



Qualification Testing of the PGU-47 Armor Piercing High Explosive Incendiary-Traced 25mm Cartridge

NDIA Armament Systems Forum

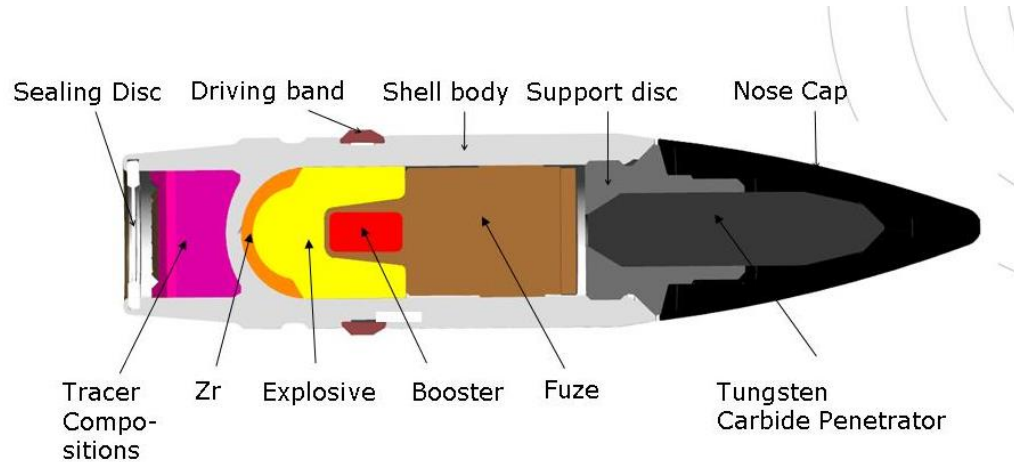
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Background

- Cartridge developed by Nordic Ammunition Group (NAMMO) Raufoss, Norway
- Fuze developed by Dezamet, S.A.
- Fired from GAU-22/A, developed by General Dynamics Ordnance and Tactical Systems (GD-OTS)
 - Internally mounted on F-35A
 - Externally mounted pod for F-35B and C
- Candidate to meet F-35 ORD
- OSD approved DoN FCT to conduct comparative testing
- USN Program Lead is NAVAIR, Code PMA-242

PGU-47 Description



Component	Material, Nomenclature	Net Explosive Weight
Propellant	SMP 795	87.5 grams (g)
Main Charge	PBXN-11	6.5 g
Booster	PBXN-5 Type I, Class 4	0.28 g
Tracer	NAMMO compositions	5.5 g
Fuze Detonator	M55 Stab	82 milligrams (mg)
Fuze Booster Lead	PETN, Class 4 (D)	18 mg

Basic Safety Tests

Test	Requirement	Conduct	Status
28 Day T&H	MIL-STD-2105	NAMMO	Complete
Vibration	MIL-STD-2105	NAMMO	Complete
4 Day T&H	MIL-STD-2105	NAMMO	Complete
40 ft. Drop	MIL-STD-2105	NAMMO	Complete



In insensitive Munitions and Hazard Class Tests

Test	Requirement	Conduct	Status
Fast Cook Off	MIL-STD-2105, NAVSEAINST 8020.8	NAMMO	Complete
Slow Cook Off	MIL-STD-2105	NAMMO	Complete
Bullet Impact	MIL-STD-2105	NAMMO	Complete
Fragment Impact	MIL-STD-2105	NAMMO	Complete
Sympathetic Reaction	MIL-STD-2105, NAVSEAINST 8020.8	NAMMO	Complete
Shaped Charge Jet Impact	MIL-STD-2105		Not Planned
Energetics Qualification	NAVSEAINST 8020.8	USN	Complete

Reaction types for each test were typical for minor caliber high explosive gun cartridges.

Insensitive Munitions and Hazard Class Tests



Test	Requirement	Conduct	Status
PVAT		USN, NAMMO	Complete
Function and Casualty		USN, GD-OTS	Complete
Salt Fog	MIL-STD-810	GD-OTS	Complete
Sand and Dust	MIL-STD-810	USN	Complete
Arena	JTCG/JMEM	USN	Complete
Shipboard Shock	MIL-S-901	USN	Complete
Waterproof	MIL-STD-810	GD-OTS	Complete



Test	Requirement	Conduct	Status
HERO	MIL-STD-464		N/A
ESD	MIL-STD-331 MIL-STD-464	USA, Redstone	Complete
EMV	MIL-STD-464		N/A
Lightning Strike	MIL-STD-464	USA, Redstone	Complete
THVA	MIL-STD-810	GD-OTS	In Progress
Terminal Effects	GD-OTS A11726 CID	NAMMO	Complete



Fuze Tests

Test	Requirement	Conduct	Status
Fuze Function	GD-OTS A11726 CID	NAMMO/GD-OTS	Complete
Fuze Arming Distance	MIL-STD-331	NAMMO	Complete
Primary Explosive Component Safety	MIL-STD-331	NAMMO	Complete
Interrupter Effectiveness	MIL-STD-331	Dezamet	Complete
Jolt	MIL-STD-331	NAMMO	Complete
Jumble	MIL-STD-331	NAMMO	Complete
Lead Azide	NAVSEAINST 8020.3	USN	Complete
5 ft. Drop	MIL-STD-331	NAMMO	Complete
Brush Impact	MIL-STD-331	NAMMO	Complete

Qualification Status

Currently preparing data packages for final (type) qualification, final hazard classification, and final operational capability.

