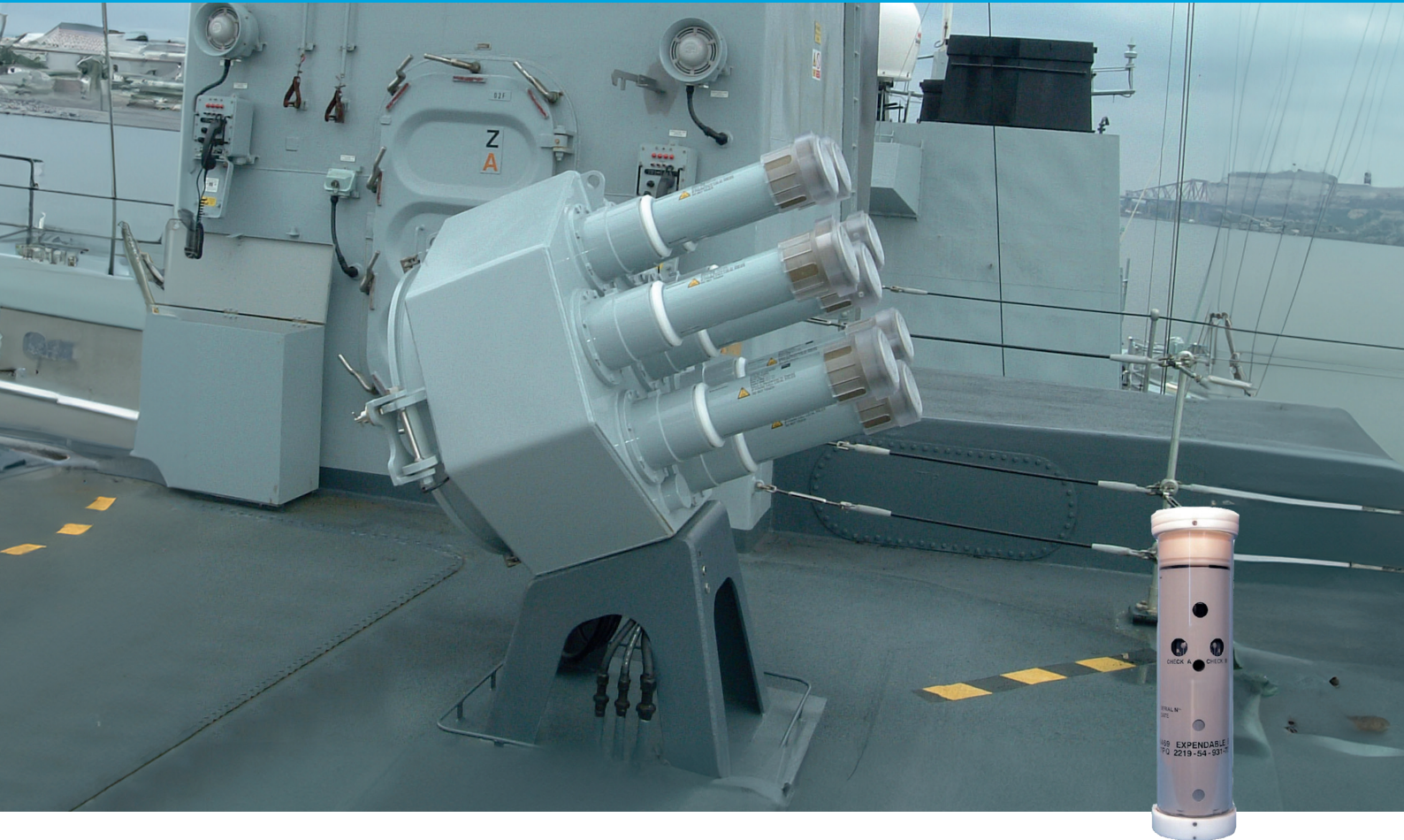


## Sea Sentor

### Surface Ship Torpedo Defence



#### Key features

- Torpedo defence for all warships and auxiliary vessels
- Detect, classify and localise torpedo threats
- Tailored tactics to weapon type and mode
- 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

#### Overview

The threat to Surface Ships by torpedo attack continues to increase with the exponential growth in submarines operated around the world. Dedicated torpedo defence systems provide platforms with the ability to detect and counter such attacks. Ultra Maritime has provided torpedo defence systems to the UK and its allies for over 20 years and is a world leader in their design and development.

SEA SENTOR is an integrated, sense-to-effect solution which offers a comprehensive capability that maximises vessel survivability in torpedo engagements. The system employs advanced acoustic processing techniques to detect and classify torpedo threats at a tactically significant range with a very low False Alert Rate and high Probability of Correct Classification.

# Sea Sentor Surface Ship Torpedo Defence

The high-performance levels achieved by the system stems from the dedicated towed sonar array designed explicitly for torpedo detection. The towed array requires only two operators to deploy it from the system's compact, single-drum winch to minimise crewing impact.

Uniquely to the UM system, the tow also incorporates an in-line acoustic countermeasure which does not need to be attached or detached during deployment and recovery, allowing for rapid operation.

The SEA SENTOR dedicated torpedo classification software determines the weapon make, model, type, and current operating mode. Specific advice optimised to defeat the identified threat, involving countermeasure action and vessel manoeuvres, is presented by the tactics sub-system. In the case of a salvo attack, the system automatically adjusts its tactics to maximise effectiveness against all weapons in the engagement.

The system is fully effective in all environmental situations and operating conditions, whether the platform is operating solo in deep water or in-convoys in busy shipping lanes and littoral waters.

Continuous tracking of the vessel progress against the recommended manoeuvre enables the towed acoustic Countermeasure can be programmed and initiated as required without operator involvement. The system prompts the operator to launch expendable acoustic countermeasures as needed, avoiding any personnel safety concerns.

Expendable countermeasures are supplied in an environmental protective casing and are launched by a dedicated, rechargeable pneumatic firing system. The pneumatic launcher can be depressurised when alongside or during at-sea replenishment to make it entirely safe. This approach allows the countermeasures to remain in the launchers, with no ready-locker store required, maintaining a high readiness state at all times.

Both the towed and expendable countermeasures can be programmed by the end user in the field to emit a user's preferred transmissions. Up to ten different settings can be stored simultaneously, and the most appropriate entry used for each threat.

SEA SENTOR supports installation as a stand-alone system, or in conjunction with other systems via its Combat Management System interface. This standard Ethernet connection allows the exchange of both tactics, sonar contacts, and threats. The system can also be operated through either dedicated or multi-function consoles.

When operated as part of UM's integrated sonar processing system, SEA SENTOR is able to work cooperatively as part of a wider integrated suite of sensors, and conduct torpedo detection across all suitable sensors including Hull Mount and Variable Depth Sonars as well as distributed, wide-area Sonobuoy fields. For integrated sonar platforms, SEA SENTOR operation is integrated into the Sonar installation and made available to all Sonar operators.



The SEA SENTOR and torpedo defence systems are currently operated by UK, US, Australia, New Zealand, Turkey and India.

Inboard component	Height (m)	Width (m)	Depth (m)	Weight (kg)
CIC/Bridge Console	0.6	0.54	0.2	30
Processing Cabinet	1.2	0.64	0.55	271
Winch and tow	1.7	1.9	2.3	4170
Launcher control unit (remote)	0.15	0.3	0.25	11
Expendable device launcher	1.69	1.21	1.54	583
Launcher selector remote	0.15	0.3	0.25	10



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