Development of LW25 Family of Ammunition

Lee Olson
Design Engineer
ATK Medium Caliber Systems

OSR Public Release Approval Ref 08-S-1203
Outline

Why LW25

Gun Characteristics Overview

Cartridge Family

  Cartridge Design Characteristics
  Common Cartridge Components
  Common Projectile Components
  Cartridge Performance Summary

Conclusion

Acknowledgements & Contacts

Questions & Answers
Why LW25

System size and weight comparable to M2 and Mk19

Increased Lethality

- 70 to 85% of M789 and M792
- Programmable Air Burst Munition (PABM) capable

Remote or Manual Operation

Application-Nearly anywhere a M2, Mk19 or M240 is used
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caliber</td>
<td>25mm X 59mm</td>
</tr>
<tr>
<td>Rate of Fire</td>
<td>230-260 shots/minute</td>
</tr>
<tr>
<td>Power Source</td>
<td>External (electric) chain driven action</td>
</tr>
<tr>
<td>Power Requirement</td>
<td>0.4Hp @ 28V DC</td>
</tr>
<tr>
<td>Predicted Reliability</td>
<td>Mean Rounds Between Stoppages, 35K</td>
</tr>
<tr>
<td>Feed System</td>
<td>Dual Feed, First Round Select</td>
</tr>
</tbody>
</table>
LW25 Gun Characteristics

Size (w/o feed chutes):

Length- Less than 1,194 mm (47”)
Width- Less than 280 mm (11”)
Height- Less than 270 mm (10.625”)

Weight:

Receiver 15.8 kg (34.9 lb)
Feeder 8.6 kg (19 lb)
Barrel 6.2 kg (13.6 lb)
Total 30.6 kg (67.5 lb)
LW25 Cartridge Family

LW25 Ammunition

TP  DUMMY  AIRBURST  HEI  HEDP
LW25 Ammunition Family (Future Development)

Shot shell
Non-lethal
TP Marking
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (max)</td>
<td>138.5 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>174 g</td>
</tr>
<tr>
<td>Projectile Mass</td>
<td>141 g</td>
</tr>
<tr>
<td>Muzzle Velocity</td>
<td>400 m/s</td>
</tr>
<tr>
<td>Dispersion</td>
<td>0.5 mils</td>
</tr>
</tbody>
</table>
Common Cartridge Components
(reduces development time)

• Primer (common with .50 Caliber)
• Cartridge Case
• Propellant
Use of Common Components minimizes Development time

- Rotating Band for HEI, HEDP and TP common with M792, M793, PGU-23, PGU-25 etc.
- Modified M759 Fuze used on both HEI and HEDP, over 90% common with M759 Fuze used on M789 Cartridge
- Banded Projectile Body common to HEI and HEDP
- Airburst Projectile over 90% common with XM25
HEI and HEDP Projectile

HEI

HEDP

OSR Public Release Approval Ref 08-S1203
Cartridge Performance Summary

Velocity more than 400 m/s

Case Mouth Pressure less than 275 MPa

Dispersion less than 0.5 mil X 0.5 mil

Predicted HEDP Penetration more than 1.4”

Blast and Incendiary effects 85% of M792
Conclusion

LW25 Ammunition and Gun offer:

• Low weight, low recoil, high lethality
• Combined Antipersonnel and Light Armor Penetration
• Dual Feed, First Round Select
• Lethality for Troops in defilade
• High reliability of gun and ammunition

LW25 is a Unique tactical solution.
Acknowledgements

Mr. Larry Douma, ATK Medium Caliber Systems
Ms. Linda Heuer, ATK Medium Caliber Systems

Contacts

Clark Schiferl (LW25 Program Manager)
(480) 324-8797
Clark.Schiferl@atk.com

Lee Olson (Ammunition Design Engineer)
(763) 712-7721
Lee.Olson@atk.com

Rodney Ward (Medium Caliber Systems Business Development)
(480) 324-8608
Rodney.Ward@atk.com