



SKIPPERS NOTES - Yacht Sea Essay of Hamble

Newsletter No 02/16

Introduction

This is an occasional document issued by the Yacht Secretary, which will be placed on the CSD website and/or sent to all CSSA approved Skippers in CSD when there is new and/or important operational information to promulgate. There is no intention to produce newsletters on a regular basis. Each one is numbered in sequence every year so recipients can identify if any are missing.

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Multi-Function Display Software Update

The Raymarine MFD software version 16 introduced new Automatic Identification System (AIS) collision avoidance facilities, which are briefly explained in this SNL.

Since that update further software versions have been issued and presently the Sea Essay MFD has 17.45 loaded. Users should find little difference though the Home screen and Data bar have been locked and cannot be changed. The Raymarine web site <http://www.raymarine.com/view/?id=3764> –Support- Software Updates- E Series- Operations Manual gives details. The Yacht Husband team have tested and re-calibrated the autopilot and ensured that all systems are GO!

AIS Overview

The AIS (Automatic Identification System) feature enables you to receive information broadcast by other vessels, and to add these vessels as targets in the chart and radar applications. You can:

- Display targets for any other transmitting AIS-equipped vessels within range. Up to 100 targets can be displayed simultaneously.
- Display position data being broadcast by these targets, such as their position, course, speed and rate-of-turn.
- Display vectors for AIS targets. Vectors can be displayed for each target. These vectors indicate the vessels direction of travel and the distance it will travel over a specified period of time (COG / SOG vector). Targets displayed with their vectors are referred to as 'active targets' and are scaled according to the size of the vessel. The larger the vessel, the larger the target.
- Display basic or detailed information for each target vessel, including safety-critical



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target data.

- Set up a Dangerous target alarm to alert you if an AIS target is getting too close.
- View Target interception graphics for targets to help improve collision awareness.
- Add AIS-equipped friends and regular contacts to a “Buddy List”

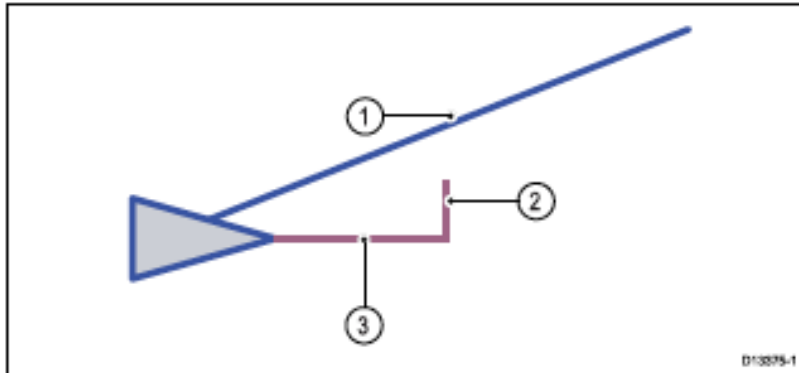
AIS target types

Your MFD displays a range of symbols to represent the different types and status of AIS targets:

	Unknown vessel type		Yacht
	Commercial vessel		High speed
	Land based station		* Blueforce
	SAR (Search and Rescue Aircraft)		AToN (Aid To Navigation)
	Virtual AToN		SART (Search and Rescue Transponders)
	Lost target (No border, crossed through)		Dangerous target (Flashes red)
	Buddy target (Triangle fill)		Uncertain target (Dashed line)
	Dangerous and uncertain target (Dashed line, flashes red)		AToN target off position (Red border)



AIS Vectors



COG vector — The length of the COG vector predicts the distance the target will travel within a specified time period. The COG vector can be set to 'Relative' (Orange) or 'True' (Blue) motion.

Rate of turn — Class A targets, if available can display a Rate of Turn (ROT) indicator.

Heading — The Heading line is a fixed length.

Vector Motion Mode True Motion



In True motion the COG vector displays the actual target's predicted course / position.

Relative Motion



In Relative motion the COG vector is displayed in relation to your own vessel's position.

AIS Context Menu

To access, place the cursor on the object and press OK

When an AIS target is selected, the Chart application context menu includes AIS target information and menu options. The context menu provides the following AIS target data:

- Buddy Name / Vessel Name / MMSI
- CPA
- TCPA
- COG
- SOG

The context menu also provides the following menu options:

- AIS Vector — Switch target vectors On and Off.
- AIS Data — Switch on screen target data On and Off.
- Show Interceptions — Switch individual Target interception On and Off.
- View AIS Data



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- Add Buddy — Add target to the buddy directory.
- Acquire Target (only available if Radar overlay is switched on.)
- Slew IR camera (only available when pan/tilt thermal camera is connected and operating.)

Dangerous Targets

Targets are considered dangerous if the target will get closer than the specified Safe Distance within the specified Time to Safe Distance. The location of the Dangerous Targets page is dependent on the application and Overlays you have enabled:

- Radar application: **Menu > Collision Avoidance > Dangerous Targets.**
- Chart application with Radar and AIS overlays enabled: **Menu > Radar & AIS > Collision Avoidance > Dangerous Targets**
- Chart application with only the Radar overlay enabled: **Menu > Radar > Collision Avoidance > Dangerous Targets**
- Chart application with only the AIS overlay enabled: **Menu > AIS > Collision Avoidance > Dangerous Targets**



E.g.: With Time to Safe Distance set to 6 minutes and the Safe Distance set to 0.5nm AIS targets will turn red and start to flash if they will reach the Safe Distance within the next 6 minutes.

Alarms

An alarm can also be set-up to trigger whenever a target becomes dangerous. The Dangerous target alarm for AIS targets can be switched On and Off.

An alarm is also triggered if a Dangerous target becomes Lost (No signal has been received for 20 seconds).

The Dangerous AIS target alarm can also be enabled from the Alarm Manager: **(Homescreen >**

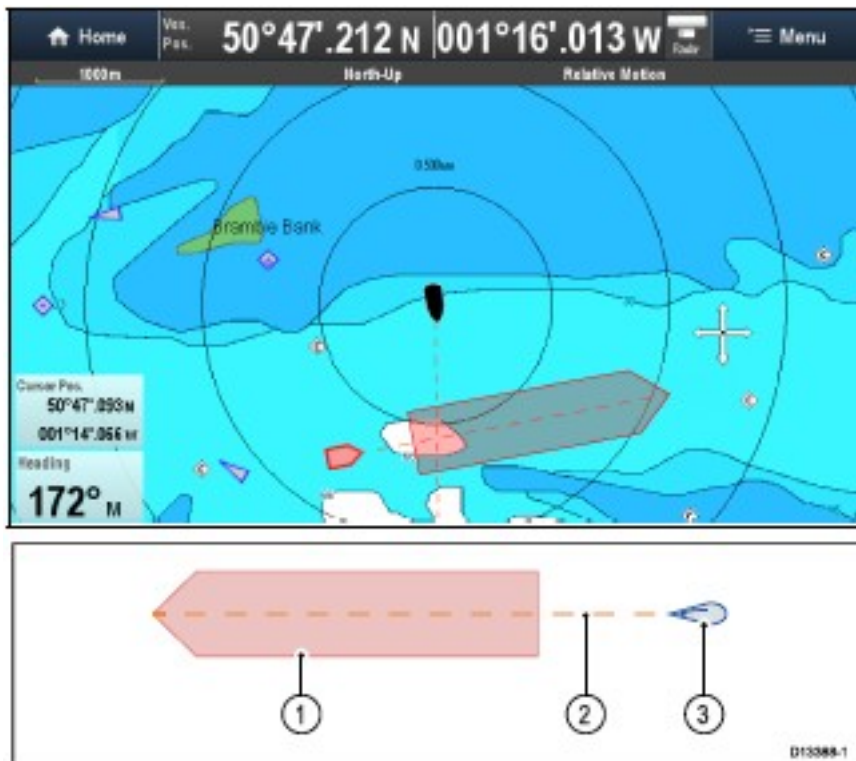


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Set-up > Alarms
> Safety Alarms
> Dangerous
AIS targets).

Collision Avoidance

The Chart application provides features to help improve collision awareness. The Target interception feature tracks AIS targets in relation to your own vessel's Course Over Ground (COG) and Speed Over Ground (SOG). Target interception zones indicate areas where there is an increased risk of collision. Zones are based on your current speed and AIS data received from targets and can help you determine whether you should change course and / or speed to avoid danger. The Target interception graphics automatically refresh when new position data for the target or your own vessel is received by the system.



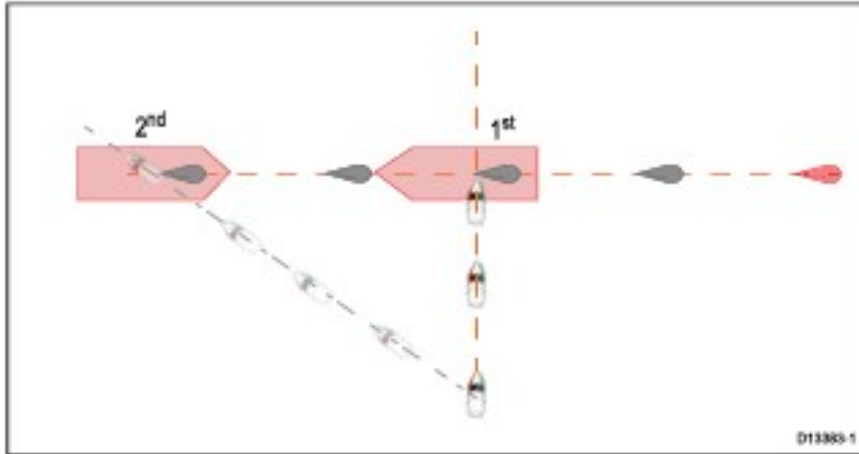
1. Target interception zone (Predicted area of danger based on target's last reported position.)
2. Target COG line
3. AIS Target (Last received position)

Important: You must still maintain a permanent watch for:

- Vessels that are not equipped with AIS or AIS equipped vessels that are not currently transmitting their position, as these targets will not be displayed in the Chart application.
- AIS equipped vessels reporting an inaccurate GPS position or your own vessels GPS accuracy, as this will cause your vessel's position and / or AIS target positions to be displayed inaccurately in the Chart application



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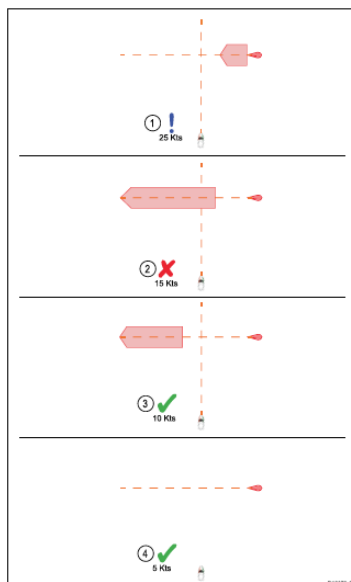


In certain situations, when the target vessel is travelling faster than your vessel, there may be more than 1 opportunity for your paths to cross within the Intercept distance. If this is the case then a second Interception zone is displayed.

1st — The first Interception zone (displayed closest to the target vessel) represents a bow-to-bow collision.

2nd — The second Interception zone (displayed farthest from the target vessel) represents the target vessel running you down from behind.

When altering course and speed, both Interception zones must be avoided.



1. Speeding up (1) — Increasing vessel speed to pass ahead of the target vessel. Proceed with caution; there is always an inherent risk when passing in front of other vessels.
2. No speed change — Not changing speed or course is not an option as it can result in a collision.
3. Slowing down — Slowing down a sufficient amount will allow the target vessel to pass safely ahead of your vessel.
4. Slowing down (2) — Slowing down a sufficient amount will allow the target to pass safely ahead of your vessel.

(1) In this example the paths will still cross within the Intercept distance so the graphics are still displayed.

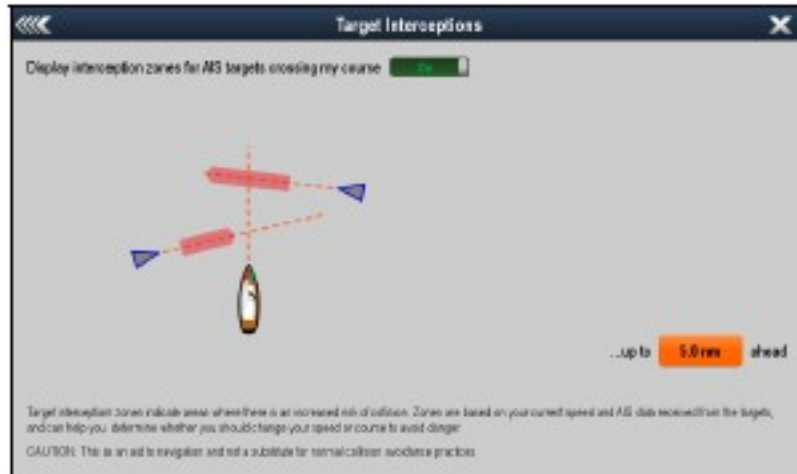


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Enabling Target Interceptions

Target interception graphics are disabled by default; they can be enabled from the Target interceptions page, accessed from the Chart application's menu.

- Ensure the AIS Overlay is enabled. The AIS Overlay can be enabled from the Overlays menu (**Menu > Presentation > Overlays**).
- Open the Target Interception page: (Menu > Radar & AIS > Collision Avoidance > Target Interceptions, or Menu > AIS > Collision Avoidance > Target Interceptions).



- Select the slider control so that On is displayed.
- Select the distance ahead box and select the required Intercept distance.
- Select Back or Close to return to the previous menu or Chart application screen.

Target interception graphics will now be displayed for all AIS targets that will cross your current course within the specified Intercept distance, based on your current speed and the target's

Adrian Barnes
Yacht Secretary
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