



# Introduction to Racing

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## Performance Handicap Rating Factor & Basic Racing Rules of Sailing

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# PHRF Defined

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Terry Schell's regression formula:

$$R' = 610 - \frac{8.36SA}{\sqrt[3]{Disp}} + \frac{SA^2}{19608} - \frac{55P}{(J + E)} - 30.8\sqrt{LWL} - \frac{602Draft^2}{SA}$$

$$\text{Where: } SA = \frac{I * J + P * E}{2}$$

*Translation:*

*Big, fast boats get low ratings.*

*Small, slow boats get high ratings.*

*Final rating is subjective and based on local conditions.*



# PHRF Rating

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- Base rating determined by boat design (SA, LWL, Disp., etc.)
- Options (sails, keel, prop, etc.)
- Local Conditions
- Not condition of hull & sails
- Not performance of skipper & crew



# PHRF-NE Handicap Application

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- [www.gmora.org](http://www.gmora.org)
- Dr. Charles E. Hawley  
Handicapper, Gulf of Maine Fleet  
P.O. Box 4  
Southport, ME 04576-0004.
- [gomphrf@gwi.net](mailto:gomphrf@gwi.net)

# How does it work?

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## **Time on Distance**

Race distance = 5 nm

Boat A Rating = 72 (seconds/nm)

Handicap =  $72 * 5$   
= -360 seconds

Boat B Rating = 90 (seconds/nm)

Handicap =  $90 * 5$   
= -450 seconds

# Corrected Time

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Boat	Rating	Elapsed Time	Handicap	Corrected Time
Boat A	72	1:07:23	-0:06:00	1:01:23
Boat B	90	1:08:32	-0:07:30	1:01:02

Boat B finishes second but wins on corrected time





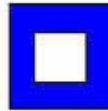

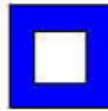







# Conduct of a Race – The Start

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- Each class has a five minute sequence.
- Class flag determines who will start.
- Flags take precedent over sounds.
- Preparatory flag determines penalty for premature start.

# The Start

	Time until Start	Sound Signal	Flag	Action
Warning	5 Minutes	Gun	 OR  OR 	 HOIST
Preparatory	4 Minutes	Gun		 HOIST
1 Minute	1 Minute	Long Horn		 DROP
Start	0 Minutes	Gun	 OR  OR 	 DROP

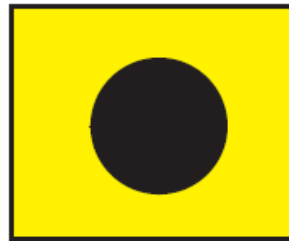
# Starting Penalties

## Preparatory Signals



↑ • ↓ —

P Preparatory signal



↑ • ↓ —

I Rule 30.1 is in effect.



↑ • ↓ —

Z Rule 30.2 is in effect.



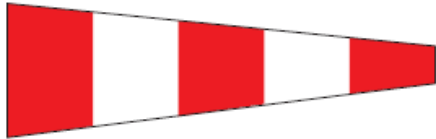
↑ • ↓ —

Black flag. Rule 30.3 is in effect.

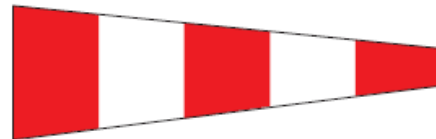
- In effect at One Minute signal – Long Horn
- 30.1 Round the Ends
- 30.2 Scoring Penalty (20%)
- 30.3 Disqualification
- Can be announced at time of infraction

# Conduct of a Race - Signals

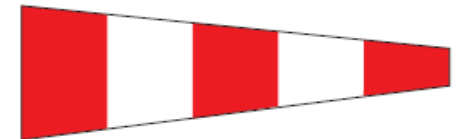
## Postponement Signals



AP Races not started are *postponed*. The warning signal will be made 1 minute after removal unless at that time the race is *postponed* again or *abandoned*.



AP over H Races not started are *postponed*. Further signals ashore.

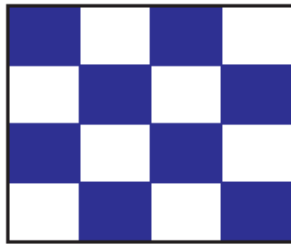


AP over A Races not started are *postponed*. No more racing today.

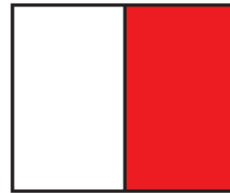
- A postponement is a delay to the start of a race.
- This is usually due to lack of wind or changing conditions.
- Postponements do not effect races which have already started.

# Abandonment

## Abandonment Signals



**N** All races that have started are *abandoned*. Return to the starting area. The warning signal will be made 1 minute after removal unless at that time the race is *abandoned* again or *postponed*.



**N over H** All races are *abandoned*. Further signals ashore.



**N over A** All races are *abandoned*. No more racing today.

- Abandonment is only signaled after the start.
- The conditions will not allow completion of the race.

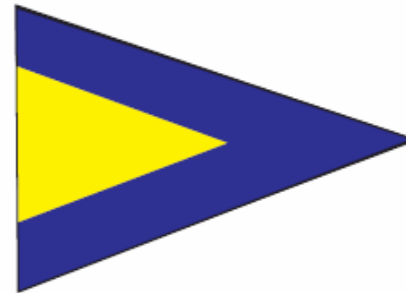
# Recalls

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## Recall Signals



X Individual recall.



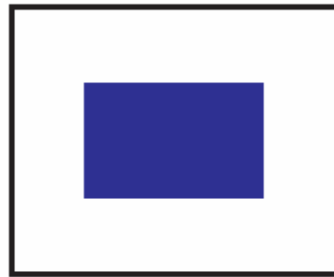
First Substitute General recall. The warning signal will be made 1 minute after removal.

- Signaled after the start.
- To re-start the entire boat must return to the pre-start side of the line.
- This can be done by sailing across the line or around either end.

# Change of Course

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## Course Change Signals



**S** The course has been shortened.  
Rule 32.2 is in effect.



**C** The position of the next *mark* has  
been changed.

- The course must be shortened at a turning mark.
- What do I do?
- Sail the course...



# Notice of Race - NOR

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- An invitation from a club, class, ect.
- Who is invited (open, one-design, qualifiers, etc.)
- When & Where
- What rules will be used
- How to register
- Who to contact



# Sailing Instructions – S.I.s

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- Schedule (start, limits)
- Communications (notices, radio)
- Course Description
- Scoring
- Rules (penalties, starting)



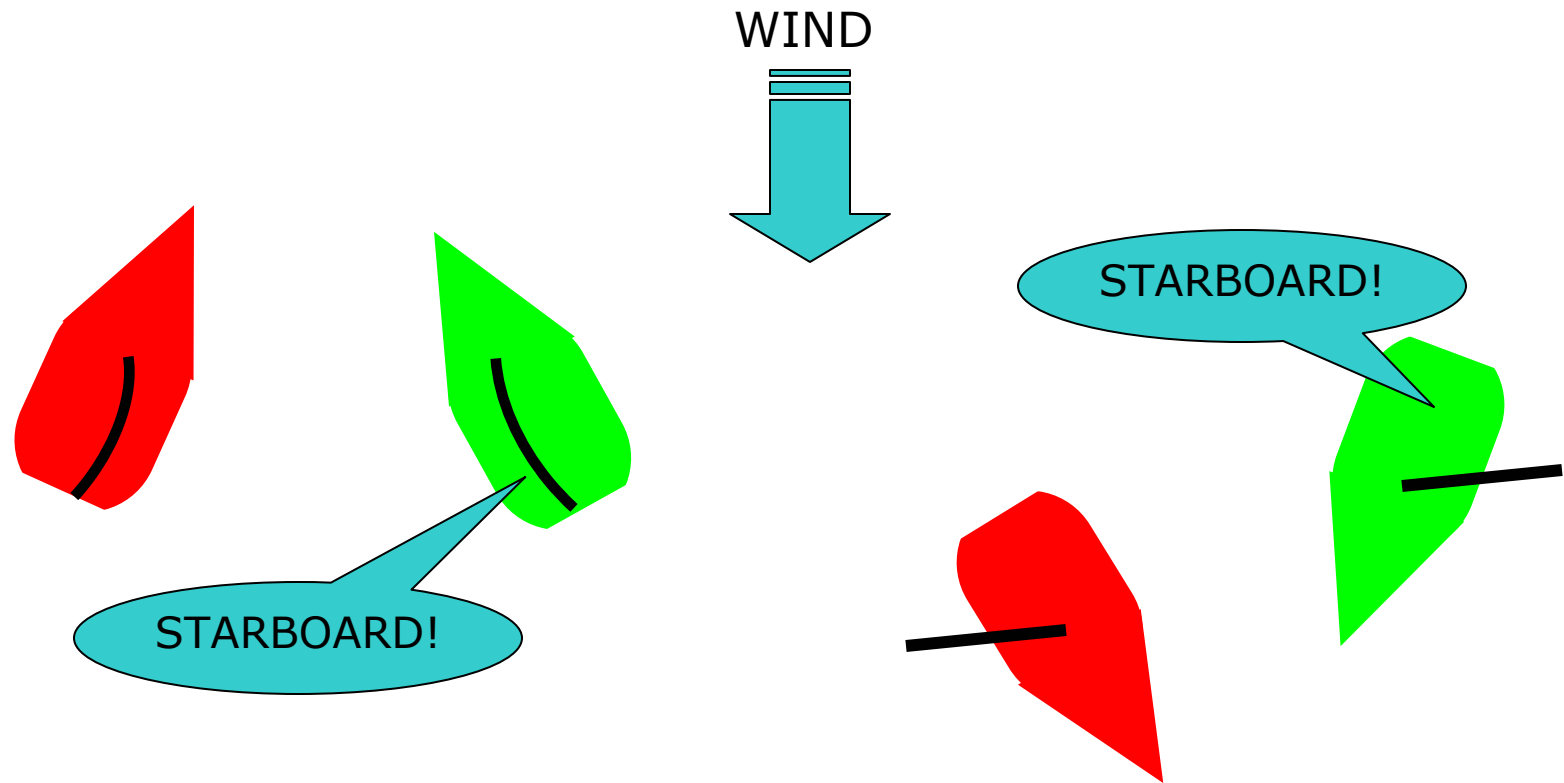
## When Boats Meet - Communication

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- It is every competitors responsibility to avoid contact with another boat.
- You should make your intentions clear (“I am going to tack”, “I have room at the mark”).
- If you are in doubt, assume the other boat has right of way.

# Right of Way – Port/Starboard

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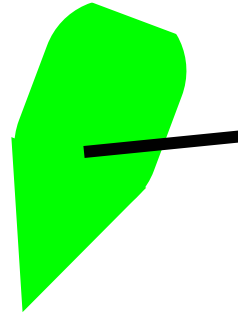


- Boat on starboard tack has right of way.
- Determine which tack by side of the boat toward the wind.
- Boom is on port = starboard tack

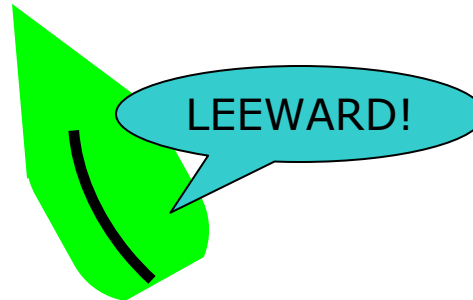
# Right of Way – Windward/Leeward

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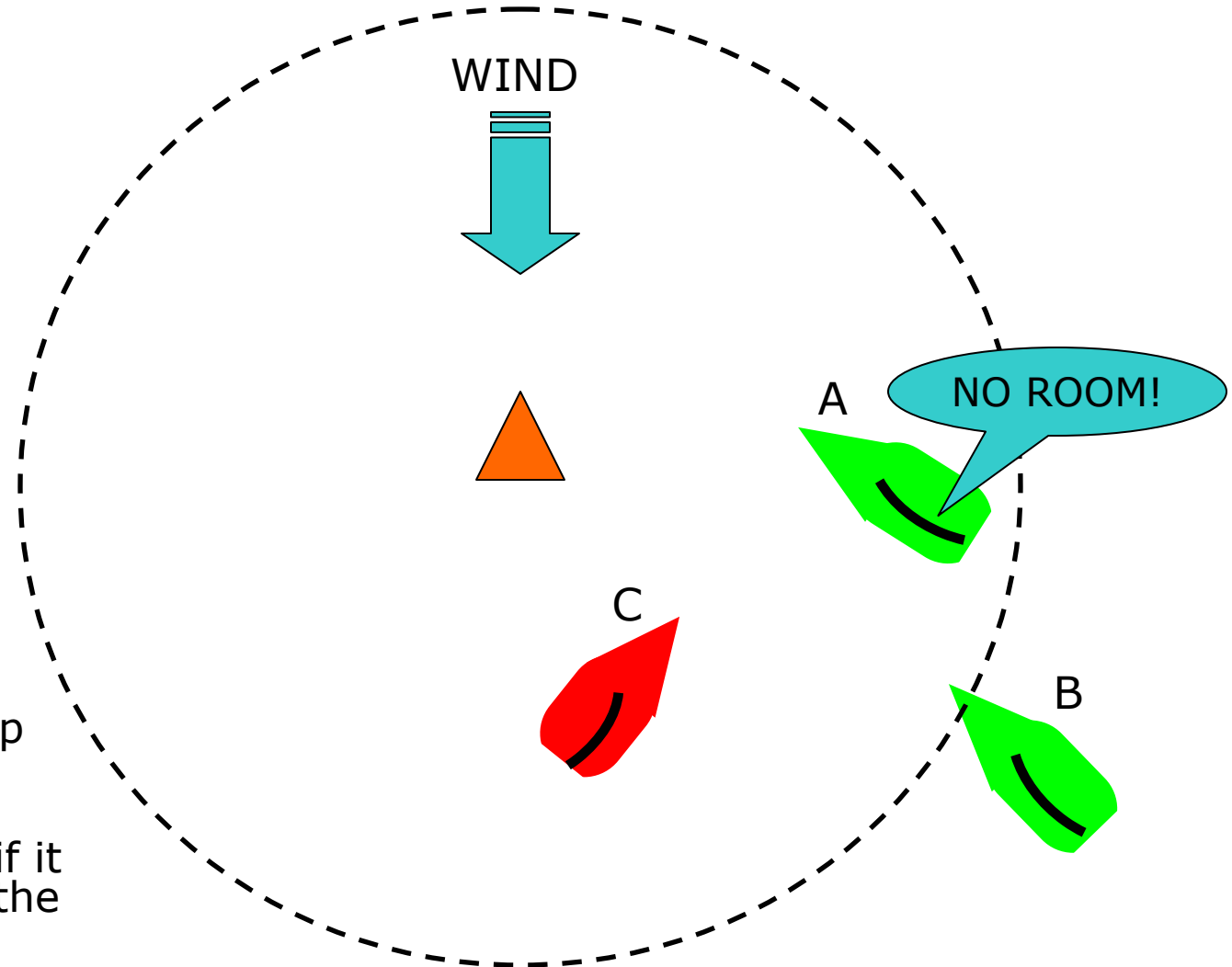
WIND



- On same tack, leeward boat has right of way.
- Leeward must give windward room to stay clear.



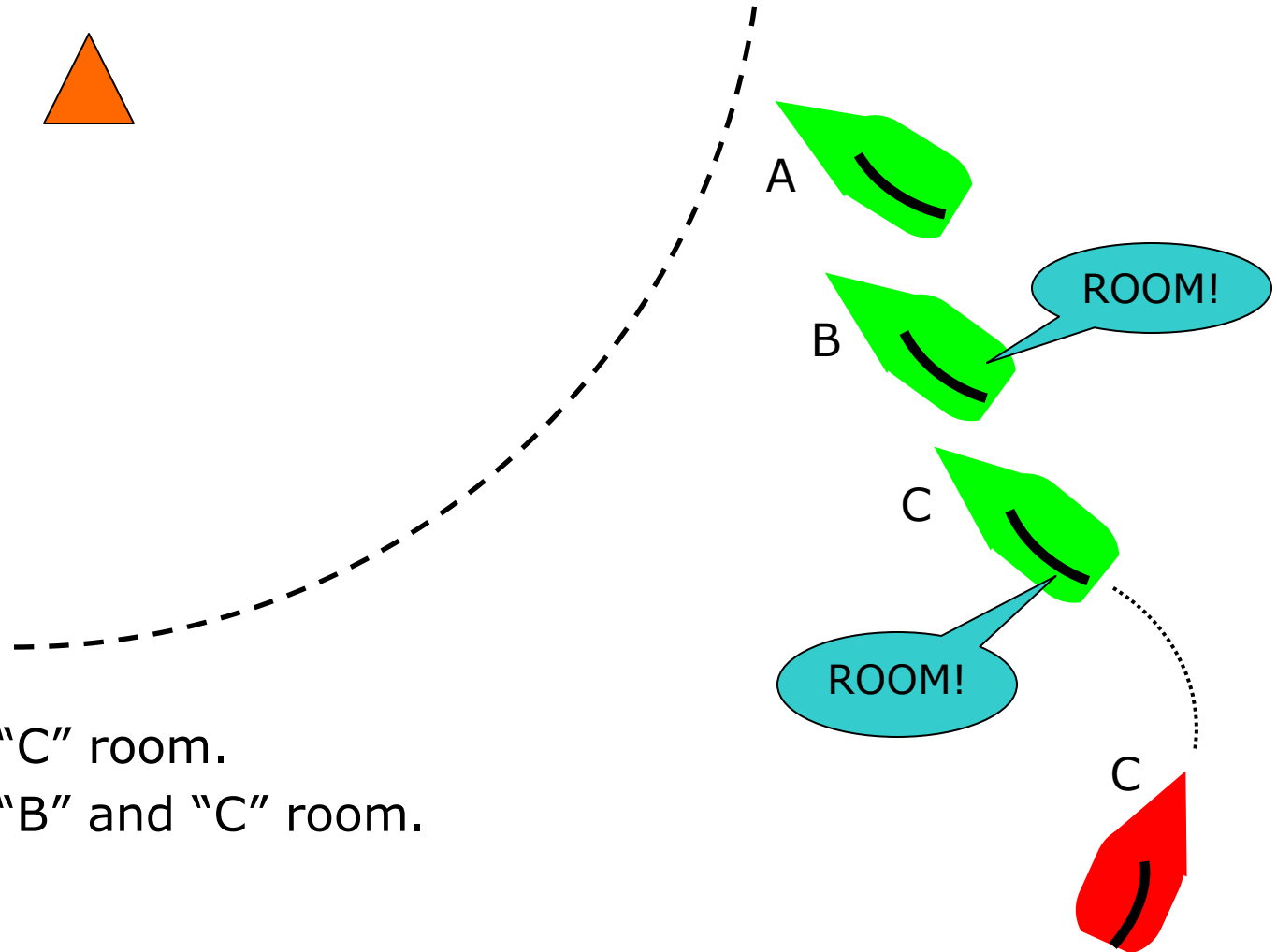
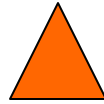
# Right of Way – Room at a Mark



- "B" has no overlap at the two boat length circle
- "C" has no room if it must tack inside the circle to round

# Right of Way – Room at a Mark

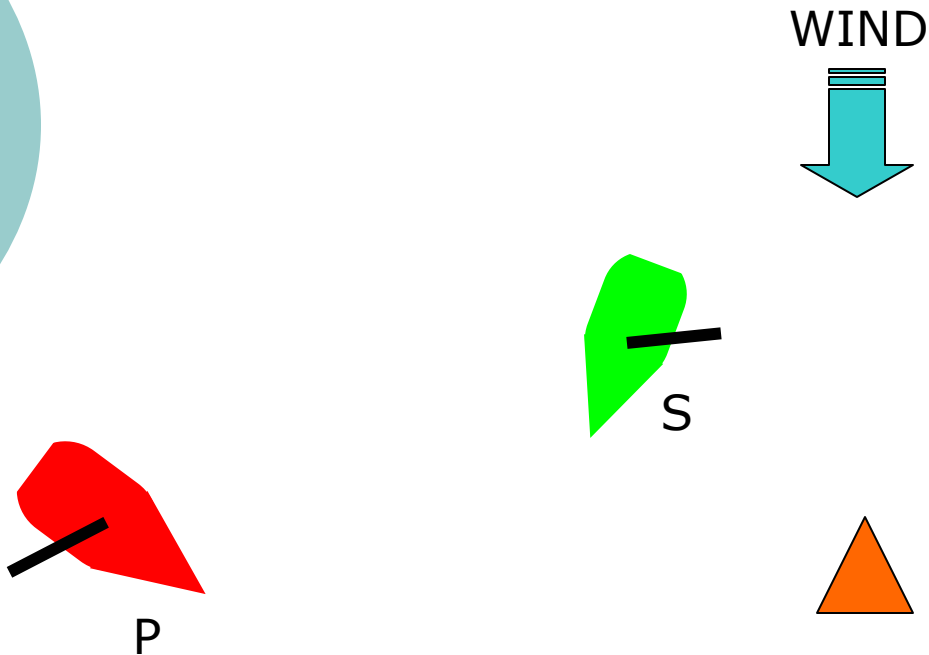
WIND



- "B" must give "C" room.
- "A" must give "B" and "C" room.

# Right of Way – Proper Course

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- "S" can not sail beyond proper course to the mark.
- "P" must give room for "S" to gybe.



# Right of Way – The Start

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- A boat may sail head-to-wind prior to the start. After the start the boat can not sail above proper course (close hauled).
- There is no “room” at a starting mark. You must give the leeward boat right of way (barging).
- The committee boat is not an obstruction, it is a mark of the course.



# The Start – Staying out of Trouble

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- On starboard tack at the start ALL the starboard tack boats to your left have right of way.
- Do not tack to port unless you have plenty of room to duck.
- Learn how to slow/stop the boat.



# Racing Rules of Sailing

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- There are only 12 rules regarding right-of-way.
- Join US Sailing [www.ussailing.org](http://www.ussailing.org)
- Join a crew
- Help with Race Committee
- Sit in on a protest