



# SOPMOD PROGRAM OVERVIEW

For the  
**National Defense Industrial  
Association  
Small Arms Symposium**



**17 April 2006**





- **SOPMOD Program Overview**
- **Acquisition Top Map**
- **Miniature Day Night Sight (MDNS) Development**
- **Weapon Shot Counter (WSC) Development**
- **Weapon Shock Simulation**
- **New Initiatives and Business Opportunities**





The SOPMOD Program Management Office at NSWC Crane, IN, will provide standardized, versatile weapons accessories to meet needs across SOF mission scenarios.



These accessories will increase operator survivability and lethality by enhanced weapon performance, target acquisition, **signature suppression**, and fire control. SOPMOD PMO will provide these accessories when they are operationally suitable, affordable, sustainable, and funded.





# SOPMOD Client Weapons

**SOPMOD ORD 5 - Core Small Arms  
(Threshold) ...Design For Use On:**

**M4A1 Carbine  
M203 Grenade Launcher**



**ORD Annexes - Additional Weapons  
(Objective)**

**....Harden For Use On, and possibly  
develop versions for:**

- SCAR**
- CQBR (Mark 18)**
- MK46 LMG / M249 SAW Machineguns**
- MK48/ M240-N/M240/M240-B Machineguns**
- M14 and Mark 14 Enhanced Battle Rifle**
- AK-47/AK74 Series Assault Rifle**
- Mk-19 40mm Machinegun**
- M2-HB .50 Cal Machinegun**
- M72 LAAW**
- AT4-CS**
- MAAWS**
- MK11, MK12, MK13, & MK15 Sniper Rifles**
- M-24 Sniper Rifle**



**SOPMOD Weapons of Interest**

**Limited Interest – Generally Covered  
by UNS (AN/PVS 22), MUNS, & DUNS**



# Capabilities Required

- **Standardized versatile weapons accessories**
- **Modular- meets needs across SOF mission scenarios**
- **Increased operator survivability and lethality by enhanced target acquisition, signature suppression, and fire control**



## ➤ Evolutionary Acquisition Subprograms:

- **Block I (Plus Platform Mods and Phased Replacements)**
- **Block II (New and Combined Capabilities)**
- **Block III (Emerging Capabilities)**

# Crane Task Organization



**Fielding & Sustainment**

**ALGL PMO**

**SOF LCSM**

**SOPMOD PMO**



**RD&A & ISEA**

**SOF Small Arms Program Group**

**RD&A & ISEA**



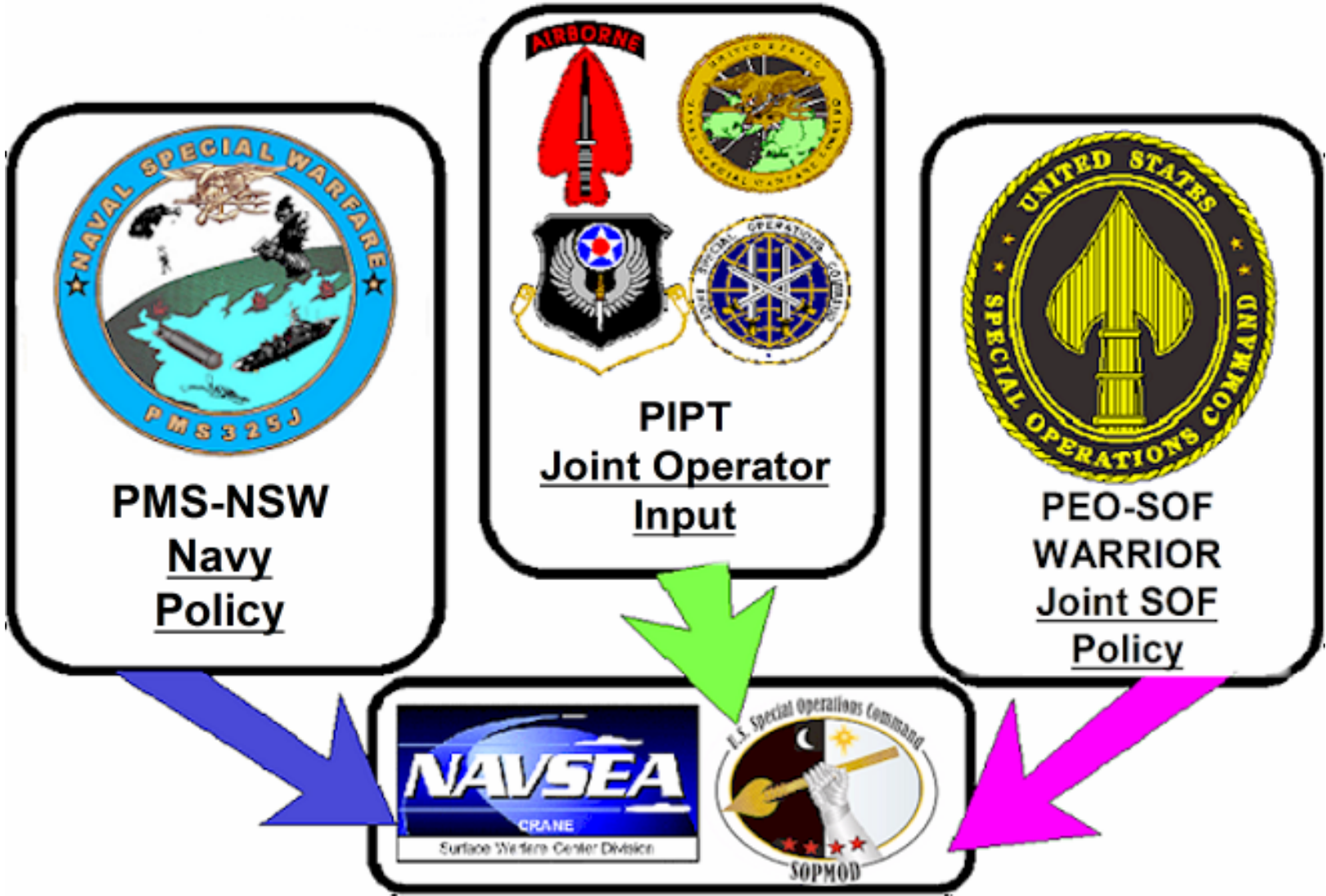
**RD&A & ISEA**

**SOF Weapons PMO**



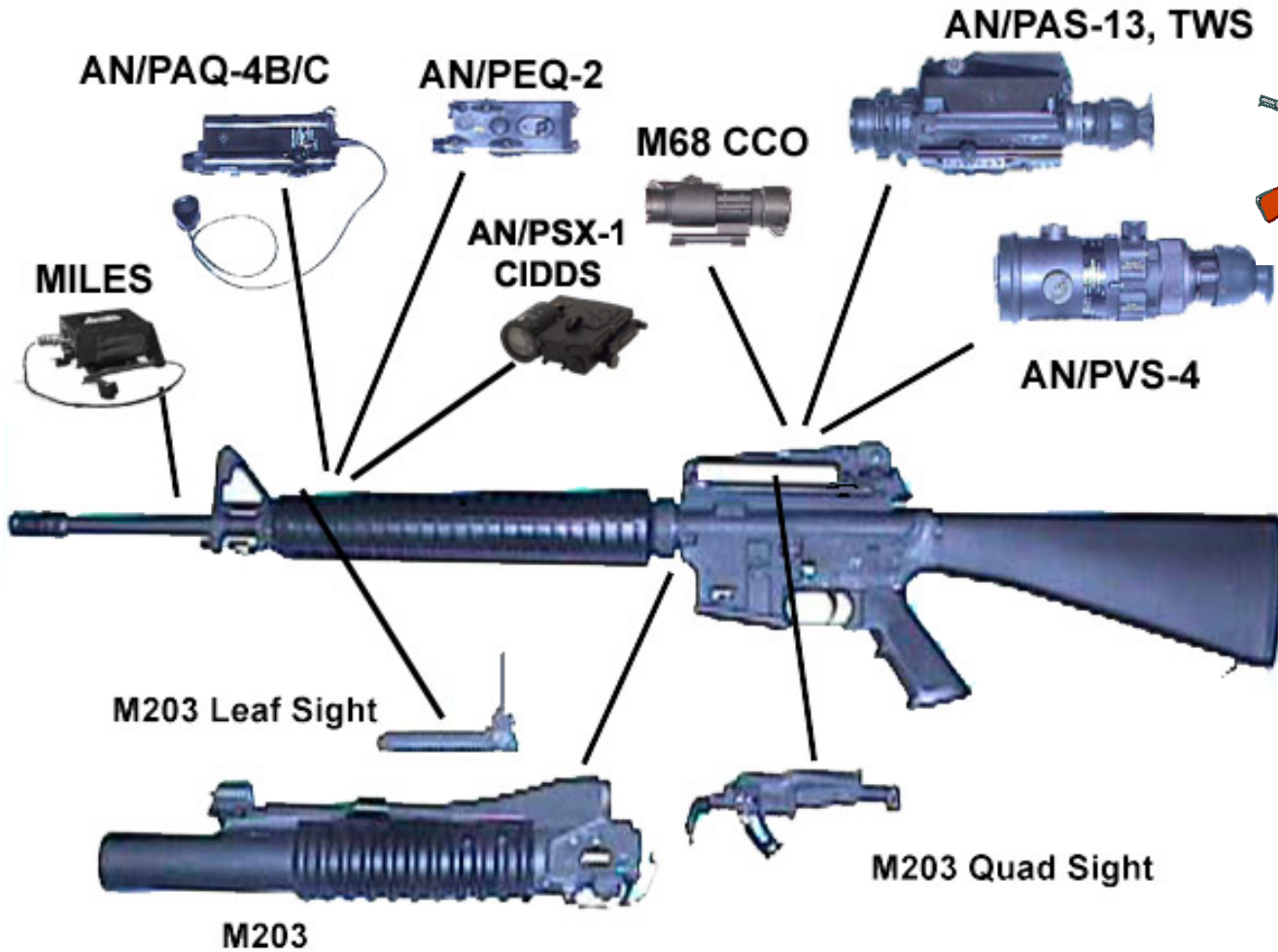


# SOPMOD Guidance





# Army Modular Weapon System (MWS)



M16A2 -- TM 9-1005-319-10

## Frequent Coordination





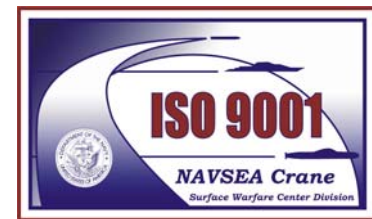


# Quality

## SOPMOD, as part of NSWC Crane, is ISO 9001 Certified

**Our Quality System is a set of formally documented activities that are carried out to ensure that we satisfy our customers' requirements.**

**Our Quality System is based on, and officially certified to, the requirements of ISO 9001-1994, an international standard for quality assurance in design, development, production, installation and servicing.**



# SOPMOD Sub-Program Structure



## SOPMOD Sustainment

## Miniature Day/Night Sight (MDNS) Development

## Weapon Shot Counter (WSC) Development





## SOPMOD M4

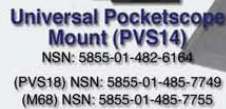
## Accessory Kit

Special Operations Peculiar Modification to the M4 Carbine

Block I Accessory Kit

Poster Version 3 February 2005

Logistics Support: [sofsustainment@navy.mil](mailto:sofsustainment@navy.mil)  
Website: <http://ssavie.socom.mil>





## M4A1 Carbine Product Improvements



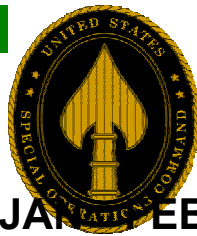


- ➡ **Joint Weapon Accessory System Currently Used By Army Special Forces, Army Rangers, Navy SEALs, Air Force Special Tactics & USMC Special Operations.**
- ➡ **Integrated Day And Night Aiming and Signature Suppression System**
  - ➡ **20 Varieties Of Subsystems**
  - ➡ **6 Varieties Of Minor Items And Parts Sets**
- ➡ **Miniaturized Lights, Lasers, Optics, Image-Intensification Night Vision, Thermal Imaging, And Sound Suppressors**









# SOPMOD 06 MACRO CALENDAR

MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB

WINTER PIPT

MDNS OT/DT 5

WSC LRIP

NDIA

USSOCOM APBI

CS/BTA/MRD Testing

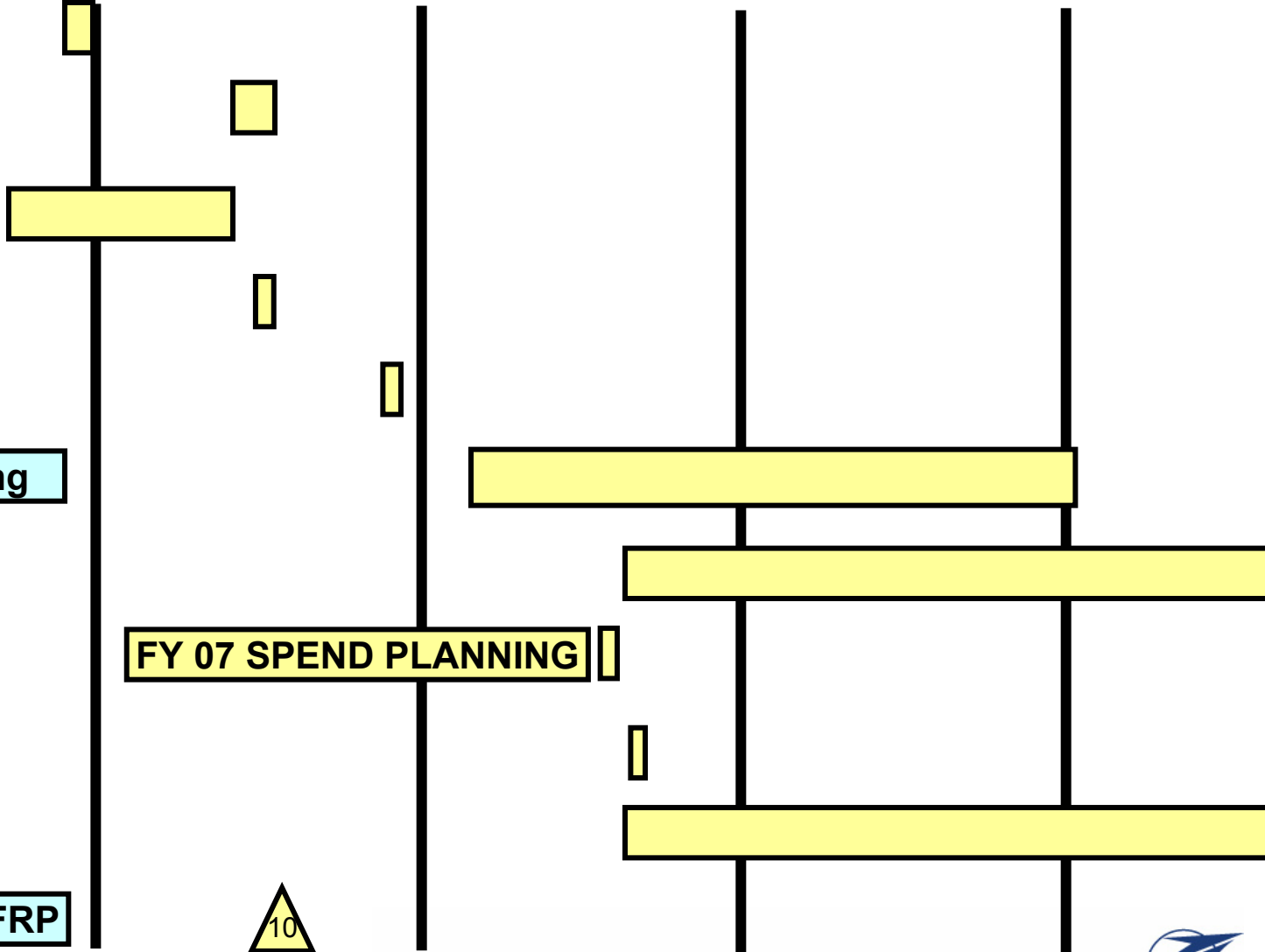
MDNS FIELDING

SUMMER REVIEWS

SUMMER PIPT

WSC FIELDING

MS-C MDNS & WSC FRP



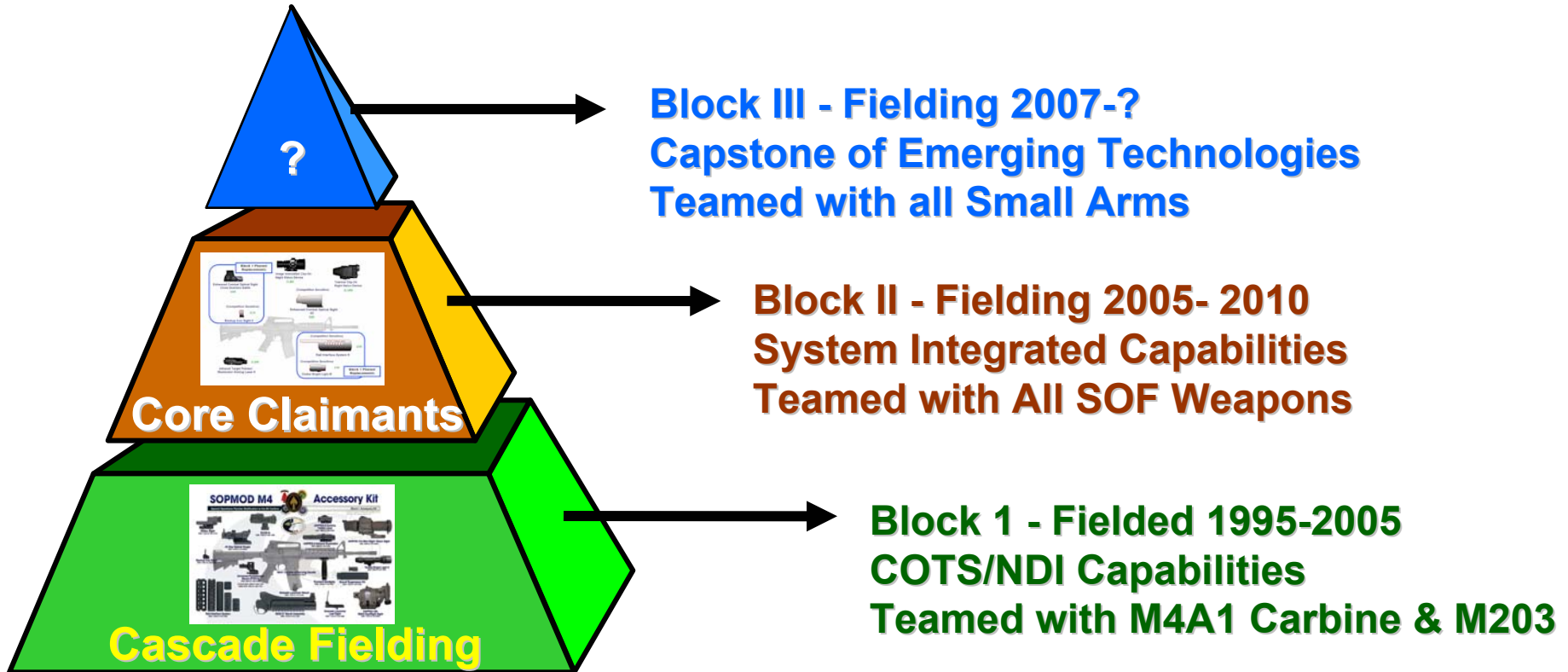




# SOPMOD ACQUISITION TOP MAP

17 May 2006





# TOP MAP STRUCTURE



- **Overview Top Map Shows Entire System at a Glance**
- **Five Detailed SOPMOD Accessories Top Maps Show Main Subsystem Categories**
  1. **Carbine Improvement Subsystems**
  2. **Passive Day Aiming Subsystems**
  3. **Passive Night Aiming Subsystems**
  4. **Active Aiming Subsystems**
  5. **Weapons Shot Counter Subsystems**



# SOPMOD ACQUISITION TOPMAP OVERVIEW







Unclassified



## Existing Systems

## Emerging Systems

## Objective Systems

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>SOPMOD ACCESSORY KIT OVERVIEW</b>														
<b>SOPMOD Increment #1 (1994-2007+)</b>														
														
														
														



# SOPMOD ACQUISITION TOPMAP

## Carbine Improvement Subsystems

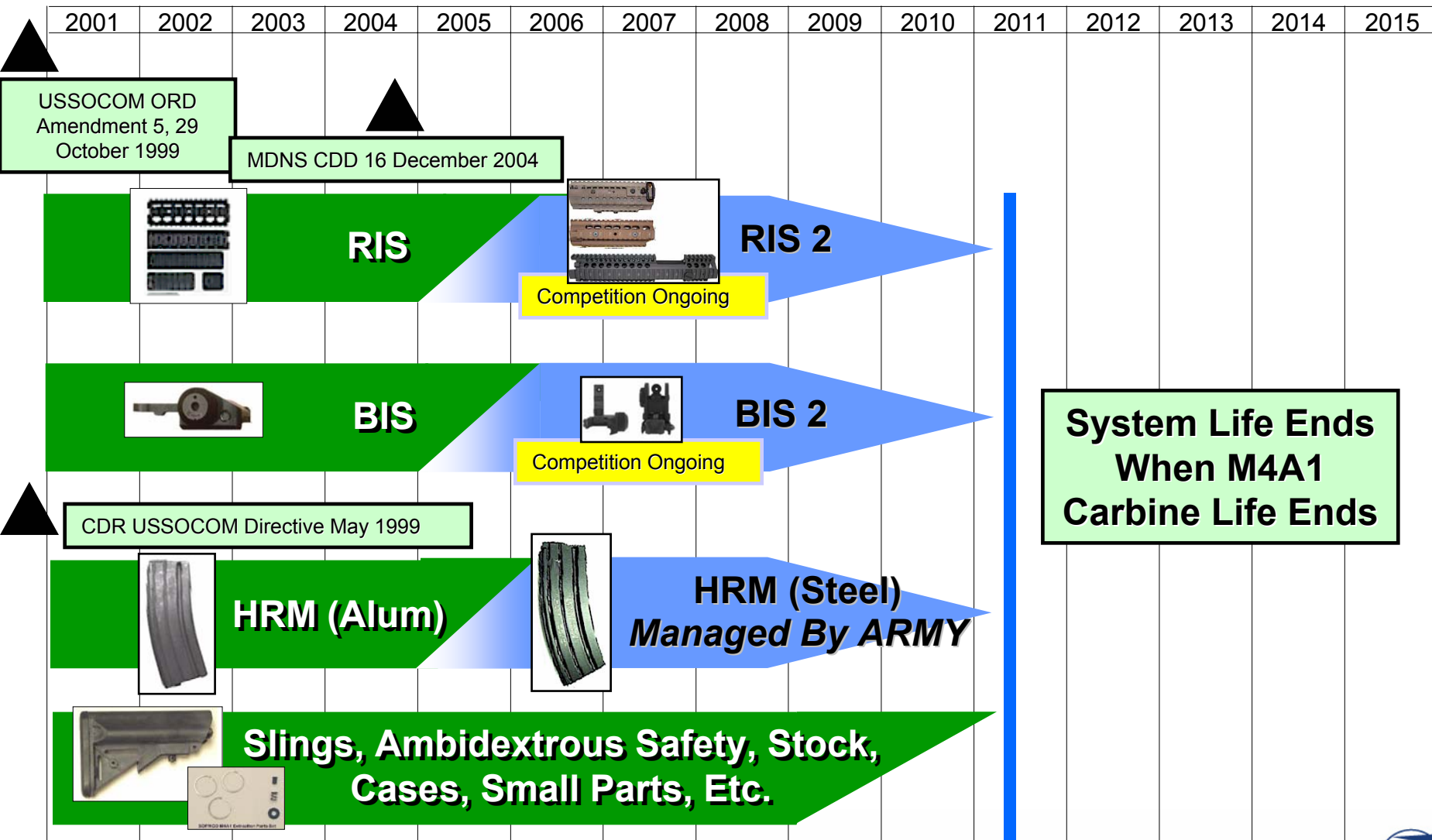
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### Existing Systems

### Emerging Systems

### Objective Systems





# Miniature Day/Night Sight (MDNS) Development





# MDNS Goals

- **Based on Unrequested FY02 Congressional Plus-Up**
- **Update Aging Technology on Current SOPMOD Items**
- **Address Possible Improvements in Current SOPMOD Kit Items**
- **Miniaturize and Ruggedize SOPMOD**
- **Integrated System Approach**
- **Encourage Innovation through Competition**
- **RDT&E + Modified NDI: Best of Both Worlds**
- **Meet Objective Fielding Requirements for SOPMOD Kits**



# SOPMOD ACQUISITION TOPMAP

## Passive Day Aiming Subsystems

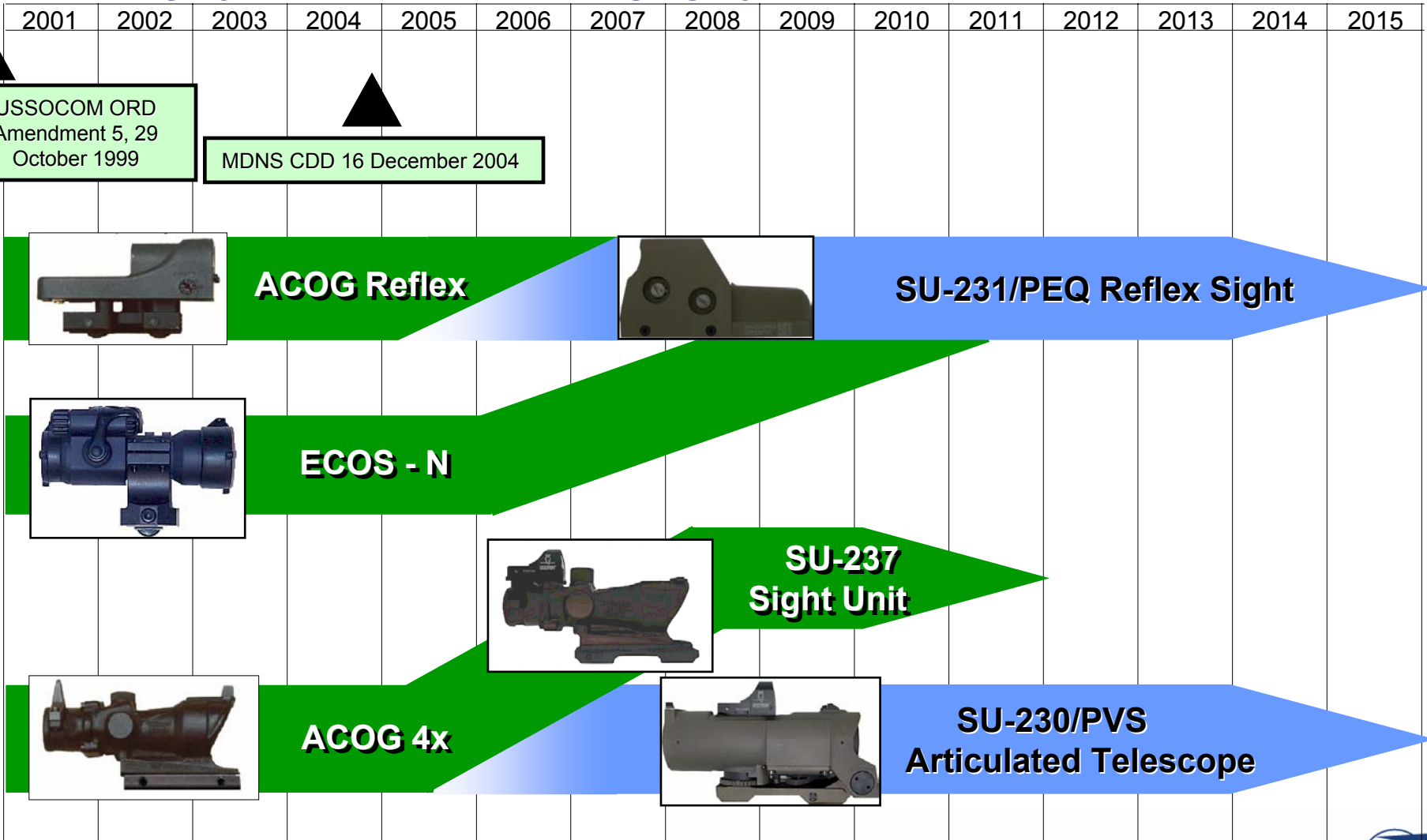
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### Existing Systems

### Emerging Systems

### Objective Systems





# SOPMOD ACQUISITION TOPMAP

## Passive Night Aiming Subsystems

Unclassified



### Existing Systems

### Emerging Systems

### Objective Systems

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

USSOCOM ORD Amendment 5, 29 October 1999

MDNS CDD 16 December 2004



**Weapon-Specific MNVS (e.g., Crew Served)**

**MNVS AN/PVS-17A**

**AN/PVS-17A PIP**

**Universal Pocketscope Mount**

**Clip-on Night Vision Device – I2**

**CNVD Sensor Fusion**  
CONCEPT IMAGE

**Clip-on Night Vision Device - Thermal**



### Existing Systems

### Emerging Systems

### Objective Systems

2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

USSOCOM ORD  
Amendment 5, 29  
October 1999

MDNS CDD 16 December 2004



**Crew-Served and Heavy  
Weapons Aiming Laser**



**ITPIAL  
Carbine AN/PEQ-2**



**CVL  
AN/PEQ-5**



**ATPIAL  
Spirals??: Wireless Controls  
and Green Light Laser**

**VBL 2  
PIP**



**Crew-Served VBL**



**VLI**



**VBL 2**



**VBL 3**

**SU-233/PVS and SU-238/PVS Gun Lights**



## DESCRIPTION



## PERFORMANCE CHARACTERISTICS

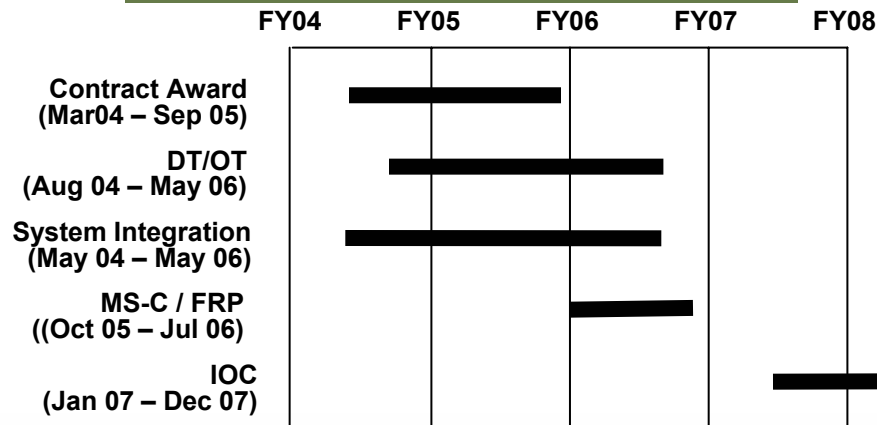
- **Sub-Program Status: GREEN**
- **Capability / technology upgrade to all SOPMOD day / night sighting subsystems for phased-replacement**
- **Improved weight, ruggedness, and zero retention**
- **New and combined capabilities: miniature thermal sighting, combined optics and lasers**

## APPROXIMATE BUDGET PROFILE

➤ **FY-06 to FY11 Programmed:**

- **\$0.8M R&D**
- **\$89M Procurement**

## KEY MILESTONES/ ACTIVITIES





- ➡ **Floating Rail Concept**
- ➡ **Floating Grenade Launcher Capability**
- ➡ **Improved Shooting Accuracy**
- ➡ **3 Contracts Awarded in March 2005**
  - ➡ **N00164-05-D-4863 (A.R.M.S.)**
  - ➡ **N00164-05-D-4864 (Daniel Defense)**
  - ➡ **N00164-05-D-4865 (Knight's Armament)**
- ➡ **Final Production Down-Selection In-Process**





- ➡ **Program Status: GREEN**
- ➡ **Improved Aperture Flexibility**
- ➡ **Improved Set Position Features**
- ➡ **2 Contracts Awarded in September 2005:**
  - ➡ **N00164-05-D-8559**  
**((Knight's Armament))**
  - ➡ **N00164-05-D-4864**  
**(A.R.M.S.)**
- ➡ **Final Production Down-Selection In-Process**



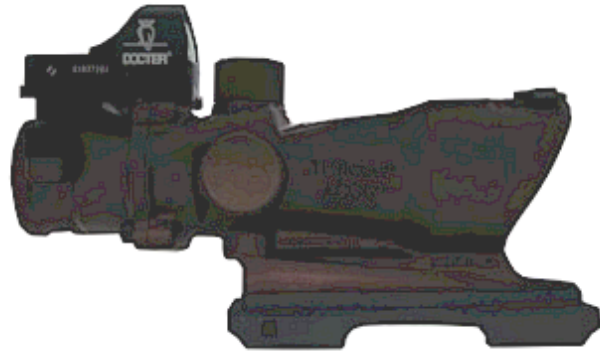
# SU-231/PEQ Reflex Sight OVERVIEW

Unclassified



- ➡ **Night Vision Compatible**
- ➡ **Increased Optical Field of View**
- ➡ **Holographic Technology**
- ➡ **Based upon EOTech 500 Series HWS**
- ➡ **0.5 MOA Adjustments**
- ➡ **DL 123 Battery Powered**
- ➡ **Throw-Lever Mounts**
- ➡ **Contract N00164-04-D-4832 Awarded to EOTech**
- ➡ **Possible Spiral Developments Include Crew-Served Sizing and Ranging Reticles**





- ➡ **4X Magnification**
- ➡ **Incorporates Miniature Red Dot for CQB**
- ➡ **Improved Reticle Illumination**
- ➡ **0.5 MOA Adjustments**
- ➡ **Throw Lever Mount**
- ➡ **Possible Spiral Developments**
- ➡ **Contract N00164-04-D-4834 Awarded to Trijicon**





- **1X - 4X Switchable Magnification**
- **Switchable CQB/Open Air Illuminated Reticle**
- **Compatible with Miniature Red Dots**
- **Adjustable Reticle Illumination**
- **0.5 MOA Adjustments**
- **Spiral Development Potential**
- **Throw Lever Mount**
- **Contract N00164-04-D-4833 Awarded to Elcan Optical Technologies**





# LA-5/PEQ Integrated Small Arms Illuminator OVERVIEW

Unclassified



- **Combined Visible/Infrared Pointing & Illuminating Lasers**
- **Size and Weight Reductions**
- **Enhanced Performance over SOPMOD Baseline**
- **0.5 MOA Adjustments**
- **System Integrated with Forward Handgrip**
- **Potential Wireless Remote Capability**
- **IFF Capable**
- **Contract N00164-05-D-8510 Awarded to Insight Technology**



# SU-233/PVS Visible Bright Light III (VBL III) OVERVIEW

Unclassified



- ➔ **Increased Luminosity**
- ➔ **Size and Weight Reduction**
- ➔ **Improved Durability**
- ➔ **Based Upon Insight Model M3X**
- ➔ **M6X VBL w/ Integrated Visible Laser Also Available for Spiral Developments**
- ➔ **Contract N00164-05-D-8568 Awarded to Insight Technology**





- ➡ **Original ORD 5 Block II**
- ➡ **Sized and Scaled for Use on Carbines and Light Machineguns**
- ➡ **Gen III OMNI V Auto-Gated Image Tube**
- ➡ **Potential Sensor Fusion Spiral Development**
- ➡ **Lightweight**
- ➡ **Improved Zero Retention for Day Scopes**
- ➡ **Contract N00164-04-D-4839 Awarded to Litton**



# SU-232PAS Thermal Sight OVERVIEW



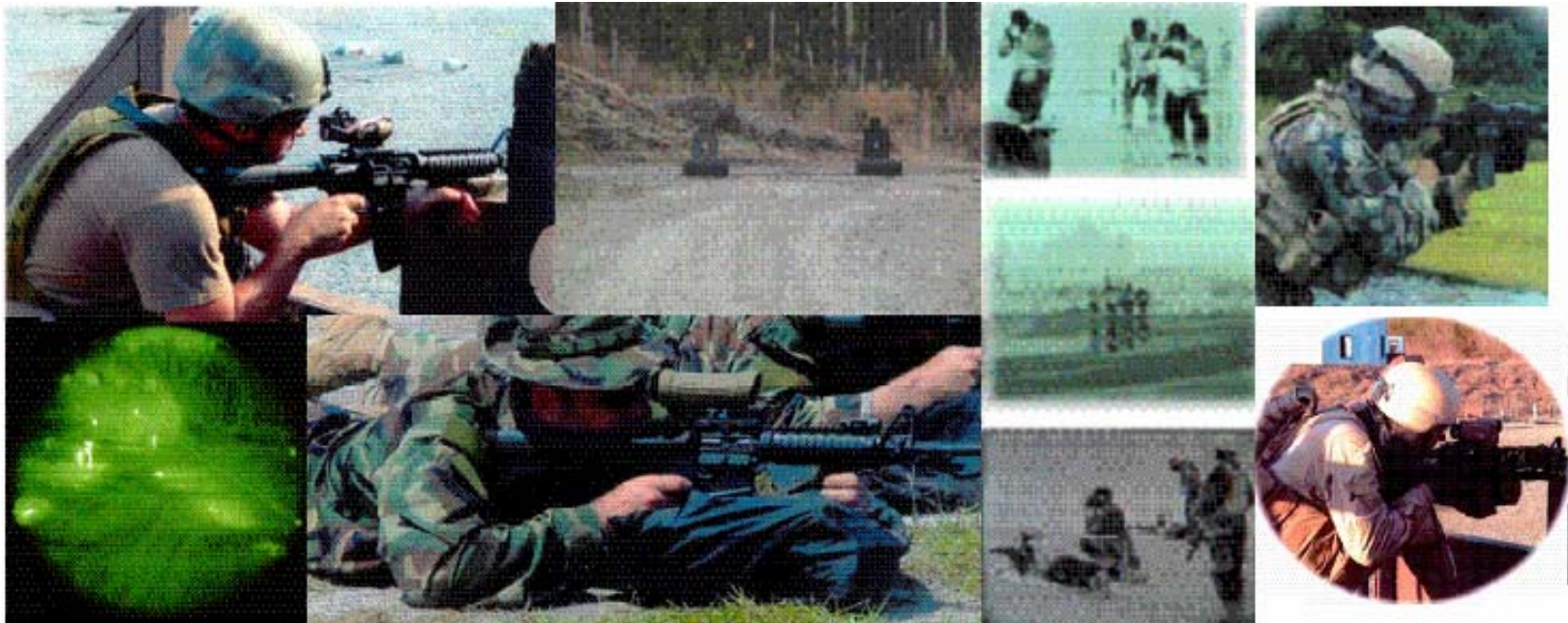
- ➔ **New Capability**
- ➔ **Significant Size/Weight Reduction**
- ➔ **Improved Target Detection Capability**
- ➔ **For Use as CNVD or Stand-Alone**
- ➔ **1X-2X Zoom**
- ➔ **Dual Video Output, VGA and RS 170**
- ➔ **Throw Lever Mount**
- ➔ **Improved OLED for Enhanced Performance**
- ➔ **Potential CNVD-Sensor Fusion Spiral Development**
- ➔ **Contract N00164-04-D-4840 Awarded to Insight Technology**





## Final Round of Testing Underway

- ➔ **Final Source Selection**
- ➔ **Integrated System Test**
- ➔ **Validation of Engineering Changes**
- ➔ **Validation of Hardware on Multiple Weapons**



# Miniature Day/Night Sight Development



**SU-231/PEQ  
Reflex Sight**  
1240-01-533-0941



**SU-237/PVS  
Sight Unit**  
1240-01-540-1186

**Block 2**



**SU-230/PVS  
Articulated Telescope**  
1240-01-533-0939



**SU-232/PAS  
Thermal Sight**  
5855-01-533-0557



**LA-5/PEQ ATPIAL**  
5855-01-533-0555



**AN/PVS-24  
Night Vision Device**  
5855-01-533-0940



**AN/PVS-17 Product  
Improvement Kit**  
NSN Pending



**M4A1 Carbine w/Carrying Handle**  
NSN: 1005-01-352-0903



**RIS II**  
AWAITING PPRODUCTION  
SOURCE SELECTION and NSN



**SU-233/PVS  
Gun Light**  
5855-01-533-0996



**SU-238/PVS  
Integrated Gun Light**  
5855-01-540-1185



**BIS II**  
AWAITING PPRODUCTION  
SOURCE SELECTION and NSN

**Block 1 Phased Replacements**



# Miniature Day/Night Sight (MDNS) Development

Barry Gatewood

USSOCOM SOPMOD Deputy Program  
Manager

NSWC Crane

Commercial: (812) 854-3842, DSN 482-3842

Email: [barry.gatewood@navy.mil](mailto:barry.gatewood@navy.mil)





# Weapon Shot Counter (WSC) Development









## DESCRIPTION



## PERFORMANCE CHARACTERISTICS

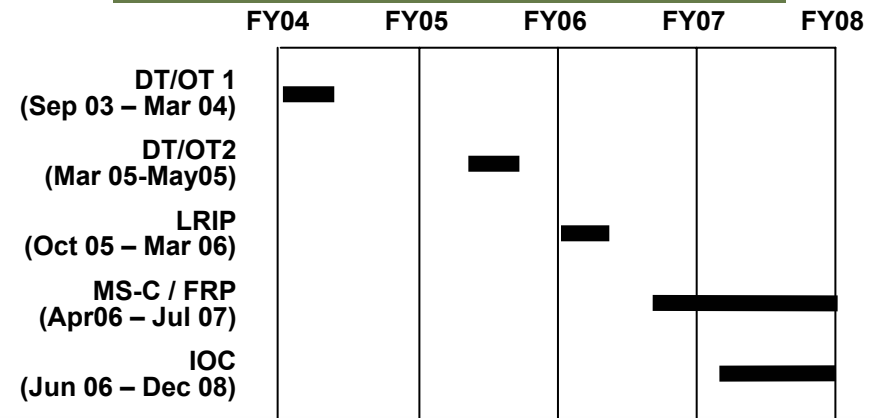
- **Sub-Program Status: GREEN**
- Enables unit armorers to determine number of rounds fired
- Minimizes catastrophic parts failures and malfunctions in combat
- More cost-effective...reliability, & maintenance

## APPROXIMATE BUDGET PROFILE

### 🚫 Funding On Hand to FY11:

- ➡ **\$0.8M R&D**
- ➡ **\$3M Procurement**

## KEY MILESTONES/ ACTIVITIES





- ➡ **If His Gun Fails in Combat, He and His Companions May Die or Lose the Fight**
- ➡ **Worst Failure is a Catastrophic Breakage of Parts That Could Have Been Replaced, such as a Bolt, Leading to a Jammed Weapon That Is Not Repairable During a Firefight**
- ➡ **Second Worst Failure Is a Burned Out Barrel, Making a Hit on His Enemy Unlikely**



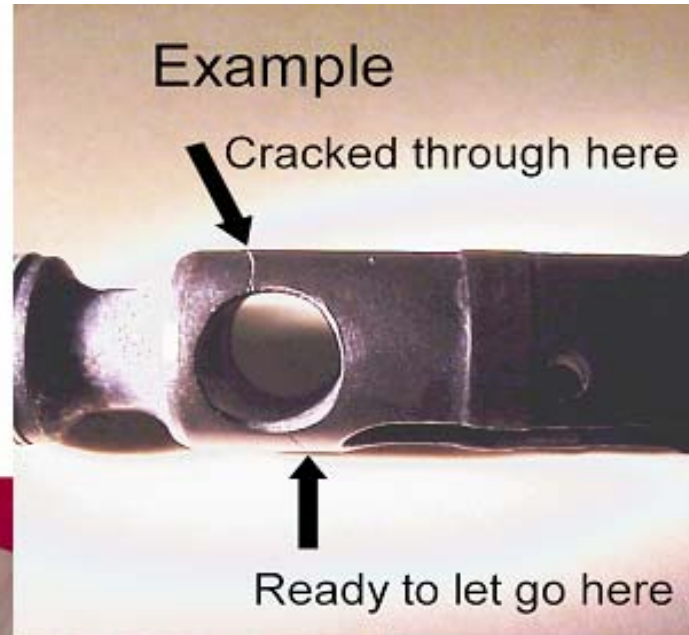


- **Most Bolts Subjected to Harsh Firing Schedules Will Show Initial Cracking Around 3,000 to 6,000 Rounds**
- **On Milder Schedules, Nearly All Bolts Will Show Initial Cracking at 6,000 to 10,000 Rounds**
- **Once the Crack Is Initiated, the Bolt May Fail at Any Time, or May Last for Thousands of Rounds, Depending on Crack Propagation**





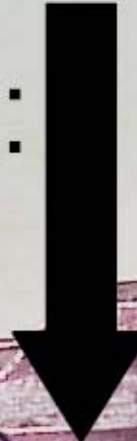
# Catastrophic Bolt Failure



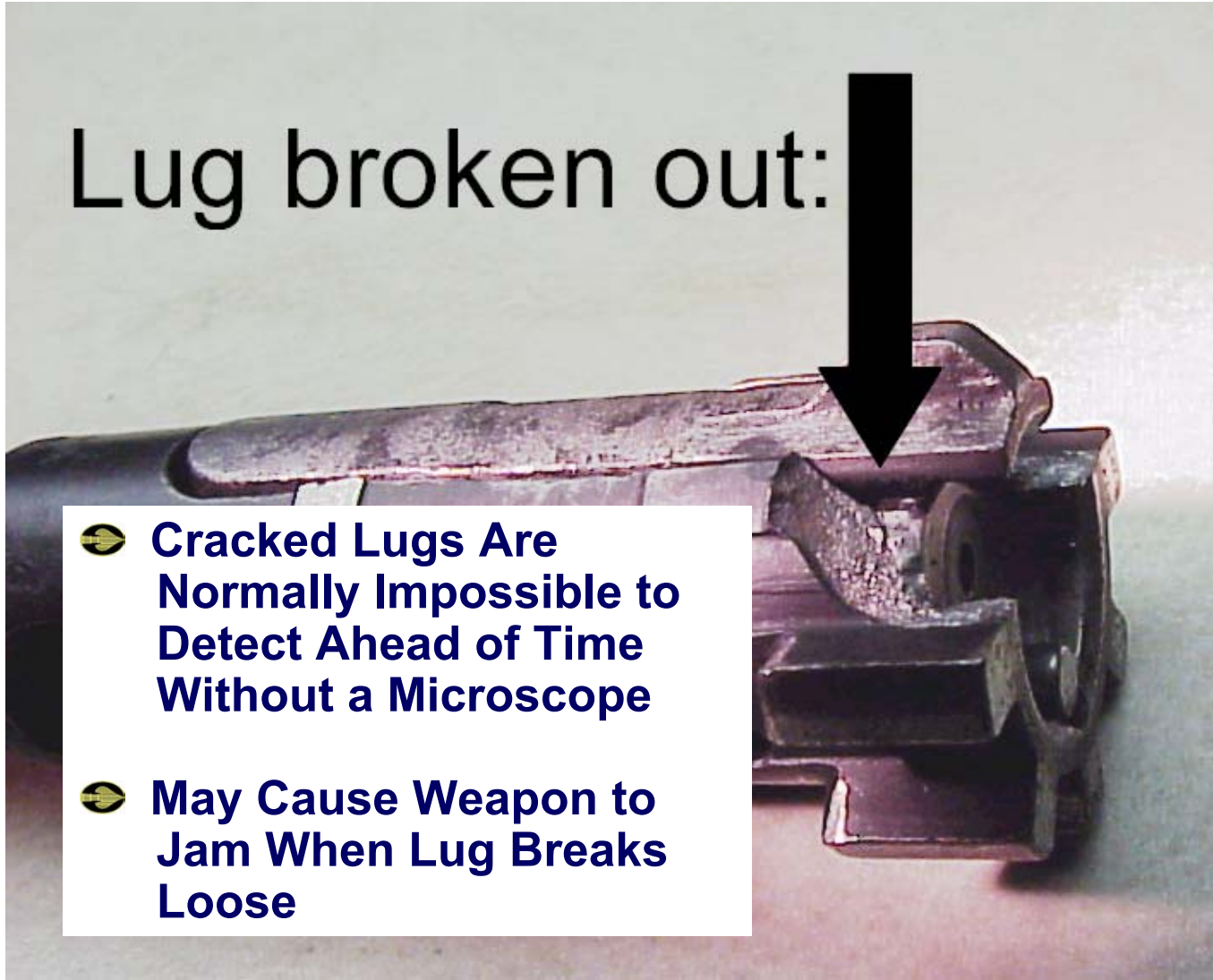


# Non - Catastrophic Bolt Failure

Lug broken out:



- **Cracked Lugs Are Normally Impossible to Detect Ahead of Time Without a Microscope**
- **May Cause Weapon to Jam When Lug Breaks Loose**



# Non - Catastrophic Bolt Failure



➡ **Worn Gas Rings**



➡ **Failure to Feed**  
➡ **Failure to Eject**





# The Barrel Burn Problem

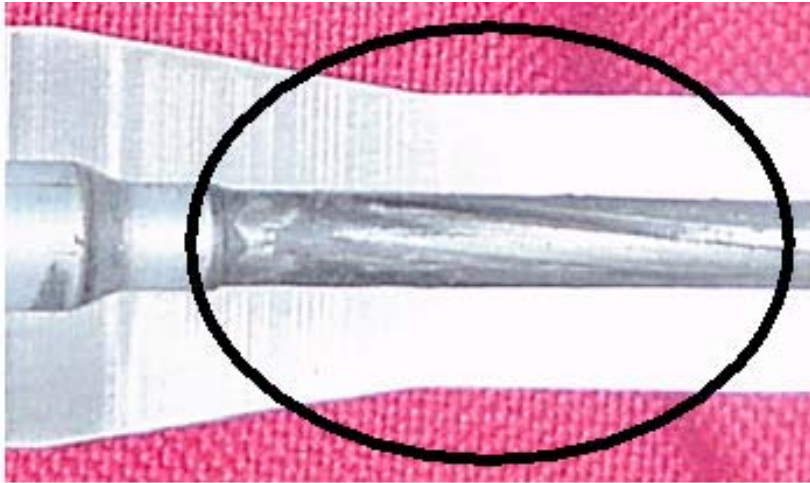
- ➡ **Most M4A1 Carbine Barrels Subjected to Harsh Firing Schedules Will Be Burned Out Between 4,000 and 6,000 Rounds**
- ➡ **On Milder Firing Schedules, They May Last 10,000 Rounds**
- ➡ **Barrel Gauges Are Only 60% Accurate and Are Expensive to Buy and Calibrate. After Barrel Inspection:**
  - ➡ **The Armorer May Think the Gun Is OK, but There Is a 40% Chance That the Barrel Is Burned Out and the Shooter Cannot Reliably Hit His Enemies**
  - ➡ **The Armorer May Have Turned the Gun in for Depot Overhaul, but There Is a 40% Chance That the Barrel Is Still Good...millions of Dollars Wasted in Unneeded Repairs**



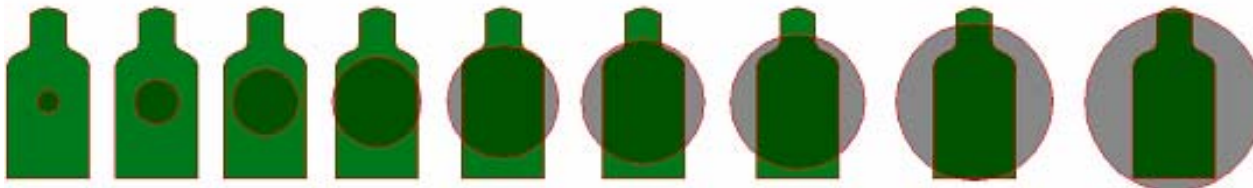




# The Barrel Burn Problem –Throats



- ➡ The Throat Is the Rifled Area in Front of the Chamber
- ➡ Erodes Forward of the Chamber in a Cone-shaped Pattern or a Football-shaped Pattern
- ➡ Taper Barrel Gauges Do Not Adequately Measure Throat Erosion

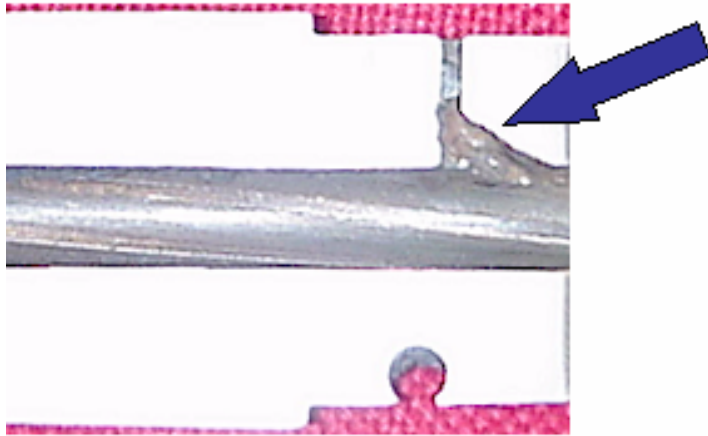


- ➡ Throat Erosion is the Primary, Progressive Cause of Poor Accuracy





## The Barrel Burn Problem – Gas Port Erosion



- Unburned Powder Particles Mixed in Hot Gasses Erode Port
- Decreases Gas Friction, but Without Increase of External Port Size
- Cannot Be Detected With Gauges

- Increases Rate of Fire
- Increases Bolt, Spring, and Part Fatigue
- Possible Cause of Failure to Eject and Poor Accuracy



# Shot Counter Goals

- ➔ **Modify the Current Maintenance System From a Time Schedule to a Usage Schedule**
- ➔ **Minimize Catastrophic Failures and Weapon Jamming, and Resultant Injuries or Deaths in Combat**

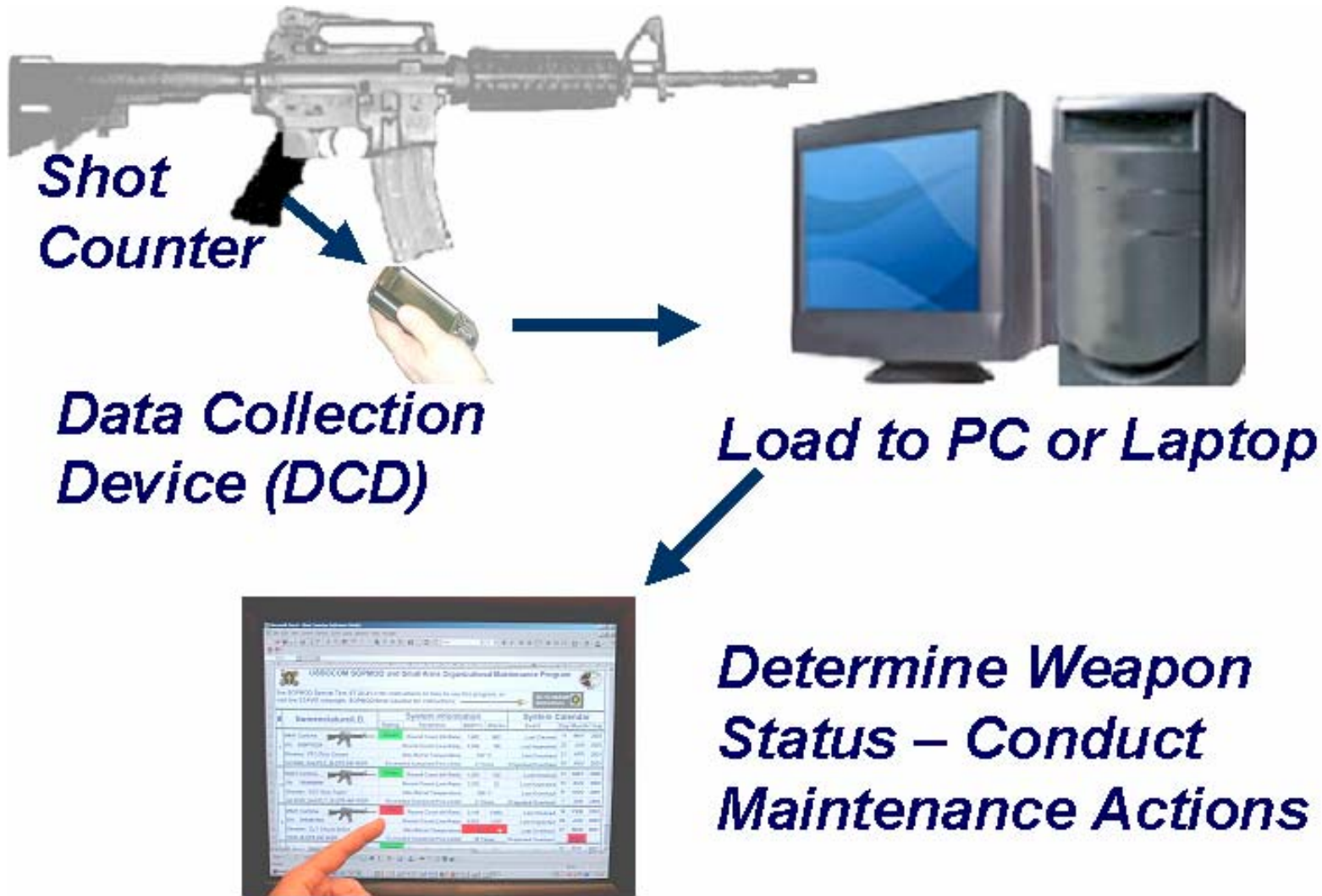


- ➔ **Enable Weapons Maintenance Personnel (Armorers) to Easily**
- ➔ **Determine the Number of Rounds Fired Through a Weapon**
- ➔ **Provide Data Collection Device (DCD)**





# Summary of WSC System





**AccuCounter**



**ADC**





# Potential Spiral Developments

## *Shot Counters for Other SOF Small Arms*



*Light Machine Guns*



*Sniper Rifles*

-  *Distinguish Blanks From Ball Ammo*
-  *Distinguish Between Dry and Live Fire*
-  *Cadence of Fire*
-  *Barrel Temperature*





# Weapon Shot Counter (WSC) Development

Michael H. Jones

USSOCOM SOPMOD Assistant Program  
Manager for RD&A

NSWC Crane

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# Weapon Shock Simulation





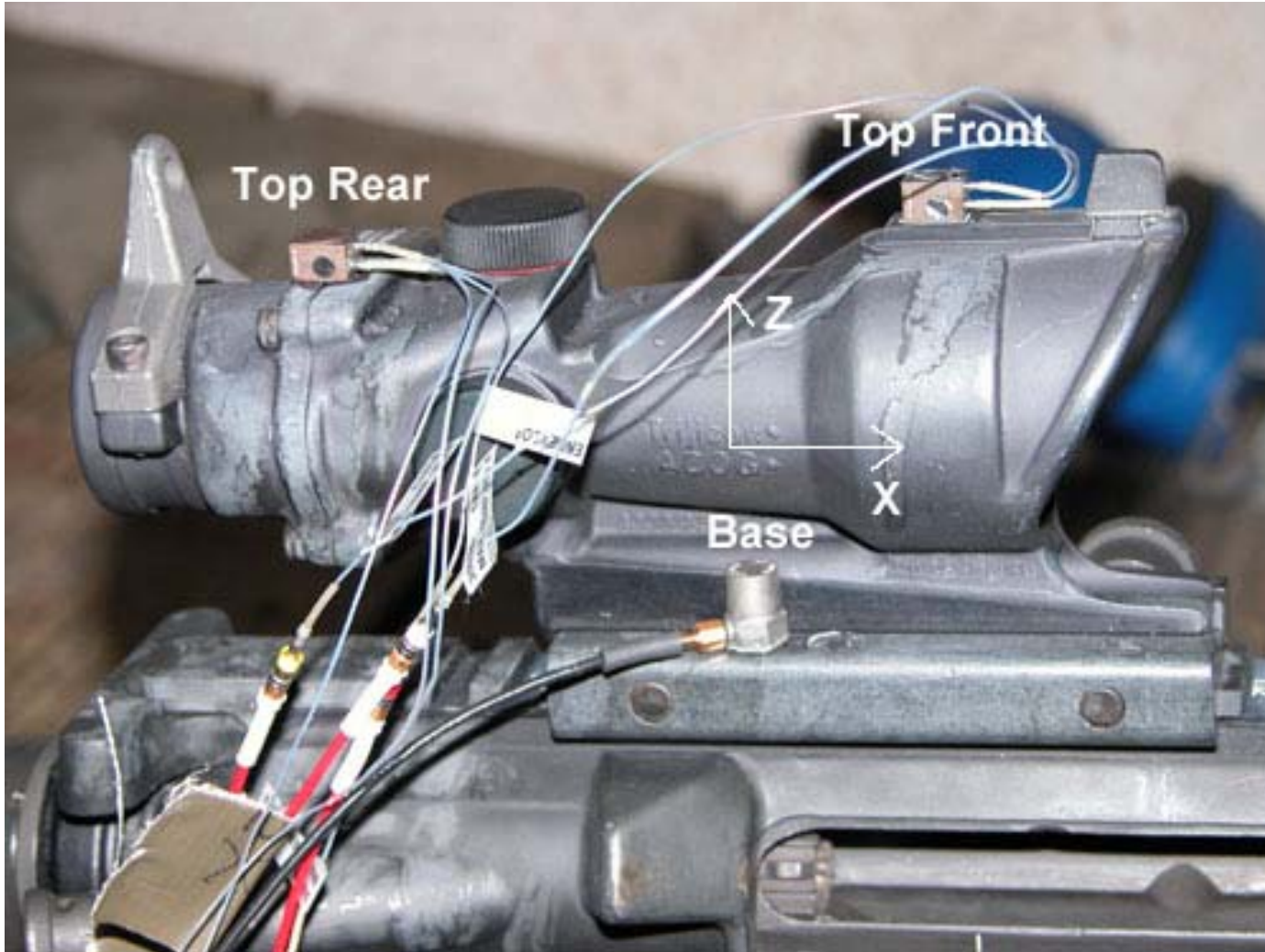


- **Development of Accessories for Small Arms**
- **Example Developmental Test Endurance Requirement**
  - **Live Fire**
    - **30,000 Rounds per unit, 10 units tested**
    - **~80 cents per Round (labor + ammo + maintenance)**
    - **\$24,000 per unit, \$240K total cost for endurance test**





# Data Acquisition

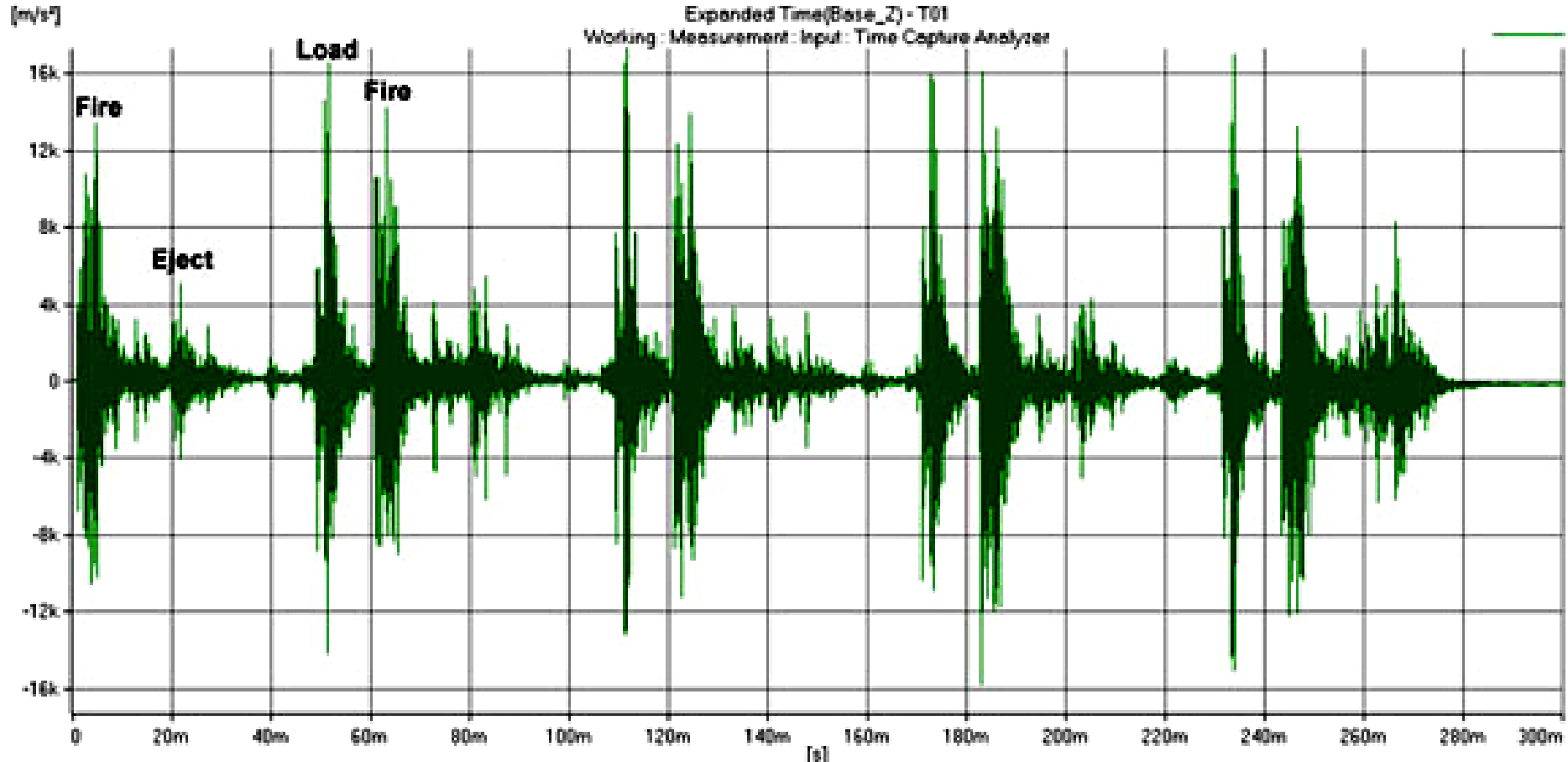


# Data Acquisition





# Typical Profile





# Typical Values

<b>ACOG</b> Values G/100																
	Top Front X				Top Front Z				Top Rear X				Top Rear Z			
	+ve		-ve		+ve		-ve		+ve		-ve		+ve		-ve	
	low	high	low	high	low	high	low	high	low	high	low	high	low	high	low	high
<b>MK46</b>	5	11	4	9	2.5	6	3	6	4	11	5	10	2.5	5	2	5
<b>M240B</b>	5	11	4	9	3	6.5	3.5	8	6	12	6	20	3	4.5	3	7
<b>M249</b>	6	15	6	14	5	21	4	16	7	14	8	14	2.5	6	4	6
<b>MK48</b>	6	17	6	9	4	6	4.5	9	4	13	4	9	3	8	3	14
<b>M4A1</b>	20	36	24	42	8	16	8	16	8	17	9	20	4	12	6	9





## ➡ Previously-Purchased System

➡ **TIRA 5880/LS-330 EDS**

➡ **Vibration Research Controller**





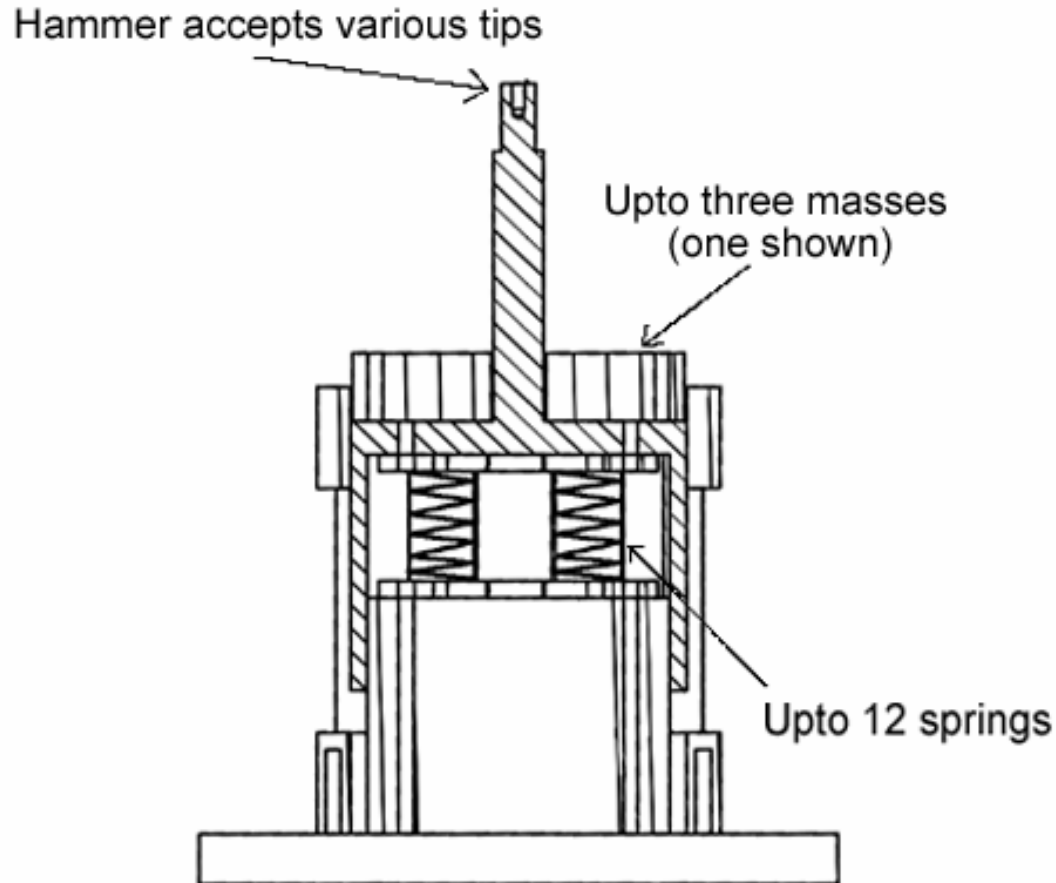
## Shaker Specification

Shaker	TV 5800/LS-330
Amplifier	A 52318
Rated Force	16kN (3.6Kip)
Frequency Range	DC-3kHz
Displacement	50.8mm (2in)
Velocity	2.5m/s (100in/s)
Acceleration	176g
Moving Mass	9.3kg (20lb)
<b>All values are shock ratings</b>	



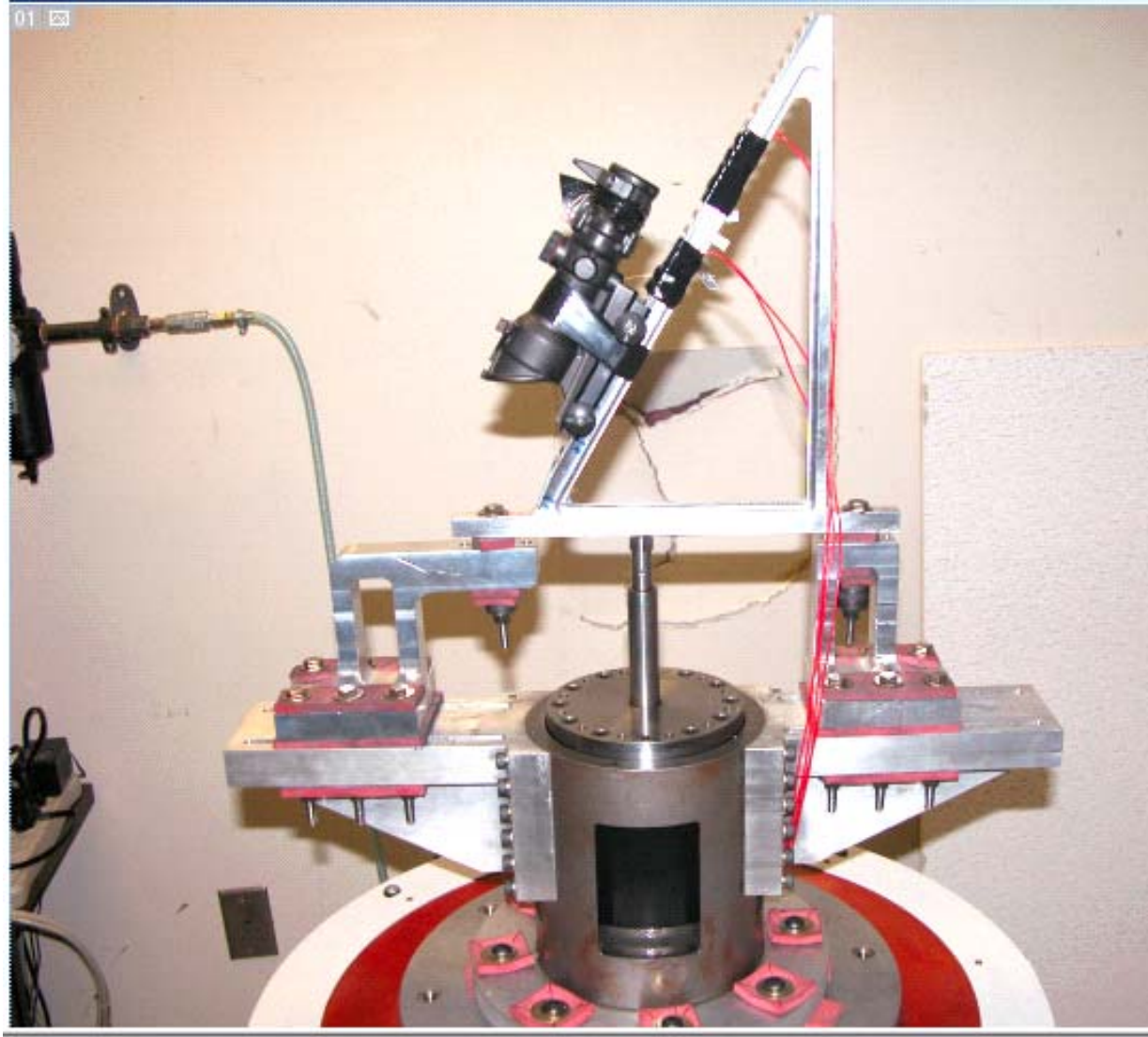


## Shock Amplifier



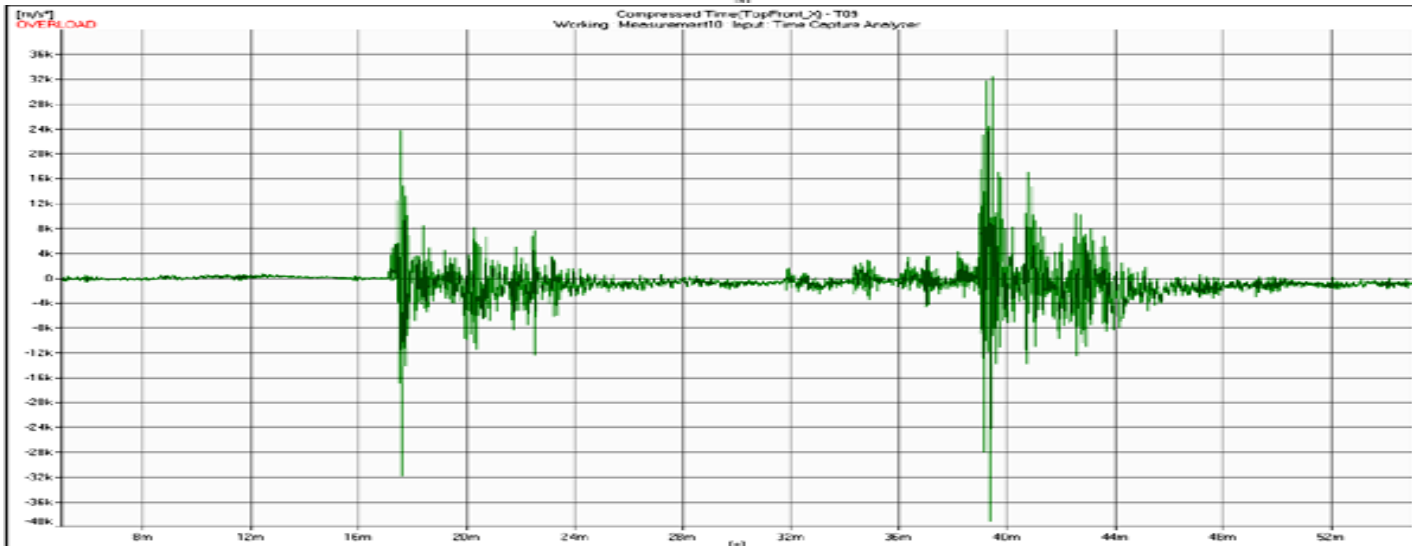
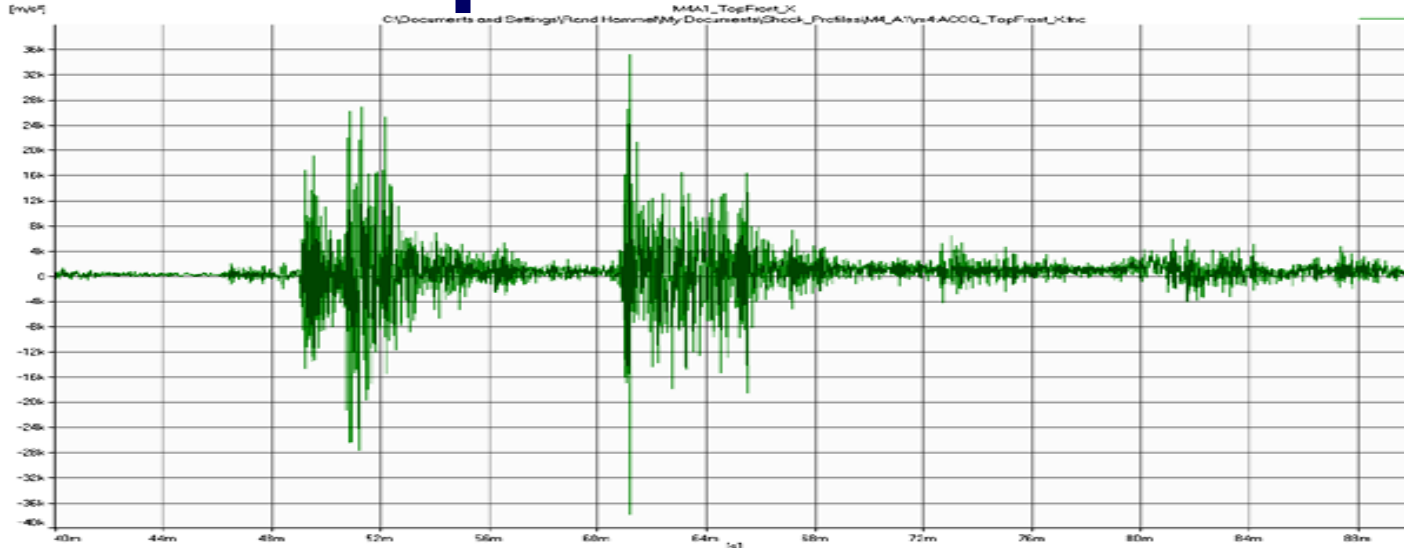


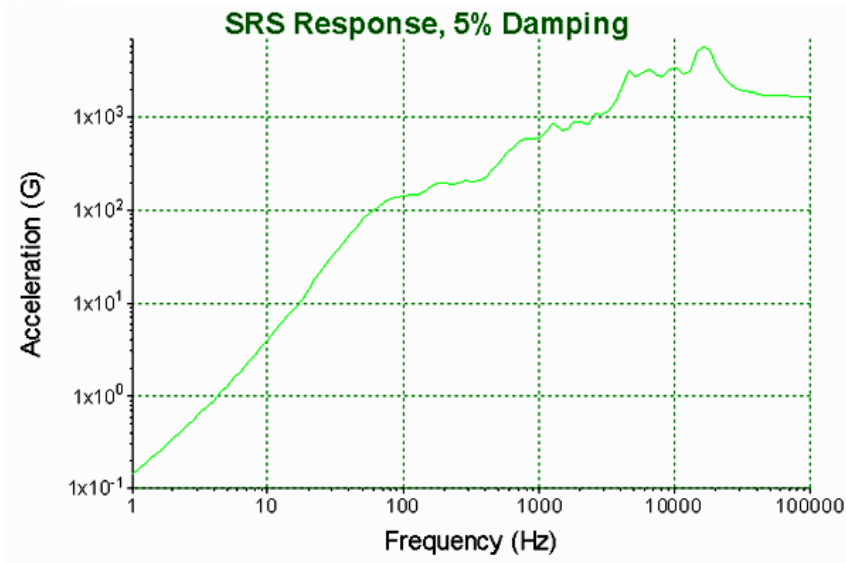
# Test Setup



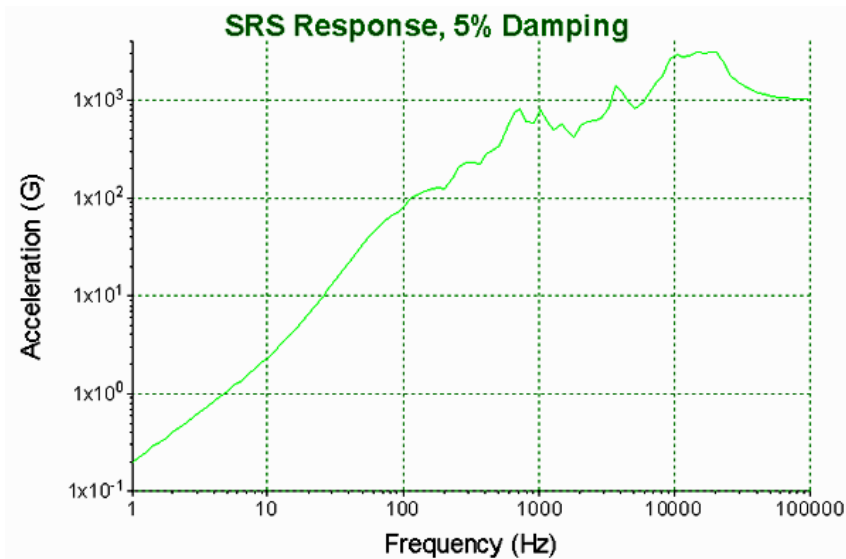


## Top Front X Time



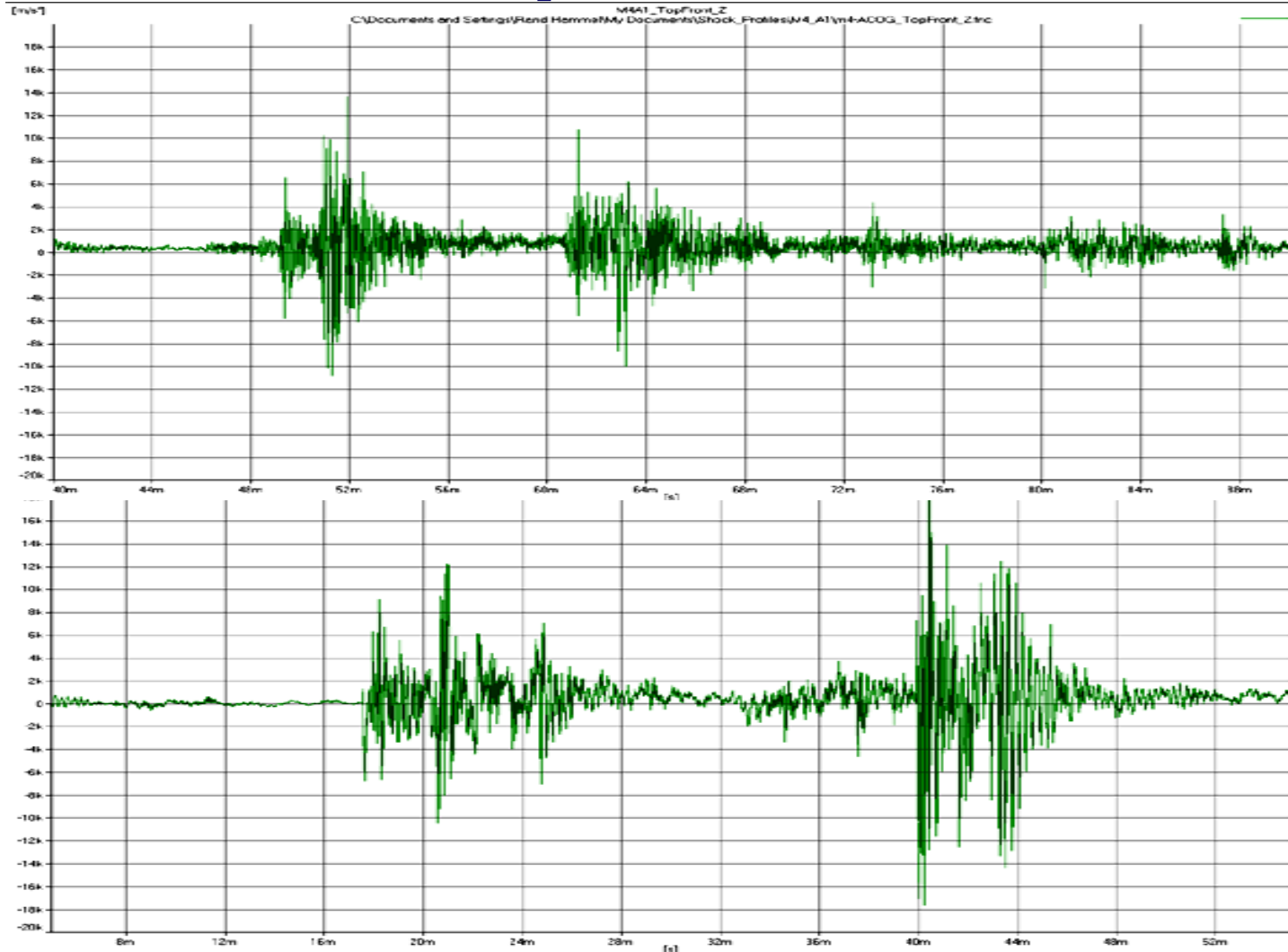


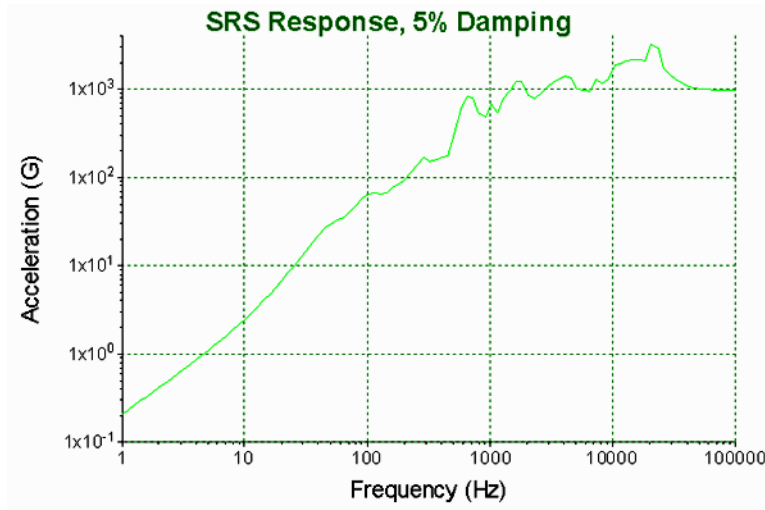
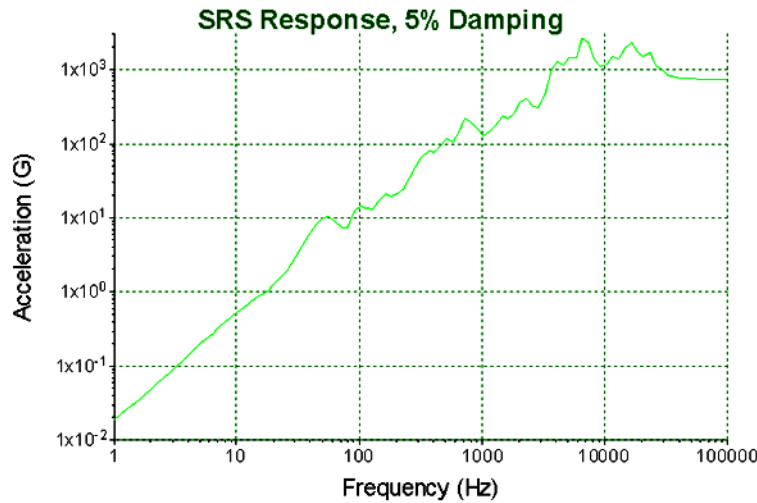
## Top Front X SRS





## Top Front Z





## Top Front Z SRS





## ➊ Representative Failures Have Been Reproduced On Several Accessories

- Reticle Failure On Scope
- Battery Failures On Several Devices
- Accurate Counting Of Shot Counters
- Mount Failures On Several Devices
- Cable & Connector Failures Of Internal Electronics

## ➋ Simulation And HALT Testing Catch And Fix Design Weaknesses Prior To Fielding

## ➌ Need To Continue To Compare Lab And Field Failures

- Does Not Completely Replace Live-fire





- ➡ **NSWC Crane developed a shock simulation system that amplifies the impulse of an Electromagnetic Shaker to replicate firing shock profiles on small arms accessories**
- ➡ **Further testing needed to validate simulations through a comparison of field and lab failures**
- ➡ **Current shock simulation capability has demonstrated cost savings and contributed to design improvements**





# Weapon Shock Simulation

**Brian Kaneen**

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# New Initiatives And Business Opportunities



# Clip-on Night Vision Device - Sensor Fusion



## CNVD-SF CONCEPT IMAGE



### Initial Objectives:

- **Improved Target Acquisition**
- **Less than 2 Pounds**
- **Less than \$30K Per Copy, Objective less than \$10K**
- **Technology Readiness Assessment Complete**
- **Draft Specification and Acquisition Strategy Published, Open for Public Comment until End of June 2006**

## Crew-Served and Heavy Weapons Aiming Laser

- **Infrared Laser Capability (and Visible Green Laser?) Out to 2.2 KM**
- **Weight Less Than 1.5 lbs**
- **DL123 Battery and External Power**
- **MIL-STD-1913 Interface**
- **Compatible with**
  - **M2 50 Cal MG**
  - **MK 47 ALGL?**
  - **M240 MG (Series)**
  - **MK15 .50 Caliber Sniper Rifle**
  - **MK 44 Mini Gun Sys**
  - **MK 48 LMG**
  - **MK 19 (and Other Weapons?)**
- **Specification Published for Comment – Open Until 15 June 2006**



**CSHWAL  
CONCEPT IMAGE**



## Crew-Served Visible Bright Light

- **Visible White Light and Infrared Illumination Capability Out to 2.2 KM?**
- **Weight Less Than 2.5 lbs?**
- **DL123 Battery and External Power**
- **MIL-STD-1913 Interface**
- **Compatible with**
  - **M2 50 Cal MG**
  - **MK 44 Minigun System**
  - **MK 19?**
  - **MK 47 ALGL?**
- **Force Development Experimentation Ongoing**
- **Market Survey and Performance Specification Being Drafted**



**CSVBL  
CONCEPT IMAGE**





- ➡ **Specific Specialized Range-Adjustable Quadrant Mounts for:**
  - ➡ **M2 50 Cal MG**
  - ➡ **MK 44 Minigun System**
  - ➡ **MK 19**
  - ➡ **MK 47 ALGL? (On Separate Announcement)**
- ➡ **Compatible or Able to be Integrated into Current Ballistic Shields – NOTE: Shields Can be Modified**
- ➡ **MIL-STD-1913 rail surfaces to accept various sights**
- ➡ **A Conceptual Objective Sighting Combination would provide Range-Adjustable Quadrant Rails for:**
  - ➡ **Rapid Aiming, e.g. SU-231/PEQ Reflex Sight**
  - ➡ **Night Passive Aiming, e.g. SU-231 + Clip-ons (CNVD's)**
  - ➡ **Night Active Aiming: CSHWAL and CSVBL**





# Miniature Red Dot (MRD)



- **Provides Attachable CQB Capability to Existing SOPMOD Sights**
- **Currently Available in COTS Configuration on Contract N00164-04-D-4834 Awarded to Trijicon**
- **Needs to be Improved:**
  - **Needs Durability to Meet All SOF Combat Requirements**
  - **Waterproof up to 66 Feet**
  - **Easier Battery Change**



# Boresight Training Aids

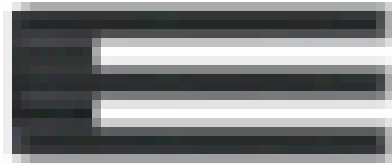
- **BTA will provide small, inexpensive, easily transportable devices that can be quickly installed and removed from the weapon to provide a means of verifying the collimation of the point-of-impact/point-of-aim**
- **Compatible with SOPMOD Aiming and Target Acquisition Systems and the following weapons:**

- **M4A1 Carbine**
- **M24 and M82 Sniper Rifles**
- **Mk11 Rifle**
- **MK12 Special Purpose Rifle (Series)**
- **MK13 Series Sniper Rifle**
- **M240 MG (Series)**
- **M249 MG (Series)**
- **Mk46 LMG**
- **Mk48 LMG**
- **MK16 SCAR Light**
- **MK17 SCAR Heavy**





# Flash Hiders



- ➡ **Product-Improved Attachable Flash Hider to 5.56mm Carbines and Machineguns**
- ➡ **Must be Compatible with SOPMOD Sound Suppressor**
- ➡ **Current Small Purchases for Force Development Test / Experimentation**







## **Clip-on Night Vision Device – Sensor Fusion**

## **Crew Served/Heavy Weapons Accessories**

 **Crew Served Heavy Weapons Aiming Laser (CSHWAL)**

 **Crew Served Visible Bright Light (CSVBL)**

 **Weapon Quadrant Mounts (WQMs)**

## **Miscellaneous**

 **Miniature Red-Dot (MRD)**

 **Boresight Training Aids (BTA)**

 **Sound-Suppressor Compatible Flash Hiders**





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