



# 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



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



# Specifications



<b>Caliber</b>	25mm
<b>Operation</b>	Semi-Automatic
<b>Barrel Length</b>	17.6 inches (44.70 cm)
<b>Rifling Twist</b>	1 in 22
<b>Rifle Weight</b>	35.18 pounds (15.9 kg)
<b>Overall Length</b>	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



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



# Questions

