② When do you use them? <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc. 22</p> <p>Slide 24</p>	<p>ASK: the question on the slide</p> <p>We use sound signals to alert other boats to:</p> <p>Our intentions</p> <p>Identify our boat type and position in restricted visibility</p> <p>Signal Danger or Confusion.</p> <p>Signal Bridges for Opening.</p>

ABC Chapter 3 Part 1 Tables

 <p>Sound Signals</p> <ul style="list-style-type: none"> ① Short blast: about one second long ② Prolonged blast: 4 to 6 seconds ③ Danger Signal: 5 or more short blasts ④ Blind bend or corner: 1 prolonged blast <p>Let Other Boaters Know Where You Are</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>24</p>	<p>ASK: what is a prolonged and a short blast?</p> <p>Short Blast : About One Second Long</p> <p>Prolonged Blast : 4 to 6 Seconds</p> <p>No “Long Blast”</p>
 <p>Sound Signal (Maneuvering)</p> <ul style="list-style-type: none"> ① Inland Rules <ul style="list-style-type: none"> • Signals indicate intent • Require an answer of agreement ② International Rules <ul style="list-style-type: none"> • Signals indicate execution • No response required unless danger <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>22</p>	<p><i>Classroom aid: use model boats and have students demonstrate proper sound signals</i></p> <p><i>Classroom aid: “Port” has one syllable. One blast means, “I’m passing you on MY PORT side (I’m turning to starboard)”</i></p> <p>International Rules Exception – Narrow Channel INTENT</p> <p>P - P - S – Overtake on your Stbd side</p> <p>P – P – S – S – Overtake on your Port side</p> <p>P – S – P – S – OK</p>
 <p>Sound Signal (Maneuvering - International)</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>29</p>	<p>International – Signal and Go</p> <p>No response required unless Danger</p> <p>S – Altering Course to Starboard</p> <p>S – S – Altering Course to Port</p> <p>S – S – S – Operating propulsion astern (reverse)</p> <p>S – S – S – S – S (or more) - Danger / No</p>

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Sound Signals
(Restricted Visibility)

Restricted visibility is when a boat is not in sight because of fog, rain, snow, etc.

① What will a powerboat underway sound?
② A sailboat?

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24

Slide 28

ASK: questions on slide

Sound Signals in Restricted Visibility
Let Other Boaters Know What and Where you are

Discuss any other sound signals common to your boating area.

Ferry leaving slip – Prolonged –

Seattle - Local Custom. Not required for International Rules.

Ferry leaving slip – Three Short (Operating Astern Propulsion) –

San Juan Islands - Local Custom. Not required for International Rules.

Power Making Way P @ 2 min

Power Not Making Way P – P @ 2 min.

Sailboat P – S – S @ 2 min.

P – S – S @ 2 min. ALSO -

Not Under Command

Restricted in Ability to Maneuver

Constrained by Draft (International only)

Fishing

Fishing at Anchor

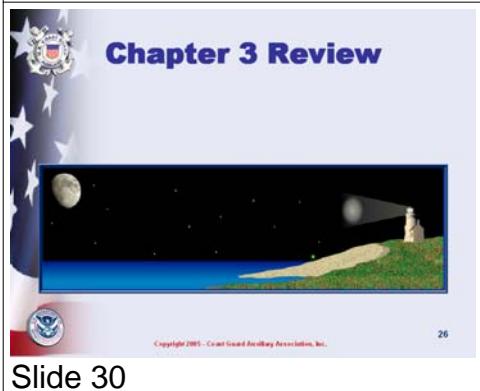
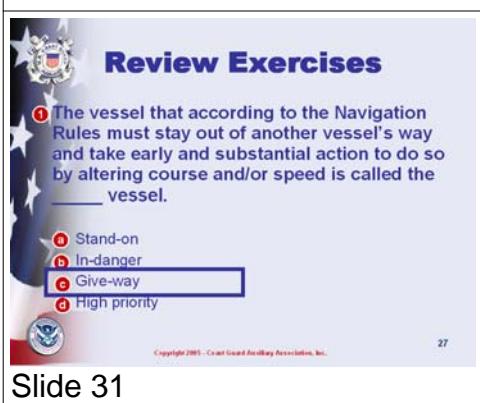
Towing

Pushing

Note the time is “INTERVALS OF NOT MORE THAN”

Vessel being towed is manned P – S – S – S @ 2 min match towing vessel if practicable

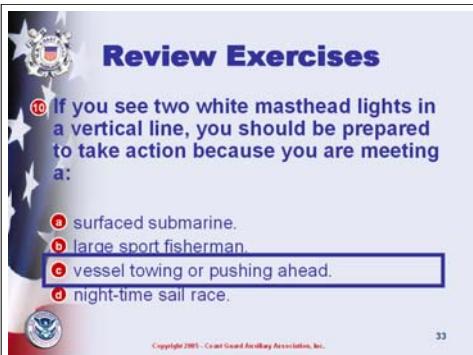
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 <p>Vessel Traffic Service VTS</p> <p>① Traffic Separation Scheme ② "Separation Zone" 1,000 + 500 + 1,000 yards Port to Port 1.4 miles</p> <p>TSS buoy Traffic lane Sep. Zone</p> <p>Slide 29</p>	<p>http://www.uscg.mil/d13/units/vts/RecPamphlet4.htm</p> <p>Rule 10 Hand out the VTS pamphlet from USCG VTS at pier 36</p> <p>Design a slide for rule 9 on the Columbia & other rivers</p> <p>Cross VTS lanes at Right Angle Enter or leave lanes at a small angle</p> <p>10(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.</p> <p>Freighter – 22 / 24 kts - Kingston Turning Buoy to Shilshole = = 10 MINUTES</p>
 <p>Chapter 3 Review</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 30</p>	
 <p>Review Exercises</p> <p>① The vessel that according to the Navigation Rules must stay out of another vessel's way and take early and substantial action to do so by altering course and/or speed is called the _____ vessel.</p> <p><input type="radio"/> a. Stand-on <input type="radio"/> b. In-danger <input checked="" type="radio"/> c. Give-way <input type="radio"/> d. High priority</p> <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>Slide 31</p>	

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 <h3>Review Exercises</h3> <p>② When two powerboats meet bow-to-bow, which boat must stay out of the way of the other?</p> <p><input type="radio"/> a The boat closest to the wind. <input checked="" type="radio"/> b Both boats are give-way vessels. <input type="radio"/> c The boat closest to a northerly heading. <input type="radio"/> d The boat last to sound its maneuvering signal.</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>28</p>	
<p>Slide 32</p>  <h3>Review Exercises</h3> <p>⑥ When operating in a narrow channel, you must keep your vessel:</p> <p><input type="radio"/> a as close to the outer limit of the channel that lies to your starboard side as is safe and practicable. <input checked="" type="radio"/> b as close to the center of the channel as is safe and practicable. <input type="radio"/> c as close to the outer limit of the channel that lies to your port side as is safe and practicable. <input type="radio"/> d with the wind and current on your stern for best control.</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>30</p>	
<p>Slide 33</p>  <h3>Review Exercises</h3> <p>⑥ When operating in a narrow channel, you must keep your vessel:</p> <p><input type="radio"/> a as close to the outer limit of the channel that lies to your starboard side as is safe and practicable. <input checked="" type="radio"/> b as close to the center of the channel as is safe and practicable. <input type="radio"/> c as close to the outer limit of the channel that lies to your port side as is safe and practicable. <input type="radio"/> d with the wind and current on your stern for best control.</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>31</p>	
<p>Slide 34</p>  <h3>Review Exercises</h3> <p>⑥ A sailboat with sails raised and operating using engine power is a:</p> <p><input type="radio"/> a vessel not under command. <input type="radio"/> b vessel restricted in her ability to maneuver. <input type="radio"/> c fast vessel. <input checked="" type="radio"/> d power-driven vessel.</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>32</p>	

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Review Exercises

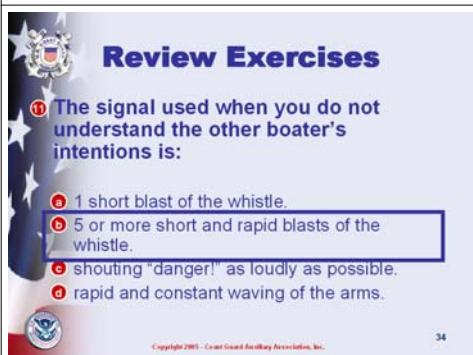
10 If you see two white masthead lights in a vertical line, you should be prepared to take action because you are meeting a:

- a. surfaced submarine.
- b. large sport fisherman.
- c. vessel towing or pushing ahead.
- d. night-time sail race.

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33

Slide 36



Review Exercises

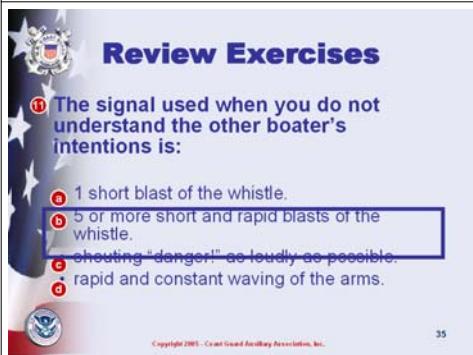
11 The signal used when you do not understand the other boater's intentions is:

- a. 1 short blast of the whistle.
- b. 5 or more short and rapid blasts of the whistle.
- c. shouting "danger!" as loudly as possible.
- d. rapid and constant waving of the arms.

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34

Slide 37



Review Exercises

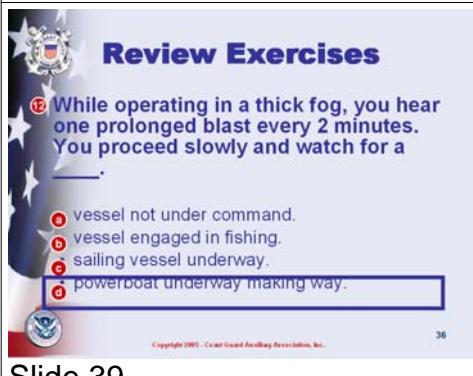
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35

Slide 38



Review Exercises

12 While operating in a thick fog, you hear one prolonged blast every 2 minutes. You proceed slowly and watch for a _____.

- a. vessel not under command.
- b. vessel engaged in fishing.
- c. sailing vessel underway.
- d. powerboat underway making way.

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36

Slide 39

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 <p>End Chapter 3 Rules</p>  <p>Copyright 2005 - Coast Guard Auxiliary Association, Inc.</p> <p>37</p>	<p>Any Questions?</p>
Slide 40	