

SEA SENTOR

Surface Ship Torpedo Defence



defending



the fleet



Torpedo defence for any warship or auxiliary vessel

Operation by non-sonar trained personnel

Un-attended system for minimal manning

COTS and Open Architecture technology

No munition based devices

In-built training system



THE THREAT FROM TORPEDO ATTACK HAS INCREASED IN RECENT YEARS WITH THE PROLIFERATION OF QUIET DIESEL SUBMARINES, EQUIPPED WITH SOPHISTICATED HOMING TORPEDOES.

TODAY, SHIPS CAN BE PROTECTED AGAINST THIS THREAT BY A COMBINATION OF TOWED SONAR WITH SPECIALIST PROCESSING AND ROBUST TOWED AND EXPENDABLE COUNTERMEASURES.



defen



A Winch



B Equipment cabinet



C Control unit



D Operator display



E Expendable launcher



F Bridge display

system elements



Towed assembly

The SEA SENTOR™ towed assembly comprises a purpose-designed multioctave torpedo detection towed-array coupled with Vibration Isolation Modules (VIMs)

forward and aft, a rope drogue 'tail' for stabilisation, an Array Tow Cable (ATC) to provide separation between the Flexible Towed Body (FTB) countermeasure and the acoustic array, and a Fibre Optic Tow Cable (FOTC).

FTB

The Flexible Towed Body (FTB) is designed to be deployed and recovered in one seamless operation, by reeling the complete towed assembly onto a dedicated single drum winch. The FTB supports a number of modes of operation. It is supplied with default settings, but is also fully programmable in field.

EAD

The Expendable Acoustic Device (EAD) is a static, programmable countermeasure incorporating low-cost features pioneered by Ultra under its Sonobuoy programmes, supporting a low cost of system ownership. It is designed to become operational 10 seconds following launch, transmitting an acoustic decoy signature in the water. It is programmable using PC based facilities and can support a number of modes of operation. The countermeasures are also supplied with default settings.





SSTD EXPERTISE

ULTRA ELECTRONICS HAS BEEN INVOLVED IN TORPEDO DEFENCE PROGRAMMES FOR OVER 15 YEARS AND IS THE WORLD LEADER IN SURFACE SHIP TORPEDO DEFENCE. HAVING BEEN SELECTED BY THE UK ROYAL NAVY TO SUPPLY TORPEDO DEFENCE TECHNOLOGY TO PROTECT THE ENTIRE FLEET, ULTRA IS THE ONLY COMPANY TO HAVE DELIVERED SENSOR-TO-COUNTERMEASURE CAPABILITY INTO SERVICE ON MULTIPLE PLATFORMS.

ding the fleet

SEA SENTOR™

Surface Ship Torpedo Defence

The SEA SENTOR™ system utilises a towed acoustic passive array especially designed for the detection of torpedoes to classify and localise in-water threats.

Tactical advice is presented by the system that is specifically geared to the make, model and current operating mode of the detected threats – single or salvo.

Detection ranges to initiate successful defeating tactics are achieved in all conditions; whether operating solo in deep water or in-convoys in busy shipping lanes and littoral waters

The towed Countermeasure action is automatically configured according to the tactical advice

Expendable countermeasures are launched by the operator when prompted to do so.

Sixteen systems have been delivered to the UK Royal Navy, and SEA SENTOR™ has been in-service since October 2004. The system has also been deployed upon non-UK vessels in co-operation with respective governments.

The SEA SENTOR™ system is available in three variants:

- The **Towed Countermeasure System** provides continuous underwater countermeasure action and is designed to replace ageing systems with the latest war-fighting capabilities;

- The **Torpedo Detection System** utilises the towed acoustic array to detect incoming threats and integrates onto vessels with existing mortar-launch countermeasure systems to increase platform survivability;

- The **Torpedo Detection and Countermeasure System** provides all SEA SENTOR™ capabilities and can be procured outright or achieved through a defined upgrade path.

proven, reliable, in-service

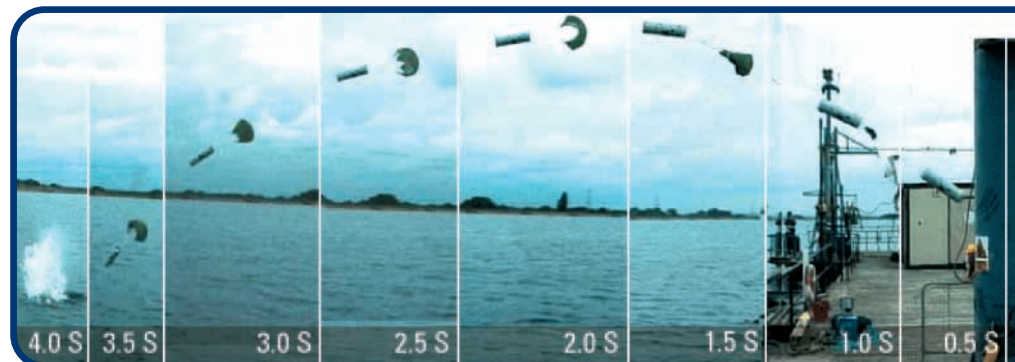
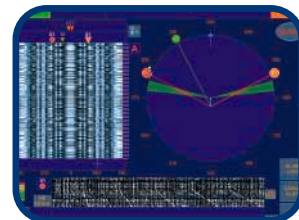


EAD launcher

Each expendable acoustic device launcher, typically one deployed to Port and one to Starboard, contains eight expendable acoustic countermeasures. The launchers fire their countermeasures using (self contained) high-pressure air to simplify handling and installation. Each barrel has an independent reservoir, which is sized to take account of the worst-case environmental conditions and ship attitude.

Mortar Launcher

Some vessels already possess SRBOC or Sea Gnat launchers for torpedo counter-measure use. Ultra Electronics also offers a Mortar Launched EAD variant allowing easy integration into existing launcher equipment.



Technical specifications

	Torpedo Countermeasure System	Torpedo Detection System	Torpedo Detection & Countermeasure System
Operator/Bridge Console	(1 console)	(1 console)	(2 consoles)
Height	0.38m	0.38m	0.38m
Width	0.43m	0.43m	0.43m
Depth	0.21m	0.21m	0.21m
Weight	22kg	22kg	22kg

Processing Cabinet

Height	1.2m	1.2m	1.2m
Width	0.64m	0.64m	0.64m
Depth	0.55m	0.55m	0.55m
Weight	280kg	280kg	280kg

Winch

Height	1.7m	1.7m	1.7m
Width	1.9m	1.9m	1.9m
Depth	2.2m	2.2m	2.2m
Weight	3278kg	4138kg	4170kg

Launcher Control Unit

Height			0.15m
Width			0.30m
Depth			0.25m
Weight			10kg

EAD Launcher

Height			1.69m
Width			1.21m
Depth			1.54m
Weight			583kg

EAD

Height			0.42m
Width			0.12m dia
Depth			N/a
Weight			7.5kg



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HMS Westminster ISD

The first Torpedo Detection and Countermeasure system was successfully delivered to the UK Royal Navy October 2004. The system was delivered early, with overall programme cost savings.

Integration with C2 Systems

The SEA SENTOR™ system is an Open Architecture COTS technology to ease integration with existing ship's systems and platforms. The display format can be generated in either a Microsoft Windows or X-Windows compatible format, and executed on either a Microsoft Windows or a Linux platform. For optional integration into Command and Control systems, track and threat information generated by SEA SENTOR™ is automatically transmitted over TCP/IP.

Designed for small footprint installation
SEA SENTOR™ can be operated on corvettes, frigates, destroyers, aircraft carriers, auxiliary vessels as well as commercial craft.



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