



Scan for track record

James Fisher Renewables



UXO Techniques



LOW-YIELD

Equipment Used: Barracuda 104mm Hyper-Water Jet, Disruption, Disintegration System

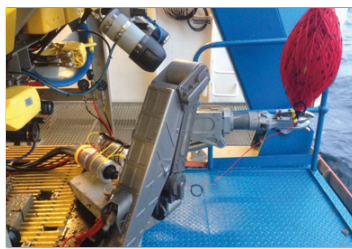
- Newest method to the market, has conducted 8 Live Firings, 5 of which were in 2021.
- Utilises high-pressure, hyper water jets to target the vulnerable areas of the identified UXO.
- Internal disruption of components, arming and actuation mechanisms and total disintegration of the explosive main filling.
- Blast / Shock Wave is much less than a “High-Order” technique but unlike a Low-Order technique, no explosive residue will remain on completion of the firing.
- Explosive Free certificate issued on completion, with debris recovered on completion.
- **This method is recommended, instead of Low-Order, by James Fisher EOD Team.**



LOW-ORDER

Equipment Used: Barracuda 30mm Self-Filled Modular Charge

- A Low-Order technique uses a small shaped charge to initiate a deflagration (burn out) of the explosive main filling and burst open the UXO case. If successful, the Blast / Shock Wave is much less than a “High-Order” technique. Very importantly, if successful, large amounts of explosive residue will remain and will require subsequent clear-up at the seafloor and will involve the use of a subsequent clearing-charge adding to time and cost of operations.
- **Cannot always be guaranteed** (80-90% success rate) and therefore the necessary precautions and mitigation measures for a High-Order detonation must be employed to ensure the safety of personnel, vessels, infrastructure / assets, fauna, flora, cetaceans, fish and mammals.



HIGH-ORDER

Equipment Used: Barracuda 104mm Self-Filled Modular Charge

- Traditional method of disposal. Developed in 2008 and has conducted over 1500 Live Firings since with No Misfires / Malfunctions Accidents or Incidents.
- Accurate placement of disposal system to generate either a plasma jet or a blast-fragmentation event to target the UXO at its most vulnerable point (as determined by EOD Superintendent offshore).
- Guaranteed disposal of cUXO target. Debris recovered on completion.
- Bubble Curtain, can be supplied by James Fisher, and MMO mitigation requirement for containment.



LIFT & SHIFT

Equipment Used: Remote Ordnance Lifting System (ROLS)

- Specifically designed to achieve Lift/Raise & Tow of UXO which have been deemed safe to move which were not able to be Blown In-Situ.
- Can remotely lift items of UXO up to 1800 Kgs (weight in air) and can be towed at speed of up to 2 kts in up to Sea State 4 (2mHMax).
- The UXO is removed to an alternative location, carefully set down on the seafloor and left in an agreed wet-storage location or will be disposed of subsequently by positive EOD action at the new location.