CRUSADER

The Army XXI Firepower Revolution

Combat Vehicle Conference

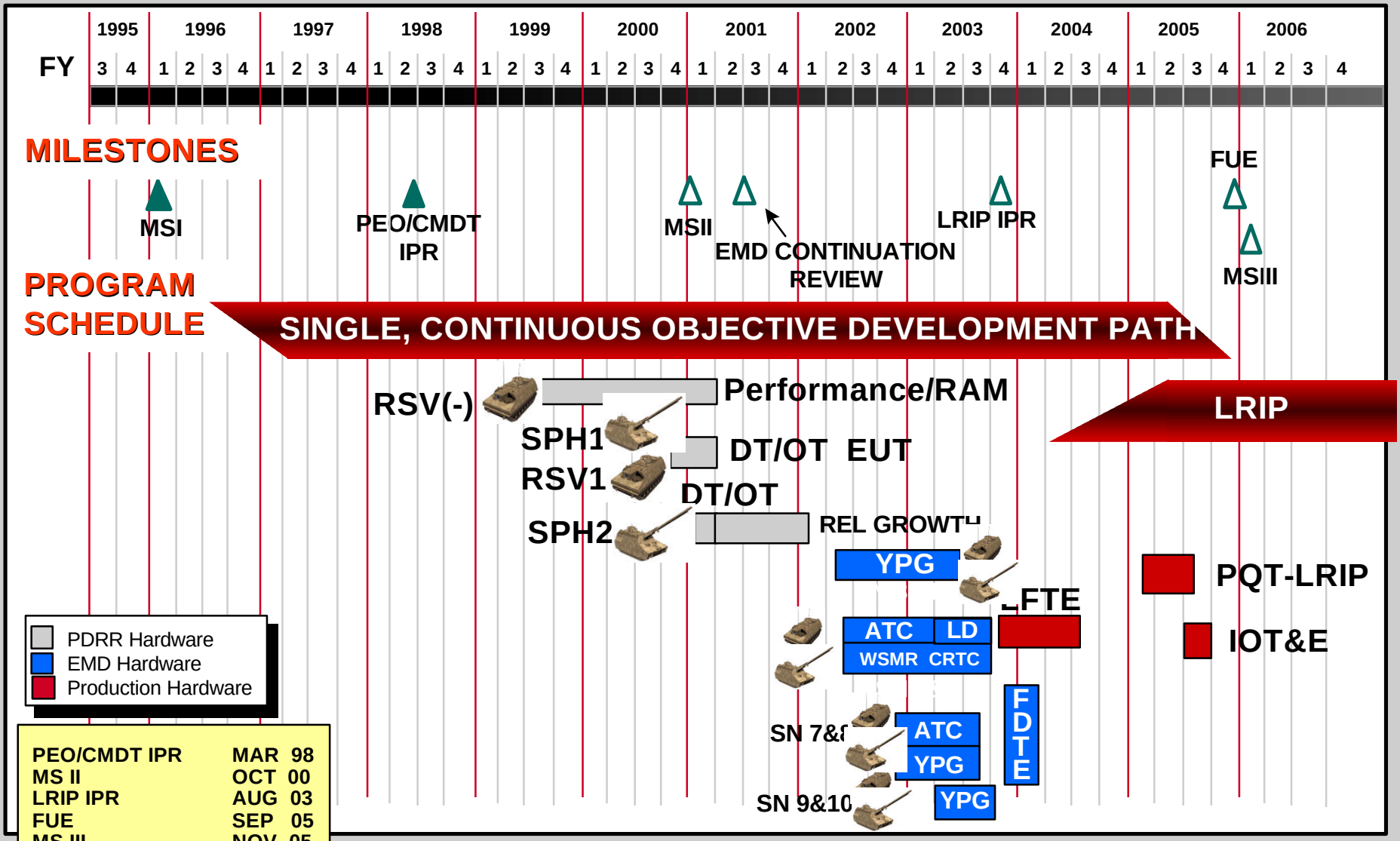
Presented by:

Kevin M. Fahey

DPM Crusader

September 22-23, 1998

Program Schedule



SN: Set Number (2 vehicles)

Crusader - A System for the 21st Century

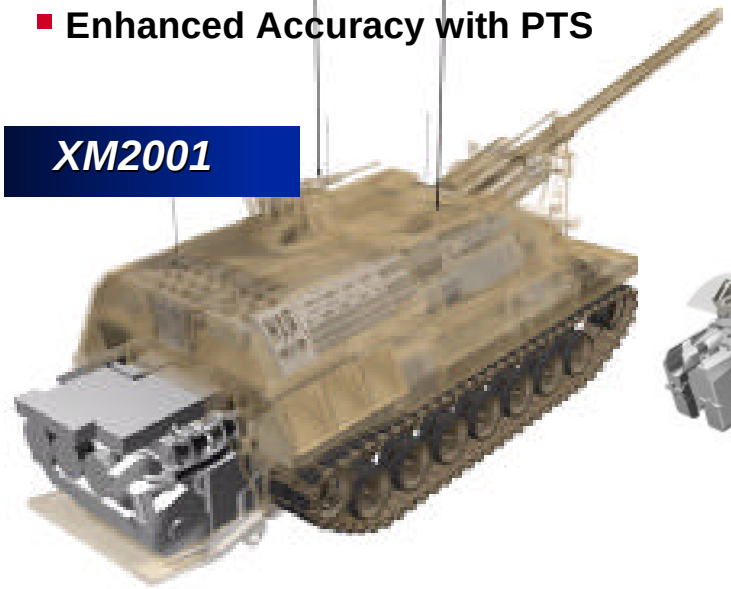
Lethal Firepower

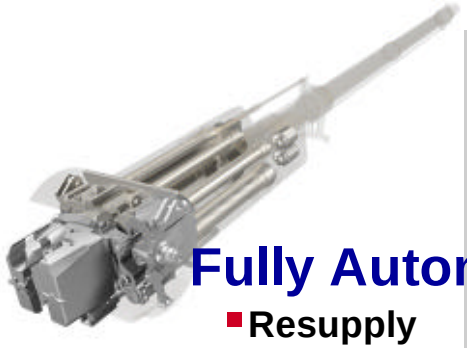
- Cooled Cannon for Continuous Fires
- 10-12 Rnds/minute out to 40-50 km
- Enhanced Accuracy with PTS

Crew Cockpit Enables Information Dominated Warfare

- Mission Planning
- Situational Awareness
- Decision Aids

XM2001





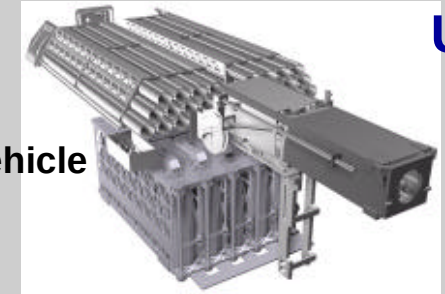
XM2002

Fully Automated

- Resupply
- Ammunition Handling
- Aiming
- Loading & Firing

Highly Mobile

- 1500 HP to Meet & Exceed M1/M2
- First Drive-by-Wire Ground Combat Vehicle
- Ride Quality Better than M1/M2

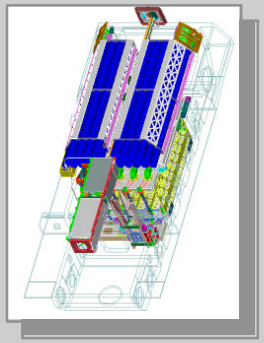
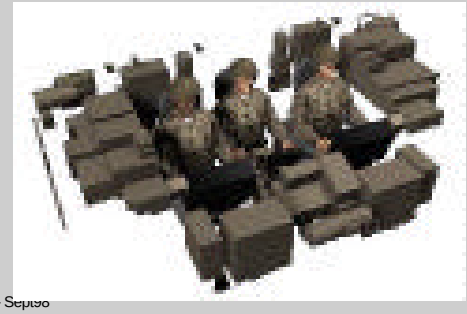


Unmatched Survivability

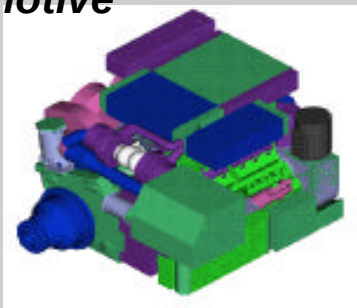
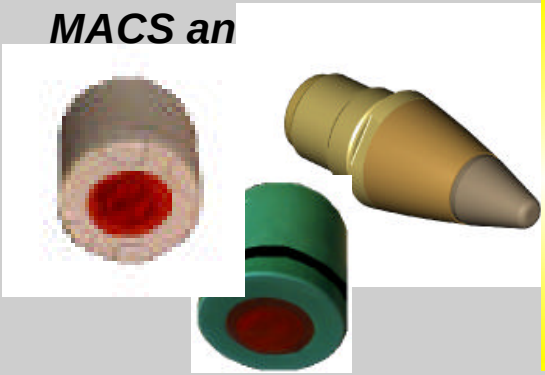
- Separate Crew & Weapon Stations
- Composite Armor
- Ballistic & Non-ballistic Protection

Crusader Is Not Just Another Howitzer

Crusader Subsystems:
The Key To Leap-ahead Performance

Major Sub - System	Key Features	Status
Automated Cannon	• Automatic Loading • Active Thermal Cooling • Laser Charge Ignition • Inductive Fuzing	*Achieved Multiple 15 Rd Auto Burst (Demonstrated 8.6 RPM)* *Demo'd Functionality of the Thermal System* *Mount & Cannon in Fabrication* *Demo'd 1 Battlefield Day Firing with Laser Ignition System*
 *Automated Resupply/ Ammunition Handling*	• Inventory Management • Storage • Selection • Transfer	*Detailed Design Completed* *Procuring Objective Hardware* *Assembling SPH & RSV Hardware Set #1 in SIF* *Selected Ammo Identification/ Verification Approach*
Automated C^3 	• Fire control • Weapon Control • Positioning • Embedded Training • Situational Awareness	*Hardware in Detailed Design* *Software in Preliminary Design* *Lo-Fidelity Modeling*

Crusader Subsystems (Cont'd): The Key To Leap-ahead Performance

Major Sub - System	Key Features	Status
Automotive 	• 1500 Horse Power • Variable Geometry Turbochargers • Self Cleaning Air Filter • Roll-Out/In Power Pack • External Hydropneumatic Suspension • Drive-by-Wire • Composite Armored Hull	*Engines & Transmissions # 1 - 3 Delivered* *Engine Full Power Demo'd* *Max Transmission Tractive Effort Demo'd* *Power Pack Test Ongoing in Propulsion Test Lab* *Lower Hull Weld-Up in Process*
MACS an 	• Complete Zoning Solution • Supports 10-12 rd/min Rate of Fire • Significantly Reduces Logistics Tail • Four Fuze Setting Mode • Withstands Out-of-Pack Environmental Exposure	*MACS & MOFA Qualification Testing Ongoing* *Type Classification Complete within 24 months*
Survivability	• Protect Crew, System and Mission • Composite Armor Ballistic Protect. • Ammo & Fuel Compartmentation • Susceptibility Reduction Features • NBC Collective Protection with Shirt Sleeve Environment • Automated Fire Suppression	*Hull, armor, top attack armor, & ballistic shock testing ongoing* *Propellant compartmentation testing in process* *Fire suppression dispersion testing completed* *NBC system checkout - Oct 98*

Contemporary Challenges

- Design to Build / Design Phase
- Software Development/Integration
- Funding Stability
- Timely Decisions (Continuous Development Schedule)
- SASC Report
- Maintain Technical Imperative
- Unknown Unknowns

Key Events within the Next Year

- Software Detailed Design
- RSV (-) IAT&C
- RSV (-) Testing
- SPH/RSV Builds
- Crew Trainer
- CEP
- EMD Planning/Proposals/Contract
- Armaments Safety Certifications
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Summation

- Requirements Valid
- Design On-Track & Meets Requirements
- Program is Affordable
- Risk Under Control
- Deliver 1st Prototype Next April