Safety Test of the XM109 Rifle

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Agenda

- Test Management
- Safety Release Test Objectives
- Weapon System Configurations
- Weapon Specifications
- Limited Safety Release Test Results
- Q & A
Test Management

US Army Developmental Test Command
  Mr. Hubert Cole
  Mr. Bernie Sokolis
  Mr. Jorge Hernandez

Aberdeen Test Center
  Mr. George Niewenhous

US Army Research Laboratory
  Human Research and Engineering Directorate
  Advanced Munitions Concept Branch
  Mr. Timothy Brousseau
Safety Release Test Objectives

To document the technical performance of XM109 rifle with XM1049 and XM1050 ammunition.
Rifle Development
Specifications

Caliber: 25 mm
Operation: Semi-Automatic
Barrel Length: 17.6 inches (44.7 cm)
Rifling Twist: 1 in 22
Rifle Weight: 33.6 pounds (15.9 kg)
Overall Length: 46 inches (144.78 cm)
Specifications

Caliber: 25mm
Operation: Semi-Automatic
Barrel Length: 17.6 inches (44.70 cm)
Rifling Twist: 1 in 22
Rifle Weight: 35.18 pounds (15.9 kg)
Overall Length: 46 inches (116.84 cm)
CARTRIDGE, 25 MILLIMETER
Target Practice (TP) XM1050

- Over 20,000 rounds built and fired to date
- Simple two piece projectile construction
- Integral rotating band
- Common cartridge case, primer and propellant
XM1049 HEAP

- Developed for the XM307
- Off the shelf modified M759 nose fuze with spitback
- Advanced molybdenum shaped charge liner
- Flight tested to 963 Meters
- Dispersion ~ 0.75 mils

First Generation
# Limited Safety Release Results

<table>
<thead>
<tr>
<th></th>
<th>990rds (TP)</th>
<th>85rds (HEAP)</th>
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<tbody>
<tr>
<td><strong>Rounds Fired</strong></td>
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<tr>
<td><strong>Recoil Energy</strong></td>
<td>57.51 ft-lbs</td>
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<tr>
<td><strong>Recoil Impulse</strong></td>
<td>11.22 lb-sec</td>
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<tr>
<td><strong>Sound Pressure</strong></td>
<td>174dB</td>
<td>156dB</td>
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<tr>
<td><strong>Fuze Arming</strong></td>
<td>20.4m</td>
<td>56.3m</td>
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<tr>
<td><strong>Hearing Protection</strong></td>
<td>double (-5m)</td>
<td>single (&gt;5m)</td>
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<tr>
<td><strong>Daily Shot Limit</strong></td>
<td>25</td>
<td></td>
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<tr>
<td><strong>Inspection</strong></td>
<td>500rds</td>
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Questions