GD-OTS Canada New .50 cal SRTA

- Project Objectives
- Current Training Ammunition Products/Projects
- Concept
- Performance
  - Simulations
  - Test Data
- Applications/Benefits
- Summary
Project Objectives

- To develop an improved .50 cal SRTA
  - Eliminate need for weapon adaptors/ancillary equipment
  - Increase effective ballistic match range
  - Increase functioning reliability
Current Product
.50 cal Limited Range Training Ammunition

- Non-toxic, 45g bullet with rear fins to limit range
- Functions in M2HB and QCB machineguns
- Ball and tracer versions in production since 2001
Current Product .50 cal LRTA

- Accuracy of 30 cm at 550 m range
- Ballistic match up to 800 m with M33
- LRTA = Max range of 3,500 m or 50% reduction vs. M33
- Now in service in 3 NATO armies
Current Product
SHORT STOP® 7.62 mm SRTA

- 7.62 mm SHORT STOP® training round
- Available in 4B/1T configuration
- Now in Production for DoD as M973 & M974
Current R&D Project
SHORT STOP® 5.56 mm SRTA

- Ballistic match to 100 m with max range of 600 m
- Under final development with ARDEC
- Phase III recently awarded
The .50 cal SRTA Cartridge is:

- Our newest Short Range Training Solution
- An Internally-funded GD-OTS Canada R&D program
- Now in test and evaluation phase
.50 cal SRTA Concept

SRTA performance objectives:
- No modifications of M2 machinegun
- Improved ballistic match with M33/M17
- Reliable functioning from –20 to +50°C
- Non-toxic components
- Max range of 700 m
- Frangible projectile
  - No splashback beyond 25 m
- Improved performance vs. M858
The .50 cal SRTA has:

- A monolithic, frangible projectile
- Forward fins with controlled spin technology to limit range
  - Fins introduce a "reverse" spin/drag, opposing rotation
  - The projectile quickly becomes dynamically unstable
- Very good accuracy due to consistent ballistic performance
  - Yaw on target is trade-off for greatly reduced max range
.50 cal SRTA Performance

SRTA performance Objectives/Results

- Objective: ballistic match with ball round at 150 m
  - Result: > 200 m match range possible
- Objective: Drop of < 15 cm compared to ball at 150 m
  - Results obtained: < 5 cm
- Objective: Mean radius Dispersion < 30 cm at 150 m
  - Results obtained: < 15 cm
.50 cal M858 Ball and Tracer M860 training rounds

- Type classified in 1983 and introduced in the US DoD
- Requires use of M3 Recoil Amplifier Barrel Assembly
- Muzzle velocity is approx. 4,000 feet per second.
- Plastic projectile mass is approx. 3.3 grams
- Ballistically comparable to M17/M33 out to 150 meters
- Maximum range of 700 meters
.50 cal  SRTA Ballistic Simulation

Comparison of ballistic drop with M858 at 150 m
Comparison of ballistic Drop vs. M33 Ball round
Velocity decay vs. M33 simulation with PRODAS
.50 cal SRTA Ballistic Testing

Shadowgraph images from DREV spark range
.50 cal  SRTA Ballistic Testing

- Typical Drag vs. Velocity curve measured
.50 cal SRTA Ballistic Simulation

- Maximum range simulation with PRODAS
  - Less than 700 m
Ballistic match and accuracy tests at 150 m, June 2007

– Reference is M33
.50 cal SRTA Ballistic Testing

- Frangibility testing at 50 m range
  - No penetration of a 10 mm armor plate
  - No splashback at 25 m after 30 shots fired
Minimal barrel fouling in M2 barrel observed
Training Applications/Benefits

- Maritime training with limited surface danger-zones
- Used on reduced safety template ranges
- Training with reactive steel targets
- Fired on “Lead-free” ranges
- Enables engagements with targets on 2nd and 3rd floor windows or on overpasses
- Reduces friction created by units competing for range time
March-April 2008 edition of Infantry Magazine

- Article entitled: “SRTA allows 360° Training Capability”
- At Fort Riley, Kansas: “SRTA is 1st Division's means to produce one awesome, realistic and simple training event.”
- “Only SRTA can provide free-thinking using fire and maneuver in a 360° training environment because of the SDZ”
- “SRTA allows trainers to condense the battlespace”
- “SRTA ranges can be created from maneuver spaces”
- Because of the increases in land resources the training tempo has increased.”
- “Without SRTA, the 1st Division and the U.S. Army transition team trainers would face significant and difficult obstacles”
SUMMARY

- The new .50 cal SRTA lead free, frangible concept represents an advance in small arms training technology.
- The new .50 cal SRTA is currently an in-house R&D project.
- It optimizes the use of range training resources due to its significantly reduced danger-template.
- This new product will further enhance the family of:

  Short Range Training Solutions offered by GD-OTS Canada.
Contact Information

GENERAL DYNAMICS
Ordnance and Tactical Systems–Canada

John MacDougall:
Business Development Manager

Telephone: 1-514-582-6226

E-mail: john.macdougall@can.gd-ots.com
Weapon cycling video