



Chew Valley Lake Sailing Club

**Coaching Day
23rd May 2009
Ralph Singleton**



The most Challenging sport in the world

- As defined by an international coaches conference in 1996
- Second was Formula 1
- Third Three Day Eventing



23rd May 2009

The 5Ps

Poor preparation produces poor performance

- Self Preparation
- Boat Preparation
- Boat Handling
- Boat Tuning
- Race Strategy
- Starting
- Tactics
- Racing Rules
- Meteorology



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Self Preparation

- Fitness
- Food
- Liquid intake (water/energy drink)
- For every pint of beer in the evening have a pint of water!!
- Warm up / Stretching



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Boat Preparation

- Look after your boat and it will look after you.
- Check all fitting regularly.
- Check all ropes and pulleys.
Compare how easy the controls are with a new boat.
- Check that boat conforms with class rules.
- Is your boat the correct weight ?



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Boat Handling

- Boat balance (amount of heel 5% to windward)
- Trim (fore and aft)
- Sail Trim (constantly changing)
- Tacking (roll)
- Gybing (roll)
- Spinnaker hoist
- Spinnaker gybe
- Spinnaker drop
- Crewing
- Mark rounding
- Practice



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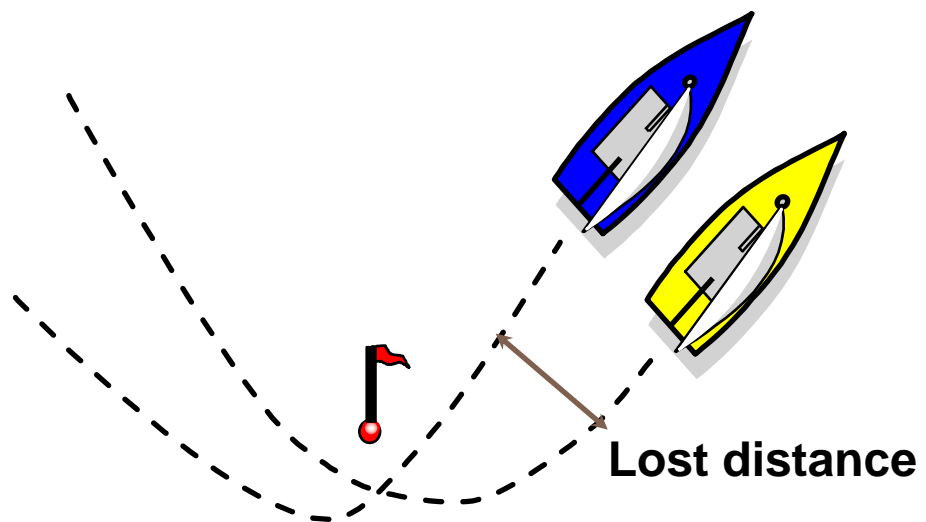
Boat Handling

- Keep your body weight moving together.
- Keep the weight as close together as possible.
- Light winds (leeward and forward)
- Medium (windward and balanced)
- Heavy (flat and back)
- Pumping
- Waves
- Power (which controls to use)



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Correct mark rounding



Boat Tuning

- Look at your class association web site. May need to join but it will be worth it.
- Initially set the boat up for medium flat water conditions.
- Don't get obsessed.
- Calibrate and record performance
- Need to consider
 - A) Type of boat
 - B) Course to be sailed
 - C) Expected wave conditions
 - D) Expected wind conditions



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Boat Tuning Basics

- Flat water = flatter sails, firmer leeches
- Choppy water = fuller sails, more leech twist
- Firmer leeches = more power / pointing
- Leech twist = More speed, less pointing



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Boat Tuning

- Mast – Mast heel –too far back boat will luff into wind – too far forward boat will bear away-think of wind surfing. Mast rake for different wind conditions – More rake in more wind – can be 8 inches different (420)- see class web site
- Spreaders-long =stiff short=allows top to bend. Forward angle=stops mast bending forward. Aft angle induces prebend and flattens sail.
- Lowers / uppers



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Boat Tuning

- Rig tension- Flat water tighter tension (keeps power)-less in waves
- Ram- controls straightness of mast
- Cunningham-Don't use cunningham to remove horizontal creases- use to bring fullness forward in strong winds. This will also open the leech and depower the rig by reducing the heeling moment and allowing lower sail to generate speed. Normally used once kicker is maxed out.
- Clew Outhaul-flat water on tight to keep flat sail- slacker for waves or on reaches if sail is flat and has twist (tightens up leech)



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Boat Tuning

- Kicker / Vang – Most important control. It controls leech shape. Top telltales stream 80% of the time. In stronger gusts twist occurs and telltale stream perfectly. Ease the kicker to de-power on reaches or mark rounding. Keep some on downwind to keep leech tight but not hooked. Keep on tight to assist stability. Kicker induces mast mend but effect is reduced with ram or lowers on tight.



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Boat Tuning

- Jib slot / barber haulers- control shape of jib in same way as the main. Open slot for stronger winds / move cars aft
- Spinnaker pole height- spinnaker should curl at mid height. (if higher pole is too low). Tack and clew level on a run.
- Centreboard-
W/Reach/Run=down(even slightly forward if allowed)/ up half way/ up as far as possible (half way in a breeze) Dagger boards generally kept down except in very light winds to allow boat to sail low.



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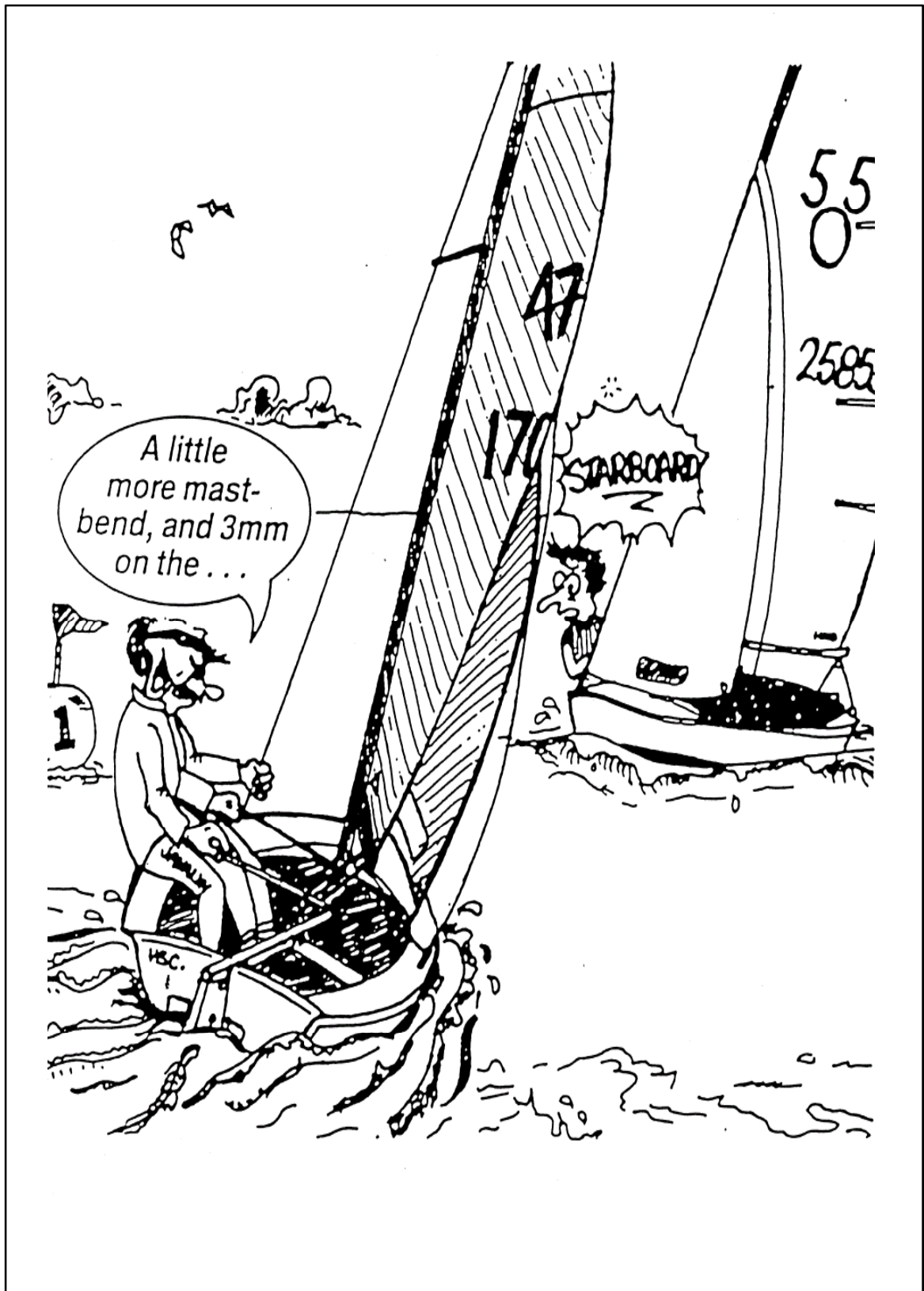
Boat Tuning

- Traveller- keep boom on centreline whenever possible. To windward makes main full with twist (waves). To leeward helps induce mast bend flattening the sail and tightening leech.

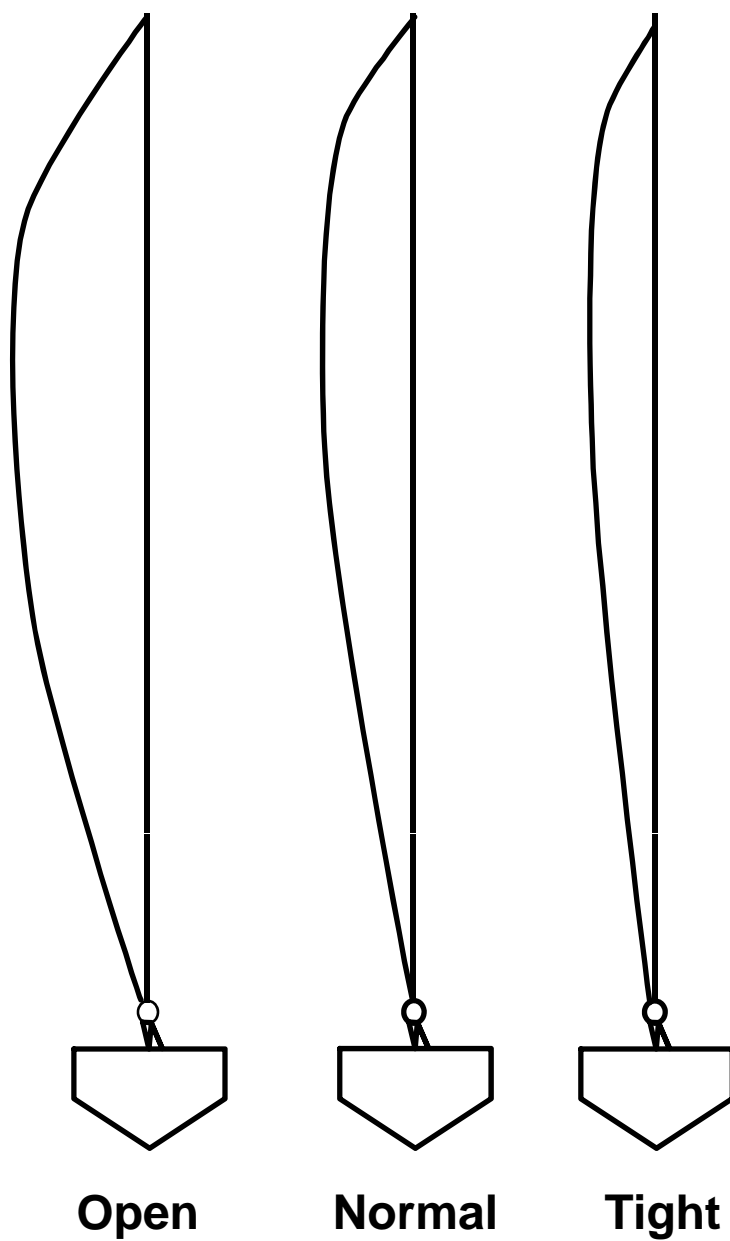


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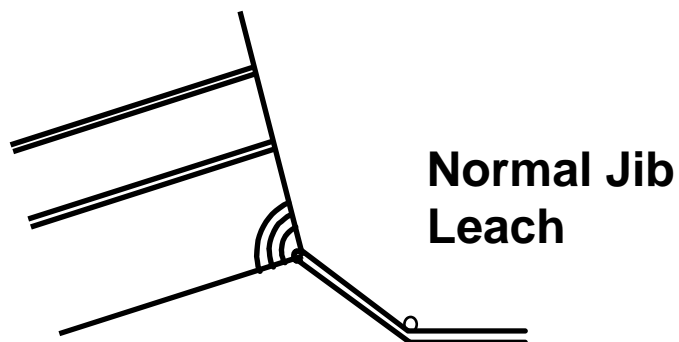
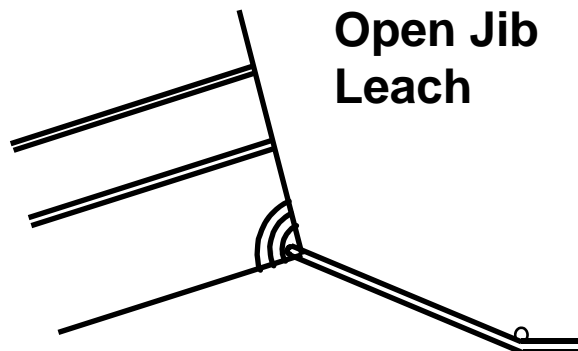
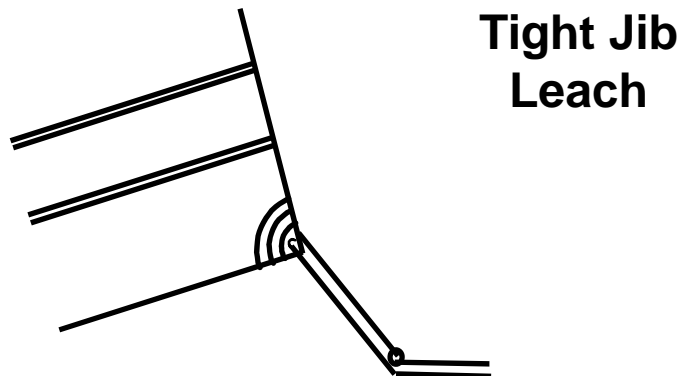
Boat Speed



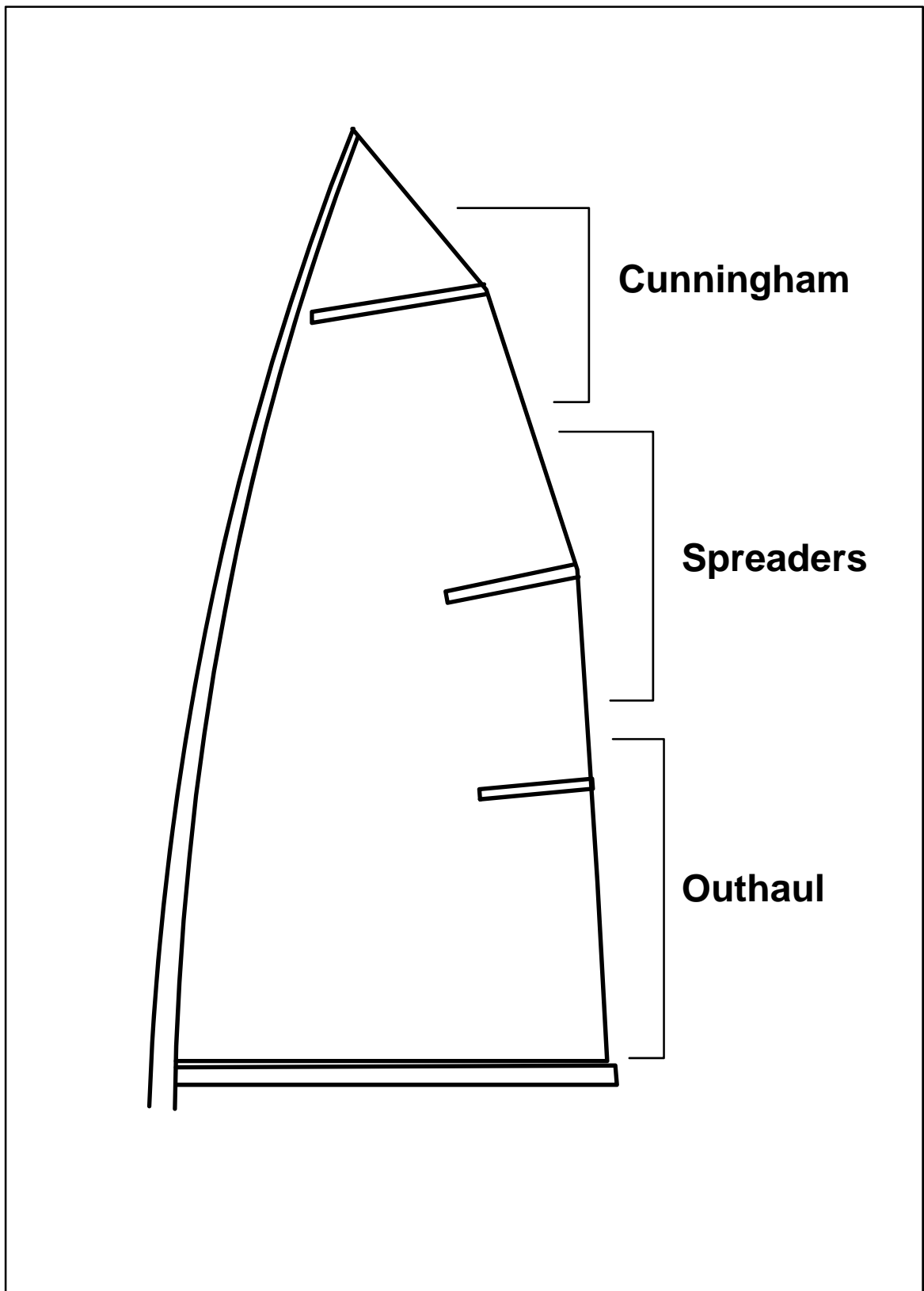
Mainsail Leech



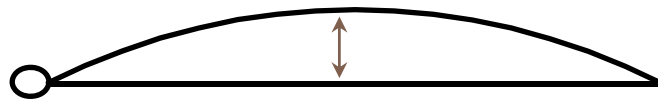
Jib Car Positions



Sail Controls



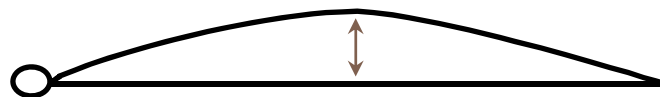
Cunningham -Sail Controls



Normal flow shape - Force 1-4



Flow moves aft - force 4-6

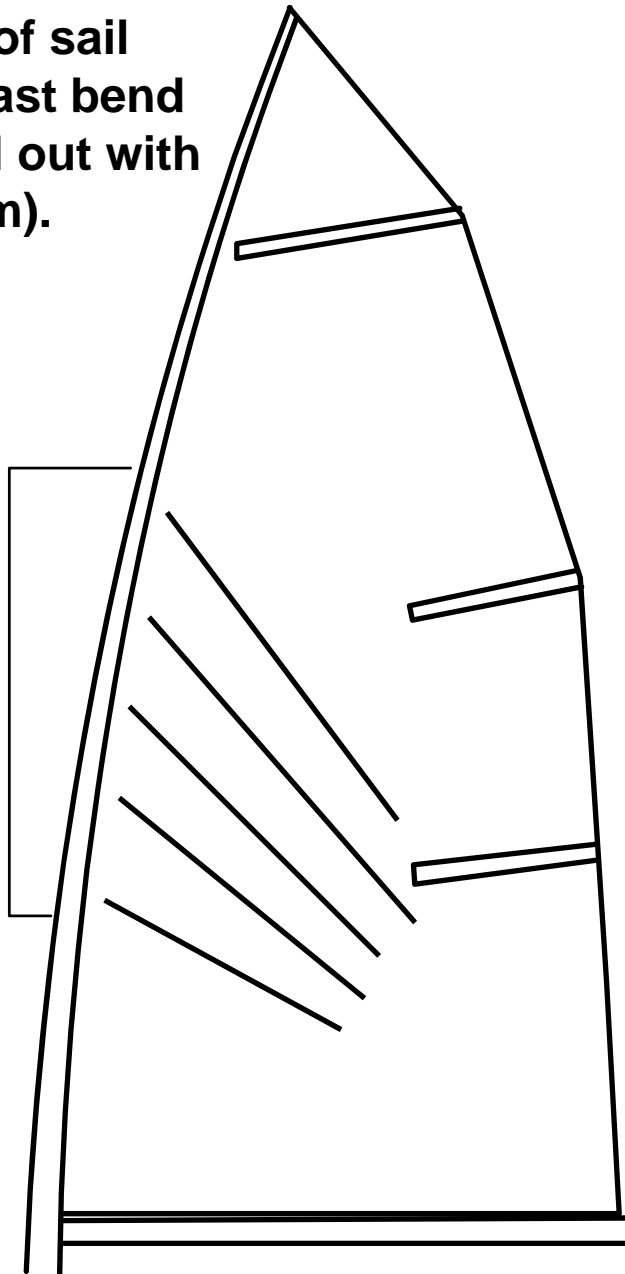


**Force 4-6 - Apply cunningham -
Flow moves forward to normal flow
shape**

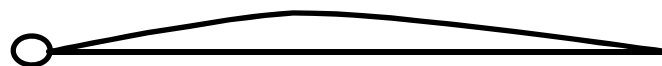
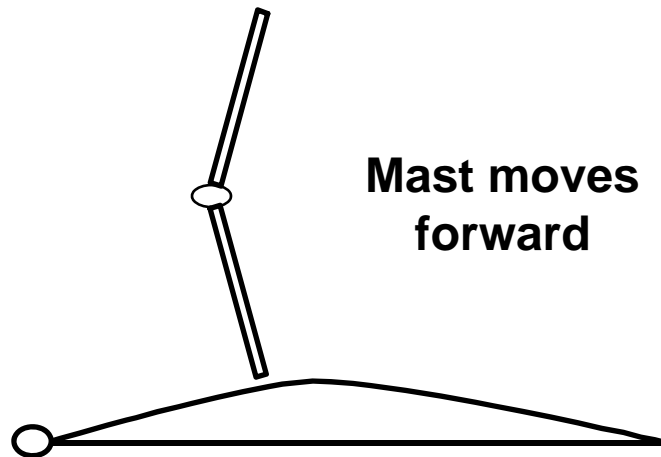
Luff - Round Starvation

**Luff round of sail
matches mast bend
(Do not pull out with
cunningham).**

Creasing

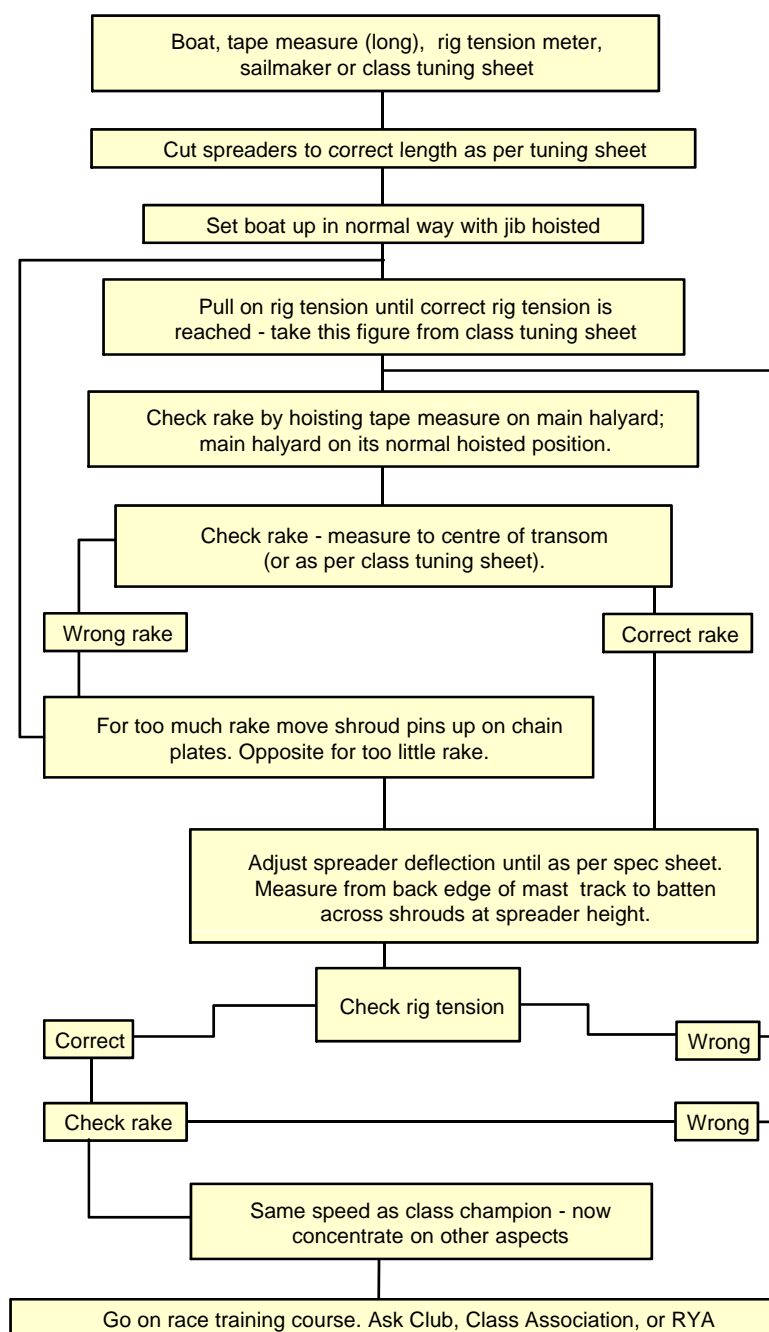


Effect of Mast Bend



Flatter sail - Due to more mast bend

Dinghy Tuning Flow Chart



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Race Strategy

- Weather forecast (weather fronts and forecast wind direction changes)
- Wind direction and how land mass affects it (Nunnery point and the narrow end of the lake)
- Tides (at Chew !!!)
- Gusts (Sail where there is wind. Look in front on the beat and behind on the run)
- Wind shifts will be greater near the shore (westerly mark 8 vs mark 5)
- Need to make a decision at each mark particularly windward /leeward marks



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Race Strategy

- Use a compass for accuracy or memory / land marks to work out if you are initially on the right tack
- Wind bends (sail into as the bigger lift is on the inside of the bend)
- Wind shifts tack straight away (smaller boats Int 14s RS 800 are slow tacking so look at bigger picture)
- Go back down the run the same way as you went up the beat (assuming it was the right way !!)
- Sail the shortest route unless wind strength means that the longer route is quicker



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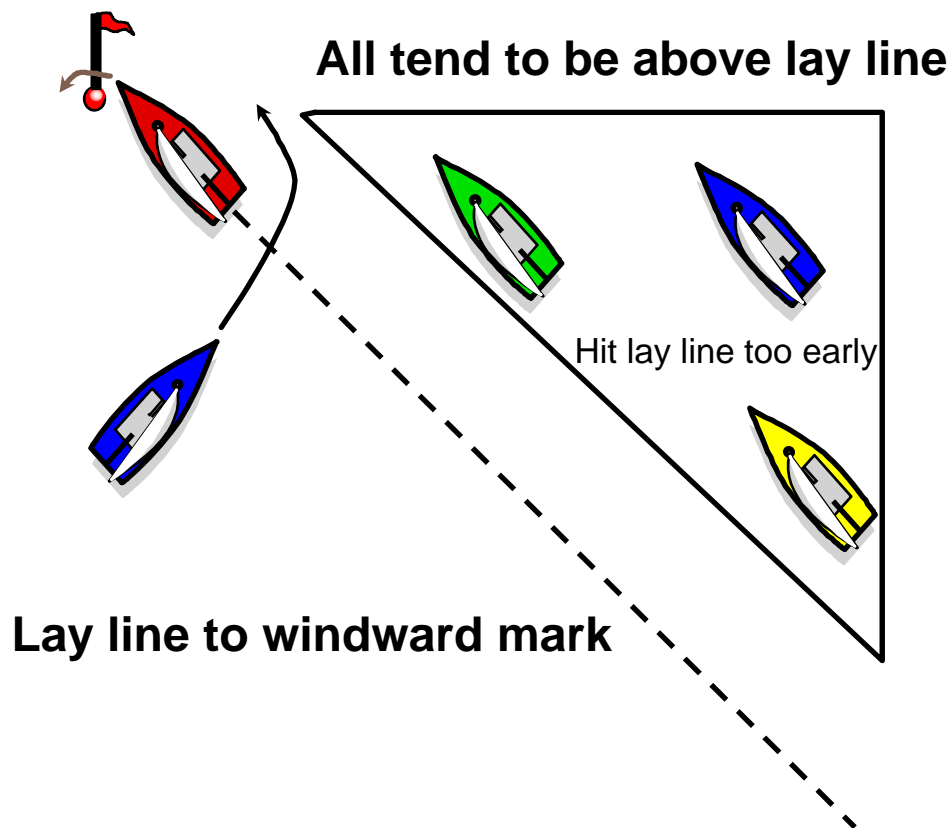
Race Strategy

- Lay lines – Get the crew to call these. Learn to trust the crew!!
- Don't get on the lay line too early (no options)
- Stay with the wind downwind
- Gybe when you have to sail higher than the average
- Is it a true beat or is the mean wind blowing from one side (have a look at the start mark compared to the windward mark)
- Race Management
- Starting plan



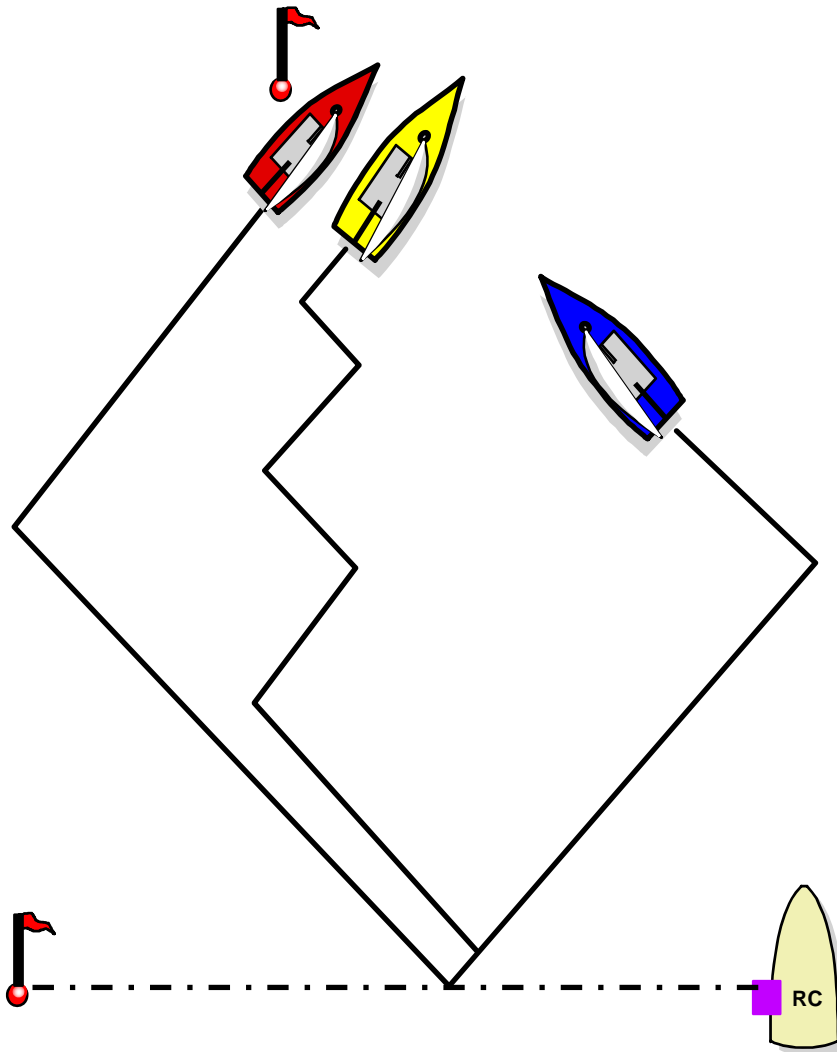
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Approach to Windward Mark



Port tack approach - this keeps your options open in the last 100 Yds of the beat. i.e. You have not hit the lay line until the last moment.

Laylines

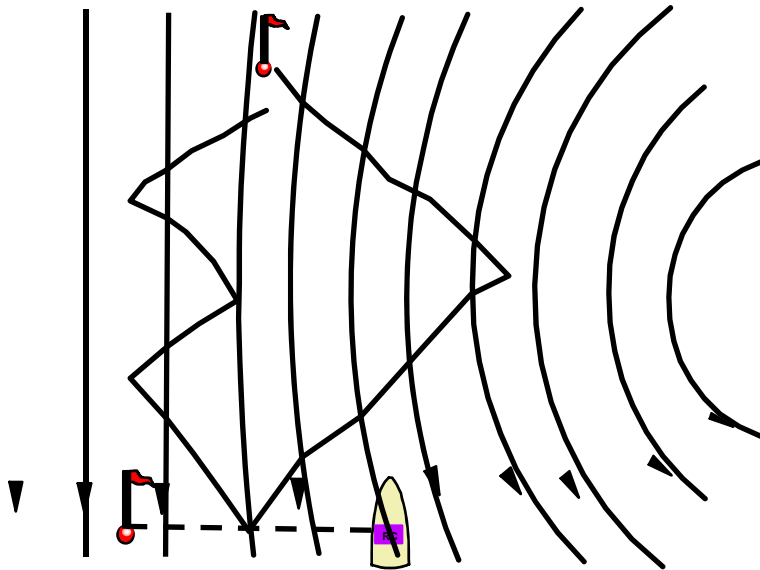


Hitting the corners

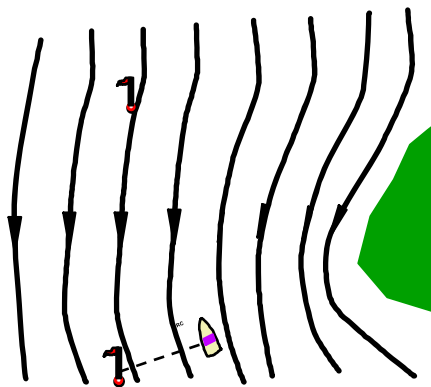
If you sail to the corners of the course, should the wind shift you cannot take advantage of this, i.e. you commit yourself by halfway up the beat.

Wind Bends

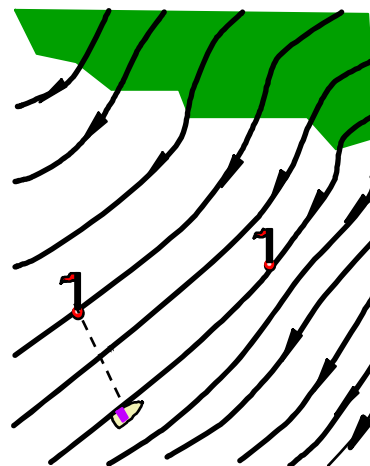
Sail towards the centre of a wind bend



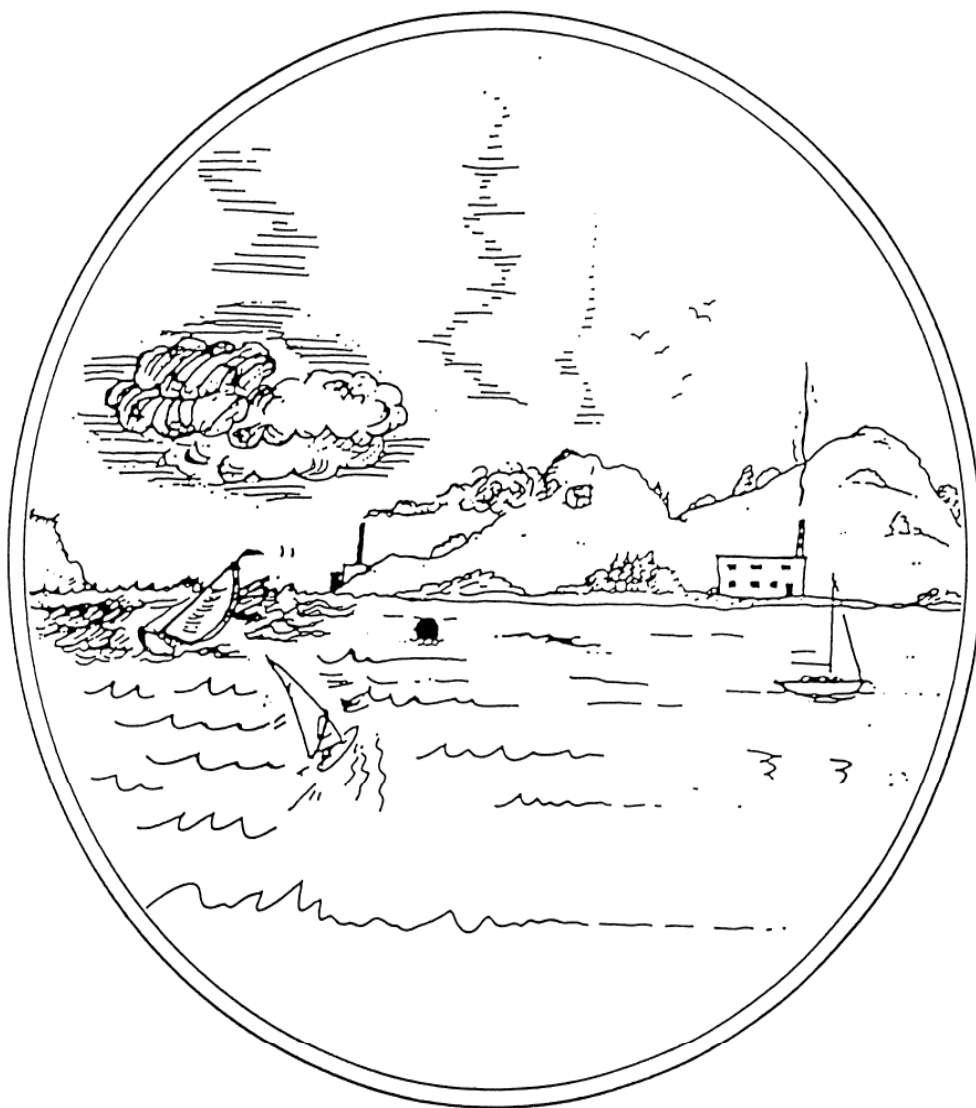
Wind bend around headland



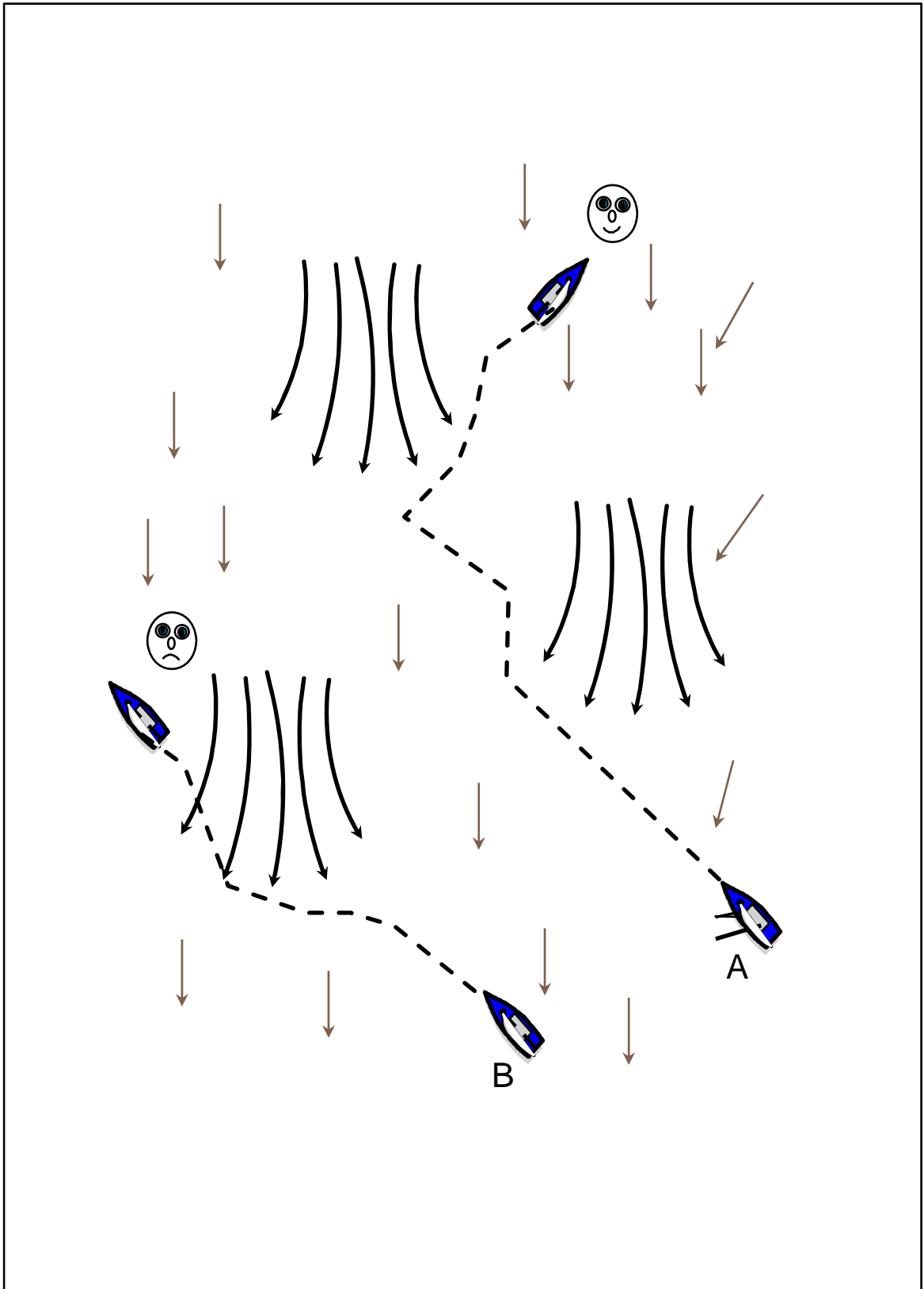
Wind bend off land



Looking upwind for clues



Using Gusts



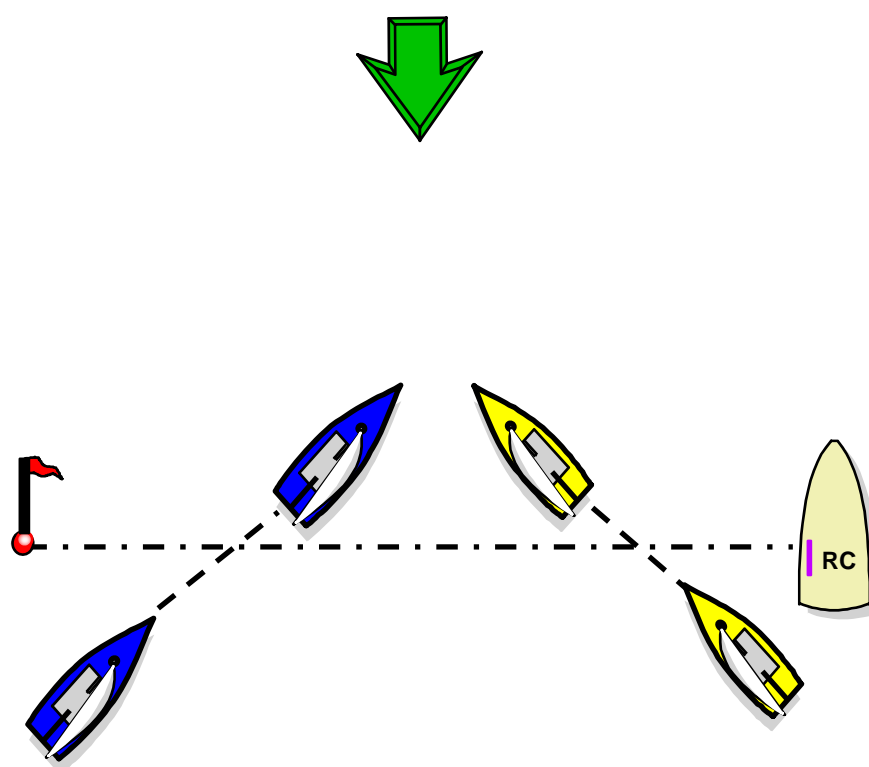
Starting

- Stay close to the line
- Have a plan
- Know the rules
- Read the sailing instructions
- Transits
- Practice / timed runs
- Stay cool
- 60% of the race more in a big fleet or short race.



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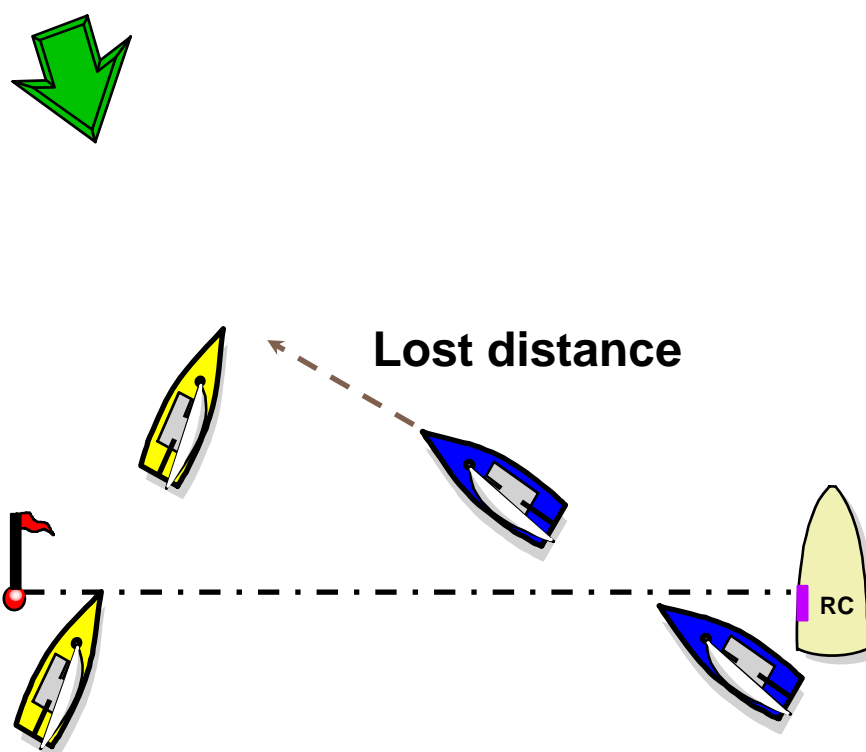
Square Line Starts



Square Line

A Square line is perpendicular to the wind direction. All boats get an even start.

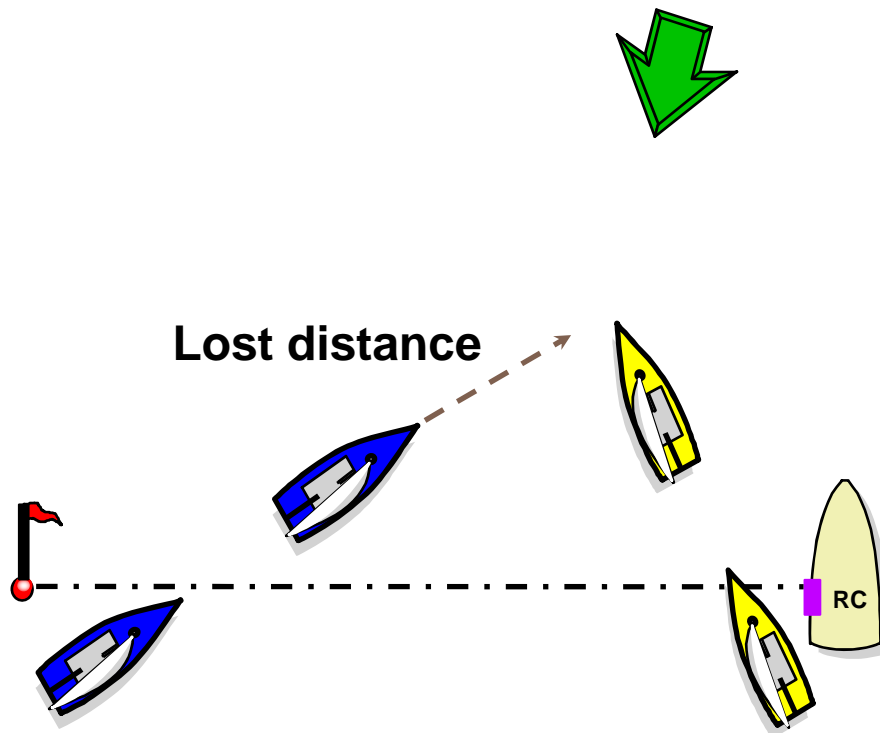
Port Bias Starts



Port end favoured

**Starboard tack boat starts 1 length
behind boat from port end.**

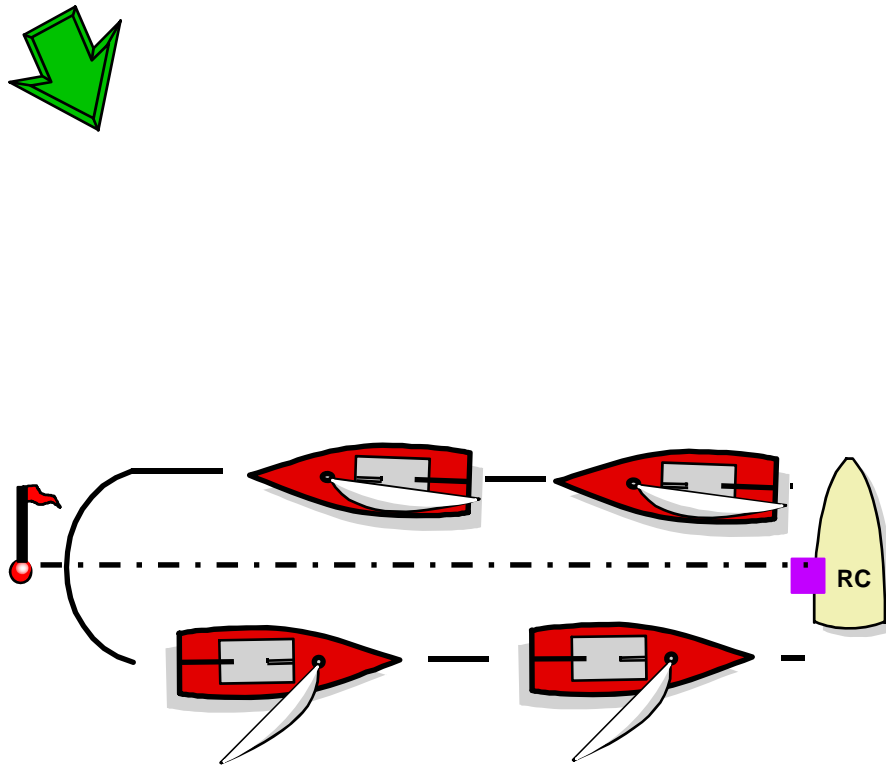
Starboard Bias Starts



Starboard end favoured

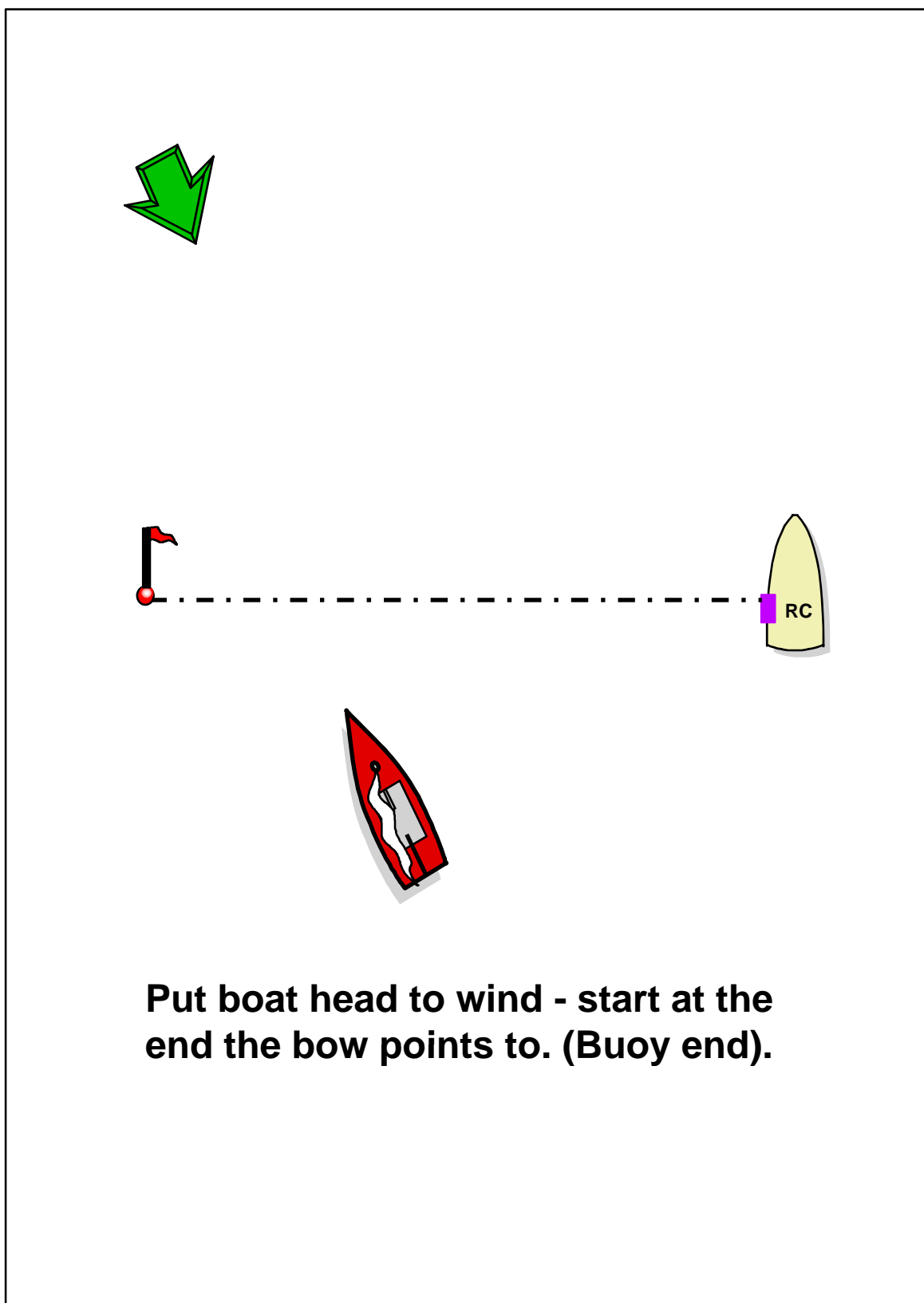
**Port tack boat starts 1 length behind
boat from starboard end.**

Determining Favoured End (1)



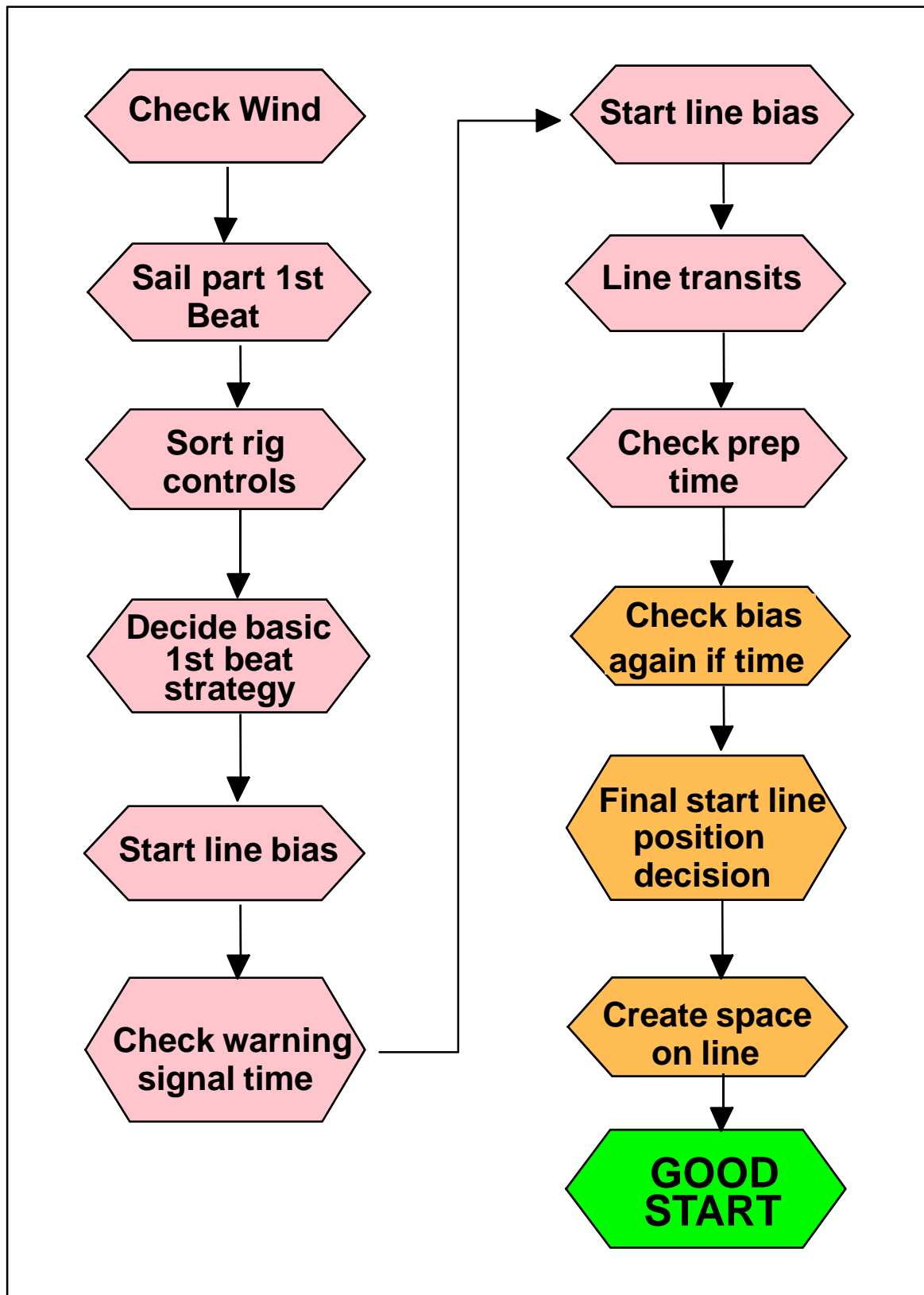
Sail along start line, set sail accurately. Start at the end you sail away from on broadest point of sailing. (Start buoy end in diagrams).

Determining Favoured End (2)



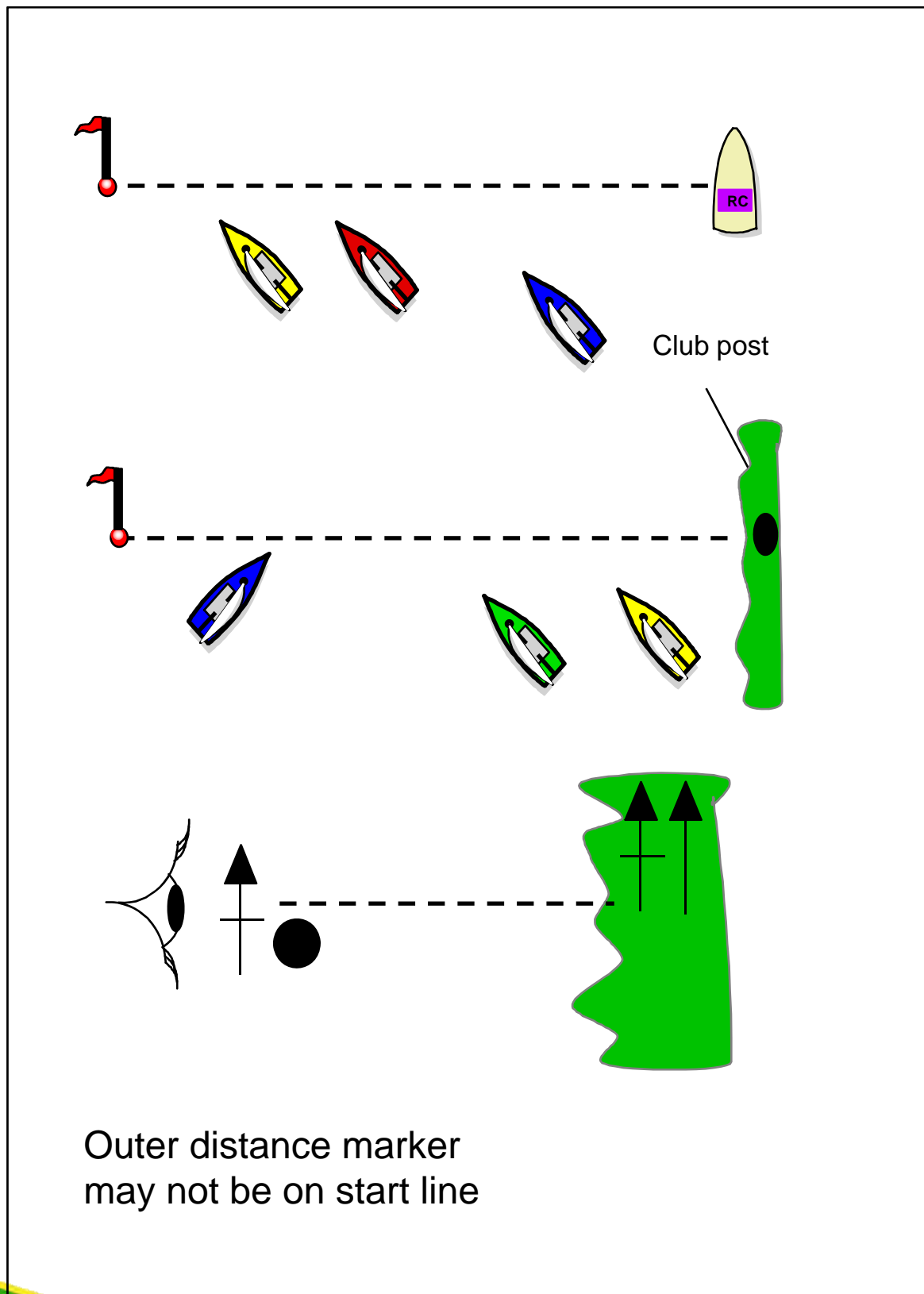
Put boat head to wind - start at the end the bow points to. (Buoy end).

Starting Flow Diagram

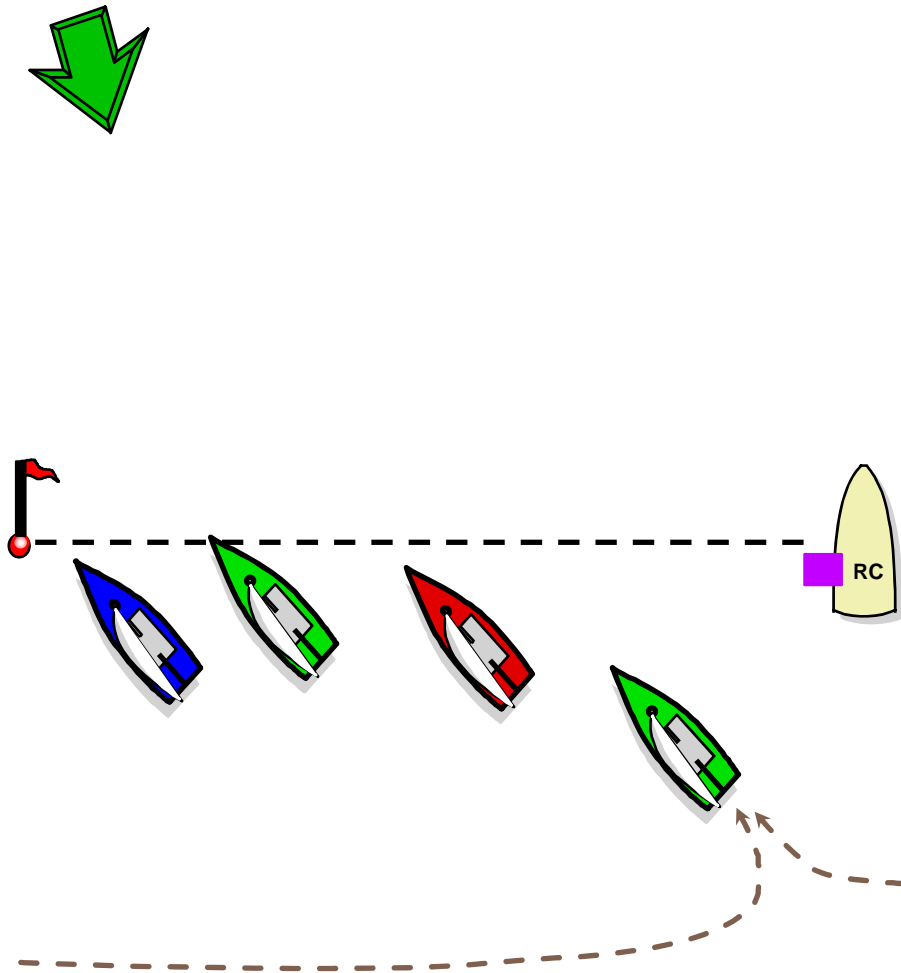


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Start Lines

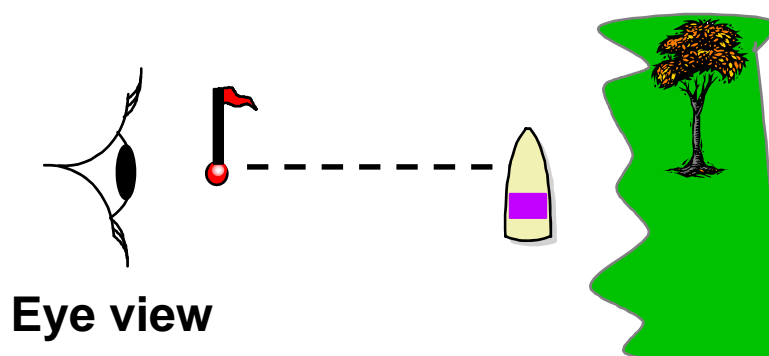
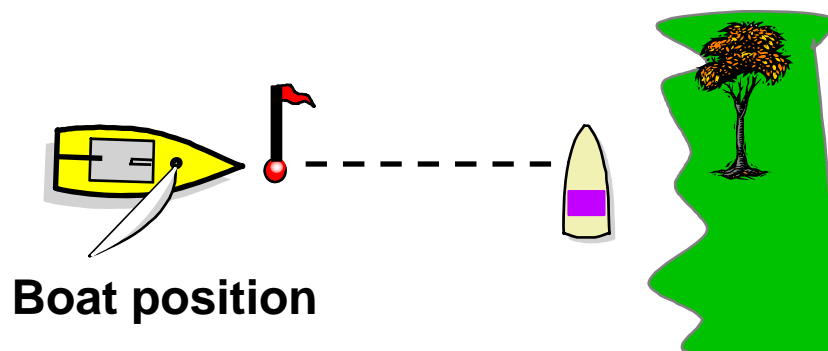


Starting strategy

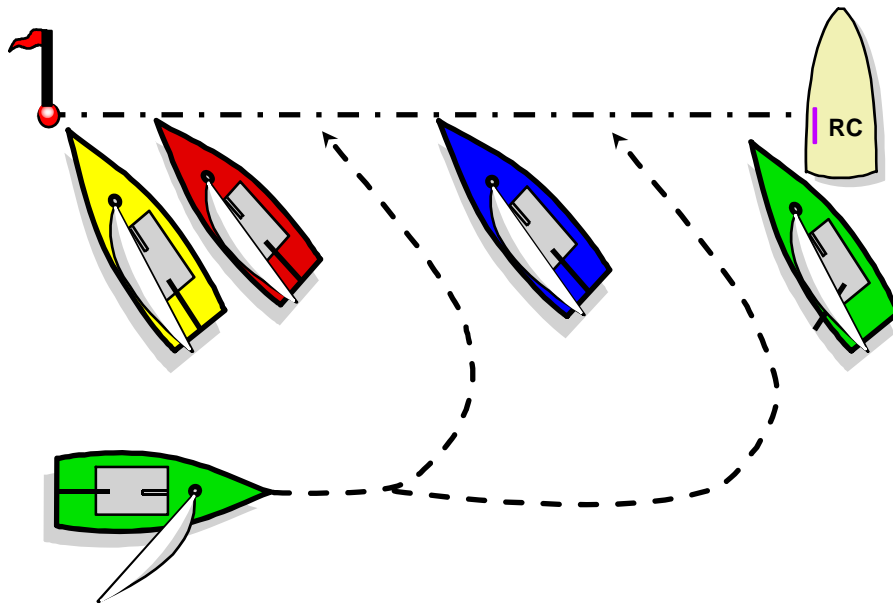


**Don't always start at the favoured end -
think about being able to tack / tide /
bends (Lake Garda) etc.**

Establishing a Transit



Port Tack Approach



If you approach on Port then you keep your options open (particularly in an oscillating breeze). The problem is that this will only work in a small fleet. Large fleets will line up well in advance of the start.

Tactics / Strategy



Tactics

- Are you going with the majority ? If not why not?
- Are you on a lift or a header?
- How are you doing against the rest of the fleet.
- Do you have room to tack and follow your strategy.
- Do you have clear air?
- Do I tack before a starboard boat or sail round it?
- Covering (loose / tight)
- High / low on reaches runs?



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Tactics

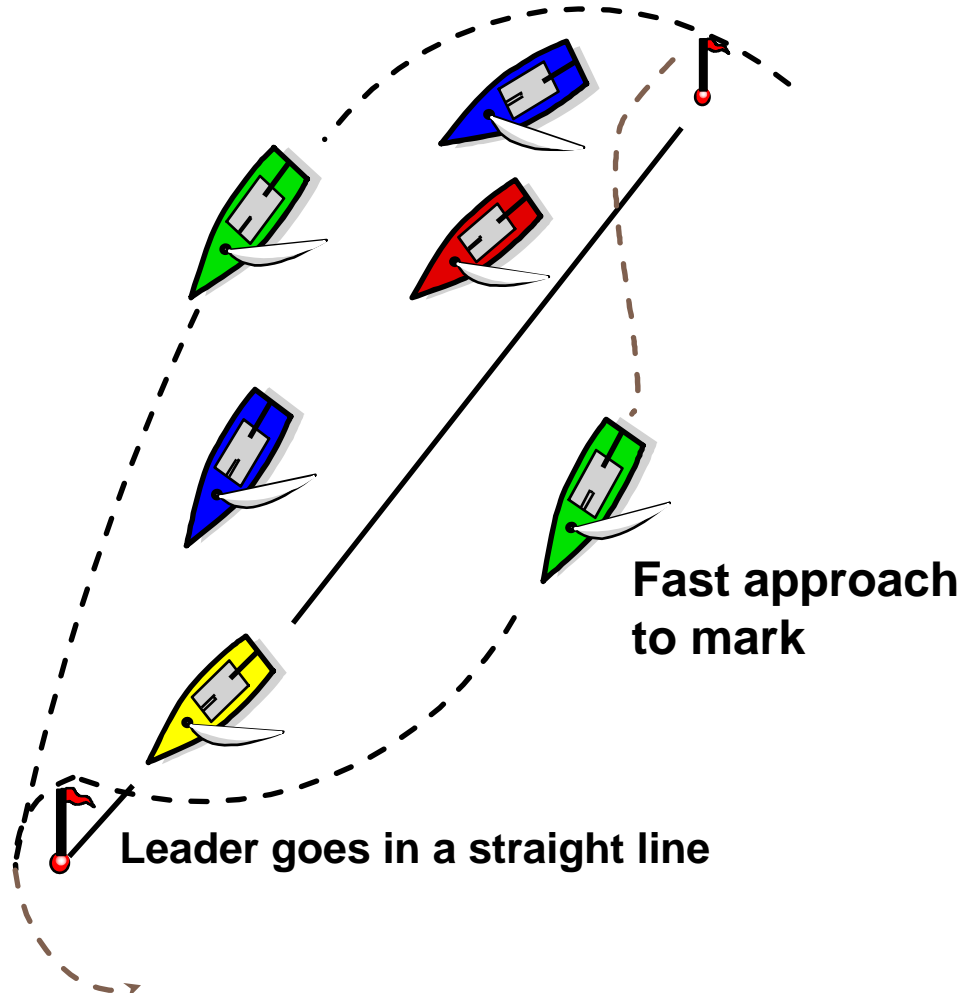
- Defend your wind but sail low at first opportunity (fast boats slow boats)
- Pinching / sailing low and fast
- Approach to the next mark (coming it at speed / water at the mark)
- Rafts at leeward marks



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The 1st Reach

Course sailed by fleet is an arc



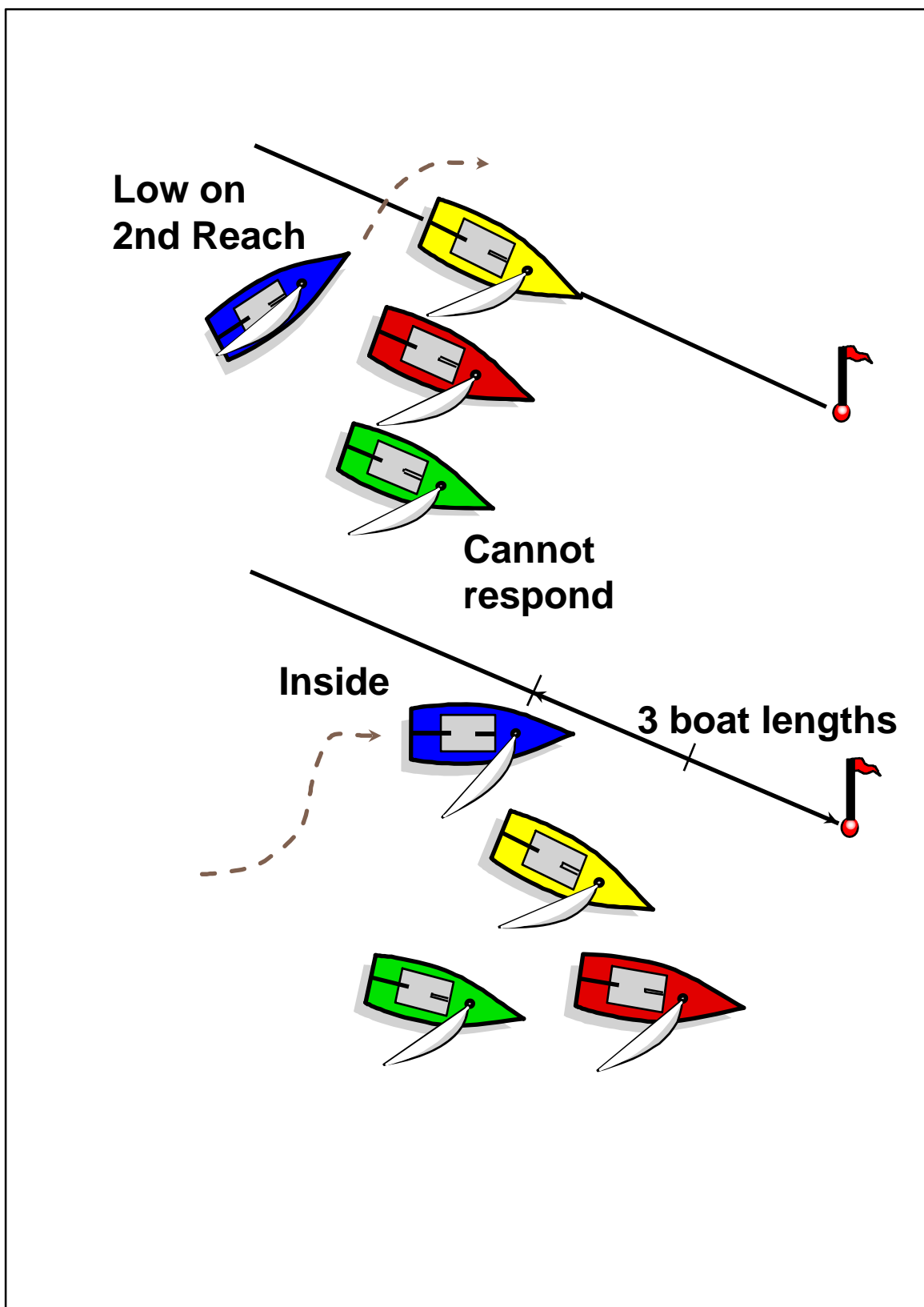
Bear off rapidly round the windward mark. Best done with a gap behind you.

You also approach gybe mark on the inside.

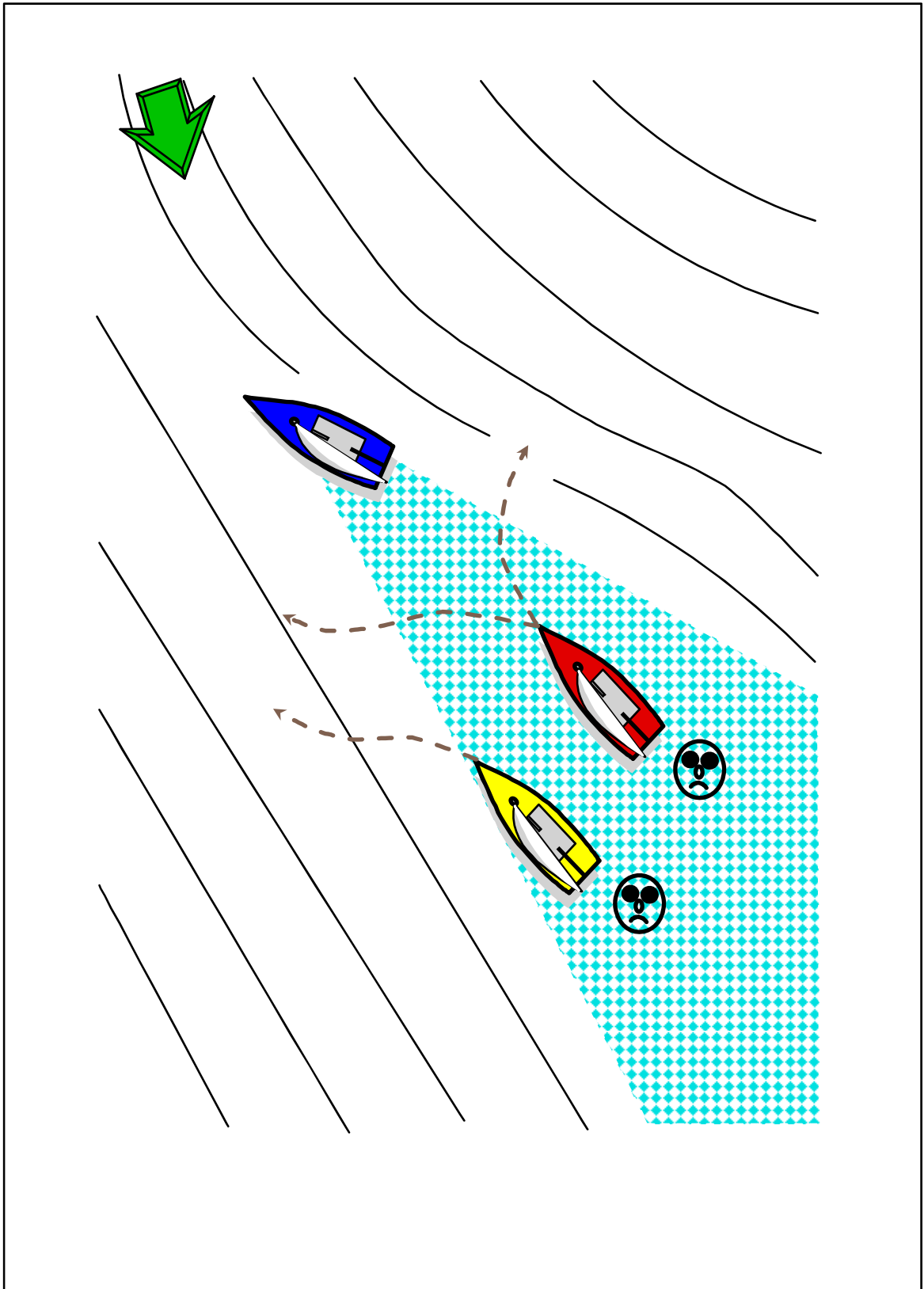


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Approaching Leeward Mark



Dirty Wind

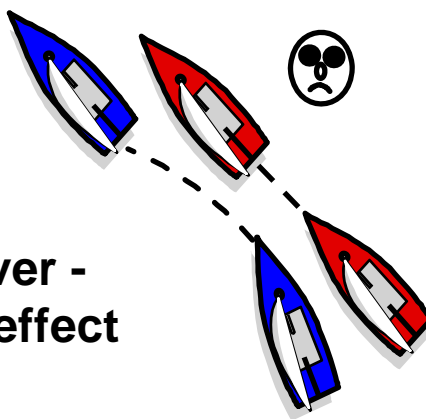


Covering

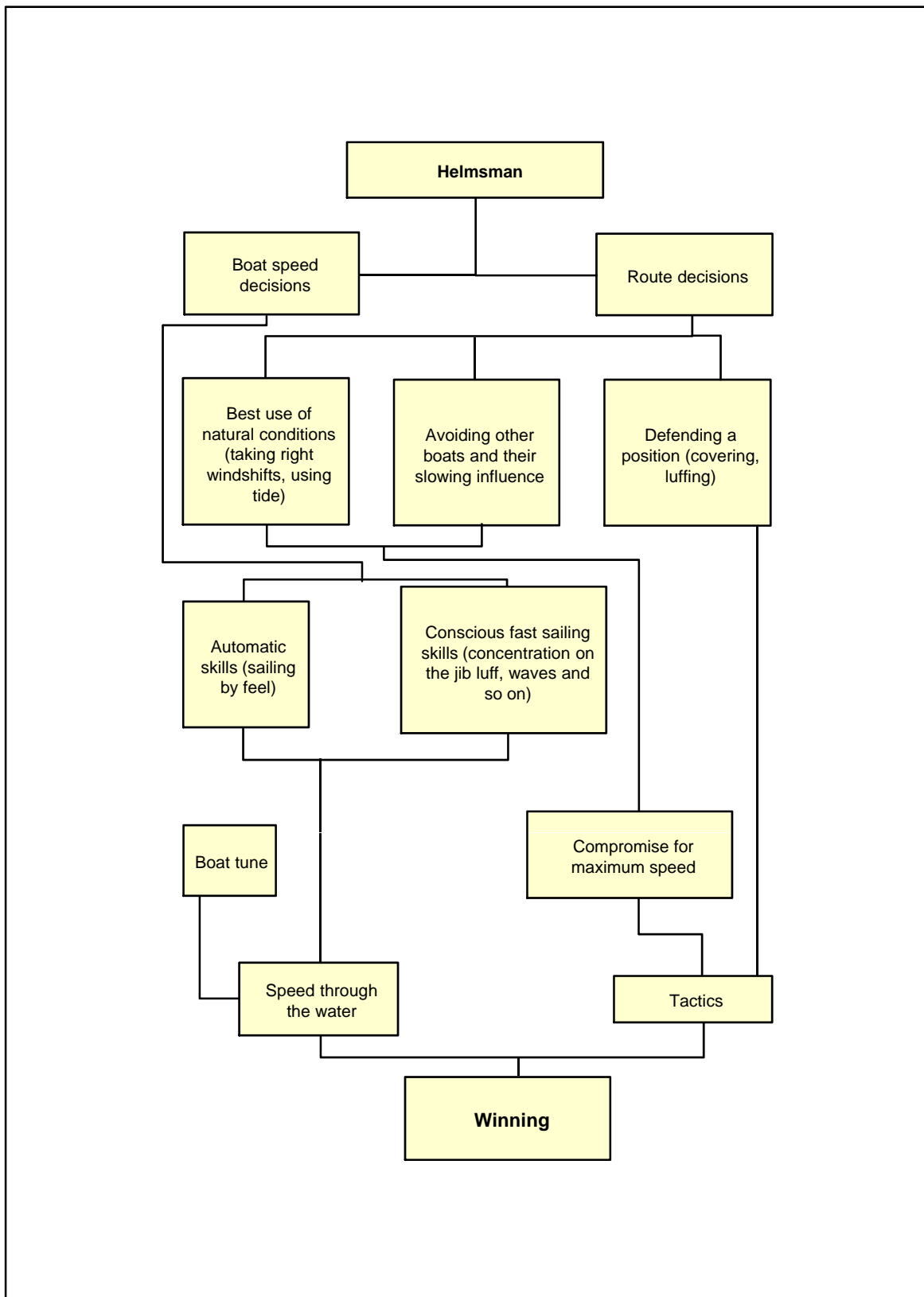
**Tight cover -
blanketing**



**Tight cover -
Leebow effect**



12.11 (a) First Place Thinking



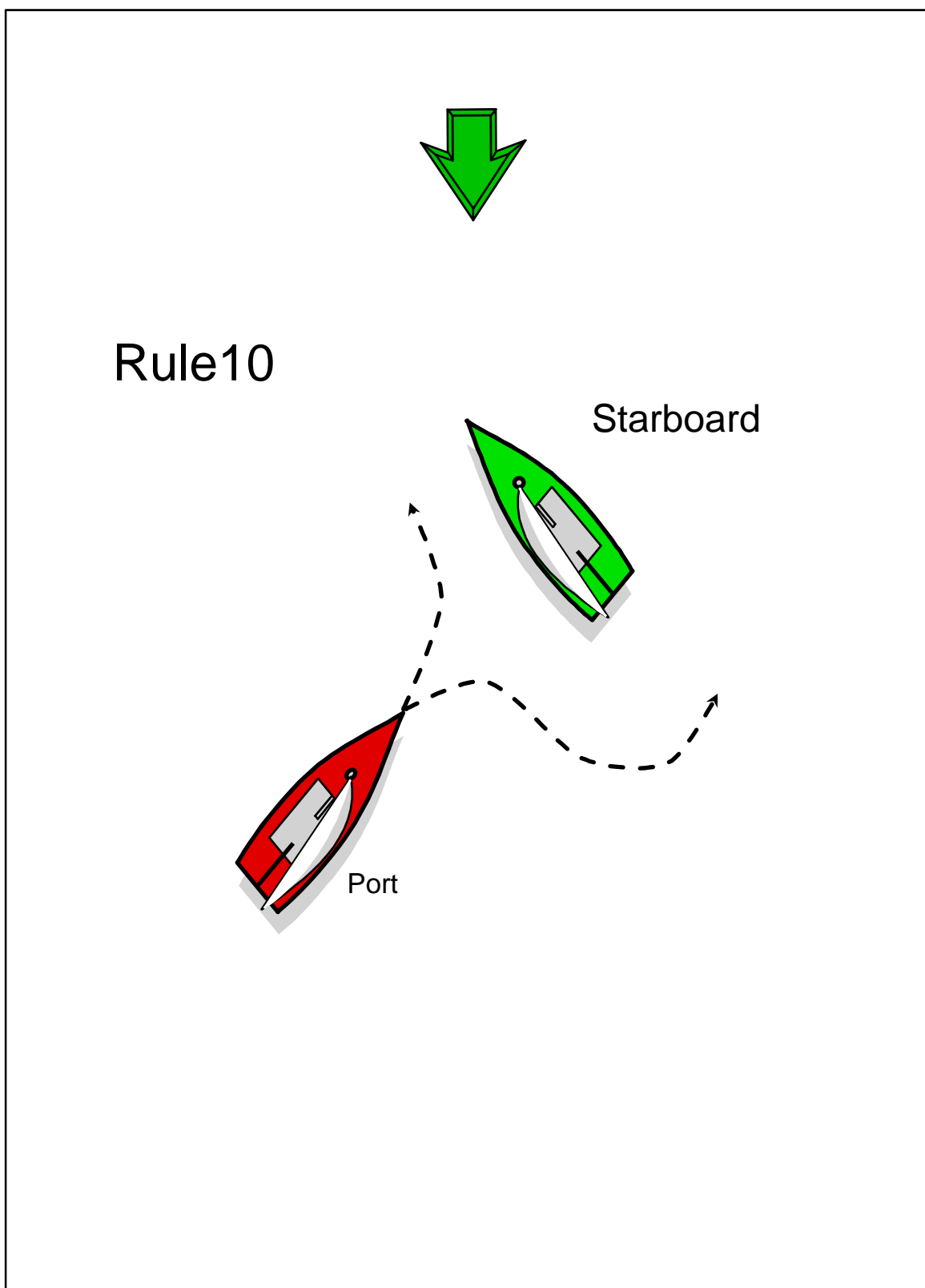
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Rules

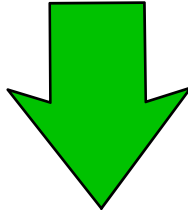


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Port/Starboard

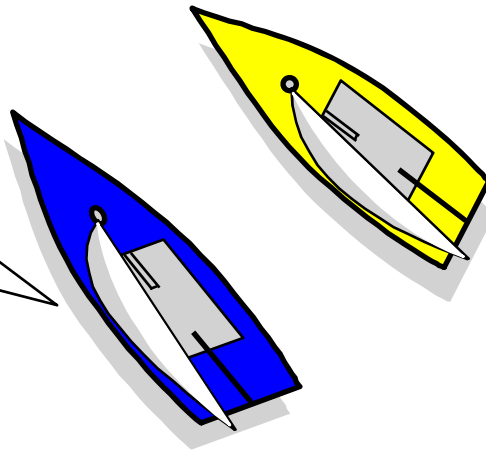


Windward / Leeward



Rule 11

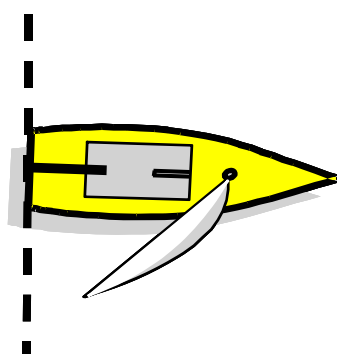
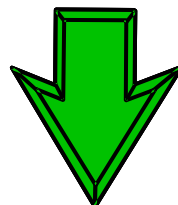
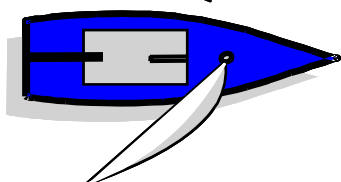
Windward boat
keep clear



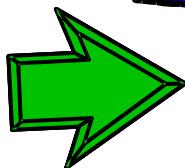
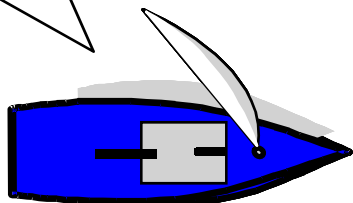
Overtaking

Overtaking Rule 12

**I'm clear astern on
the same tack, so I
have to keep clear.**

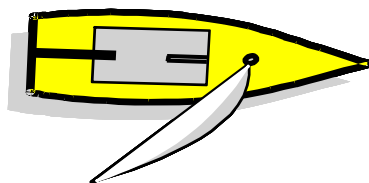


**2. No, on opposite
tacks port
keeps clear**



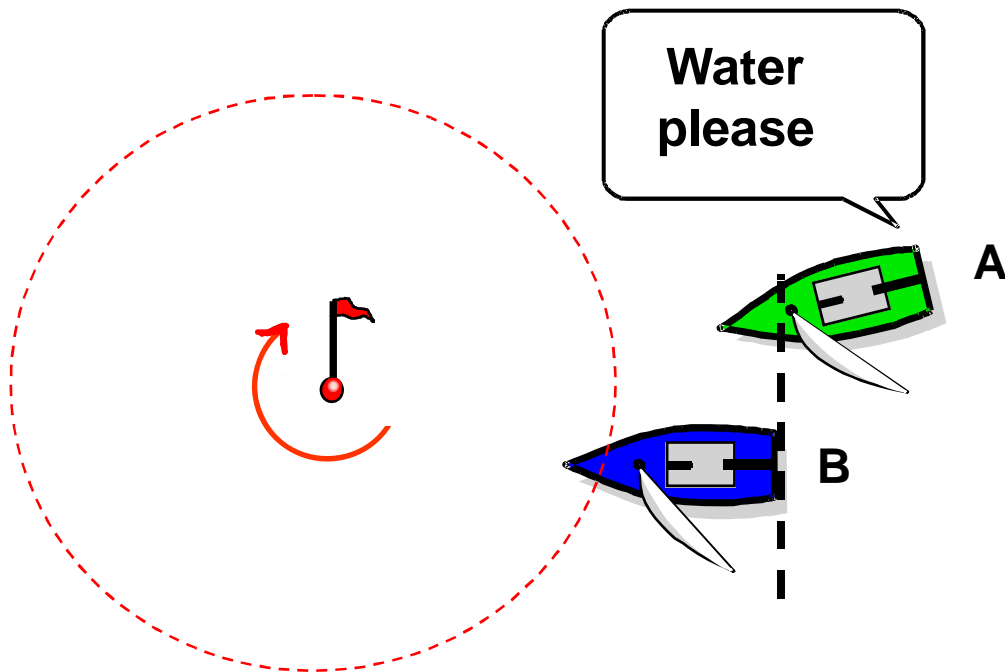
**1. You are astern,
keep clear.**

**3. OK, I will keep
clear**



Mark Rounding

Rule 18.2 (a)



BOAT A has an inside overlap

BOAT B is within three-length zone

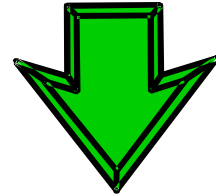
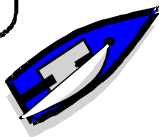


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Tacking / Gybing

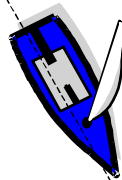
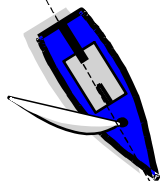
Rule 13 Tacking

**Keep clear
when
tacking**



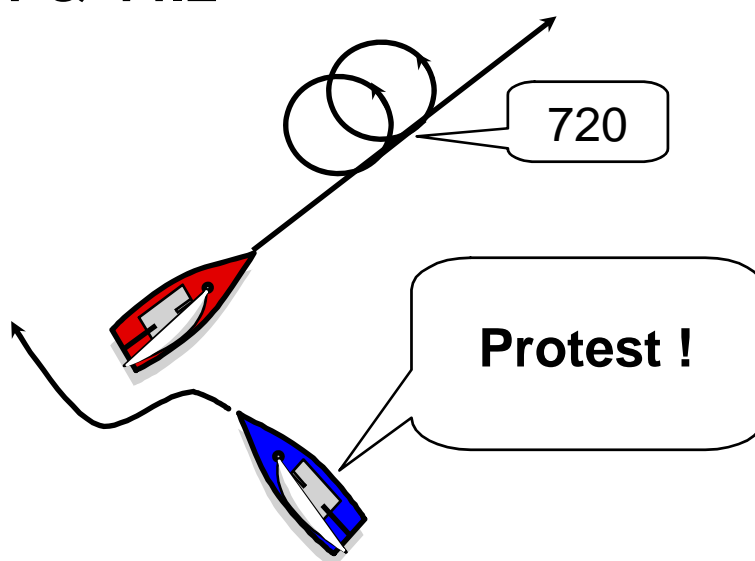
Rule 15 Acquiring Right of Way - Gybing

**Give me
room to
keep clear!**

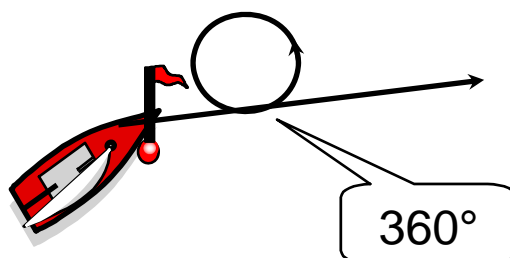


Alternative Penalties

Rule infringement Rule 44.1 & 44.2



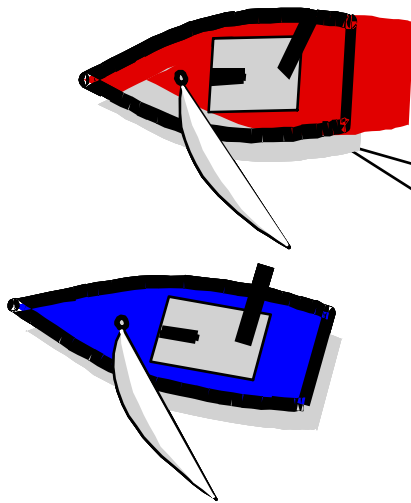
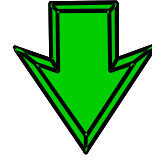
Hitting a mark Rule 31.2



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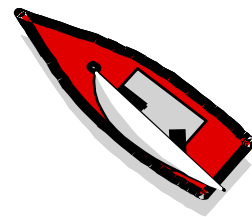
Changing Course

Rule 16.1 Room to Keep Clear



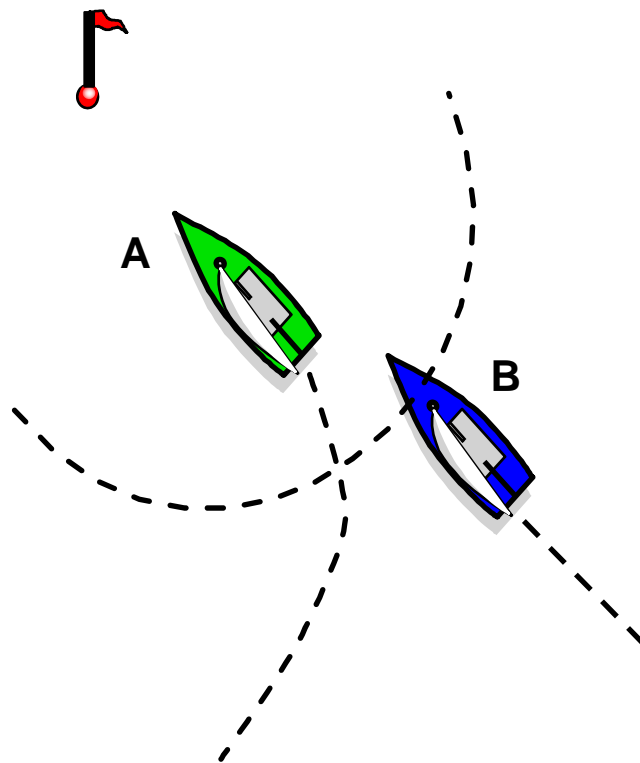
**Don't luff - that
won't give me
room to keep clear**

Rule 16.2 Obstructing



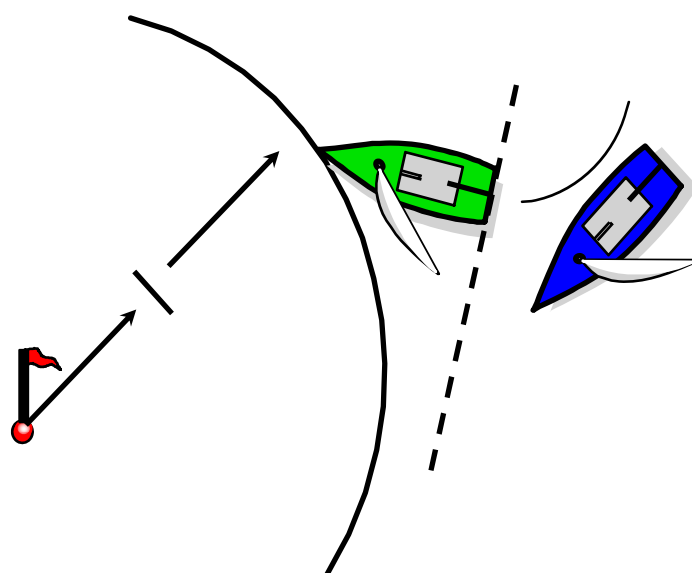
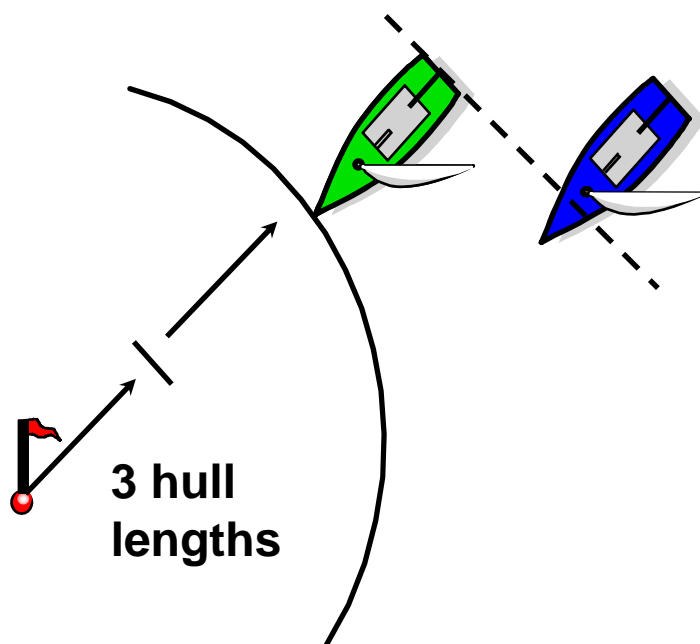
**I'm keeping clear
- don't bear away
and obstruct me**

Approach to windward mark



A must not tack inside the three boat length circle if by doing so B is forced above close hauled.

Rule 18



Rules

- Get a rules book
- Arbitration at Chew
- Rule quiz on web site.
- Read definitions at the back
- Must inform other boat that you want to protest-Time limit.
- Don't always enforce your rights (eg starboard boat on a lift is better off letting the port boat sail on)
- Rule 14 – A boat shall avoid contact with another boat if reasonably possible.



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NOAA 15
2103/00/01 17:51 UTC
Meteorology
southbound 62 W
137.50 MHz
Gemini

- Chew website
- Trends-watch the trend in wind strength and direction over a few days
- Clouds
- Sea Breeze – even at Chew on a hot day at about 1:00 o'clock from the west.



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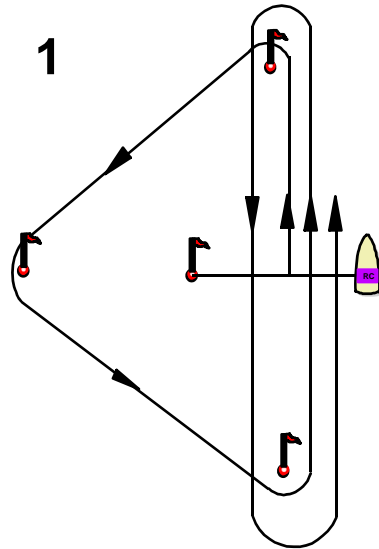
Practice

- Follow my leader – tacking / gybing staying in control
- W/L course – keep going round until I say stop- video shots
- Starting – Rolling 3 minute starts (5-6 with some boats being given a chosen position)
- If in doubt come back to the coach boat
- Debrief

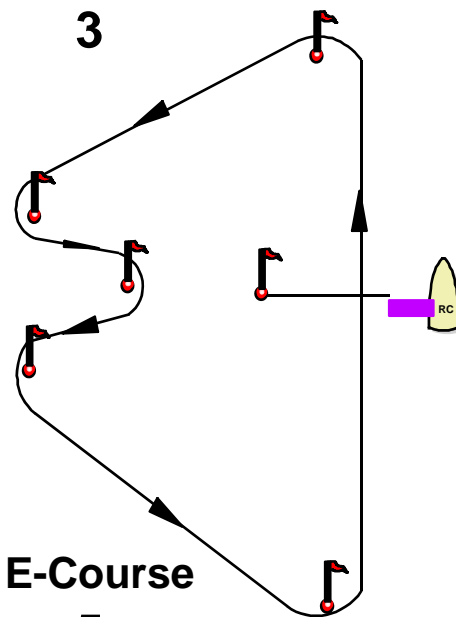


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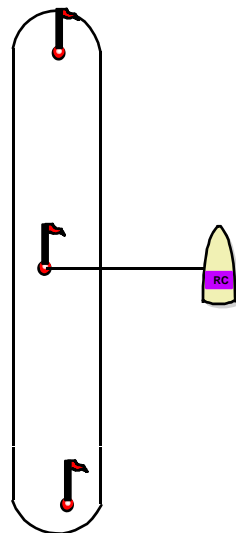
Race Training Exercises (1)



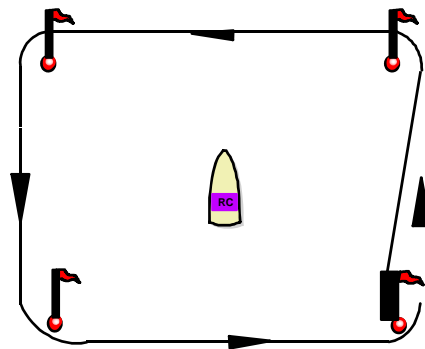
Triangle/Sausage



E-Course

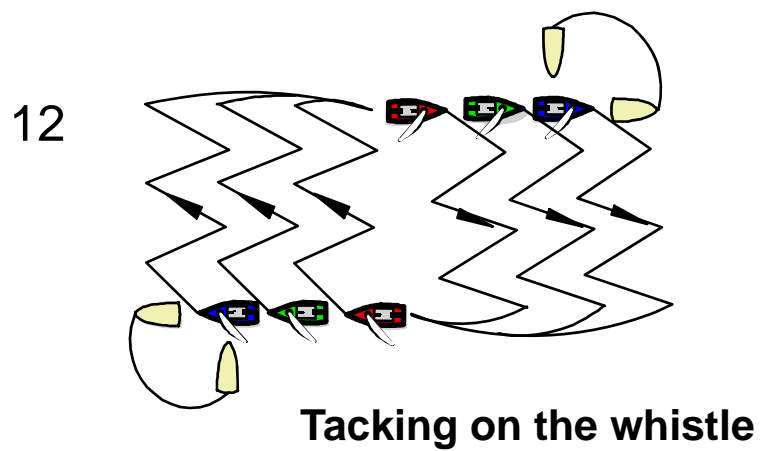
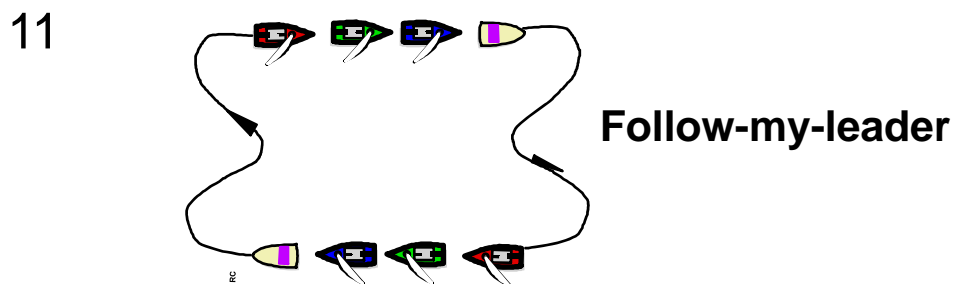
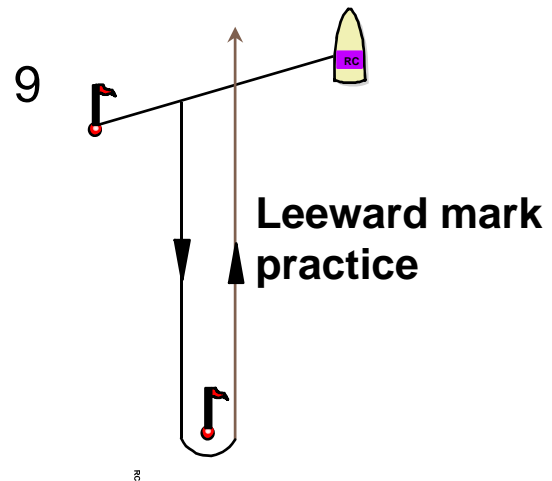
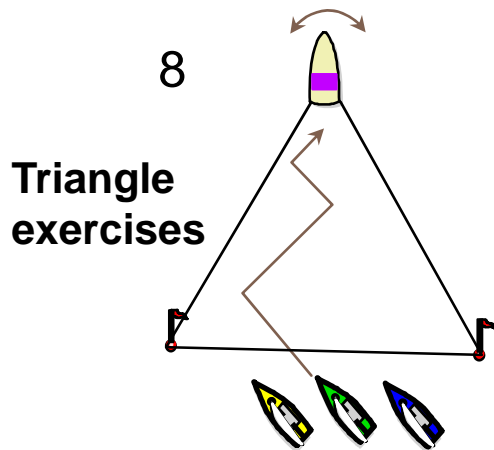


Sausage Course

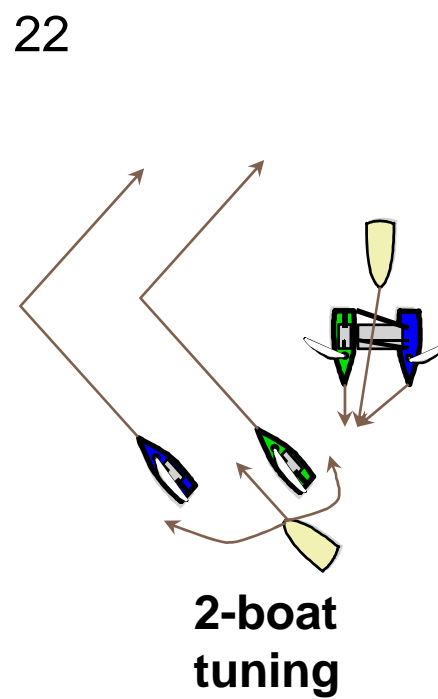
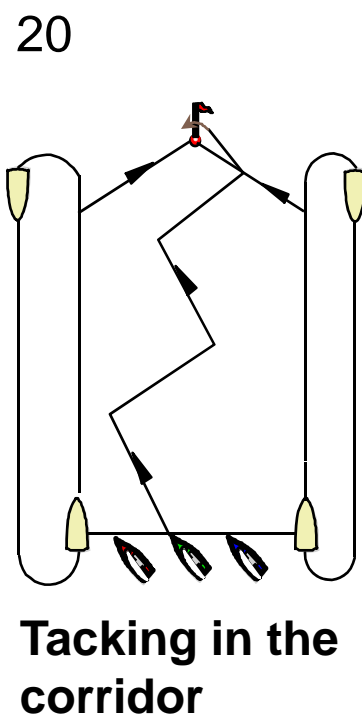
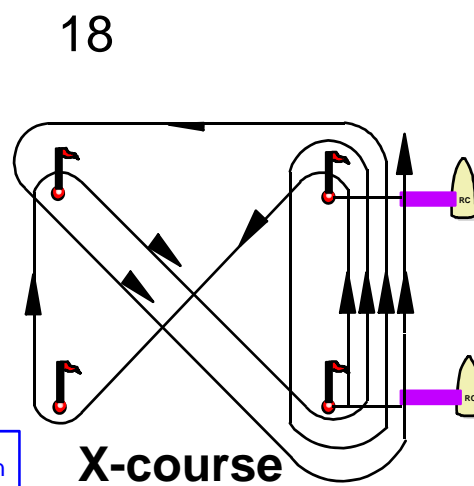
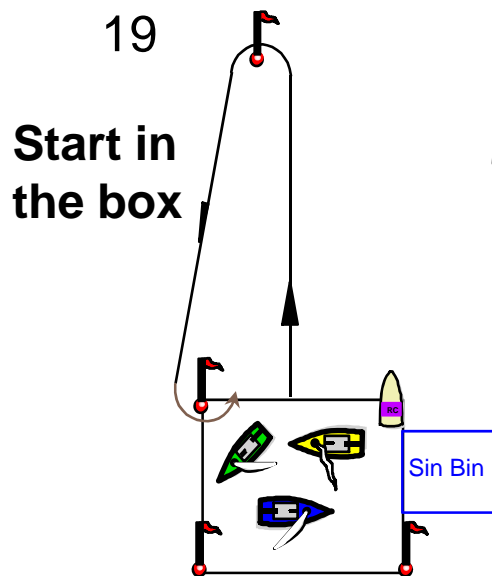


Box Course

Race Training Exercises (2)



Race Training Exercises (3)



Spare parts for building new slides

