

Our torpedo solutions offer unparalleled performance, assuring critical operational advantage and mission capability through-life.

# Spearfish

## Advanced heavyweight torpedo

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In service with the Royal Navy, the Spearfish heavyweight torpedo sets new standards in underwater weapon performance.

Its advanced design delivers high-speed, maximum warhead lethality. Operationally, Spearfish offers extended endurance with outstanding manoeuvrability, low radiated noise, discriminative homing and advanced tactical intelligence.

The result is an underwater weapon that provides decisive advantage against the full range of submarine and surface threats in all operational environments.

Spearfish heavyweight torpedo has a common architecture baseline for a family of underwater weapons. It is modular and software-intensive to facilitate future upgrades against new and emerging threats.



**BAE SYSTEMS**

BAE Systems is a world leader in the design, development, production and support of underwater guided weapon systems. Leveraging this proven pedigree, Spearfish delivers dynamic homing performance unmatched by any other heavyweight torpedo.

An advanced transducer array and associated electronics use a combination of active and passive homing techniques to acquire, identify and prosecute the target. Powerful beam-forming techniques are employed to optimise performance in all environments.

In a typical engagement, Spearfish will run out wire-guided to the general vicinity of the target and then conduct a covert passive search. The high-capacity guide wire system, specifically designed to match Spearfish's manoeuvre and speed envelope, provides two-way data exchange between the torpedo and the launch submarine, maximising the submarines' organic sensor and combat control capabilities.

Once at close range the torpedo accelerates to sprint speed and uses active sonar to classify and home in on its target. High power transmissions and sophisticated signal processing enable Spearfish to accurately discriminate targets from background noise, and ensure high resistance to acoustic countermeasures and/or evasive manoeuvres.

Should Spearfish fail to hit the target on its first attack, it automatically selects an appropriate re-attack mode to successfully conclude the engagement. Tactical software functionality has been refined by an extensive programme of real time hardware-in-the-loop simulations, demonstrated in over 500 in-water trials and exercise firings.

The guidance section, located in the mid-body of the torpedo, contains a tactical computer controlling all functions from propulsion to homing. It makes decisions

on the optimal transmission and receive modes and attack tactics. A control sensors unit, incorporating an inertial navigation system, provides speed, course and depth measurements to the tactical computer. A large warhead ensures high lethality against both double-hull submarine targets and large displacement surface ships.

### Supporting the customer

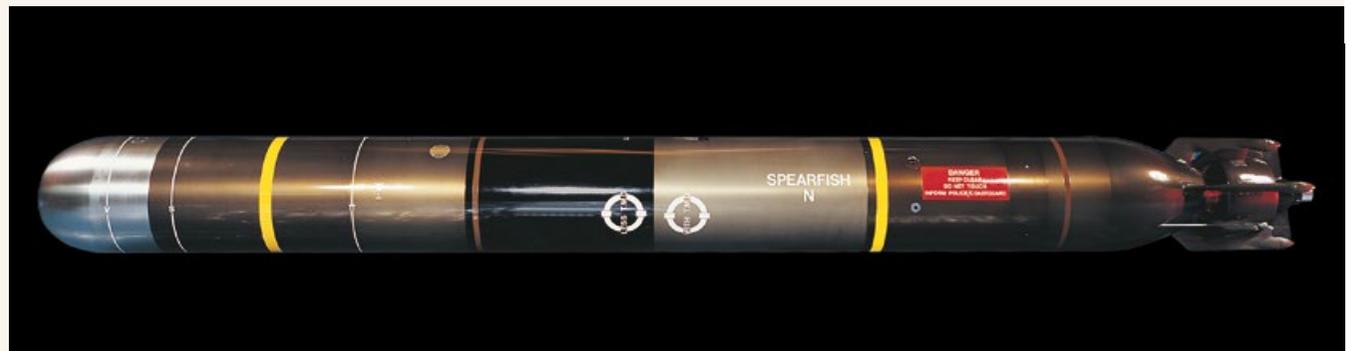
Spearfish is supportable, maintainable and reliable, and meets the most demanding safety and environmental criteria. The weapon has demonstrated outstanding in-water reliability, affirming user confidence and minimising proofing and surveillance requirements.

Fleet issue weapons have a five-year fuelled life, and are certified for lifed item replacement at a minimum 90-month interval. Otherwise, planned maintenance activity is limited to periodic 'through-the-skin' testing.

Its digital technology and commercial off-the-shelf hardware is designed to improve maintainability and reduce through-life costs.

Most maintenance tasks can be accomplished at user depot level, including unit/section level replacement. Triple containment of liquid fuels ensures safety of handling and storage.

BAE Systems offers comprehensive in-service support from delivery to operational deployment. This full 'workshop-to-waterfront' service includes commissioning, post-design services, configuration management, spares, repairs and in-water performance analysis.



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