



76/62 HE MOM-A1 Ammunition

Naval forces face an increasingly complex range of threats, from fast, low-signature aerial targets such as missiles, to low-RCS threats such as drones, as well as asymmetric surface threats. Effective engagement requires munitions that can adapt quickly to different scenarios while remaining reliable and precise in challenging operational conditions.

Challenges include:

- High-speed interception of aerial targets in AAW environments.
- Engagement of low-RCS threats, such as drones.
- Integration with existing naval gun systems.

The MOM-A1 addresses these demands by offering programmable fuze modes that provide tailored functionality, thereby enhancing lethality while minimising collateral damage.

The MOM-A1 is a modern 76/62mm naval ammunition designed for versatile use in Anti-Aircraft warfare (AAW) and other naval roles. Featuring a Pre-Formed Fragmentation (PFF) warhead, it maximises lethality against aerial and surface targets, and is equipped with

the 4AP Multi-Function Programmable Fuze (MFPF), supporting proximity, height of burst, impact (SQ/DLY) and time modes.

A key advantage of the MOM-A1 is its compatibility with existing 76/62 OTO Melara gun systems used by fleets worldwide. The ammunition uses the same ballistic firing tables that have historically been embedded in these systems, avoiding the need for costly and invasive modifications to the combat management system.

The fuze can also be factory-configured in Smart Default mode to ensure effective functioning in legacy configurations by enabling an automatic sequence:

- **PROX mode** is used for the initial flight and then switches to HoB until impact;
- **SQ impact** mode is always available as a backup.

For newer platforms with fuze-programming capability, the 4AP allows full exploitation of its advanced functionalities through dynamic configuration from the fire control system, enabling engagement profiles to be optimised in real time based on target type and mission context.

This dual-mode approach – backward compatibility with legacy systems and full integration with modern ones – ensures that the MOM-A1 delivers operational flexibility, improved time-to-fire and enhanced mission effectiveness while maintaining consistent performance across all 76/62 gun variants.

TECHNICAL INFORMATION

The MOM-A1 employs a Pre-Formed Fragmentation (PFF) projectile (Product Id. PFF IM 84) designed for high lethality against aerial and surface targets. The warhead contains ~0.8 kg of Composition B, optimised for controlled fragmentation and damage effectiveness. It integrates the 4AP Multi-Function Programmable Fuze, which can be set via the Fuze Setting Device (FSD) inside the gun system.

The fuze supports the following modes:

- Proximity (PROX): Forward-looking FMCW RF sensor enabling detection of targets (missiles, drones, aircraft) tens of metres before intercept; designed for resilience against low-RCS targets and reduced sea/ground clutter sensitivity.
- Height of Burst (HoB): Customer-selectable detonation height (5–20 m), switchable in flight after a default PROX phase.
- Impact (SQ/DLY): Always enabled as backup; selectable short or delayed detonation.
- Time Mode: Programmable detonation after a defined flight duration.

Smart Default Mode (factory configurable): In the absence of fuze-programming capability, the fuze can be delivered pre-set to Automatic Mode: PROX activation for the initial phase of flight, switching to HoB after ~12 seconds (factory configurable), with SQ impact mode always available as fallback. Default HoB height and switching time can be tailored to customer needs at factory level.

Additional features:

- Self-Destruction Option: Available when set in PROX mode; fuze self-destructs after pre-defined time if no detonation occurs.

KEY FEATURES

- Caliber: 76/62 mm naval ammunition.
 - Warhead: Pre-Formed Fragmentation (PFF) with ~0.8 kg Composition B high-explosive charge.
 - Fuze: 4AP Multi-Function Programmable Fuze (MFPF), modes: Proximity, Height of Burst, Impact (SQ/DLY), and Time.
 - Smart Default (Automatic Mode): Factory-configurable PROX + HoB sequence for legacy systems, ensuring functionality even without a fuze-programming device.
 - Range: ~16 km under ICAO standard conditions.
 - Roles: AAW, ASuW (Anti-Surface Warfare), NGS (Naval Gunfire Support).
 - Compatibility: Fully interoperable with all variants of 76/62 OTO Melara naval guns.
 - Safety & Arming Device (SAD): Fully mechanical, compliant with STANAG 4187, dual safety features (setback + spin), interrupted explosive train.
 - Status: Qualified and in service; compliant with STANAG 4224 / STANAG 4170 for the complete round, and AOP-20 / STANAG 4187 for the fuze.
- Electromagnetic Robustness: Resistant to modern radar and EW environments.
 - Multi-Caliber Adaptability: 4AP fuze design compliant with NATO standards, adaptable to other calibres.
 - SAD (Safety and Arming Device): Fully mechanical, compliant with STANAG 4187. Dual independent safety mechanisms (setback double pin + centrifugal lock) ensure safety during handling and transport. The design includes a Non-Armed-Assembling feature, preventing integration of an armed SAD into the fuze.

The cartridge case and propelling charge are long-qualified and in service for decades, compliant with STANAG 4224 and STANAG 4170. They provide consistent ballistic performance with a nominal muzzle velocity of ~905 m/s and typical standard deviation <2 m/s, ensuring accuracy and repeatability in operational use.

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