

# RYA Yachting Shorebased Courses

## Revision Notes

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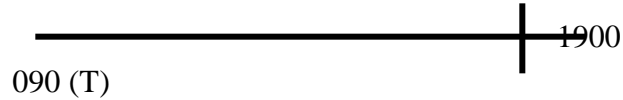
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## General Revision Points (updated 12 July 2010)

- Before you put a line or point on a chart or set up your protractor – **GUESS first**. Guess the angle and use your fingers for measuring
- **Everything on a chart is TRUE**. Good idea to draw a little **sketch** to get a rough idea of bearings to/from, tidal effect, leeway.
- Red & White **Fairway mark** (start of a channel) **1 ball good**. WHITE light.
- **Cardinals – Triangle topmarks**: “up” =North, East = “egg”, South “down”, West “waist or wineglass”. **Cardinals: colours**: the arrows point to where the black is. **Cardinals lights** : look at your watch: **N (continuous .....**think of it as 12 flashes, then another 12 then another 12...) **E 3, S6 (plus one extra long** so you don’t confuse it with 3 or 9) **W9**. These are also WHITE lights.
- **Isolated danger mark**: Red and Black (The old British comic strip character “Dennis the Menace”). **2 balls bad..**
  - The light on an isolated danger mark is also **WHITE!** Its 2 flashes say “Go Away”. **It is not red** - reds signify port hand channel markers.
- LAT lowest predicted astronomical tide =**Chart datum**: From where depths or drying heights and height of tide are measured. **MHWS**: normally from where heights of objects are measured. **HAT**: highest astronomical tide from where clearance under bridges, electricity wires etc are measured (“worst case”).
- Tides go TO. Winds come FROM
- The great “sin” in Course to Steer is to “**join the dots**”. That is to join the end of the tidal vector to the destination (Z to Y in our diagram). The three lines are vectors – a model – and must all represent the same period of time.
- The EP tidal vector goes **at the end**: you are working out where you are/where you have been.
- The CTS vector goes **at the start**: you are doing a prediction of where you must point in order to end up at your intended destination.
- Learn the “**fix**” symbol. Put a time! Erase extraneous lines. Have you been given a bearing FROM a point? Or have you been given a bearing TO a point/waypoint? Draw a little sketch with your boat on it and the rough shape of the land..
- **Visibility “125” rule**: mist & fog **1000m poor 2 miles moderate 5 miles good**
- **Weather forecast times “0, 6, 12 rule”**: *from now (0<)* imminent (*>6< hours*) soon (*12< hours*) later
- **Variation West – Magnetic Best/Variation East – Magnetic Least. Deviation West – Compass Best/Deviation East – Compass Least**
- **Buys Ballot**: “If you stand with your back to the wind in the Northern hemisphere, the low pressure is on your left.”
- **Transits, head bearings, back bearings, leading lines.**
- **Safety brief. Voyage brief. Engine checks. What to do if you go into fog.**
- **Tidal streams** from the Victoria table. **Tidal heights** from your local table.
- HW is not the same as HW Hour which is +/- 30 minutes
- Water track 1 arrow (“**1 head**”). Ground track 2 arrows (2 **feet** walking across the ground)
- **Depth to anchor = draft + drop + clearance**. (In your theory paper: “drop” or “fall” means height of tide now minus height of tide at low water)
- **Special marks and lights in addition to normal navigation lights when under way**:
  - **Restricted in ability to manoeuvre**: ball, diamond, ball (“You’d be restricted in your ability to manoeuvre if you had a diamond between your balls”. Red, white, red at night. N.b the two balls - two red lights at night - telling you this side NOT to pass or, two diamonds (“girl’s best friend”) or two green lights tells you this side to pass.
  - **Not under command** two balls (two balls bad). Two red lights at night .
  - **Vessel aground** three black balls (three balls very bad) two red light and anchor lights at night.
  - **Constrained by Draught**: Cylinder (think of it as “cylinder = barrel = draught beer”. 3 red lights at night.
- **Distress alert, call and message: Alert**: Red Button. Then Channel 16 hi power: **Call** “Mayday Mayday Mayday This is Yacht Susie, Susie, Susie”. Pause **Message** “Mayday Yacht Susie, MMSI 023113344. My position (Lat & long or else “5 miles south of St Catherines Light”). We are holed and sinking/(A crew member has a suspected heart attack/We are on fire/We are being attacked by pirates). We require immediate assistance. Six persons on board. We are preparing the liferaft (or any other useful info – some people repeat the position) Over.”

## Chartwork Symbols

- DR



- EP



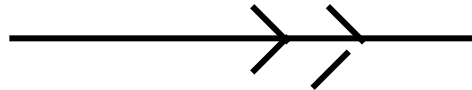
- FIX



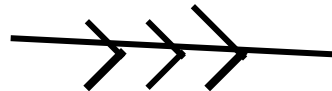
- Water track



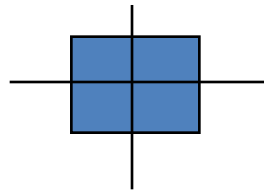
- Ground track



- Tidal Vector



- GPS Waypoint



# Finding tide direction and speed

**Tidal heights** are derived from the **local** tide table, **tidal streams come** from the **Victoria** tide table.

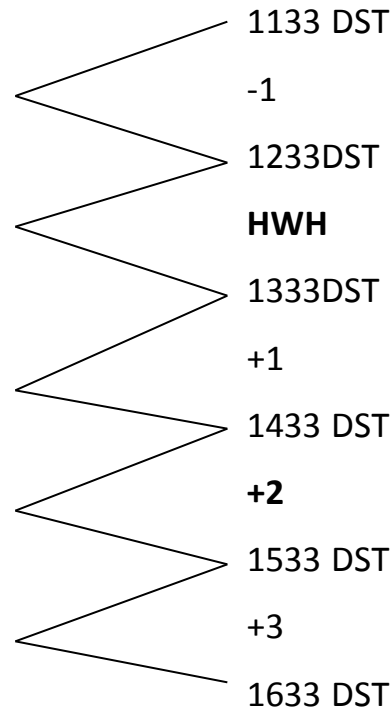
More errors are made on deciding **which hour** than on any other aspect of chartwork!

**High Water time** is not the same as the **High Water Hour** which is +/- 30 minutes

Watch for **UT** and **DST**

**Please** draw this diagram every time!

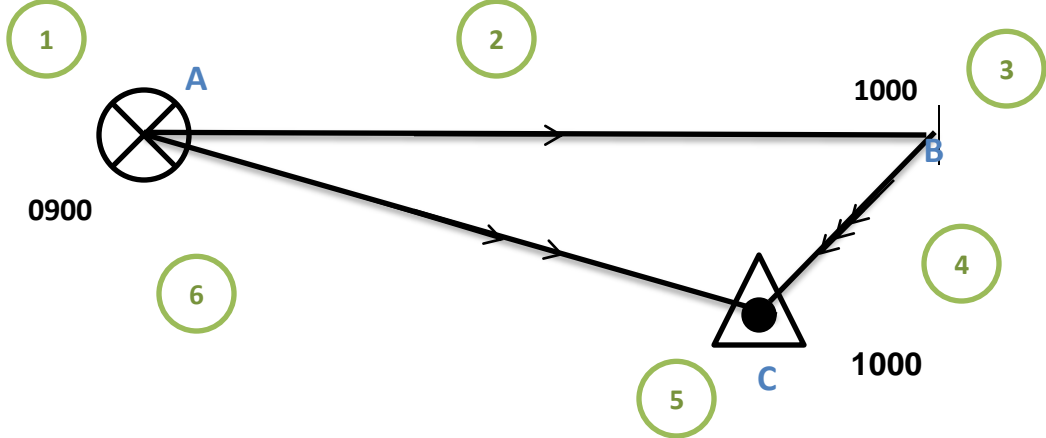
**HW Victoria**  
1203 UT/1303DST  
5.2m Springs



If the starting fix is at 1433 DST, then the vessel will start travelling during HWH+2

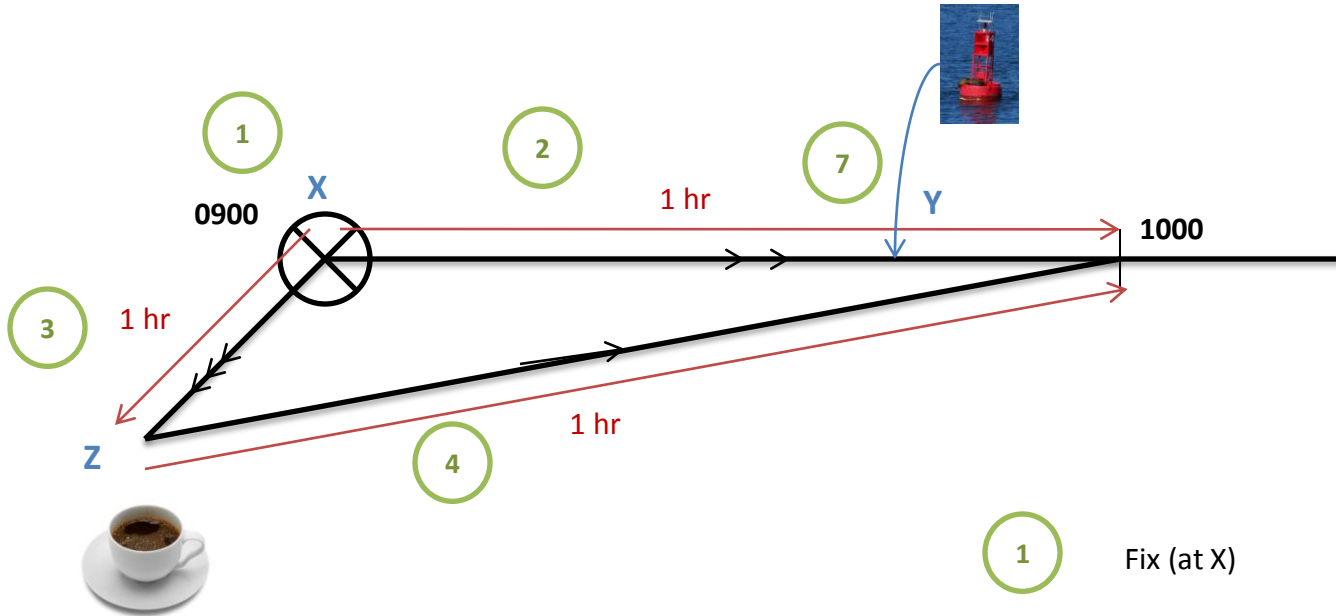
**140 T 1.4 kts**  
(you can draw a tide vector here if you want)

# Estimated Position: EP



- 1 Fix
- 2 Water track and boat speed (one arrow)
- 3 DR point (Dead Reckoning)
- 4 Tide vector (three arrows)
- 5 Draw the EP
- 6 Join A to C – gives COG / SOG (two arrows)

# Course to Steer: CTS



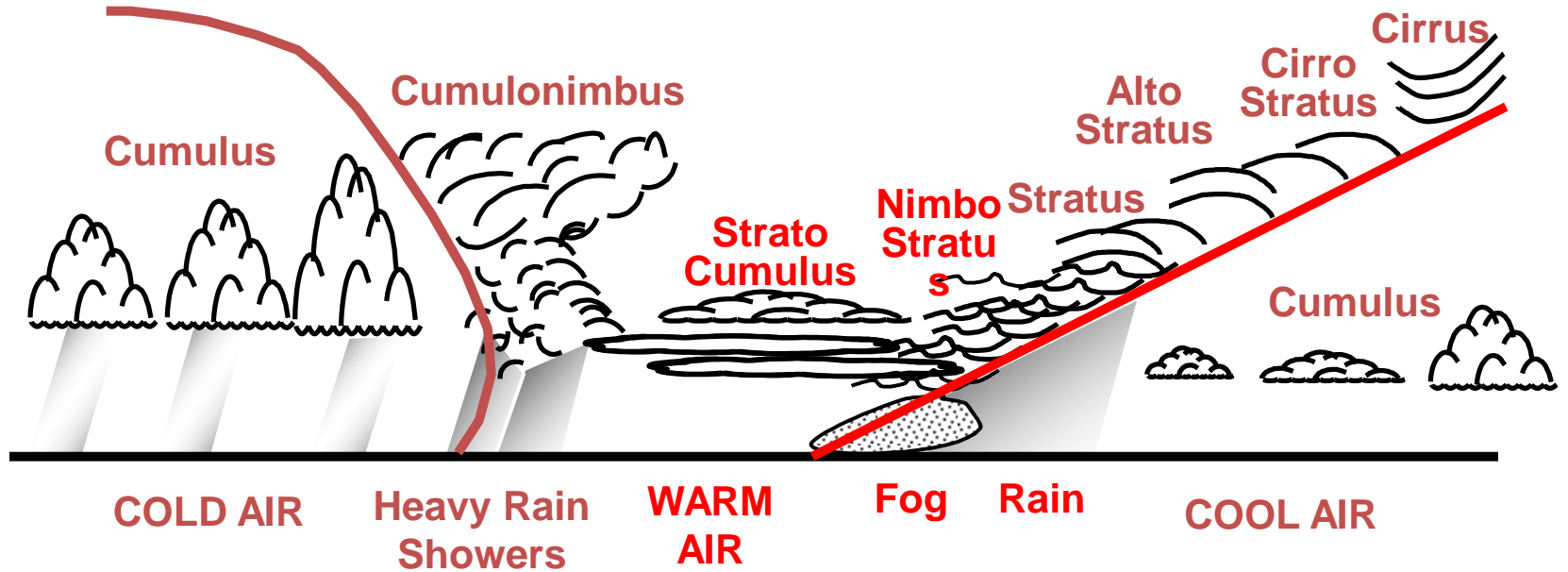
Z is where you would be at 1000 if you did nothing but sit in the boat with engine off, and drinking a cup of coffee.

- 1 Fix (at X)
- 2 Ground track to destination Y and beyond (2 arrows)
- 3 Tide vector (3 arrows)
- 4 Boat speed arc to intercept ground track line (1 arrow)
- 5 Measure CTS
- 6 Variation / leeway
- 7 How far X to Y?

## Met Memory Joggers

- More than 2mB change per hour is significant.
- “1 2 5 rule” : mist & fog **1000m** poor **2nm** moderate **5nm** good
- “0 6 12 rule” : **0**-6hrs imminent **6**-12hrs soon **12**+hrs later
- Cirrus clouds : “going to be nasty in a day or two”: cloud comes right down as *warm front* arrives, then warm damp air, then squally *cold front*, then OK.
- Buys Ballots law: “If you stand with your back to the wind in the N Hemisphere, the low pressure is on your left”.
- F 0-2 too calm! F 3-4/5 perfect. (10-20ish knots) F 5-7 fun! F8 gale. (N.b “real” and “apparent” wind)
- Radiation fog: clear skies + presence of moisture +light mixing wind.
- Advection/Sea Fog: warm air + cold sea.
- What is happening in each stage of a frontal system? See DS Book Page 71 and next slide.

# FRONTAL SYSTEM





# Rule of the Road for Yacht Skippers

(You don't need to be able to recite this – but you do need to understand it!)

Keep a look out at all times;  
See a vessel - do these rhymes.

If the bearing does not change,  
Then action's needed (at long range).

Give-way vessel moves away;  
Stand-on vessel should not sway.

.....  
There's an order for who's "best":  
Power, sail, fishing - then the rest.

They *all* yield to each of these:  
NUCs and RAMs and CBDs\*.

- NUC Not under command
- RAM Restricted in Ability to Manoeuvre
- CBD Constrained By Draught

Big ship channels are what they say;  
Don't impede if you go that way.

.....  
Green-to-green or red-to-red,  
Perfect safety – go ahead.

If red *and* green you see ahead,  
Then starboard wheel and show your red.

If a *red* light does appear,  
It is your duty to keep clear.

If it's *green*, the task is hers;  
Don't alter course/speed; don't reverse.

Overtaking someone slower,  
She's more helpless; *we* move over

.....  
Two sailing boats on collision track  
Give way according to their tack.

If she's on starboard, we're on port  
The problem is for *us* to sort

Both *same* tack? The one to windward  
Gives way to lee boat; she's more hindered.

.....  
Keep a look out at all times;  
See a vessel - do your rhymes.

But there's no such thing as "*Right of Way*;"  
We must *all* take care at the end of the day.

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