FLASH BLACK

The New Generation Lightweight Torpedo

STATUS

FLASH-BLACK is a not conventional Lightweight Torpedo, designed and entirely developed by WASS to meet all challenging operational requirements for ASW. Although derived from the technology generated by WASS in the development of the A244/S Mod.3, A290 and MU90 LWT and of the BLACKSHARK HWT, FLASH-BLACK includes a number of conceptual innovations and inventions which make it uniquely capable in the world, in terms of flexibility, performances and reduced Life Cycle Cost.

DESCRIPTION

The FLASH BLACK can be deployed by any type of conventional platform such as surface vessels, fixed or rotary aircraft, but it has been designed to be launched also from underwater platforms and submarines fitted with 400 mm launching tubes as well as vehicles like UAV, UUV e USV (Unmanned Aircraft, Unmanned Underwater and Unmanned Surface Vehicles).

The weapon, effective against every kind of target, nuclear submarines, midgets, surface vessels, hijacked ships and incoming torpedoes, operates in all environments from open waters to coastal and confined waters, also in presence of the most sophisticated countermeasure systems.

The torpedo guarantees full effectiveness against every target type, from midget to conventional and nuclear submarines, bottomed or escaping at maximum speed and High Kill Probability against Heavy Weight Torpedoes attacking the LWT launching platform (Torpedo-Torpedo Killer).

According to the presetting data received from the platform the torpedo can be employed against Surface Ships; it guarantees high damage capability on small and medium size surface ships as well as high capability to perform a non lethal attack on large surface ships, like hijacked LPG and LNG, large Military vessels, hitting the propeller shaft and/or the rudder (Mission Abort).

The weapon is pre disposed to be wire-guided in case it is used (launched) from underwater platforms. This configuration is achieved by adding a dedicated section in the torpedo without any additional modification.

Powered through a rechargeable Lithium-Polymer cells battery stack, derived from automotive applications, the torpedo is propelled by an electronically controlled high-rotation speed brush-less motor driving a skewed multi-blades pump-jet propulsor allowing a continuously variable torpedo speed automatically selected by the tactics of the weapon, according to the scenario, the environment and the operational phase. This kind of propulsion system guarantees the weapon a maximum speed exceeding 50 Knots and the capability to engage the target at more than 20 Km distance. Additionally, the very low
radiated noise, achieved through the use of the most modern pump-jet technologies combined with an extended selection of torpedo preset parameters and proper tactics, allows a silent approach to the target minimizing the alert range of even sophisticated submarine detection systems and increasing the overall killing probability of the weapon.

The Navigation System is based on an Inertial System obtained by an Inertial Measurement Unit (IMU), by a pressure-meter and dedicated patented software. The torpedo controllability guarantees all-attitudes capability including bottom following capability and high accuracy for the final impact on the target and is obtained trough 4 independent fins, positioned at 45° respect the horizontal plane in order to maximize the torpedo manoeuvrability in the space.

The torpedo’s forward section is a completely new concept design; it is composed by an acoustic transducers planar array with a specific profile to minimize the noise flow generation in all the torpedo range speed. The section contains all the electronic of the acoustic head and all the electronic for the torpedo control including the control and mission tactic software. This architecture minimizes the torpedo internal connections and data exchanges, maximizing the torpedo reliability and minimizing the test operation and the torpedo maintenance.

The payload consists of V350 explosive, fully insensitive, shaped charge warhead, proven to kill double hull submarines and ignited through an impact type exploder incorporating two mechanical and six electrical independent safety devices. The warhead fully meets any STANAG safety requirement. The exercise section, interchangeable with the warhead section, allows live exercise evaluation, war stock surveillance & training firings. Composed of a pneumatic recovery system based on inflatable collar technology, it features high recovery reliability & easy localisation. The exercise head also incorporates redundant safety and localisation devices, underwater tracking capability as well as a solid state memories data acquisition system, providing a computer-based post-firing evaluation analysis capability. The length, weight and CoG of the Exercise round is strictly the same of the warshot weapon thus assuring fully realistic live firings.

The reduced maintenance is a strong weapon characteristic that allows a double ratio Capability/Life-cycle-cost in comparison to other existing torpedoes. The interval between two maintenance torpedo operations, without torpedo disassem-

A comprehensive ILS is provided to the customer thus assuring an easy preventive and corrective maintenance throughout the system shelf life. The modern approach to the Flash Black ILS makes turns the 30-years Life Cycle Cost of the weapon significantly low with whether to all the existing torpedo systems and minimizes the need of significant infrastructures and human resources. Several types of turn-key stand-alone, partially- or fully integrated ship borne and airborne torpedo launching systems either for the Flash Black or for combined weapons capability are available to best suit the customers’ requirements.