

# Radar Best Practice

## Radar Usage – Part 1

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When using the radar for navigation, position fixing and collision avoidance the following points should be considered:

- ✓ Review the operating manuals for all of the different makes and models of radar sets on board and be familiar with their capabilities and limitations
- ✓ Radar should be in continuous use at all times and all radars should be operated in high traffic areas, in restricted visibility and at night when small craft or ice may be encountered
- ✓ It is mistaken to think that the working life of a radar can be prolonged by switching it off. Radar is designed for constant use
- ✓ If two or more radars are running they should be set on different range scales. It should also be remembered that S Band (10 cm/3 GHz) radars are better at detecting vessels and landfalls due to their greater range and ability to penetrate precipitation. X Band (3 cm/9 GHz) radars are better for coastal navigation and pilotage due to their higher directivity and definition of targets
- ✓ When two radars are in operation, it is recommended that the one fitted with ARPA is used for collision avoidance and the other is used for navigation
- ✓ Ensure that the range scale in use is appropriate to the prevailing circumstances and conditions
- ✓ Use long range scanning periodically to detect targets and landfalls, and when approaching high traffic areas
- ✓ It may sometimes be appropriate to operate the radar off-centre for a better view ahead whilst maintaining the benefits provided by a smaller range scale
- ✓ Check and adjust the brilliance, gain, tune and clutter controls regularly to ensure that they are optimised for the prevailing conditions
- ✓ Ensure that the radar pulse length is optimised for the range scale in use; shorter pulse lengths for lower ranges, longer pulse lengths for higher ranges. Remember that long pulse lengths have poor range discrimination and may cause targets on the same bearing to merge if they are close to each other
- ✓ Adjust the manual clutter controls and use the automatic clutter controls regularly to ensure that targets are not being masked by sea or rain clutter, or by the anti-clutter feature
- ✓ As far as practicable, electronic picture enhancements such as echo averaging, echo and target expansion/stretch, enhanced video and interference rejection should be employed to help detect targets. Be familiar with the positive and negative effects that these features may have on the radar picture
- ✓ Use the performance monitor to check the radar at regular intervals, ideally at least once every 4 hours



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**Important:** The above points are listed for guidance only. It is essential that you read the operating manuals for the radars aboard your vessel and ensure that the radars are used in accordance with the manufacturers' instructions