30mm x 173mm Air Burst Munition

Applications for Ground and Sea Platforms

NDIA

24 April 2007
This briefing will discuss:

- ATK Air Burst Munitions Evolution
- System Overview
- Air Burst Munition Test Shots and Video
Air Burst Ammo Target Set

Urban & Wall

Lightly Fortified Infantry Emplacement (LFIE)

ATGM Crew

Troops in squad

Watercraft

BTR

Lightly Armored Vehicles
ATK Experience

An advanced weapon and space systems company

• Objective Individual Combat Weapon (OICW)
• XM25 Weapon System
• ALACV - Super 40mm Air Burst round
• Medium Caliber Ammunition
  – 20mm
  – 25mm
  – 30mm
• Gun Designer and Producer
  – Bushmaster Family
  – MK44
  – LW25
• Designer and Producer of Inductive Setting Systems
ATK Air Bursting Munitions Evolution

An advanced weapon and space systems company

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
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</thead>
<tbody>
<tr>
<td>Shoulder Fire</td>
<td>OICW 20mm Ammo</td>
<td>20mm Firing</td>
<td>MEMS</td>
<td>25mm Non-Lethal</td>
<td>Common Air Burst Fuze</td>
<td>XM25 25mm MEMS 25mm</td>
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<td>Cannon Caliber</td>
<td>30mm ABM Nose Fuze</td>
<td>30mm Firing Demonstrations Dec 2001 May 2002 Nov 2002</td>
<td>MK44 30/40mm Cannon</td>
<td>Super 40mm Development ALACV</td>
<td>30mm ABM Base Fuze Firing</td>
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• Bursting munition applications must be **system integration focused**
  – Open architecture — system of systems
• Bursting munition effectiveness is centered on error budget management
  – Interfaces must be in place “now” for later integration
• Platform integration and interfaces are critical
• Bursting munitions is a **system** not just fuze or ammunition
  – Fuze  – Fire control interface
  – Setter  – Human interface
  – Gun
ATK Air Burst System Overview

Key Components

MK44 Chain Gun

Gun Control Unit (GCU) with Inductive Fuze Setter

Fire Control System

ATK ABM Projectile

Target Set

Expeditionary Fighting Vehicle (EFV)
Other MK44 platforms include:
LPD-17, Bradley Fighting Vehicle & FCS
30mm ABM Data

Physical Data

- Cartridge Length: 290mm
- Cartridge Weight: 728g
- Projectile Weight: 423g
- Propellant Type: Single Base
- Cartridge Case Length: 173mm
- Cartridge Case Material: Aluminum
- Primer: M36A2 Percussion
- Fuze: ATK Turns/Time

Performance Data

- Muzzle Velocity: 980m/s
- Chamber Pressure (ambient): 360MPa
- Dispersion: 0.5mr
- Penetration: TBD
- Trace Time: 2 sec min, 5-6 sec typical
Shot 2 – 500m Air Burst Sequence  Highspeed

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Shot 3 – 500m Air Burst

Down Range Views

Side View

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Shot 3 – 500m Air Burst    Highspeed

FASTCAM-APX 120K
Start frame: 1662
4000 fps +00:00:00.415250sec
1/4000 sec 1024 x 512

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ABM Test Video