First Theory
Basic Keelboat & Basic Coastal Cruising Sailing Classes

First Theory
General Maintenance
Colorado Executive Club Bldg.

• Building doors close at 7:00, so if you need to go outside for any reason, be sure to have a buddy to let you back in.
• Washrooms are located just outside the door and on floors 2 & 3.

Company Management

• Owner – Erica Cook & Tibor Van den Wildenbergh
  – 303-697-7433
  – tibor@victoriasailingschool.com
  – info@victoriasailingschool.com

• Corporate Mottos
  – Safety First
  – Sailing is 95% preparation, 5% execution
  – Know your knots
Corporate Policies

• Once you have paid for any level of the Victoria Sailing School’s courses, the theory classes are available online for a year after your registration.

• Practical classes do not expire, if you do not finish all your classes this season, you can take them in following years.

Scheduling A Practical Class

• You should get a userid and password within 2 days of taking this class – if you do not – something is wrong. We probably fat fingered when we entered your email address in the system, please email us explaining that you did not get the userid and password and we will cut and paste the email address and resend it.

• There is a separate handout that explains the process.

• There is a video available online with instructions on how to use the scheduling system. It is available at:
  – http://vimeo.com/user9277707/review/72001891/1067455dad
Practical Class Scheduling – See Separate Instruction Sheet

• **Be sure to select the proper location & time.**
• If you have a spam blocker on your system please add the Victoria Sailing School to your trusted sites.
  • If your spam system locks out the Victoria Sailing School emails, then you will not get the reminder emails.

• **What is in the separate instruction sheet:**
  • How to use the reservation system.
  • Cancellation policy.
  • Where to meet.
  • What to bring.
  
  • **If fewer than 2 people have registered for a class, we may cancel the class.**

Our Cancellation Policy

• Please cancel – we only take 4 students per boat – if you do not cancel, you are taking someone's spot.
  – Outside of 12 hours – no problem – no charge.
  – Within 12 hours - $25 charge
  – Not cancelling - $45 charge.

• If there is bad weather, we cancel all classes at the dock.
Advantages Of ASA certification

- ASA certification never expires. (Membership does)
- Get a log book to track your sailing experience.
- Some charter companies offer an ASA discount.
- Chartering a boat.
  - Depends on the Charter Company if you need the ASA certification or not.
  - We will teach you the skills needed to pass a checkout.
  - For European charters, you need the ASA (104) Bareboat Chartering certification.
Our Beginning Sailing Classes
(ASA 103 required for North American Bareboat Chartering)
Costs are listed under the "Store / Sailing Instruction" tab.

<table>
<thead>
<tr>
<th>How Taught</th>
<th>Basic Keelboat (ASA 101)</th>
<th>Basic Coastal Cruising (ASA 103)</th>
<th>Combined Basic Keelboat (ASA 101) &amp; Basic Coastal Cruising (ASA 103)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Theory classes held at Colo. Executive Club Bldg) Practical classes held at either Cherry Creek, Cherry Creek or Lake Carter)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theory # 1</td>
<td>In classroom or optionally available online</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Theory # 2 - Know Your Knots</td>
<td>In classroom</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Theory # 3</td>
<td>Only available online</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Theory # 4</td>
<td>Only available online</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical #1</td>
<td>Aboard one of our J/22's</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical #2</td>
<td>Aboard one of our J/22's</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical #3</td>
<td>Aboard one of our J/22's</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical #4</td>
<td>Aboard one of our J/22's</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical #5</td>
<td>Aboard one of our J/22's</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical #6</td>
<td>Aboard one of our J/22's</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical #7</td>
<td>Aboard our J/30</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**The Checklists (In Your Binder)**

- Bring the checklist to all practical classes.
- Insist the instructor fill them out.

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Our ASA Certification Policy

ASA charges a one time $39.00 registration fee for all students wishing to obtain the ASA Basic Keelboat Sailing certification. The Basic Keelboat Certification is a prerequisite for all other sailing certifications.

This fee also covers a year of membership dues to the ASA.

If you wish the ASA certification, we will gladly administer the exams, submit the paperwork to the ASA and supply you with a logbook. The cost to you will be the same as the ASA charges us (purchasing the items in bulk). These costs are:

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA Certification</td>
<td>$39.00</td>
</tr>
<tr>
<td>Basic Keelboat Sailing exam</td>
<td>$12.50</td>
</tr>
<tr>
<td>Log Book</td>
<td>$8.00</td>
</tr>
<tr>
<td><strong>Total for Basic Keelboat</strong></td>
<td><strong>$59.50</strong></td>
</tr>
<tr>
<td>Basic Coastal Cruising exam</td>
<td>$12.50</td>
</tr>
<tr>
<td>Total for Basic Keelboat</td>
<td>$72.00</td>
</tr>
</tbody>
</table>

All other exams (ASA 104, ASA 105, etc.) are also $12.50 per exam.

Writing the ASA Exam

- You can write the ASA exams any night we are having a regular theory session.
  - Please arrive by 6:45 so that you are not disturbing a class in session.
  - We will request certification from the ASA – can take several weeks to receive logbook stickers from them. If necessary, we can provide you with your ASA #.
  - Bring:
    - Writing instrument.
    - Your check off sheet.
    - A check (payable to VSS) for ASA costs.

- There will be one final exam night on November 13th, 2019
**First Theory**
Required For Both the Basic Keelboat (ASA 101) & Basic Coastal Cruising ASA (103)  
- Monday, March 4
  Also Available Online

**Know Your Knots**
Required For Both the Basic Keelboat (ASA 101) & Basic Coastal Cruising ASA (103)  
- Friday, March 8

**Second Theory**
Required For Basic Coastal Cruising (ASA 103) Only  
- Only Available Online

**Third Theory**
Required For Basic Coastal Cruising (ASA 103) Only  
- Only Available Online

---

**First Theory**

<table>
<thead>
<tr>
<th>Monday, March 4</th>
<th>Friday, March 8</th>
<th>Only Available Online</th>
<th>Only Available Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also Available Online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Know Your Knots**

<table>
<thead>
<tr>
<th>Tuesday, March 19</th>
<th>Friday, March 22</th>
<th>Only Available Online</th>
<th>Only Available Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also Available Online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Second Theory**

<table>
<thead>
<tr>
<th>Wednesday, April 3</th>
<th>Friday, April 5</th>
<th>Only Available Online</th>
<th>Only Available Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also Available Online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Third Theory**

<table>
<thead>
<tr>
<th>Thursday, April 18</th>
<th>Friday, April 19</th>
<th>Only Available Online</th>
<th>Only Available Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also Available Online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**First Theory**

<table>
<thead>
<tr>
<th>Monday, April 29</th>
<th>Friday, May 3</th>
<th>Only Available Online</th>
<th>Only Available Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also Available Online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Know Your Knots**

<table>
<thead>
<tr>
<th>Tuesday, May 14</th>
<th>Friday, May 17</th>
<th>Only Available Online</th>
<th>Only Available Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also Available Online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Second Theory**

<table>
<thead>
<tr>
<th>Wednesday, May 29</th>
<th>Friday, May 31</th>
<th>Only Available Online</th>
<th>Only Available Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also Available Online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Life Jacket Choices

<table>
<thead>
<tr>
<th></th>
<th>Coastal Manual</th>
<th>Offshore Automatic</th>
<th>Deckvest 5D</th>
<th>Sailing Gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail $</td>
<td>$109.99</td>
<td>$219.99</td>
<td>$369.00</td>
<td>$25-30</td>
</tr>
<tr>
<td>VSS Regular $</td>
<td>$61.50</td>
<td>$179.99</td>
<td>$299.99</td>
<td>$15.00</td>
</tr>
<tr>
<td>With Course Upgrade $</td>
<td>Included</td>
<td>$90.00</td>
<td>$200.00</td>
<td></td>
</tr>
<tr>
<td>Safety harness</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Triggering Mechanism</td>
<td>Manual</td>
<td>Automatic</td>
<td>Hydrostatic</td>
<td></td>
</tr>
</tbody>
</table>

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---

### TSA Policy On Gas Cartridges


<table>
<thead>
<tr>
<th>Safety Matches</th>
<th>✅</th>
<th>✕</th>
</tr>
</thead>
<tbody>
<tr>
<td>One book of safety (non-strike anywhere) matches are permitted as carry-on items, but all matches are prohibited in checked baggage.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Small Compressed Gas Cartridges</th>
<th>✅</th>
<th>✅</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to two in life vests and two spares. The spares must accompany the personal flotation device and presented as one unit.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spillable Batteries</th>
<th>✕</th>
<th>✕</th>
</tr>
</thead>
<tbody>
<tr>
<td>Except those in wheelchairs.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Terminology

Parts of the Boat

• Page 2 of the “Sailing Made Easy” booklet has more definitions.
• Try to learn as much of this as you can prior to attending your practical classes.
Parts of a Sail

- **Luff**
- **Mast**
- **Foot**
- **Clew**
- **Tack**

Depending on the attachment of the forestay to the mast, the rig is either a:
- “Partial Rig” or a “Masthead Rig”

A Headsail can either be a Jib or a Genoa.

- **Battens**
- **Full Length Batten** (not standard)

Mainsail attaches to the mast with either:
- Sail slides – fit around a track attached to the mast.
- Sail Slugs – fit inside the mast.
- Bolt Rope – sewn into the luff of the sail.

Jib attaches to the forestay with hanks;
- Piston hanks, snap hanks or a bolt rope etc.

If the headsail is larger than the foretriangle (forestay to mast to deck);
- It is a “Genoa” otherwise it is a “Jib” – 90% jib, 130% Genoa.

Halyards and Sheets

- **Main halyard**
- **Jib halyard**
- **Spinnaker halyard**

- **Main sheet**
- **Jib sheets**
Running and Standing Rigging

• Halyards and sheets are running rigging.
  – Used to raise (halyards) and trim (sheets) sails.
• Shrouds and stays are standing rigging.
  – Hold the mast up.

• There can be subtle differences:
  – Something needs to hold the boom up when the mainsail is not up.
    • A boomlift is attached between the backstay and the boom (is not adjustable, therefore is standing rigging).
    • A toppinglift is typically a halyard similar to the main halyard that holds the boom up (is adjustable, therefore is running rigging).

Forward / Ahead – Aft / Astern

• Difference between “Forward” (on the boat) and “Ahead” (in front of the boat).

• Difference between “Aft” (on the boat) and “Astern” (behind the boat).
Planing Hulls

- Very Fast
- Points higher in the wind
- Typically a centerboard or dagger style keel
- Harder to Steer
- Lots of motion
- Very little space below decks

Displacement Hulls

- The cruisers choice.
- Can use self steering gear.
- Room below decks.
- Stable.
- Typically a full keel.
- Slow.
- Will get caught in more weather!
True Wind vs. Apparent Wind

• True wind is the direction and speed of the wind when you are standing still.

• Apparent wind is the direction and speed of the wind when you are underway.
  – Apparent wind is forward of the true wind.
  – Think of yourself riding a bike, the wind is always in front of you when riding at a high speed.
A Dinghy

• Does not have a weighted keel, uses a centerboard.

• The crews weight is used to keep the boat upright.

• The further out the crew weight can get, the more sail power you can balance.

• If the crew messes up, the boat will tip over.

Multihulls

• Do not have a weighted keel, uses the width of the boat for stability.

• The volume of the amas (side hulls) also contribute to the stability.

• It is possible for a very large wave (open ocean) to turn the boat upside down and once there will remain upside down. Most cruising multihulls have escape hatches in the bottom of the hulls.
Keelboats

• Has a weighted keel, the heavier the keel and the deeper the keel the greater the stability.

• As the boat heels, it takes significantly more wind to make it go over just a little further.

• It is possible for a very large wave (open ocean) to turn the boat upside down, but once there will return right side up again (think of the old popeye weighted dolls).

Why Sails Work
The Square Rigger

• How man has sailed for centuries.

• Can sail upwind a little – to about 70°, but nowhere near the 40° typical of a current sailboat.

• Had to follow “Trade Routes” and “Trade Winds”.

The Modern Sailing Ship

• Started in the late 1800’s, early 1900’s

• Can sail upwind to about 40° (common) – America’s Cup – approx. 25°.
The Speed of Particles

Think of the Wind as Particles

As a parade formation wheels around a corner, in order for the formation to stay together, the marchers on the outside have to increase their speed and the spacing between the lines increases on the outside.

Fewer Particles in an area
Less Pressure

More Particles in an area
Higher Pressure

Creation of the Low Pressure

Examples: Airplane Wing, Umbrella
How To Use Vectors
A Vector Is A Graphical Representation Of A Force

If you push an object from the left to the right, you would draw that force with an arrow pointed from left to right. If you only moved the object half the distance, the arrow would be half the length.

If you raised the object from up, you would draw that force with an arrow pointed vertically.

To determine what would happen to the object if you applied both forces at the same time, you join the two arrows together head to tail, then join the origin to the finishing point and that resulting vector show what would happen to the object.
Put a Boat Under the Sail – Port Tack

Wind Direction

Resistence of Keel

Direction of Lift (Pull)

Resultant direction of the boat

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Put a Boat Under the Sail – Starboard Tack

Is The Boat Sailing Upwind ??
Three Positions of the Sail Relative to the Wind

- **Luffing**
  - Wind Direction
  - The leading edge of the sail shaking

- **Proper**
  - The two telltails – both streaming smoothly back

- **Stalled**
  - The outside telltail flipping around

Use the Telltails

- **Luffing**
  - The leading edge of the sail shaking

- **Proper**
  - The two telltails – both streaming smoothly back

- **Stalled**
  - The outside telltail flipping around
The Angle of the Sail to the Wind Stays the Same

Beating
Sailing As Close as Possible to the Wind

The Angle of the Sail to the Wind Stays the Same

Beam Reach
Sailing Across the Wind
The Angle of the Sail to the Wind Stays the Same

- The angle of the boat to the land changes
- The angle of the boat to the wind changes
- The angle of the sail to the boat changes

- But, the angle of the Sail To The Wind stays the same all the time.
Tacks, Points Of Sail & Sailing Maneuvers

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The 2 Tacks

The Port side of the boat - is the “Left” side (Facing the Bow)
The Starboard side of the boat - is the “Right” side (Facing the Bow)
The Tack you are on is defined by the “Windward” Side of the Boat

Port Tack
Wind Coming Over the Port Side of the Boat

Starboard Tack
Wind Coming Over the Starboard Side of the Boat

Victoria Sailing School © 2019
The 2 Tacks
When the Boat is Running (Wing on Wing)

Wind Direction

Port Tack
The main is on the Starboard side
Therefore a Port Tack.

Wind Direction

Starboard Tack
The main is on the Port side
therefore a Starboard Tack.

The Windward Side Of The Boat Is Defined As The Side Opposite The Mainsail

The 5 Points of Sail
Relative to the Wind

“Beating” vs “Close Hauled”
Used interchangeably (in the US).
Beating is the boat’s position relative to the wind.
Close hauled is the position of the sails relative to the boat.
The Maneuvers (1)
Relative to the Wind

Heading Up
Taking the bow of the boat Closer to the eye of the wind.

Bearing Away
Taking the bow of the boat further from the eye of the wind.

Tack Does Not Change

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The Maneuvers (2)
Relative to the Wind

Tacking
Taking the bow of the boat through the eye of the wind.

Gybing
Taking the stern of the boat through the eye of the wind.

Tack Does Change

Victoria Sailing School © 2019
Boat #1  Point Of Sail: __________________________
What tack Is The Boat On: _____________________

Boat #2  Point Of Sail: __________________________
What tack Is The Boat On: _____________________
What was the maneuver between Boat #1 & boat #2: ________________________________

Boat #3  Point Of Sail: __________________________
What tack Is The Boat On: _____________________
What was the maneuver between Boat #2 & boat #3: ________________________________

Boat #4  Point Of Sail: __________________________
What tack Is The Boat On: _____________________
What was the maneuver between Boat #3 & boat #4: ________________________________
Boat #5  Point Of Sail:  
What tack Is The Boat On:  
What was the maneuver between Boat #4 & boat #5:  

Boat #6  Point Of Sail:  
What tack Is The Boat On:  
What was the maneuver between Boat #5 & boat #6:  

Boat #7  Point Of Sail:  
What tack Is The Boat On:  
What was the maneuver between Boat #6 & boat #7:  

Boat #8  Point Of Sail:  
What tack Is The Boat On:  
What was the maneuver between Boat #7 & boat #8:  

Boat #9  Point Of Sail:  
What tack Is The Boat On:  
What was the maneuver between Boat #8 & boat #9:  

Victoria Sailing School © 2019
Boat #10 Point Of Sail: ____________________________
What tack Is The Boat On: ________________________
What was the maneuver between Boat #9 & boat #10:

Boat #11 Point Of Sail: ____________________________
What tack Is The Boat On: ________________________
What was the maneuver between Boat #10 & boat #11:

Boat #12 Point Of Sail: ____________________________
What tack Is The Boat On: ________________________
What was the maneuver between Boat #11 & boat #12:

Boat #13 Point Of Sail: ____________________________
What tack Is The Boat On: ________________________
What was the maneuver between Boat #12 & boat #13:

Boat #14 Point Of Sail: ____________________________
What tack Is The Boat On: ________________________
What was the maneuver between Boat #13 & boat #14:

Boat #15 Point Of Sail: ____________________________
What tack Is The Boat On: ________________________
What was the maneuver between Boat #14 & boat #15:

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Sailing By The Lee
The Wind Is Coming Over The Same Side Of The Boat That The Mainsail Is On

Port Tack
The main is on the Starboard side, as is the wind.

Starboard Tack
The main is on the Port side, as is the wind.

Extreme Danger Of An Accidental Gybe!!
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Weather vs. Lee Helm

• Weather Helm.
  – The boat has a tendency to round up into the wind – if the helmsperson lets go of the helm, the boat will turn into the wind.

• Lee Helm.
  – The boat has a tendency to bear away – if the helmsperson lets go of the helm, the boat will turn away from the wind.

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Man Overboard Maneuver (Figure 8 Method)

- Call man overboard
- Appoint a lookout
- Throw a floatable

- Bear away to a beam reach (1)
- Tack (2)
- Return to the man on a beam reach (3)
- Go into the wind or heave to retrieve the man overboard. (4)
Required Items

These Items Vary Depending On The Size Of The Boat And The State The Boat Is Being Used In

**Required**
- One PFD per person.
- Throwable.
- Type B Fire Extinguisher (if combustible fuel) & ventilation for an inboard gas engine.
- Sound making device (every PFD has a whistle – use it).
- Annual sticker.
- Registration papers.

**Optional**
- Paddle (centerboard on windsurfer) or anchor (dependant on size of boat).
- Flares are illegal in Inland States (but required in all waterways wider than 2 miles).
- Bucket (no bilge pump in the world – like a scared man with a bucket).

Alcohol and Boating

- Most states have a “Boating While Impaired” for anyone operating a vessel > .08% (Federal Limit)
  - Alcohol consumption increases the risk of damage, injury and boating fatalities.
  - 1st time offense
    - **Imprisonment** for 5 days to 1 year
    - **Loss of privilege** to operate a vessel for 3 months.
    - **Court-imposed fines** between $200 to $1,000.
    - **Court-ordered community service** up to 96 hours.
Rule #5 – Lookout Rule

• The “lookout” 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.
Disposing of Garbage

- It is illegal to dump any garbage in any U.S. lake, river or harbor.
- 3 to 12 NM – less than 1” can be disposed of.
- After 12 NM, there are no restrictions to size.
- No plastic ever, of any size.

Float Plan

- A plan of where and when you plan to go.
- Should be filed with a friend or family member.
- Don’t forget to call to tell them you arrived.
In Case of Accident (Federal Requirements)

- Take down all information.
- Take down witnesses information

- If accident involves death or missing person or medical evacuation, you need to report the incident to the nearest state authorities ASAP – must be within 48 hours.
- If accident involves damage more than $2,000, a formal report must be made within 10 days (to coast guard or state police).

Good Samaritan Rule of the Federal Boat Safety Act of 1971

- Protects mariners from liability when rendering assistance to other boats needing help.
- You are required to help, as long as you are not endangering your vessel or crew.
Small Craft Advisory

• No standard definition – specific to geographic area.
• “A Small Craft Advisory may be issued when sea or lake ice exists that could be hazardous to small boats”.
• Southern (GA..TX and Caribbean) - Sustained winds of 20 to 33 knots, and/or forecast seas 7 feet or greater that are expected for more than 2 hours.
• Typically posted at harbor entrances, marinas and yacht clubs

Federal Requirements & Procedures

Required Lights & Sound Signals
(see Federal Guide)
Sound Signals

• Dangerous Situation
  – If a dangerous situation exists – sound 5 short blasts.

• Limited Visibility (under Sail)
  – One long (4 to 6 s), two short (1 s) every 2 minutes.

• Limited Visibility (under Power)
  – One long (4 to 6 s) every 2 minutes.

Required Lights

Federal Regulations

• Requirements vary relative to the vessels size. There are three sections;
  – Vessels less than 7 meters (just under 23 ft.) in length.
  – Vessels between 7 meters and 50 (164 ft.) meters in length.
  – Vessels greater than 50 meters in length.

• Must show lights from sunset to sunrise.

• An vessel with engine on (not necessarily in gear) is considered a power boat.
Required Lights
Federal Regulations
All vessels < 7 meters in length
or any vessel less than 50 meters at anchor

Note: The white light covers an arc of 360 degrees.

Note: The red and green lights cover an arc of 112.5 degrees each.

Note: The stern light covers an arc of 135 degrees.
On sailboats, this forward facing light is called the “Steaming Light”.

**Required Lights**

**Federal Regulations**

**Powerboats**

A vessel greater than 50 meters in length or longer must have 2 forward facing (225 degrees) white lights with the forward light being lower than the aft light.
A tug with a tow less than 200 meters in length (or pushing) must have 2 forward facing (225 degrees) white lights and an amber stern light. 200 meters measured from the end of tug to end of tow.
A tug with a tow less than 200 meters in length (or pushing) must have 2 forward facing (225 degrees) white lights and an amber stern light. 200 meters measured from the end of tug to end of tow.

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What is the type of Boat and What Direction is the Boat Direction

Answers At End Of Slides

G – Green, R – Red, W – White, A – Amber

Question # 1  Question # 2  Question # 3  Question # 4  Question # 5

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What is the type of Boat and What Direction is the Boat Direction

Answers At End Of Slides

G – Green, R – Red, W – White, A – Amber

Question # 6

Question # 7

Question # 8

Question # 9

Question # 10

Navigational Lights
Navigational Buoys for The America’s

- In the Americas we follow the Red, Right, Returning rule.
  - When returning to a harbor keep the red lights to the right of the boat.
  - Thus when departing to open water, the green buoys would be to the right.
- Mid Channel Buoy
  - Also known as a safe water buoy

Shipping Lanes

“Highways” for very large ships to follow.

Marked on charts. All the ships will be following one route.

Cross as close to 90 degrees as possible.
Bifurcation Buoys

- Separates the channel into a primary and secondary channel.
  - Is colored both red and green – horizontal stripes.
  - The primary channel is typically deeper, heavier travelled and with fewer navigational hazards.

Regulatory Markers

http://www.uscgboating.org/assets/1/workflow_staging/Publications/486.PDF
Federal Requirements & Procedures

Rules of the Road

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Rules of the Road

Federal Regulations

• Vessels restricted in their ability to maneuver have the most right of way (a tanker in a narrow channel or a fishing vessel engaged in fishing).

• Sailing vessels have the right of way over Power Vessels (if engine turned on – in gear or not – is a power vessel), unless overtaking.

• Vessels with the Right of Way ("Stand On") must maintain course and speed.

• Vessels without the Right of Way ("Give Way") must make distinct movements.
Rules of the Road
Federal Regulations
Three General Categories

• Sail vs. Sail.
  • Starboard Tack has Right of Way over all vessels on Port Tack.
  • Only if both vessels on the same tack, leeward vessel has right of way over windward vessels.

• Power vs. Power (Same as a car)
  • Vessel being overtaken has the right of way.
  • Vessel to the right has the right of way (Privileged vessel sees green).
  • If head on, both vessels move to right.

• Power vs. Sail.
  • In general, sailing vessels have the right of way over power vessels, unless the power vessel is being overtaken.

• Exceptions.
  • Any vessel restricted in its ability to maneuver.

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Rules of the Road
Which Vessel has the Right of Way and What Course Should They Take

Wind Direction

Sailboat A

Sailboat B

Power Boat B

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Rules of the Road
Which Vessel has the Right of Way and What Course Should They Take

Securing the Boat

- Fenders should be placed at the center of boat, at dock level.
- Breast lines hold boat close to the dock.
- Spring lines hold the boat from moving forward or back.
  - Take their name from the direction they go from the boat, thus a forward spring line goes from the stern forward and an aft spring line goes from the bow aft.
Recommended Web Sites

  – Shows the knots the same way we teach them.
  – Thank you - Mark Rosenstein for the web site.

• Remember – the key to tying knots
  – Start the same way every time.
  – Knot class this Friday evening.

---

Required Knots (Basic Keelboat)

• Bowline – temporary loop.
  – Rabbit comes out of the hole, around the tree and back down the hole.

• Figure Eight – stopper knot.
  – Used at the end of sheets so they will not strip through the blocks.

• Reef Knot (square knot)
  – Used to tie two lines of similar size and characteristics.

• Cleat Hitch
  – Used to secure a line to a dock or boat cleat(ASA).
Know Your Knots

• Clove Hitch
  – Temporarily secure a boat to a piling (ASA).
• Round Turn & Two Half Hitches
  – A secure knot that can be used to tie a boat up to a piling (ASA).
• Sheet Bend
  – Connect two lines of dissimilar size of characteristics.
• Rolling Hitch
  – Used to reduce load on a line or anchor chain
## Answers To Questions

<table>
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<tr>
<th></th>
<th>Boat #1</th>
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<th>Boat #3</th>
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<td>What tack Is The Boat On:</td>
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<td>Starboard</td>
<td>Port</td>
<td>Port</td>
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<td>What was the maneuver between Boat # 1 &amp; boat #2:</td>
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<td>What was the maneuver between Boat # 3 &amp; boat #4:</td>
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</table>
Boat #5 Point Of Sail: Close Reach
What tack Is The Boat On: Port
What was the maneuver between Boat #4 & boat #5: Heading Up

Boat #6 Point Of Sail: Broad Reach
What tack Is The Boat On: Port
What was the maneuver between Boat #5 & boat #6: Bearing Away

Boat #7 Point Of Sail: Beam Reach
What tack Is The Boat On: Port
What was the maneuver between Boat #6 & boat #7: Heading Up

Boat #8 Point Of Sail: Close Reach
What tack Is The Boat On: Port
What was the maneuver between Boat #7 & boat #8: Heading Up

Boat #9 Point Of Sail: Beating (Close Hauled)
What tack Is The Boat On: Port
What was the maneuver between Boat #8 & boat #9: Heading Up
**Boat #10** Point Of Sail: Beating (Close Hauled)

What tack Is The Boat On: Starboard

What was the maneuver between Boat #9 & boat #10: Tacking

**Boat #11** Point Of Sail: Beating (Close Hauled)

What tack Is The Boat On: Port

What was the maneuver between Boat #10 & boat #11: Tacking

**Boat #12** Point Of Sail: Beating (Close Hauled)

What tack Is The Boat On: Starboard

What was the maneuver between Boat #11 & boat #12: Tacking

**Boat #13** Point Of Sail: Broad Reach

What tack Is The Boat On: Starboard

What was the maneuver between Boat #12 & boat #13: Bearing Away

**Boat #14** Point Of Sail: Close Reach

What tack Is The Boat On: Starboard

What was the maneuver between Boat #13 & boat #14: Heading Up

**Boat #15** Point Of Sail: Beam Reach

What tack Is The Boat On: Starboard

What was the maneuver between Boat #14 & boat #15: Bearing Away
Boat #16 Point Of Sail: Broad Reach
What tack Is The Boat On: Starboard
What was the maneuver between Boat #15 & boat #16: Bearing Away

Boat #17 Point Of Sail: Running
What tack Is The Boat On: Starboard
What was the maneuver between Boat #16 & boat #17: Bearing Away

Boat #18 Point Of Sail: Running
What tack Is The Boat On: Port
What was the maneuver between Boat #17 & boat #18: Gybing

Boat #19 Point Of Sail: Broad Reach
What tack Is The Boat On: Port
What was the maneuver between Boat #18 & boat #19: Heading Up

Boat #20 Point Of Sail: Broad reach
What tack Is The Boat On: Starboard
What was the maneuver between Boat #19 & boat #20: Gybe

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What is the type of Boat and What Direction is the Boat Direction


Question # 1
A sailboat, under sail, going from the left to the right.

Question # 2
Multiple choices: Could be the stern of any vessel except a tug with a tow.
A vessel at anchor.
A vessel less than 7 meters in length.

Question # 3
A sailboat, under sail, coming directly towards you.

Question # 4
A tug with a tow.
There should be lights visible from the vessel being towed, but these are often not working.

Question # 5
Multiple choices, but in all cases the vessel is coming directly towards you:
A vessel > 50 meters in length.
A tug with a tow < 200 meters in length.
A vessel less than 50 meters in length, showing the optional additional white light.

Question # 6
Multiple choices, but in all cases the vessel is going from left to right:
A vessel > 50 meters in length.
A vessel less than 50 meters in length, showing the optional additional white light.

Question # 7
A vessel > 50 meters in length, with a tow greater than 200 meters in length, coming directly towards you.

Question # 8
A vessel > 50 meters in length, with a tow less than 200 meters in length, going from left to right.

Question # 9
A power boat, coming directly towards you.
Can not be a vessel greater than 50 meters in length (would have a second forward facing white light).

Question # 10
A power boat, going from right to left.
Can not be a vessel greater than 50 meters in length (would have a second forward facing white light).
Rules of the Road
Which Vessel has the Right of Way and What Course Should They Take

Sailboat B is on a Starboard Tack, therefore has the right of way. Needs to maintain course and speed (course #1).

Sailboat A is on a Port Tack, therefore does not have the right of way. Needs to follow course #3.

Wind Has Changed Direction

Sailboat B is on a Port Tack, but is to leeward (same tack rule), therefore has the right of way. Needs to maintain course and speed (course #2).

Sailboat A is on a Port Tack, but is to windward, therefore does not have the right of way. Needs to follow course #3.
Rules of the Road
Which Vessel has the Right of Way and What Course Should They Take

Sailboat A is under sail, therefore has the right of way. Needs to maintain course and speed (course #1).

Powerboat B is under power, therefore does not have the right of way. Needs to follow course #5.

Rules of the Road
Which Vessel has the Right of Way and What Course Should They Take

Powerboat B is to the right, therefore has the right of way. Needs to maintain course and speed (course #2).

Powerboat A is to the left, therefore does not have the right of way. Needs to follow course #3.