

COBHAM



SAILOR 5052 AIS SART

SAILOR 5052 AIS-SART

COBHAM



AIS SART replacing Radar SART



RADAR SART

=



AIS SART

What is SART ?

Search & Rescue Transponder (SART) is designed to guide rescuers to a survival craft.

A SART is not an alternative to an EPIRB. It is not designed to raise an alert, but allows vessels carrying standard marine navigation aids to locate a survival craft even in very poor visibility.



What is SART ?

The SART is the principal means of homing in on a survival craft in the Global Maritime Distress and Safety System (GMDSS).



The SOLAS vessels and SAR equipped aircraft can detect and locate the SART at a range of up to 5 nautical miles from a surface vessel, or up to 30 or more nautical miles from an aircraft, depending on its altitude.

Radar SART vs AIS SART in SOLAS

- A SOLAS amendment entered into force on 1st January 2010
- The requirement for RADAR transponders was replaced by a MSC 256(84) which broadened the description to include both:
 - RADAR SART = Search and rescue transponder
 - &
 - AIS SART = Search and rescue transmitter

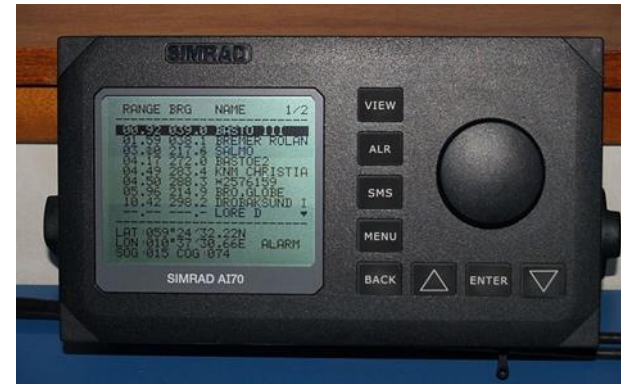


Radar SART vs AIS SART in SOLAS

IMO has recognised the AIS SART as being equivalent to RADAR SART for SOLAS carriage – i.e. ships can now substitute a RADAR SART with an AIS SART



Navigation RADAR



AIS transponder

This change to SOLAS has come about due to sea-going ships now being required by regulation to have on board both a navigation RADAR and since 2004 a Class A AIS transponder.

The AIS SART offers significant advantages over a RADAR SART.

Better Range

The much lower operating radio frequency of 160 MHz to that of a RADAR SART 9 GHz means that signal penetration and transmission range is significantly increased.

Better accuracy

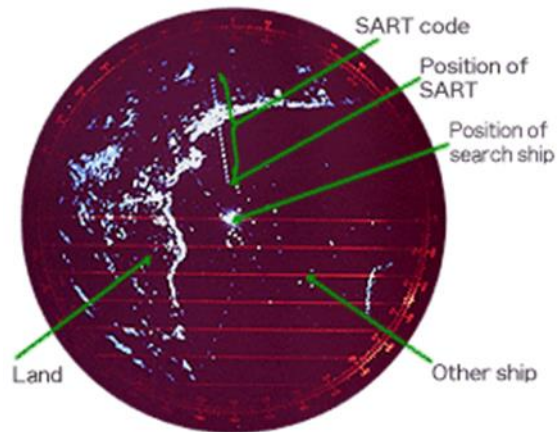
The in-built GPS feature means that continuously updating latitude and longitude (and calculated) bearing to distance of the target survival craft is provided.

Better identification

The AIS SART has a unique 9 digit identification code. This means an individual AIS SART can be located even under situations of heavy AIS traffic in busy shipping lanes.

Radar SART vs AIS SART

The AIS SART offers significant advantages of clarity over a RADAR SART.



RADAR SART has a distinctive homing pattern shown on the RADAR.

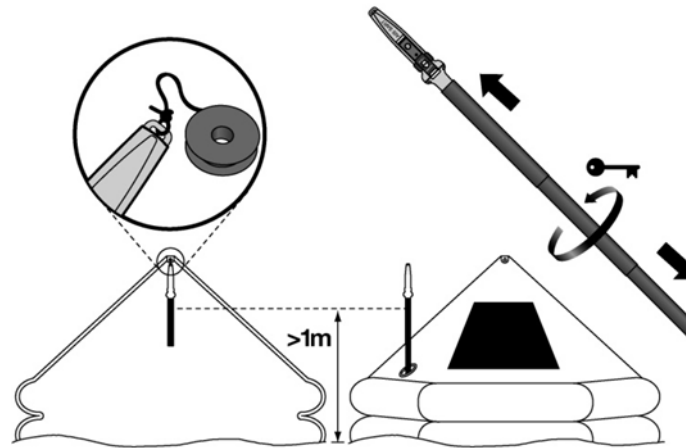


AIS SART typically will display as an icon with optional information box on an ECDIS display.

Most vessels typically stow the AIS SART on the bridge of the ship so it is readily available to take onboard the survival craft at time of need



An AIS SART should be deployed with at least 1m height above water, inside or outside the survival craft.



To achieve the 1m height the AIS SART is often supplied with a telescopic pole which is pushed out through a hole in the life raft canopy with the AIS SART perched on top.

A less precarious arrangement which has proved just as effective is to hang the AIS SART inside the raft using a rope or strap passed over the canopy support tube.

Additional SARTs may also be packed inside the survival craft.

For passenger ships one SART is required per four life crafts.



What is a survival craft?



A lifeboat or survival craft is a small, rigid or inflatable boat carried by a larger boat for emergency evacuation in the event of a disaster.





Life boats are rigid boats carried by a larger vessels.

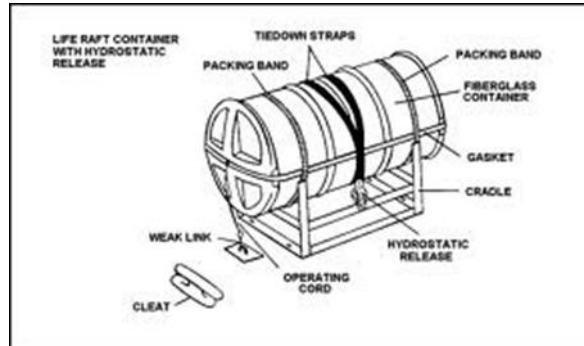
The AIS SART may be attached to the outside of the cabin top. With the 1m pole section being dropped into a pipe section.



Note.

Cruise ships may sometimes deploy rigid lifeboats as harbour tenders.

Rigid lifeboats can be open or enclosed, SOLAS regulations require a crewmember to inspect them periodically including any SART equipment.



Life crafts are stored in a heavy-duty fiberglass canisters on upper decks and have automatic inflation.

SOLAS regulations require the life craft to be sealed, never opened by the ship's crew, they are removed from the ship and sent to a certified facility for annual inspection and maintenance.



The AIS SART should be taken from the ship bridge and rigged up after deployment of the survival craft.

Not all life crafts are the same.

Heavy-duty fiberglass canisters on deck are new generation Marine Ark designs. These have evacuation chutes and can accommodate 150+ persons.



SOLAS GMDSS carriage requirements

SOLAS seagoing vessels from 300 to 500 GRT are required to carry on board 1 SART.

Most SOLAS vessels over 500 GRT are required to carry 2 SARTs.



SAILOR 5052 AIS SART

- Based on the AIS (Automatic Identification System) Maritime VHF frequency
- Life raft **S**earch **A**nd **R**escue **T**ransmitter
- IMO / SOLAS Mandatory carriage product
- Extension pole, case & bulkhead bracket
- Used to aid location of a survival craft
- 96hr operation

IMO has recognised the AIS SART as being equivalent to RADAR SART for SOLAS carriage - i.e. ships can now substitute the AIS SART in place of the requirement to carry RADAR SART.



What is an AIS SART ?

The AIS SART comprises a two channel VHF AIS transmitter and a GPS receiver integrated into one waterproof enclosure - which is very similar in size to a traditional RADAR SART.

SAILOR 5052 AIS SART basic parameters:

- Power output: 1 W EIRP
- Transmitting frequencies: AIS channels 1 and 2
- Inbuilt GPS receiver
- Battery capacity operating life: 48 hrs (minimum)
- Operating temperature -20 to +55 C
- 1,05 m telescopic pole
- 10m safety attachment lanyard
- Stowage bag included



How does an AIS SART work?

The AIS SART VHF message format conforms with standard AIS messages:

1. A text broadcast (message 14) of either 'SART TEST' or ACTIVE SART'.
2. A position message (message 1) with a 'Navigation Status' = 14

Transmission is 8 times in 14 seconds, once per minute regardless of any other AIS transmissions in the area.

This is an '*impolite protocol*', AIS transponders in the area will pause transmitting when they hear an AIS SART to ensure the AIS SART is heard in a crowd.

How does an AIS SART work?

AIS SARTs are coded with a unique 9 digit identification code beginning with 970 - very similar to a DSC MMSI.

The identification code is structured as follows:

970XXYYYY, where:

970 is the SART prefix

XX is the manufacturer's 2 digit code

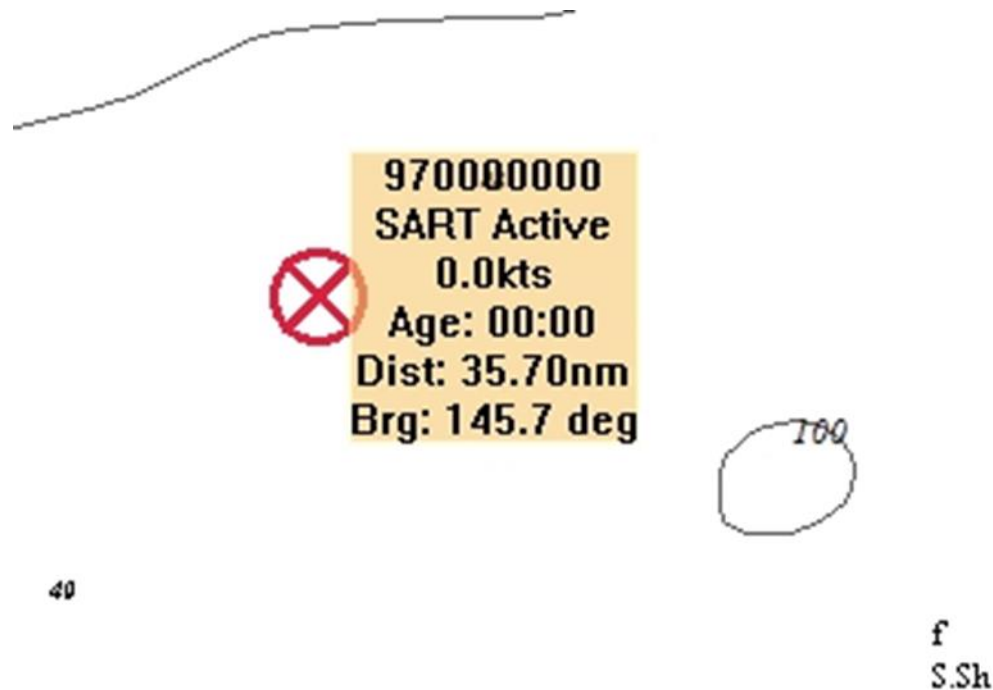
YYYY is the individual SART number



The unique 9 digit identification code is printed on a label attached to the face of the AIS SART. No official requirement exists for ownership registration of the AIS SART but the vessels management organisation may wish to keep its own record in the event of loss or improper use being reported.

How does an AIS SART work?

Up to date shipboard AIS systems will recognise the 970 prefix as a AIS SART ID, and display the target as a circle with a cross. An optional information box will be specific to the AIS / plotter used to display the target.



How does an AIS SART work?

Older shipboard AIS systems may display the AIS SART 970 prefix as if it was a standard AIS vessel target.

In this case no ship name is presented but the AIS SART ID will be indicated in place of the target vessels MMSI number. The description SART ACTIVE or SART TEST may be shown when the detailed AIS target information is selected.



| AIS Target List | | | | |
|-----------------|------------------|----------|--------------|--------|
| No. | Name/MMSI | Buddy | Rng | Brg |
| 31 | 235009160 | | 2.989nm | 13.8°P |
| 32 | ST CLARE | | 3.626nm | 4.6°P |
| 33 | ST CECILIA | | 5.154nm | 18.6°S |
| 34 | WIGHT RYDER II | | 5.564nm | 5.7°S |
| 35 | CMA CGM THALASSA | | 5.888nm | 35.1°P |
| 36 | 970110912 | | 6.354nm | 59.1°S |
| 37 | ST HELEN | | 6.841nm | 20.8°S |
| MMSI | 970110912 | Position | 50°47'.925N | |
| Last seen | 06/04/2010 | | 001°16'.002W | |
| | 09:36:16AM | Heading | ---°T | |
| Vessel | ----- | ROT | ---°/min | |
| | | COG | ---°T | |
| | | SOG | 0.0kt | |

The range achievable from a AIS SART to a surface vessel is proportional to its height above the water.

A AIS SART mounted at 1m (i.e: in a survival craft) should be able to be detected at 5 nautical miles by a ship's AIS antenna mounted at 15m. In practical testing ranges in excess of 10 nautical miles are not untypical.

The same SART should be detectable at 30 to 40 nautical miles by an aircraft flying at 8000 feet.

The AIS SART starts transmitting within 1 minute after initial activation.

The AIS SART has a visual indication of transmission and GPS position acquisition.

Questions?