Gunfire Test of the U.S. Navy’s Improved Kinetic Energy – Electronic Time Projectile

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The Navy’s 5” 54 and 62 Caliber Guns

Cruisers (CG’s)  Destroyers (DDG’s)

"History does not long entrust the care of freedom to the weak or the timid" – General Eisenhower
Navy’s Requirement

The Navy’s 5” 54/62 caliber guns have an anti-surface warfare requirement to defend against small boat threats

• Swarming tactics
• Terrorists
• Pirates
MK 182 KE-ET Anatomy

- The MK 182 KE-ET is currently fielded in the fleet
- KE-ET: The pellets lose kinetic energy by being expelled from the base
- IKE-ET: The pellets gain kinetic energy by being expelled from the nose

Nylon DRB
Cargo Body
13-Grain Tungsten Alloy Shot Shell Pellets (~9,000)
Transfer Cup
MK 432 Fuze
Base Plug
(Modified with Aluminum Plug)
Aluminum Spacers To Reduce Weight And Balance Projectile
WC 294 Expelling Charge

IKE-ET Anatomy

- Fuze
- Nose Removal Charge
- Nose Joint
- Tungsten Pellet Payload
- Payload Expulsion Charge
IKE-ET Test
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4 BL&Ps
2 KE-ETs
3 Reduced Charge IKE-ETs (1 fuze failure)
5 Full Charge IKE-ETs
Test Photos
(Nose Separation)
Test Photos
(Flight Follower)
Sample Radar Plot

- Projectile Pre-Event
- Projectile Nose
- Projectile Post-Event
- Tungsten Pellets
- Muzzle Debris
- Spacers

Velocity (m/s) vs. Time (s)
Results Photos

Debris Impact Divots
Results Photos

Spacer vs. Sandbag
Results Photos

IKE-ET vs. Camera Shelter
Results Photos

IKE-ET vs. Stop Sign
The IKE-ET is still in the Small Business and Innovative Research (SBIR) phase

What’s to come?

- Currently the contractor is redesigning the projectile specifically for this application
- After the redesign phase we will test fire the projectile again to verify survivability and functionality
- The test will also attempt to acquire dispersion and velocity data (Z-data)
- The Z-data will be provided to the lethality analysts to characterize IKE-ET’s effectiveness vs. certain targets
- The lethality results will support a decision whether or not to proceed with the program
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Backup Slides
5 Inch 54 Caliber Gun Mount
Shelters
Field Cameras
Flight Follower and Triggers
Rear Facing Camera