

18317 - Anti-Class One Drone & Multi-Purpose 66mm Launch System For The M-4 Carbine

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Introduction:

“There Has To Be An Inexpensive Way To Bring Down Small Drones Without “Firearms” Or Firing A Missile And Hopefully Using Something We Already Have As A Start!”

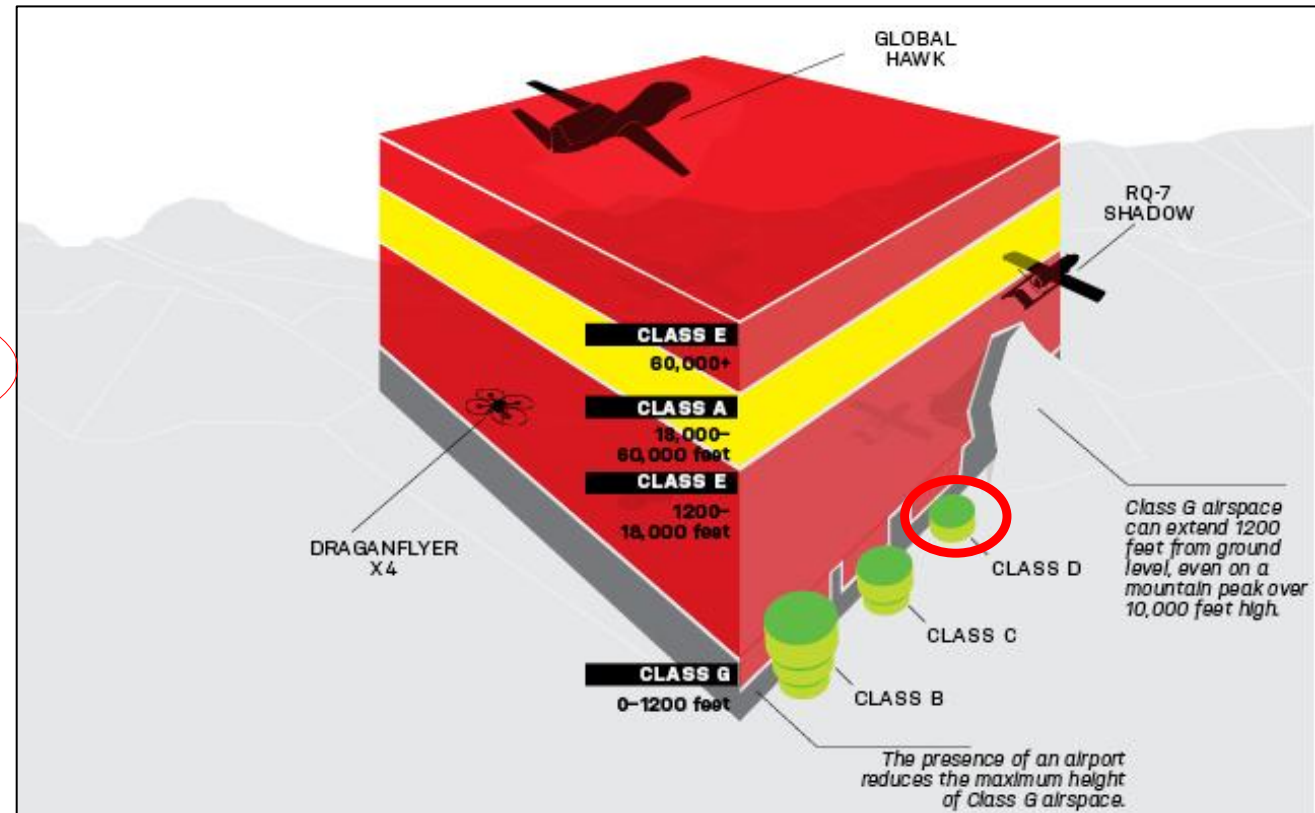
And There Is:

Proposed Is A Reusable Proximity Round That Fires A Capture Net Which Is Powered By Blanks And Fits On An M-4 Lower Receiver With A Launcher That Has 1,001 Other Uses...

Classifying Target Drone Categories:

TARGET: Micro- & Mini- NATO Class I Plus FAA Class D Small Low Altitude Drones

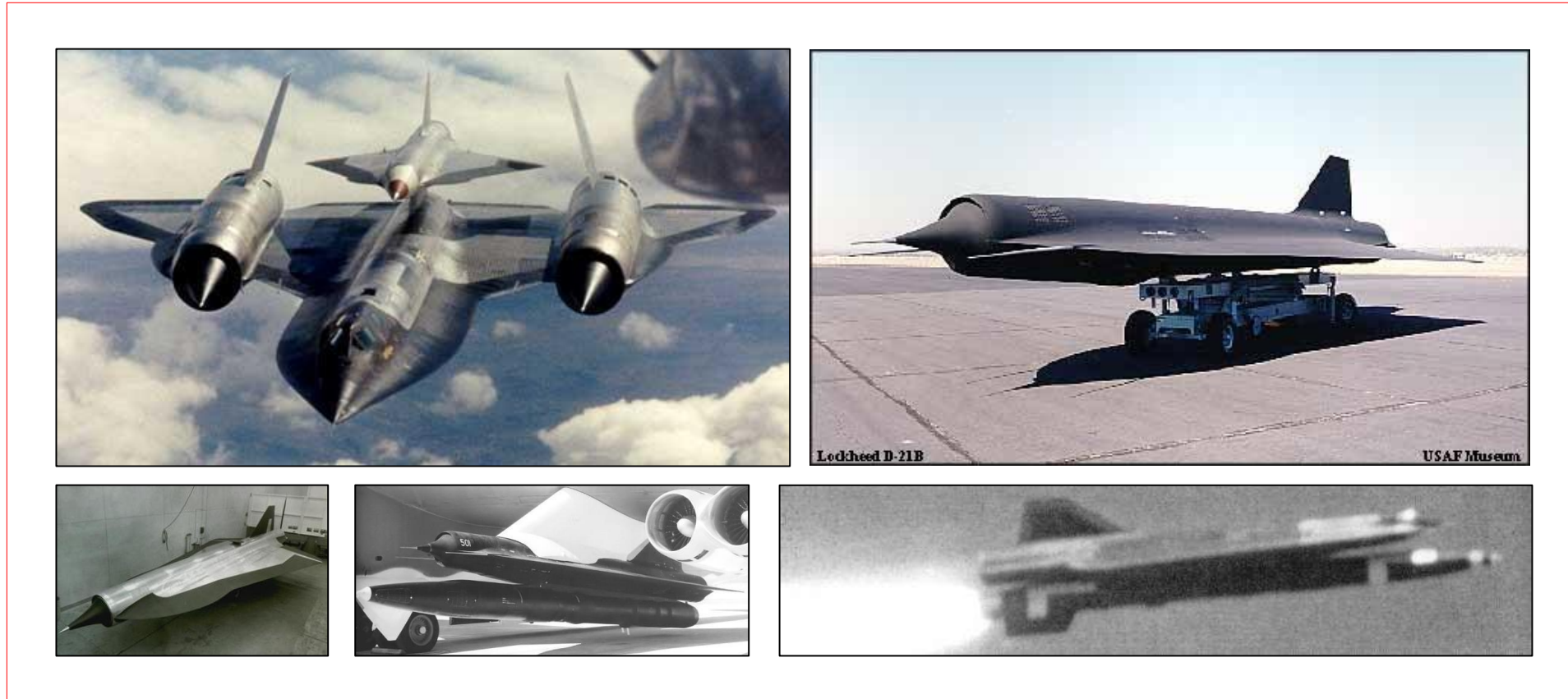
NATO Classification					
Class & Weight, w (kg)	Category & Weight, w (kg)	Normal Employment	Normal Operating Altitude, h (ft)	Normal Mission Radius (km)	Example Platform
Class I w < 150	Small w > 20 kg	Tactical Unit (employs launch system)	h ≤ 5000 AGL	50 (LOS)	Luna, Hermes 90
	Mini 2 ≤ w ≤ 20 kg	Tactical Unit (manual launch)	h ≤ 3000 AGL	25 (LOS)	ScanEagle, Skylark, Raven, DH3, Aladin, Strix
	Micro w < 2	Tactical Patrol/section, Individual (single operator)	h ≤ 200 AGL	5 (LOS)	Black Widow
Class II 150 ≤ w ≤ 600	Tactical	Tactical Formation	h ≤ 10,000 AGL	200 (LOS)	Sperwer, Iview 250, Hermes 450, Aerostar, Ranger
Class III w > 600	Strike/ Combat	Strategic/ National	h ≤ 65,000	Unlimited (BLOS)	
	HALE	Strategic/ National	h ≤ 65,000	Unlimited (BLOS)	Global Hawk
	MALE	Operational/ Theater	h ≤ 45,000 MSL	Unlimited (BLOS)	Predator A, Predator B, Heron, Heron TP, Hermes 900



Above Left: NATO Drone Classification; Above Right: FAA Drone Classification.

Not A Target For Net Capture: High Altitude Strategic Reconnaissance Drones

The Original And Still The Published Drone Speed Champion: The Lockheed D-21



Above: USAF And Lockheed Martin Corporation Photos

Not Targets For Net Capture Either: Large Aircraft-Like Military Drones



Clockwise From Upper Left: General Atomics Reaper LR, USN UCAV, USAF Global Hawk, Aurora VTOL, USN Fire Scout, Kaman V-Max.

Targets For Net Capture If They Fly Low Enough: Tactical Surveillance Drones



Above Left: Chinese Tactical Drone; Above Right: AAI RQ-7 Tactical Drone.

Advanced Commercial Drones:

Micro- & Mini- NATO Class I Plus FAA Class D Drones In The Crosshairs:



Above: Popular Mechanics Photo.

The Actual Targets For Net Capture: Micro- and Small Aircraft & “Copters”



Clockwise From Upper Left: Gizmag Perching Drone Photo; DJI Class 1 Photo; Geekwire Quad Photo; 3D Robotics Photo; CCom Quad Photo; Homebuilt Quad.

Advanced Commercial Vertical Flight "Copters" With Military Potential:



Clockwise From Upper Left: Chinese Drone; Nowak Racing GPS Photo; Pepsi Soccer Photo; Gizmag Self Recharging Drone; Drone Factory Photo; Scorpion Racing Drone Photo.

Advanced Commercial Vertical Flight “Copters” With Military Potential:



GPS system likes Open Ground

Open ground is the best place for GPS System, one it receives good GPS signal, it will have Pin-Point Hovering and Fail-Safe return home.

* GPS Antenna only works in open ground to work, it will not work in forrest.

A white DJI Phantom 3 drone is shown flying over a rocky, brown landscape under a clear blue sky. In the foreground, a white remote control is visible, with a tablet mounted on top. The tablet screen displays a live HD view of the drone's camera feed, showing the rocky terrain from the drone's perspective. The text "LIVE HD VIEW" is overlaid on the image.

LIVE HD VIEW

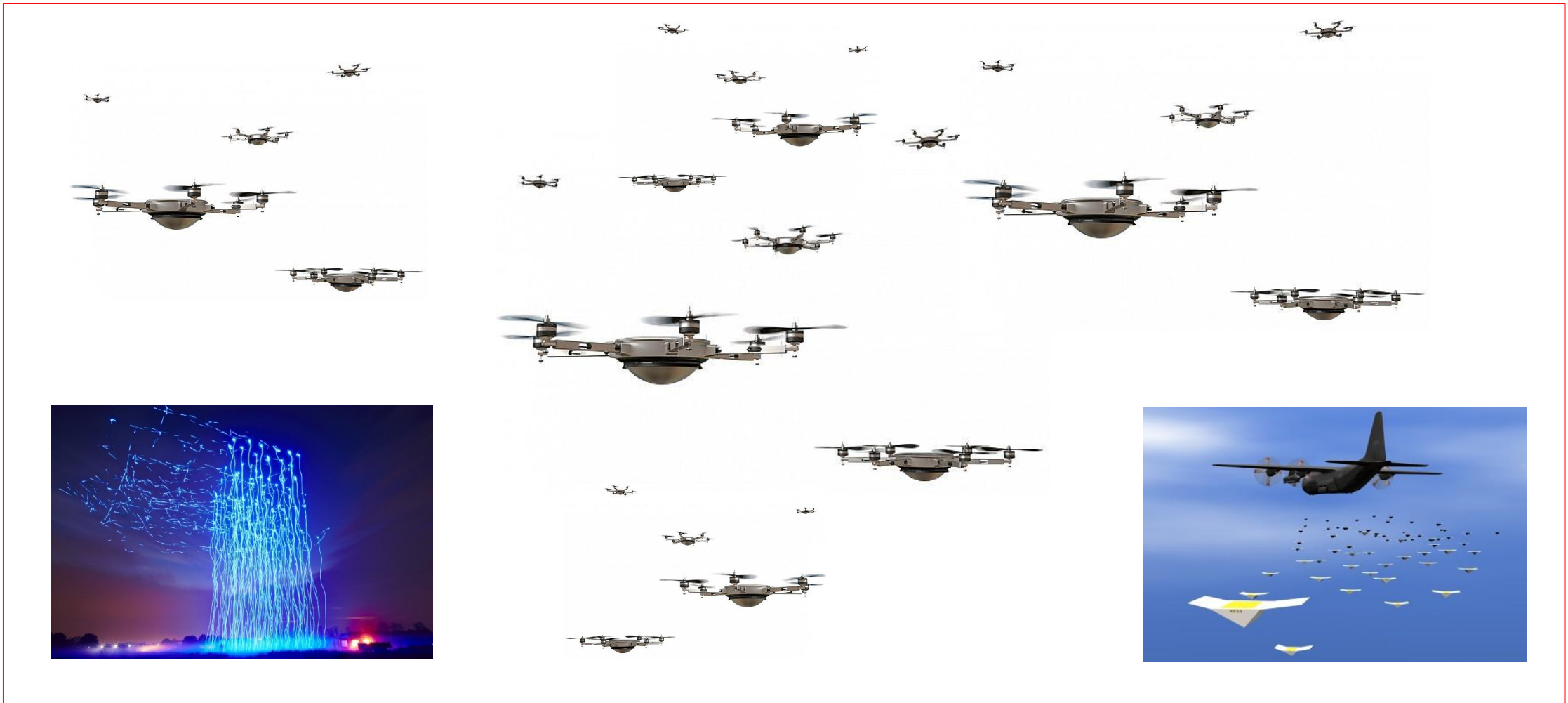
Experience a new view of your world, over distances up to 3.1 miles (5km)* and in real time. Simply connect your phone or tablet, and a 720p HD view of everything your camera sees as you fly is displayed live. This immersive view streams to you in absolute clarity, enabling you to get that perfect shot and experience flying in a unique way.

*Maximum range tested in open areas free of interference and may vary depending on local regulations.

Left Above: NAZA Storm Racing Drone; Right Above: DJI Phantom 3

The Real Threat: “Militarized Commercial Drones”:

Advanced Drones Demonstrating Military “Swarming” Potential:



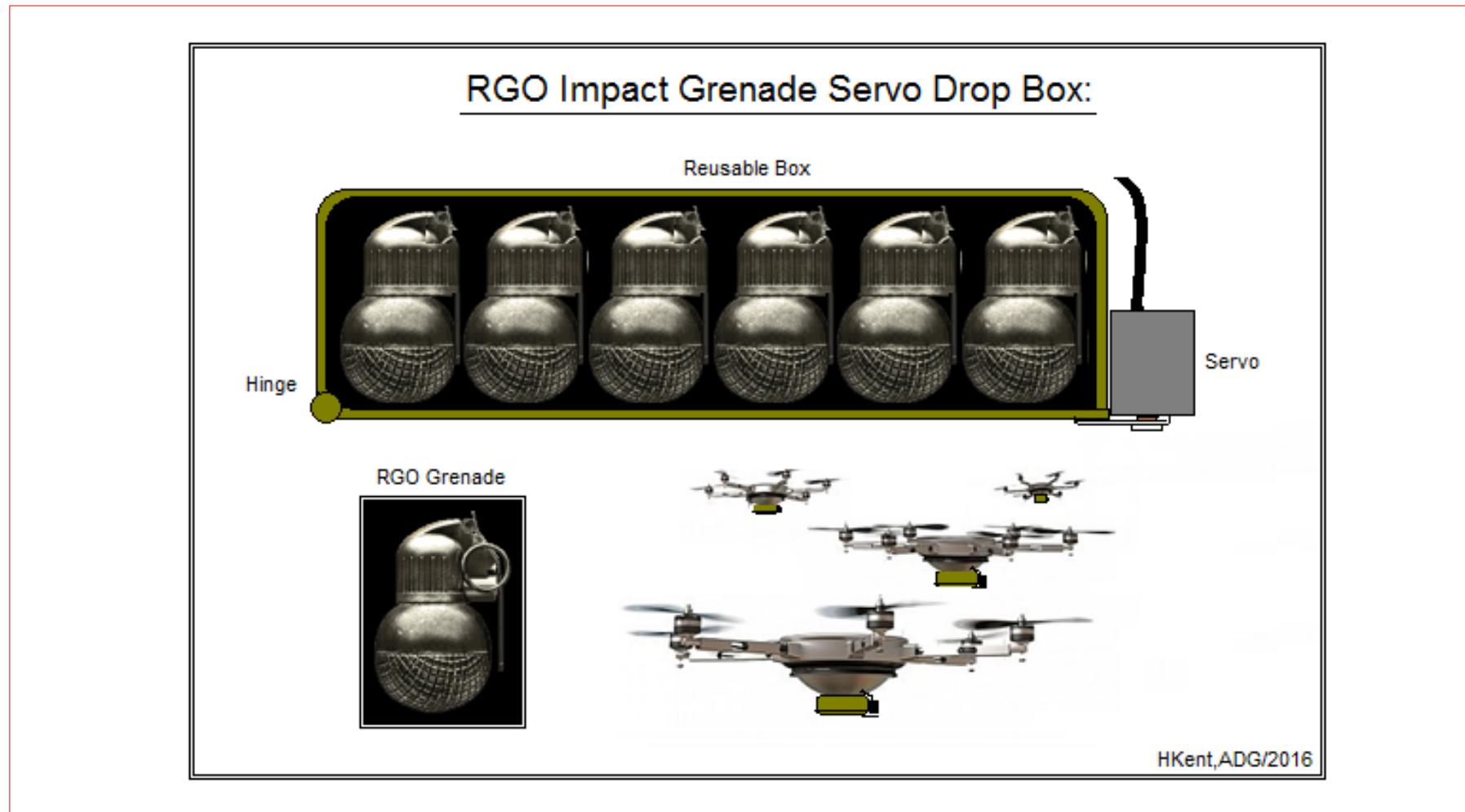
Clockwise From Upper Left: Popular Mechanics Drone Swarm (Composite); Intel Quadcopter Swarm Photo; USAF Swarm Concept.

Advanced Drones Demonstrating "Militarization" Potential:



Clockwise From Upper Left: PackStat Drone & IED; ARCAA Manipulator Arm, Mortar Round, Houston Chronicle Refinery; CBC.ca Quad Copter Power Lines & Mylar Tape.

Advanced Drone "Militarization" Potential Using Threat Ordnance:

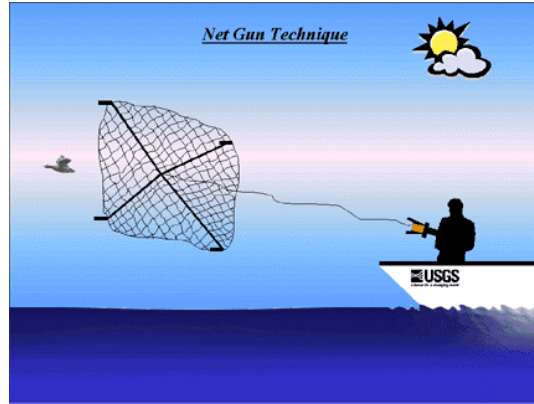


Potential Class I Counter-Measures:

Attacking Small Drones:

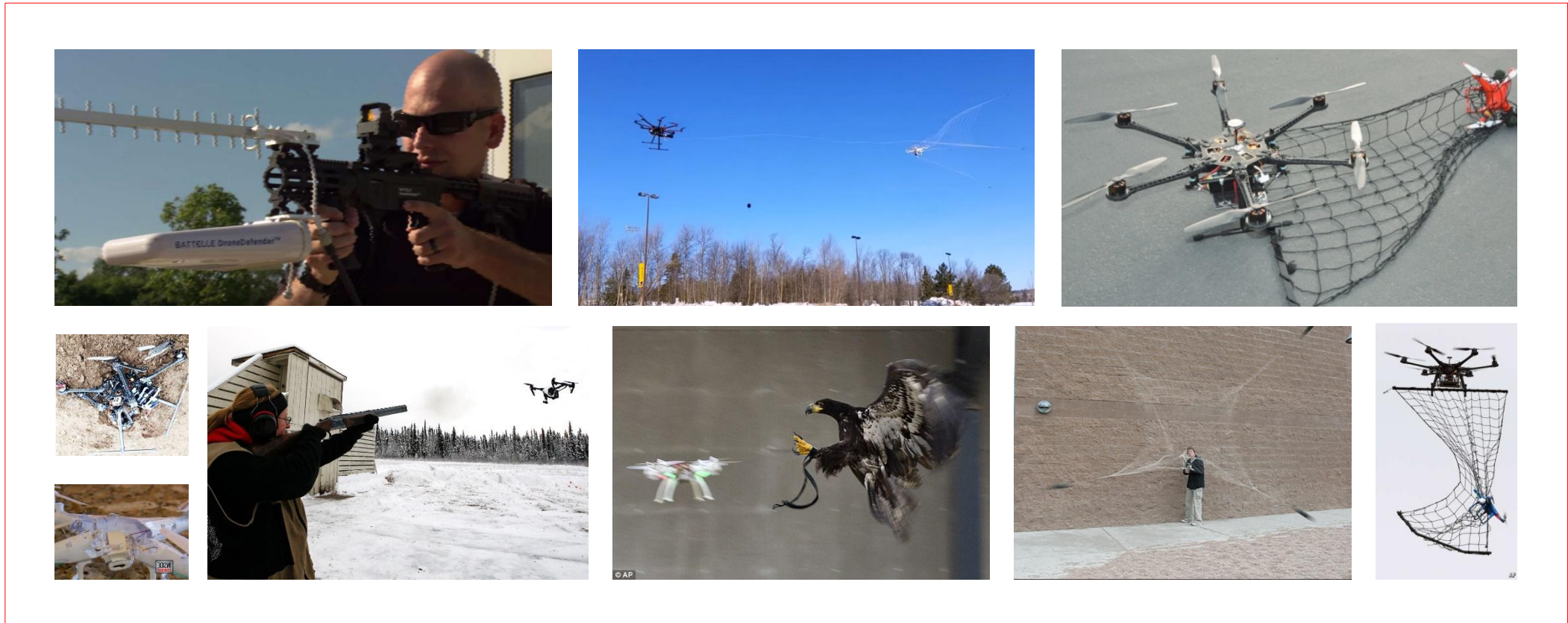
- Drones Are Aerostructures So They Are Fragile...Particularly "Copters".
- Projectiles May Pass Through Without Damage Unless Vital Components Are Hit.
- Small Moving Drones Provide Challenging Targets Except With Birdshot.
- Shotguns And Muzzle Blast Nets Or Entanglements Have <40 Yard Range.
- Most Drone Lift Capability Is Very Limited; Camera & Guidance Fit Only.
- All Small Propeller Driven Craft Are Vulnerable To Nets And Entanglements.

Net Gun Capture Examples:



Clockwise From Above Left: NZ Government Photo; USGS Net Gun Photo; NZ Government Photo; Edwards Net Gun Photo; Universal Pictures Hollywood Featuring Arnold Schwarzenegger "**Running Man**" Photo; CODA Enterprises Portable & Fixed Net Launcher Systems.

Other Countermeasure And Capture Examples:



Clockwise From Upper Left: Battelle RF Drone Countermeasure; Dron-e-Capture Net; BFM Business Photos; Edwards Net Gun; Daily Mail UK Eagles; Internet Shotgun & Hits.

Air Burst Proximity Round Net Gun Capture Examples:



From Left Above: CODA Muzzle Blast Type Net Guns; Skywall 100 Projectile System Photos.

Instead: A Blank Powered 66mm Cargo Round Launcher?

Introducing: The XProducts Can Cannon



Above: XProducts Photo; US M-200 Blank Cartridge Inset

The XProducts Can Cannon:

- Wildly Successful Commercial Product Developed As A Novelty Item.
- Fires A >5,000 Grain Blunt Nosed Projectile (Aluminum Cans) 100 Yards+.
- Further Developed Into Muzzle Blast Net Gun And Grapple Launch System.

Now Proposed As A Launcher For An IR Proximity Net Launching Projectile...

The Can Cannon In Action With Original Ammunition:



Above: XProducts Photo

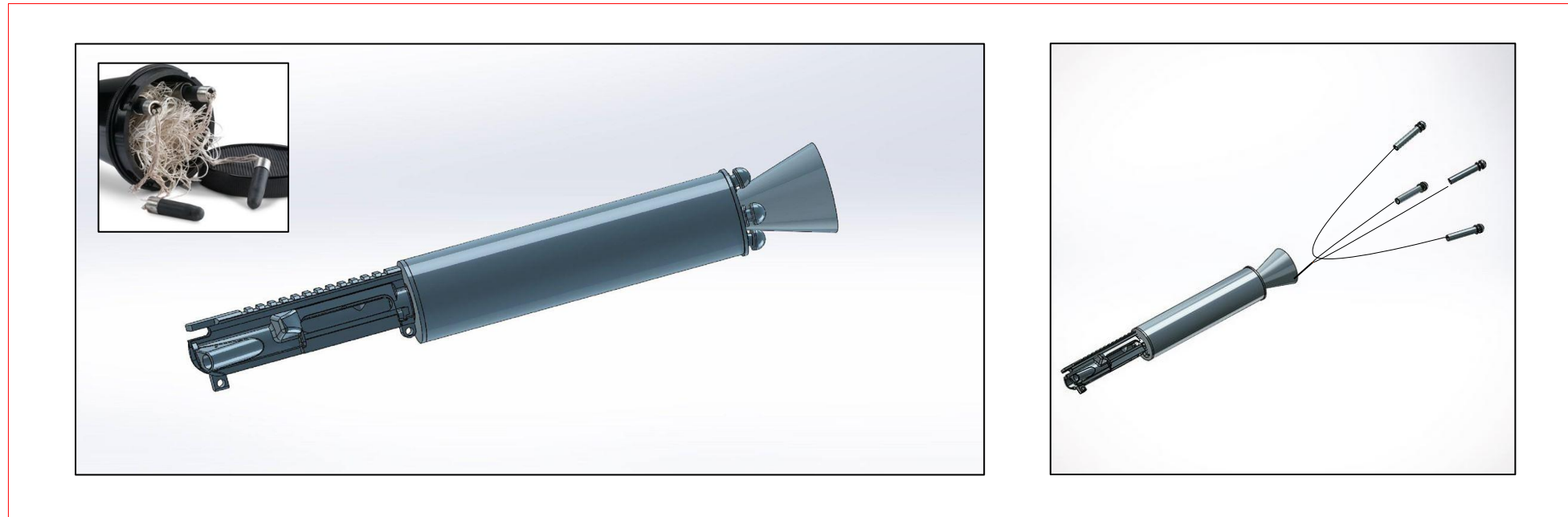
XProducts Can Cannon Accessory Scope:

Real Lucid LLC P-7 80 MOA Drop Reticle



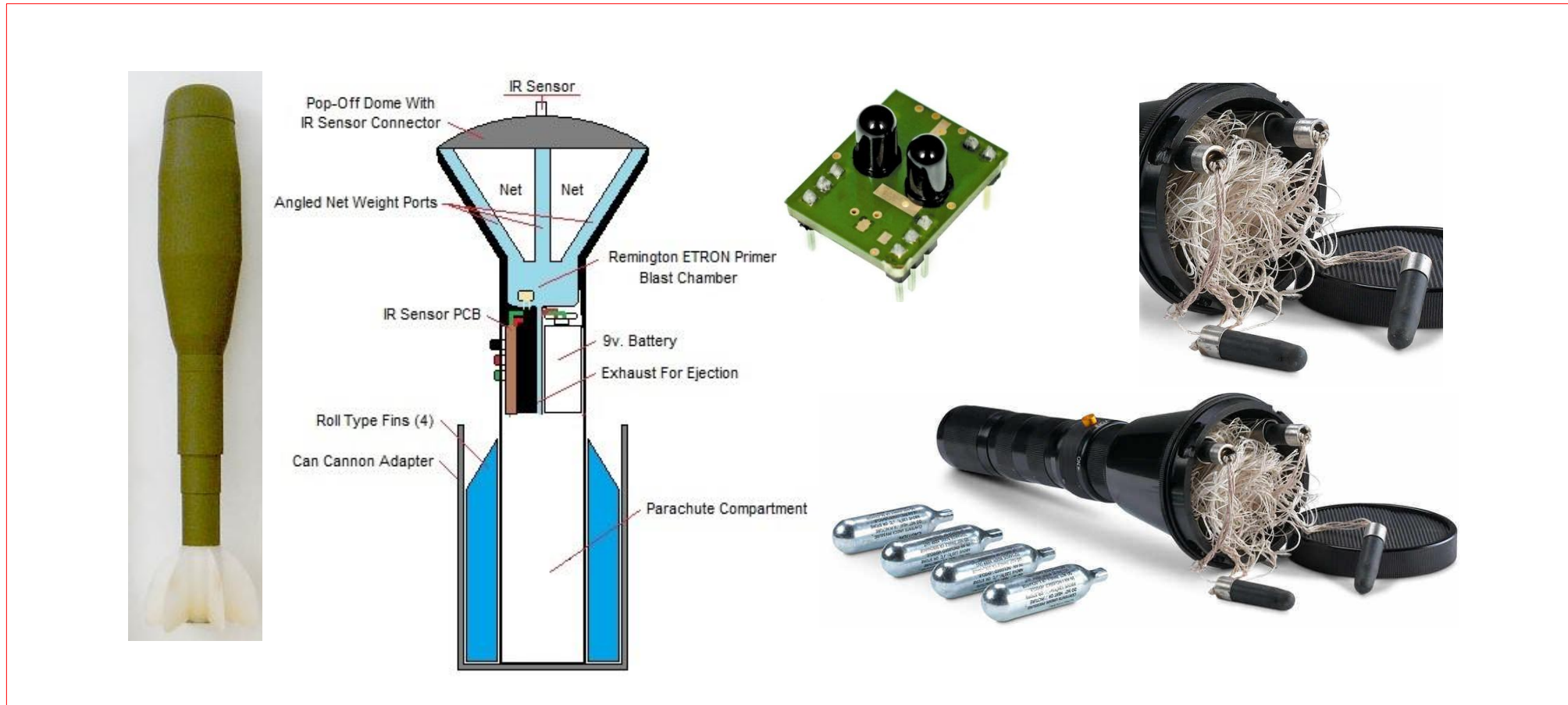
Above: Real Lucid LLC Photo, P-7-2 Reticle.

Original Concept Sketches: Muzzle Blast Type Net Launcher



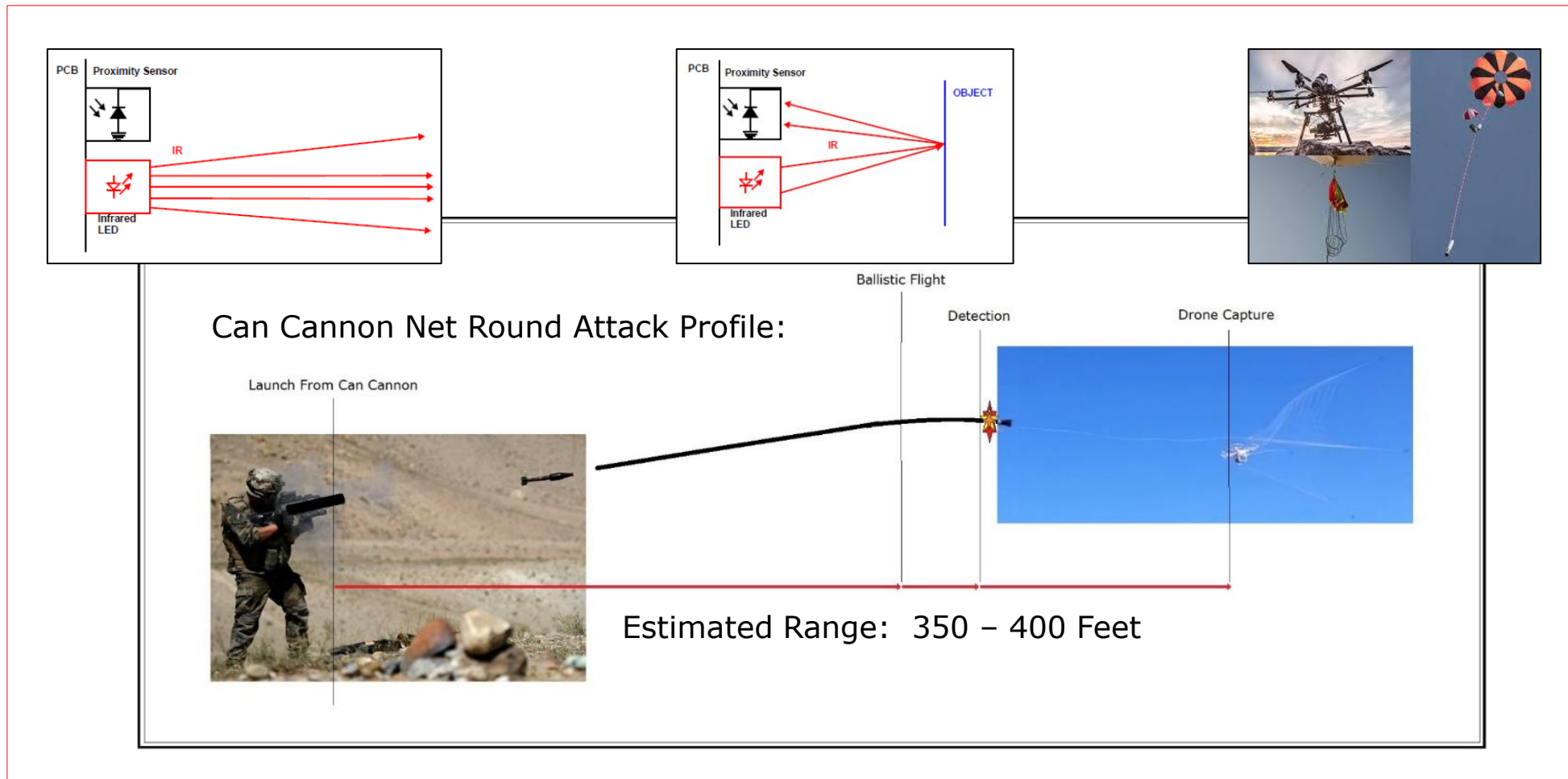
Above: James Malarkey Concepts For Direct Fire Net Gun Powered By Blank Round Muzzle Blast, NOTE: Projectiles Are Attached To The Net.

Concept Sketches: IR Proximity Projectile Type Net Launcher



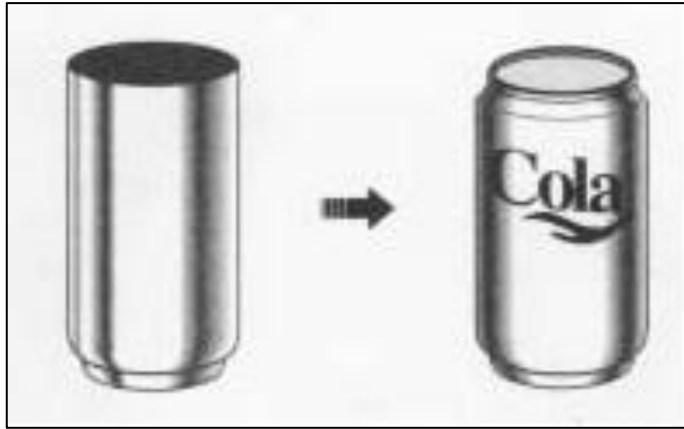
From Left Above: Telescoping Rifle Grenade Shaped Projectile; Sketch Of Electric Primer Powered Net Projectile; Alibaba IR Proximity Switch; Edwards CO2 Jet Cartridge Powered Net Guns With Net Partially Ejected, CO2 Cartridge Powers Projectiles And Net Is Pulled In Drogue Format.

Concept Sketches: IR Proximity Projectile Type Net Launcher



Above: User Activates Projectile, IR Sensor Transmits After Accelerometer Signal, Object In Field Reflects IR Beam To Detector, Net Fires Capturing Drone. NOTE: Net Projectile Parachutes For Re-Use And Remains Connected To Net Over Entangled Drone Acting To Further Weigh Target Down.

1,001 Other Uses For The 66mm Can Cannon:



UNCLASSIFIED

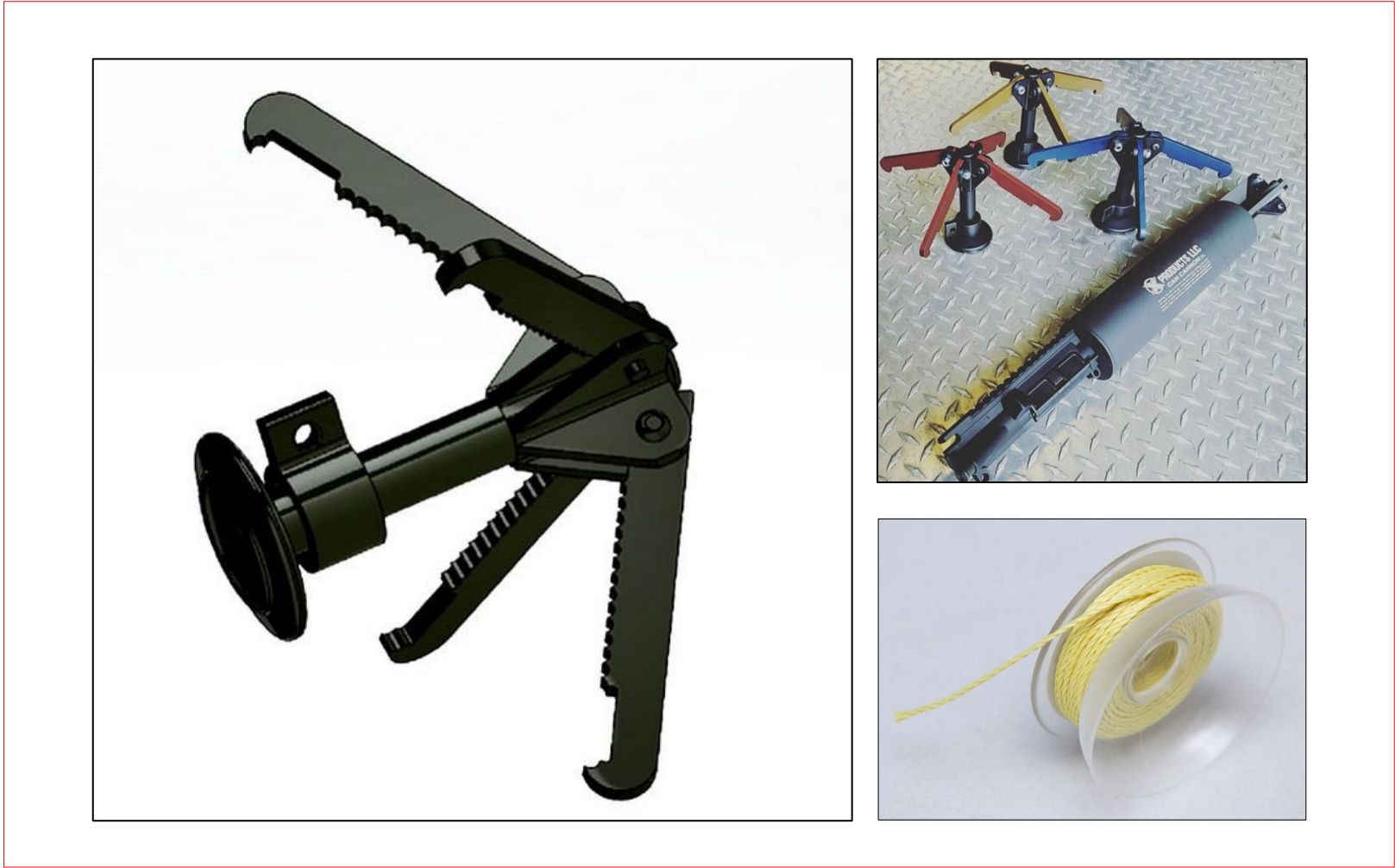
XM1112 Airburst Non-Lethal Munitions (ANLM)

<p>Anticipated Fielding: FY12</p> <p>Status: Developmental</p> <p>Lead Agency: USA</p>
<p>Target Type: Counter-Personnel</p>
<p>Intended Target Response: Deny access into/out of an area to individuals, move individuals through an area, and suppress individuals.</p>
<p>Description: 40 mm round with a fuel enriched pyrotechnic payload, proximity air burst, and settable delay option fuse. The maximum effective range is 150 m threshold/350 m objective. Minimum safe distance is 35 m threshold/15 m objective. Duration of effect is 30 second threshold/60 second objective.</p>
<p>Concept of Employment: Payload is dispensed 5 m above target to provide force protection, crowd control, patrols/convoys, area clearing/denial, and other offensive and defensive operations.</p>
<p>Capability Effect: Flash bang, ocular and auditory impairment, and/or thermal heating.</p>

UNCLASSIFIED



Clockwise From Above Left: Non-Developmental Cargo Round; Yugoslav Style 66mm Rifle Grenade; Impact Grenade; New Picatinny Variable Yield Hand Grenades; Less Lethal Grenades; XM-1112 Airburst Less Lethal (Except Bigger); Line Thrower; ROK Thermobaric 66mm Rocket; Or Anything That Will Fit...



Above: James Malarkey Concept For Grappling Hook; Prototype Grappling Hooks; 950 Pound Test KEVLAR Grappling Hook Cord.

Conclusions:

- The Best Method Of Capture Is The Air Burst Proximity Net Gun Concept.
- The XProducts Can Cannon Is The Most Compatible With Existing Weapons.
- The Versatility Of A 66mm Cargo Round Can Provide Multiple Functions:
Less Lethal Launcher, Grapple & Line Thrower, Grenade Launcher, Other.

NOTE: Since The Can Cannon Is Capable Of Throwing A Riot Grenade Farther Than Anyone Could Possibly Throw It Back, It's Less Lethal Functions May Exceed It's Capability As An Anti-Drone Weapon.

Recommendations:

- Adopt A Cargo Carrying Projectile Launcher With High Projectile Volume.
- Develop A Sensor Fused Cargo Projectile With Multiple Payloads.
- Develop A Non-Fused Cargo Launching Sabot For Other Objects
- Utilize Existing Fusing & Payloads; Airburst Rounds, Smoke And Blast Or Fragmentation Grenades, Parachute Cameras, et cetera.
- Definitely Obtain The Grappling Hook For Climbing And Tripwires.

With Special Thanks To:

John H. Edwards, Program Management Officer
US Army RDECOM, JSSAP, Picatinny Arsenal

(Who Suggested The Topic)



Credits:



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