



Introduction To Racing

'The Start Of The Journey'



Five Essentials

‘Efficient Sailing’



5 Essentials

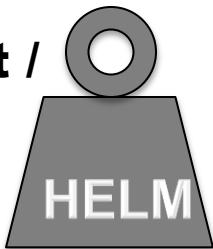
Centre Of Effort
Approximately Centre Of Sail

Centre Of Resistance
Approximately Centre Of What Stops Boat Going Sideways

Centre of Effort

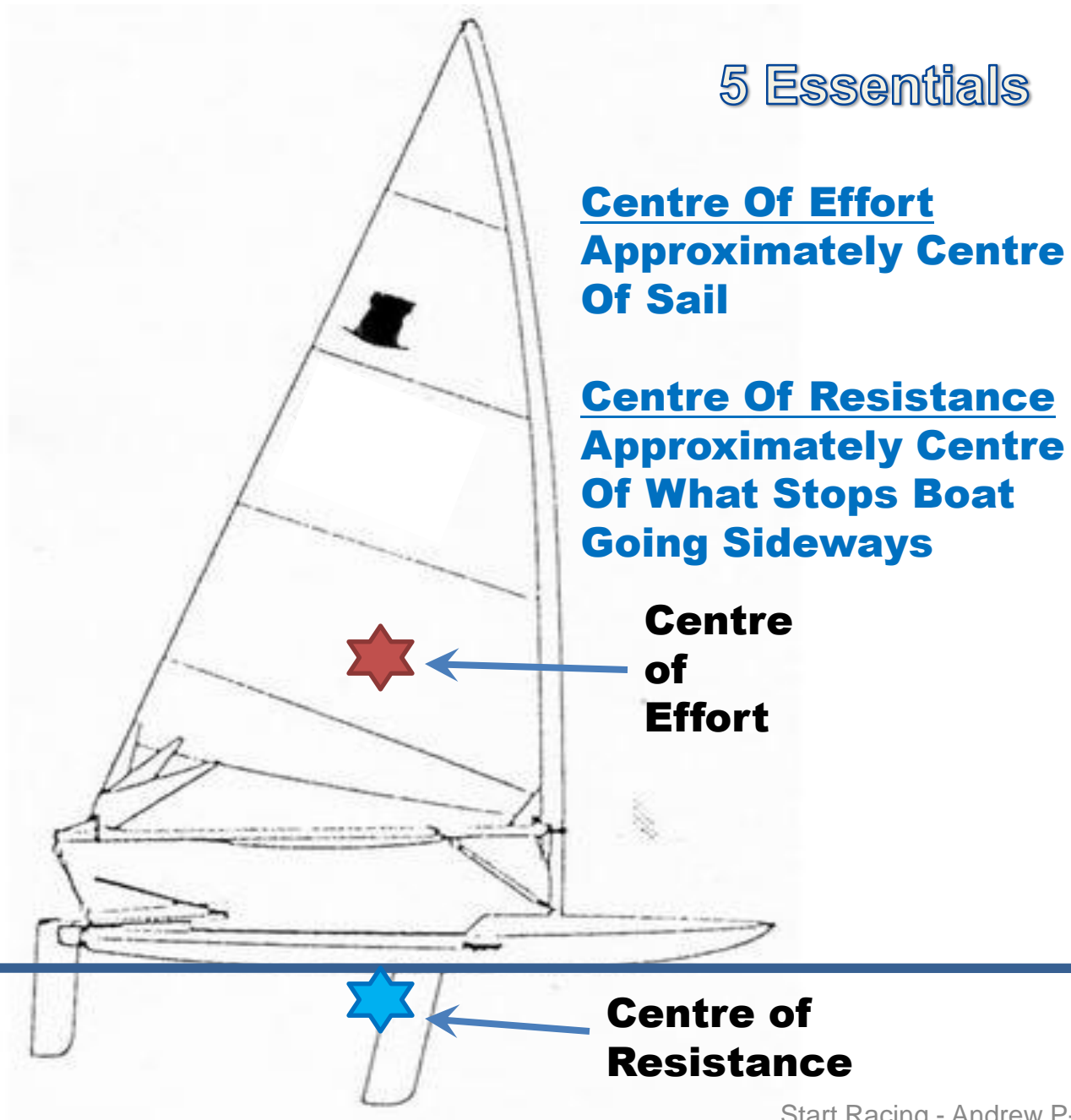
Centre of Resistance

Weight / Crew



Water

TRIM





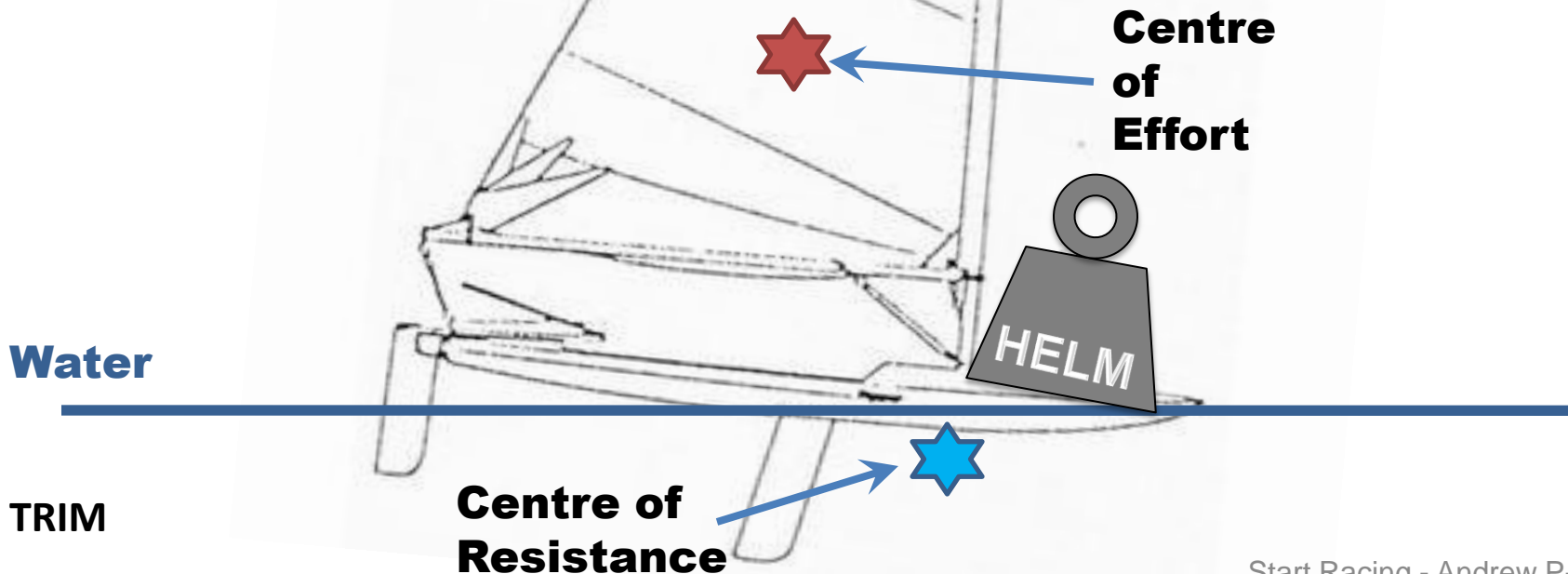
5 Essentials

Weight Forward

More Resistance At Front Of Boat So Encourages Turn Into Wind

Centre Of Effort Moves Forward A Bit.

Centre Of Resistance Moves Even More!





5 Essentials

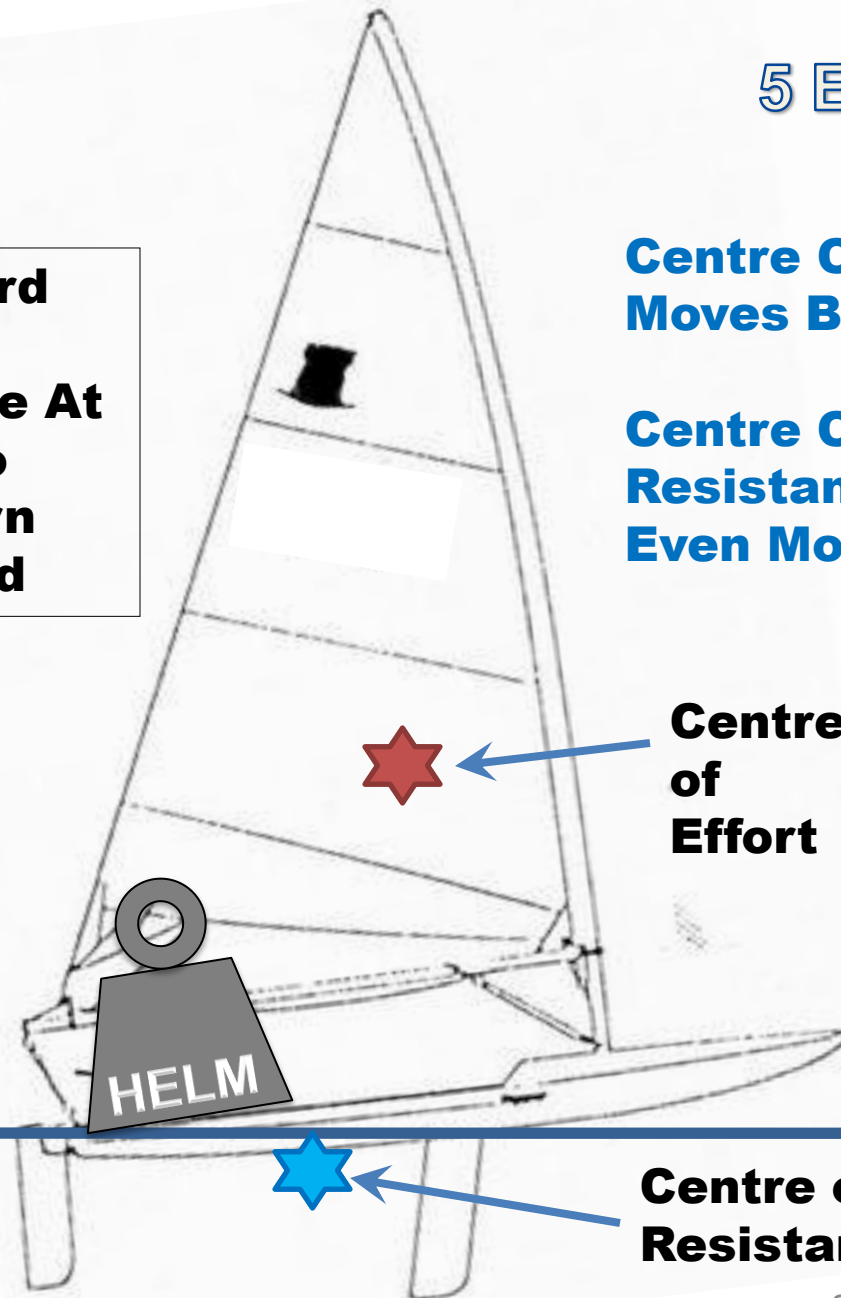
Weight Backward

More Resistance At Rear Of Boat So Encourages Turn Away From Wind

Even Having Rudder Slightly Raised Can Impact On Centre Of Resistance

Water

TRIM



Centre Of Effort Moves Back A Bit.

Centre Of Resistance Moves Even More!

Centre of Effort

Centre of Resistance



5 Essentials

**Weight Backward
& Board Up**

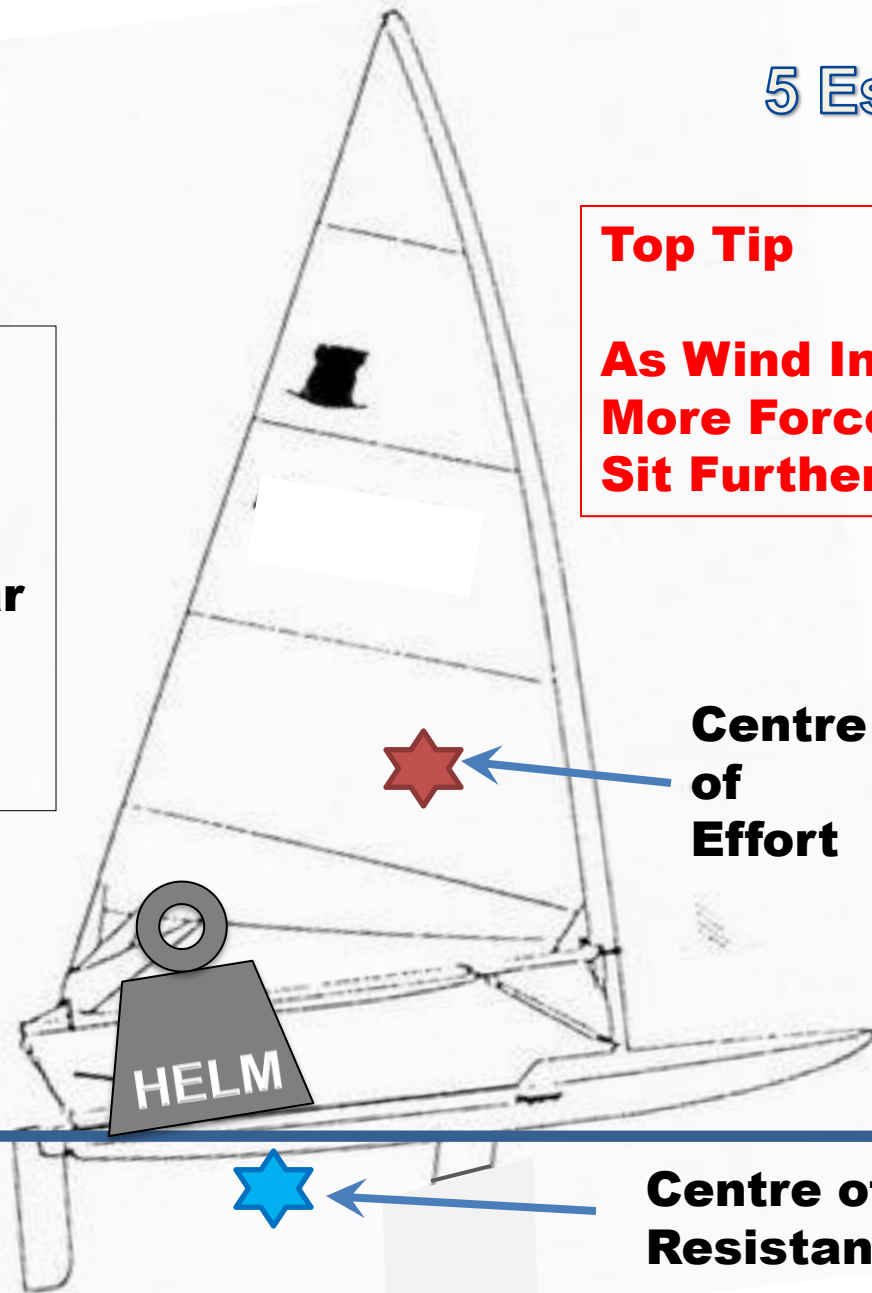
**Even More
Resistance At Rear
Of Boat So
Encourages Turn
Away From Wind**

Top Tip

**As Wind Increases,
More Force On Sail.
Sit Further Back**

Water

TRIM



**Centre
of
Effort**

**Centre of
Resistance**



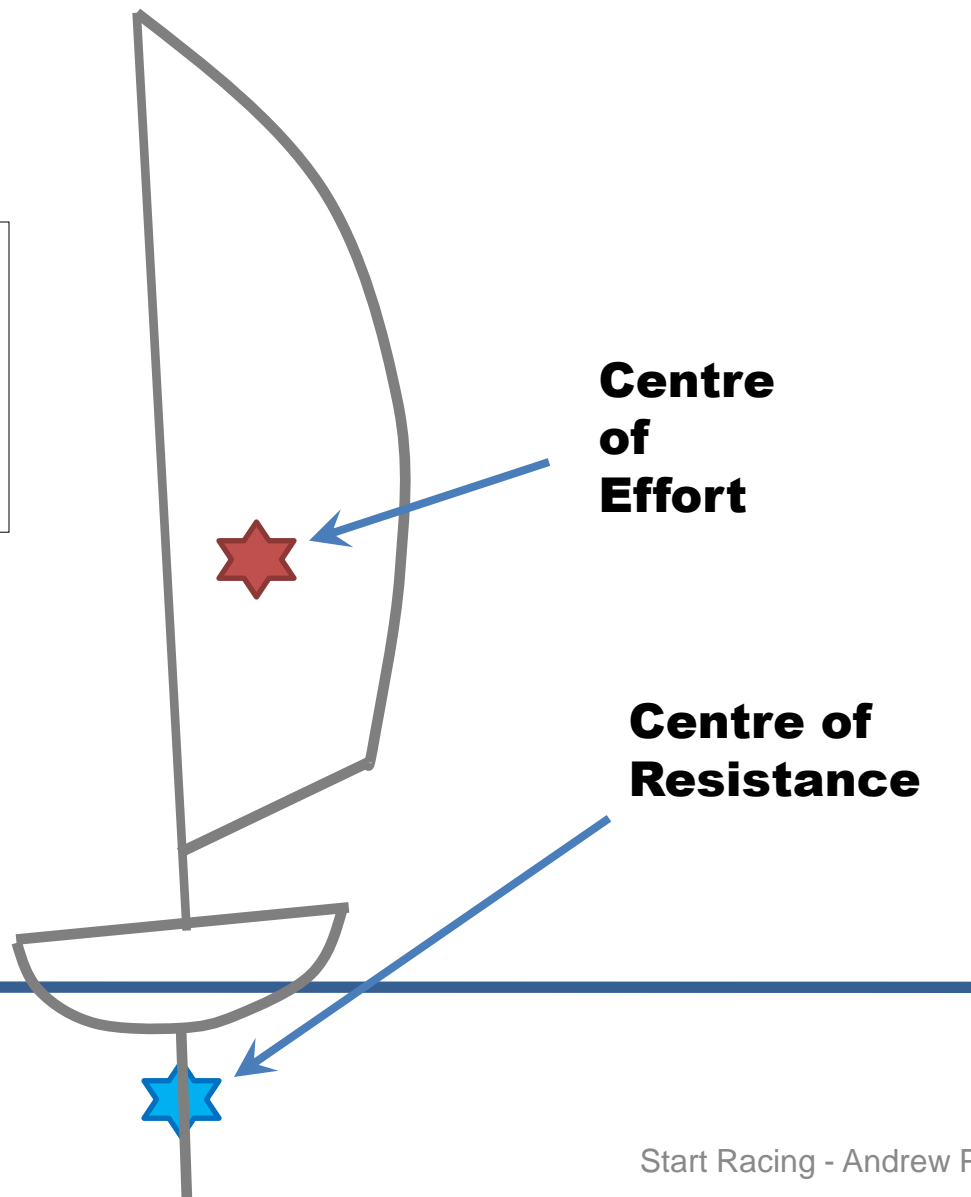
5 Essentials

Boat Upright

**Centre Of Effort
Approximately Above
Centre Of Resistance**

Water

BALANCE



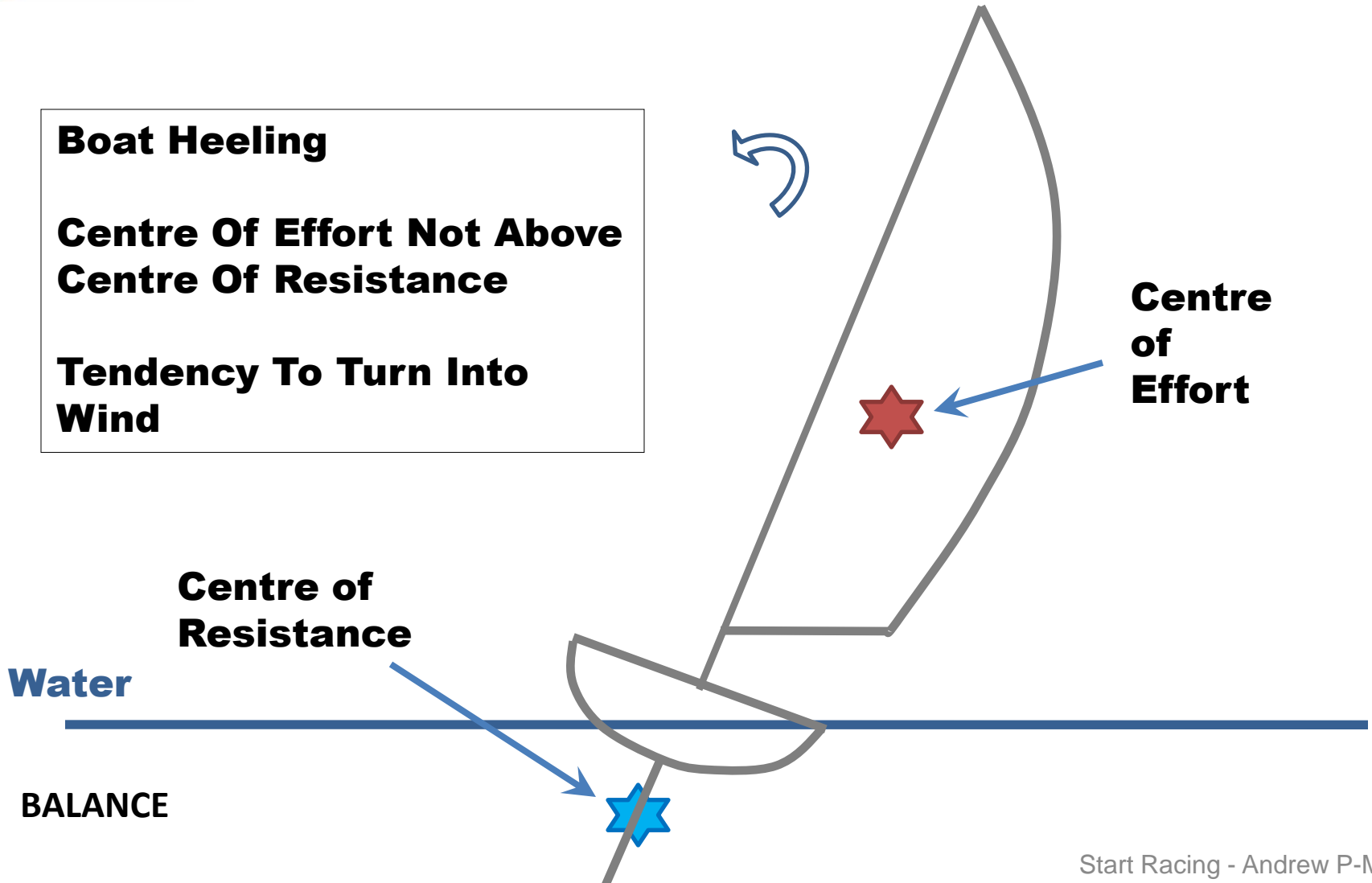


5 Essentials

Boat Heeling

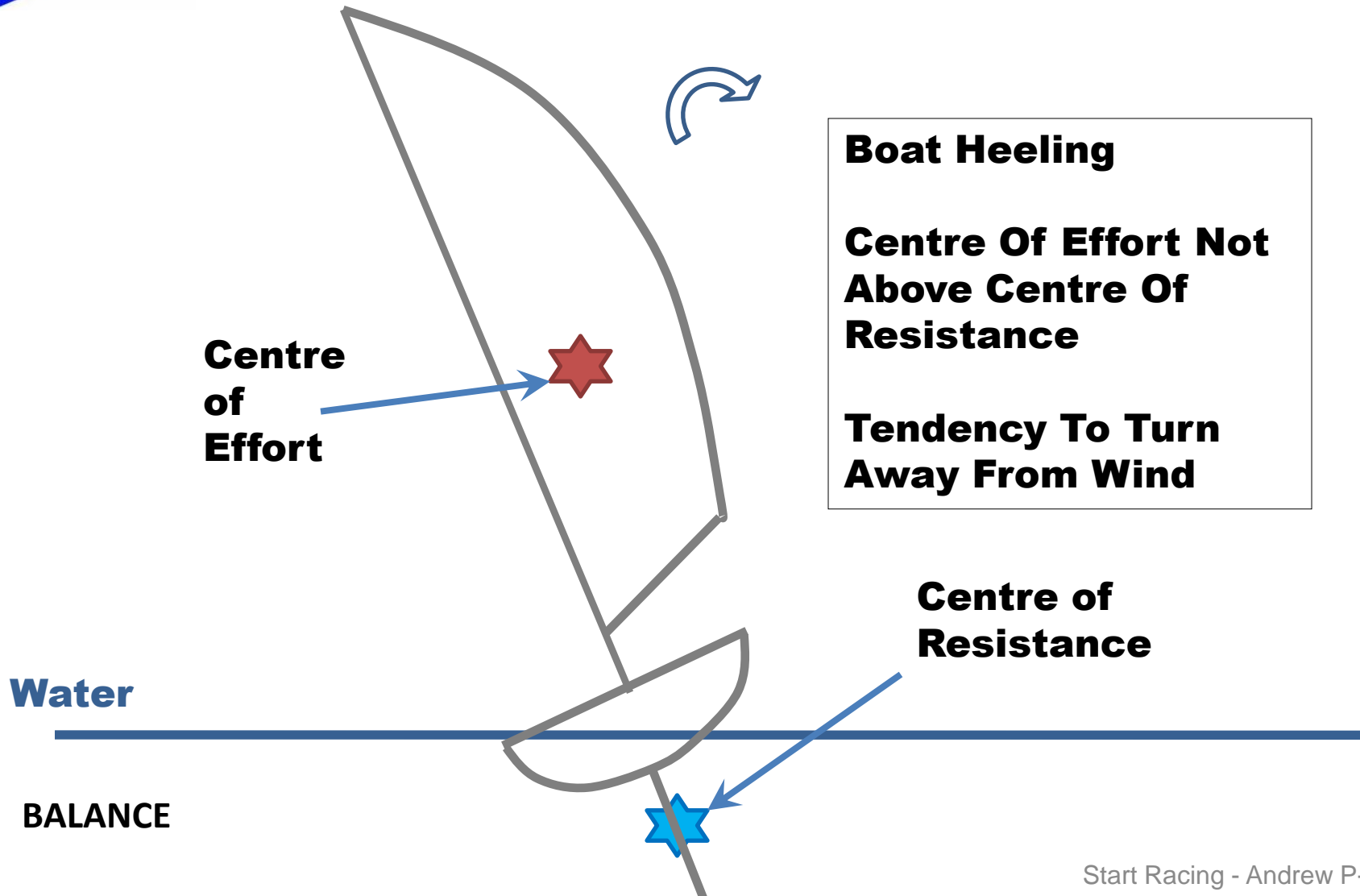
**Centre Of Effort Not Above
Centre Of Resistance**

**Tendency To Turn Into
Wind**





5 Essentials





5 Essentials

Top Tip

Sail Upright

Water

**Excessive Heeling
Takes Some Of The
Rudder Out Of Water**

**Bearing Away Using
The Tiller Will Cause
Lift Over The
Rudder.
Creating Drag.**

Water

BALANCE

**Hike Out Or Let The
Sail Out To Move
Upright**



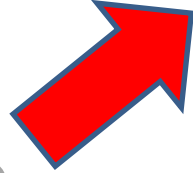
5 Essentials



Wind In Sails



Forward Movement



Forces Caused By Wind And Resistance Combine To Produce Forward Movement

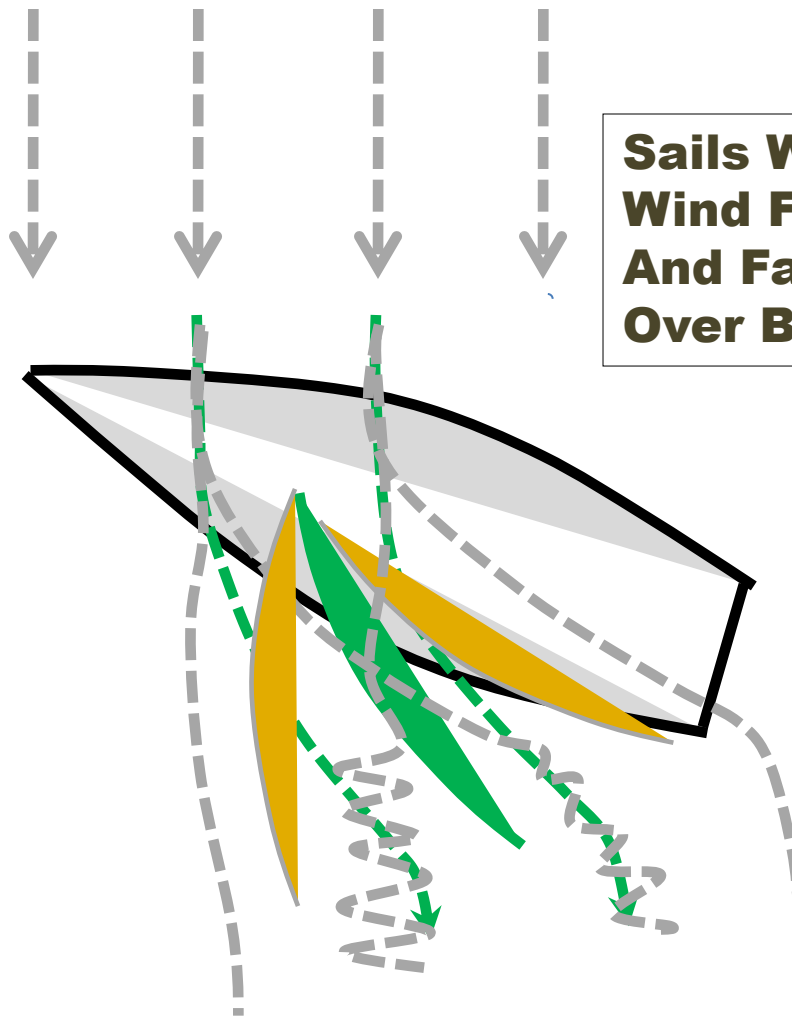
CENTREBOARD / DAGGERBOARD / WIND / SAIL



WIND

5 Essentials

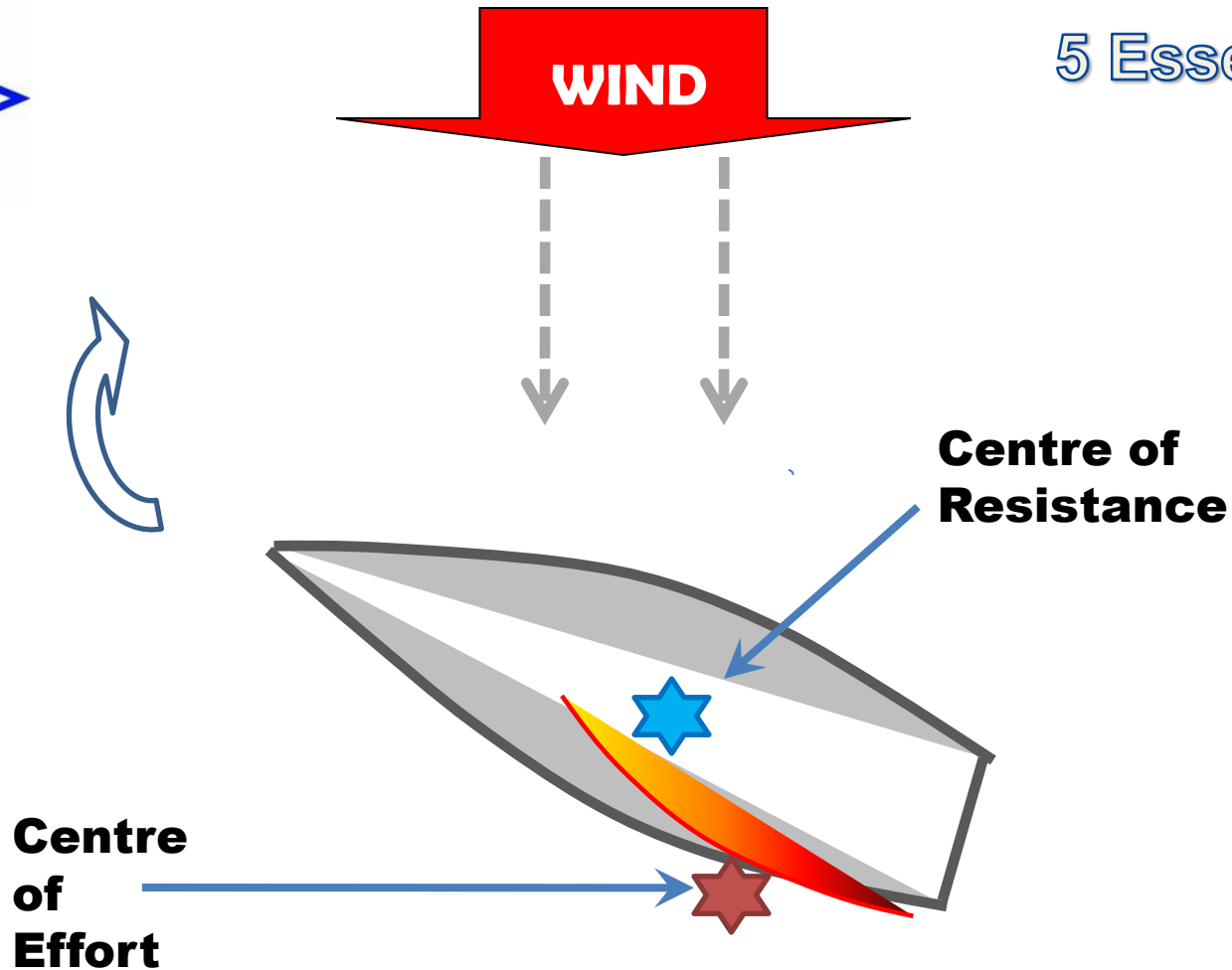
**Sails Work Best With
Wind Flowing Smoothly
And Fairly Equally
Over Both Sides**



SAIL



5 Essentials

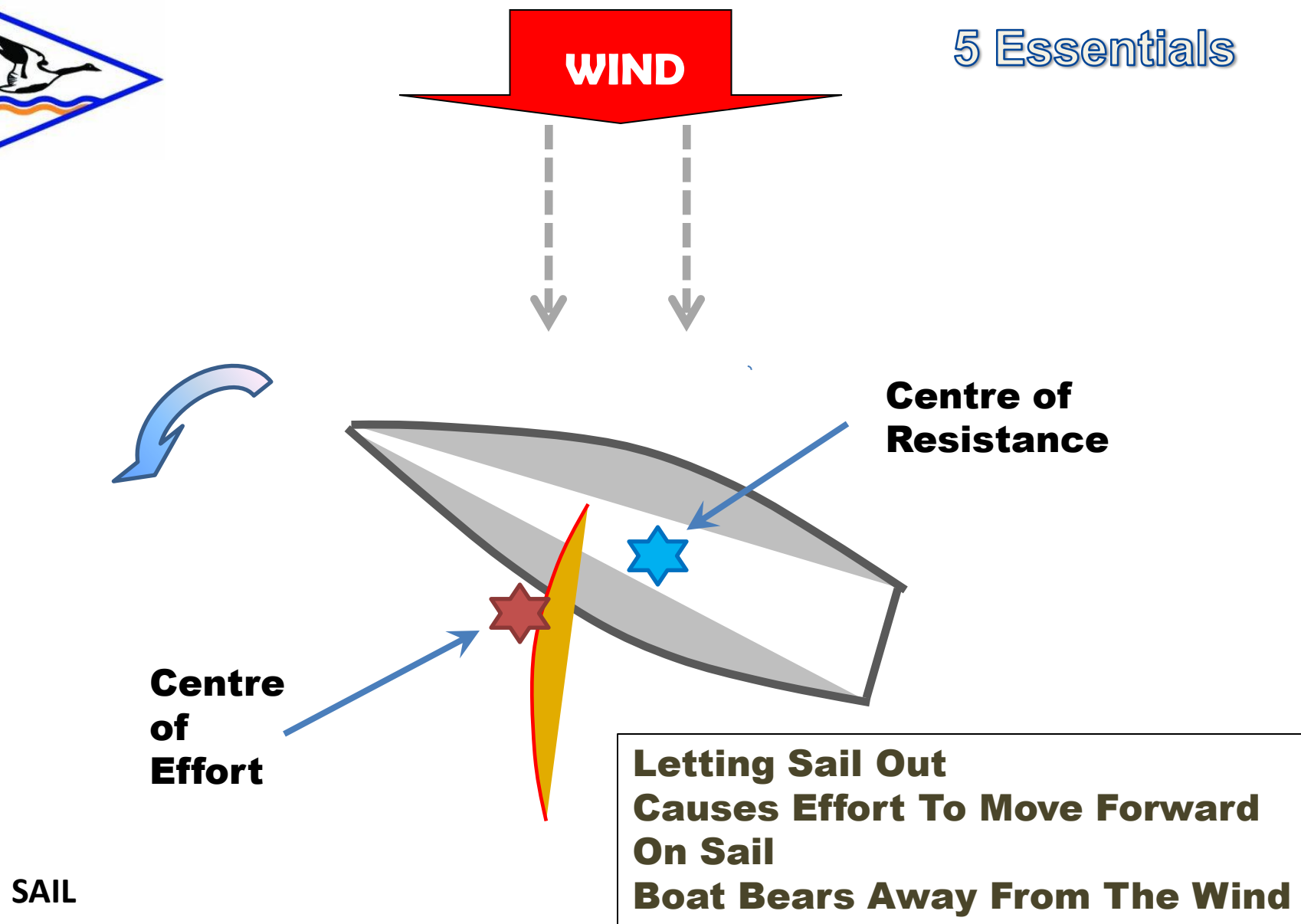


SAIL

**Pulling Sail In
Causes Effort To Move Back In Sail
Boat Heads Into Wind**

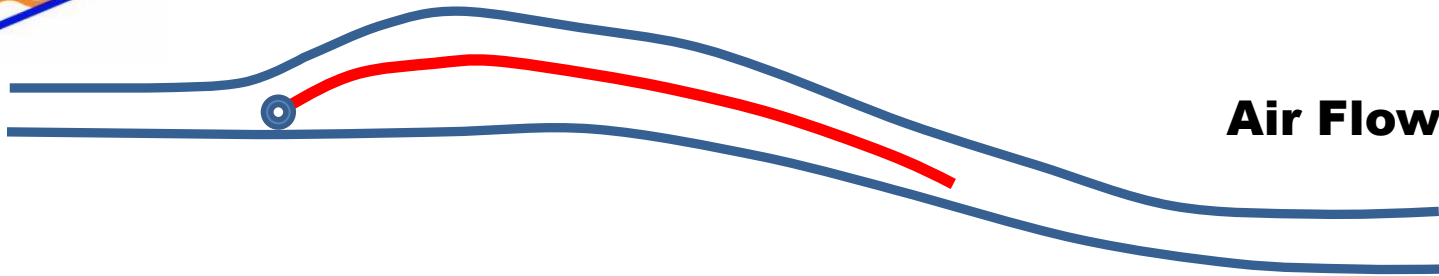


5 Essentials

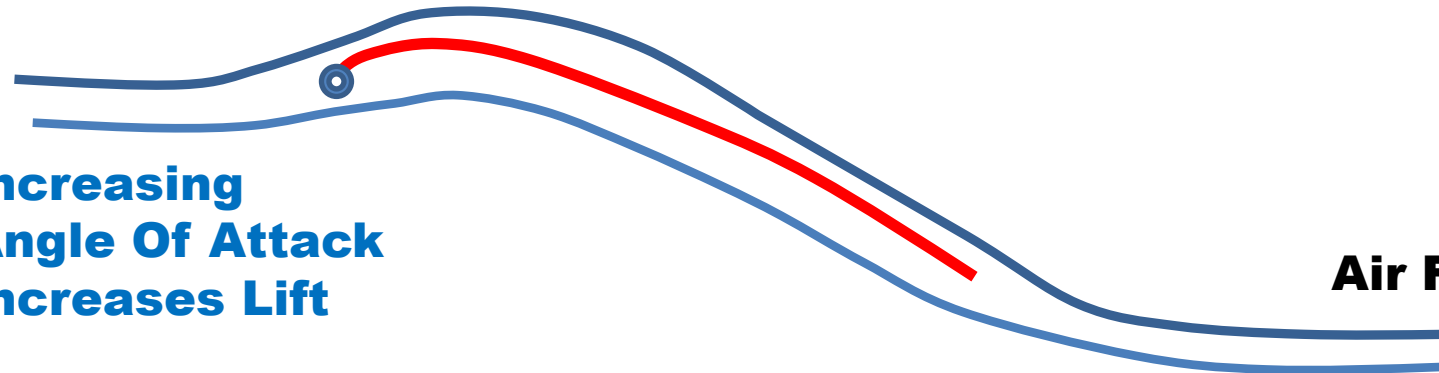




Hooked Sail

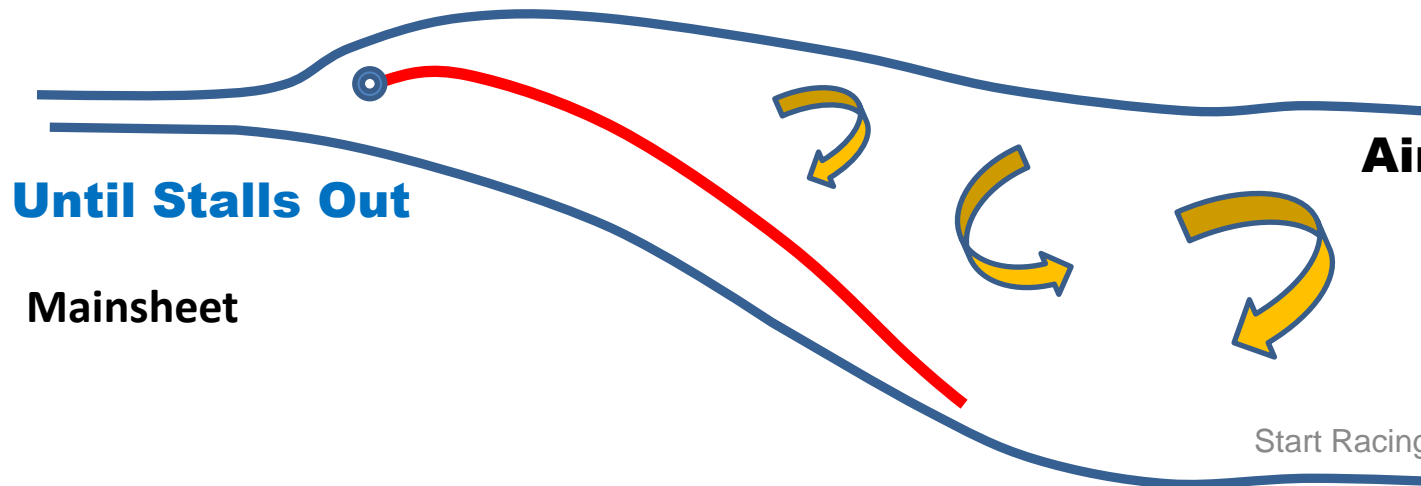


Air Flow



Increasing Angle Of Attack Increases Lift

Air Flow



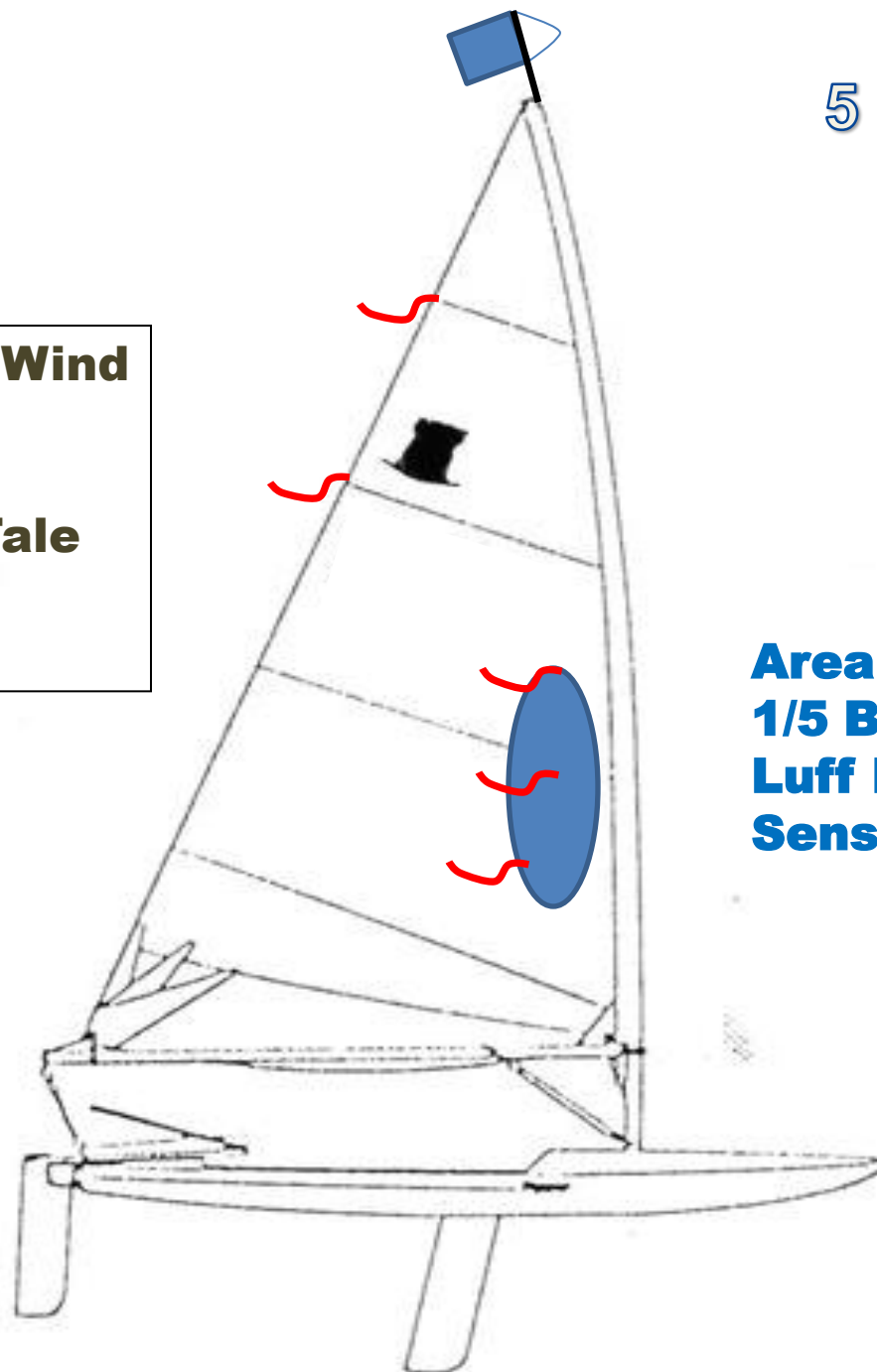
Until Stalls Out

Air Flow

Mainsheet



Remember Other Wind Indicators
E.G. Burgee
Note Leech Tell Tale
Shows Air Flow
Leaving Sail



5 Essentials

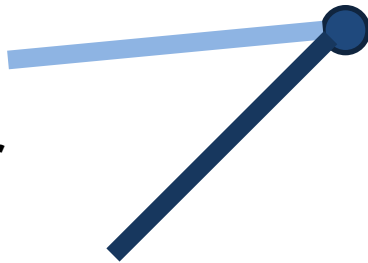
Area About
1/5 Back From
Luff Is Most
Sensitive

SAILS - TELL TAILS

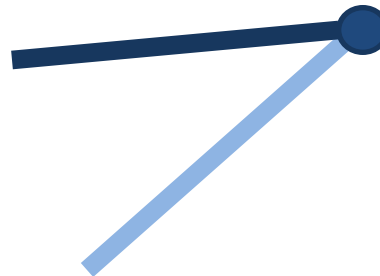


5 Essentials

**Nearest Tell
Tale Down
Bear Away or
Sheet In**



**Furthest Tell Tale
Down Point Up or
Sheet Out**



Top Tip

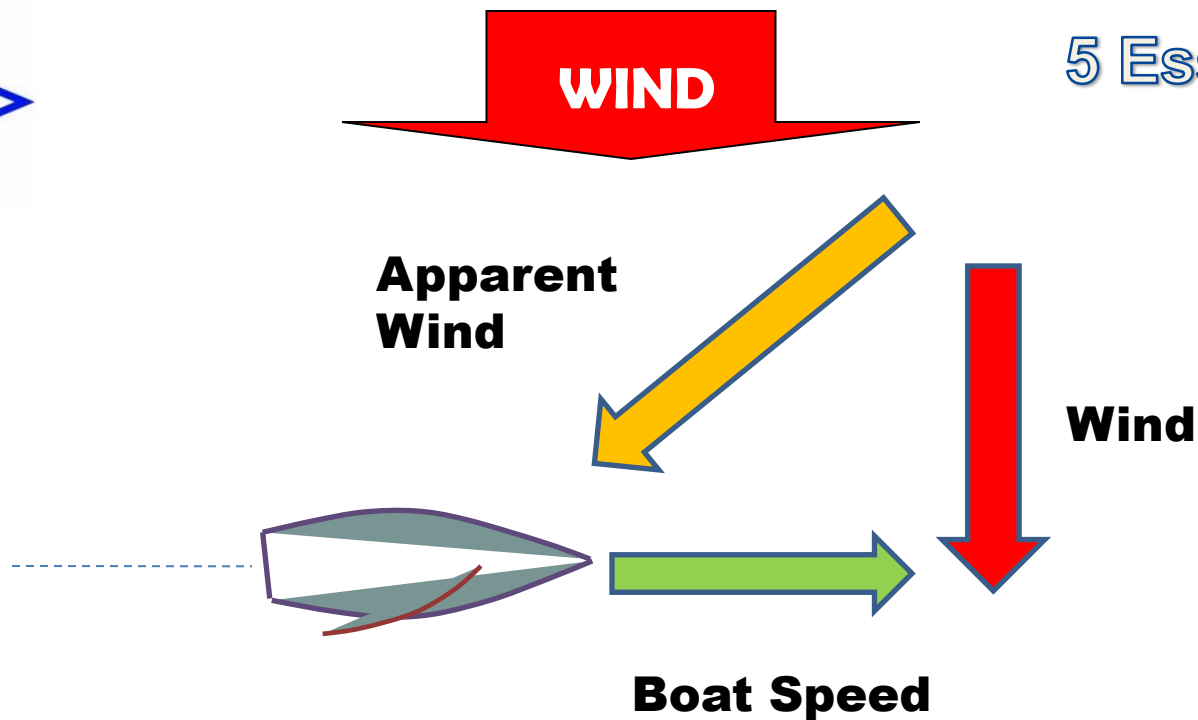
**Both Tell
Tales Flying
= Fast**



SAILS - TELL TAILS



5 Essentials

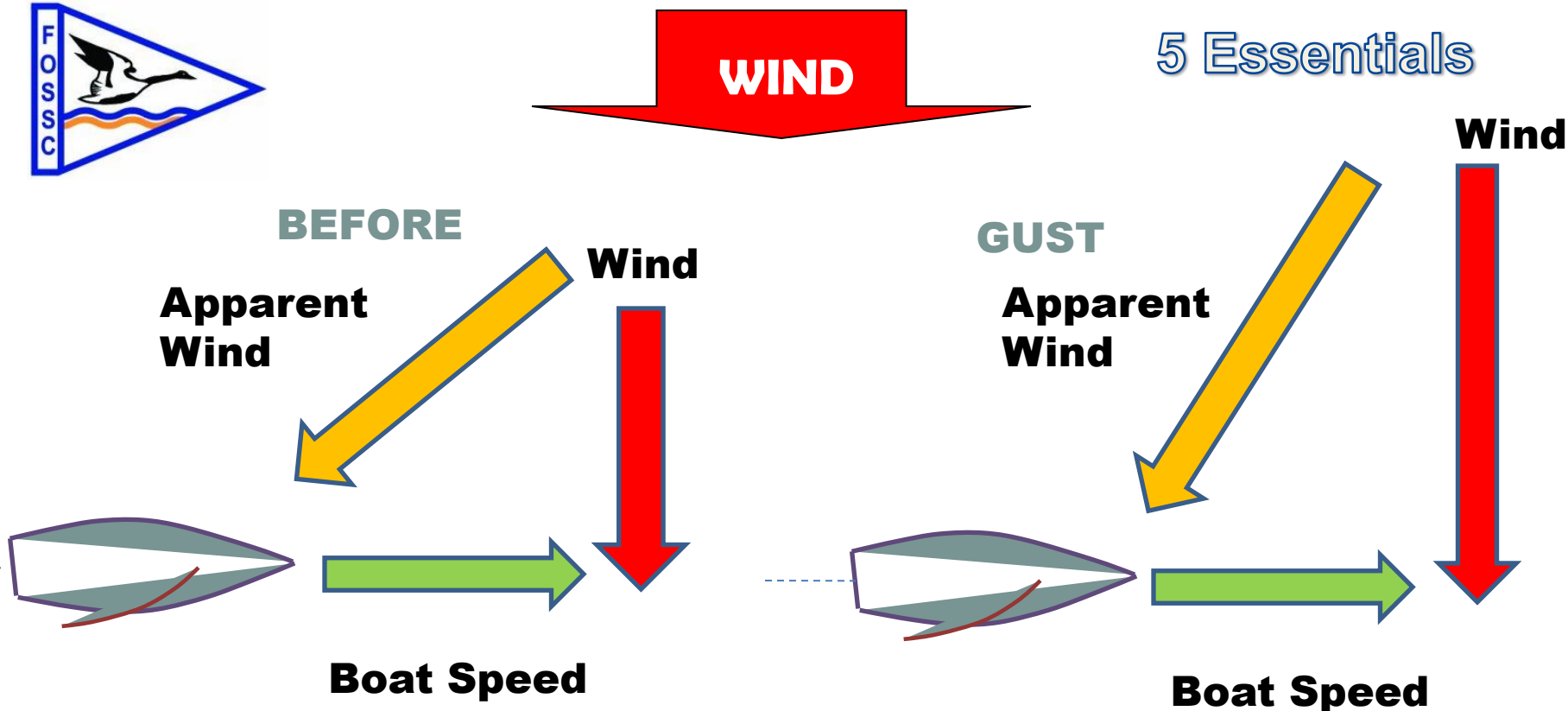


Apparent Wind Is The Wind As It Appears To The Sailor On A Moving Boat. Different In Speed And Direction From The True Wind That Is Experienced By A Stationary Observer.

Apparent Wind



5 Essentials



**Wind Gets Stronger In A Gust Apparent Wind Goes Further Aft
And In A Lull The Apparent Wind Goes Further Forward**

**So During a Gust
Head Up To Wind (If Sailing To Windward)
Hike More & Let Sail Out**

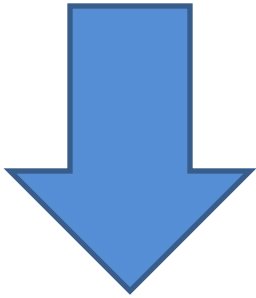
Sailing in A Gust of Wind



WIND

5 Essentials

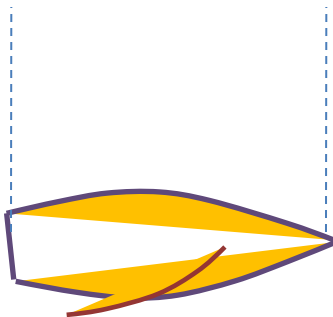
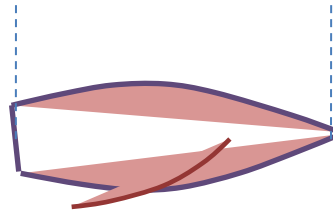
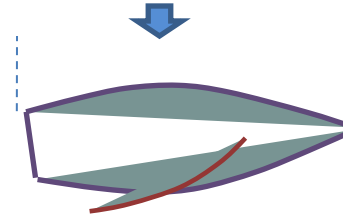
No Board



Half Board



Full Board



Top Tip

**Generally Better To
Have Slightly Too Much
Board Down Check
Wake & Transits**

CENTREBOARD / DAGGERBOARD



5 Essentials



BEAR AWAY

2

**Sail Out
Board Up
Balance Flat
Trim Flat
Straight
Course**

**Tack towards
Mark**

**Sail In
Board Down
Balance Flat
Trim Flat**

**Sail ½ Out
Board ½ Up
Balance Flat
Trim Flat
Straight
Course**

**TURN
UP TO
WIND**

GYBE

3

1

COURSE – 5 E's



5 Essentials

Course Made Good

- **Plan Your Route Or Course.**
- **Select Route That Will Enable Getting To Destination In The Shortest Possible Time**
- **E.G. A Straight-line Course When Sailing Off wind In Inland Waters.**
- **Consider Leeway And Know When And How To Tack And Gybe.**

Course Made Good



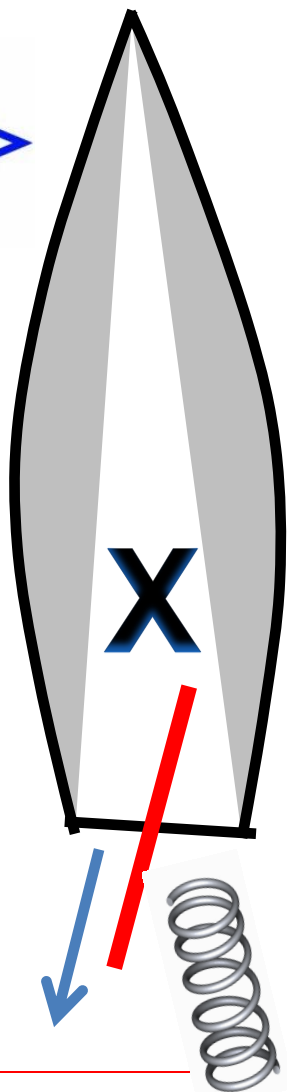
Efficient Sailing

**‘When You Are Learning To Sail
The Tiller Is Your Friend,
When You Are Racing It Is Your
Enemy.....**

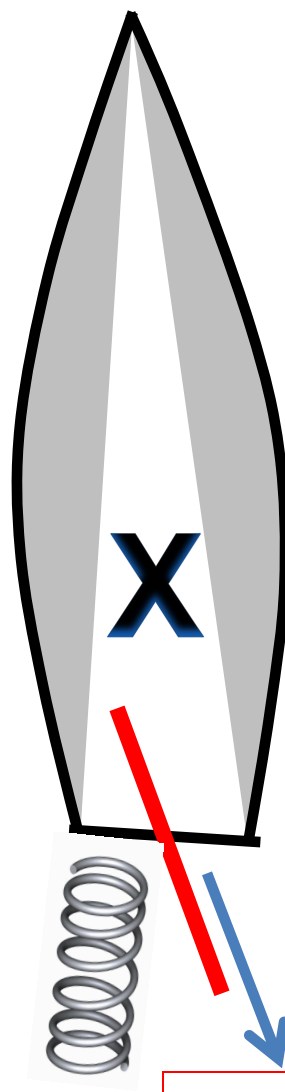
**Because Every Time You Use It,
It Slows You Down’**



Efficient Sailing



Top Tip
Check Rudder
Central Also
Look At Wake



Top Tip
A Light Touch On The
Extension Can Feel Rudder
Pressure





Keeping Out of Irons

Check Tiller Position – Sometimes Helms Position In The Boat Encourages Tiller To Be Angled And Steering Boat Into Wind. Look Behind You To Check.

- Use Tell Tales – Concentrate On Luff Of Sail – Maintain Good Speed At All Times**
- Tacks Tend To Be Easier Starting From A Close Hauled Course**
- Try To Tack With Good Boatspeed**
- A Roll Tack Helps Maintain Boatspeed**
- To Tack And Then Tack Again When Things Aren't Going Well - Makes Things Worse**
- A Hard Yank Or Two On The Tiller May Be Enough To Bear Away and Quicker Than Push Push, Pull Pull**

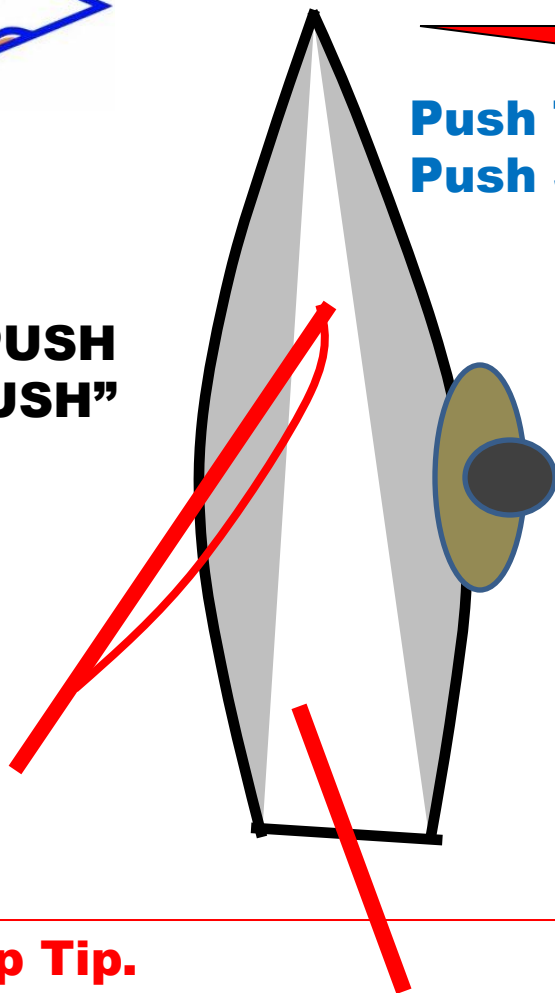


WIND

Getting Out of Irons

Push Tiller Away
Push Sail Away

**“PUSH
PUSH”**



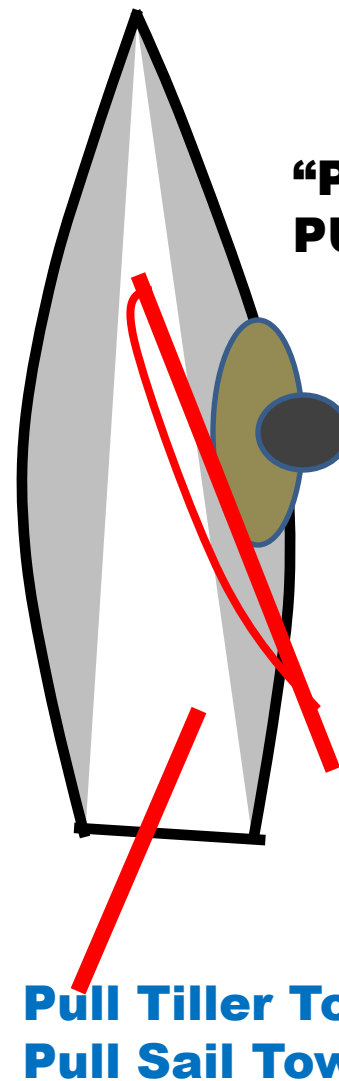
Top Tip.

**Avoid
Getting Into
Irons.
-Use 5 E's**

Top Tip.

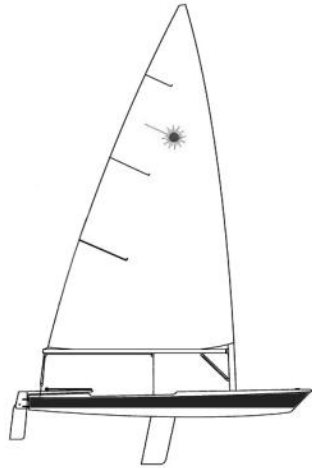
**Don't 'Restart' Too Soon.
Go To Almost 90° From The Wind**

**“PULL
PULL”**



Pull Tiller Towards You
Pull Sail Towards You

Getting Out of Irons



Topper Designed As A Beach Boat So Mast Set A Bit Further Back Than Most Boats.

Helps Boat To Turn Safely Into Irons If The Tiller Is Released.

If Racing – Use 5 Essentials To Compensate For This

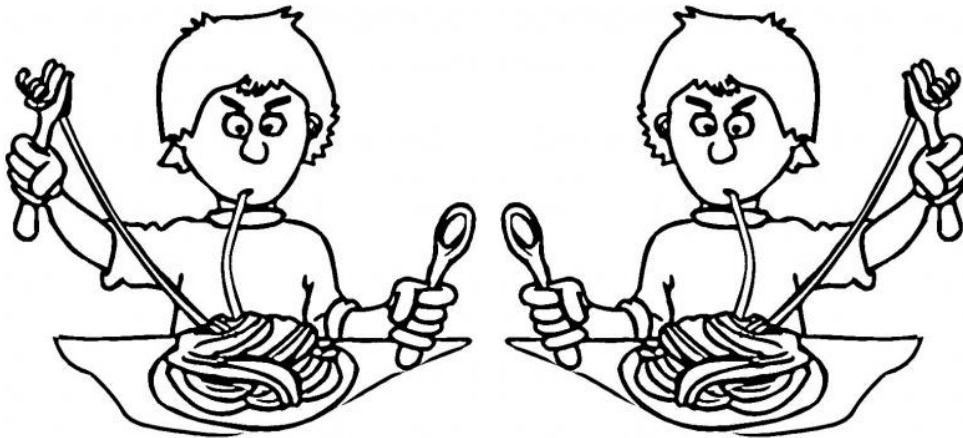
Centre of Effort

The Topper

Centre of Resistance



Sheeting in and out

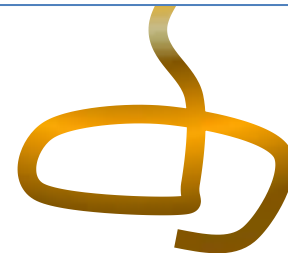


**Eating Spaghetti
(Centre Main)**



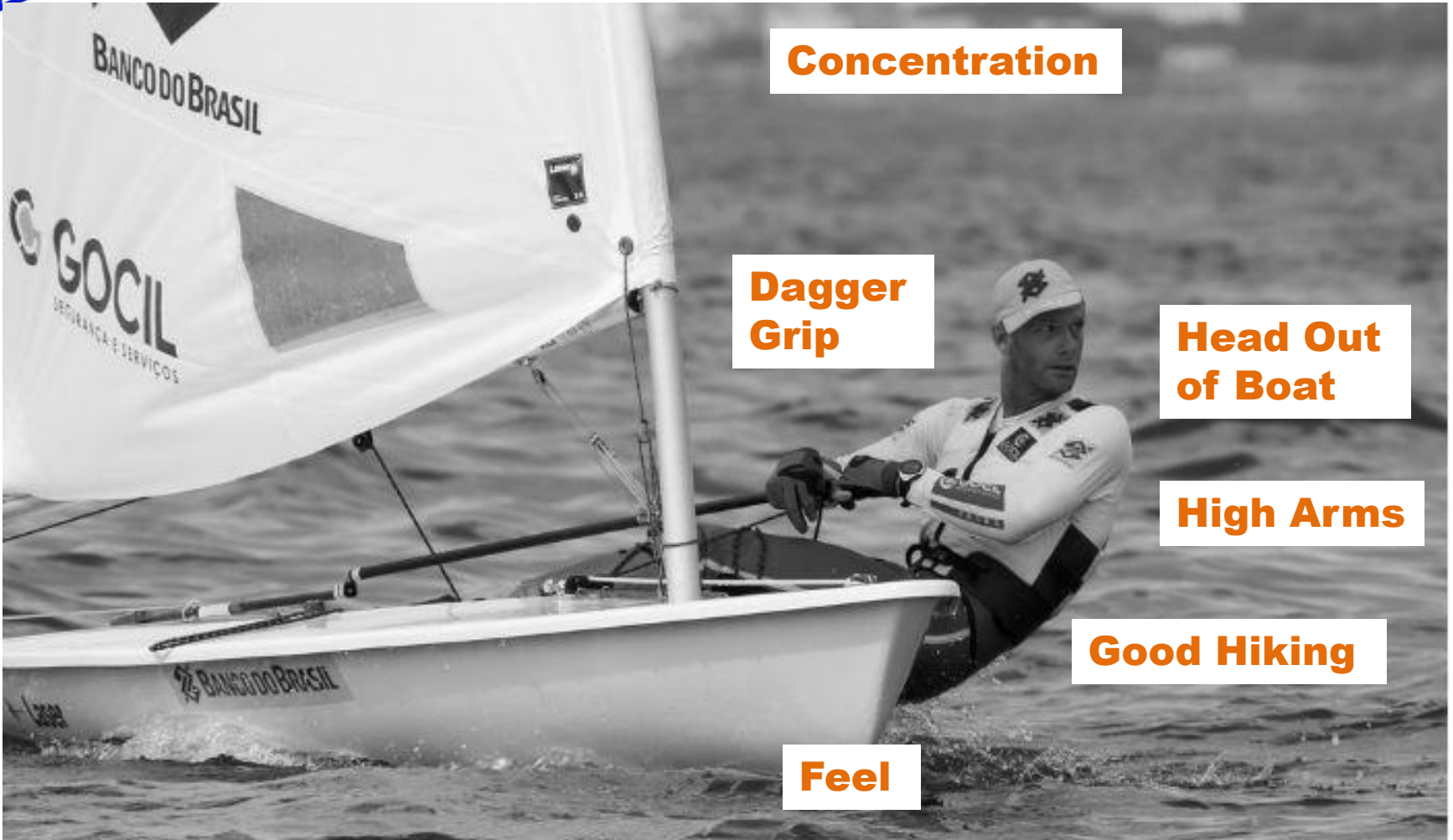
**Arm Raised To 'Dump' The
Mainsheet
Clears Most Tangles
Free Flow Through Block.**

Mainsheet





Scheidt



Concentration

**Dagger
Grip**

**Head Out
of Boat**

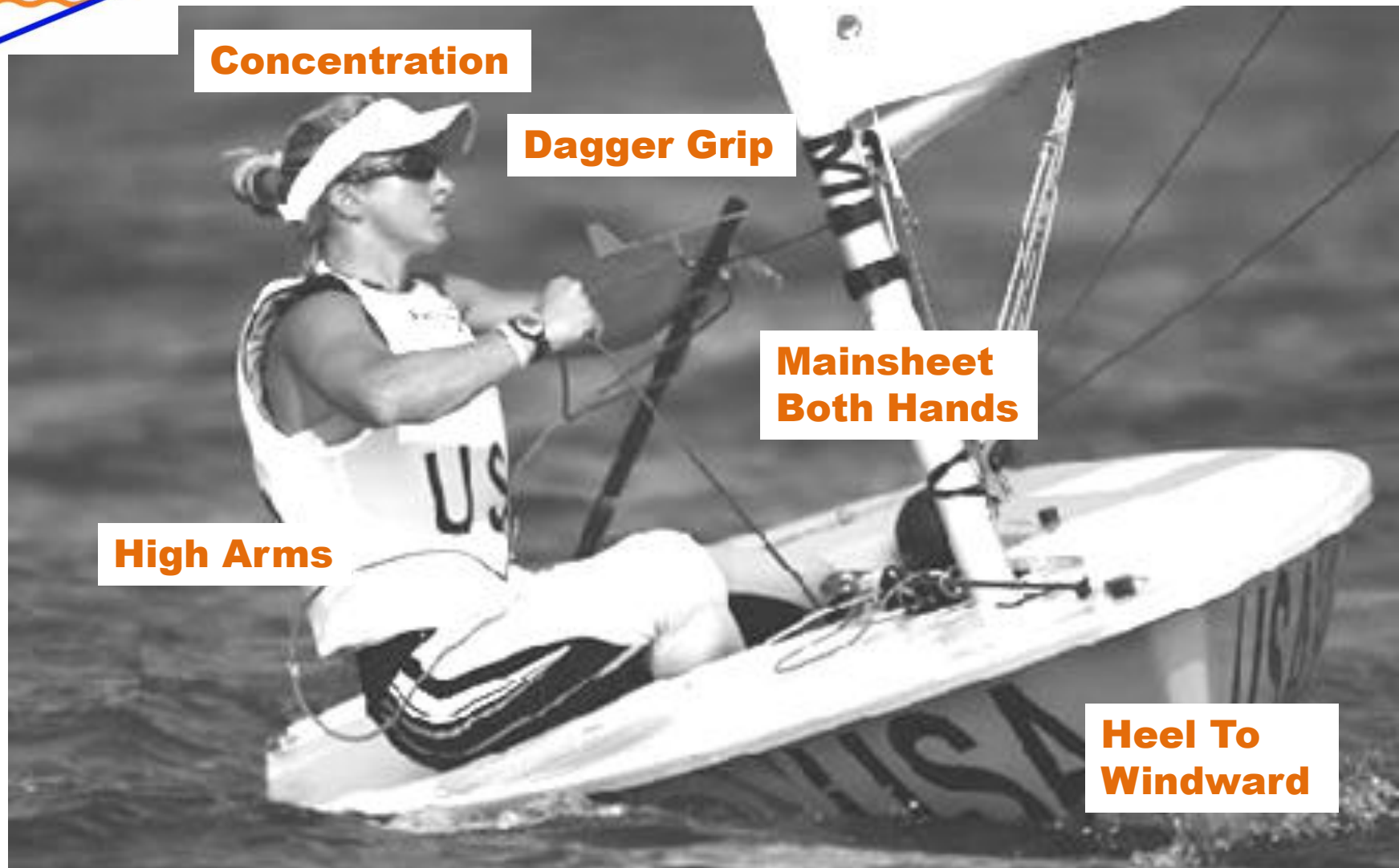
High Arms

Good Hiking

Feel



Tunncliffe



Concentration

Dagger Grip

**Mainsheet
Both Hands**

High Arms

**Heel To
Windward**



Ainslie



Concentration

High Arms

**Heel To
Windward**

Dagger Grip

Eating Spaghetti ?

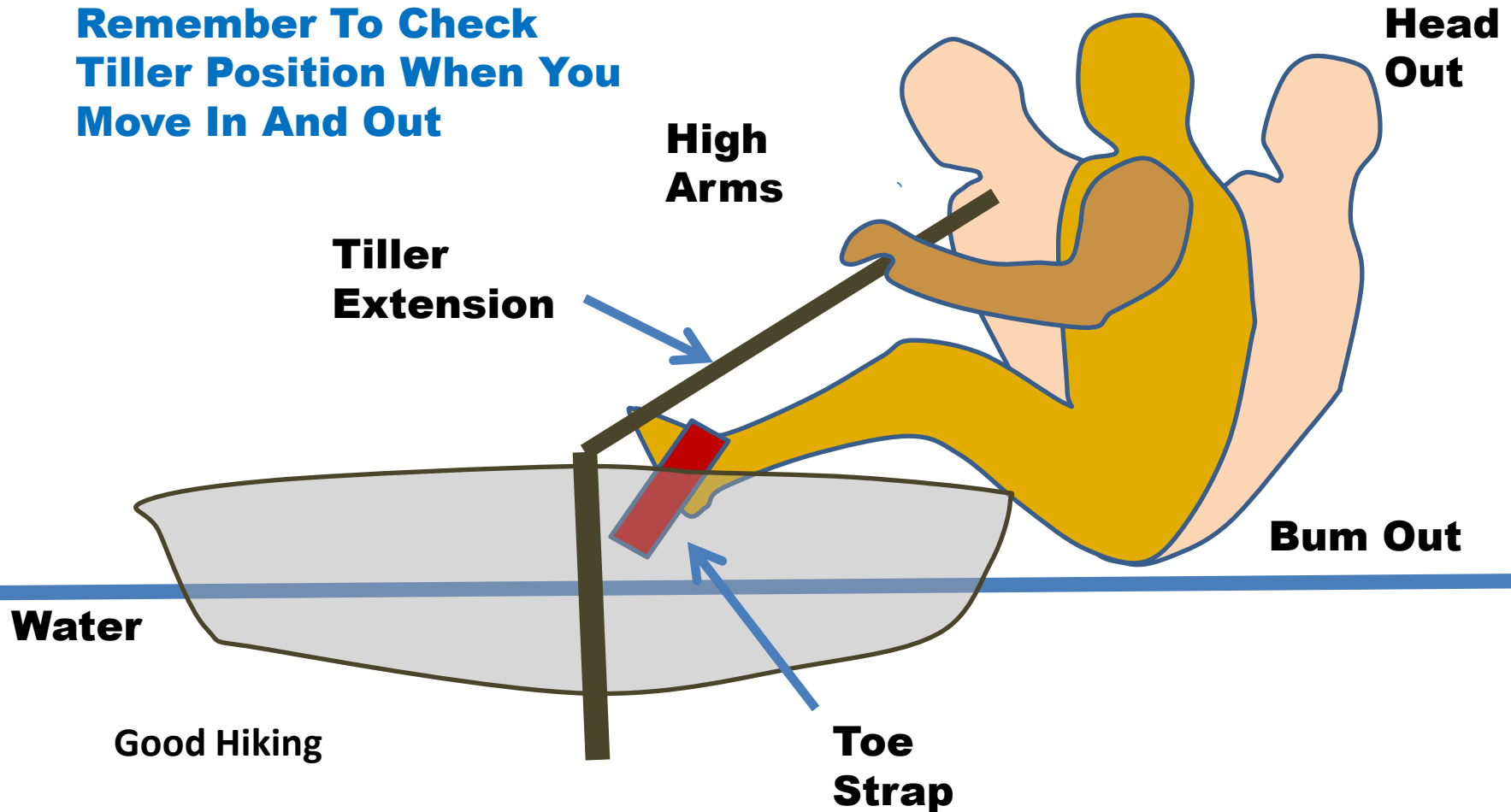
**Having A Rest
Downwind? -
No**



Hiking Position

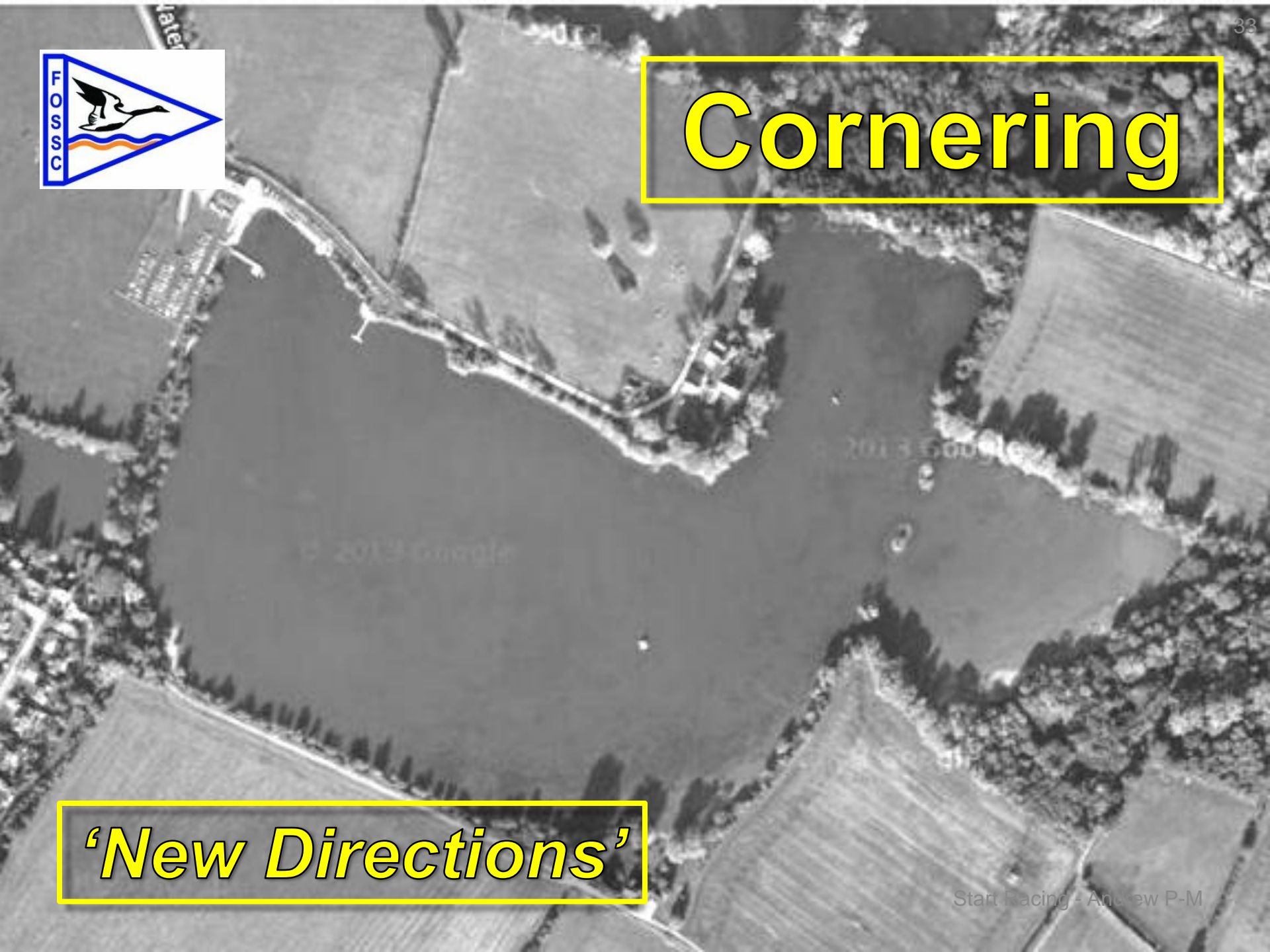
**Moving Torso Can Make
Big Changes To Balance
And Trim**

**Remember To Check
Tiller Position When You
Move In And Out**





Cornering



'New Directions'

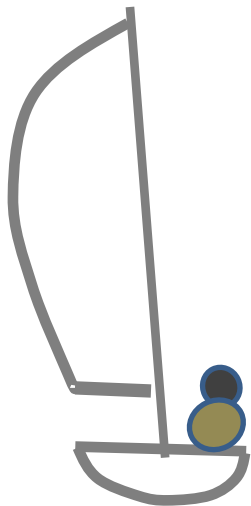


WIND

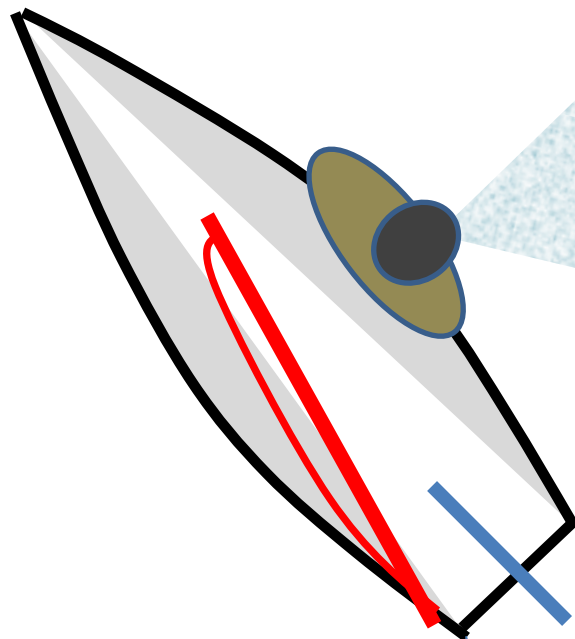
Roll Tack

1 - ENSURE GOOD BOATSPEED

2 - LOOK (BEHIND YOU) Check its safe to tack



Cornering



Top Tip

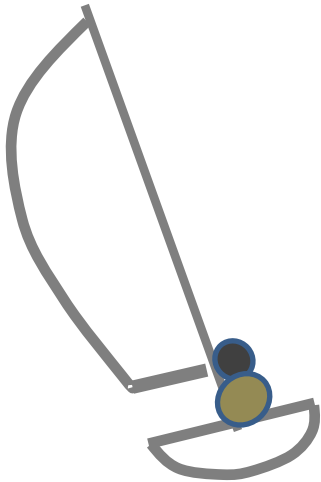
Also Look Under Boom!



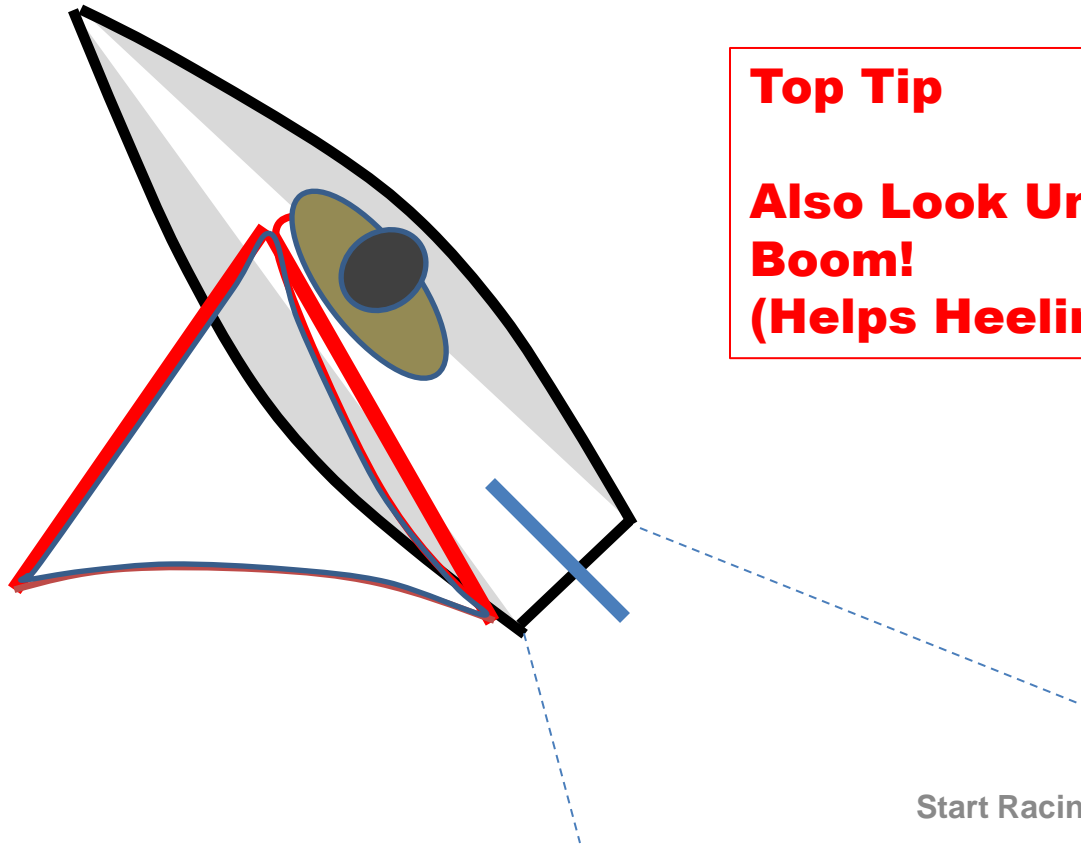
WIND

Roll Tack

**3 - HEEL To LEEWARD ABOUT 10°
(Helps Turning To Windward)**



Cornering



Top Tip

**Also Look Under
Boom!
(Helps Heeling)**

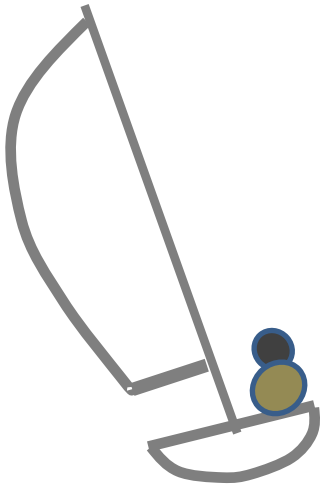


WIND

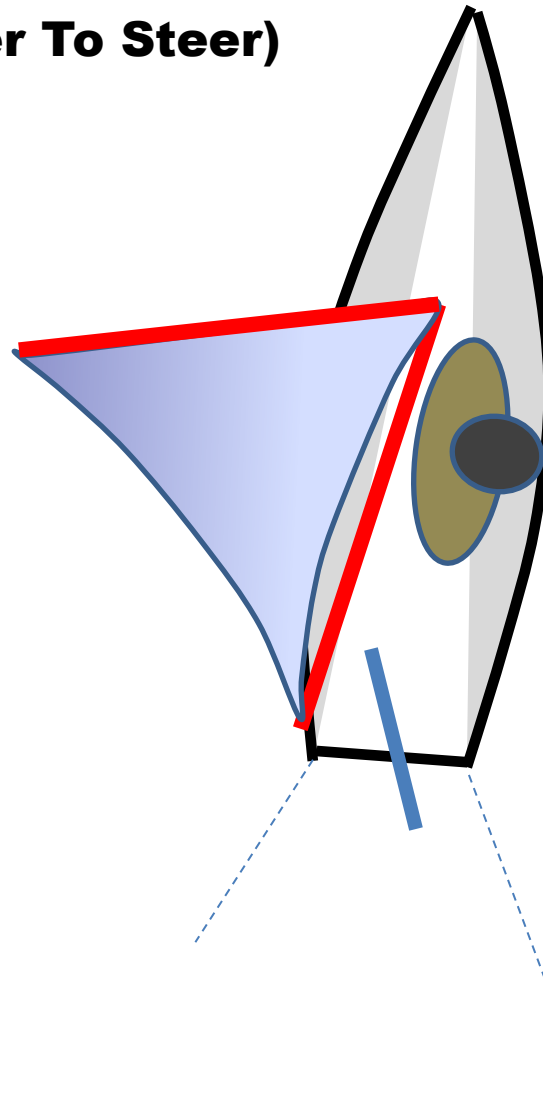
Roll Tack

**4 - GO THROUGH Towards HEAD TO WIND
(Use Bit Of Rudder To Steer)**

**Use Momentum To
Gain Distance To
Windward – Turning
Too Fast Takes Off
Speed**



Cornering



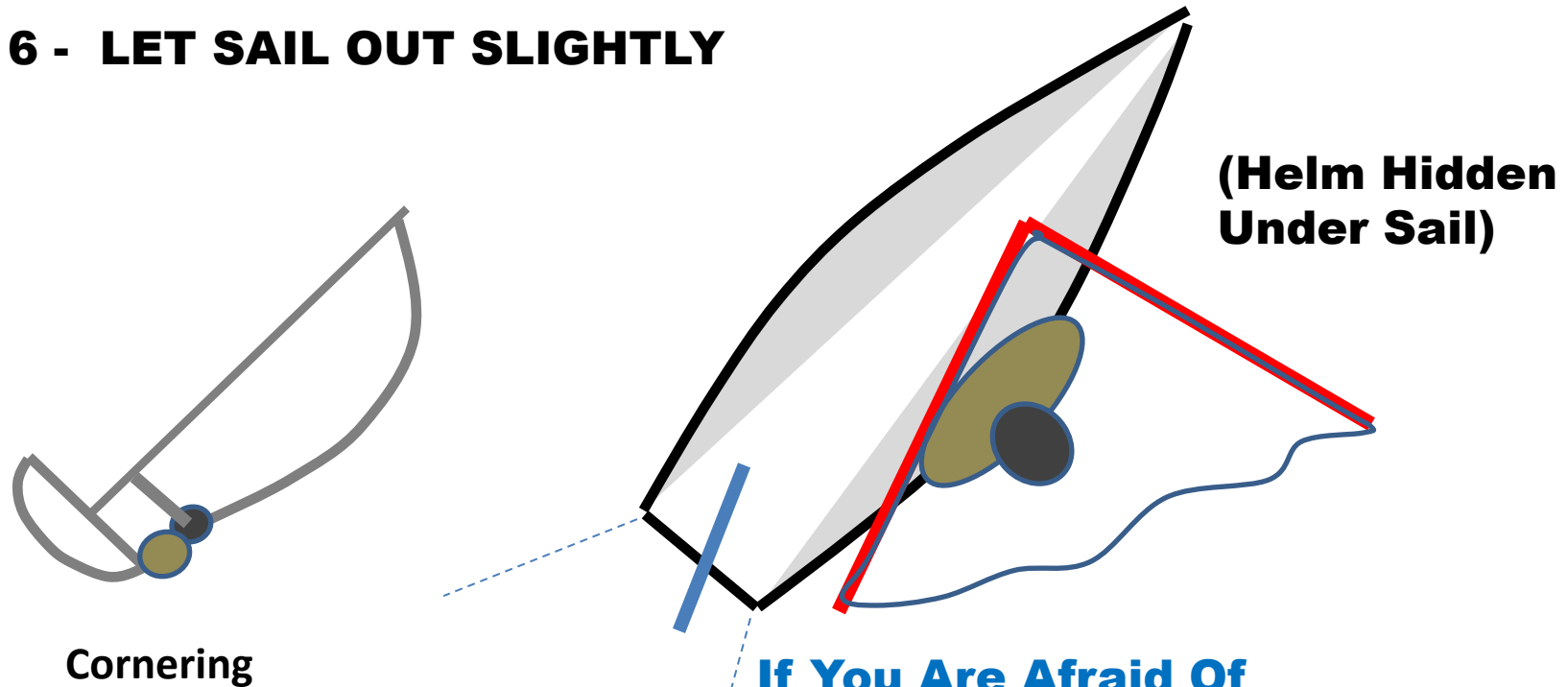


WIND

Roll Tack

**5 - AS SAILS BEGIN TO BACK –HIKE HARD TO WINDWARD
(KEEPS FLOW IN THE SAIL FOR LONGER) ANGLE UP TO 70°
LIKELY TO GET YOUR BUM WET!**

6 - LET SAIL OUT SLIGHTLY



**If You Are Afraid Of
Capsizing – Your
Tacks Will Be Poor**



WIND

Roll Tack

7 - STRAIGHTEN RUDDER

8 - CHANGE SIDES (ALMOST STANDING UP)

9 - FLATTEN BOAT

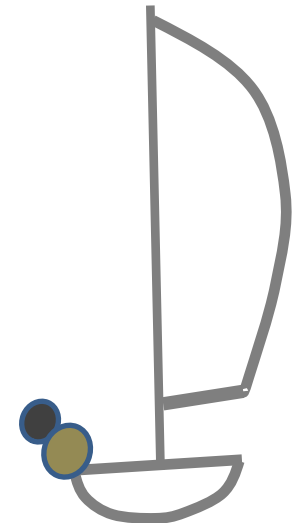
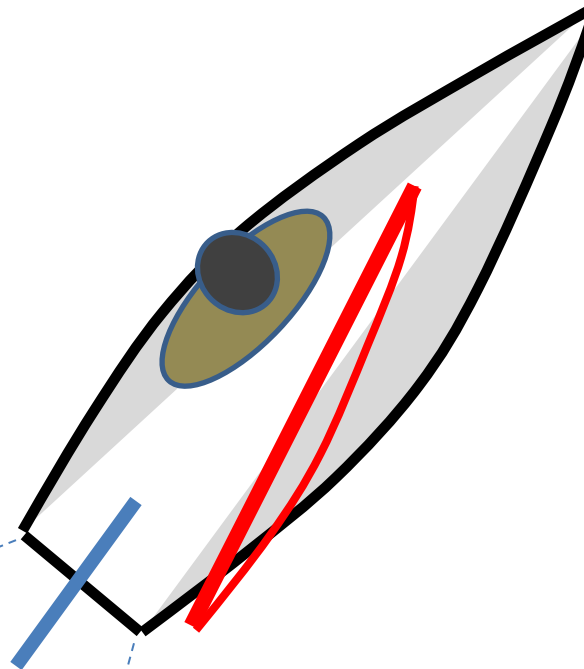
10 - PULL SAIL BACK IN

11 - CHECK COURSE

**Rules Allow Helm To Use
Weight To Help Steer
But Emerging From A
Tack Faster Than You
Went In Is Frowned On**

Cornering

**STEPS 4 To 9
Cause Additional
Flow In The Sail
= Extra Speed**





The Roll



**Facing Forward
Head Out Of Boat**

**Yet To
Swap
Hands**

Sail Out

**Leaning
Out**

Dagger Board Out !

**Rudder
Totally
Out !**



Flattening after a tack

**Facing Forward
Head Out Of Boat**

**Yet To
Swap
Hands**

**Leaning
Out**

Sail Out





Kiting Downwind

Not Only Reduces Need For So Much Rudder Also Raises Centre Of Effort (Into More Wind)

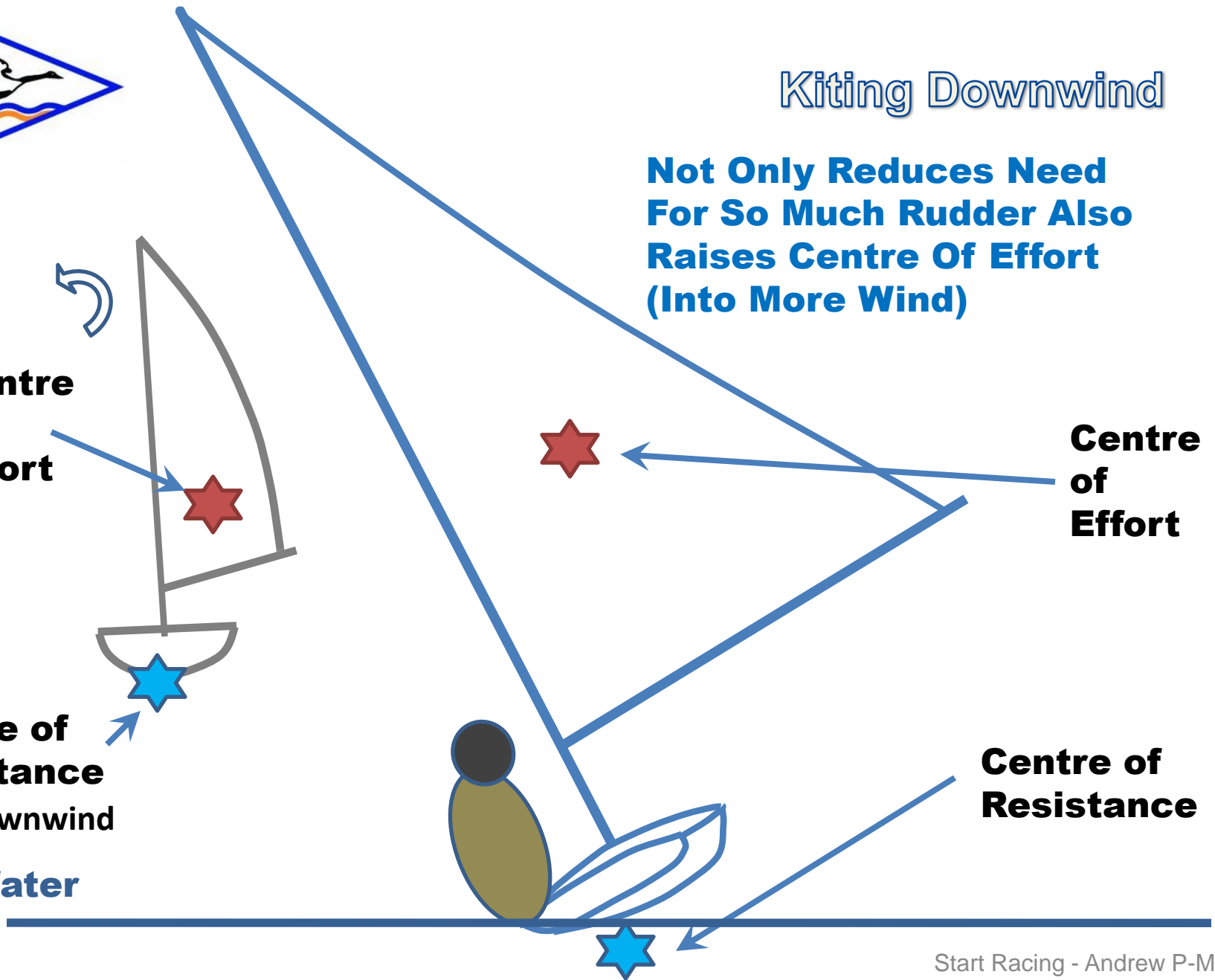
Centre of Effort

Centre of Effort

Centre of Resistance
Downwind

Centre of Resistance

Water





Flattening after a tack

**Facing Forward
Head Out Of Boat**

**Sail Right
Out**

**Dagger
Board ?**

**Leaning
Out**

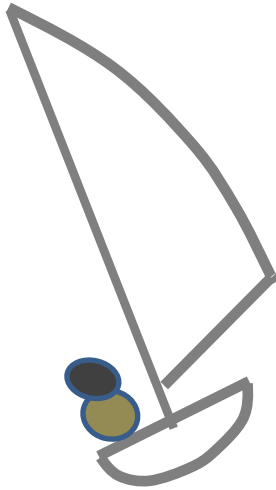




WIND

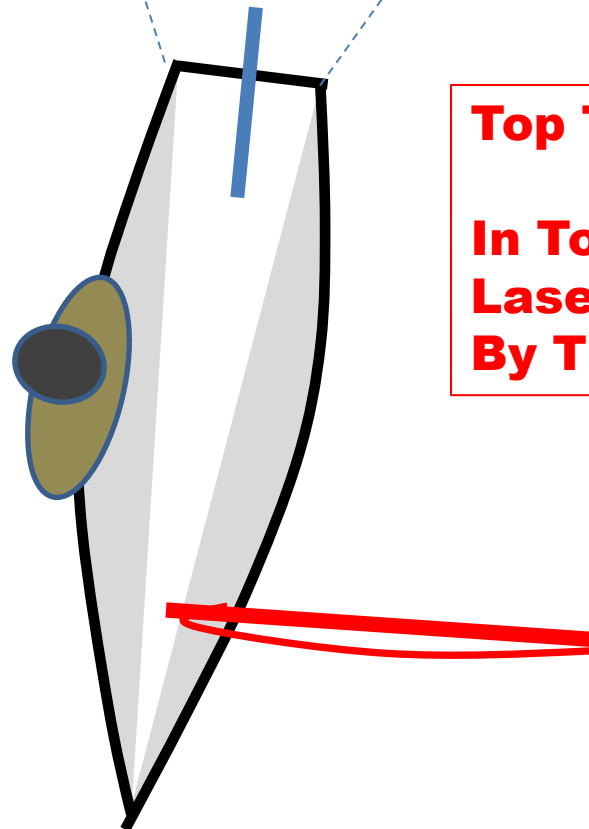
Kiting and Gybing

1 - LOOK (Under Sail) (Check Its Safe To Gybe)



Kiting

Cornering

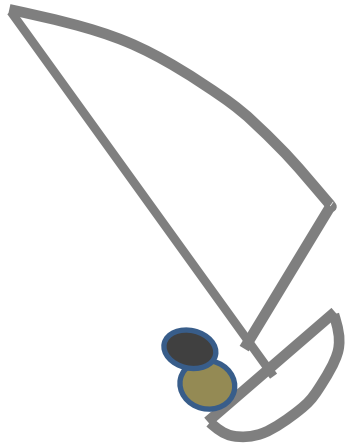


Top Tip

**In Toppers And
Lasers - Try Sailing
By The Lee !**

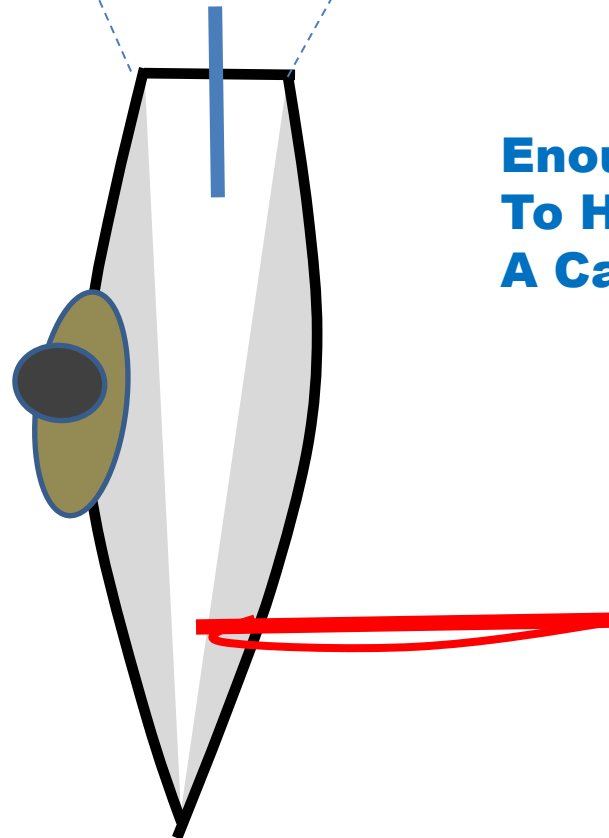


**2 - HEEL MORE TO WINDWARD
(Helps Turning)**



Kiting

Cornering



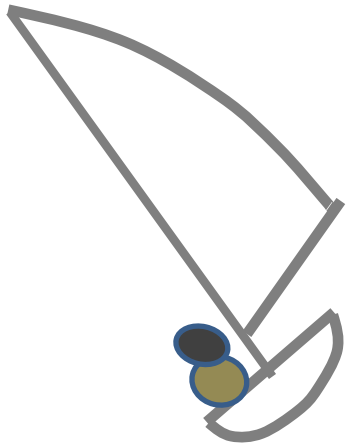
**Enough Board
To Help Right
A Capsize**



WIND

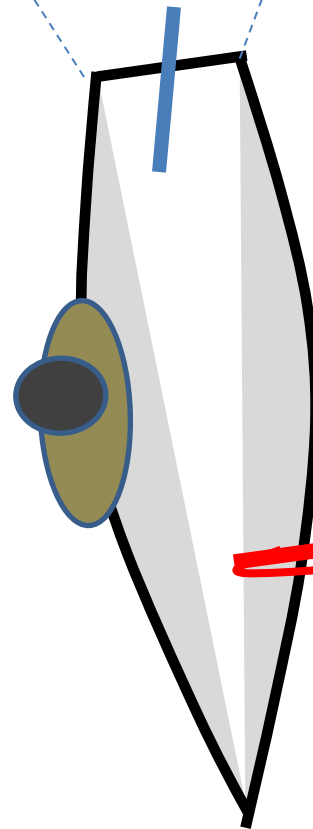
Kiting and Gybing

3 – MAY NEED A LITTLE RUDDER



Kiting

Cornering



**Enough Board
To Help Right
A Capsize**

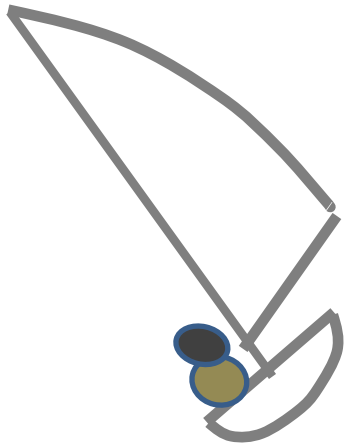


WIND

Kiting and Gybing

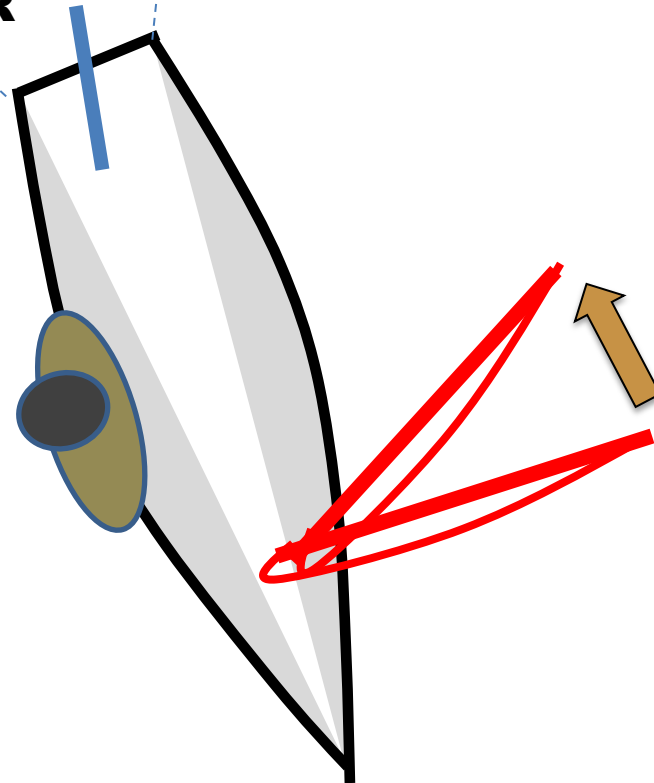
4 – PULL IN ARMFUL OF MAINSHEET TO INITIATE GYBE.

5 – STRAIGHTEN RUDDER



Kiting

Cornering





WIND

Kiting and Gybing

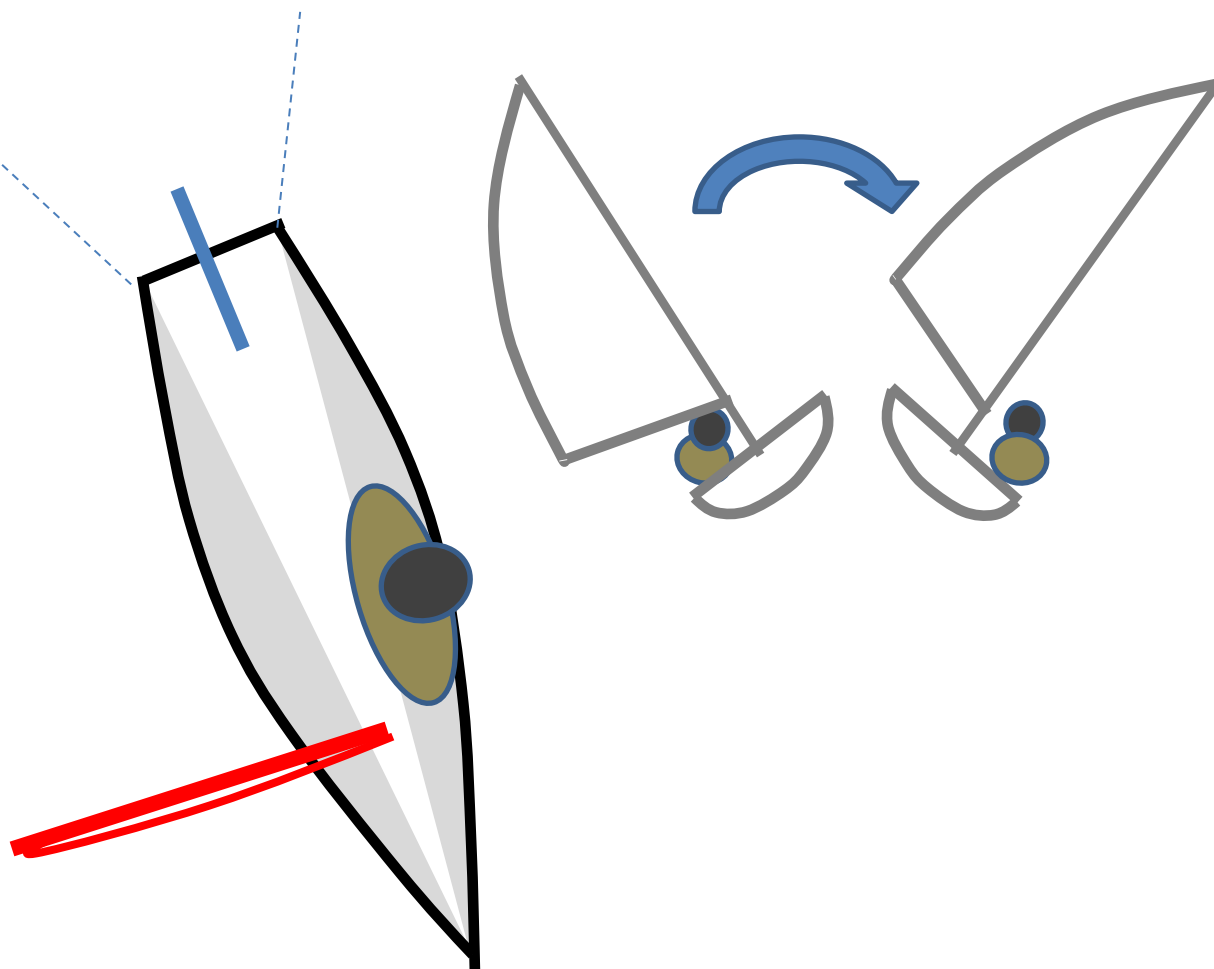
6 - GYBE

7 - CHANGE SIDES

8 - CHECK COURSE

Kiting

Cornering



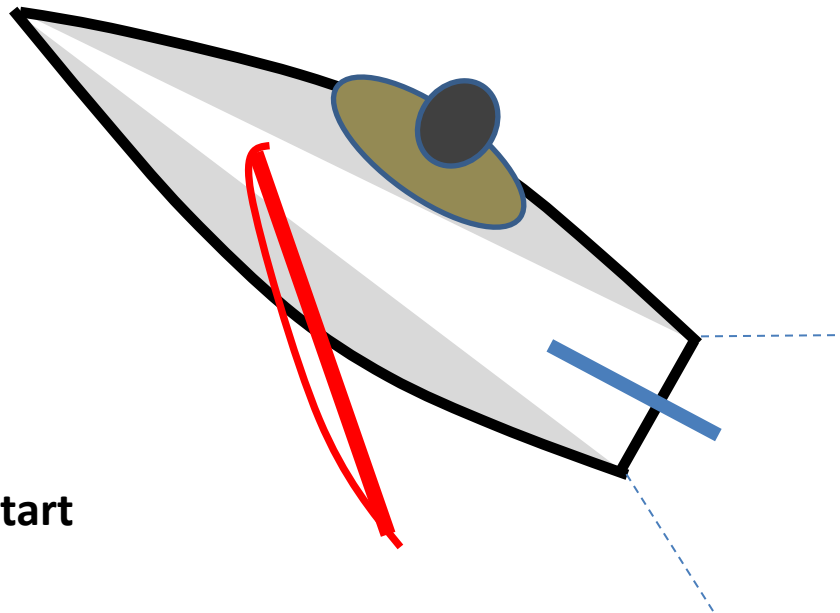


WIND

Trigger Pull Start

**1 – APPROACH LINE – Prepare To ‘Almost’ Stop
(Starboard – In Control)**

START LINE



Trigger Pull Start

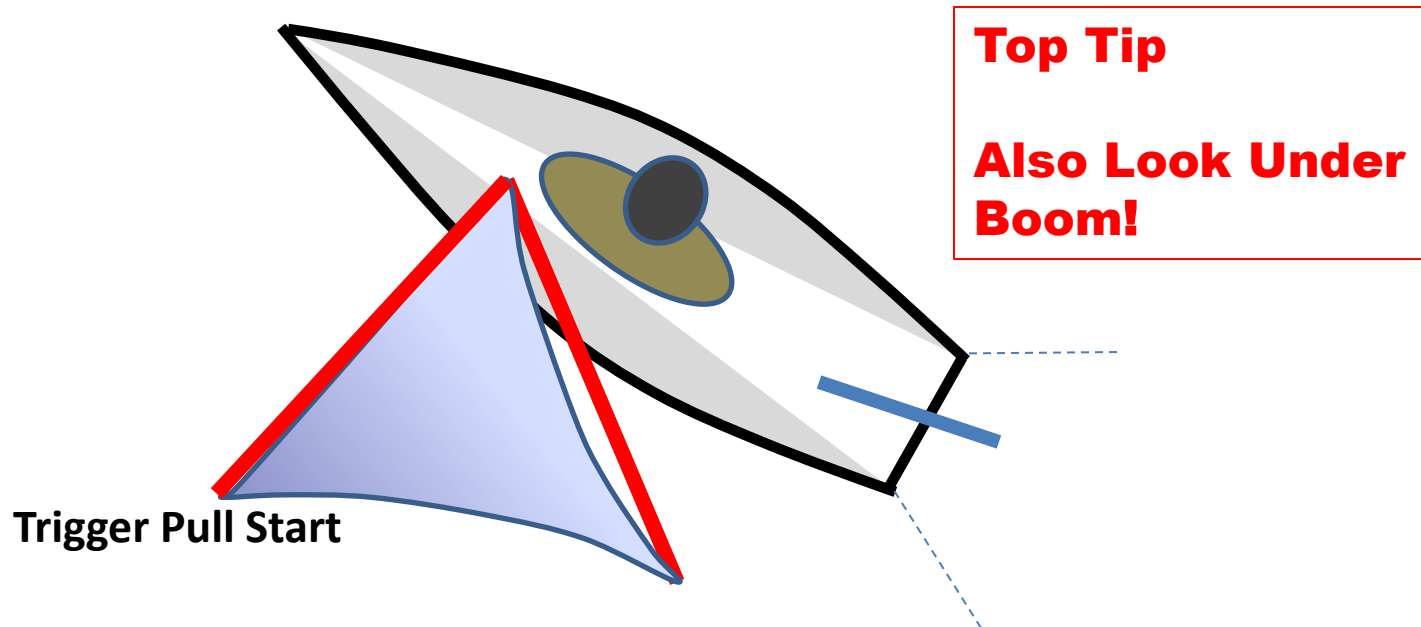


WIND

Trigger Pull Start

**2 – A Few Seconds Prior To Start Heel To Leeward
(To Help Initiate Turn To Windward)
(May Need Just A Little Rudder)**

START LINE



Trigger Pull Start

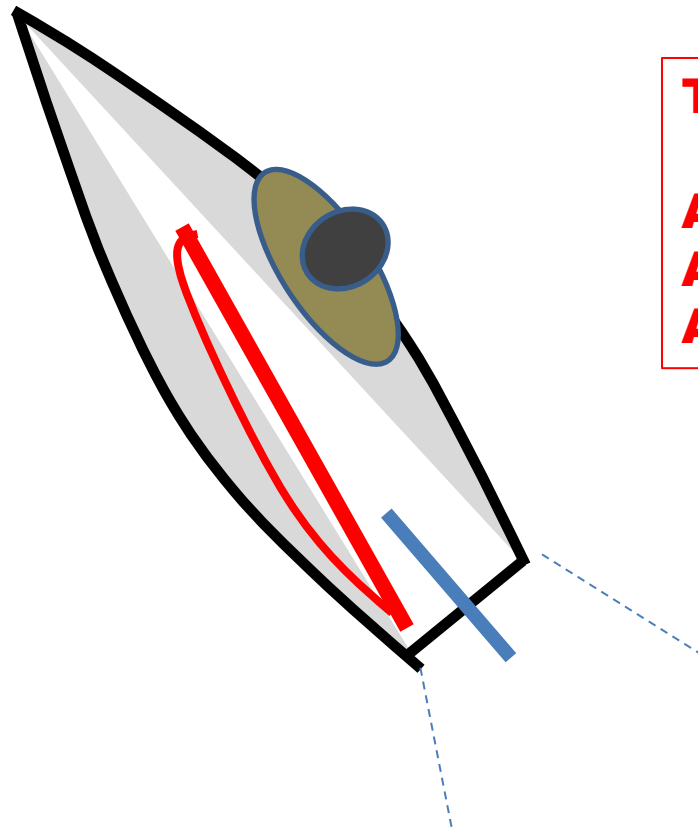


WIND

Trigger Pull Start

- TO ACCELERATE**
3 – STRAIGHTEN RUDDER
4 - LEVEL BOAT
5 – PULL IN SAIL

START LINE



Top Tip

**Aim To Cross Line
 At Maximum Speed
 As The Gun Goes**

Trigger Pull Start



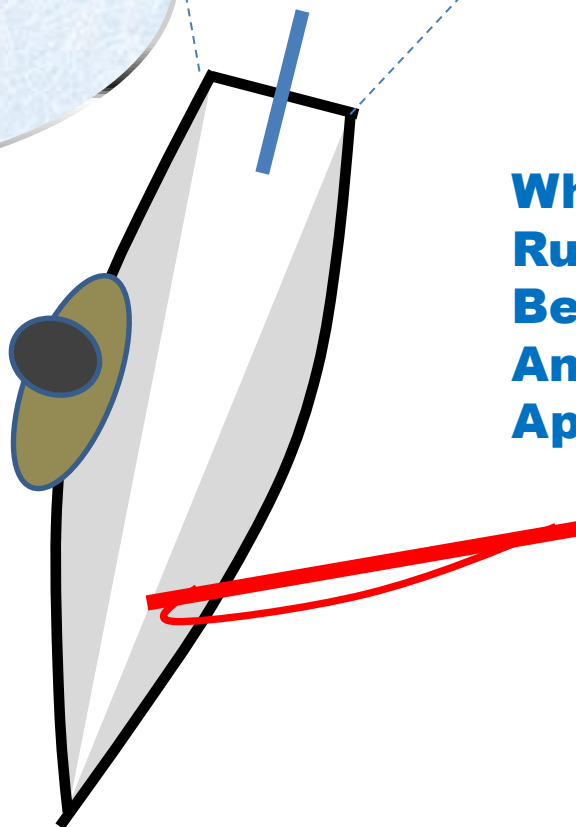
WIND

Kiting and Gybing

Gust

**When Reaching Or
Running Look
Behind To See
And Prepare For
Approaching Wind**

Downwind





WIND

Mark Rounding

**If Possible Adjust
Dagger Board And
Sail Controls Before
Mark**

Top Tip

**Wide In
Tight Out**

**Wide In Tight Out
More Likely To Keep
Out Of Dirty Air
From Other Boats**

**If Gybe Needed –
Do In Advance**

**Don't
Leave A
Gap**

**Use 5 E's To
Reduce Rudder**

**Tight In Wide
Out**

Leeward Mark

Top Tip

**Use 5 E's To
Help turn**

Top Tip

**Usually Best Not To
Tack At The Mark**



WIND

Mark Rounding

**Leave Enough
Room At Buoy
To Allow Sail
Out**

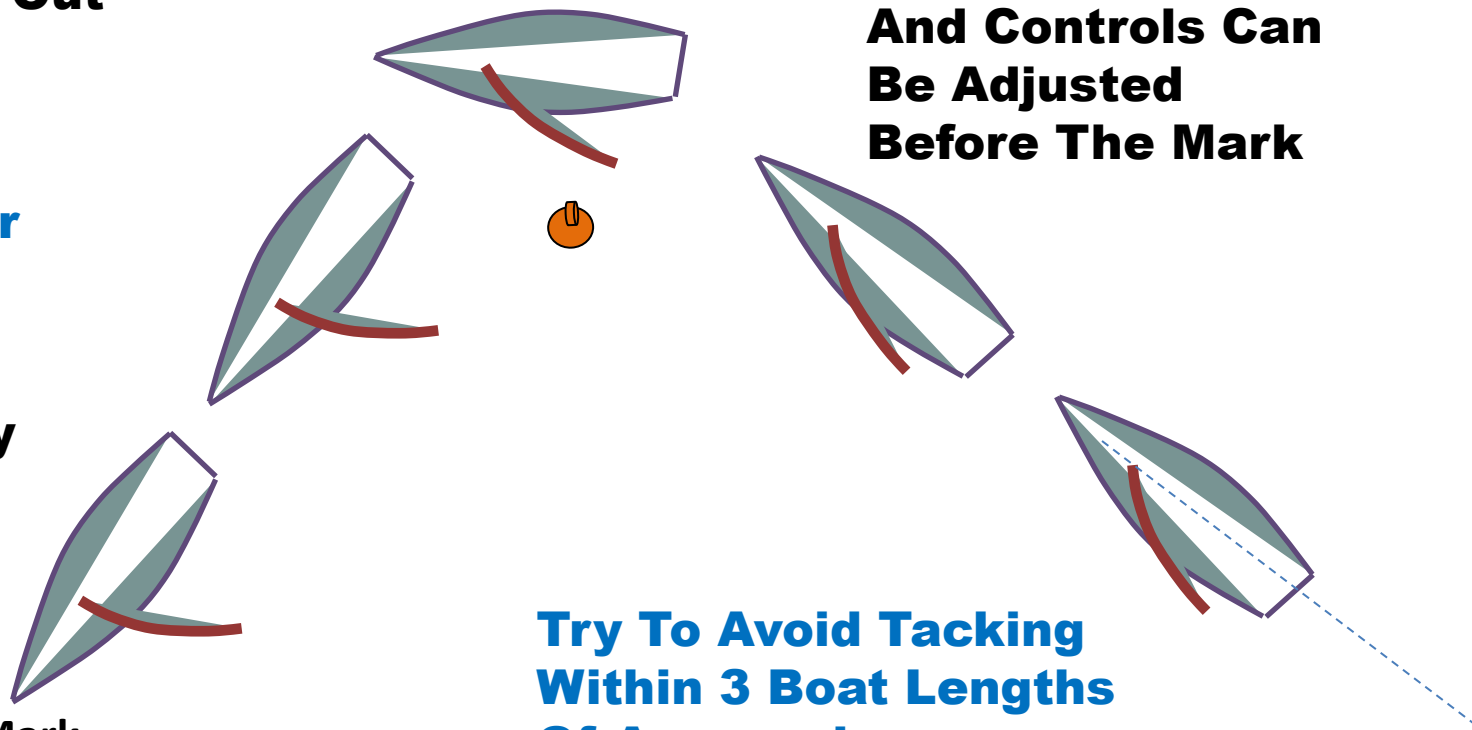
**Dagger Board
And Controls Can
Be Adjusted
Before The Mark**

**Use 5 E's To
Reduce Rudder**

**Weight Back
As Bear Away
If Windy**

Windward Mark

**Try To Avoid Tacking
Within 3 Boat Lengths
Of Approach**





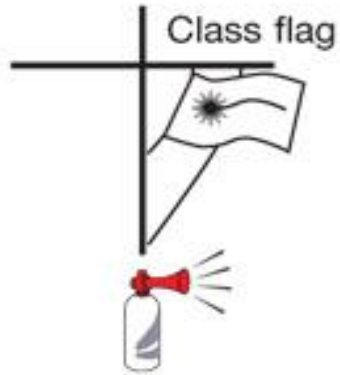
Starting



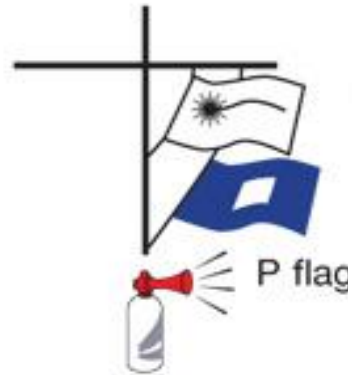
'The Best Route To Clear Air'



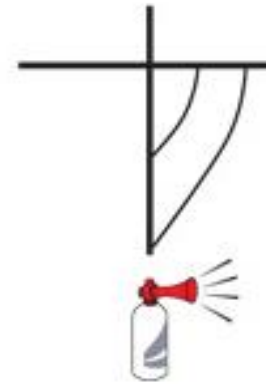
Frampton Starting



**6 Minutes
Frampton**



**3 Minutes
Frampton**



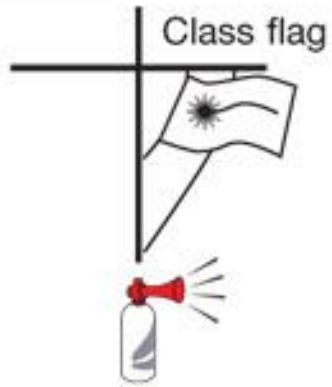
**Start
Frampton**

Top Tip

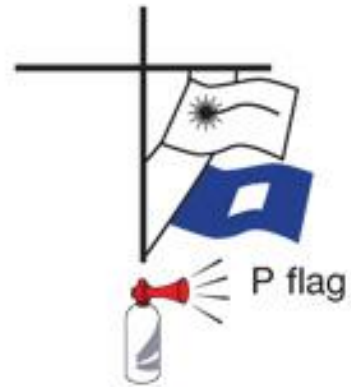
**Check FOSSC Sailing
Instructions**



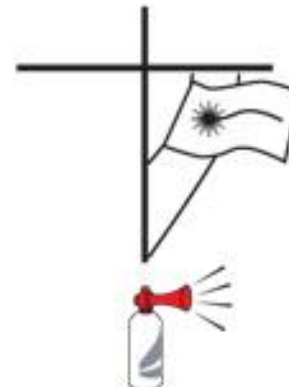
Open Meeting Starting



5 Min Open



4 Min Open



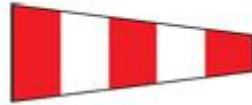
1 Min Open



Start Open

Top Tip

**Check Open Meeting
Sailing Instructions**



Postponement

**Race Postponed
If Flown With
Numerical Pennant
Denotes Length Of
Postponement**

Starting

Preparatory
'P'

**Preparatory Signal
No Specific Starting
Penalties**

1 Minute
rule

**If Over The Line In The
Minute Before The
Start. Must Sail Around
Either End To Start**



Black Flag

**If Over The Line In The
Minute Before The
Start. Disqualification**

Individual
Recall
'X'

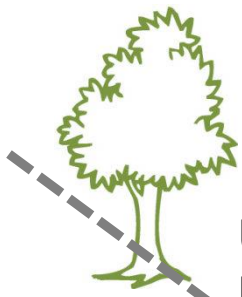
**Individual Recall - One
Or More Boats Did Not
Start Correctly (One
Extra Sound Signal)**

General
Recall

**General Recall - All
Boats To Return For
New Start (Also Two
Extra Sound Signals)**

Start Flags

Start Lines



Use Tree, House, Pylon Etc As Transit

If You Are On The Transit – The Boat Is Likely To Be Over The Line

Always On The Line

Always On The Line

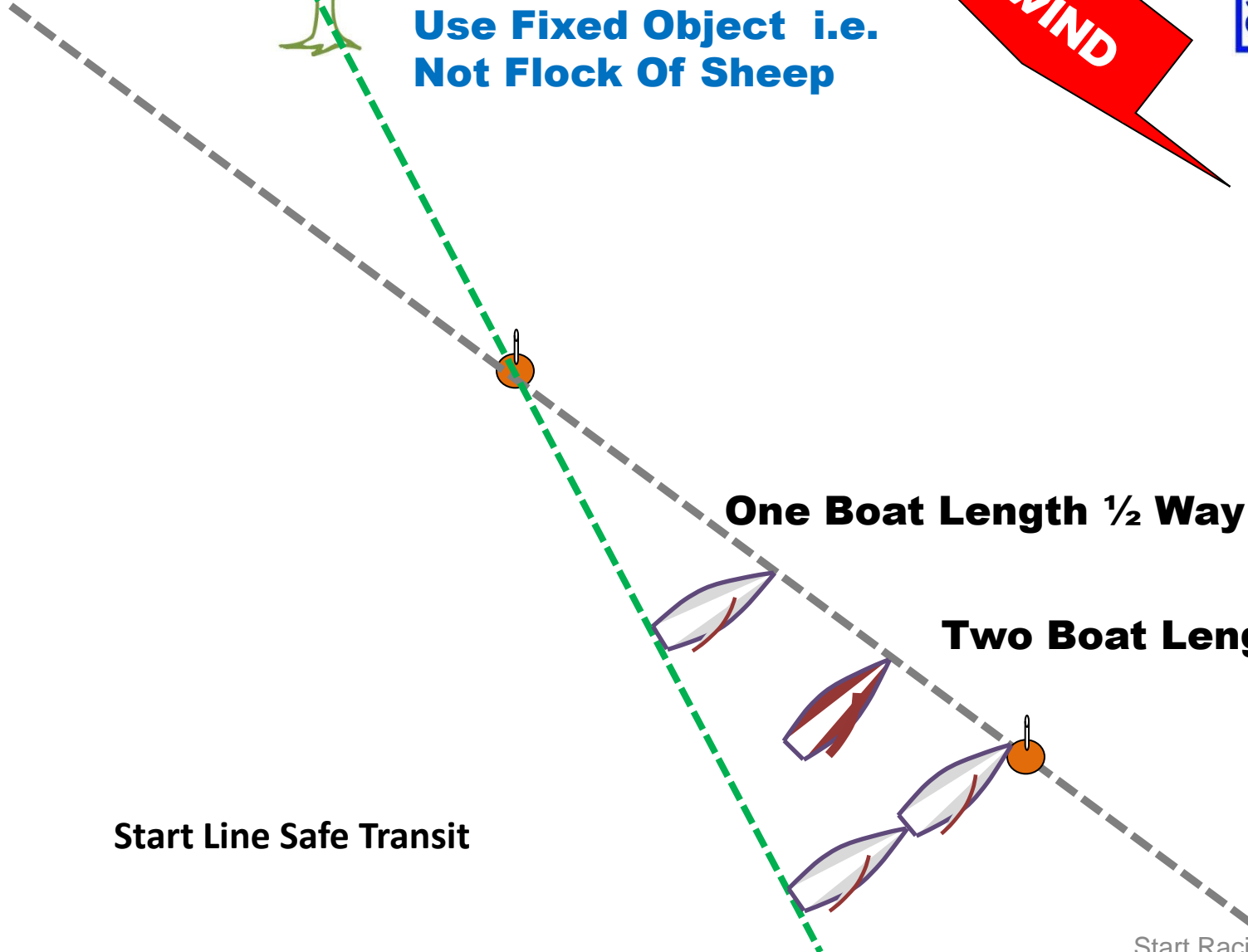
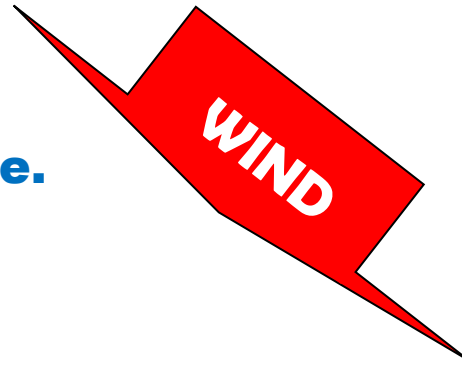
Top Tip
Transits Take The Guessing Out Of Starts

Start Line Transit



Start Lines

Use Fixed Object i.e.
Not Flock Of Sheep



One Boat Length $\frac{1}{2}$ Way Along

Two Boat Lengths At Mark

Start Line Safe Transit



1

2

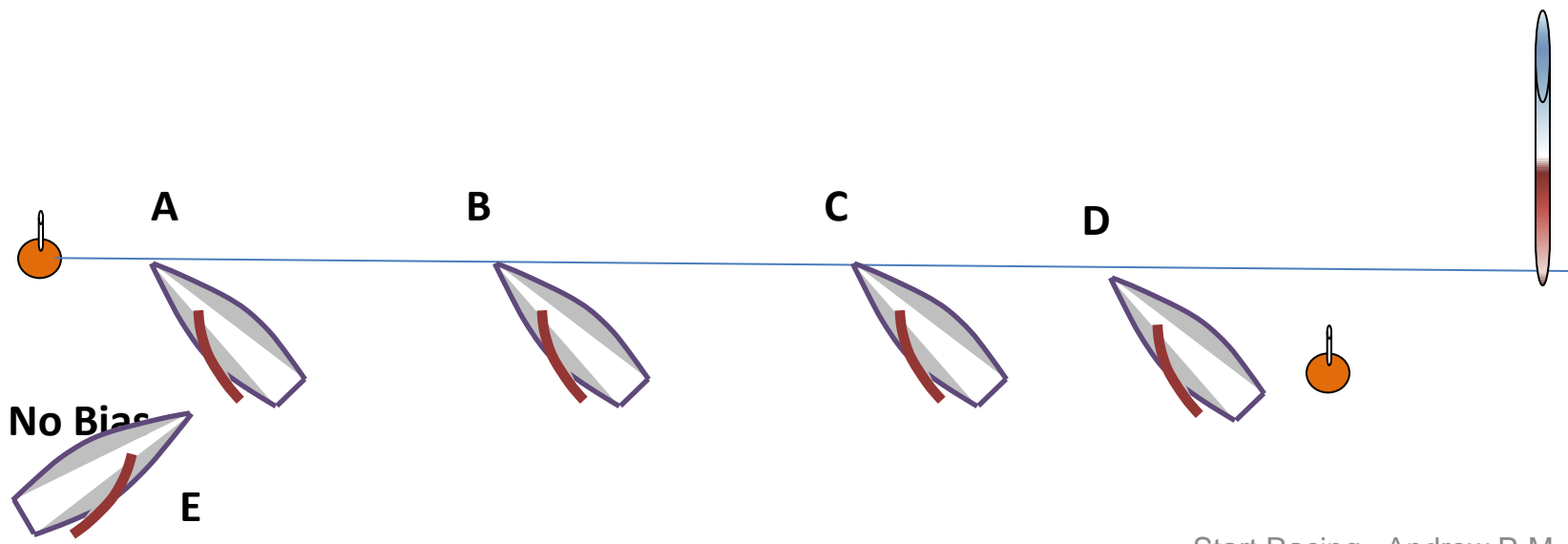
3



Start Lines

Where To Start With A 'Perfect' Beat ?

Does It Make A Difference Which Is The Windward Mark?





1

2

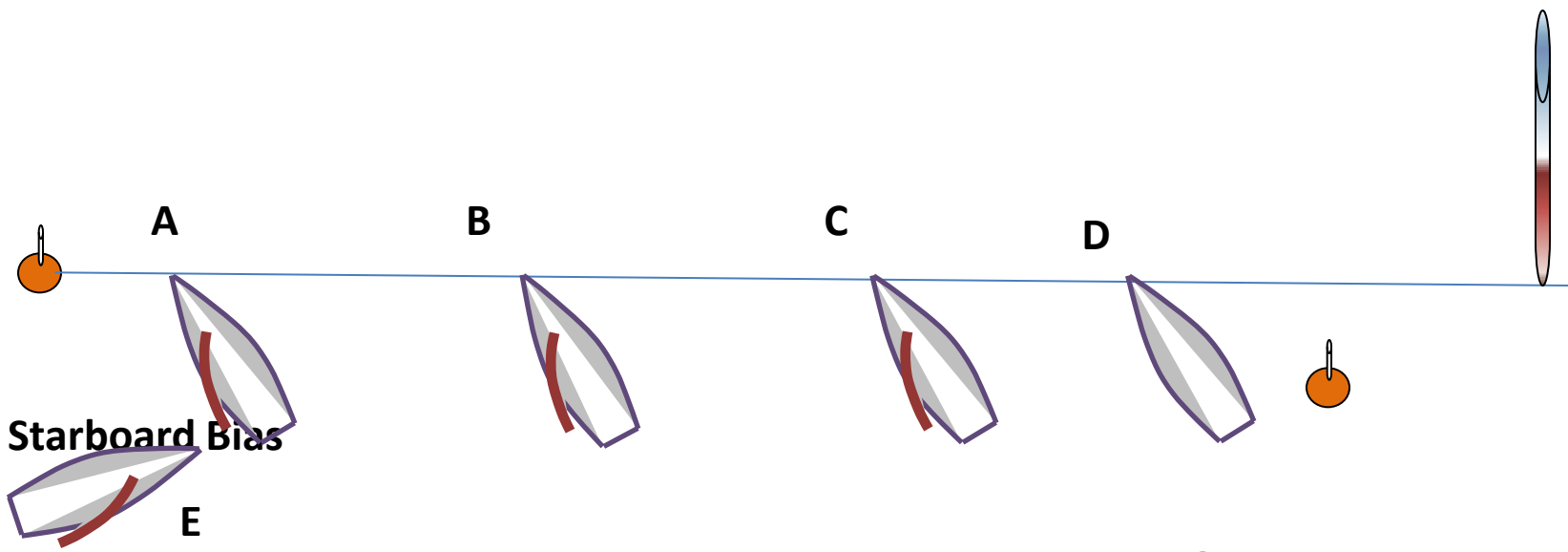
3

Start Lines



Where To Start With A 'Starboard Bias ' Beat ?

Does It Make A Difference Which Is The Windward Mark?





1

2

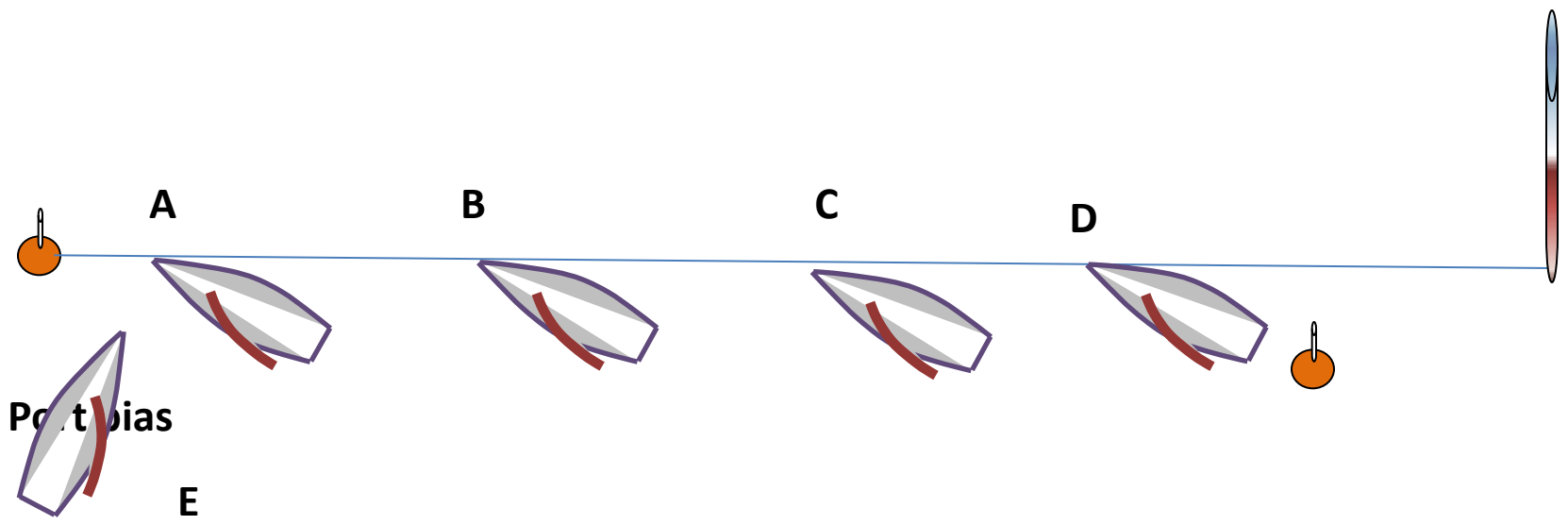
3

Start Lines



Where To Start With A 'Port Bias' Beat?

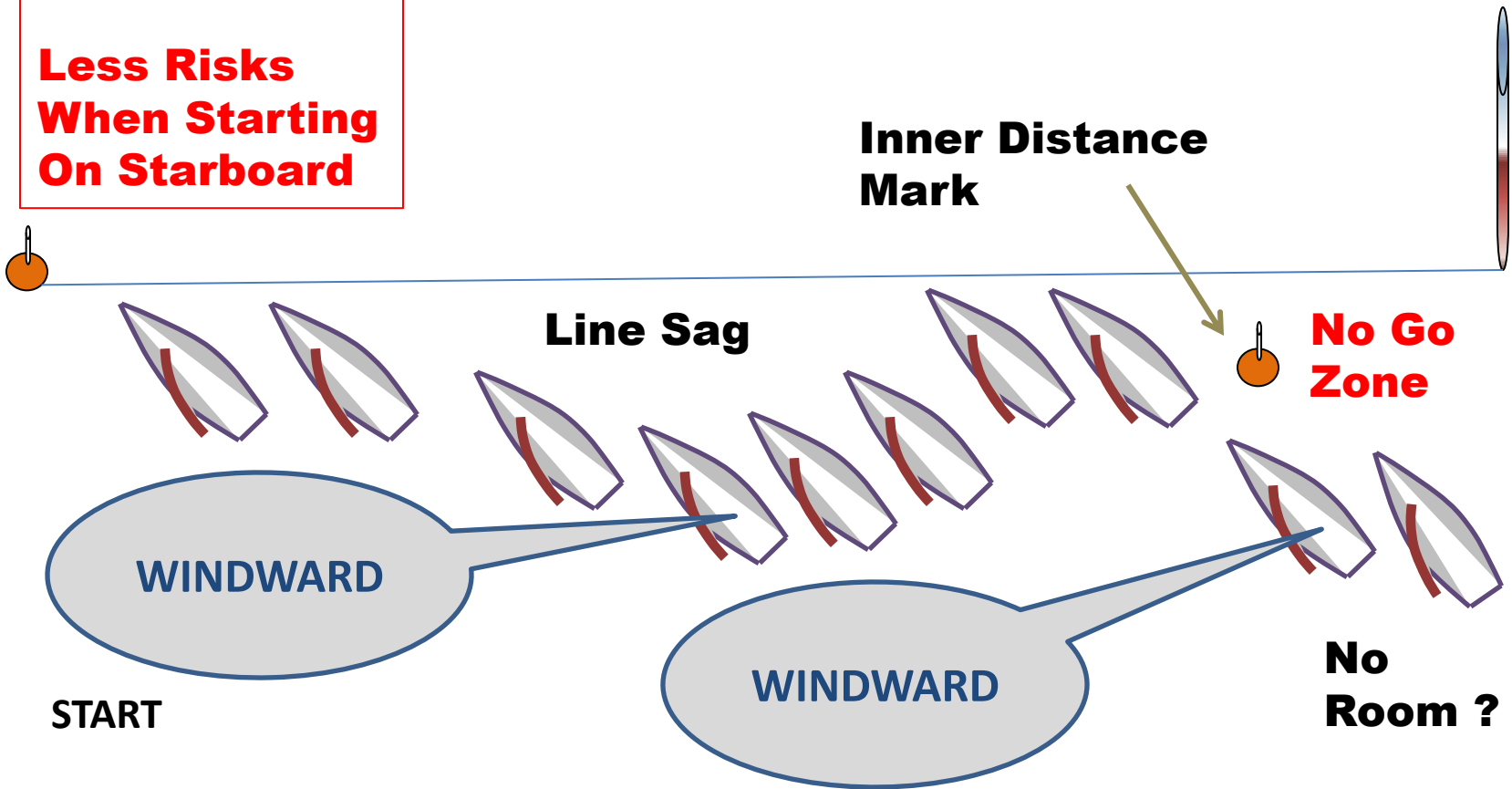
Does It Make A Difference Which Is The Windward Mark?





Start Lines

Top Tip
Less Risks
When Starting
On Starboard





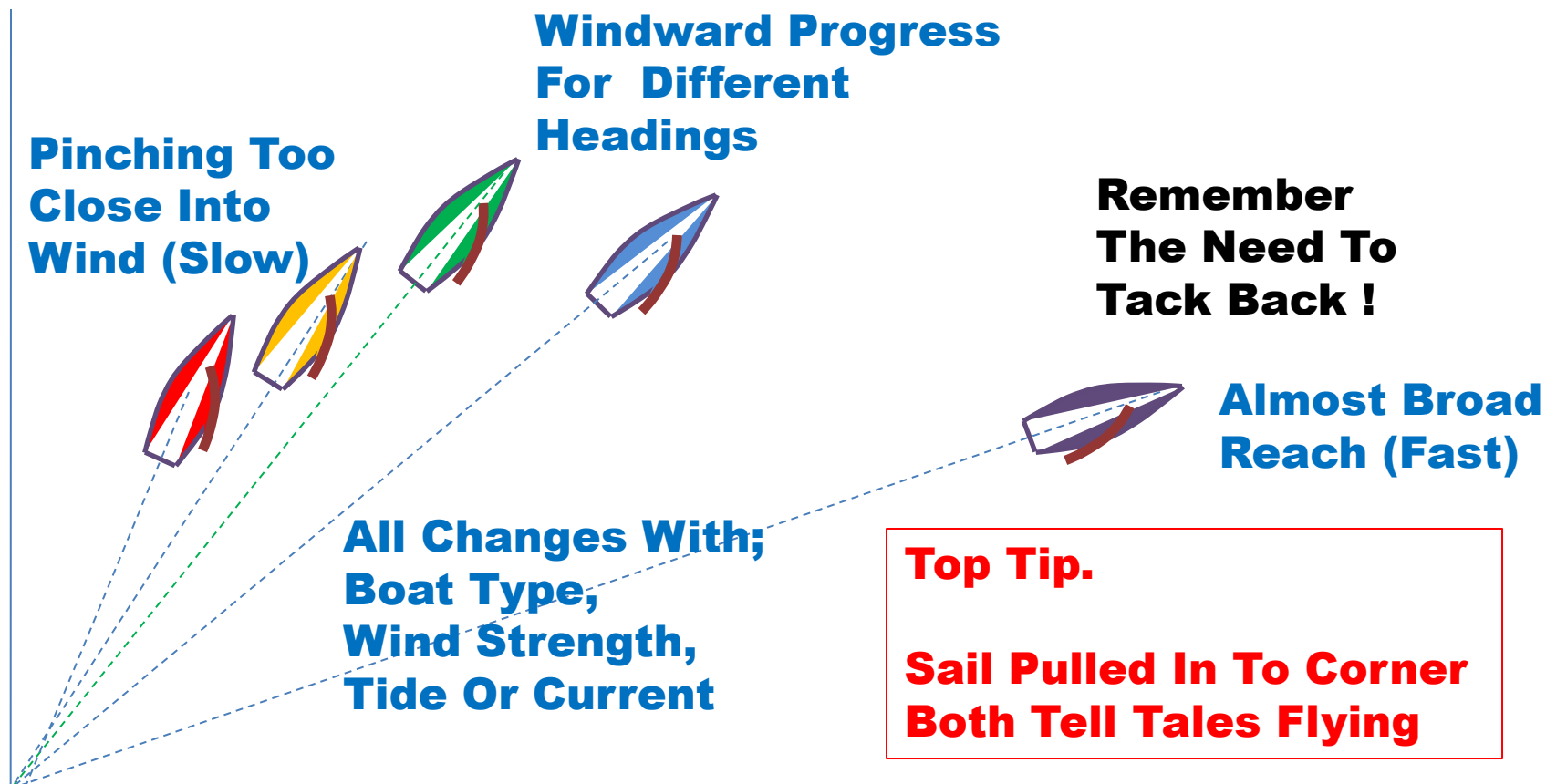
Strategy

***‘The Fastest Route
– Without Other Boats’***



WIND

Strategy



OPTIMUM SPEED - WINDWARD

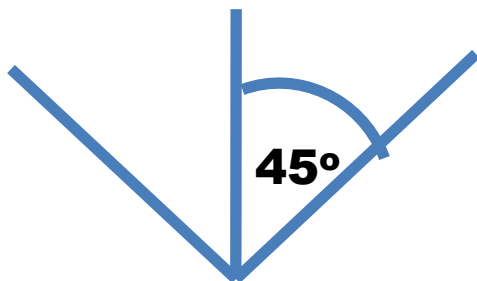


Strategy

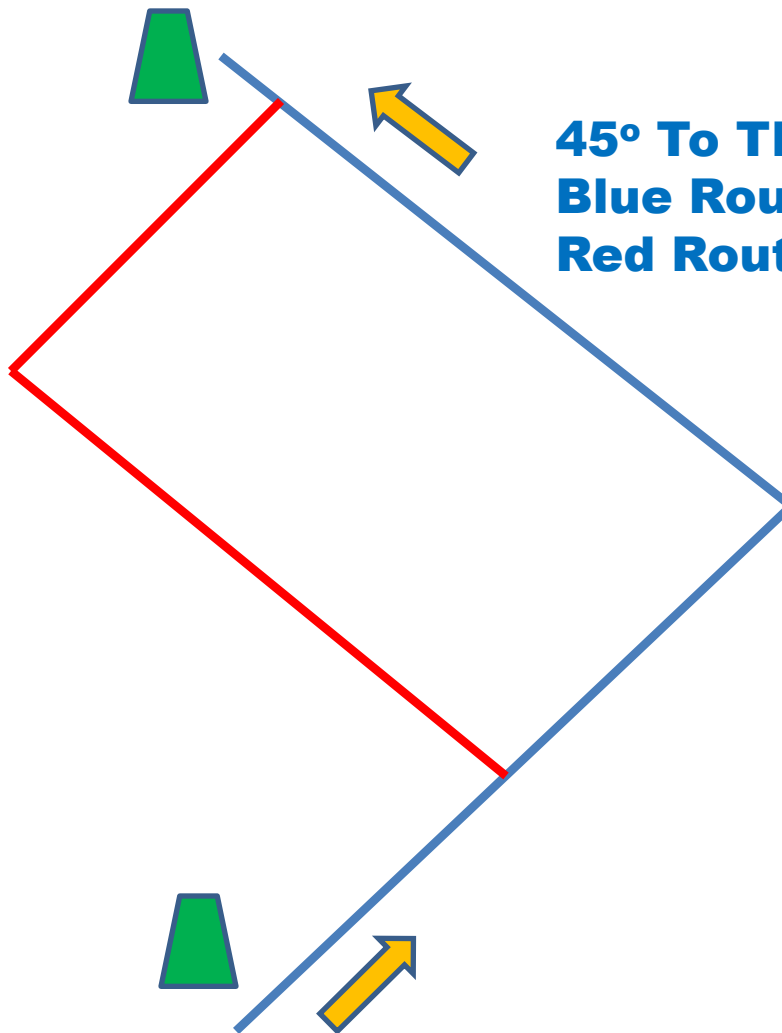


45° To The Wind
Blue Route 1 Tack
Red Route 3 Tacks

Into Wind

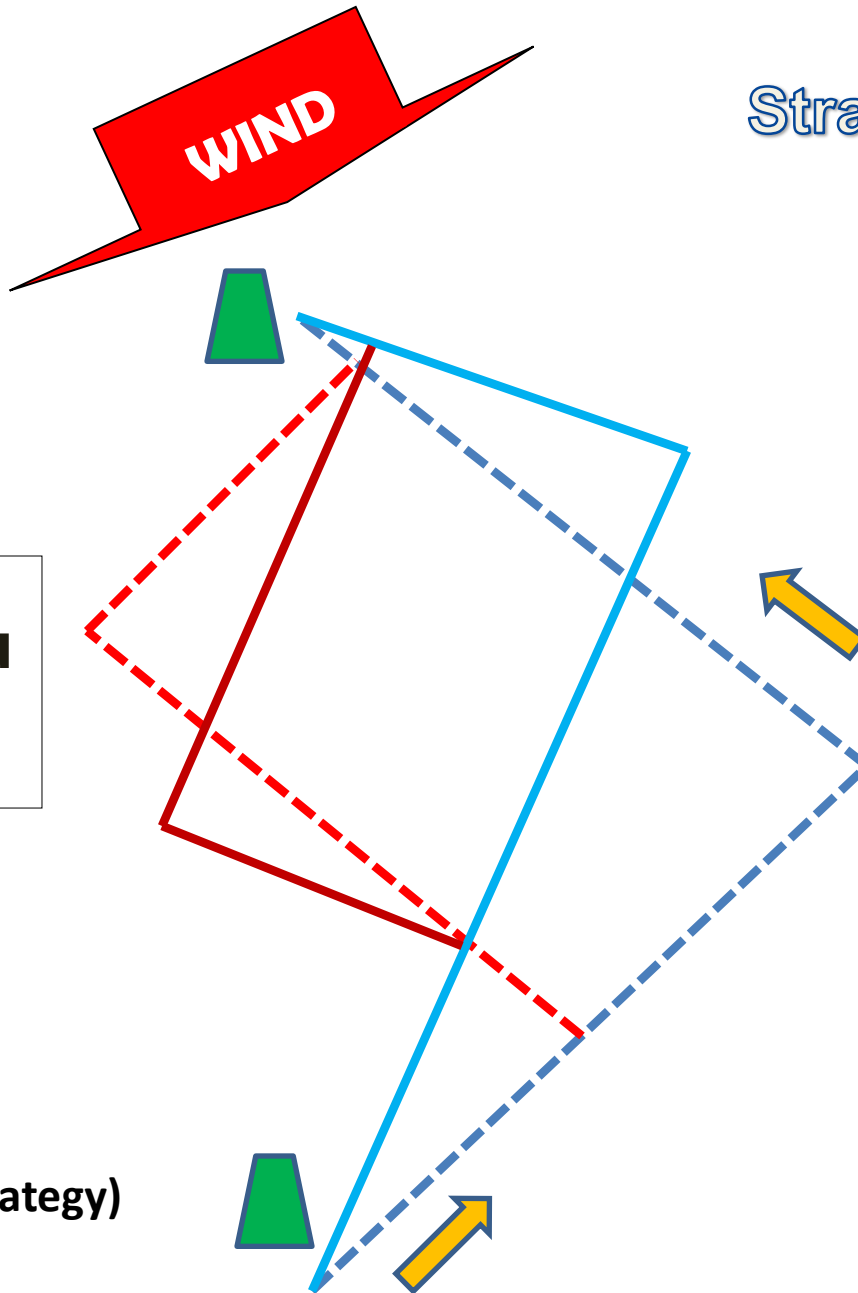


THE BEAT (Strategy)





Strategy



**Port Lifted
Starboard Headed
– Sailing On Port
Much Shorter**

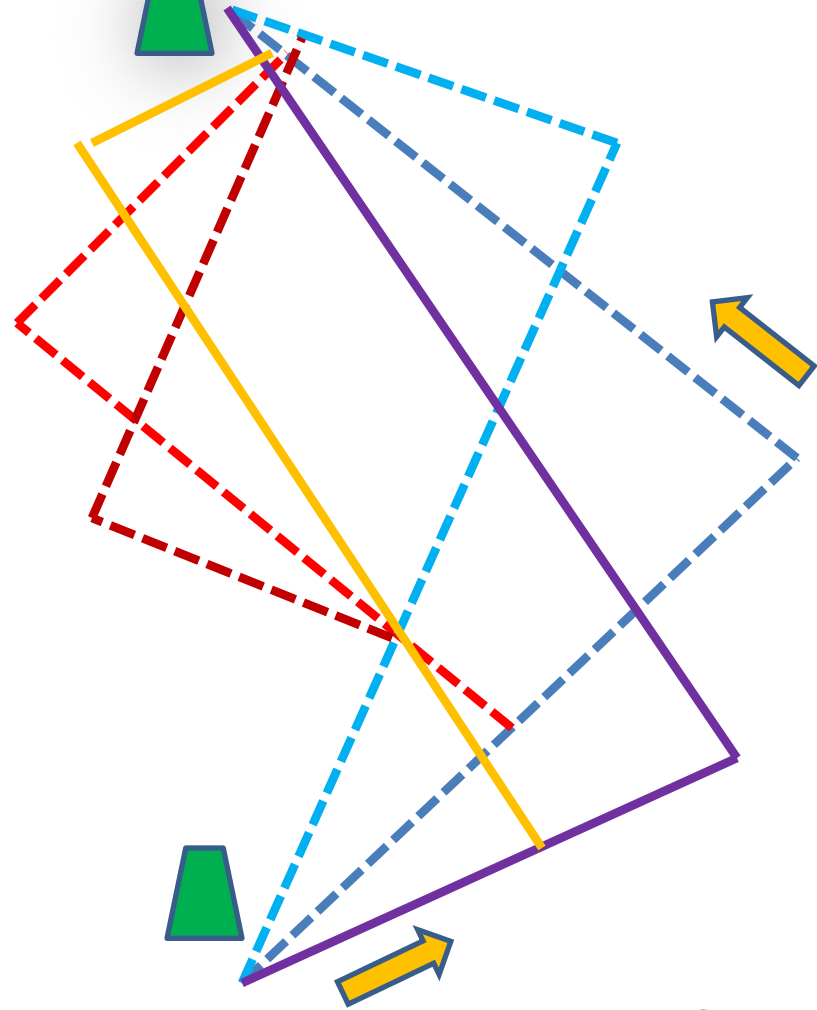
THE BEAT PORT LIFT (Strategy)



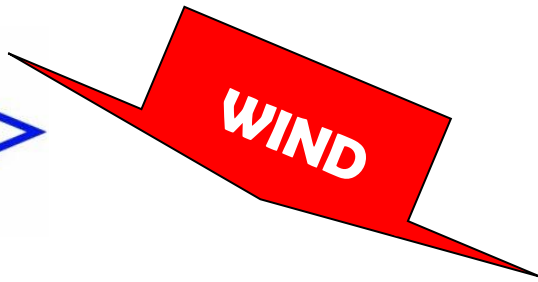
Strategy



**Starboard Lifted
Port Headed
– Sailing On Port
Much Longer**

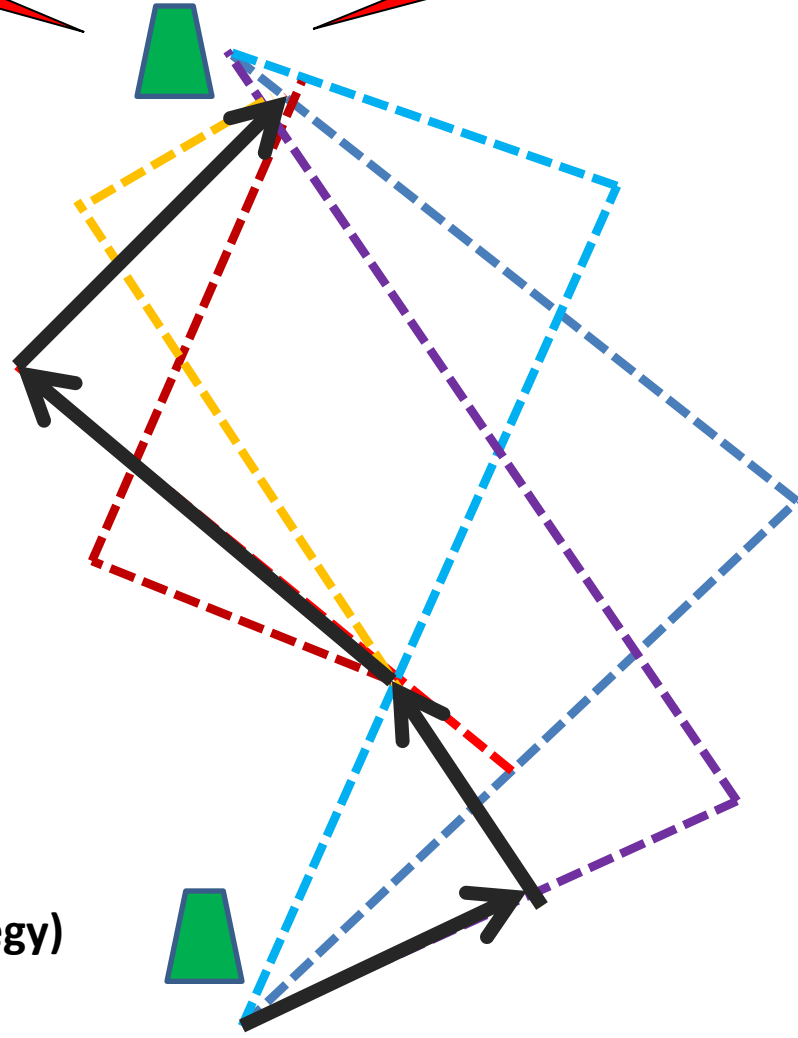


**THE BEAT STARBOARD LIFT
(Strategy)**



Strategy

**So
Can End Up Sailing
Longer Distance**

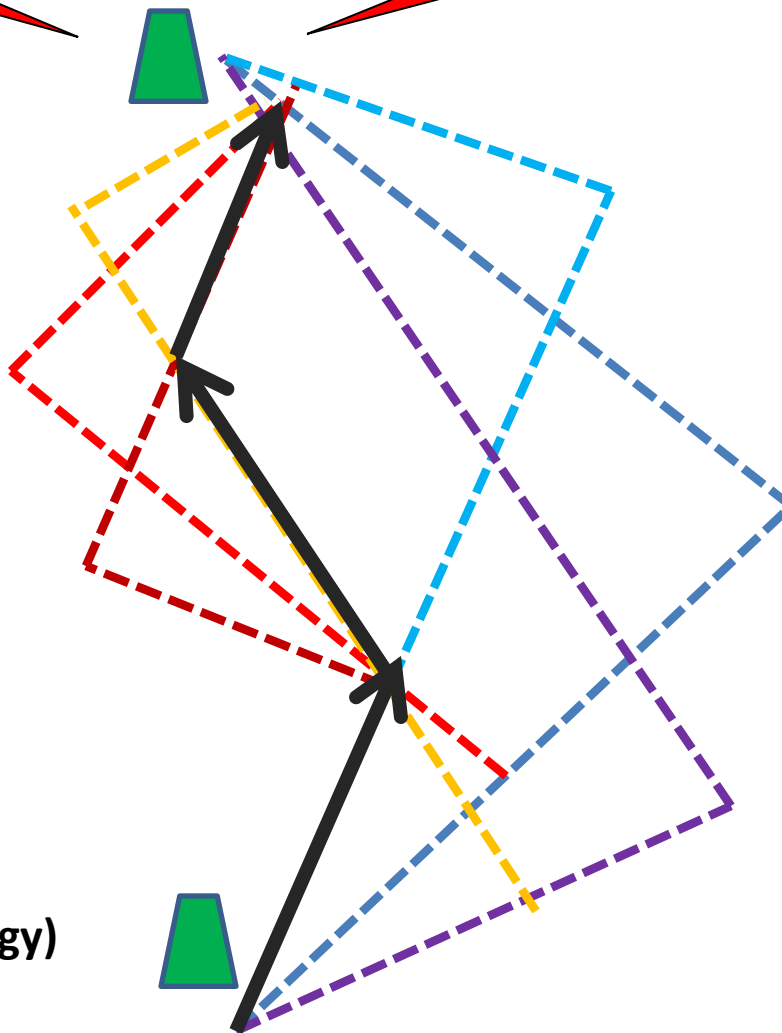


THE OPTIMUM BEAT (Strategy)



Strategy

Top Tip
The Tack That Is
Aiming Closest To
The Mark Is Often
The Best To Be On.



THE OPTIMUM BEAT (Strategy)

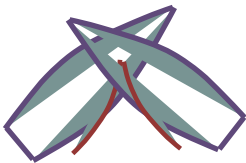


Head Out of Boat

Header

Wind Shadow

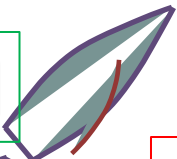
Lift



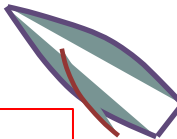
Weed

Other Boats

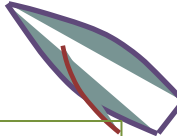
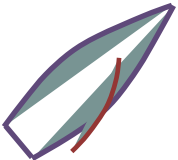
More Wind



Boat Speed

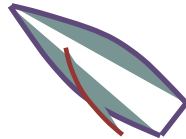


Bank / Shallows



Wind Bend

Fishermen



Strategy

Flags

HEAD OUT OF BOAT !



What to look for...

What Happened Last Time Round ?

Check – Sails, Burgee

Bank – Weed – Wind Strength – Fishermen

Other Boats – Their Sails, How High Are They Pointing ?

Flags On Buoys, What Might The Wind Do ?

Have You Noticed Boats Ahead Gaining – Can You Do Same ?

Other Boats Will They Affect You – (Are They Faster Or Slower)

Who Has Right Of Way ?

What Might The Other Boats Be Expected To Do ?

Try To Predict What May Happen Next

In Summer Check Weed Not On Foils

HEAD OUT OF BOAT (Strategy)



WIND

Strategy

Shadows / Bend

Weed

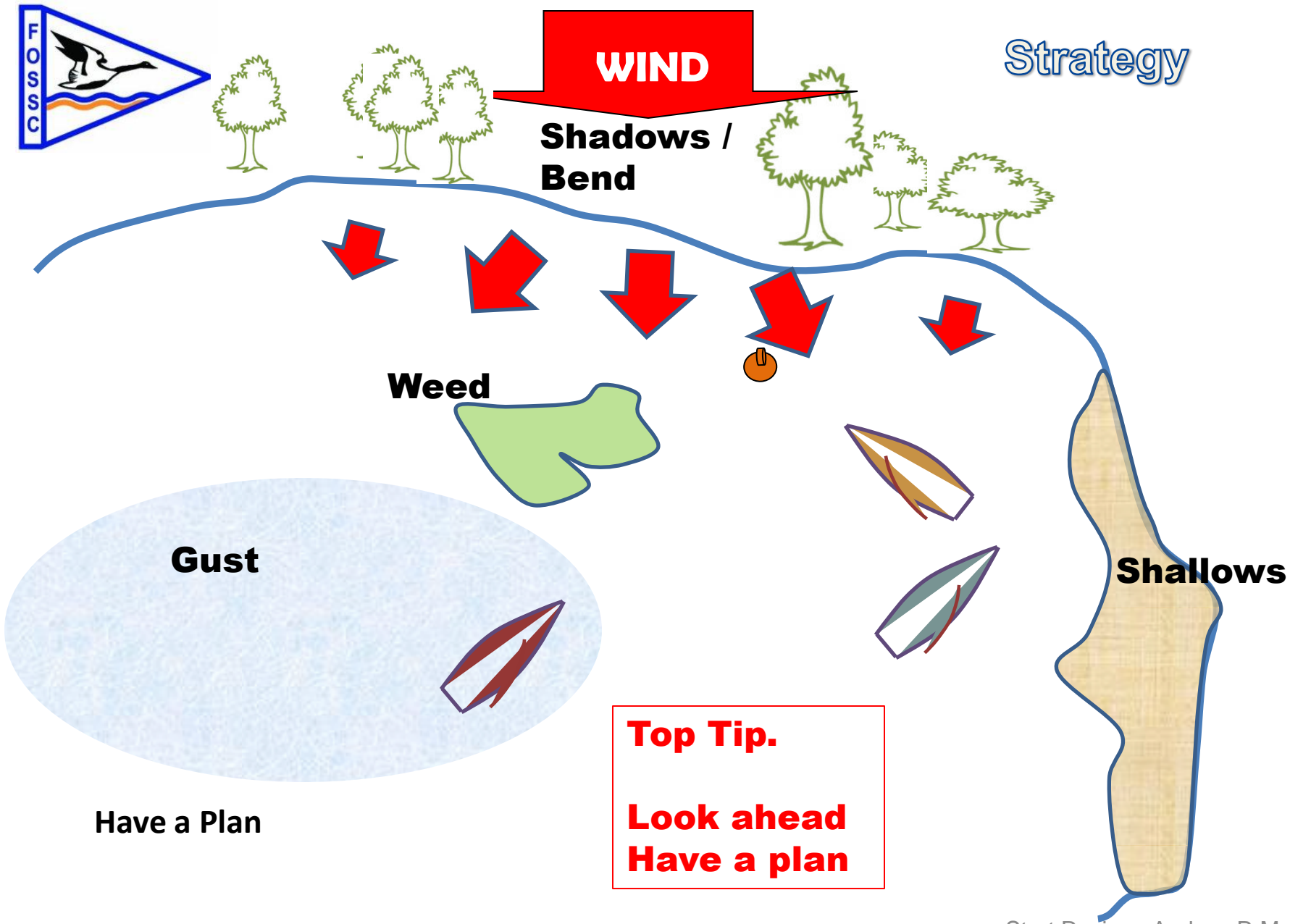
Gust

Shallows

Top Tip.

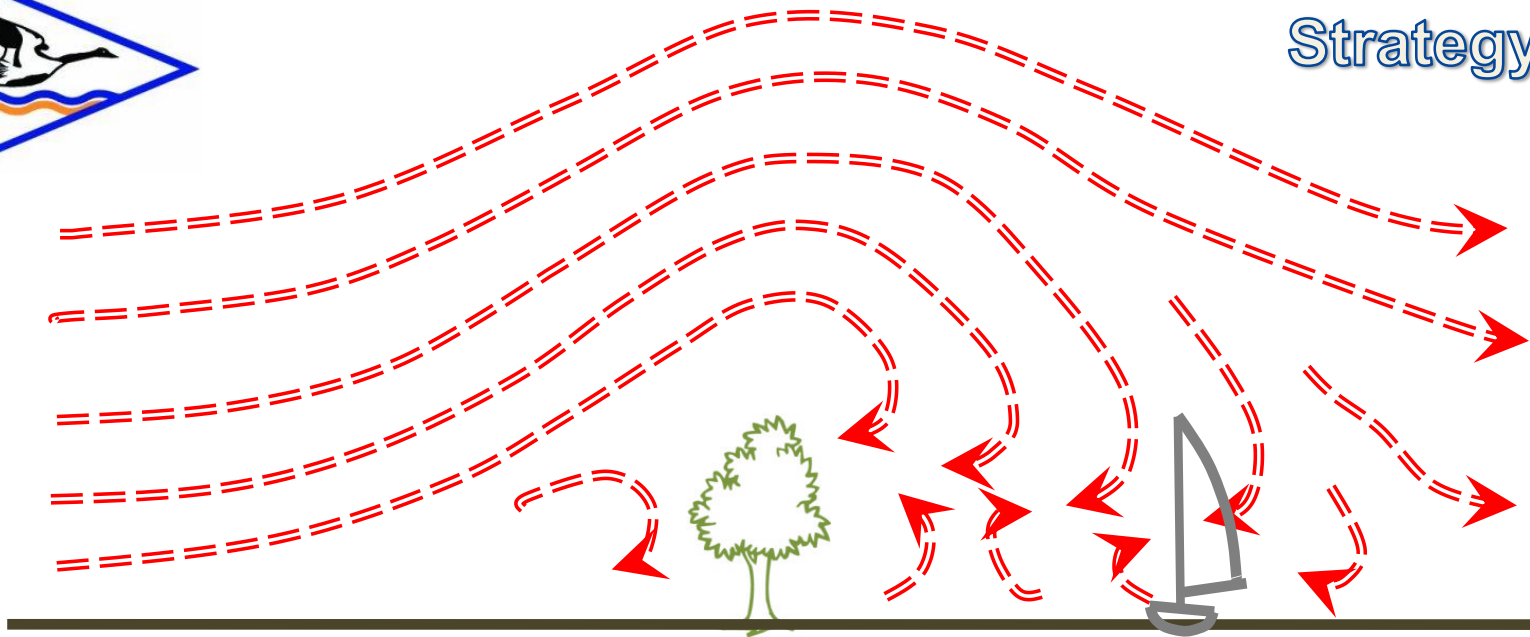
**Look ahead
Have a plan**

Have a Plan

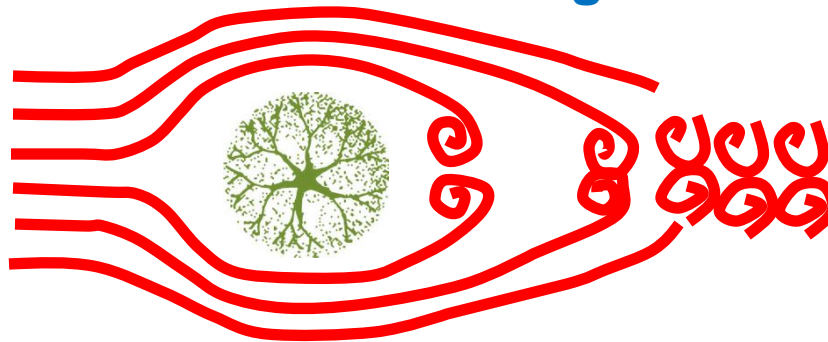




Strategy



Disturbed Air Extends Up To 30 Times Height Of Obstruction



Where's the Wind ?

Wind Takes The 'Easiest Route Around Obstacles – Note How The Lines Get Closer (Stronger) As They Pass The Obstruction.



Strategy

Stronger Wind

**Long
Obstacle**

Lines Compress Together As The Wind Hits A Long Obstacle. This Can Mean Significantly Stronger Wind could Be Anticipated By The Obstacle.

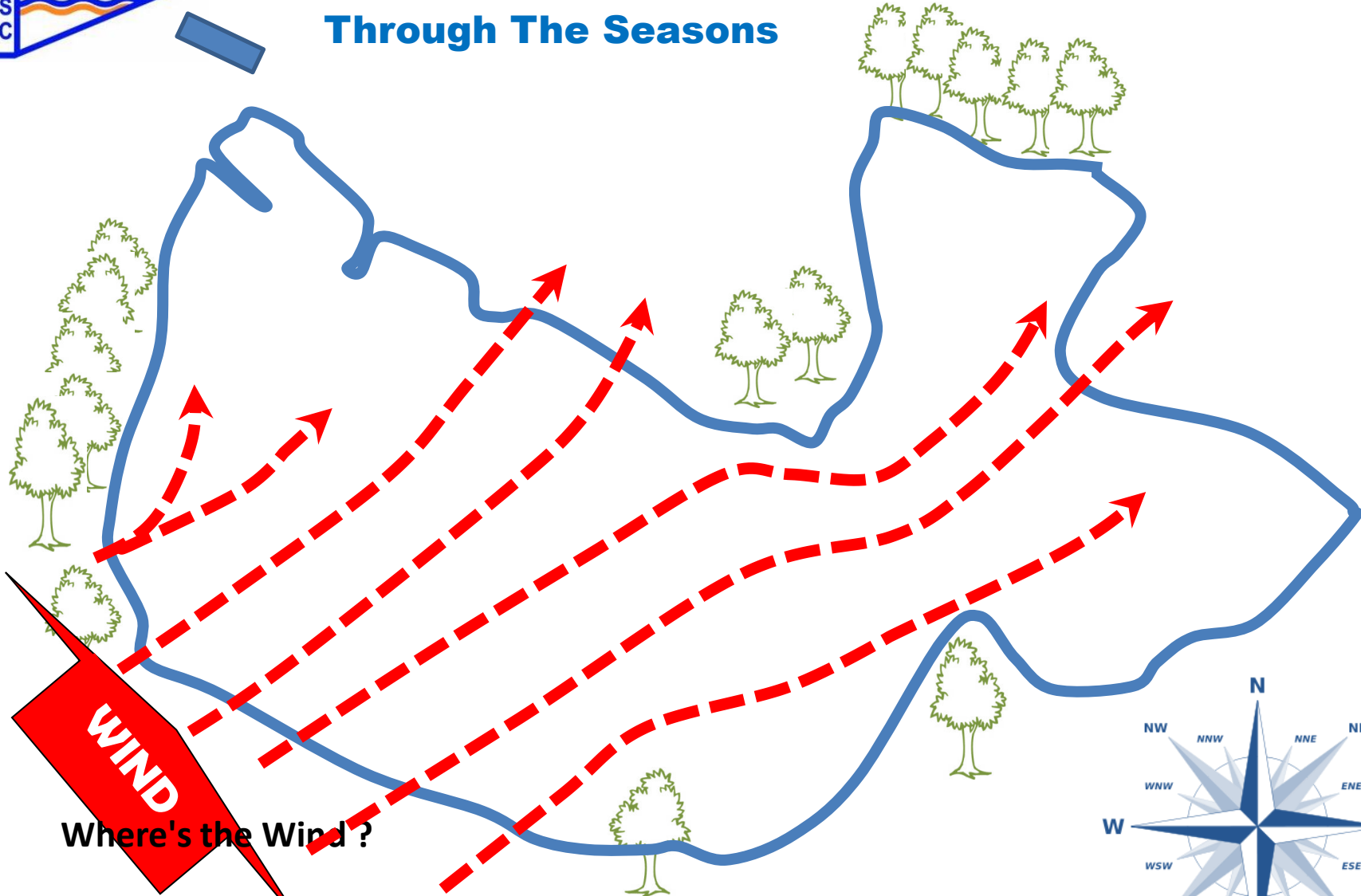
Sometimes Quicker To Sail In This Stronger Wind Even If Not In Best Direction.

Where's the Wind ?



Effect Of Trees Varies Through The Seasons

Strategy



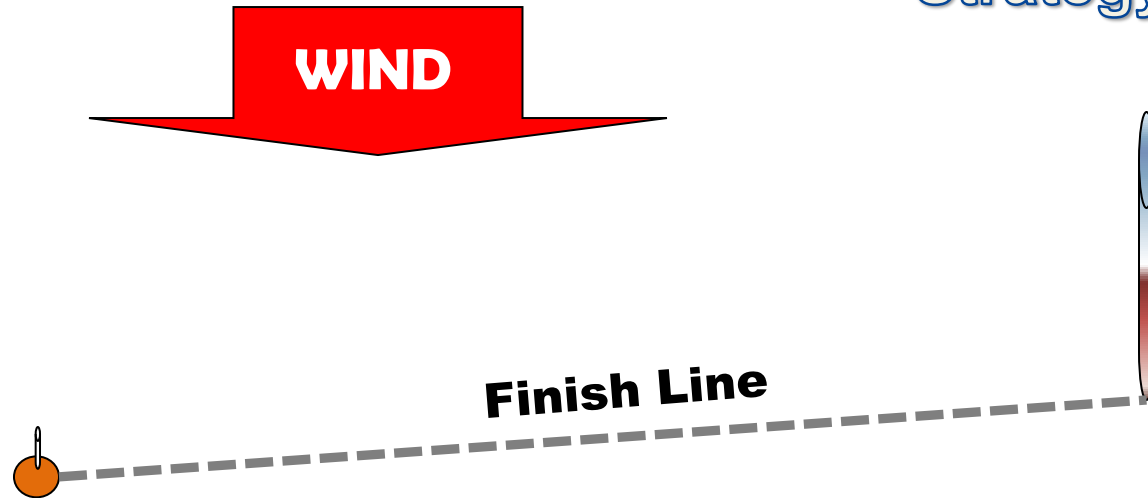
Where's the Wind ?



Start Racing - Andrew Rem

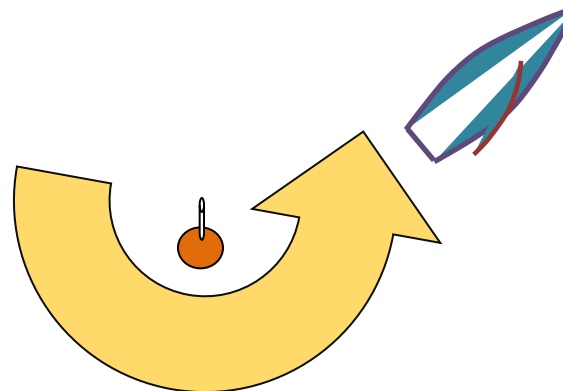


Strategy



**Usually Take The Shortest
Route To The Line
Don't Tack Too Often
If You Have Enough Speed
May Be Able To Go Right
Into Wind Over Last Boat
Length To Finish A Bit
Earlier**

Finishing

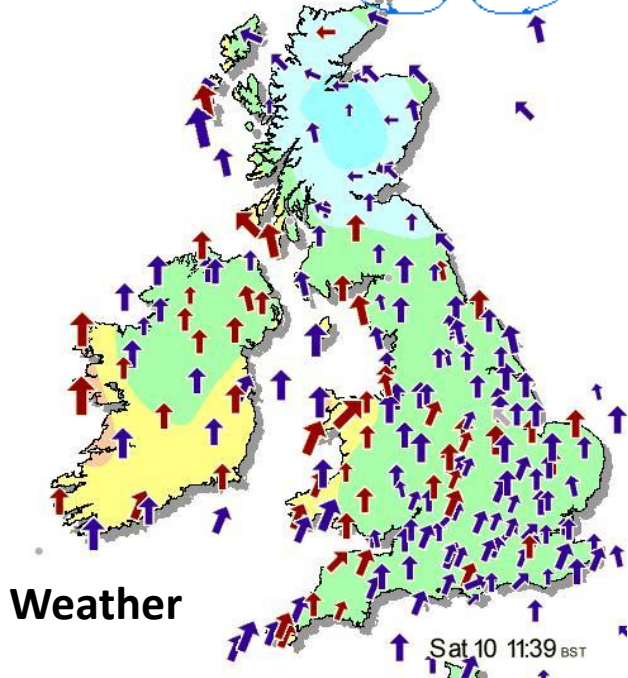
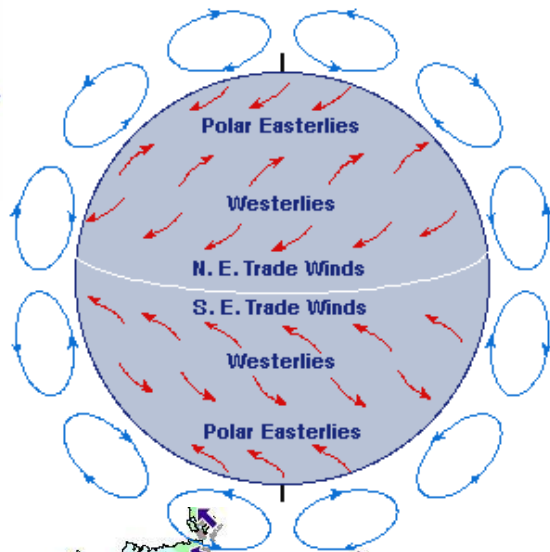




Weather

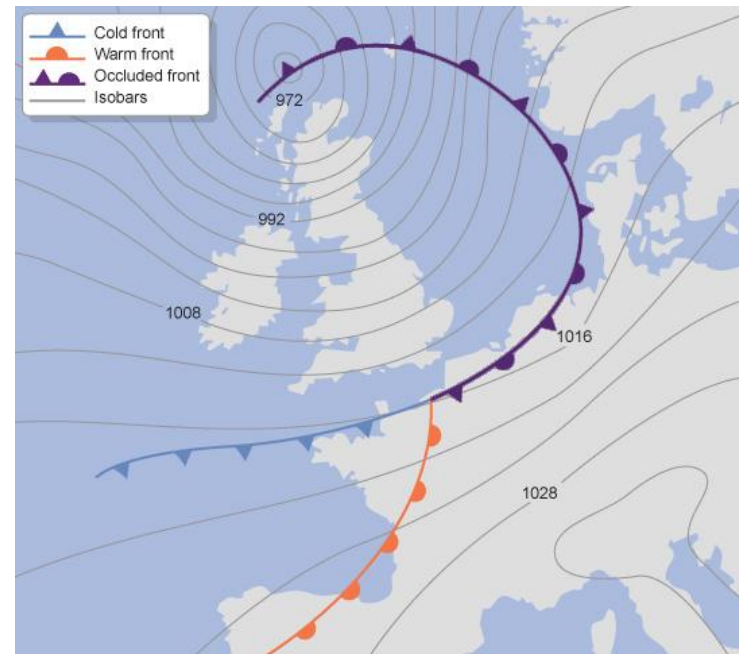


‘Will There Be Wind ?’



Weather

Forecasts

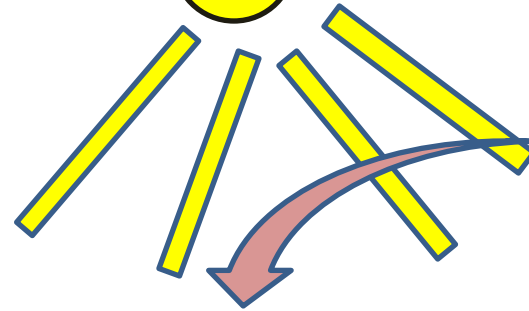


Websites

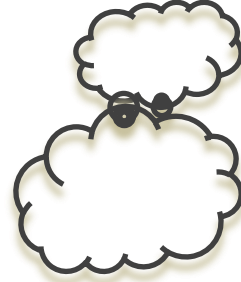
- **BBC Weather**
- **Met Office**
- **Wind guru**
- **XCWeather**
- **Magic Seaweed**
- **SailFlow**



Hot Air Rises



Weather

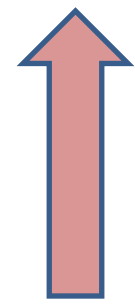
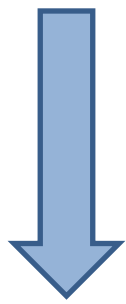
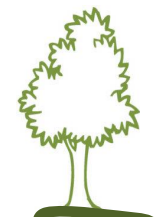


**Land Heats Up
Faster Than
Water Creating
Air Flow
I.E. See Breeze**

Water



Land

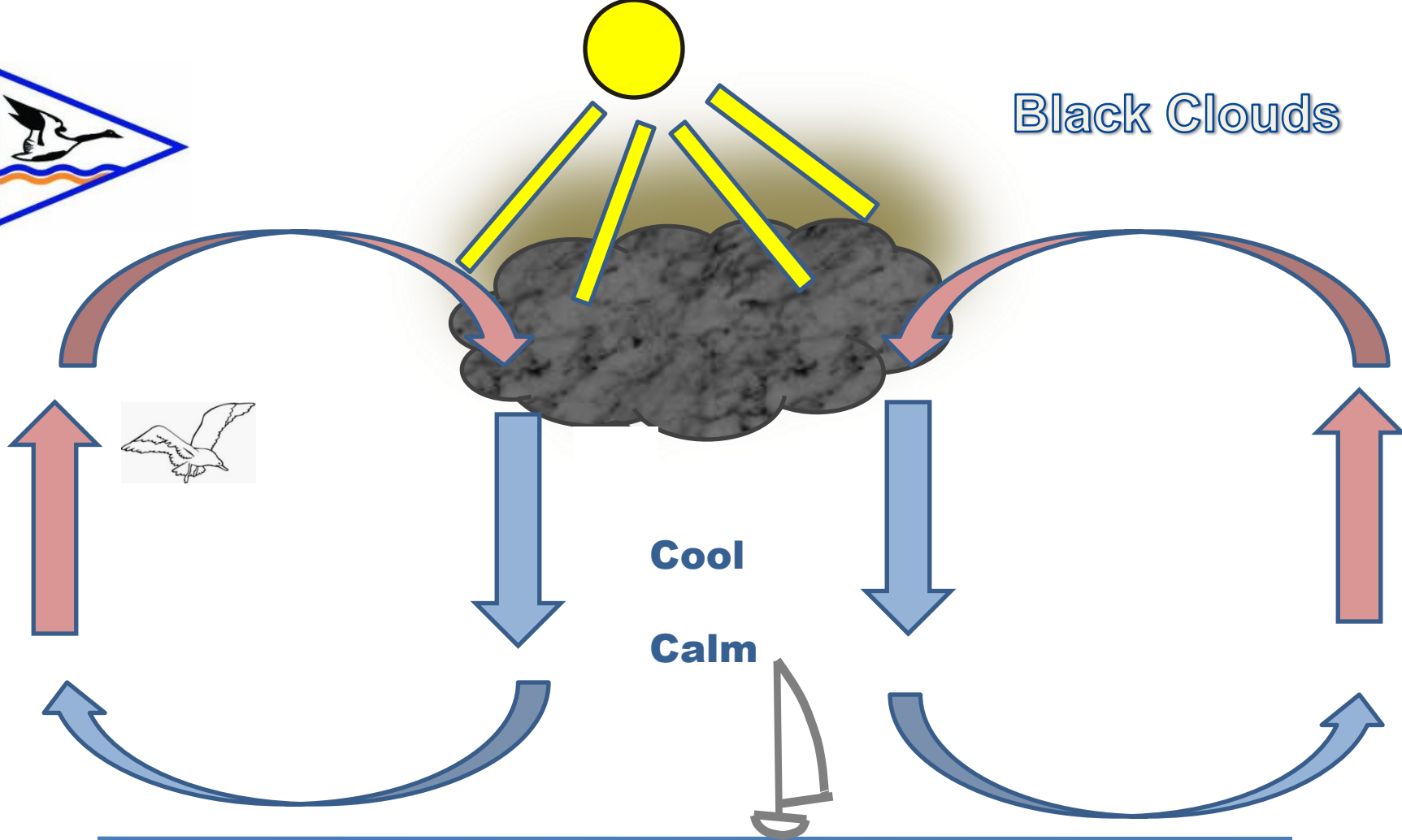


Air Movement

**Same Effect Where Temperature Differences
Land - Water
Built Up Areas (Concrete) - Water
Hillsides - Water
Etc.**



Black Clouds



Water

Weather

**Clouds On A Sunny Day
 Winds/Gusts Locally At Edges
 Possibly Calm Directly Beneath
 Change To Prevailing Winds**

**Top Tip
 Use Clouds To
 Predict Winds**



Tactics

‘Dealing With Other Boats’



Mark Rounding

**Port / Starboard
Limited Rights If
Tacking Within 3 Boat
Lengths**

**Three Boat
Lengths**

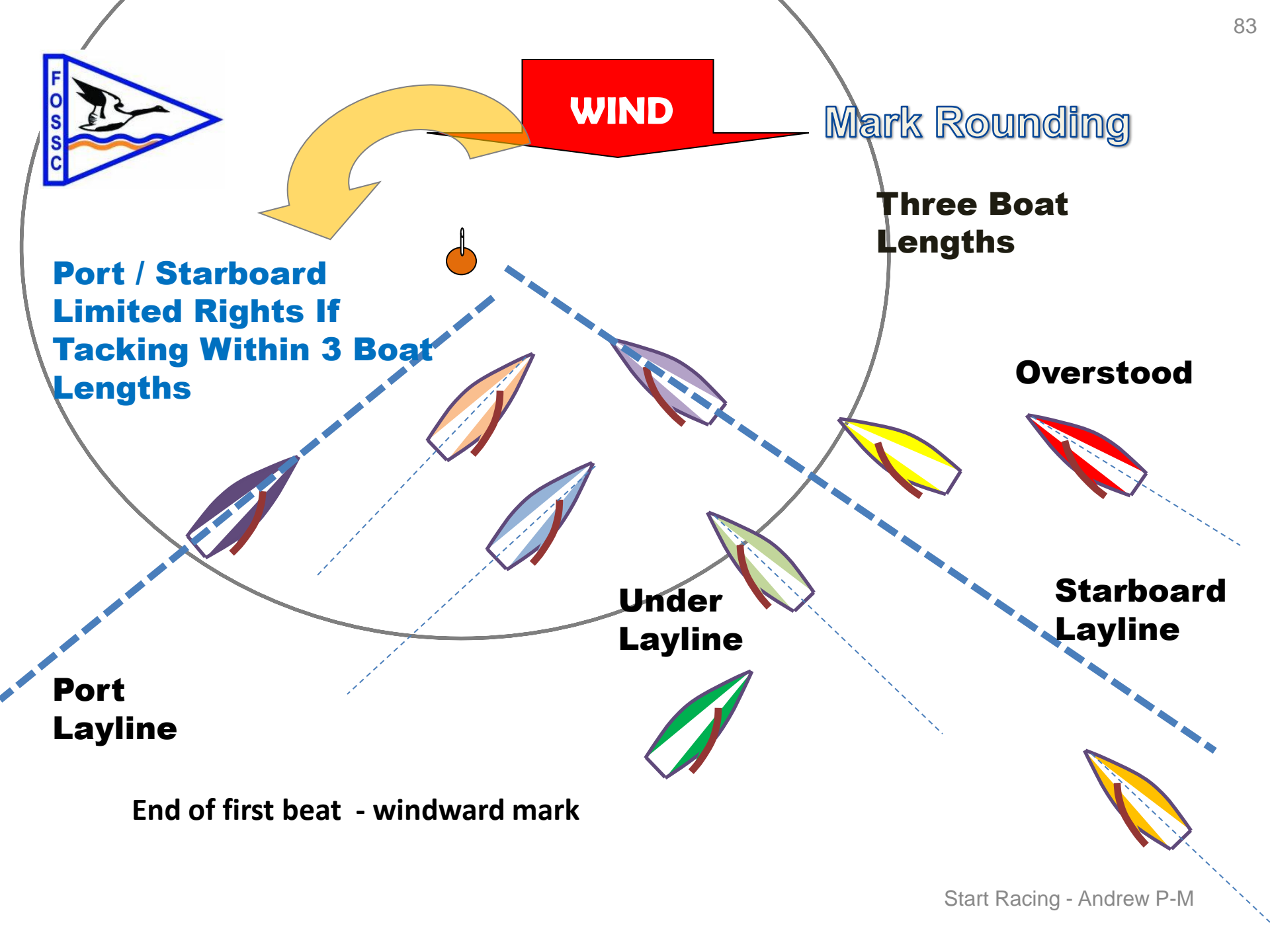
Overstood

**Under
Layline**

**Starboard
Layline**

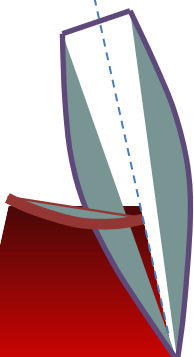
**Port
Layline**

End of first beat - windward mark





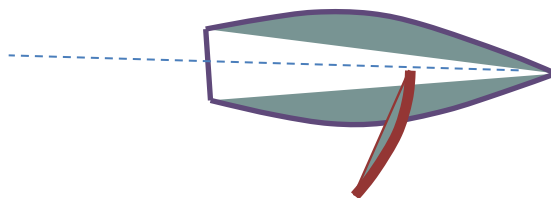
Tactics



Slow Zone

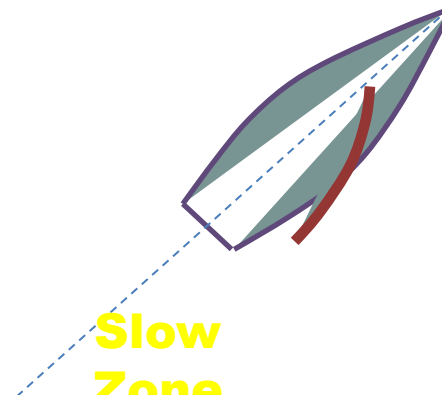
**Run –
Flow Affected
Downwind**

WIND SHADOW



Slow Zone

**Reach –
Flow Affected To
Leeward**



Slow Zone

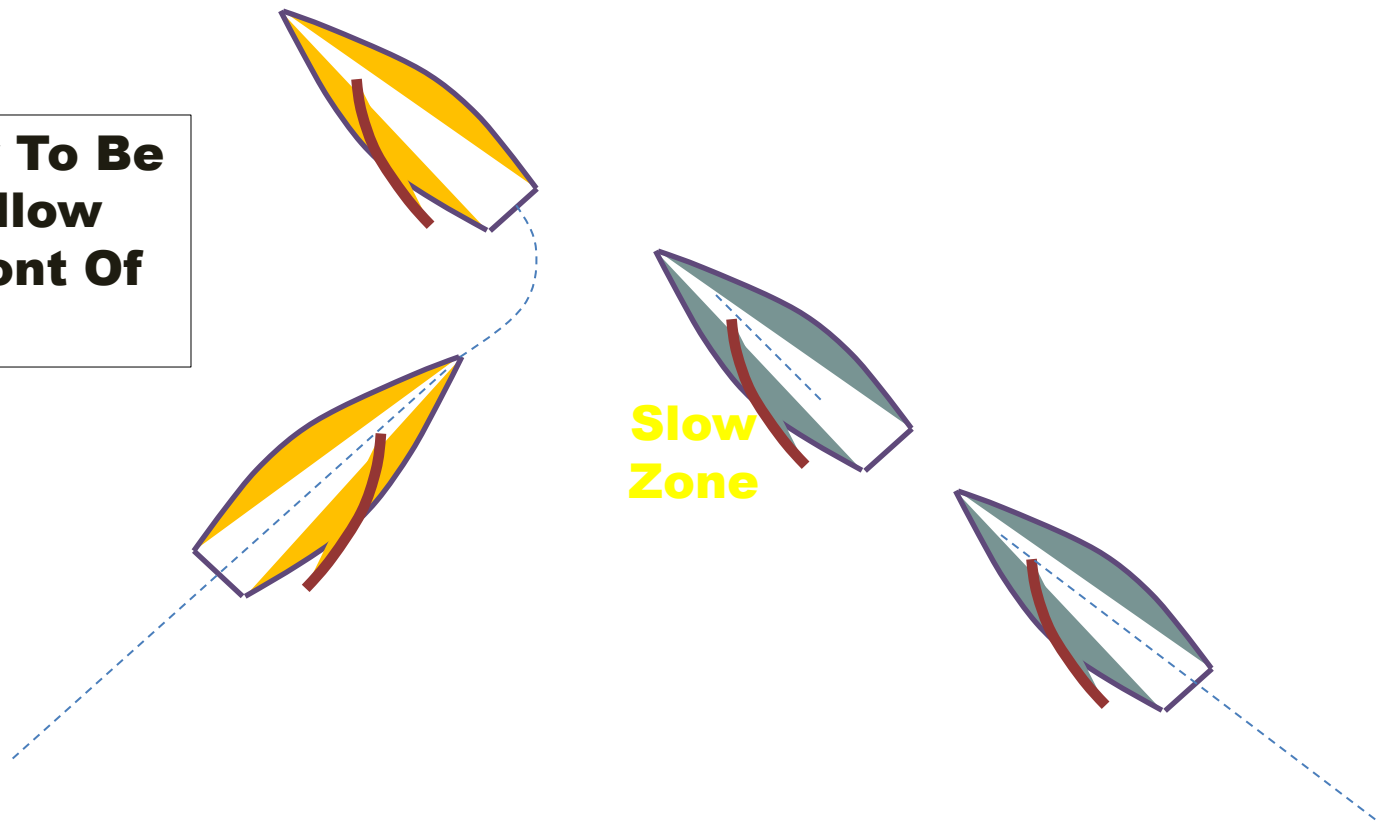
**Upwind–
Flow Affected To
Leeward And
Astern**

Top Tip
**Sail Where There
Is Most Wind**



Tactics

Grey Is Likely To Be Slowed By Yellow Tacking In Front Of Her



The Beat – Lee Bow



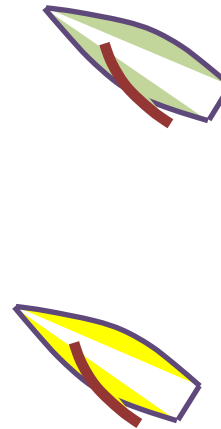
WIND

Tactics

**Try To Keep Within
The Lay Lines And
Always Try To Stay
Between The Next
Mark And The
Opposition**

Covering

**Sometimes Better
To Cover The
Fleet Rather Than
One Or Two Boats**





Tactics

Top Tip

At The Start Of The Race Try And Sail Against The Fleet Rather Than Concentrating On One Or Two Boats. Better To Lose One Or Two Places Rather Than Fall Behind ½ The Fleet.

At The End Of The Race The Fleet Will Probably Have Strung Out So Losing A Bit Of Ground Contesting An Individual Place Is Likely To Be Far Less Costly Overall.

When to use Tactics



Rules



‘Avoiding Collisions’



Simple Rules

- **Sportsmanship, Fair Sailing And Misconduct**

If You Break A Rule – Take A Penalty Play Fairly

- **Help Those In Danger**
- **The Decision To Race Is Yours
Not The People Running The Race**
- **A Boat Must Avoid Contact If Reasonably Possible**
- **When A Right-of-way Boat Changes Course, She
Shall Give The Other Boat *Room To Keep Clear.***

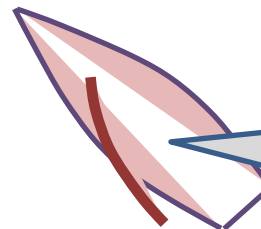
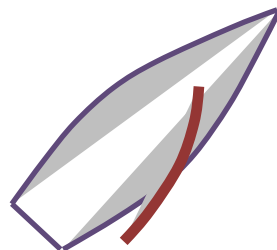
Rules Principles



WIND

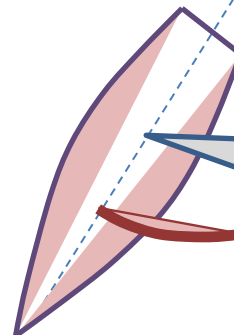
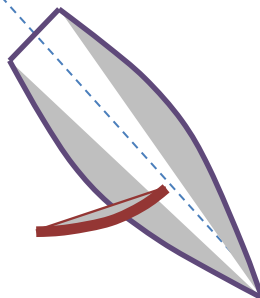
Simple Rules

**Port Should
Tack Or
Bear Away**



STARBOARD

**Port
Should
Gybe Or
Go Behind**



STARBOARD

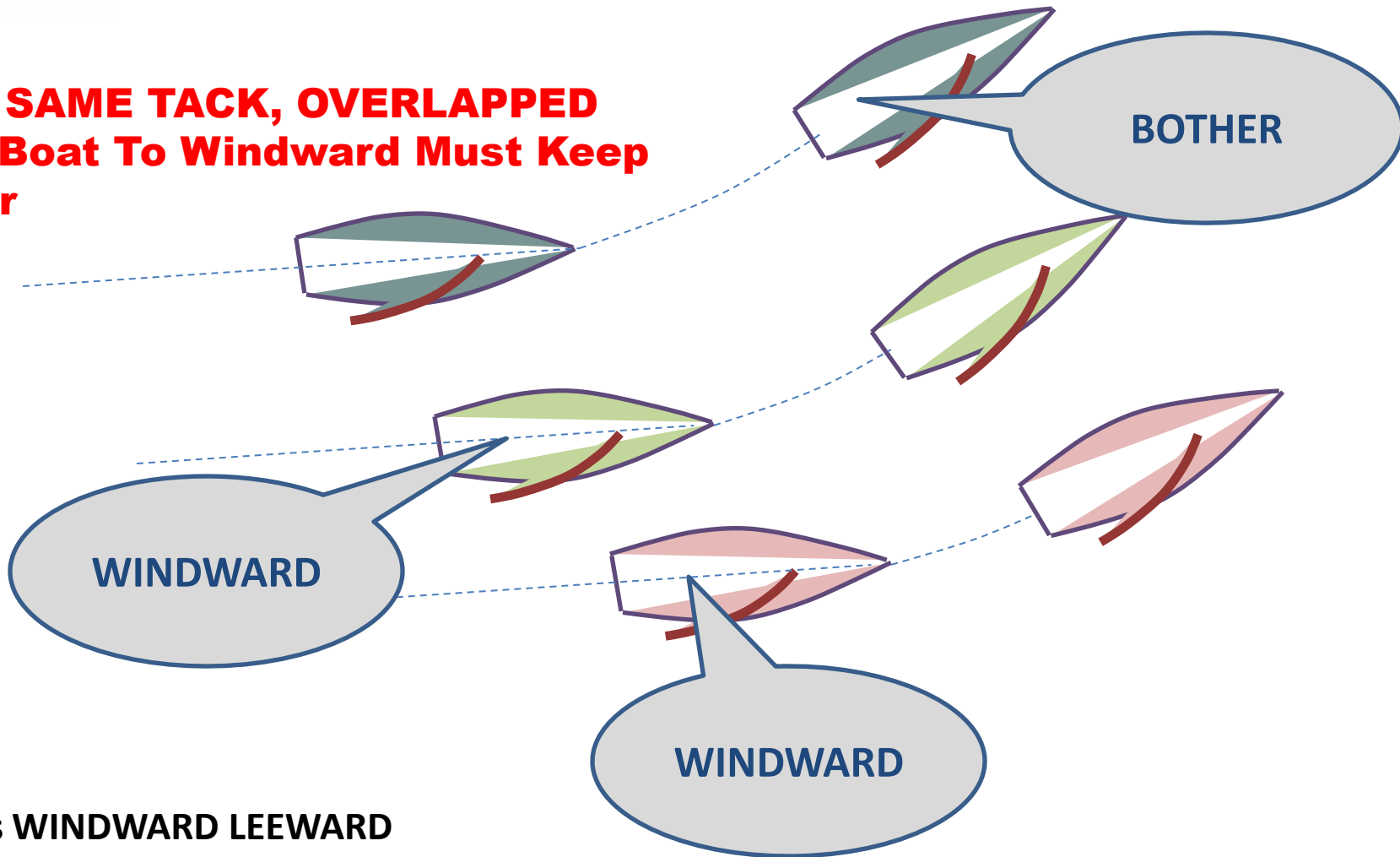
**ON OPPOSITE TACKS
The Port Tack Boat Must Keep Clear**

Rules OPPOSITE TACKS



Simple Rules

**THE SAME TACK, OVERLAPPED
The Boat To Windward Must Keep
Clear**

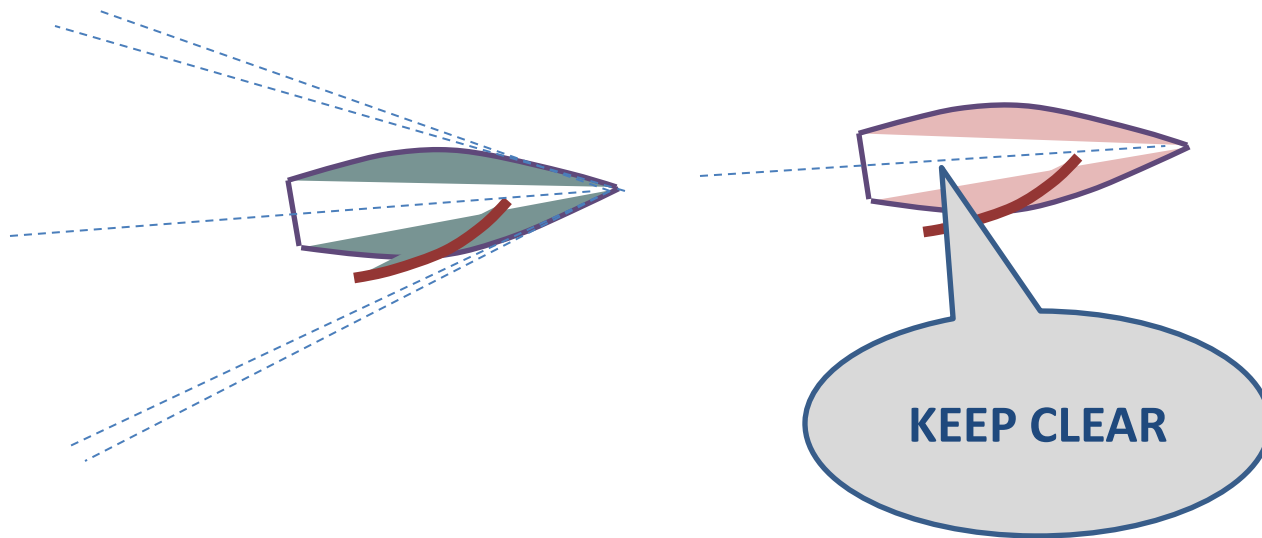


Rules WINDWARD LEEWARD



WIND

Simple Rules



**ON THE SAME TACK, NOT
OVERLAPPED
The Boat Clear Astern Must Keep
Clear**

Rules OVERTAKING BOAT

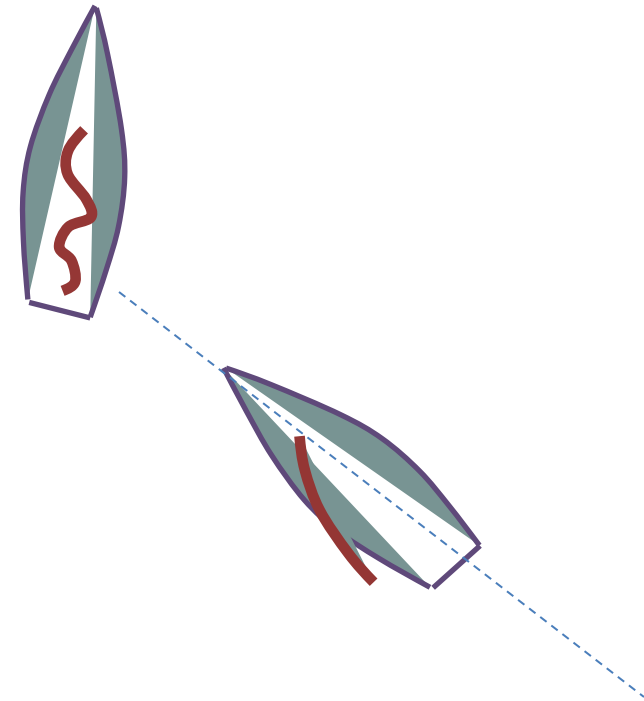
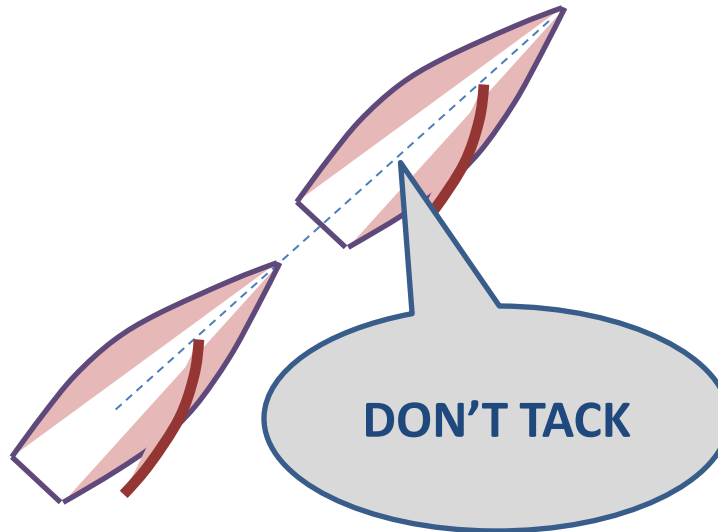


WIND

Simple Rules

WHILE TACKING
After A Boat Passes Head To
Wind She Must Keep Clear Of
Other Boats Until She Is On A
Close Hauled Course

Rules Tacking

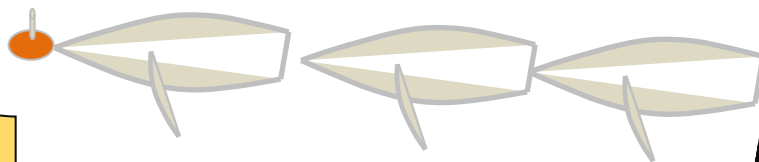
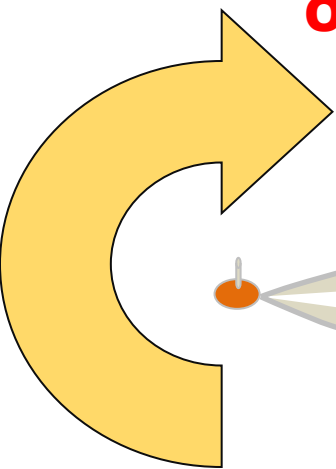




WIND

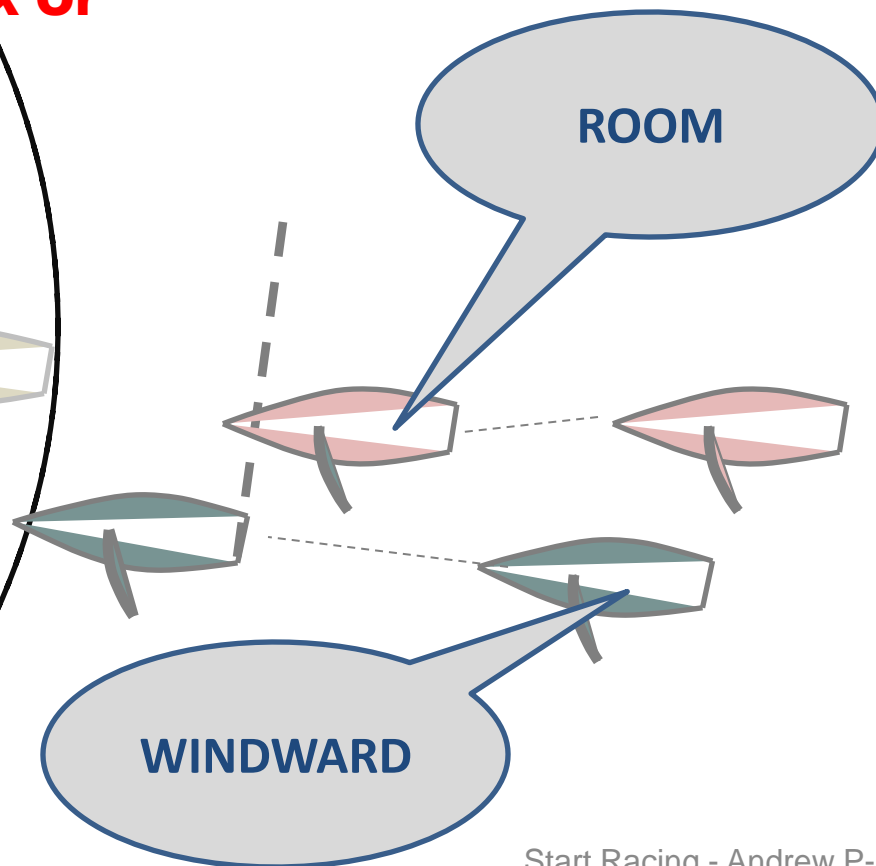
Simple Rules

ROOM AT A MARK OR OBSTRUCTION
When Boats Are Overlapped The
Outside Boat Must Give Inside Boat
Room To Pass The Mark Or
Obstruction



Three Boat
Lengths

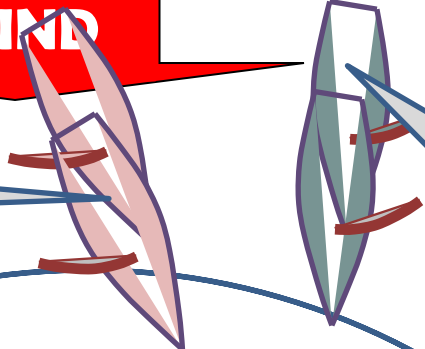
Rules ROOM FOR MARK





Simple Rules

ROOM

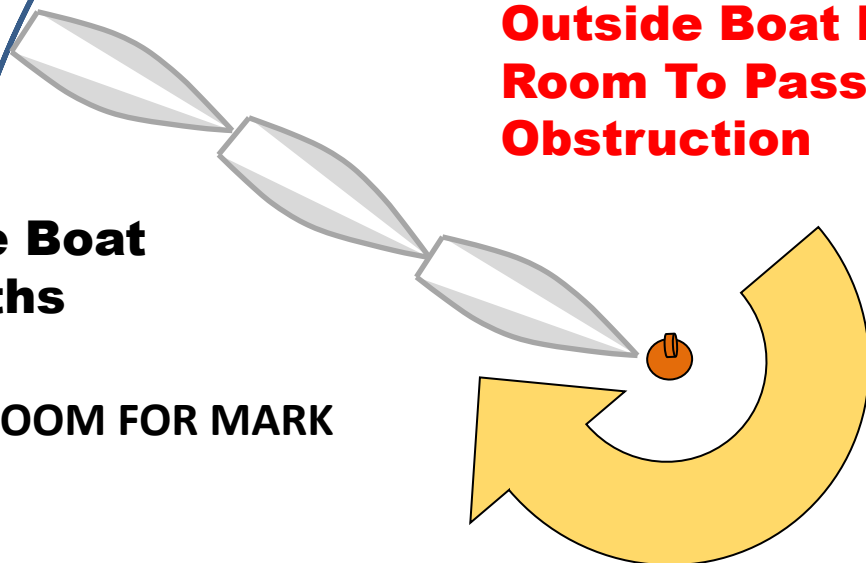


STARBOARD

ROOM AT A MARK OR OBSTRUCTION
When Boats Are Overlapped The Outside Boat Must Give Inside Boat Room To Pass The Mark Or Obstruction

Three Boat Lengths

Rules ROOM FOR MARK

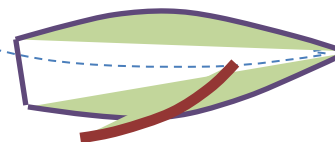
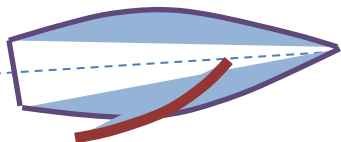
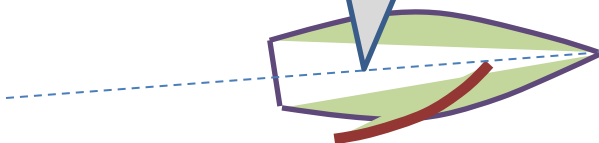




WIND

Simple Rules

ROOM



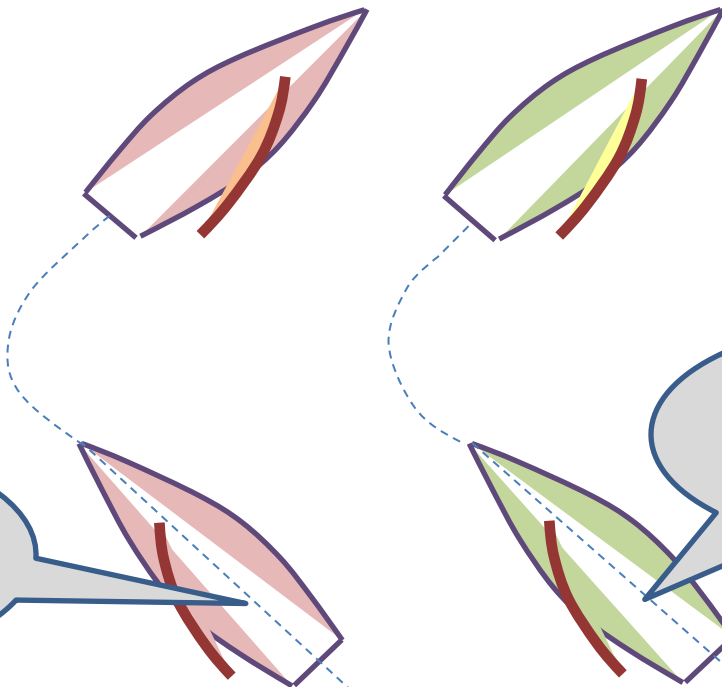
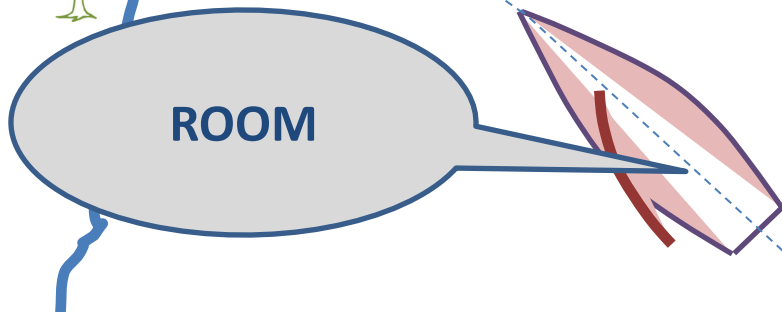
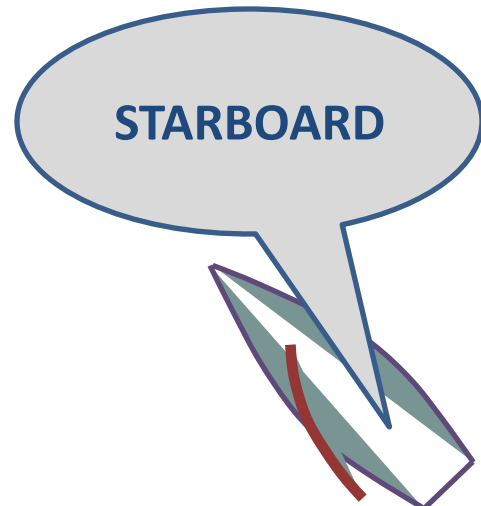
Rules ROOM FOR OBSTRUCTION

**ROOM AT A MARK OR OBSTRUCTION
When Boats Are Overlapped The
Outside Boat Must Give Inside Boat
Room To Pass The Mark Or
Obstruction**

Start Racing - Andrew P-M



Simple Rules



Rules ROOM FOR OBSTRUCTION

Green Must Respond By Tacking, Or Hailing 'You Tack' And Giving Room



WIND

Simple Rules

OPPOSITE TACKS AT WINDWARD MARK

**When Boats Are On Opposite
Tacks, Port Must Keep Clear**

**Try To Avoid
Tacking Within 3
Boat Lengths**

Rules Tacking

**If The Boat Astern Gets An
Inside Overlap The Boat That
Tacked Must Give Room**

**When A Boat Completes A
Tack Within The Three
Length Zone And The Other
Is Fetching The Mark The
Tacking Boat Must Not Force
The Other Boat Above A
Close Hauled Course**

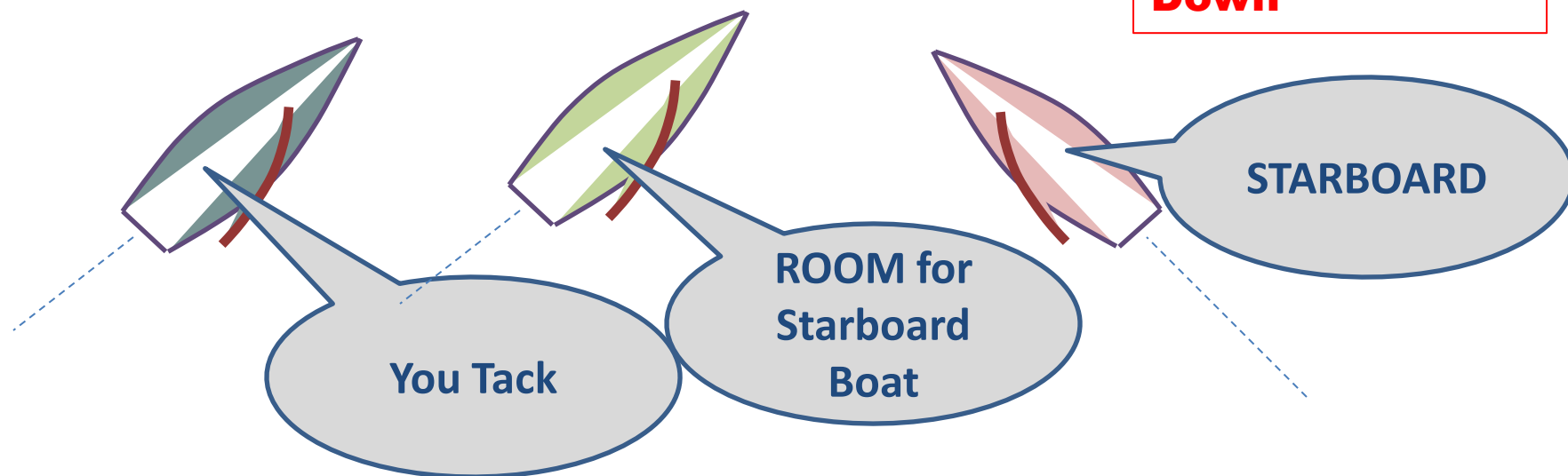


WIND

More Rules

Top Tip

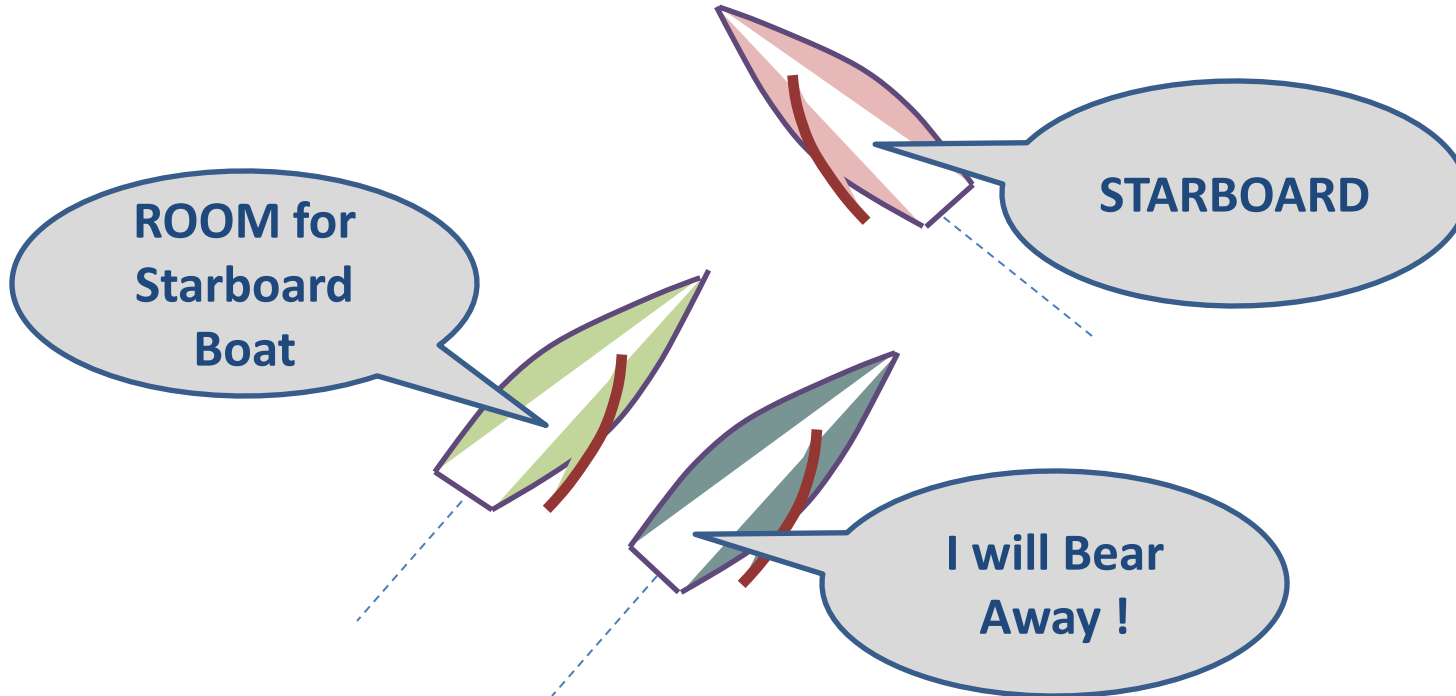
**Other Boats
Often Slow You
Down**



OPPOSITE TACKS



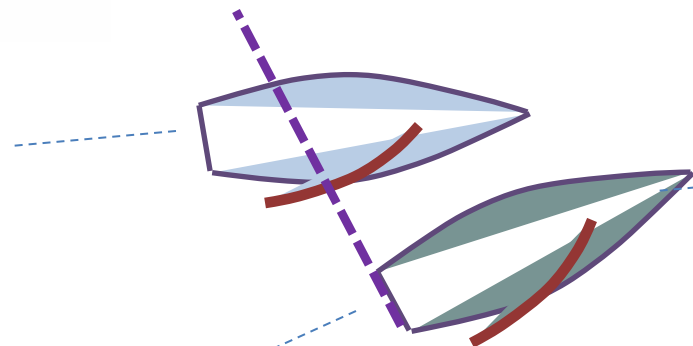
More Rules



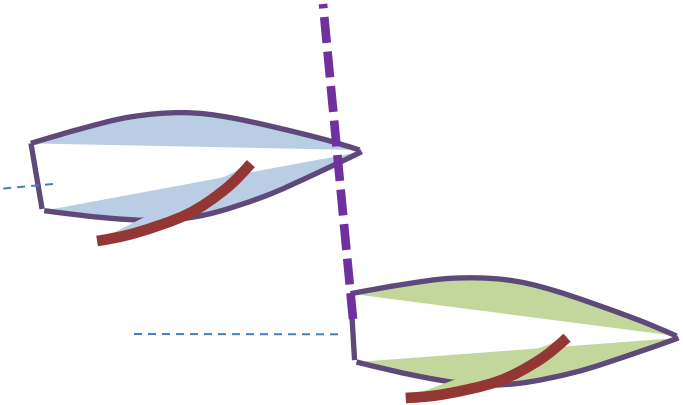
OPPOSITE TACKS



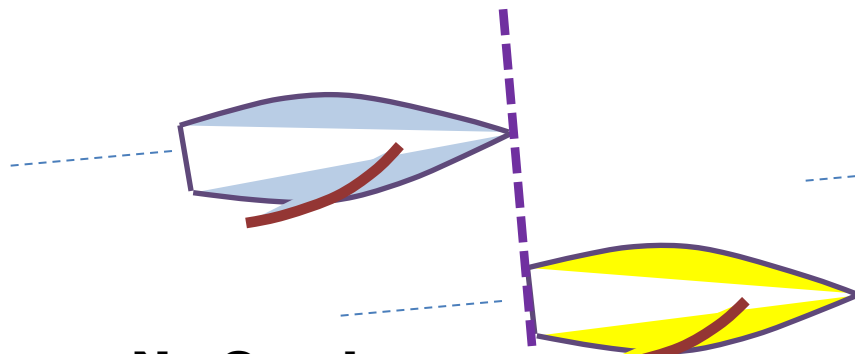
More Rules



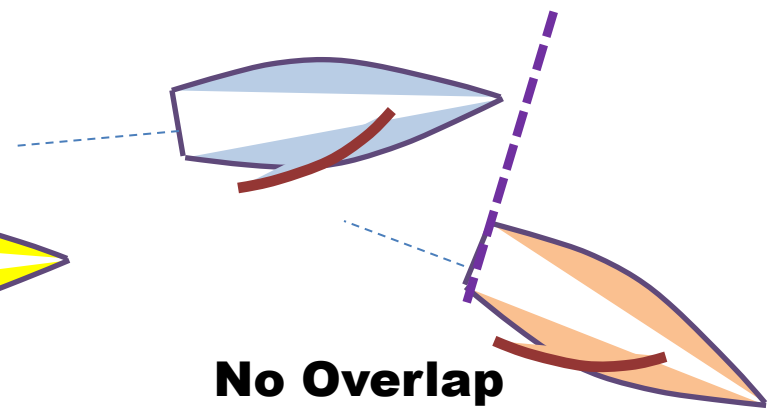
Blue has Overlap



Blue Still Has Overlap



No Overlap



No Overlap

OVERLAP



More Rules

Room - Does Not Apply

At Start Line Marks

(No Proper Course Immediately Prior To Start)

At Windward Mark

Windward Leeward & Or Opposite Tacks Apply

Limited Rights If Tacking Within The 3 Boat Length Zone

ROOM FOR MARK



More Rules

Propulsion

You May Use The 5 E's To Help Turn Etc – But Must Not Be Used To Propel The Boat.

You May Move Your Body To Exaggerate The Rolling That Helps A Boat Through The Tack Or Gybe. Provided This Does Not Increase Speed Greater Than Would Be In The Absence Of The Tack Or Gybe

Except On A Beat The Boat Can Pull On The Sheet To Help Planing Or Surfing. But Only Once For Each Wave Or Gust

Propulsion



More Rules

Penalties

360° (One Complete Turn)

For Hitting A Mark – No Need To Re-round

720° (Two Complete Turns)

For Other Infringement

Turns Should Be Part Of Same Manoeuvre

All Penalties Taken At The Earliest Opportunity

**A Boat Has No Rights When Making Her Turns
(So Keep Clear Of Others!)**

PENALTIES



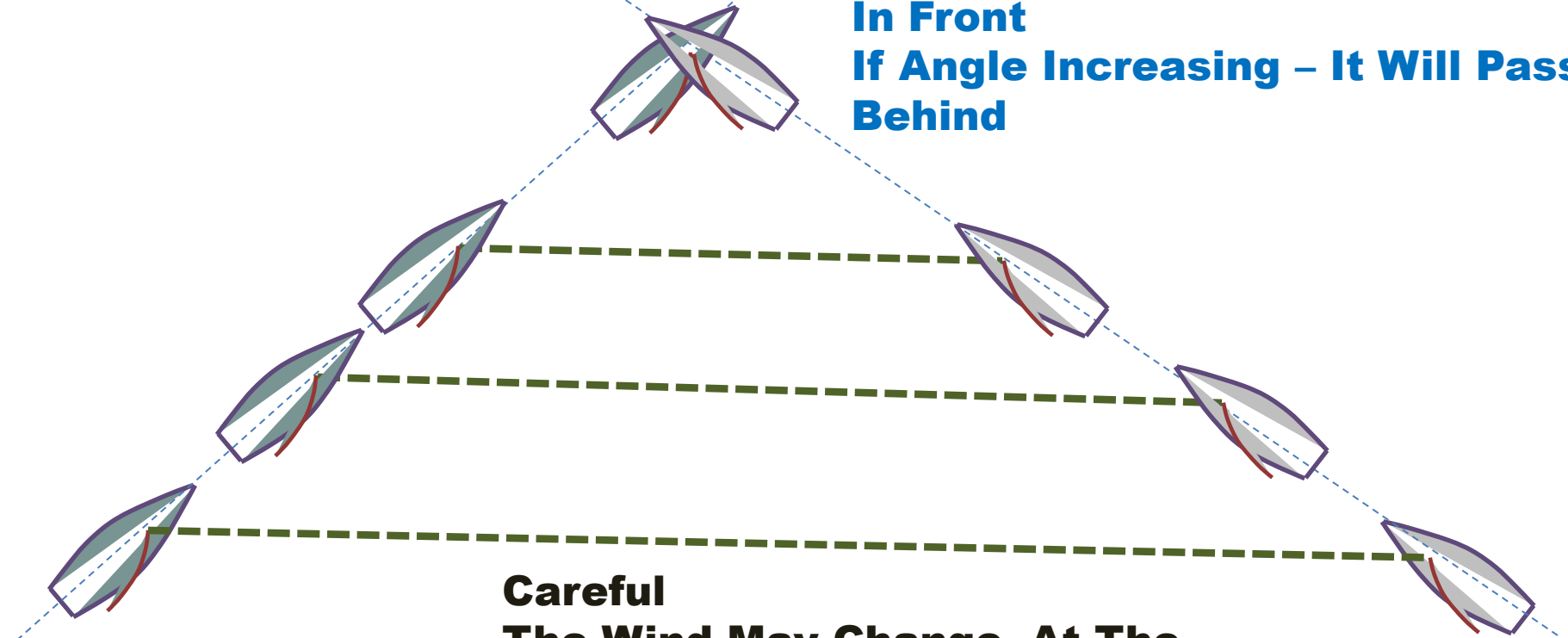
WIND

Avoiding a Collision

If Relative Position Stays Same – Collision

If Angle Reducing – It Will Pass In Front

If Angle Increasing – It Will Pass Behind



Converging Course

**Careful
The Wind May Change At The
Last Moment**



Sail and Rig

‘What Does That String Do ?’



Outhaul



Halyard
Sail Controls



Downhaul /Cunningham



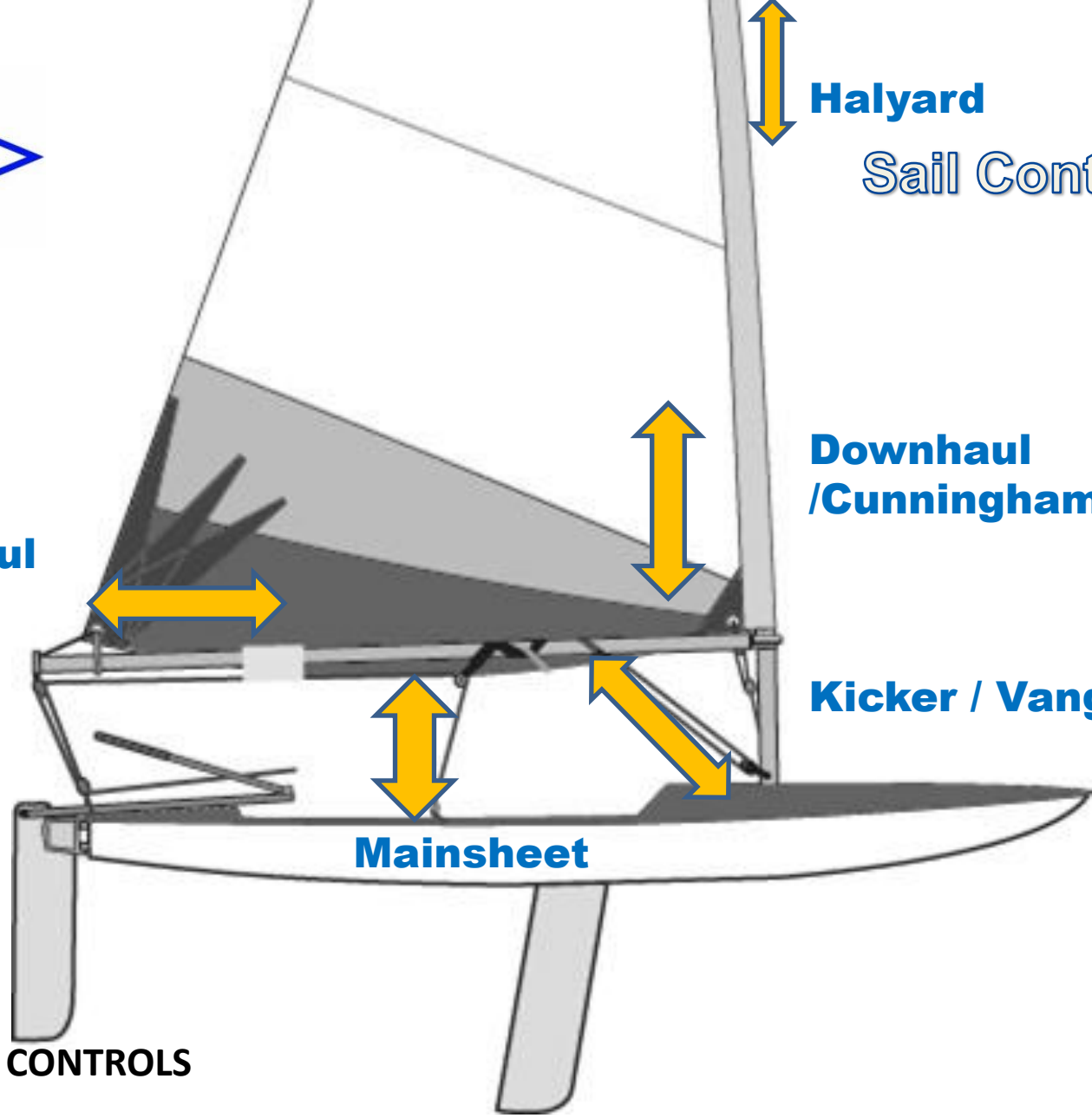
Kicker / Vang



Mainsheet



SAIL CONTROLS

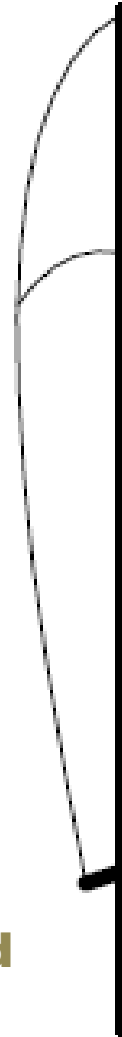




**Tight
Leech Held Straight
Sail Flattened**



Upwind



Kicking Strap

**Loose
Leech Allowed To Curve
Sail Made Fuller**

**Kicker Pulls The Boom
Down**

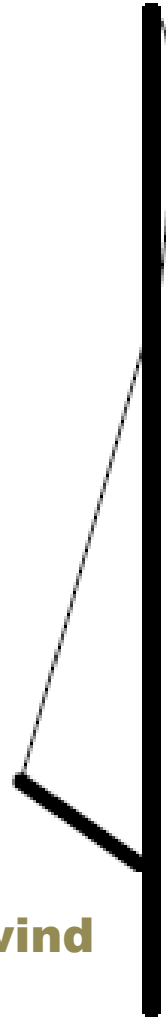
SAIL CONTROLS - KICKER



**Tight
Leech Held Straight
Sail Flattened**



Downwind



Kicking Strap

**Loose
Leech Allowed To Curve
If Too Loose Can Blow
In Front Of Mast (May
Make Boat Unstable)
Sail Made Fuller**

**Kicker Pulls The Boom
Down**

SAIL CONTROLS - KICKER



**Loose
Sail Full – At Bottom**



Outhaul

**Tight
Sail Flattened – At
Bottom**



SAIL CONTROLS - OUTHAUL

**Outhaul Pulls Sail Along The
Boom – Changes Bottom 1/3
Of Sail**



**Tight
Front Of Sail Flat**

**Downhaul /
Cunningham**



**Loose
Sail Fuller**

**Downhaul Bends The
Mast Helping To Flatten
The Sail**



Downhaul Tightens The Luff

SAIL CONTROLS - DOWNHAUL



Full Sail

- More Power
- Increased Heeling
- Lower Pointing

Flat Sail

- Less Power
- Less Heeling
- Higher Pointing

Top Tip

Upwind Flat – To Allow Boat To Point – But With Power

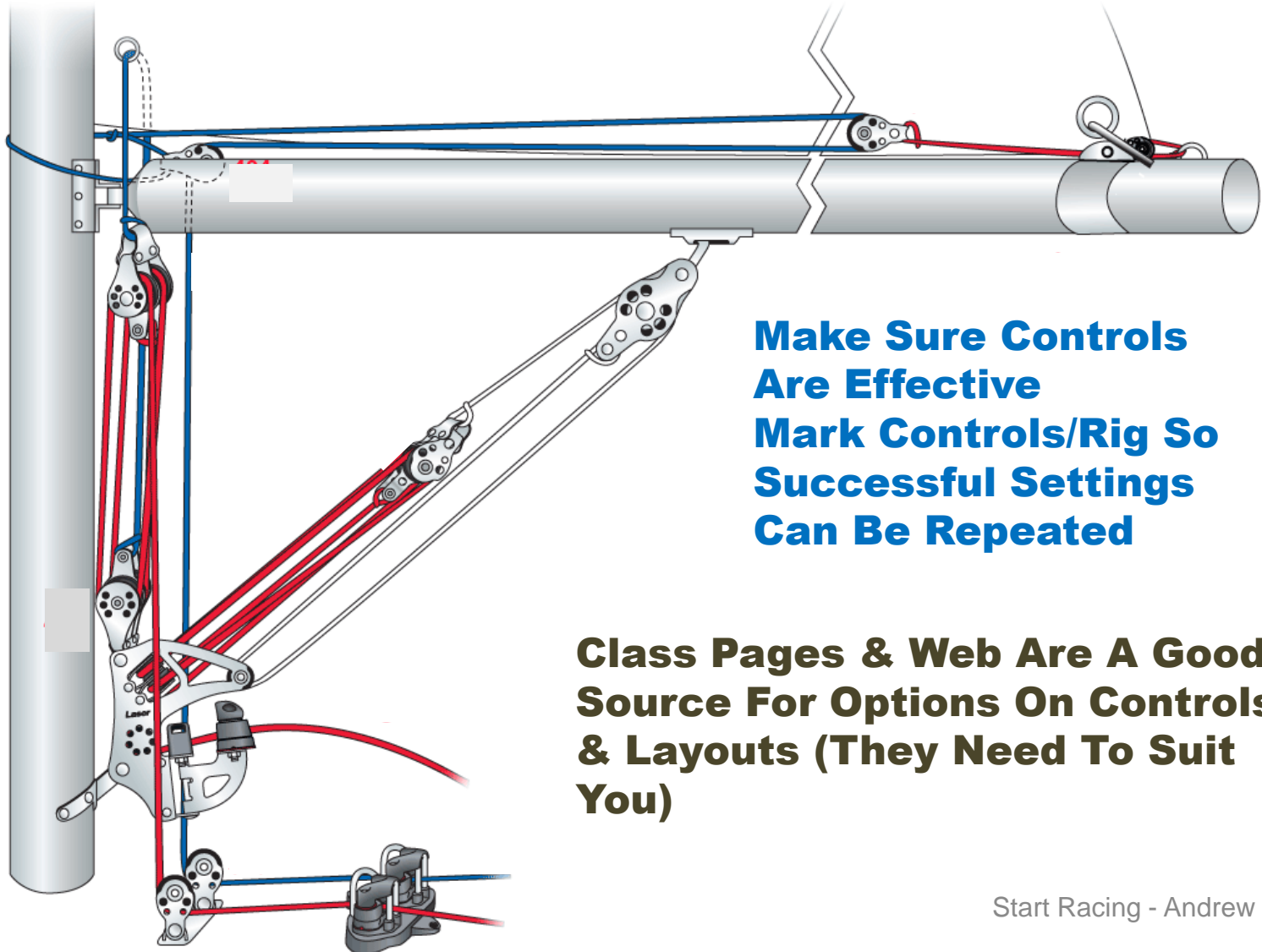
Downwind Full – To Develop Power – But Not So Baggy As To Develop Drag

SAIL CONTROLS - Full or Flat

Full or Flat Sail



Controls



**Make Sure Controls
Are Effective
Mark Controls/Rig So
Successful Settings
Can Be Repeated**

**Class Pages & Web Are A Good
Source For Options On Controls
& Layouts (They Need To Suit
You)**



Diet & Hydration

‘What Shall I Eat ?’



Diet / Hydration

The Effect Of Poor Diet / Hydration

Some Sailors Suffer The Symptoms Of A Poor Diet Like Lethargy And Headaches.

On The Water This Effects Performance And, At An Extreme, Health.

A Few Simple Steps Can Reduce These Effects.

Fluid

A 2% Drop Of Fluid In Your System Has Been Proved To Produce A 20% Drop In Performance!

(If You Feel Thirsty It Is Already Too Late!)

Type Of Drink

Water Alone Will Simply Go Through The System And Wash Away Some Vital Electrolytes, So Aim For A Hypotonic Drink; 2/3 Water A 1/3 Fruit Juice And A Pinch Of Salt Is Great Or Could Also Go For Specialists Drinks



Diet / Hydration

Fuel

Carbohydrates Are Essential For Energy.

Complex Forms Are Bread, Cereals (Especially Oats), Pasta, Rice Etc.

Simple Forms Are The Type Of Sugars Found In Jam, Fruit, Jaffa Cakes And Gel Bars.

Complex Is Better Than Simple Before Sailing, In That It Releases Energy Over A Longer Time Period, But A Combination Of Complex And Simple Can Be Effective On The Water.

Food



Diet / Hydration

Eat Or Drink Carbohydrates Within The First Hour After Sailing (Or After Any Activity).

During This Short Period Of Time The Body Can Absorb The Energy More Efficiently..

A Jam Sandwich, Malt Loaf, Sis Bar, Banana A Chocolate Bar (If You Really Must), But Do Eat. Or Even A Hypotonic Drink Will Have Some Carbohydrates If All Else Fails.

You Still Do Need Proteins (For Repairing Muscles) And Fat But Simple Carbs Are Good For Short Term Energy Boosts (Just Pre-start?) And Complex Carbs For Medium And Long Term Energy.

Food



Tides

‘When The Water Moves !’



Tides

A Tide Is The Rising And Falling Of Earth's Ocean And Sea Surface Caused By The Gravitational Pull Of The Moon And The Sun.

Tides Cause Changes In The Depth Of Both Sea And Estuary Waters.

Tides Also Make Currents e.g. Tidal Streams

This Means That Being Able To Predict The Effect Of Tide Is Important For Coastal Sailing.

It Also Means That The Ability To Clearly Identify The Movements Associated With The Tides Is Necessary To Ensure Success In A Race.

Tidal Movements



SPRING

High
→

Low (Ebb)

→

Spring and Neap



NEAP

High
←

Low (Ebb)

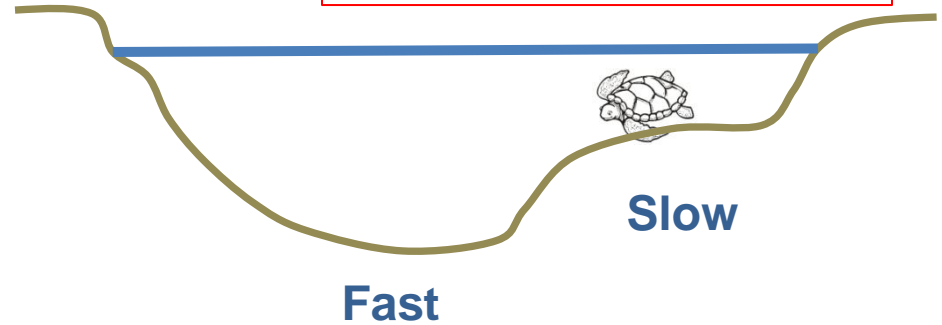
←

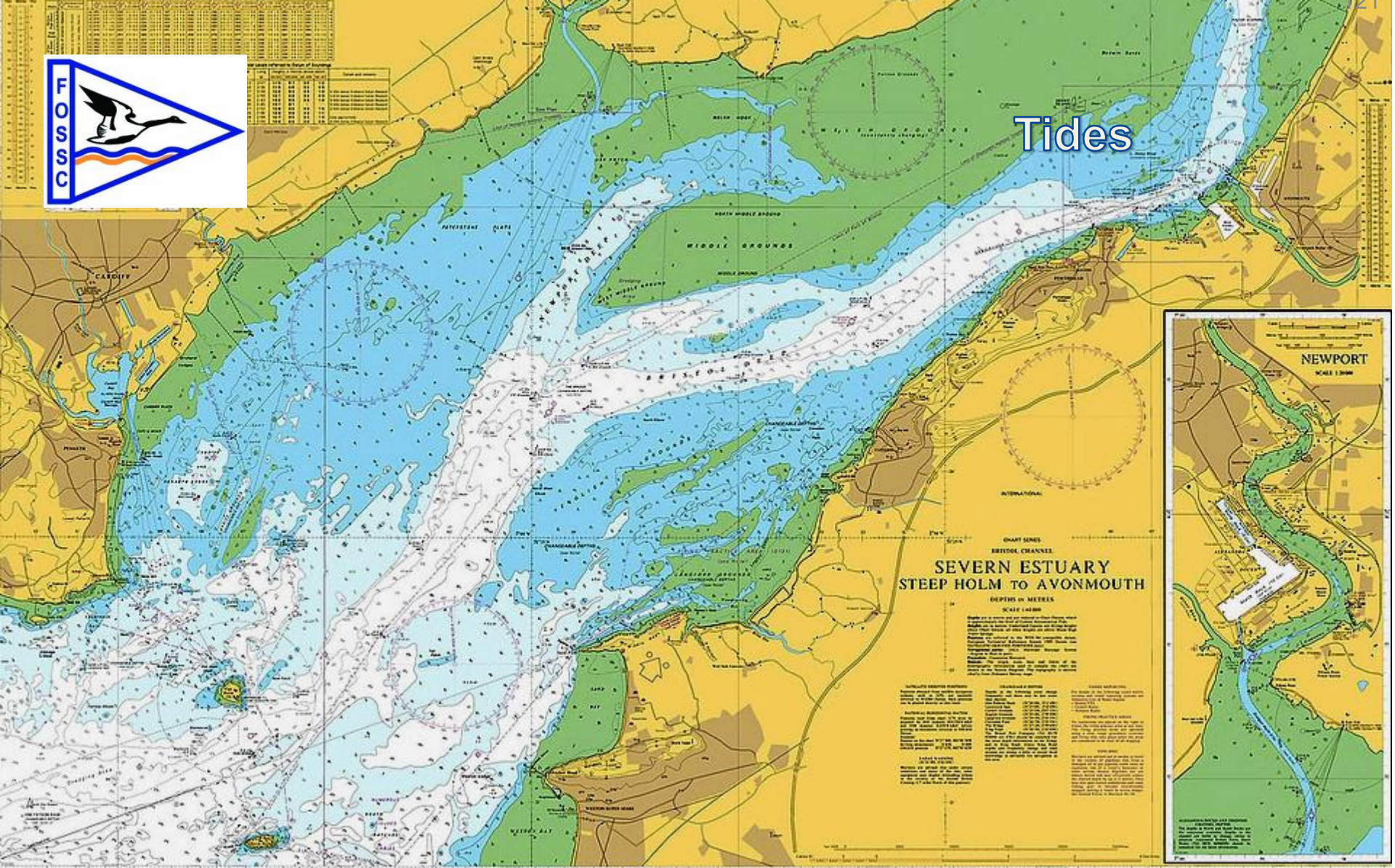
Tides

Spring Has Highest Tidal Range (Extremes)

Tides A Separated By 12hr 25min

**Top Tip
Deeper Water Flows
Faster Than
Shallow Water**





Tide Chart

Marine Chart Shows Depths & Hazards



JANUARY 2014

MOON'S PHASES

	Day	Date
(Last Quarter	Thu	7
● New Moon	Fri	15
) First Quarter	Sat	23
○ Full Moon	Sat	30

All times on this page are GMT

1 0543 4.0 1216 0.9 F 1814 4.0	9 0010 3.0 0618 1.5 SA 1251 3.0 1922 1.8	17 0058 1.1 0655 4.0 SU 1322 1.3 1905 3.8	25 0621 1.9 1310 3.0 M 1920 1.9
2 0019 0.6 0627 4.2 SA 1304 0.8 1856 4.0	10 0139 3.0 0731 1.7 SU 1431 3.0 2043 1.8	18 0131 1.1 0728 4.0 M 1354 1.3 1935 3.8	26 0122 3.0 0753 1.9 TU 1503 3.2 2033 1.7
3 0105 0.5 0710 4.2 SU 1350 0.8 1937 3.9	11 0251 3.1 0853 1.7 M 1553 3.1 2146 1.7	19 0201 1.2 0759 3.9 TU 1425 1.4 2002 3.7	27 0309 3.2 0925 1.6 W 1602 3.4 2137 1.3
4 0152 0.5 0754 4.1 M 1437 0.9 2020 3.7	12 0346 3.3 1004 1.6 TU 1627 3.2 2233 1.5	20 0227 1.3 0828 3.8 W 1452 1.5 2029 3.6	28 0408 3.5 1034 1.3 TH 1648 3.7 2233 1.0
5 0239 0.6 0839 3.9 TU 1524 1.0 2105 3.5	13 0429 3.5 1056 1.5 W 1656 3.4 2312 1.4	21 0252 1.4 0858 3.6 TH 1521 1.6 2100 3.4	29 0455 3.9 1126 0.9 F 1729 3.9 2322 0.6
6 0328 0.7 0925 3.7 W 1613 1.3 2153 3.3	14 0507 3.7 1137 1.4 TH 1727 3.6 2348 1.2	22 0321 1.6 0931 3.5 F 1559 1.7 2137 3.3	30 0538 4.1 1211 0.7 SA 1807 4.0 O
7 0419 1.0 1016 3.4 TH 1708 1.5 (2250 3.1	15 0545 3.9 1214 1.3 F 1800 3.7 ●	23 0401 1.7 1014 3.3 SA 1652 1.9) 2223 3.1	31 0008 0.4 0619 4.3 SU 1255 0.5 1844 4.1
8 0515 1.3 1118 3.2 F 1810 1.7	16 0023 1.1 0621 4.0 SA 1249 1.3 1833 3.8	24 0458 1.9 1114 3.1 SU 1803 1.9 2328 3.0	

Tide Chart

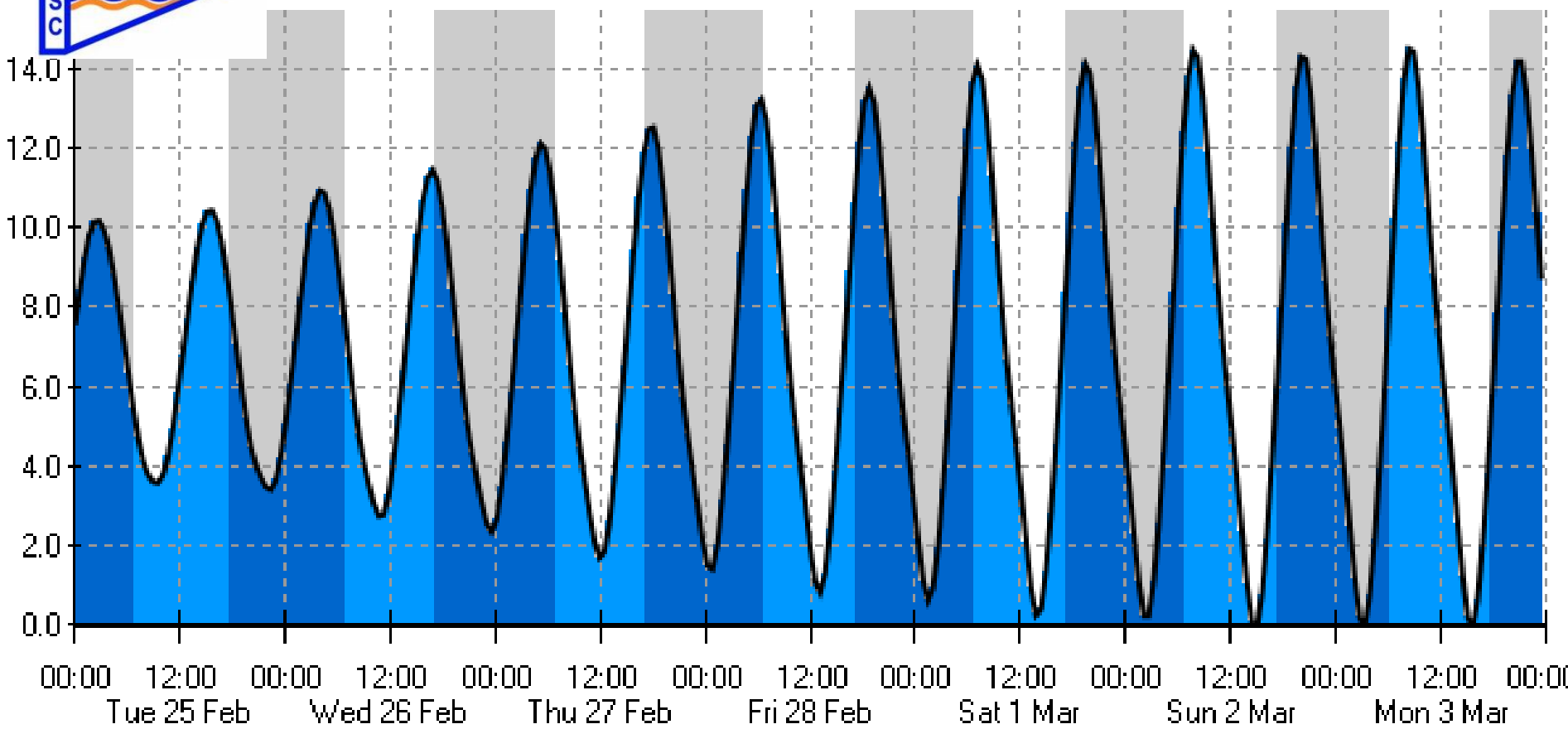
Tides

**Tide Tables
Shows Times And
Heights**

Start Racing - Andrew P-M

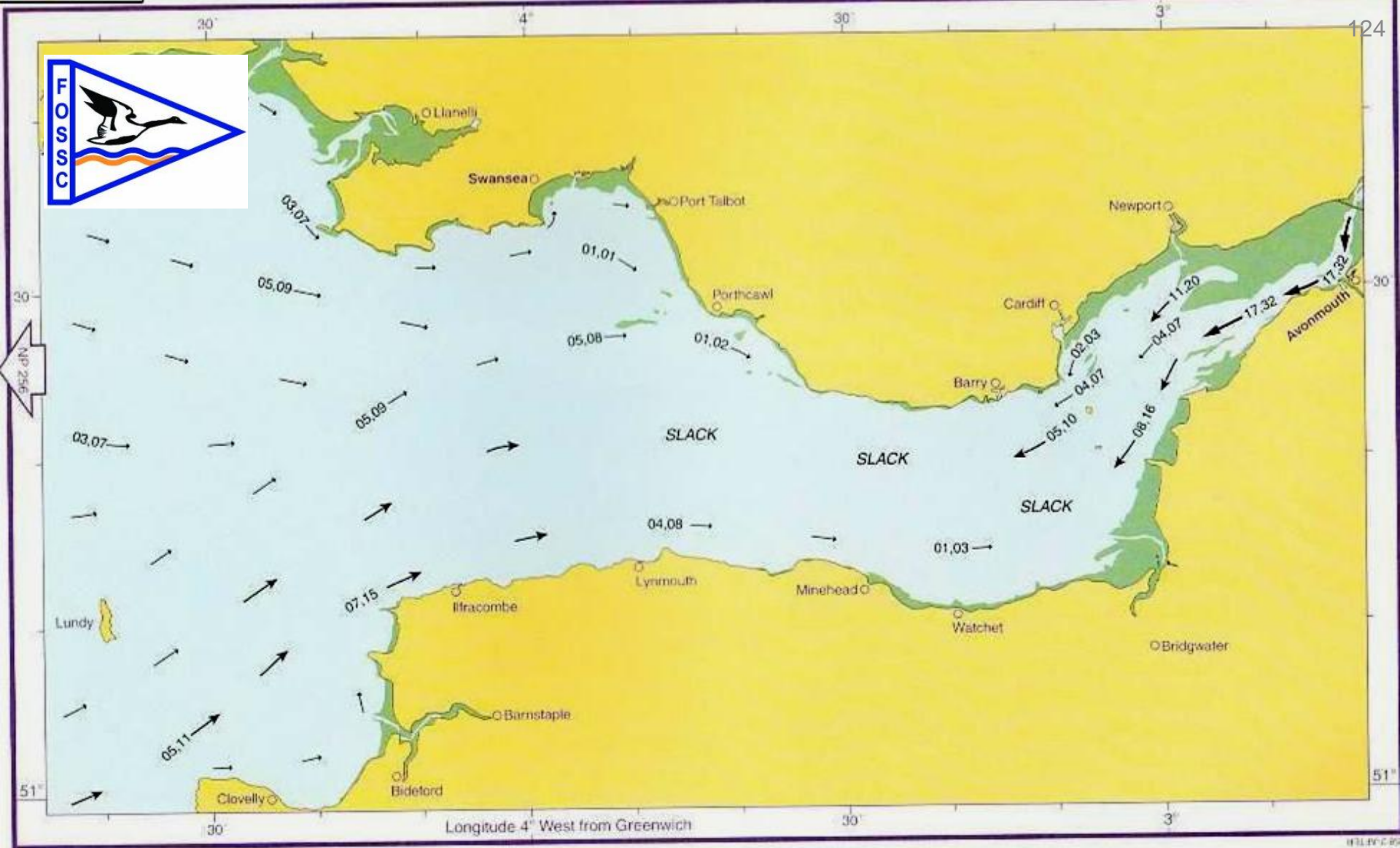


Tides Crown Copyright 2014



Tide Range Shows Pictorial Times And Heights

Tide Chart



Tide Chart

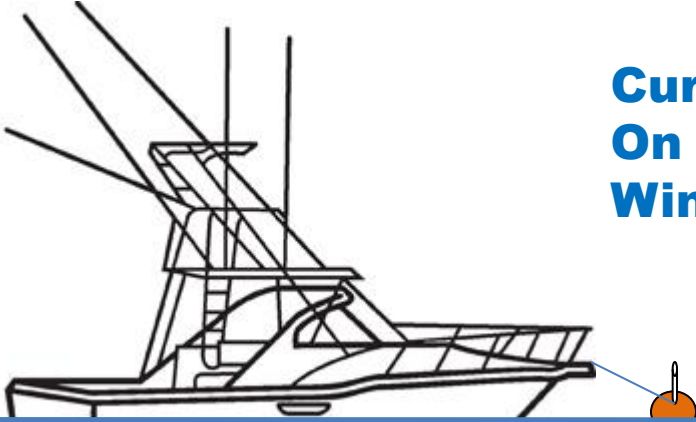
Tide Flow Shows Direction Of Flows At Various Points During Tide

Start Racing - Andrew P-M



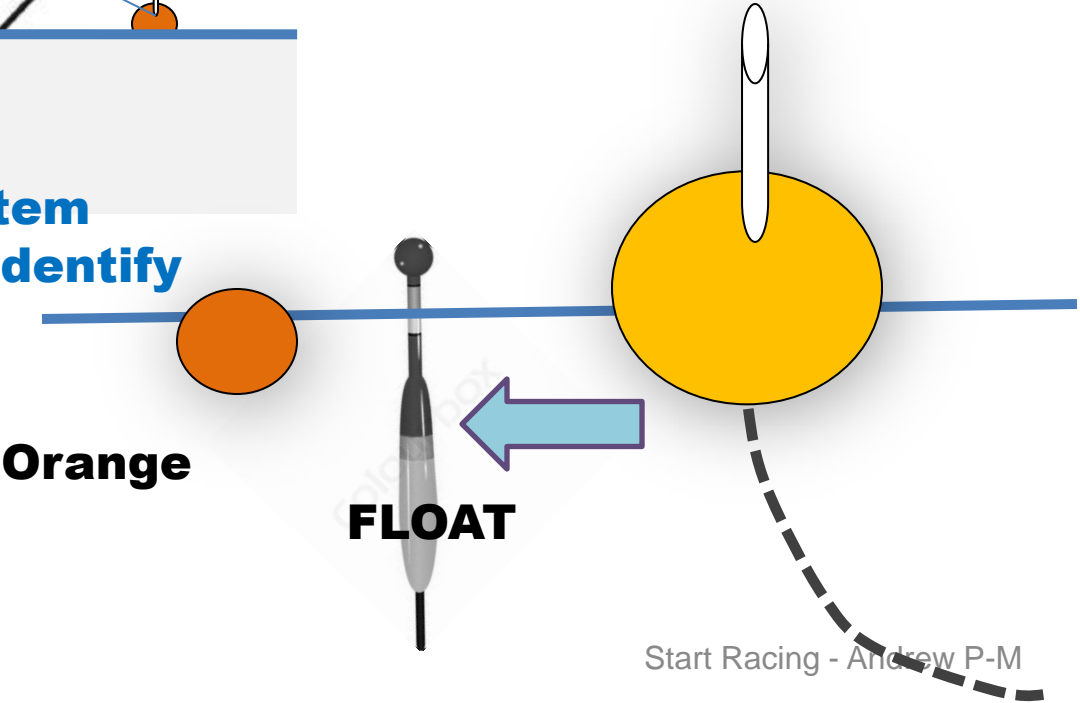
Tides

Current /Flow Can Swing Boats On Their Moorings (Against The Wind)






Observing Free Floating Item Near Fixed Object Helps Identify Water Movement

Tide effect





-  **Strong**
-  **Medium**
-  **Weak**

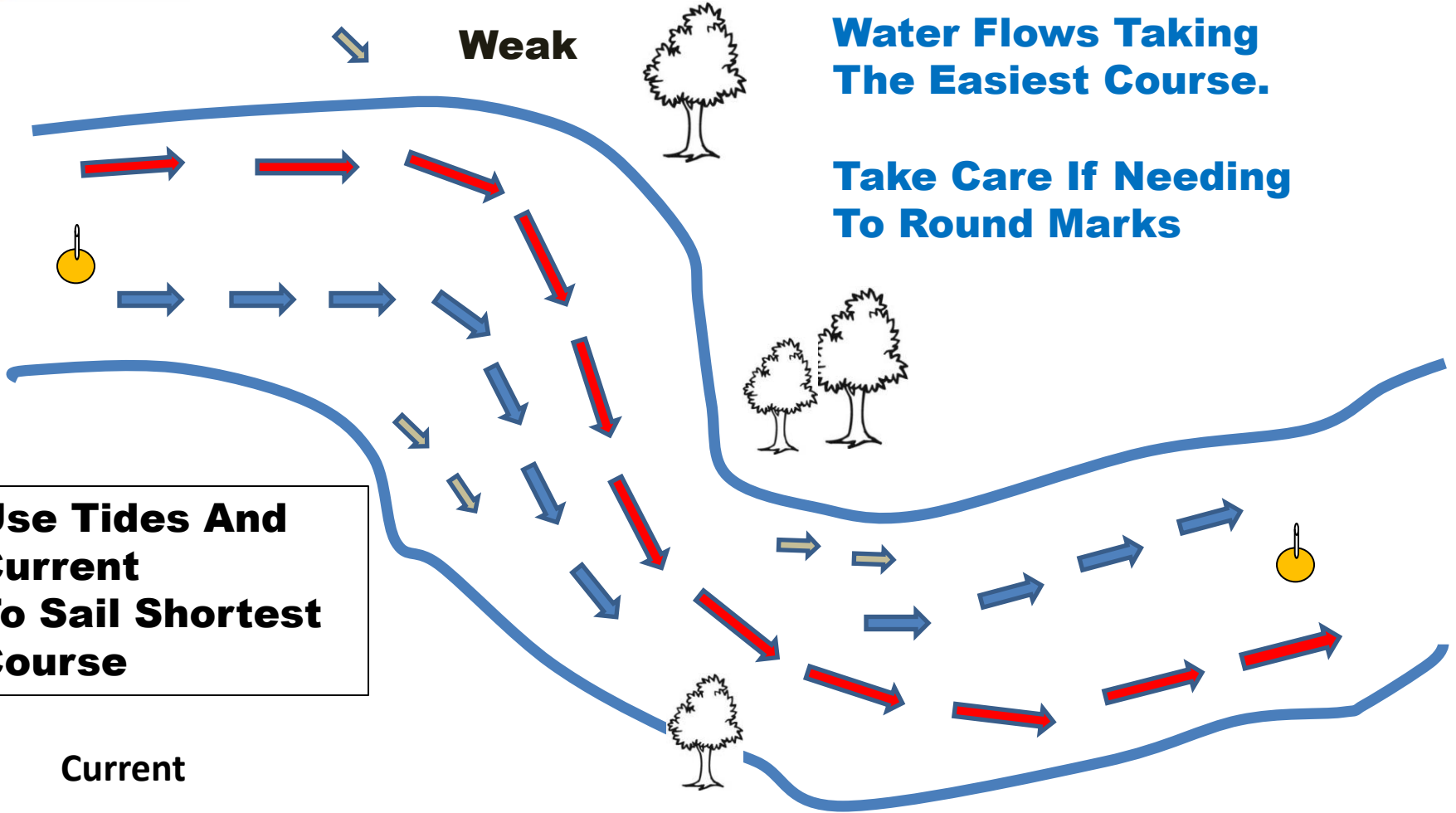
Current

Water Flows Taking The Easiest Course.

Take Care If Needing To Round Marks

Use Tides And Current To Sail Shortest Course

Current





Sailing in Waves

Body Position

Try To Keep The Boat Level Both Fore And Aft, As Body Weight Too Far Forward Causes The Bow To Nosedive And Too Far Back Creates Turbulence Off The Stern, Both Slows You Down. This Applies Up And Down Wind.

Steering Over Waves

Push Your Tiller Away From You As You Go Up And Over The Wave And Pull Your Tiller Towards You When Going Down The Other Side.

Rig

Ensure Sail Has Sufficient Power To Drive Through The Waves
Waves



Sailing in Waves

Steering Downwind

Downwind Steering Is Just As Important As Upwind Steering. As You Surf Down The Wave Face, Steer Towards The Lowest Part Of The Wave Ahead.

Working The Boat

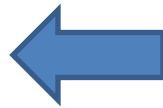
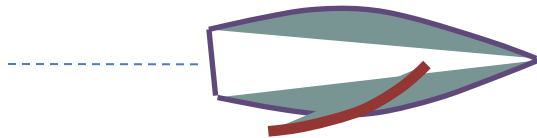
Keep Working The Mainsheet, Steering (Not Just Rudder) Over Waves And Moving Your Body To Keep The Boat Flat. Looking For Wind Shifts, Tide Movements And Other Boats Around You.

Course

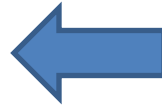
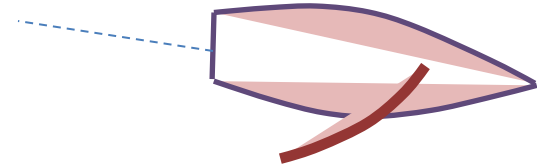
Try To Sail Through The Flatter Water.
Waves



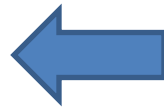
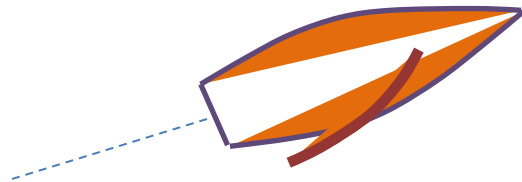
Sailing into current



Current Straight On Slows Boat



Current To Windward Side Forces Boat Downwind



Current To Leeward Side Pushes Boat Upwind



Currents

Top Tip
Small Changes In Direction Can Make Big Differences



Two Man Boats

‘Someone To Blame !’



2 man boats

Someone Else In The Boat

Need To Communicate To Let Crew Know What Helm Plans To Do.

Crew Needs To Communicate To Helm What They Can See And Plan To Do.

Crew Could Tell Helm About Wind (Gusts Shifts Etc)

Balance & Trim Now Depends On Where Both Sailors Sit.

Airflow Over Jib Influences Airflow Over Mainsail

Crew Could Call Tactics While Helm Looks After Boat Speed.

Know How To Motivate Each Other.

Using Trapeze - Spinnaker ?

Two man boats



2 man boats

Singlehanded Boats Usually Sheet In To The Edge Of The Transom

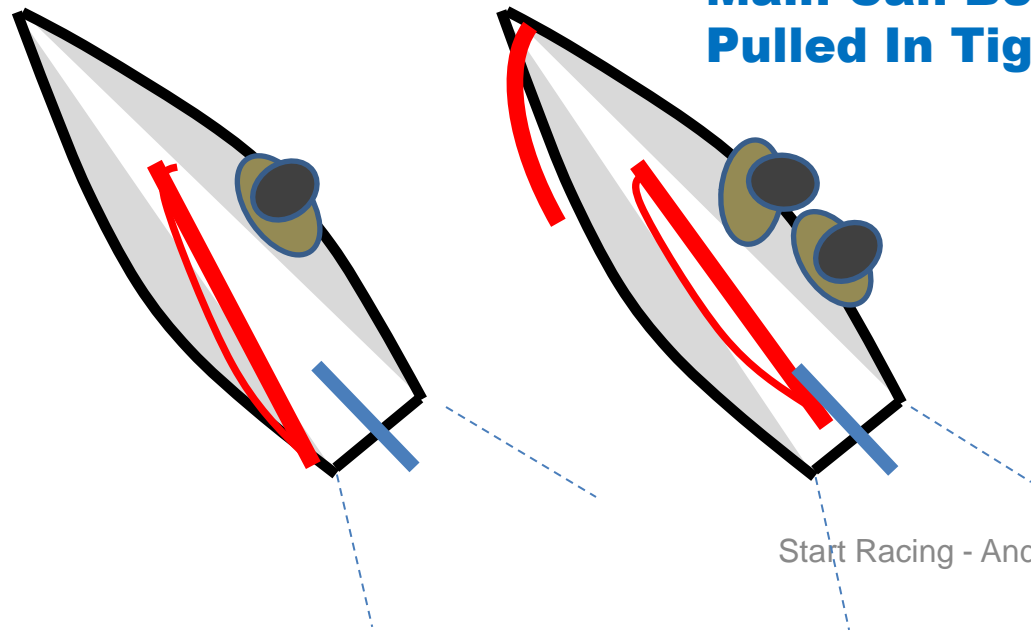
Two Man Boats Usually Sheet Closer To The Centreline

Airflow Over Jib Influences Airflow Over Mainsail



Jib Changes Angle Of Wind – Usually Means Main Can Be Pulled In Tighter

Two man boats





Spinnaker

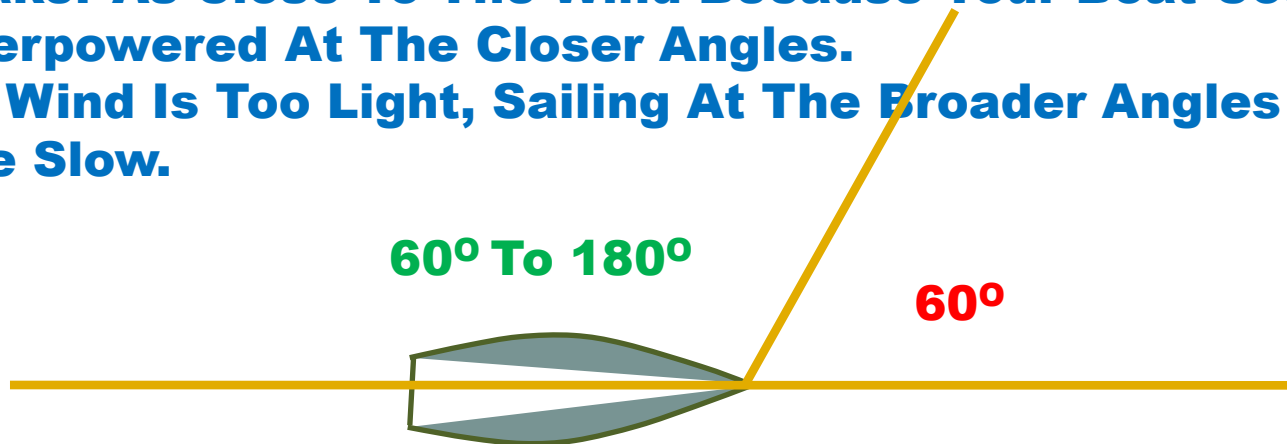
SPINNAKER

Used When The Wind Direction Is Between 60 To 180 Degrees Off The Bow.

Optimal Sailing Angles Are Determined By Wind Strength And Experimentation.

In Stronger Winds, You May Not Be Able To Fly The Spinnaker As Close To The Wind Because Your Boat Could Be Overpowered At The Closer Angles.

If The Wind Is Too Light, Sailing At The Broader Angles Will Be Slow.



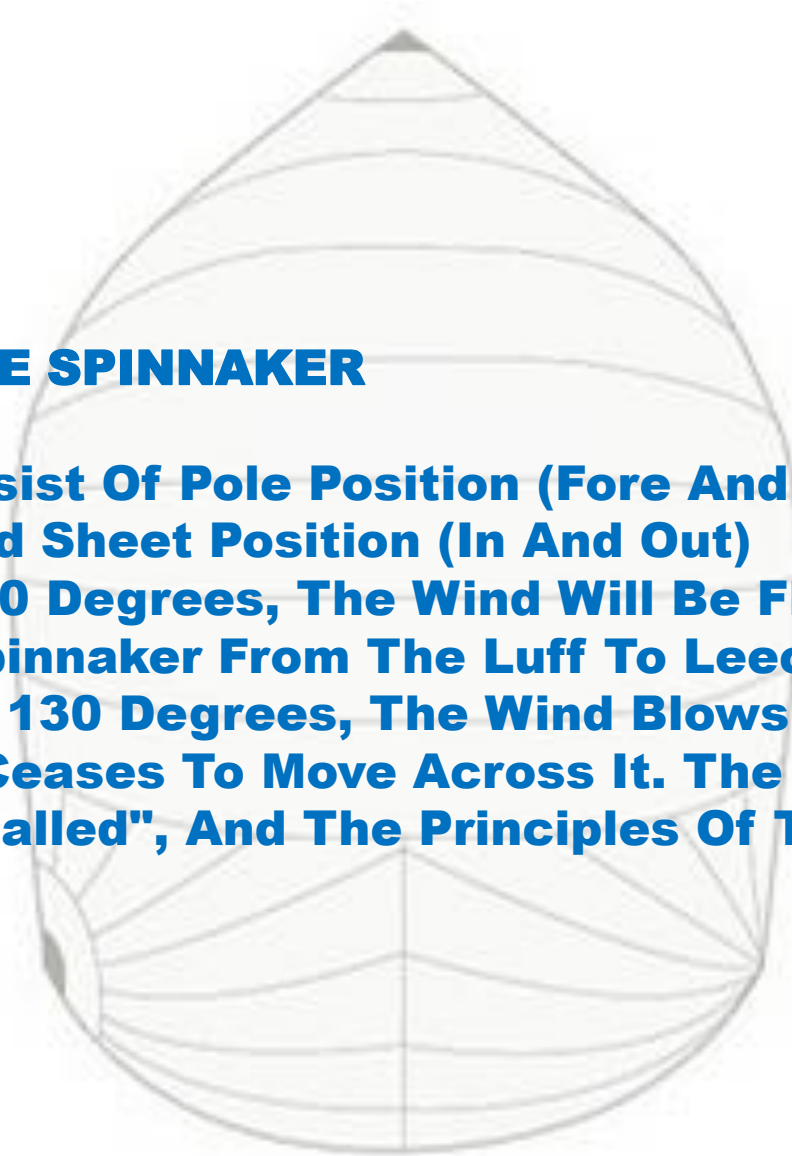
Two man boats



Spinnaker

TRIMMING THE SPINNAKER

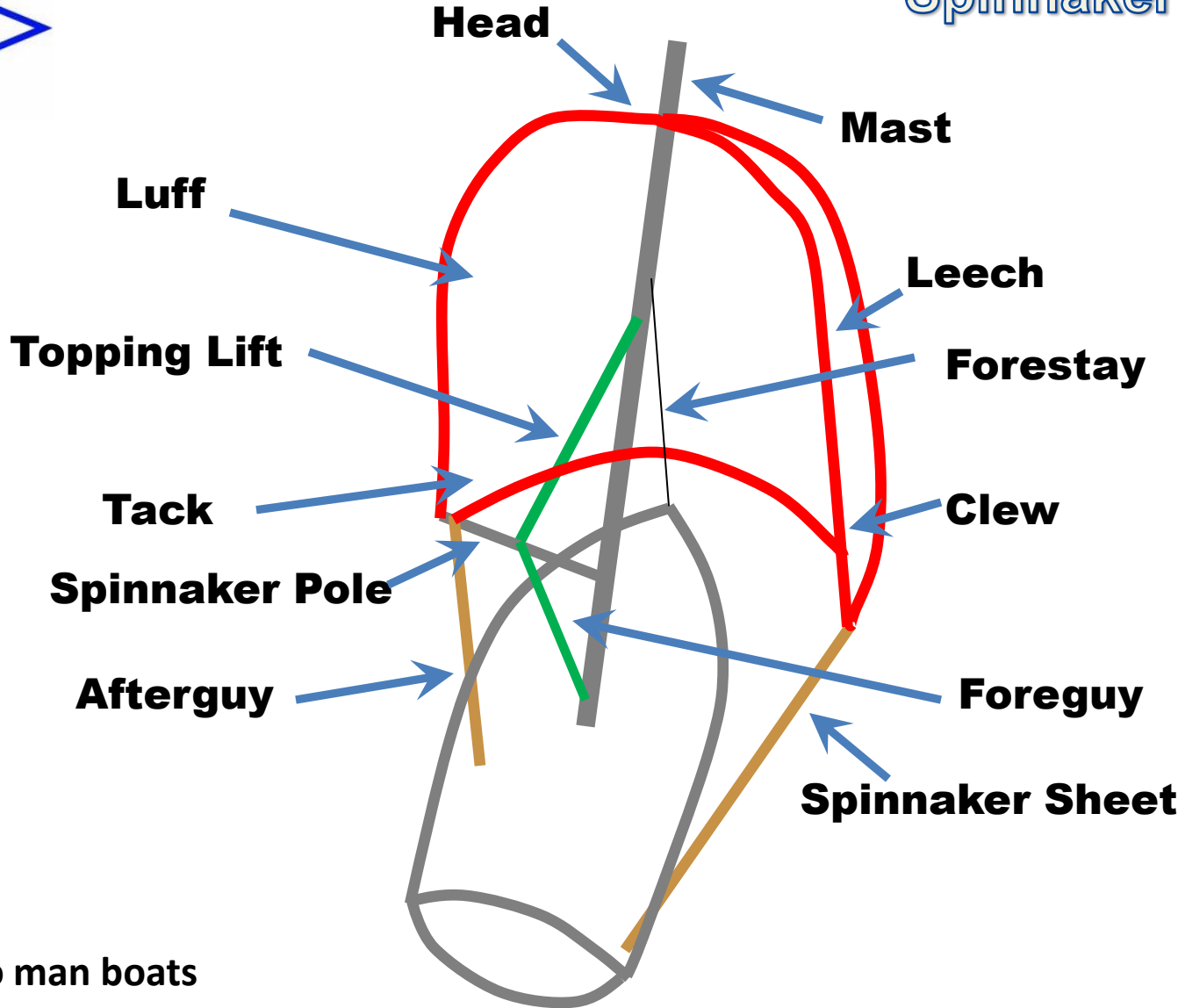
Variables Consist Of Pole Position (Fore And Aft, And Up And Down) And Sheet Position (In And Out) From 60 To 130 Degrees, The Wind Will Be Flowing Across The Spinnaker From The Luff To Leech. Beyond About 130 Degrees, The Wind Blows Directly Into The Sail And Ceases To Move Across It. The Sail Is Then Said To Be "Stalled", And The Principles Of Trim Change Accordingly.



Two man boats



Spinnaker



Two man boats



REACHING TRIM

Spinnaker

If The Wind Is Forward Of Abeam, The Pole Should Be As Close As Possible To The Forestay Without Touching. If The Pole Does Rub Against The Stay, There's A Risk Of Damage To The Pole, The Sail, The Forestay, Or All Three.

The Sheet Should Be Trimmed In To Prevent The Sail From Collapsing. The Trim Should Be Constantly Tested By Easing The Sheet Slightly Until The Luff Commences To Curl, Then Trimming In Again When The Curl Becomes Excessive.

It Is Recommended That The Pole Height Is Adjusted To Match The Position Of The Clew.

If The Pole Is Lower Than The Clew, The Sail Will Become Asymmetrical, With The Draft Forward Of The Centre.

Possibly Faster In The Closer Reaches. Putting The Pole Higher Than The Clew Moves The Draft Behind The Middle. But This Always Slow:

Two man boats

NEVER CARRY THE POLE HIGHER THAN THE CLEW.



Spinnaker

REACHING CONTINUED

Sufficient Tension Should Be Maintained On The Pole Controls To Keep The Outboard End Of The Pole Firmly In Position.

As The Wind Moves Aft, Ease The Sheet, While At The Same Time Bringing The Pole Aft. If The Pole Is Correctly Placed Fore And Aft, The Depth Of The Draft In The Sail Will Be Uniform From The Top To Bottom, And The Luff Of The Sail Will Extend Directly Upward From The End Of The Pole. If The Pole Is Too Far Forward, The Pocket In The Lower Part Of The Sail Will Be Too Deep, And The Luff Will Angle Out To Windward From The End Of The Pole. If The Pole Is Too Far Aft, The Foot Of The Sail Will Be Too Flat, And The Luff Will Angle Off To Leeward From The Pole End.

Two man boats



Spinnaker

RUNNING TRIM

When On A Run, It Is Desirable To Present As Much Area As Possible,. The Pole Should Be Kept As Far Aft As Possible Without Making The Foot Too Flat Or Causing The Luff To Be Other Than Straight Up From The Pole End.

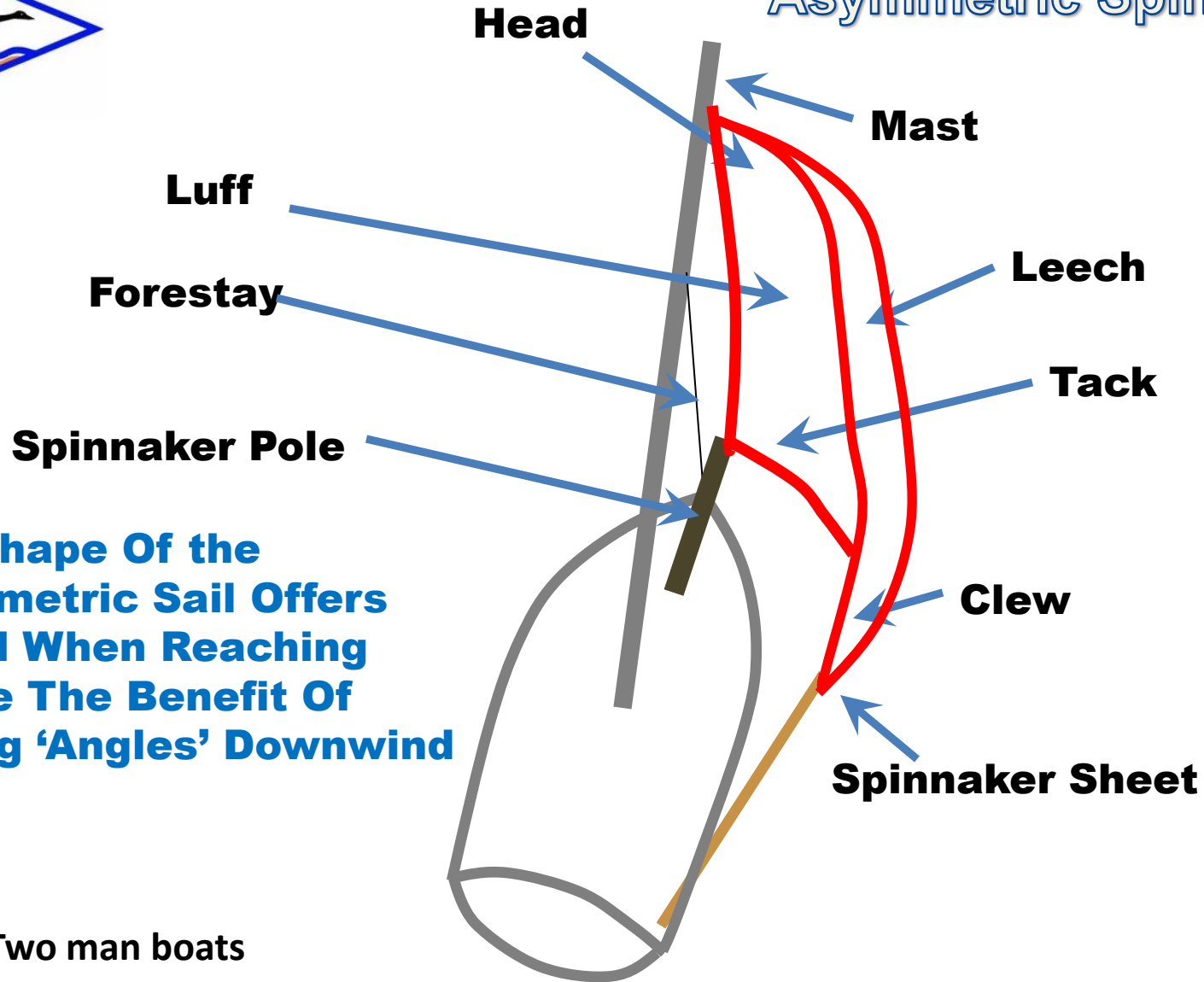
Sufficient Tension Should Be Maintained On The Pole Controls To Keep The Outboard End Of The Pole Firmly In Position.

The Only Way To Find The Best Shape Is To Experiment While Watching You Speed.

Two man boats



Asymmetric Spinnaker



The Shape Of the Asymmetric Sail Offers Speed When Reaching Hence The Benefit Of Sailing 'Angles' Downwind

Two man boats



Asymmetric At Speed



29 er

Start Racing - Andrew P-M



Which Boat?



***'The Seller Said
I Would Look Good In This !'***



TRAINING



Which Boat Next

CLUB RACING



ADVANCED



YOUTH

What to Race



JUNIORS

Start Racing - Andrew T. Hill



Optimist



Mirror



Topper



Which Boat Next?

**Laser
4.7**



**Laser
Radial**



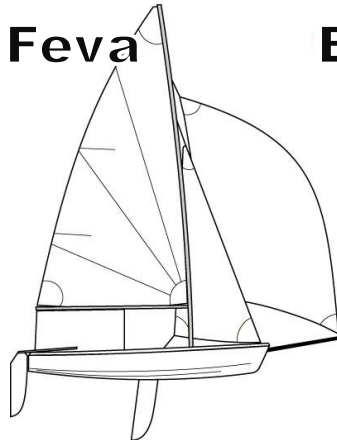
**Laser
Standard**



Solo



RS Feva



Enterprise



420



Which Boat ?



Optimist

Mirror

Topper

Which Boat Next?

Where Will You Sail ?

Sea - Puddle - Ditch

What Do The Locals Sail?

Fleet Racing - Class Racing

Crew Size ?

Laser

Laser

Solo

4.7

Weight - Height

Radial

Standard

What Are Your Aspirations?

Mid Fleet - Club Winner

Local Open Meetings

National Events - Olympics

/ **Americas Cup**

RS Fyn

Enterprise

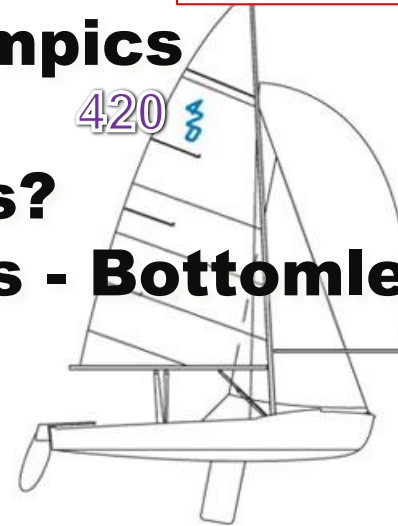
420

How Deep Are Your Pockets?

Hundreds - Thousands - Bottomless

Which Boat ?

Top Tip
Speak To As Many People As Possible.





Exercises

'Future Practice'



Training Activities

Single Boat

- **Stationary / Hovering In Vicinity Of A Buoy**
- **Double Tacking - Quickly**
- **Accelerating From Stationary**
- **Getting Out Of Irons / Backwards**
- **Self Timed Runs To A Line / Buoy**
- **How Many Tacks / Gybes In A Minute**
- **Upwind And Downwind Mark Rounding**
- **Sail Around The Hut Using 5 E's And Sail Controls**
- **Rudderless / Blindfold / Watching Wake**
- **Extreme Kiting – Capsize Practice**
- **Wide In Tight Out**
- **Fine Tuning Leeway**

Exercises



Training Activities

Two Or More Boats

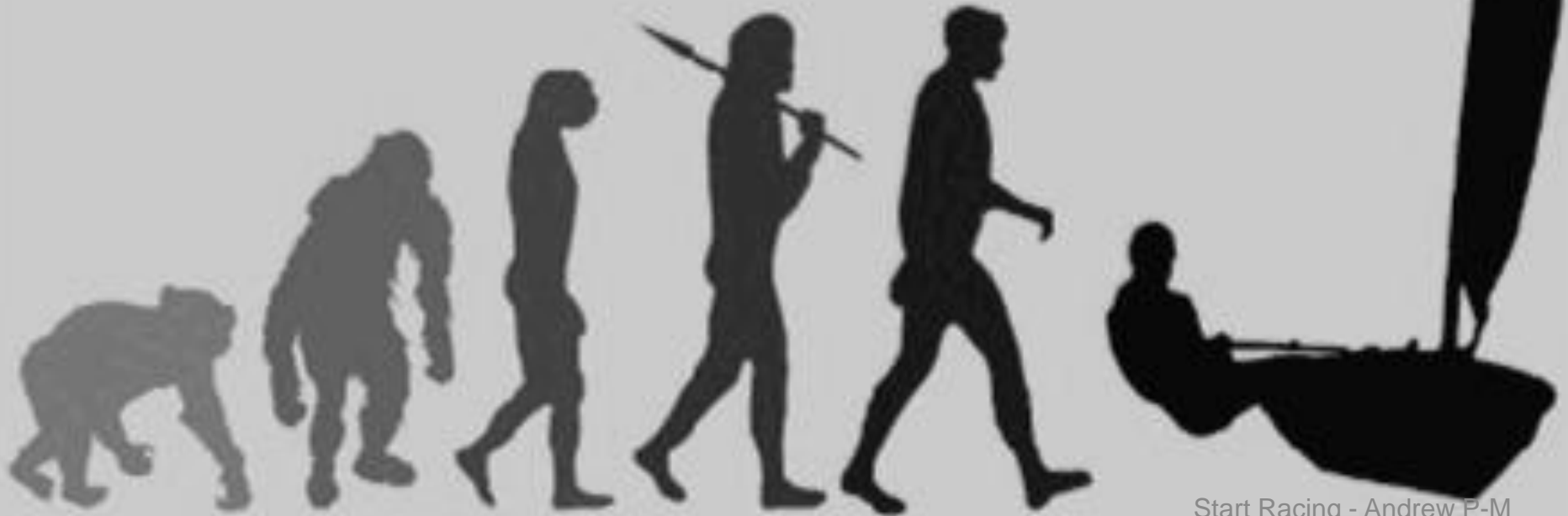
- **Windward Leeward Short Races**
- **Race & 360 Each Time Lead Boat Goes Round Mark**
- **As Above With 5 Tacks 5 Gybes**
- **Drag Races Comparing Speed**
- **Covering The Other Boat**
- **Match / Team Racing**
- **Personal Handicaps**
- **Split Tacks**
- **Fox N Hounds – Fox Starts First And Tries To Cover The Hounds To Stop Them Passing (Covering)**
- **Forcing The Other Boat Out Of An Area**

Exercises



20 Top Tips

'The Key Bits'





20 TOP TIPS

- 1. As Wind Increases, More Force On Sail. So Sit Back**
- 2. Usually Sail Upright**
- 3. Better To Have Slightly Too Much Board – To Check Look At Wake & Transit**
- 4. Both Tell Tales Flying = Fast**
- 5. When You Are Learning To Sail The Tiller Is Your Friend, When You Are Racing It Is Your Enemy.....
Every Time You Use It, It Slows You Down**
- 6. Check Rudder Central - Look At Wake – Can Often Feel Rudder Pressure**
- 7. Avoid Getting Into Irons. –Use 5 E's & Don't 'Restart' Too Soon. Go To Almost 90° From The Wind**



20 TOP TIPS

- 8. In Toppers And Lasers - Try Sailing By The Lee !**
- 9. Check Sailing Instructions For Starts, Courses Etc**
- 10. Transits Take The Guessing Out Of Starts**
- 11. Less Risky When Starting On Starboard**
- 12. Upwind The Tack That Is Heading Closest To The Mark Is Often The Best To Be On.**
- 13. To Look Ahead –Have A Plan**
- 14. Clouds Help Predict Winds**
- 15. Wide In Tight Out For Mark Rounding**
- 16. Sail Where There Is Most Wind (Clouds)**



20 TOP TIPS

17. At The Start Of The Race Sail Against The Fleet Rather Than Concentrating On One Or Two Boats. Better To Lose One Or Two Places Rather Than Fall Behind $\frac{1}{2}$ The Fleet.

At The End Of The Race The Fleet Will Probably Have Strung Out So Losing A Bit Of Ground Contesting An Individual Place Is Likely To Be Far Less Costly In Positions.

17. Other Boats Slow You Down

18. Upwind Flat Sails –Allows Boat To Point –With Power

19. Downwind Full Sails –Develop Power –Not So Baggy As To Develop Drag

20. Deeper Water Flows Faster Than Shallow Water

Top Tips



End

***'Trophies
To Polish !'***

