

Patria

Expanding the Armed Forces Capability through Turreted Mortar Systems

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Joint Armaments Forum & Exhibition, Phoenix, AZ, May 14, 2014

Patria Briefly

- Over 80 years of experience in Mortar Business
- A trusted provider of defence, security and aviation life-cycle support services and technology solutions.
- Owned by the state of Finland (73.2%) and Airbus Company (26.8 %).

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Presentation outline and contents

1. What are turreted mortars?
2. Mortar roles in combat
3. Capability gaps of muzzle loading mortars
4. Performance improvements by turreted mortars
5. Ammunition
6. Challenges



Patria Nemo AMV

What are turreted mortars?

- Breech loading
- 120 mm smoothbore weapon
- Fires conventional 120 mm mortar ammunition
- Vehicle/Vessel based



Patria Nemo AMV



Patria Hägglunds AMOS

Patria Nemo for Finnish Navy

Mortar Roles in Combat

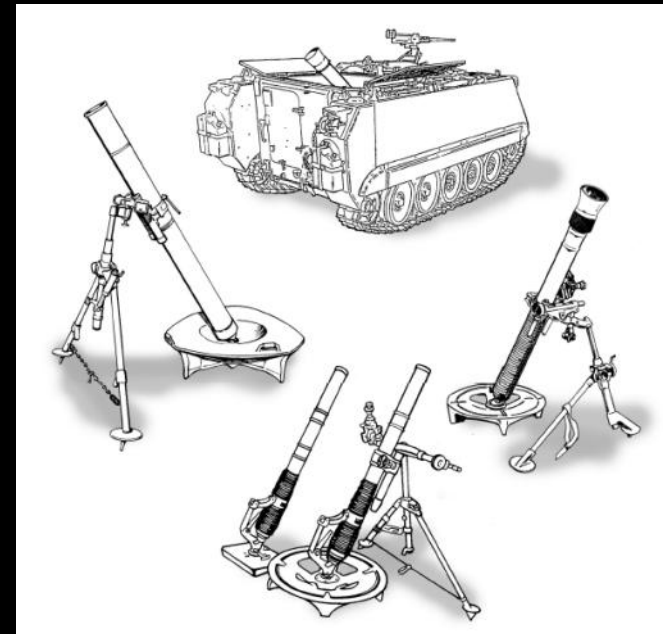
From U.S. Army Field Manual, FM 3-22.90, Dec.2007:

Mortars are suppressive indirect fire weapons.

They can be employed to:

- Neutralize or destroy area or point targets,
- screen large areas with smoke
- provide illumination or coordinated high-explosive/illumination.

The mortar platoon's mission is to provide close and immediate indirect fire support for maneuver battalions and companies.



Capability gaps of muzzle loading mortars

- Response time
- Protection
- Survivability
- Mobility
- Accuracy
- Range



Performance improvements by Turreted Mortars

Response time

- Open fire within seconds after stopping
- Capable of creating fire missions independently, if needed

Short response times improve the capability of mortars to offer immediate fire support.



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Performance improvements by Turreted Mortars

Protection

- The crew under armor all the time
- protected from gunfire, splinters and NBC threats



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Performance improvements by Turreted Mortars

Mobility

- Offer the same level of mobility and protection as the units they are supporting.
 - Mechanized Battalion
 - Armored personnel carriers (APC)
 - Infantry Fighting Vehicles (IFV).
- Shoot and Scoot



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Performance improvements by Turreted Mortars

Accuracy and Range

- Automated aiming systems
- Recoiling weapon offering stable muzzle velocities
- 3 meters long barrel offering more range

Increased range => Larger area to support



Performance improvements by Turreted Mortars

Direct Fire/ Direct Lay and MRSI

- Engage new kinds of targets
- Improved survivability
- Multiple Rounds Simultaneous Impact (MRSI)



Performance improvements by Turreted Mortars

Stabilization and Naval Use

- Stabilized turret enable firing from a moving platform
- Indirect fire support for Naval forces
 - Landing operations
 - Patrolling



Nemo for Finnish Navy



Nemo for UAE Navy

Ammunition

Existing Ammunition Types

- Existing 120 mm smoothbore mortar ammunition can be utilised
 - High Explosive
 - Illuminating
 - Smoke
 - Guided

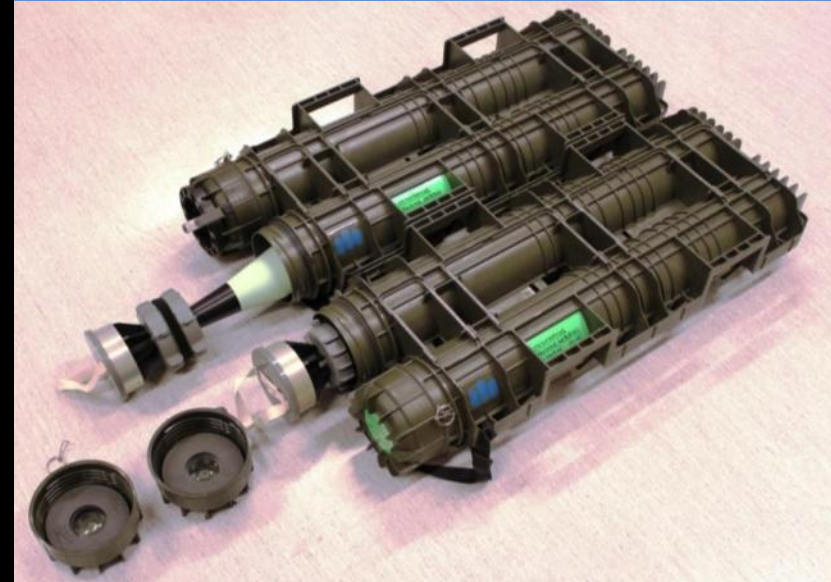
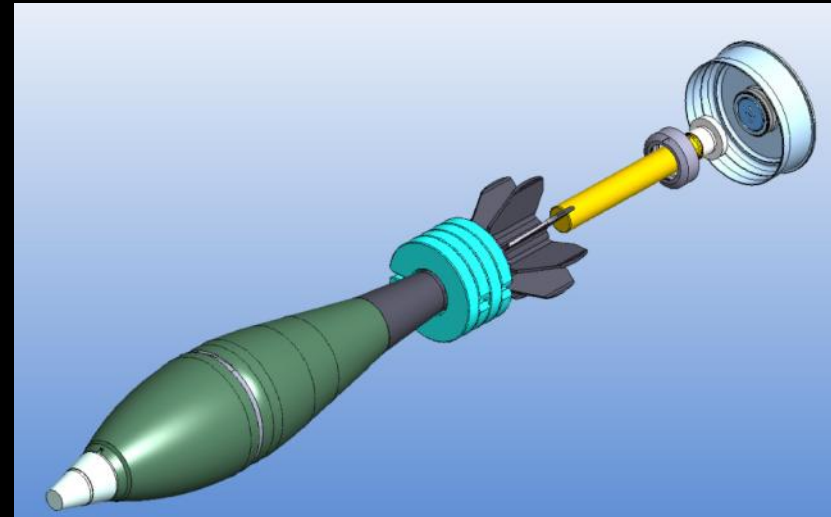


ATK XM395

Ammunition

Stub Case

- Stub case as an interface between weapon and ammunition
- Compatible with almost all ammunition types
- Ammunition specific connector



Challenges

- Doctrines and requirements related to muzzle loading mortars.
- Challenge as a weapon manufacturer is to spread awareness among mortar users that there are:
 - More modern and more capable systems available nowadays and
 - they can still utilize the existing mortar ammunition.

