

## Chart Plotter Basics 8 Radar. 1 Overview.

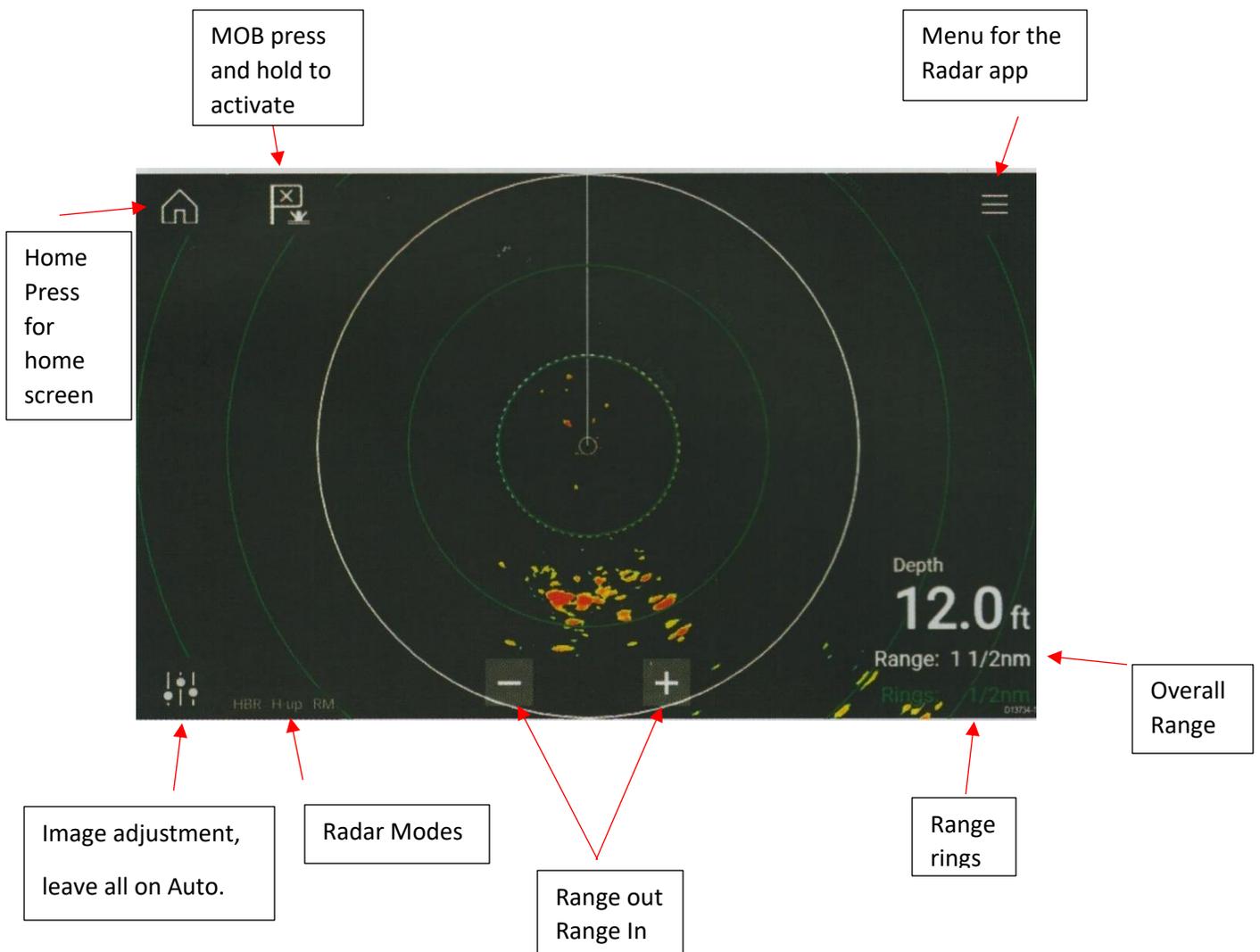
### Turning on the Radar

With the Chart Plotter on, turn on the Radar breaker on the electrics board.

From the Chart plotter home screen select the Radar App by tapping it.

The Radar can be viewed overlaid on the chart plotter, in split screen with the chart plotter or in split screen showing two radar pictures, one short range and the other longer range. For this overview we are looking at the single presentation.

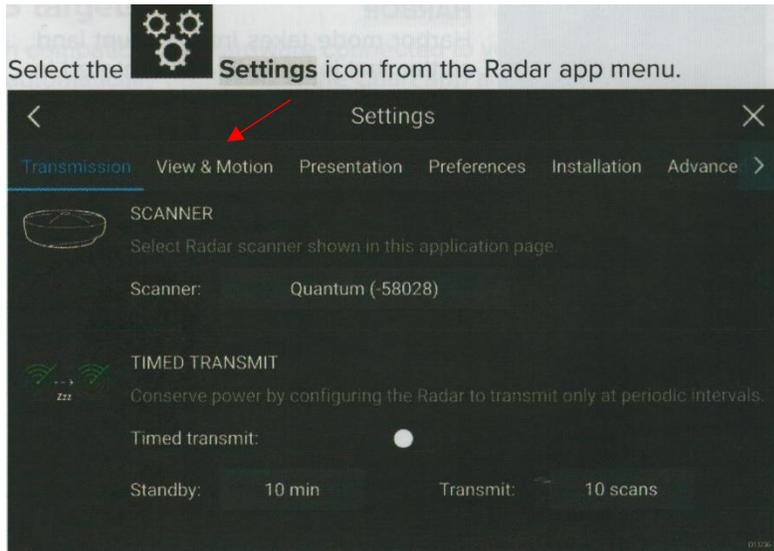
If the radar is not Transmitting but is in Standby mode a box will come up, select Transmit. In a few seconds the radar picture will appear.



**Home Screen** takes you back to the choice of apps. Continued below.

Tapping **MOB** puts a Way point on your screen in your position. Touch and hold the MOB button to activate the MOB function, the MOB screens will come up on both the master and the deck set.

**Menu** top right, for the Radar app brings up a selection of options to set up different modes and settings on the radar. Go right down to the bottom of the box and select **Settings**. The icon looks like three cogs in mesh. Select the View and Motion Tab and then the Orientation tab and a context box comes up. You have a choice of Head Up, North Up and Course Up.



For Collision Avoidance select **Course Up**. This setting stabilises the screen because it takes course over the ground data from the chart plotter. The screen stays stable and just the heading marker moves with the yaw of the yacht. This makes collision avoidance much easier.

Also in the View and Motion tab is the Motion Mode box. Selecting this brings up Relative motion and True motion. Select **Relative motion** as this is best for collision avoidance.

These settings, Course Up and Relative motion will be shown at the bottom left of the Radar picture. **Radar Modes**. They are the best for collision avoidance.

**Range** can be changed by pinching the screen or holding the Range in and out buttons at the bottom of the screen. Range rings, distance and overall picture distance are shown on the bottom right of the screen. The physical rotational knob top right is not functioning at the moment.

Continued below.

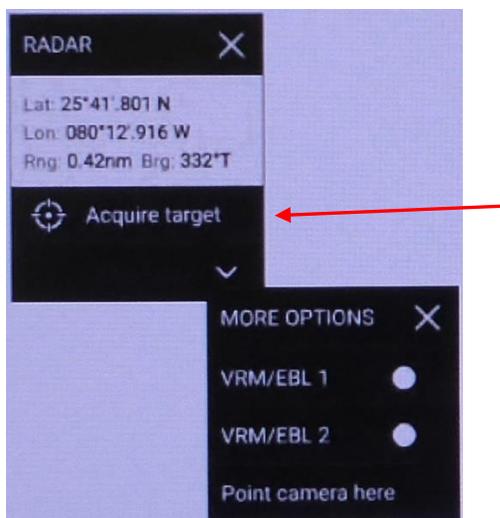
### Chart Plotter Basics. Radar 2. Collision Avoidance

In good visibility you determine if a risk of collision exists by using a hand bearing compass to see if the bearing of the target remains constant. If it does remain constant a risk of collision exists and avoiding action must be taken.

In restricted visibility where you cannot physically see a target a Radar must be used to determine if the risk of a collision exists.

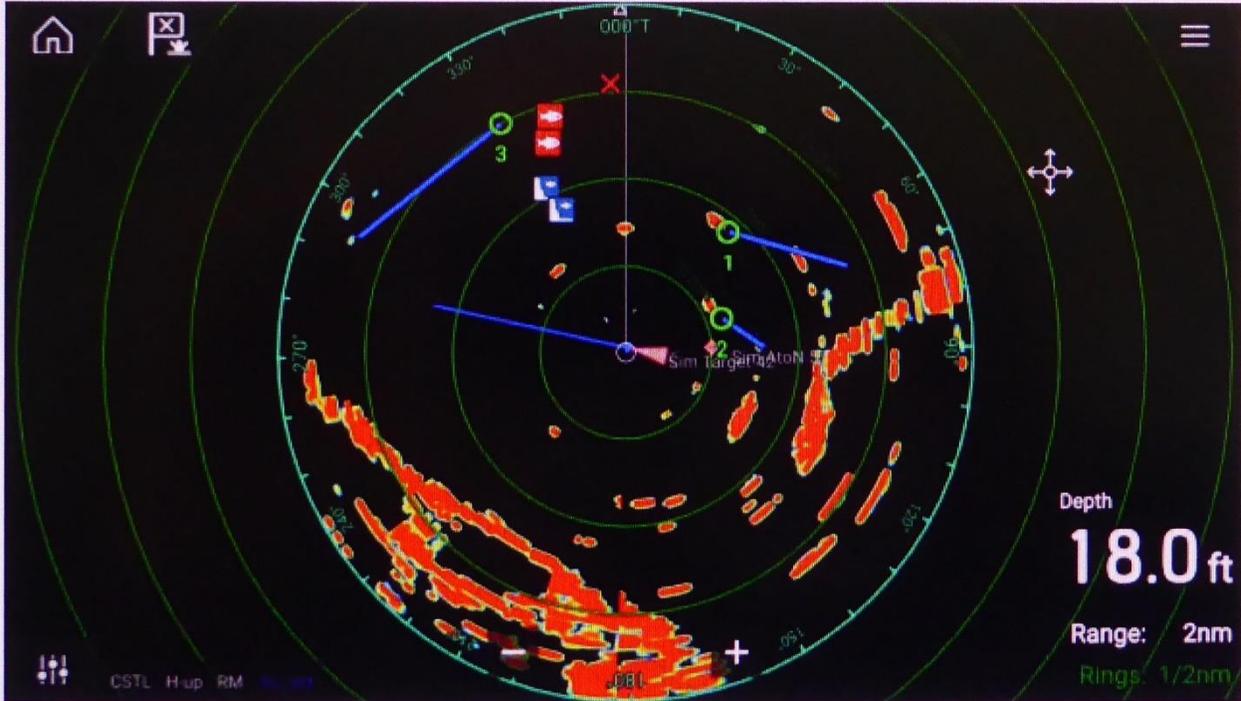
To establish if a radar target is in a position where a risk of collision exists the Radar computer has a function called **MARPA**, **Mini Automatic Radar Plotting Aid**.

Select a target by touching and holding it. A context box comes up, select **ACQUIRE TARGET**.



The MARPA will start to track the target and the context box will show its course and speed, **Closest Point of Approach** and **Time of CPA**. A risk of collision will exist if the target's vector, the blue line, passes through or near your position at the centre or the Radar picture. See action to take below.

The context box will close after a few seconds. To access it again just tap the target.



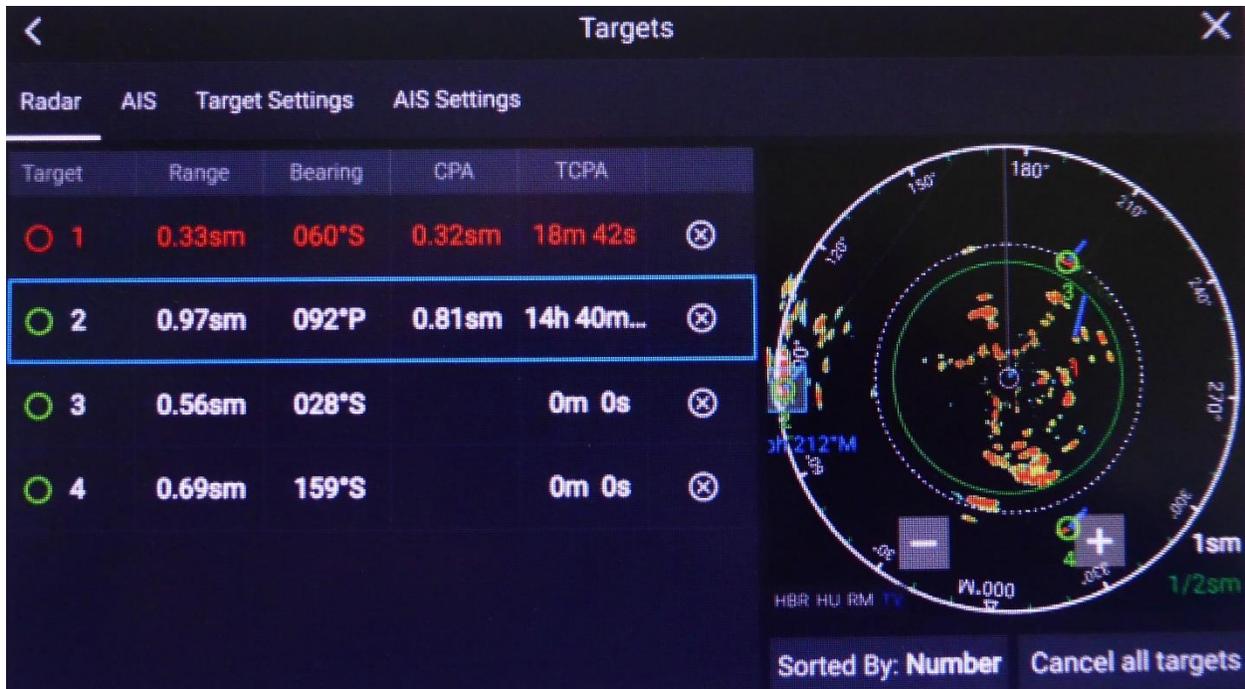
MARPA Tracking Radar Targets in the green circles, above. The blue vector lines show the direction of Travel of the target. The longer the line the faster the target. The RED target in the centre of the screen shows a vessel where a risk of collision exists. Tap the target for CPA and TCPA and the targets course and speed.

The context box will also allow you to select the **VRM** Variable Range Marker and **EBL** Electronic Bearing Line to take the range and bearing of a target or a fixed object for use in plotting position.

Having tapped VRM/EBL 1 in the context box to select it you can then move it on to a target by selecting **Edit** from the context menu and dragging the circle to the target.

To access the list of Radar Targets selected go to Radar Menu top right Select Targets and then Radar.

This list will show all the targets selected and the Range, bearing, CPA, TCPA.



The target shown in Red No 1 is considered **Dangerous** as it will pass only one third of a mile away.

When a sub menu is displayed the screen splits automatically and still shows the main screen on the right. This reverts to full screen when you come out of the sub menu.

AIS targets can be shown on the Radar Plot as well but this makes the screen very cluttered. It may be best to leave them on the Chart Plotter.

Remember an AIS Target is only updated every 30 seconds or so. A Radar Target is updated every sweep of the scanner.

### **Chart Plotter Basics. Radar 3. Action to take to avoid a Collision.**

Having 'Acquired' your targets the blue vector line will show whether a risk of collision exists if it passes through or near the centre of the Radar screen. Remember that vessels abaft your beam may still pose a risk as they can still be crossing or overtaking vessels. If in doubt always Acquire a target and find out what it is doing. The information shown will be **Relative** to your own vessels course and speed.

There are four relevant rules for the Prevention of Collision at Sea ( The Col Regs) when using Radar.

**Rule 5** Keep a proper **Lookout** by all available means, this includes Radar.

**Rule 6** Proceed at a **SAFE SPEED** for the conditions, particularly the factors affecting restricted visibility.

**Rule 7** use all available means to determine if the **risk of collision** exists, including Radar.

**Rule 19** is the collision rule which applies to vessels which are not in physical sight of one another but are detected as **targets on Radar** alone.

If you cannot visibly see another vessel and a risk of collision exists the normal rules do not apply and you must base your action on rule 19.

- There is no give-way or stand-on vessel
- Avoid altering course to port for a vessel forward of the beam, unless overtaking
- Avoid altering course towards a vessel abeam or abaft the beam.

Early and substantial action is required where a risk of collision exists and apart from altering course, stopping your vessel or if a yacht doing a 360 is a very good way of breaking the Rabbit in the headlights syndrome. What ever your action it needs to be bold enough and early enough so that the other vessel can clearly see your intentions and act accordingly.