

2018 ARMAMENT SYSTEMS FORUM

ARMAMENT SYSTEM RESPONSE TO THE EVOLVING THREAT SPECTRUM



May 7 – 10, 2018

Sheraton Indianapolis Hotel at Keystone Crossing

Indianapolis, IN

NDIA.org/Armament-Forum

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WELCOME TO THE 2018 ARMAMENT SYSTEMS FORUM

Dear Attendees,

Welcome to the 2018 Armament Systems Forum and Technology Firing Demonstration. The Armament Forum continues to confirm partnership of government and with the industrial base to ensure capability and readiness. This event is designed to provide the opportunity to examine aspects of Armament systems and technologies that underpin our military power today and in the future. The theme: “Armament System Response to the Evolving Threat Spectrum” reflects the changing needs for Integrated Armament Systems to counter the evolving nature of the threat and the need for maintaining technological superiority in Armaments design and performance in the face of these threats. The 2018 Forum is focused to provide a vision for the evolving Armament System capability enhancing legacy systems and evolving, maturing, and fielding advanced systems. The importance of platform integration, enabler technologies meeting warfighter objectives is included.

The informative and challenging presentations address ensuring legacy armament enhancements and present a vision for future capability over the course of the next three days. Our speakers are experts in their fields and come together with you to share their insights and discuss challenges to shape opportunities. The agenda reflects participation by Allied International countries. I am sure you will benefit from interacting and networking. Our exhibitors are eager to show innovation and advanced technology, so please take time to visit with them to consider technology applications and benefits.

The Technology Firing Demonstration on Thursday afternoon is always a highlight of this annual event. I want to thank Sal Fanelli and the demo team for their support and participation. In addition, I thank Camp Atterbury for providing the range and safety support so critical in ensuring a successful and safe experience for all participants.

I want to acknowledge and thank the planning committee, and especially the Chairs of the Division Committees – Small Arms Systems- Mr. Brian Berger, GTDS America, LLC, The GARM Industry and Government Leadership Team, and Unconventional and Emerging Technology Armament Systems- Mr. Daniel Hartman, Spectra Technologies, LLC. Without the support of the Armament Team leadership, NDIA staff, and each attendee this event would not offer the vision for Armament Systems evolving capabilities. The 2018 Forum provides value added vision for future Armament Technologies and Systems.

Thank you to the sponsors of this event who have stepped up to provide the support so vital in providing a quality experience for all participants. We appreciate their partnership and urge you to learn more about their capabilities.

Please enjoy the 2018 Armament Systems Forum and Technology Firing Demonstration, and I look forward to speaking with you.

Sincerely,

David Broden

President, Broden Resource Solutions, LLC

NDIA Armament Division Chair



WHO WE ARE

The National Defense Industrial Association is the trusted leader in defense and national security associations. As a 501(c)(3) corporate and individual membership association, NDIA engages thoughtful and innovative leaders to exchange ideas, information, and capabilities that lead to the development of the best policies, practices, products, and technologies to ensure the

safety and security of our nation. NDIA's membership embodies the full spectrum of corporate, government, academic, and individual stakeholders who form a vigorous, responsive, and collaborative community in support of defense and national security. For more information, visit NDIA.org

SCHEDULE AT A GLANCE

MONDAY, MAY 7

Registration

Suite Tower Lobby
12:00 – 4:30 pm

Plaza Foyer
4:30 – 7:30 pm

Tutorial Sessions

See page 6 for details
1:00 – 5:30 pm

TUESDAY, MAY 8

Registration

Plaza Foyer
7:00 am – 5:00 pm

Networking Breakfast

Plaza Foyer
7:00 – 8:00 am

Poster Sessions

Suite Tower Lobby
8:00 am – 5:00 pm

General Session

Plaza AB
8:00 am – 5:10 pm

Exhibit Hall

8:30 am – 7:00 pm

Awards Ceremony

Plaza AB
10:30 – 11:15 am

Networking Reception

Exhibit Hall
5:15 – 7:00 pm

WEDNESDAY, MAY 9

Registration

Plaza Foyer
7:00 am – 5:00 pm

Networking Breakfast

Plaza Foyer
7:00 – 8:00 am

Concurrent Sessions

See page 13 for details
7:45 am – 5:40 pm

Poster Sessions

Suite Tower Lobby
8:00 am – 5:00 pm

Exhibit Hall

8:30 am – 3:45 pm

THURSDAY, MAY 10

Registration

Plaza Foyer
7:00 – 11:00 am

Networking Breakfast

Plaza Foyer
7:00 – 8:00 am

Concurrent Sessions

See page 19 for details
8:00 – 11:50 am

Technology Firing Demonstration

Camp Atterbury
See page 24 for details
12:00 – 5:30 pm



ARMAMENTS DIVISION

WHO WE ARE

The Armaments Division provides the forum for industry, military and government personnel to address the issues necessary to ensure a superior armament system capability today and in the future. The division addresses armament operational needs and requirements, approaches and concepts, system integration, weapons, munitions, fire control and other ancillary equipment, and logistic support. Attention is given to total systems and to technology application and state-of-the-art technology advancements.

LEADERSHIP AND COMMITTEES

David Broden

Division Chair

Brian Berger

Small Arms Committee Chair

Daniel Hartman

Unconventional Emerging
Technology Armament Systems
Committee Chair

Matt Phillips

Guns, Ammunition, Rockets &
Missiles Committee Chair

EVENT INFORMATION

LOCATION

Sheraton Indianapolis Hotel at Keystone Crossing
8787 Keystone Crossing
Indianapolis, IN 46240

EVENT WEBSITE

NDIA.org/Armament-Forum

EVENT CONTACT

K. Ashley Phayme

Meeting Planner
(703) 247-2540
aphayme@ndia.org

PLANNING COMMITTEE

David Broden

Division Chair

Brian Berger

Small Arms Committee

Daniel Hartman

Unconventional Emerging
Technology Armament
Systems Committee

Matt Phillips

Guns, Ammunition, Rocket &
Missiles Committee

EVENT THEME

Armament System Response To The Evolving Threat Spectrum

ATTIRE

Business attire for civilians or uniform of the day for military personnel.

SURVEY AND PARTICIPANT LIST

A survey and list of attendees (name and organization only) will be emailed to you after the conference. NDIA would appreciate your time in completing the survey to help make our event even more successful in the future.

SPEAKER GIFTS

In lieu of speaker gifts, a donation is being made to the Fisher House Foundation.

HARASSMENT STATEMENT

NDIA is committed to providing a professional environment free from physical, psychological and verbal harassment. NDIA will not tolerate harassment of any kind, including but not limited to harassment based on ethnicity, religion, disability, physical appearance, gender, or sexual orientation. This policy applies to all participants and attendees at NDIA conferences, meetings and events. Harassment includes offensive gestures and verbal comments, deliberate intimidation, stalking, following, inappropriate photography and recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome attention. Participants requested to cease harassing behavior are expected to comply immediately, and failure will serve as grounds for revoking access to the NDIA event.

SESSION TRACKS

SMALL ARMS SYSTEMS

Small Arms Technology Which Creates Asymmetric Operational Advantage for Soldiers, Sailors, Airmen, and Marines.

All sessions are Distribution A.

GUNS, AMMUNITION, ROCKETS & MISSILES SYSTEMS

Armament System Modularity and Scalability Enabling Operation Capability Across Expanding Threat Spectrum.

Concurrent sessions offered are Distribution A and D.

UNCONVENTIONAL EMERGING TECHNOLOGY ARMAMENT SYSTEMS

Kinetic to Electromagnetic and Other Defeat Mechanisms on Target. Sessions offered are Distribution A and D.

MONDAY, MAY 7

TUTORIALS

TUESDAY, MAY 8

COMBINED JOINT
GENERAL SESSION

WEDNESDAY, MAY 9

SMALL ARMS TRACK

GARM TRACK

UEA TRACK

THURSDAY, MAY 10

SMALL
ARMS
TRACK

GARM
TRACK

TECHNOLOGY
FIRING
DEMONSTRATION

AGENDA

MONDAY, MAY 7

12:00 – 4:30 pm

REGISTRATION

SUITE TOWER LOBBY

1:00 – 2:30 pm

TUTORIAL 1:

US Export Controls Over Technology - ITAR And EAR Licensing Rules And Exemptions

METRO SUITE

Johanna Reeves, Esq.

Attorney, Reeves & Dola, LLP

TUTORIAL 2:

Bore Erosion Measurement and Inspection System - Small Caliber (BEMIS-SC) for QC And LAT

CLEARWATER BALLROOM A

Rand W. Hammel

Mechanical Engineering Technician, US Navy NSW

TUTORIAL 3:

What Gun Gurus Need To Know About 'Accuracy'

CLEARWATER BALLROOM B

Jeff Siewert

Systems Engineer, Arrow Tech Associates, Inc.

2:30 – 4:00 pm

TUTORIAL 4:

Additive Manufacturing-Army Plans for AM Capabilities to Enhance Warfighter Capabilities And Integrate in the Industries Base

METRO SUITE

James L. Zunino

US Army, RDECOM- ARDEC

TUTORIAL 5:

USAF AFRL Armament and Technology 2030 Initiatives

CLEARWATER BALLROOM A

Air Force Research

Laboratory

TUTORIAL 6:

Small Caliber Ammunition Intermediate Caliber Panel

CLEARWATER BALLROOM B

See tutorial description for panelist members

4:00 – 5:30 pm

TUTORIAL 7:

Small Caliber Lead Free Primer Panel

METRO SUITE

Steve Faintich

Sr. Director Marketing & Sales, St. Marks Powder
Moderator

Dan Mansfield

Lead Development Engineer, Orbital ATK

Todd Townsend

Small Caliber Project Management Engineer, Maneuver Ammunition Systems

Joel Sandstrom

Vista Outdoors

Jeremy Mills

Manager, Military Programs, Olin Corporation

Lina Norum

Nammo Demil Division

Gustavo Domit

Technical Director, Companhia Brasileira de Cartuchos

TUTORIAL DESCRIPTIONS

TUTORIAL 1

US Export Controls Over Technology - ITAR And EAR Licensing Rules And Exemptions

Ms. Reeves' practice focuses on regulatory compliance under US export controls and the federal firearms laws and regulations. The tutorial will feature a comprehensive overview of US Export Controls over US Technology.

TUTORIAL 2

Bore Erosion Measurement and Inspection System - Small Caliber (BEMIS-SC) for QC & LAT

Drawings are now aligned with current barrel dimensions as a baseline. As new barrels are accepted using the laser-based BEMIS-SC, we can verify and validate the qualities that prove to enhance accuracy. The final aspect of the BEMIS-SC is that every aspect of measurement is recorded providing a historical record of that barrel.

TUTORIAL 3

What Armament System, Weapon, and Ammunition Developers Need to Know About "Accuracy"

Jeff Siewert, will present an in-depth tutorial addressing system performance focused to accuracy and dispersion. The tutorial will cover the difference between accuracy and dispersion, factor influencing short and long range accuracy, short range dispersion, trouble shooting, interior and exterior ballistic dispersion influences, bias vs. random factors in error budgets, and strategies for minimize error. The sources and remedies for achieving desired dispersion are presented with a focus on the needs of System, Weapon, and ammunition developers and manufacturers.

TUTORIAL 4

Additive Manufacturing-Enhancing Warfighter Capabilities

The evolving Additive Manufacturing capabilities offer benefits to government and industry development and manufacturing of armament systems. The tutorial will provide status of Additive Manufacturing, overview multiple application examples, and outline the vision for applying Additive Manufacturing to facilitate development and integrate with production. Additive Manufacturing of electronics, polymers, metals, and energetics will be addressed.

TUTORIAL 5

USAF AFRL Armament and Technology 2030 Initiatives

The USAF Air Force Research Laboratory (AFRL) is developing a vision of technologies and systems for USAF capability in 2030 and beyond. AFRL personnel will describe the Initiative program, overview the technology and system focus, and outline how government, academia, and industry can partner to identify and evolve innovative capabilities. This tutorial will provide an open forum dialogue for flow of ideas, concepts etc.

TUTORIAL 6

Small Caliber Ammunition Intermediate Caliber Panel

Discussion regarding Small Arms Intermediate Calibers. The Committee has defined "Intermediate" to be a caliber between 5.56mm x 45 and 7.62mm x 51 that along with a family of weapons would have better performance (accuracy, lethality, penetration, recoil, etc.) than one or both current cartridges and could be used for both individual and a squad weapons.

Bruce Webb, Director, Specialty Ammunition, NAMMO, Inc.

Moderator

Troy Lawton, USA HQDA

LTC Andrew Lunoff, USA, PM Small Caliber Ammunition, PM MAS

LTC Loyd Beal III, USA, PM SW

LTC Mark Owens, USA, PM for Ammo, Weapons & VAS, USSOCOM

Devin Patterson, Engineer, DHS

Matt Ohlson, Director, Remington Defense, Remington Arms Co., LLC

Gustavo Domit, Technical Director, Companhia Brasileira de Cartuchos

Nick Malkovich, President, MAC, LLC

Jeff Hoffman, Black Hills Ammunition

Russ Oliver, True Velocity

TUTORIAL 7

Small Caliber Lead Free Primer Panel

US Army seeking to remove lead from small caliber primers. Panelists will provide an update on progress made with green primers. USG will address a secondary objective which is to automate primer manufacturing.

TUESDAY, MAY 8

7:00 am – 5:00 pm

REGISTRATION

PLAZA FOYER

7:00 – 8:00 am

NETWORKING BREAKFAST

PLAZA FOYER

8:00 – 8:20 am

WELCOME AND ADMINISTRATIVE ANNOUNCEMENTS

PLAZA AB

David Broden
President, Broden Resource Solutions, LLC
NDIA Armament Division Chair

8:20 – 8:30 am

NDIA WELCOME

Frank Michael
Senior Vice President of Programs and Membership, NDIA

8:30 – 8:45 am

NDIA ENTERPRISE VISION

MG James Boozer, USA (Ret)
Chief of Staff

8:45 – 9:00 am

NDIA POLICY VISION

Col Wesley Hallman, USAF (Ret)
Senior Vice President of Policy, NDIA

9:00 – 9:30 am

NETWORKING BREAK

EXHIBIT HALL

9:30 – 10:00 am

KEYNOTE ADDRESS

Armament Response to the Evolving Threat Spectrum

LTG David Halverson, USA (Ret)
Chairman and Chief Executive Officer, Cypress International

10:00 – 10:30 am

KEYNOTE ADDRESS

Anthony Sebasto
Executive Director of Enterprise and Systems Engineering Center, US Army, ARDEC

10:30 – 11:15 am

AWARDS PRESENTATIONS

Chinn Award Recipient

Presented by: Dan Shea, Phoenix Defense

Richard D. Jones

Curator Emeritus National Firearms Collection

Trifiletti Award Recipient

Presented by: Ralph Tillinghast, ARDEC

Vic Galgano

Hathcock Award Recipient

Presented by: Buford Boone

Stephen Toboz, Jr.

Naval Special Warfare Command

Professional Service Awards Recipients

Presented by: Brian Berger, GTDS America LLC

John H. Edwards (Retired)

RDECOM-ARDEC, JSSAP

Ambrose Award Recipient

Presented by: Brian Berger, GTDS America, LLC

Jim Teetzel

CEO, Wilcox Industries, Corp.

Presented by: David Broden, Broden Resource Solutions

Mark Serben (Retired)

Supervisory Project Manager, US Army RDECOM-ARDEC

11:15 am – 12:30 pm

LUNCHEON

PLAZA FOYER

12:30 – 1:00 pm

ARMY S&T EFFORTS TO MODERNIZE LETHALITY

PLAZA AB

Michael Holthe

Director for Lethality, ASA(ALT)/ODASA Research & Technology

1:00 – 1:30 pm

PEO AMMUNITION VISION

PEO Ammo Today and Vision for the Future

BG Alfred F. Abramson, III (USA)

Commanding General, Program Executive Officer Ammunition

1:30 – 2:00 pm

KEYNOTE ADDRESS

Close Combat Ground Forces - Initiatives and Vision

MG Robert Scales, USA (Ret)

2:00 – 2:30 pm

USN KEYNOTE ADDRESS

Surface Combatant Weapon System Response to the Evolving Threat

John Fiore

Technical Director, NSWCDD - Dahlgren

2:30 – 3:00 pm

NETWORKING BREAK

EXHIBIT HALL

3:00 – 3:45 pm	USAF KEYNOTE ADDRESS USAF Armament System Vision Ahead - ARFL 2030 Initiative Dr. David E. Lambert Chief Scientist, Munitions Directorate, AFRL, Eglin Air Force Base
3:45 – 4:15 pm	ADDRESSING THE MORPHING THREAT AND RECENT ACQUISITION REFORM TO RESPOND James O'Bryon President, The O'Bryon Group
4:15 – 4:45 pm	MODERN TRENDS & DEVELOPMENTS IN GLOBAL ORDNANCE 2017 – 2018 Dan Shea General Director, Phoenix Defense
4:45 – 5:15 pm	NATIONAL ARMAMENT CONSORTIUM Butch Burgess Technology Manager, Department of Defense Ordnance Technology Consortium Charlie Zisette Executive Director, National Armaments Consortium
5:15 pm	CLOSING REMARKS
5:15 – 7:00 pm	NETWORKING RECEPTION EXHIBIT HALL
5:40 – 6:00 pm	MANDATORY MEETING FOR ALL COMPANIES PARTICIPATING IN THE FIRING DEMONSTRATION

WEDNESDAY, MAY 9

7:00 am – 5:00 pm	REGISTRATION PLAZA FOYER
7:00 – 8:00 am	NETWORKING BREAKFAST PLAZA FOYER

SMALL ARMS TRACK – PLAZA AB

7:50 – 8:00 am

ADMINISTRATIVE ANNOUNCEMENTS

Brian Berger
GTDS America LLC
Small Arms Committee Chair

8:00 – 8:20 am

WELCOME

CAPT Mark H. Oesterreich, USN
Commanding Officer, NSWC, Crane

8:20 – 9:40 am

PANEL DISCUSSION: PM SOLDIER WEAPONS (PM SW)

COL Elliott Caggins, Jr. USA
Product Manager, Solider Weapons
Moderator

LTC Loyd Beal III, USA
Product Manager, Crew Served
Weapons

LTC Steven Power, USA
Product Manager, Solider Weapons

Gabe Bailey
Sig Sauer M17/M18 Pistol

9:40 – 10:10 am

NETWORKING BREAK

EXHIBIT HALL

10:10 – 11:10 am

PANEL DISCUSSION: PM MANEUVER AMMUNITION SYSTEMS (PM-MAS)

COL Hector Gonzalez, USA
Project Manager, PM-MAS
Moderator

Christopher Seacord
Product Manager, Medium Caliber
Ammunition

LTC Andrew Lunoff, USA
Product Manager, Small Caliber
Ammunition

Tom Coradeschi
Chief Engineer, PM MAS

11:10 am – 12:10 pm

PANEL DISCUSSION: NATO WEAPONS & SENSORS WORKING GROUP

Dr. Barton Halpern
NATO Weapon and Sensor Group Chairman

Callum Jensen
Land Engineering Agency, DoD
- Australia

Dr. Amal Bouamoul
DRDC, Canada

Aldo Sluga
DMO - The Netherlands

Cdr. Jens Tore Moen Alfei
DLO, Land Systems - Norway

Douglas Cohen
System Engineer, PM SW

Dr. David Dye
Scientist, NSWC Crane

Adam Jacob
Engineer, ARDEC

Mark McFadden
Chief, Armament Tech Facility-
Supervisory General Engineer, USA,
ARDEC, JSSAP

David Long
Navy Technical Warrant Holder,
NSWC Crane/ NAVSEA

Wayde Thomka
Director, Technology Managment,
Project Manager Soldier Sensors &
Lasers

Dr. Mark Thoreson
Engineer/Scientist, NSWC

12:10 – 1:10 pm

NETWORKING LUNCH

EXHIBIT HALL

1:10 – 2:10 pm

PANEL DISCUSSION: PM SOLDIERS SENSORS AND LASERS (PM SSL)

COL Christopher Schneider, USA

Project Manager, Soldier Sensor & Laser

Moderator

Wayde Thomka

Director, Technology Management, Project Manager Soldier Sensors & Lasers

2:10 – 3:10 pm

PANEL DISCUSSION: JOINT SERVICE SMALL ARMS SYNCHRONIZATION TEAM (JSSAST)

Augustine Funcasta

USA, RDECOM-ARDEC, JSSAP

Moderator

COL Kurt “Travis”

Thompson, USA

Solider Requirements Division

Christopher Woodburn

Deputy, Maneuver Branch,

Capabilities, Development

Directorate

Col Enrico Venditti, USAF

Security Forces Center

MSgt Craig LaMudge, USAF

Chief, Weapons and Ordnance

Division, HQ USCG: Office of

Specialized Capabilities

LCDR Peter Downes, USN

DCNO N9

LTC Mark Owens, USA

PEO SOF Warrior

3:10 – 3:40 pm

NETWORKING BREAK

EXHIBIT HALL

JOINT SERVICE SMALL ARMS PROGRAM (JSSAP) SESSION

Augustine Funcasta

USA, RDECOM-ARDEC, JSSAP

Moderator

3:40 – 4:00 pm

JSSAP Science and Technology Advisory Council

Marc Ritt

ARDEC

4:00 – 4:20 pm

ARDEC Small Caliber Barrel S&T Efforts

Adam Foltz, P.E.

Mech Eng, ARDEC

4:20 – 4:40 pm

Characterization of Machine Gun Barrel Temperature and Stress Conditions Through Correlation of Testing and Modeling Simulation Data

Adam Jacob

Engineer, ARDEC

Dr. Laurie Florio

ARDEC

Adam Foltz

Mech Eng, ARDEC

4:40 – 5:00 pm

Development of Small Caliber Barrel for Enhanced Performance

Ryan Berg
Design Engineer, ARES, Inc.

Adam Jacob
Engineer, ARDEC

5:00 – 5:20 pm

Precision Munitions Technology

Christopher Parisi
Project Officer, ARDEC

5:20 – 5:40 pm

Development of Small Arms Blowback Test Methodology

Adam Jacob
Engineer, ARDEC

Douglas Ray
Lead Mathematical Statistician,
ARDEC

Arnt Johnsen
Norwegian Defense Research
Establishment (FFI)

WEDNESDAY, MAY 9 CONTINUED

GARM TRACK – CLEARWATER BALLROOM AB

7:30 – 7:40 am

ADMINISTRATIVE ANNOUNCEMENTS

7:40 – 8:10 am

DECISIVE LETHALITY ON NGCV

COL Gerald Boston
Deputy Director, NGCV Cross Functional Team

8:10 – 8:40 am

EVOLVING TECHNOLOGY ENABLING CAPABILITY VS. THREAT SPECTRUM

Maria Allende
Acting Chief of the Office of the Director of Technology, RDECOM-ARDEC

8:40 – 9:40 am

PANEL DISCUSSION: ARMAMENT RESPONSE TO EVOLVING THREAT SPECTRUM

David Broden
President, Broden Resource
Solutions
Moderator

Dr. Terrence West
AMRDEC

Dr. David Lambert
Chief Scientist, AFRL

Michael Holthe
US Army ASAALT

Dr. Anthony Pezzano
Director, ARDEC Business Interface

9:40 – 10:10 am

NETWORKING BREAK EXHIBIT HALL

GARM CONCURRENT BREAKOUT SESSIONS

Distribution A - Clearwater Ballroom A

Distribution D - Clearwater Ballroom B

10:10 – 10:30 am

Panel Discussion: Ammunition vs. Missiles Application Considerations

Howard Kent

CEO, Armor Development Group, LLC
Moderator

25mm Non-Energetic Fragmenting Cartridge for Joint Strike Fighter

Rick Wright

Sr. Principal Engineer, General Dynamics-OTS

10:30 – 10:50 am

PGU-47 APHEI-T

James McConkie

Mechanical Engineer, NSWC Crane

40mm x 53 High Exploding Air Burst Ammunition & Weapon Systems

Rick Wright

Sr. Principal Engineer, General Dynamics-OTS

10:50 – 11:10 am

One Basic Technology for Different Multipurpose Tank RD

Danny Schirding

IMI Systems LTD

Tube Launched Range Extended (T-Rex) Munition for a Multi-Role Mission

Michael Donadio

Senior Systems Engineer, ARDEC

11:10 – 11:30 am

Improved 105mm Illuminating Candle

M. Benoit Jolicoeur

General Dynamics-OTS, Canada

Kinetic Defeat of Maneuverable Agile (Group 1) Unmanned Aerial Vehicle Targets Using an Integrated Precision Fire Control Radar, Remote Weapon Station and Small Caliber Munition

Andre Aklian

ARDEC

11:30 – 11:50 am

The Rheinmetall Day Zimmermann Munitions M430A1 ABM Retrofit Program

Brian Sullivan

Program Manager, American Rheinmetall
Munitions, Inc.

XM25 Counter Defilade Tactical Engagement (CDTE) System and Complimentary Counter Unmanned Aircraft System Capability

Vince Martinez

XM25 Technical Director, Orbital ATK

11:50 am – 12:10 pm

Analysis of Large Caliber Ballistic Perf and Base Pressure Gradient

Jeff Siewert

Systems Engineer, Arrow Tech Associates, Inc.

105mm Low Blast Overpressure Muzzle Brake for M119 Towed Howitzer

Alan Ng

ARDEC

12:10 – 1:10 pm

NETWORKING LUNCH EXHIBIT HALL

1:10 – 1:30 pm

The Need for Increased Full-Spectrum Lethality for Light and Medium Vehicles

Warwick Holloway

EOS Defense Systems

Truck Mounted Howitzer

Thomas DeVoe

ARDEC

1:30 – 1:50 pm	Enabling Air to Ground Munitions to Survive Extended Ground Deployment Howard Kent CEO, Armor Development Group, LLC	Fragmentation Characterization for Multi-Material Multilayer (M3I) Warhead Cases John Paul Shebalin Engineer, NSWC Dahlgren Mary Collings Manager, Systems Development and Rapid Fielding Branch E34, NSWC Dahlgren
1:50 – 2:10 pm	Modernizing Field Artillery Maintenance Equipment to Increase Performance and Reduce Needed Resource James Brooker Vice President, Engineering, R&D, Otis Technology	Lightweight Tandem Warhead System for Mout Targets for the Precision Shoulder Launched Munition (PSLM) David Pfau Engineer, ARDEC
2:10 – 2:30 pm		M72E8/E10 Low FFE Qualification Effort Tyler Caudell Engineer, NSWC Crane
2:30 – 2:50 pm		Electronic Round Counter for 120mm Mortar Anthony Cannone Mechanical Engineer, ARDEC
2:50 – 3:10 pm	End of GARM Distribution A Session	Enabling Better Mortar Systems Through Accuracy Testing and Modeling Michael Wright APO, ARDEC
3:10– 3:40 pm	NETWORKING BREAK EXHIBIT HALL	
3:40 – 4:00 pm		Hostile Fire Signatures: Their Measurement and Analysis Jeffery Cameron Scientist, QuantiTech
4:00 – 4:30 pm		MK34 Gun Weapon System Capabilities and Recent Improvements Joe Segar MK160 Project Manager, NSWC Dahlgren Division
4:30 pm	OBSERVATIONS AND WRAP UP	

WEDNESDAY, MAY 9 CONTINUED

UEA TRACK – DISTRIBUTION A – METRO SUITE LOWER LEVEL

7:30 – 7:50 am	UEA OBJECTIVES, PURPOSE, CHALLENGES, OPPORTUNITIES Dan Hartman Spectra Technologies <i>UEA Committee Chair</i>
7:50 – 8:00 am	UEA FOCUS TO 2018 ARMAMENT THEME Evolving Technology and Systems to Shape Armament System Response to Evolving Threat Spectrum
8:00 – 8:40 am	MAJOR DEFENSE ACQUISITION PROGRAMS AND MEETING CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR SURVIVABILITY REQUIREMENTS John Larzelere JPEO JPM-P MDAP Support-Team Lead, NSWC Dahlgren Division
8:40 – 9:00 am	THE SECURE SUPPLY CHAIN Henry Newman Chief Technology Officer, Seagate Government Solutions
9:00 – 9:20 am	ADAPTIVE SENSITIVITY TESTING IN ARMAMENTS: A Case Study <div>Zachary Krogstad Mechanical Engineer, Armament Research, Development & Engineering Center</div> <div>Nick Tashjian Quality Engineer, Armament Research, Development & Engineering Center</div>
9:20 – 9:40 am	THE STUNSTICK NEUROSCRAMBLER LESS-LETHAL WEAPON SYSTEM Directed Energy That Works Fred Pearson Pearson Industries
9:40 – 10:10 am	NETWORKING BREAK EXHIBIT HALL

10:10 – 10:40 am	MULTI-CALIBER WEAPON A Survival Weapon Incorporating New Technology Richard “Rex” Hayes Liberty Consulting Solutions
10:40 – 11:00 am	SCI-FI TODAY: Forward Deployed 3-D Unitized Polymer and Metal Fabrication Shops Howard Kent CEO, Armor Development Group, LLC
11:00 – 11:20 am	ANALYSIS OF LOW DENSITY, LOW VELOCITY, LESS THAN LETHAL PROJECTILES Kenneth Hohnacker Mechanical Engineer, ARDEC
11:20 – 11:40 am	MICRO-LASER IGNITION Gregory Burke SME, Pictanny Arsenal, US Army
11:40 am – 12:10 pm	GUNS, BULLETS, FIRE CONTROL AND ARTIFICIAL INTELLIGENCE Ralph Tillinghast Lab Director, Collaboration Innovation Lab, ARDEC
12:10 – 1:10 pm	NETWORKING LUNCH EXHIBIT HALL

UEA TRACK – DISTRIBUTION D – AUTHORIZED DEPARTMENT OF DEFENSE AND US DOD CONTRACTORS ONLY

1:10 – 1:30 pm	UNCONVENTIONAL AND EMERGING TECHNOLOGY ARMAMENT SYSTEMS VISION FOR EVOLVING EMERGING CAPABILITIES FROM DEVELOPMENT TO FIELDING Dan Hartman Spectra Technologies <i>UEA Committee Chair</i>
1:30 – 2:00 pm	US ARMY EM GUN TECHNOLOGY AND SYSTEM STATUS Josiah Fay Mechanical Engineer, ARDEC

2:00 – 2:30 pm

US ARMY DIRECTED ENERGY VISION

Dr. Craig Robin

Sr. Research Scientist, AMRDEC

2:30 – 3:00 pm

USAF DIRECTED ENERGY VISION

Dr. Diana Loree

Acting Chief Scientist, AFRL

3:10 – 3:40 pm

NETWORKING BREAK

EXHIBIT HALL

3:40 – 4:10 pm

INDUSTRY DIRECTED ENERGY VISION

Matt Straup

Northrop Grumman

4:10 – 4:40 pm

HYPERSONIC WEAPONS

Dr. Richard P. Hallion

President, Hallion Associates

4:40 – 5:45 pm

PANEL DISCUSSION:

Unconventional and Emerging Technology Armament Systems Focus, Vision, Enabling Response to Evolving Threat Spectrum – From Concept to Technology and Integrated Systems Readiness

Dr. Anthony Pezzano

Director, ARDEC Business Interface,
ARDEC

Dr. Craig Robin

Sr. Research Scientist, AMRDEC

Matt Straup

Northrop Grumman

Michael Holthe

US Army ASAALT

Dr. Diana Loree

Acting Chief Scientist, AFRL

Dr. Richard P. Hallion

President, Hallion Associates

Dr. David Lambert

Chief Scientist, Munitions Directorate,
AFRL

Josiah Fay

Mechanical Engineer, ARDEC

5:45 pm

OBSERVATIONS AND WRAP UP

THURSDAY, MAY 10

7:00 – 11:00 am

REGISTRATION

PLAZA FOYER

7:00 – 8:00 am

NETWORKING BREAKFAST

PLAZA FOYER

12:00 – 4:30 pm

TECHNOLOGY FIRING DEMONSTRATION

12:00 pm – Pickup box lunch prior to boarding bus

12:30 pm – Buses depart for Camp Atterbury

4:30 pm – Buses depart for Sheraton Hotel after Technology Firing Demonstration

SMALL ARMS TRACK PLAZA AB

CONCURRENT BREAKOUT SESSIONS

Plaza A

SESSION 1: AMMUNITION

Bruce Webb

Director, Specialty Ammunition, NAMMO, Inc.

Moderator

8:00 – 8:10 am

Announcements

Brian Berger

GTDS America LLC

Small Arms Committee Chair

8:10 – 8:30 am

Multiplex Small Arms Cartridge Technology

Christopher Parisi

ARDEC

8:30 – 8:50 am

Improving Bullet Pull- FEA and Empirical Studies

Daniel Meierhofer

Orbital ATK

8:50 – 9:10 am

A Wild Ride- 9mmm MK217 SMAW Spotting Cartridge

Jay Bell

MAST/Brass Extrusion Labs Ltd.

Plaza B

SESSION 2: TARGET ACQUISITION – FIRE CONTROL PANEL

Robert Guarasi

Wilcox Industries

Corporation

Moderator

Terence Rice

RDECOM-ARDEC, JSSAP

Moderator

Announcements

Robert Guarasi

Wilcox Industries Corporation

Moderator

Panel Discussion

Robert Guarasi

Wilcox Industries Corporation

Moderator

Government Panelists:

COL Elliott Caggins, USA

PM Soldier Weapons

COL Chris Schneider, USA

PM SSL

Ross Towers

ARDEC Fire Control

Darren Ward

ARDEC Fire Control

Dr. Mark Thoreson

NSWC Crane

Greg Petty

NSWC Crane

Dean Kissinger

CERDEC NVESD

9:10 – 9:20 am

NETWORKING BREAK

PLAZA FOYER

CONTINUED

SESSION 1: AMMUNITION

PLAZA A

SESSION 2: TARGET ACQUISITION – FIRE CONTROL

PLAZA B

9:20 – 9:40 am

Design, Modeling and Simulation, and Testing of a Lightweight Cartridge Case

Raymond Chaplin
ARDEC

Panel Discussion (Continued)

Robert Guarasi
Wilcox Industries Corporation
Moderator

9:40 – 10:00 am

Contributions Of Variables To Velocity Deviations In Small Caliber Ammunition

Connie Lusto
ARDEC

David Stubler
Orbital ATK

Industry Panelists:

Robert Guarasi
Wilcox Industries Corporation

Bryan Bockmon
Aim-Lock, Inc.

Tony Bacarella
DRS EOIS

Lennart Ljungfelt
Aimpoint

Bill Schorr
L3 Brashear

Matthew Warnick
American Rheinmetall Munitions

10:00 – 10:20 am

Preparation Technique for High Liquid Content Energetics in Sensitivity Testing, and Thin Layer Propagation Testing Overview for Energetics Process Hazards Evaluation

Daniel Mansfield
Chemical Engineer, Orbital ATK

10:20 – 10:40 am

High Performance Propellants Using Thin Film Energetics; Thin Film Primer Technology

Professor Kevin Coffey
Spectrum Materials Science

End Session 2

SESSION 1 CONTINUES

PLAZA A

SESSION 3: WEAPONS B

PLAZA B

David Long
Navy Technical Warrant Holder, NSWC Crane/ NAVSEA
Moderator

10:40 – 11:00 am

Inductive Heating to Dry Environmentally Safe Case Mouth Waterproofing

Andy Bowman
Orbital ATK

Wilfredo Ramos
Orbital ATK

Cryo Accurizing

Pete Paulin
CEO, 300 Below, Inc.

11:00 – 11:20 am

Contributing Factors to Proper Tracer Performance

Thomas Gmyrek
ARDEC

Kaleb Luna
Orbital ATK LCAAP

International Collaborative in Stabilized Small Arms Testing and Evaluation

Dr. Mark Thoreson
NSWC Crane

Ian Campbell
NSWC Crane

11:20 – 11:40 am

Multi-Spectral Small Arms Signature Characterization

Dr. David Dye
NSWC Crane

Dr. Mark Thoreson
NSWC Crane

Cooperative Barrel Erosion Study of 5.56mm Ball and Lead-Free Ammunition

Matt Wolff
Vista Outdoor/Federal Cartridge Company

Joel Sandstrom
Vista Outdoor/Federal Cartridge Company

Paul Furrier
Vista Outdoor/Federal Cartridge Company

Justin Pierce
Vista Outdoor/Federal Cartridge Company

11:40 am – 12:00 pm

The Next Advancement for the Battle Proven M240 Weapon System

Robert Landies
Ohio Ordnance Works

Mid-Length vs. Carbine Length Gas System on 14.5-Inch Upper Receiver Group Test

Andrew Zirkelbach
NSWC Crane

12:00 pm

CLOSING REMARKS

Brian Berger
GTDS America LLC
Small Arms Committee Chair

THURSDAY, MAY 10 CONTINUED

GARM TRACK – CLEARWATER BALLROOM AB

FIRE CONTROL SESSION – DISTRIBUTION D – AUTHORIZED DEPARTMENT OF DEFENSE AND US DOD CONTRACTORS ONLY

8:00 – 8:10 am

ANNOUNCEMENTS

8:10 – 8:30 am

THE FIRE CONTROL KILL CHAIN

Ralph Tillinghast

Lab Director, Collaboration Innovation Lab, ARDEC

8:30 – 8:50 am

ARDEC AND NATO SOFTWARE FOR FIRE CONTROL SYSTEMS

Andre Sowa

US Army REDCOM ARDEC

Jason Fonner

US Army REDCOM ARDEC

8:50 – 9:10 am

HELMET DISPLAY AND TRACKER SYSTEM FOR US NAVY MH-60S MULTI-MISSION HELICOPTERS

Caleb Michel

NSWC Crane

9:10 – 9:45 am

NETWORKING BREAK

PLAZA FOYER

9:45 – 10:05 am

ELECTROCHEMICAL RIFLING OF LARGE CALIBER CANNONS

Christopher Humiston

Mechanical Engineer, RDECOM ARDEC, Benet Laboratories

GPS DENIED GUIDANCE SESSION – DISTRIBUTION D – AUTHORIZED DEPARTMENT OF DEFENSE AND US DOD CONTRACTORS ONLY

10:05 – 11:00 am

GPS DENIED PANEL (SMALL BUSINESSES & USG)

Moderator: TBD

Brad Clawson

Director Technical Programs,
NAVSYS Corporation

Hamish Malin

NSWC - Dahlgren

Tony Opperman

Orbital Research

Anthony Corcella

11:00 – 11:20 am	GUIDED ADVANCED TACTICAL ROCKET (GATR) WEAPON SYSTEM Dr. Tom Ting Director of Advanced Technology, Orbital ATK
11:20 – 11:40 am	GPS DENIED/DEGRADED NAVIGATION Fred Lisy President, Orbital Research

TECHNOLOGY FIRING DEMONSTRATION

12:00 pm	PICKUP BOX LUNCH PRIOR TO BOARDING BUS
12:30 pm	BUSES DEPART FOR CAMP ATTERBURY
2:00 pm	ARRIVE AT DEMONSTRATION SITE—CAMP ATTERBURY
2:15 pm	SAFETY BRIEFING ONSITE
2:30 pm	DEMONSTRATING COMPANIES BRIEF TECHNOLOGY INITIATIVES
3:00 pm	FIRING DEMONSTRATIONS
3:30 pm	ATTENDEE FIRING PARTICIPATION
4:30 pm	BUSES DEPART FOR HOTEL
5:30 pm	ARRIVE AT HOTEL

THANK YOU TO OUR SUPPORTING SPONSOR



POSTER SESSIONS

TUESDAY AND WEDNESDAY

Suite Tower Lobby

8:00 am – 5:00 pm

ABSTRACT TITLE	AUTHOR	TRACK
ARDEC Terminal Performance Model - an unclassified damage model for use by industry	Gavin McFarland	Small Arms
The Effects of Stratified Wind Profiles in Direct Fire Ballistics	Tomas Bober	Small Arms
Analysis of Low Density, Low Velocity, Less-Than- Lethal Projectiles	Kenneth Hohnacker	UEA
Contribution of Variables to Velocity Deviations in Small Caliber Ammunition	Connie Lusto	Small Arms
Modeling Ballistic Events Using Explicit Finite Element Analysis	Michael Cataldi	Small Arms
Micro-Laser Ignition	Gregory Burke	UEA
External Ammunition Sealants and Bullet Pull Strength	Harry Arnon	Small Arms
High Velocity Armor Piercing Ammunition Technology Enablers for Evolving Threats	Howard D. Kent	Small Arms

BIOGRAPHIES



LTG DAVID D. HALVERSON, USA (RET)

CEO

Cypress International, Inc.

LTG David D. Halverson, USA (Ret) became the Chief Executive Officer of Cypress International, Inc. in Alexandria, VA in October 2017. In January 2018, he became the Chairman and Chief Executive Officer.

He grew up in Babbitt, MN, and graduated from the US Military Academy with a Bachelor of Science Degree. He attended the US Naval Postgraduate School in Monterey, CA, where he was awarded a Master of Science degree in Operations Research and Systems Analysis. He graduated from the Kenan-Flagler Business School's Executive Development Program at the University of NC.

Dave's last active duty assignment was the Army Assistant Chief of Staff for Installation Management, where he transformed the business approach to the global installation management and programmed the \$19B annual energy, general services, force

protection, construction and quality of life programs for over 154 installations in the Total Army. He has served in various staff and leadership positions including command at every level from Battery to Post Command to the Commanding General of Army Installation Management Command. He has served in Continental America, Europe, Korea, Panama, and South West Asia. His staff positions, focused on program development, testing, concept and requirement development, strategic planning, cost-benefit and risk analysis, with assignments as the Senior Military Analyst in the Joint Wargaming and Policy Division of the US Southern Command in Panama, joint requirements and Army budget development in positions such as the Commander in Chief Team Chief in the Office of the Chief of Staff of the Army, Program, Analysis, and Evaluation Directorate. He was the Central Command J3, Chief of Plans, and planned,

coordinated, and executed war plans for Operation Enduring Freedom and Operation Iraqi Freedom after 9-11. He deployed as the Deputy Commanding General (Support) for the 4th Infantry Division for OIF 5/7. After his deployment, he assumed duties on the Army Staff, as the Director of Operations, Readiness, and Mobilization, G-3 and then became the Director of Force Development, G-8, where he developed the RDT&E investment, modernization and equipping programs for the Army totaling \$200B across the POM. He transformed the training and modernization as the Commanding General of Army Fires Center of Excellence and Fort Sill, Oklahoma, where the Air Defense and Field Artillery merged under one post. Dave served as the Deputy Commanding General, Army Training and Doctrine Command where the newest doctrine and concepts were developed, along with leader development, training and learning models programs were revamped.



CAPTAIN MARK H. OESTERREICH, USN

Commanding Officer NSWC, Crane

Captain Mark H. Oesterreich assumed command of the Naval Surface Warfare

Center, Crane Division (NSWC Crane) in July of 2017. NSWC Crane delivers innovative solutions and readiness to the Nation and its Warfighters through application of its technical capabilities.

A native of South Holland, Illinois, Captain Oesterreich received his commission from the United States Naval Academy in May 1991, graduating with a Bachelor of Science degree in Naval Architecture. He completed the nuclear training pipeline and served aboard USS ARCHERFISH (SSN 678), completing his qualification in Submarines.

Captain Oesterreich attended the Naval Postgraduate School earning a Master of Science degree and Professional Engineer's degree in Mechanical Engineering as well

as certification as a Professional Engineer in Mechanical Engineering. Following his graduate studies, he completed the Submarine Officer Advanced Course and served aboard USS OHIO (SSBN-726G) as Engineering Officer until his transfer to the Engineering Duty Officer Community in January of 2003.

Captain Oesterreich next served at the Puget Sound Naval Shipyard and Intermediate Maintenance Facility as the Deputy Project Superintendent for the Refueling Overhaul and Conversion of USS MICHIGAN (SSGN-727).

In November of 2007 he reported to the Director, Fleet Readiness Division (N43), on the Staff of the Chief of Naval Operations (OPNAV) as a Ship and Submarine Readiness Action Officer responsible for Carrier Maintenance Requirements and Fleet Maintenance Requirement Integration. Captain Oesterreich then assumed responsibility as Chief Engineering Officer

aboard USS RONALD REAGAN (CVN-76) in December of 2007 completing two deployments in support of Operation Enduring Freedom.

In June of 2010 he reported to the staff of Commander Naval Air Forces Pacific as the Carrier Force Maintenance Officer. Following selection for Captain, he reported to Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility where he served as the Business and Strategic Planning Officer and Production Resources Officer.

In July of 2014 Captain Oesterreich reported to the staff of Commander Naval Air Forces, Atlantic for duty as the Assistant Chief of Staff for Ship Maintenance and Material. One year later he was transferred to the same position at Commander Naval Air Forces Pacific Fleet.

Captain Oesterreich's service decorations include the Legion of Merit, Meritorious Service Medal and various personal, campaign, service, and operational awards.



ANTHONY J. SEBASTO

Executive Director of Enterprise and Systems Engineering Center, US Army ARDEC ARDEC, Munitions Engineering & Technology Center.

Anthony J. Sebasto was appointed to the Senior Executive Service and named

Executive Director for Enterprise and System Integration Center, US Army Armaments Research, Development and Engineering Center effective June 28.

His appointment was announced on June 19 by the Assistant Secretary of the Army for Manpower and Reserve Affairs. Sebasto, currently Senior Associate for Munitions at the Munition Engineering and Technology Center, began his civil service at Picatinny Arsenal in 1983.

He served in a variety of engineering and management positions in support of the

research, development and production of small, medium, and large caliber weapon systems for ground and air combat platforms and for the individual soldier.

"I have to thank my many mentors that helped guide me throughout my career, my family for their love and support, and to the entire Picatinny community, both government and private sector, that I have had the honor of working with in achieving many accomplishments in support of the warfighters" said Sebasto.

A graduate of the University of Delaware with a bachelor's degree in mechanical engineering, Sebasto received a master's degree in management from the Florida Institute of Technology. Sebasto is also a

graduate of the Senior Executive Program at Harvard University's John F. Kennedy School of Government. He is a member of the Army Acquisition Corp and certified in Engineering, Science and Technology Management, as well as in Program Management.

Sebasto serves as the lead for subterranean/megacities materiel solutions for the US Army Research, Development and Engineering Command.

In his new job, Sebasto will be responsible for guiding and measuring the progress of large, complex integrated product development teams assigned to all services and armament acquisition programs of the Office of the Secretary of Defense.



BG ALFRED F. ABRAMSON III, USA

*Program Executive Officer Ammunition, Commanding General
Picatinny Arsenal, New Jersey*

Brigadier General
Alfred F. Abramson
III became the
Program Executive

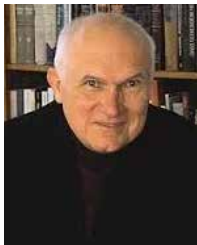
Officer Ammunition and the Commanding General, Picatinny Arsenal on December 29, 2017, leading the mission to develop and procure conventional and leap-ahead munitions to increase the Warfighter's combat power. Prior to this, BG Abramson served as the Deputy Program Executive Officer Ammunition and Senior Commander Picatinny Arsenal.

BG Abramson was commissioned a Second Lieutenant in the Chemical Corps after graduating from VA State University where he received a Bachelor of Science degree in Chemistry. BG Abramson served in a variety of positions overseas as well as

the contiguous United States to include: Battalion Chemical Officer, 6-37th Field Artillery; Smoke Platoon Leader, 172nd Chemical Company; Company Commander, 266th Quartermaster Battalion; Chemical Staff Officer, Project Manager's Office for NBC Defense; Aide-De-Camp, Soldier Biological Chemical Command; Assistant Product Manager, NBC Point Detection; Program Executive Office Liaison Officer, Coalition Forces Land Component Command; Assistant Product Manager, NBC Reconnaissance Systems; Budget Team Chief, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology); Joint Product Manager, Biological Detection Systems; Military Assistant to the Under Secretary of the Army; Joint Project Manager for NBC

Contamination Avoidance; Executive Officer for the Principle Military Deputy Assistant Secretary of the Army (Acquisition Logistics, and Technology); and previously served as the Deputy, Joint Program Executive Officer for Chemical and Biological Defense.

His civilian education includes a Master's degree in Chemistry from Johns Hopkins University, a Master's degree in National Security and Strategic Studies from the Naval War College, and a Master's degree in Strategic Studies from the Army War College. His military education includes the Chemical Officer Basic and Advanced Courses, the Combined Arms and Services Staff School, Command and General Staff College, the Advanced Program Management Course, the Senior Service College and Senior Leaders Course.



ROBERT SCALES

Retired MG Robert
Scales currently
serves as a FOX
News Channel (FNC)
military analyst.
He is president
of Colgen, Inc., a

consulting firm specializing in issues relating to land power, war gaming and strategic leadership and is one of America's best known and most respected authorities on land warfare. Dr. Scales served over thirty years in the Army commanding two units

in Vietnam and winning the Silver Star for action during the battles around Dong Ap Bia (Hamburger Hill) during the summer of 1969. Subsequently, he served in command and staff positions in the United States, Germany, and Korea and ended his military career as Commandant of the United States Army War College. In 1995 he created the Army After Next program which was the Army's first attempt to build a strategic game and operational concept for future land warfare. He has written and lectured on warfare to academic,

government, military, and business groups in the United States, Australia, Asia, the Middle East, Europe, and South America. He is the author of two books on military history: *Certain Victory*, the official account of the Army in the Gulf War and *Firepower in Limited War*, a history of the evolution of firepower doctrine since the end of the Korean War. In addition, he is an authority on contemporary and future warfare. He was the only serving officer to have written books subsequently selected for inclusion in the official reading lists of three services.



JOHN G. FIORE

Technical Director
NSWCDD

Mr. John G. Fiore is the Technical Director for the Naval Surface Warfare

Center, Dahlgren Division (NSWCDD), Dahlgren, VA. He was appointed to the position in July 2016 and has been in the SES since September 2014. In his current role, he is responsible for Dahlgren's technical excellence in executing research, development, test and evaluation, analysis, systems engineering, integration, and certification of complex naval combat, sensor, weapon, and strategic systems associated with surface warfare as well as homeland defense and force protection.

Mr. Fiore was previously the Director for Above Water Sensors in the Program Executive Office for Integrated Warfare Systems (PEO IWS). In this capacity he oversaw the planning, development, acquisition, testing, and sustaining of cost-effective warfare systems for US Navy surface ships and submarines. Additionally, Mr. Fiore was the Chief Technology Officer for PEO IWS. He spearheaded the constantly-evolving transition of new naval capabilities and technologies into more than 150 Programs of Record.

Mr. Fiore began his career at the Naval Surface Warfare Center Philadelphia Division (NSWCPD) in Philadelphia, PA., where he held a series of progressively

challenging positions culminating in his assignment as the first Deputy Program Manager for Smartship in 1998. After leaving NSWCPD, Mr. Fiore held key leadership positions at the National Geospatial Intelligence Agency (NGA) as Deputy Program Manager for Imagery Continuity of Operations (ICOOP), the US Navy's Office of Technology Development Support as the Chief Engineer for an advanced airborne intelligence, surveillance, reconnaissance, and targeting sensor, and as the acting Deputy Program Executive at the Aegis Ballistic Missile Defense (BMD) organization where he shared responsibility with the Program Executive for oversight of all Aegis BMD programs.



DR. DAVID E. LAMBERT

Chief Scientist
Munitions Directorate, Air Force Research Laboratory, AFRL, Eglin Air Force Base

Dr. David E. Lambert is a scientific senior executive currently serving as the Chief

Scientist, Munitions Directorate, Air Force Research Laboratory (AFRL/RW), Eglin Air Force Base, FL. He serves as the principal scientific and technical advisor to the director and is the primary authority for the technical content of the directorate's

science and technology portfolio. The Munitions Directorate consists of a staff of more than 600 military, civilian and contracted professionals pursuing the discovery, development and integration of affordable conventional air-launched weapon technologies for the US Air Force.

Dr. Lambert has served over 32 years in DoD civil service in a variety of technical positions. He earned his Bachelors of

Science from Florida State University (FSU) and Masters and PhD from the University of Florida (UF). In 2011 he was recognized as an AFRL Fellow and has earned honors as Distinguished Alumnus from FSU Mechanical Engineering Dept, Distinguished Alumnus lecturer from UF Mechanical and Aerospace Engineering Dept, and Leroy Collins Distinguished Graduate from Northwest Florida State College.



JAMES O'BRYON

CEO

The O'Bryon Group

James O'Bryon has over 40 years of technical experience serving with the DoD

including 15 years as Deputy Assistant Secretary of Defense (Live Fire Testing), as well as, currently, the CEO of The O'Bryon Group. Prior to his work at the Pentagon, he served as Chief, Combat Survivability in AMSAA, Aberdeen, MD as well as a mathematician at the Ballistics Research Laboratories (now ARL) for over 10 years on aeroballistics and fire-and-

forget weapons. He has testified before the Congress several times testifying on Weapons Acquisition, Test and Evaluation, Directed Energy Systems, and Aviation Security. He has a mathematics degree from The King's College, and graduate degrees from George Washington University and MIT in Systems Analysis and Electrical Engineering respectively. He retired from the Pentagon shortly after the 9/11 attack and formed The O'Bryon Group which contracts with DoD, DHS, IDA, SURVICE Engineering, CSC and other defense-related

organizations. Since his retirement from OSD, he has taught over 60 short courses on Live Fire Testing to DoD and industry partners across America. He is also a National Board Member of NDIA and served 21 years as Chair of the T&E Division. Jim has also worked as a radio announcer and talk show host at radio stations in Indiana and Maryland, written 2 books and has also released 4 music albums. He is currently listed in Who's Who in the World.



DAN SHEA

General Director
Phoenix Defense

E. Daniel Shea is a US Army veteran (Combat Engineers) and for over 40

years in the defense industry has been heavily involved in military small arms and defense contracting. Dan is a certified government expert on small arms, and a Master Armorer certified as an armorer instructor on the following weapon systems: M16 series, AK47 series, M203, GP25, M249/MK46, M240, M60 series, M2HB, NSV, PKM, DShK, KPV, RPG7, Carl Gustav M3 84mm, AGS-17/BGA-30, MK19, M134 Minigun, most shoulder-fired or tripod-mounted weapon systems, as

well as most suppressor systems. Dan designed and implemented the 1997 and 1999 Suppressor trials using cutting-edge equipment to quantify the sound results. Due to this extensive experience, he is frequently contracted to supervise MILSPEC testing of new weapons systems.

Dan is the National Defense Industrial Association's 2017 Colonel George M. Chinn Awardee and has been on the NDIA Steering Committee since the early 1990s, as well as being the Editor-in-Chief and Technical Editor of Small Arms Defense Journal, Small Arms Review, the old Machine Gun News and many technical

books on firearms, and has written over 1100 technical articles on firearms. For almost 40 years, he was the founder and General Manager of the now closed Long Mountain Outfitters, is currently the General Director of Phoenix Defense, an armorer training and weapons supply company.

Dan's licensing includes manufacturing, importing and exporting of firearms including machine guns, silencers, and destructive devices, as well as international arms brokering. He has been to over 80 countries actively dealing in arms and munitions and studying historical weapons and current threats.



SAVE THE DATE

9TH ANNUAL INTEGRATED AIR AND MISSILE DEFENSE SYMPOSIUM

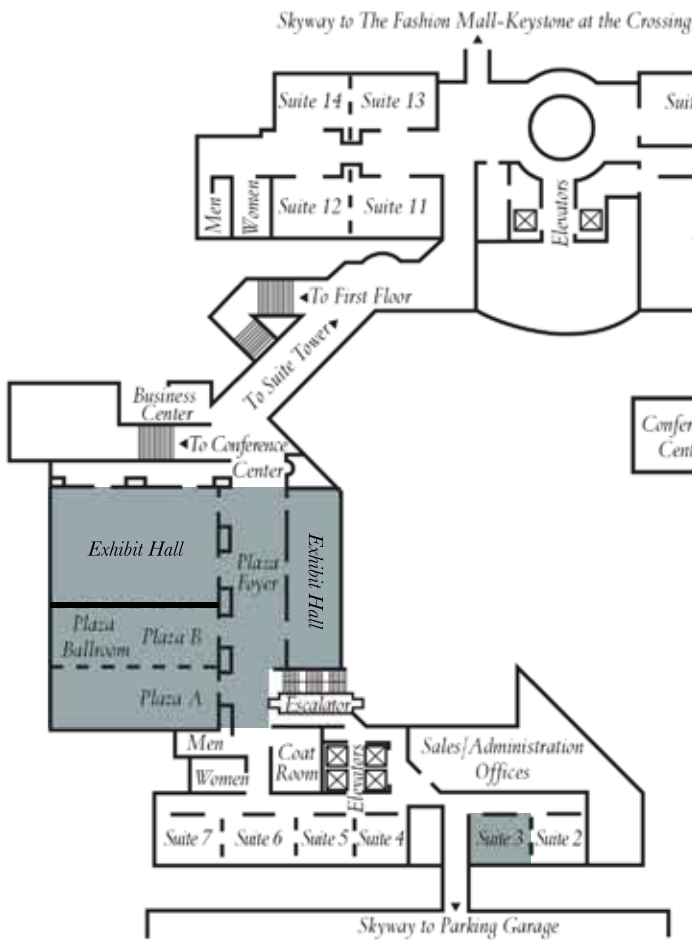
July 12, 2018

The Johns Hopkins University Applied Physics Laboratory
Laurel, MD

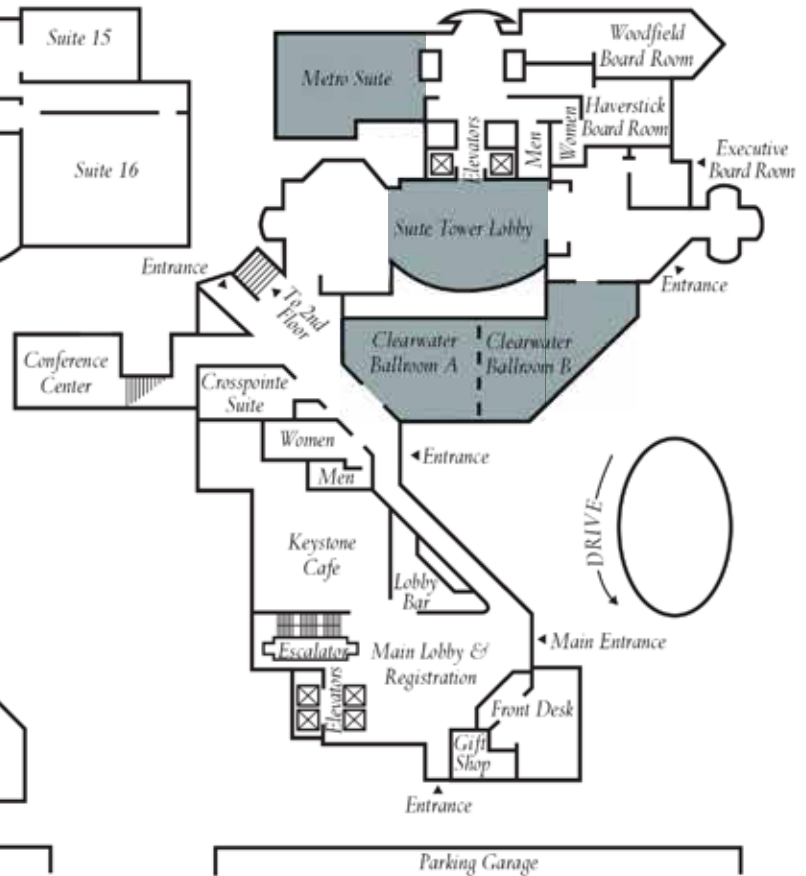
NDIA.org/IAMD18

VENUE MAP

2ND FLOOR



GROUND FLOOR



SAVE THE DATE

INTERNATIONAL EXPLOSIVES SAFETY SYMPOSIUM & EXPOSITION

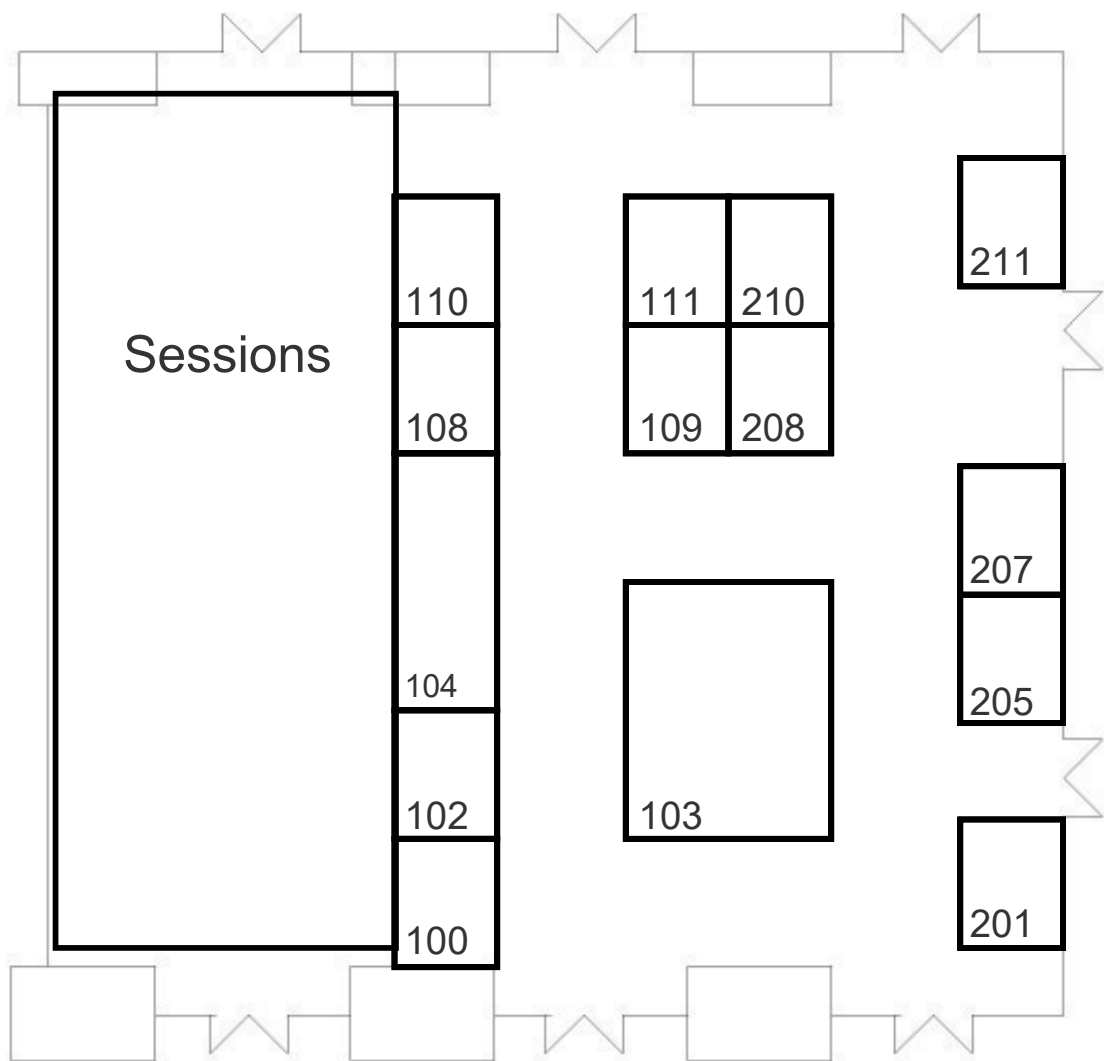
August 6 – 9, 2018

Sheraton San Diego Hotel & Marina

San Diego, CA

NDIA.org/Intl-Explosives-Safety

EXHIBITOR MAP



ENTRANCE

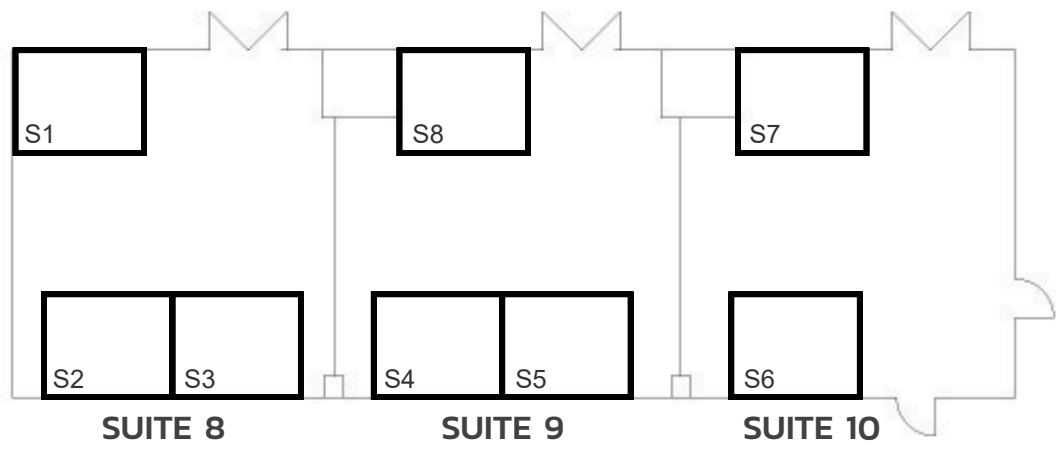


EXHIBIT HALL HOURS

TUESDAY, MAY 8
8:30 am – 7:00 pm

WEDNESDAY, MAY 9
8:30 am – 3:45 pm

EXHIBITORS BY COMPANY

As of 4/26/18

Aimpoint Inc.....	110	LINSUN INDUSTRIAL GROUP.....	100
ARDEC.....	S5	National Armaments Consortium.....	104
Arrow Tech Associates.....	102	NDIA Chapters.....	S6
Barrett.....	207	Orbital ATK.....	211
CBC.....	210	Secubit.....	108
Detroit Gun Works.....	S1	Small Arms Defense Journal.....	S4
FN America, LLC.....	S3	Sturm, Ruger.....	201
General Dynamics - OTS.....	103	Textron Systems.....	S8
Glock, Inc.....	111	U.S. Army RDECOM.....	S5
Heckler & Koch Defense.....	208	USAF AFRL.....	S2
Kistler Instrument Corp.....	109	Wilcox Industries.....	S7
Lancer Systems.....	205		

EXHIBITORS

AIMPOINT INC. 110

For over 40 years, Aimpoint has been the world leader in design and manufacture of electronic red-dot sighting systems. Soldier tested and combat proven – don't settle for anything less.

ARDEC S5

Based at Picatinny Arsenal, NJ and Aberdeen Proving Ground, MD (respectively), the Armament RDE Center (ARDEC) and Army Research Laboratory (ARL) provide critical research and underpinning technologies that support armament developments for Soldier weapons, ground combat vehicles, aircraft, mortars, and field artillery. ARDEC and ARL pursue this mission through interactions and collaboration with partners in government, industry, and academia and through a robust internal research and development capability.

ARROW TECH ASSOCIATES 102

Arrow Tech Associates is a small Non traditional contractor located in South Burlington VT specializing in ammunition design including exterior, interior ballistics, trajectory simulation and reconstruction, test data analysis, structural analysis and design (interior balloting, case chamber interaction, sabot design), Guidance, Navigation and Control, Hardware in the Loop (HIL) Development, Truth Modeling (Firing Tables and Fire Control) along with Technical and Program Management.

BARRETT 207

Headquartered in Tennessee, Barrett is the world leader in large-caliber rifle design and manufacturing. Our products are used by law enforcement agencies, the United States military and more than 73 State Department approved countries in the world. It's one thing to manufacture guns, and another to live and breathe them. Whether we're carefully assembling our latest rifle or increasing the velocity and precision of the ammunition itself - we're always working for absolute perfection.

CBC**210**

CBC is one of the largest ammunition manufacturers in the world, focused on the production of small and medium calibers, since 1926. Its wide range of products is exported to over 130 countries and attends to the needs of military, law enforcement and commercial markets. CBC offers the most comprehensive range of handgun and rifle cartridges in the industry, including complete families of military calibers such as 5.56x45mm, 7.62x51mm, 12.7x99mm (.50), 20mm, 30mm and 40mm.

DETROIT GUN WORKS**S1**

Detroit Gun Works (DGW) is a world-class contract manufacturer of precision engineered Weapons components. DGW manufactures quality machined parts for Weapons OEM's and Military Defense Contractors. DGW is ISO 9001 certified; an 07 Federal Firearms Licensee; and maintains an SOT to manufacture Class III components.

FN AMERICA, LLC**S3**

The World's Most Battle-Proven Firearms™ - FN America, LLC is a wholly-owned subsidiary of FN Herstal, S.A. and is a leader in the development and manufacturing of high quality, reliable firearms for military, law enforcement and consumers in the US Headquartered in McLean, VA with manufacturing operations in Columbia, SC, FN is passionately committed to providing its customers with a portfolio of products, training and support services that enhance their performance and safeguard their lives. For more information, visit www.fnamerica.com.

GENERAL DYNAMICS – OTS**103**

General Dynamics Ordnance and Tactical Systems manufactures large-, medium- and small-caliber direct and indirect-fire munitions; and is a leader in the development and production of lightweight tactical vehicles, weapons and armament systems. The company also produces propellants and non-lethal and force-protection products. More information about General Dynamics Ordnance and Tactical Systems is available online at www.gd-ots.com.

GLOCK, INC.**111**

GLOCK is a leading global manufacturer of firearms. GLOCK's polymer-based pistols revolutionized the firearms industry, making GLOCK pistols a favorite among military and LE agencies worldwide. In 2016, GLOCK celebrates its 30th Anniversary in the US Renowned for featuring three safeties, GLOCK pistols offer users confidence they can rely on.

HECKLER & KOCH DEFENSE**208**

HECKLER & KOCH is the world's premier small arms systems company and a major supplier to the commercial market, global military and federal law enforcement agencies. An innovative leader in design and manufacturing, HECKLER & KOCH provides technologically advanced firearms, logistical support, training and specialized services with the highest standards of innovation and reliability.

KISTLER INSTRUMENT CORP**109**

Kistler will exhibit its full line of piezoelectric sensors including dynamic ballistic pressure sensors for various ballistics applications, along with high g accelerometers for recoil, high vibration and shock applications. The 6217A ballistics pressure sensor in a high sensitivity 2000 bar (30 kpsi) measuring range is our featured product; an ideal sensor for mortars, grenade launchers, flare guns, side air bag and more. We will have a new ballistics analyzer with complete software demos.

LANCER SYSTEMS**205**

Lancer Systems is a material and engineering company. Applying our expertise in advanced polymers and lightweight component designs, Lancer created the L5 and L7 Advanced Warfighter Magazines. These hybrid magazines comes in either translucent or opaque. Complete weapon systems are available along with carbon fiber handguards and other accessories that meet the needs of today's most discerning shooters. For more information, please visit www.lancer-systems.com or call 610.973.2600

LINSUN INDUSTRIAL GROUP**100**

Visit Linsun Industrial Group and see demonstrations of the worlds only bioremediating SMARTWASHER from Chemfree. Experience the health, safety and environmental benefits with no VOC's, nonhazardous, non-flammable, never dump, parts-washing fluid. Smartwashers are designed to preform harsh military weapons cleaning applications. All the Smartwasher process components are available in the DOD NSN system and on GSA Advantage, and GPC's are accepted. Protection and procurement made easy.

**NATIONAL ARMAMENTS
CONSORTIUM****104**

Since 2000, the National Armaments Consortium (NAC) has served as the Department of Defense Ordnance Technology Consortium's (DOTC) industry partner. Our robust, transparent, and unique collaboration approach, once considered a novel and unrealistic concept, has evolved into a well-established process through which our DoD stakeholders acquire the innovative Armament technologies needed to maintain US technological superiority.

NDIA CHAPTERS

Indiana, Iowa, Great Lakes and Michigan

ORBITAL ATK

As a global leader in aerospace and defense technologies, Orbital ATK designs, builds and delivers space, defense and aviation-related systems to customers around the world both as a prime contractor and as a merchant supplier. Our main products include launch vehicles and related propulsion systems; satellites and associated components and services; composite aerospace structures; tactical missiles, subsystems and defense electronics; and precision weapons, armament systems and ammunition.

SECUBIT

Secubit's solution combines three integrated technological components: The revolutionary WeaponLogic Smart Counter, a powerful handheld Reader and a centralized Dashboard and analytics system. Together, they provide a comprehensive new analytical approach for effective weapon management and maintenance. Monitor Weapon AND Operator. Waterproof. Battery life of 10 years. Future integration with NETT Warrior, Real -Time Track weapon performance Rugged MIL-STD-810G compliant mobile reader

SMALL ARMS DEFENSE JOURNAL S4

Chipotle Publishing, LLC is home to Small Arms Defense Journal, Small Arms Review, and www.SmallArmsReview.com. Distributed at defense trade shows worldwide, Small Arms Defense Journal is a bimonthly publication that focuses on small arms, accessories, soldier gear, new products, industry news, and defense trade show reviews. Small Arms Review is a 10 issue publication. Our purpose is to provide a forum for all Class 3 interests, as well as any aspect of the military small arms industry.

STURM, RUGER

S Sturm, Ruger & Co., Inc. is one of the nation's leading manufacturers of rugged, reliable firearms for the commercial sporting market, military and law enforcement. As a full-line manufacturer of American-made firearms, Ruger offers consumers over 400 variations of more than 30 product lines. For more than 60 years, Ruger has been a model of corporate and community responsibility. Our motto, "Arms Makers for Responsible Citizens®," echoes our commitment to these principles.

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TEXTRON SYSTEMS

Textron Systems' businesses develop and integrate products, services and support for aerospace and defense customers, as well as civil and commercial customers including those in law enforcement, security, border patrol and critical infrastructure protection around the globe. Harnessing agility and a broad base of expertise, Textron Systems' innovative businesses design, manufacture, field and support comprehensive solutions that expand customer capabilities and deliver value.

U.S. ARMY RDECOM

Based at Picatinny Arsenal, NJ and Aberdeen Proving Ground, MD (respectively), the Armament RDE Center (ARDEC) and Army Research Laboratory (ARL) provide critical research and underpinning technologies that support armament developments for Soldier weapons, ground combat vehicles, aircraft, mortars, and field artillery. ARDEC and ARL pursue this mission through interactions and collaboration with partners in government, industry, and academia and through a robust internal research and development capability.

USAF AFRL

WILCOX INDUSTRIES

Wilcox is an industry leader in the design and manufacture of high quality tactical equipment for use by military and law enforcement in the United States. Making tactical products that have a reputation for quality and toughness is what Wilcox is committed to. Wilcox works toward finding solutions to the technology shortfalls that military and law enforcement encounter. With over 35 years of experience in manufacturing Wilcox has become known as a proven performer.

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S2

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SAVE THE DATE



WARHEADS AND BALLISTICS CLASSIFIED SYMPOSIUM

July 30 - August 2, 2018

Naval Postgraduate School

Monterey, CA

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