

2018 INTERNATIONAL EXPLOSIVES SAFETY SYMPOSIUM & EXPOSITION

EXPLOSIVES SAFETY AND MUNITIONS RISK MANAGEMENT



August 6 - 9, 2018

Sheraton San Diego Hotel and Marina

San Diego, CA

NDIA.org/Intl-Explosives-Safety

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NDIA

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, AUGUST 6

Registration Open
7:00 am – 5:00 pm

**Munitions Risk Management
Assessment Workshop**
8:00 am – 5:00 pm

Site Planning Workshop
8:00 am – 5:00 pm

TUESDAY, AUGUST 7

Registration Open
7:00 am – 4:30 pm

**General Session &
Keynote Speakers**
8:00 – 9:50 am

Exhibit Hall Open
9:30 am – 6:30 pm

Concurrent Sessions
10:15 am – 4:50 pm

Networking Reception
5:00 – 6:30 pm

WEDNESDAY, AUGUST 8

Registration Open
7:00 am – 4:30 pm

**General Session &
Keynote Speakers**
8:00 – 9:40 am

Exhibit Hall Open
9:30 am – 3:30 pm

Concurrent Sessions
10:20 am – 4:50 pm

THURSDAY, AUGUST 9

Registration Open
7:00 am – 12:00 pm

Concurrent Sessions
8:00 am – 4:50 pm

Exhibit Hall Open
9:30 am – 1:30 pm

EVENT INFORMATION

LOCATION

Sheraton San Diego Hotel and Marina
1380 Harbor Island Drive
San Diego, CA 92101

EVENT WEBSITE

NDIA.org/Intl-Explosives-Safety

EVENT THEME

Explosives Safety and Munitions Risk Management

ATTIRE

Civilian: Business
Military: Uniform of the day

EVENT CONTACT

Reneé Despot
Meeting Manager
(703) 247-2599
rdespot@ndia.org

Sarah O’Hanley, CEM
Manager, Exhibits & Sponsorships
(703) 247-9460
sohanley@ndia.org

Daniel Lung
Program Coordinator
(703) 247-9476
dlung@ndia.org

SURVEY AND PARTICIPANT LIST

You’ll receive via email a survey and list of attendees (name and organization) after the conference. Please complete the survey, which helps 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.

AGENDA

MONDAY, AUGUST 6

7:00 am – 5:00 pm **REGISTRATION OPEN**
HARBOR ISLAND FOYER

7:00 – 8:00 am **NETWORKING CONTINENTAL BREAKFAST**
HARBOR ISLAND BALLROOM 1

CONCURRENT WORKSHOPS

8:00 – 10:00 am	Munitions Risk Management Assessment SPINNAKER Dr. Josephine Covino Steve Darby John Lenox AK Williams <i>Facilitators</i>	Site Planning SEABREEZE Lea Ann Cotton <i>Facilitator</i>
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10:00 – 10:30 am **NETWORKING BREAK**
HARBOR ISLAND BALLROOM 1

10:30 am – 12:00 pm	Munitions Risk Management Assessment CONTINUED	Site Planning CONTINUED
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12:00 – 1:00 pm **LUNCH**
HARBOR ISLAND BALLROOM 1

1:00 – 3:00 pm	Munitions Risk Management Assessment CONTINUED	Site Planning CONTINUED
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3:00 – 3:30 pm **NETWORKING BREAK**
HARBOR ISLAND BALLROOM 1

3:30 – 5:00 pm	Munitions Risk Management Assessment CONTINUED	Site Planning CONTINUED
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5:00 pm **WORKSHOPS ADJOURN**

TUESDAY, AUGUST 7

7:00 am – 4:30 pm **REGISTRATION OPEN**
HARBOR ISLAND FOYER

7:00 – 8:00 am **NETWORKING CONTINENTAL BREAKFAST**
HARBOR ISLAND FOYER

- 8:00 – 8:15 am **WELCOME REMARKS**
 HARBOR ISLAND BALLROOMS 2 & 3
CAPT Frank Michael, USN (Ret)
 Senior Vice President, Program Development and Membership, NDIA
Dr. Josephine Covino
 Science Advisor, DoD Explosives Safety Board
- 8:15 – 9:00 am **KEYNOTE SPEAKER**
 HARBOR ISLAND BALLROOMS 2 & 3
Col Lawrence Nixon, USAF
 Deputy Chief of Safety
- 9:05 – 9:50 am **KEYNOTE SPEAKER**
 HARBOR ISLAND BALLROOMS 2 & 3
Thierry Chiapello
 Executive Director, DoD Explosives Safety Board
- 9:30 am – 6:30 pm **EXHIBIT HALL OPEN**
 NAUTILUS
- 9:50 – 10:15 am **NETWORKING BREAK**
 NAUTILUS

CONCURRENT SESSIONS

10:15 am – 12:00 pm **INTERNATIONAL POLICY AND PRACTICE**
 HARBOR ISLAND BALLROOM 1
Robert Ford
Session Chair

Explosives Safety and Munitions Risk Management – Compelling Past, Active Present, Uncertain Future

Thierry Chiapello
 Executive Director, DoD Explosives Safety Board

MSIAC Workshop 2018: Improved Explosives and Munitions Risk Management

Martijn van der Voort
 Technical Specialist Officer, Munitions Safety Information Analysis Center (MSIAC)

Standardization of Explosives Classification and Characterization Testing

Robert Ford
 President, Safety Management Services, Inc.

Allied Ammunition Storage and Transport Publication Number 4 (AASTP-4) – Status and Future Updates

Hans Øiøm
 Research Lead, Norwegian Defense Materiel Agency - Ammunition

10:15 am – 12:00 pm

RISK MANAGEMENT AND GOVERNANCE

HARBOR ISLAND BALLROOM 2

Robert MacNaught

Session Chair

Reducing Tort Liability Arising Out of Federal Munitions/Explosives Contracts: A Matter of Mutual Responsibility for the U.S. and its Contractors

Raymond Biagini

Partner, Covington & Burling, LLP

Overview of Explosives Safety Governance in the DoD

Art Kaminski

Director of Policy Development, DoD Explosives Safety Board

Avoiding Confusion in Risk Management

John Fellows

CEO, A-P-T Research, Inc.

The UK's Explosives Safety Vision – Demonstrably Safe, Environmentally Sound, Effective, and Available Defense Capability

Robert MacNaught

Defense OME Safety Regulator, UK Defence Safety Authority

10:15 am – 12:00 pm

RISK MITIGATION AND DEMIL

HARBOR ISLAND BALLROOM 3

Stephanie Wacenske

Session Chair

Review of A Decontamination Accident

Lyn Little

Explosives Safety Specialist, Mission Support Services

Risk Assessment Methodology in Connection with Transfer of Former Military Training Areas to Civilian Society in Sweden

Dennis Menning

Senior Scientist, Swedish Defense Research Agency

Decontamination and Dismantling (D&D) of Explosive Contaminated Process Piping in High Explosive Load Lines

Paul Miller

Director, Advanced Technology Systems, Gradient Technology, Inc.

Modeling a Robust Caisson Structure to Resist Effects from Blow-in- Place of Underwater Unexploding Ordnance, SERDP MR-2648

Joseph Trotsky

Environmental Engineer, NAVFAC Engineering and Expeditionary Warfare Center

12:00 – 1:00 pm

LUNCH

NAUTILUS

CONCURRENT SESSIONS

1:00 – 2:40 pm

RISK MANAGEMENT AND SITING APPLICATIONS

HARBOR ISLAND BALLROOM 1

Hugo Dijkers
Session Chair

Part I/Risk-Based Siting Criteria – Current and Future Efforts in Risk Management and Siting Applications

Dr. Josephine Covino
Science Advisor, DoD Explosives Safety Board

Part II/Risk-Based Siting Criteria – Current and Future Efforts in Risk Management and Siting Applications

Dr. Ming Liu
Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

A Fast Running Engineering Model for Lethality Due to Wall Debris Thrown from Above Ground Magazines

Peter Kummer
Senior Safety Expert, Bienz, Kummer & Partner Ltd.

An Overview of Risk-Based Explosives Safety Siting

Michael Oesterle
Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

Jon Chrostowski
Senior Scientist, ACTA, Inc

1:00 – 2:40 pm

EXPLOSIVES SAFETY POLICY AND PRACTICE I

HARBOR ISLAND BALLROOM 2

Martin Pope
Session Chair

Experimental and Theoretical Basis of NATO Standards for Safe Storage of Ammunitions and Explosives

Martijn van der Voort
Technical Specialist Officer, Munitions Safety Information Analysis Center (MSIAC)

Reducing Blast Distant Focused Overpressure Effects

Paul Braithwaite
Sr. Staff Scientist, Northrop Grumman

The Klotz Group Contribution to Explosion Safety

***Robert Conway**
Research Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

Ballistic Trajectory Modeling for the Insensitive Munitions Type IV/V Hazardous Fragment Threshold

Kevin Miers
Mechanical Engineer, U.S. Army ARDEC

1:00 – 2:40 pm

PLANNING/REDUCING EXPLOSIVES RISK

HARBOR ISLAND BALLROOM 3

Dr. Jerry Ward
Session Chair

Navy A&E Facility Planning

Gary Hogue
Senior Explosives Safety Expert, Naval Ordnance Safety and Security Activity

U.S. Navy A&EFS Program Overview/Magazine Storage Requirements Calculator (MSRC) Optimization Algorithms

Tyler Ross
Explosives Safety Engineer, A-P-T Research, Inc.

Research Plan for ECM Required Earth Cover

Joshua Payne
Research Engineer, U.S. Army Engineer Research & Development Center

How Not to Site Plan: Common Pitfalls and Mistakes in Hazards Analyses

Tyler Ross
Explosives Safety Engineer, A-P-T Research, Inc.

2:40 – 3:10 pm

NETWORKING BREAK

NAUTILUS

CONCURRENT SESSIONS

3:10 – 4:50 pm

RISK MANAGEMENT AND SITING APPLICATIONS II

HARBOR ISLAND BALLROOM 1

Shonn McNeill
Session Chair

KG-ET: An Engineering Tool for Debris Hazard Prediction

Dr. Malte von Ramin
Group Manager Hazard & Risk Analysis, Fraunhofer Institute for High-Speed Dynamics

IMESAFR Overview

John Tatom
Chief, Explosives Safety and Testing, A-P-T Research, Inc.

The IMESAFR Science Panel

Shonn McNeill
Chief, Explosives R&D Division, Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)

Modeling Uncertainty in Concept and in Quantitative Risk Assessment Models

***John Tatom**
Chief, Explosives Safety and Testing, A-P-T Research, Inc.

3:10 – 4:50 pm

EXPLOSIVE SAFETY POLICY AND PRACTICE II

HARBOR ISLAND BALLROOM 2

Peter Kummer
Session Chair

MSIAC – Update, Activities, and Highlights

Martin Pope
Technical Specialist Officer, Munitions Safety Information Analysis Center (MSIAC)

Applying Systematic Risk Management Protocol to the Design of a Modern Propellant Manufacturing Plant in Australia

Robert Ford
President, Safety Management Services, Inc.

Coupled CFD/CSD Simulations of Dust Production by Fragmenting Charges Using Stabilized Linear Tetrahedral Elements

Dr. Orlando Soto
Computational Physics Scientist, Applied Simulations, Inc.

“Intended Use” and Hazard Classification Testing

Erik Wrobel
Chemical Engineer, U.S. Army ARDEC

3:10 – 4:50 pm

RISK MANAGEMENT – STORAGE SYSTEMS

HARBOR ISLAND BALLROOM 3

James King
Session Chair

Engineering Explosives Safety – The Development of the Pseudo Underground Storage System (PUGSS)

Dr. Chong Seah
Head Engineer, Defense Science and Technology Agency

Multi-Modal Explosives Manufacture's Constraints

Dr. Joshua Hoffman
Director of Technical Services, Institute of Makers of Explosives

Development of Deep Earth Cover Magazines

Kai Oh
Senior Engineer, Defense Science and Technology Agency

Steel Box Earth-Covered Magazine

Tyler Ross
Explosives Safety Engineer, A-P-T Research, Inc.

5:00 – 6:30 pm

NETWORKING RECEPTION & POSTER REVIEW

NAUTILUS

Storage Requirements Calculator (MSRC) Overview and Demo

Tyler Ross
Explosives Safety Engineer, A-P-T Research, Inc.

A Retrospective Study on the Safety of Waterjet (WJ) and Abrasive Waterjet (AWJ) Processing of High Explosive Ordnance

Paul Miller
Director, Advanced Technical Systems, Gradient Technology, Inc.

WEDNESDAY, AUGUST 8

- 7:00 am – 4:30 pm **REGISTRATION OPEN**
HARBOR ISLAND FOYER
- 7:00 – 8:00 am **NETWORKING CONTINENTAL BREAKFAST**
HARBOR ISLAND FOYER
- 8:00 – 8:05 am **ADMIN REMARKS**
HARBOR ISLAND BALLROOMS 2 & 3
CAPT Frank Michael, USN (Ret)
Senior Vice President, Program Development and Membership, NDIA
- 8:05 – 8:50 am **KEYNOTE SPEAKER**
HARBOR ISLAND BALLROOMS 2 & 3
MG Charles R. Hamilton, USA
Commanding General, 8th Theater Sustainment Command, U.S. Army
- 8:55 – 9:40 am **KEYNOTE SPEAKER**
HARBOR ISLAND BALLROOMS 2 & 3
Captain Nigel Smith, RAN
Command Director, Land EO SPO, Capability Acquisition and Sustainment Group
- 9:30 am – 3:30 pm **EXHIBIT HALL OPEN**
NAUTILUS
- 9:40 – 10:20 am **NETWORKING BREAK**
NAUTILUS

CONCURRENT SESSIONS

- 10:20 am – 12:00 pm **RISK MANAGEMENT – THERMAL EFFECTS I – BURN TO VIOLENT REACTIONS**
HARBOR ISLAND BALLROOM 1

Ed Walseman
Session Chair

Metrics Analysis for the Improved Evaluation Methodology of the Hazard Severity of Fragments Projected from a Deflagrating Warhead

Daniel Pudlak
Engineer, U.S. Army ARDEC

Combustion Behavior & Quantity Distance Siting

Dr. Josephine Covino
Science Advisor, DoD Explosives Safety Board

Experimental Results of The Convective Combustion of an HD 1.3 Material

Cynthia Romo
Mechanical Engineer, NAWCWD

Characterizing the Pressure Gain of Magazines Due to Convective Combustion of M1 Gun Propellant

Dr. Brian Bojko
Aerospace Engineer, NAWCWD

10:20 am – 12:00 pm

EXPLOSIVES SAFETY SITING – TESTING

HARBOR ISLAND BALLROOM 2

Thomas Garcia
*Session Chair***An Overview of AMO-CAT: DDESB's Explosives Safety Knowledge Improvement Program****Robert Conway**

Research Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

Iron Warrior IV Debris Recovery: ATF's Use of DDESB's Technical Paper 21**John Tatom**

Chief, Explosives Safety and Testing, A-P-T Research, Inc.

Small Quantities for Research and Laboratories (SQRL) Test Program**Dr. Michelle Crull**

Senior Structural Engineer, U.S. Army Engineering & Support Center, Huntsville

Protective Construction for Personnel in Operations Buildings with Varying Explosives Hazards**John Nevels**

PE, U.S. Army Engineering & Support Center, Huntsville

10:20 am – 12:00 pm

EXPLOSIVES HAZARDS – OTHER CONSIDERATIONS

HARBOR ISLAND BALLROOM 3

Dr. Joshua Hoffman
*Session Chair***How Can the Government Mitigate the Use of Common Household Products Used for Explosives?****Robert Clowers**

Consultant, Envistacom

Chemistry of Chemical Warfare Agents**Dr. Kirstin Warner**

Chemist, DoD Explosives Safety Board

Design Factor Influences on Total Determined Explosives Site Risk**Dr. Jason Florek**

Senior Engineer, Stone Security Engineering

An International Standard to Manage Space Launch Risks**Tom Pfitzer**

President, A-P-T Research, Inc.

12:00 – 1:00 pm

LUNCH

NAUTILUS

CONCURRENT SESSIONS

1:00 – 2:40 pm

RISK MANAGEMENT – THERMAL EFFECTS II – MODELING

HARBOR ISLAND BALLROOM 1

Dr. Noel Hsu

Session Chair

Modeling and Simulation of HD 1.3 Thermal Initiation Tests on a Small Reinforced Concrete Storage Structure

Dr. Ming Liu

Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

Numerical Modeling of Sub-Scale Convective Combustion of M1 Propellant

Dr. Fumiya Togashi

Chief Combustion Scientist, Applied Simulations, Inc.

Integrated Violence Model of 1.3 Events with Example Test Results

Dr. Clint Guymon

Director of R&D, Safety Management Services, Inc.

A General Pressure Generation Model for Granular Propellant Fires

Dr. Frederick Paquet

Project Officer, General Dynamics OTS

1:00 – 2:40 pm

EXPLOSION EFFECTS – MODELING I

HARBOR ISLAND BALLROOM 2

Robert Conway

Session Chair

A Fast Running Model for Accurate Time-Dependent Post-Shock Gas Flow

Pietro Gheorghiu

Engineer, Karagozian & Case, Inc.

Estimation of Primary Blast Injuries Inside Buildings

Knut Holm

Senior Scientist, Norwegian Defense Research Establishment (FFI)

Numerical Modeling Capabilities to Better Understand Internal Explosions Phenomena

***Dr. Malte von Ramin**

Group Manager Hazard & Risk Analysis, Fraunhofer Institute for High-Speed Dynamics



REGISTER NOW

23RD ANNUAL EXPEDITIONARY WARFARE CONFERENCE

October 16 – 18, 2018

Westin Annapolis

Annapolis, MD

NDIA.org/EWC18

1:00 – 2:40 pm

EXPLOSIVES SAFETY – SOLUTIONS

HARBOR ISLAND BALLROOM 3

Dr. Joseph Baum
Session Chair

Explosives Safety Siting Quantity-Distance Engine & Flowcharts Criteria Merge and Software Rewrite

Cameron Stewart

Research Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

Protective Construction Design Roadmap

Arturo Luna

Research Structural Engineer, NAVFAC Naval Facilities Engineering Service Center

Ultra-High-Speed Optical Flame Detection and Releasing System Solutions for the Munitions Industry

Michael Hosch

Flame Detection Product Line Manager, Det-Tronics

2:40 – 3:10 pm

NETWORKING BREAK

NAUTILUS

CONCURRENT SESSIONS

3:10 – 4:50 pm

RISK MANAGEMENT – THERMAL EFFECTS III – STRUCTURAL DESIGN & REACTIONS VIOLENCE

HARBOR ISLAND BALLROOM 1

Dr. Lara Leininger
Session Chair

Protective Construction Design Criteria for HD 1.3

Arturo Luna

Research Structural Engineer, NAVFAC Naval Facilities Engineering Service Center

Realistic Assessment of HD 1.3 Events

Maurice Muser

Project Manager, Audits & Regulatory Compliance, Nammo Raufoss AS

Explosion Effects and Consequences from Detonations and Less Violent Munitions Response

Martijn van der Voort

Technical Specialist Officer, Munitions Safety Information Analysis Center (MSIAC)

Safety Assessments of Thermally Damaged Energetic Materials

John Reynolds

Senior Scientist, Lawrence Livermore National Laboratory

3:10 – 4:50 pm

EXPLOSION EFFECTS – MODELING II

HARBOR ISLAND BALLROOM 2

Dr. Ming Liu
Session Chair

Improved Method to Calculate Gas Pressure from Partially Confined Detonations

Charles Oswald
Senior Principal, Protection Engineering Consultants

On the Role of Modeling Dust Production by Fragmenting Warheads in Storage Facilities

Dr. Joseph Baum
CEO, Applied Simulations, Inc.

Updated Blast Effects and Consequence Models in DDESB Technical Paper 14

Robert Conway
Research Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

The Current State of the Vulnerability Assessment and Protection Option (VAPO) Software Program and its Applicability to the Explosives Safety Community

Dr. James Nichols
VAPO Principal Investigator, Applied Research Associates, Inc.

3:10 – 4:50 pm

OPERATIONAL RISK I

HARBOR ISLAND BALLROOM 3

Dr. Michael Oesterle
Session Chair

Operationalizing the Munitions Risk Management Assessment Process

John Lenox
Director Military Operations, DoD Explosives Safety Board

Explosives Safety Risk Assessments at Ports

Brandon Fryman
Junior Engineer, A-P-T Research, Inc.

Planning Considerations for Munitions Related Infrastructure

Lea Ann Cotton
Safety Engineer, DoD Explosives Safety Board

Explosion Siting Assessment for Sounding Rocket Missions

Jon Chrostowski
Senior Scientist, ACTA, Inc.

Quantitative Risk Analysis of Ammunition Transshipments in Harbors

Hugo Dijkers
Researcher, TNO Defence, Safety and Security

THURSDAY, AUGUST 9

7:00 am – 12:00 pm **REGISTRATION OPEN**
HARBOR ISLAND FOYER

7:00 – 8:00 am **NETWORKING CONTINENTAL BREAKFAST**
HARBOR ISLAND FOYER

CONCURRENT SESSIONS

8:00 – 9:40 am **HAZARD CLASSIFICATIONS & INSENSITIVE MUNITIONS I – INTERNATIONAL STANDARDIZATION**
HARBOR ISLAND BALLROOM 1
Dr. Upton Shimp
Session Chair

Motivations for NATO Standardization of Hazard Classification Procedures

Brent Knoblett
Safety Engineer, DoD Explosives Safety Board

NATO Working Group on Insensitive Munitions and Hazard Classification Requirements, Assessment, and Hazard Frequency

Martin Pope
Technical Specialist Officer, Munitions Safety Information Analysis Center (MSIAC)

Hazard Classification Reduction Assessment

Stephen Struck
Research Engineer, Air Force Research Laboratory

Review and Update of STANAG 4526 Shaped Charge Jet, Munitions Test Procedure

Dr. Brian Fuchs
Experimental Evaluation Lead Technical Expert, U.S. Army ARDEC

8:00 – 9:40 am **ELECTRICAL HAZARDS AND PROTECTIVE EQUIPMENT**
HARBOR ISLAND BALLROOM 2
John Fellows
Session Chair

Third-Party Lightning Protection System Certification Program for Explosives Facilities

Mitchell Guthrie
Senior Engineer, Lightning Protection Institute Inspection Program

Identifying Lightning Protection Requirements and Deficiencies

Jeffrey Denton
Electrical Engineer, Army Corps of Engineers

Lightning Risk Assessment Tailored to Applications Involving Structures Housing Explosives

Alain Rousseau
President, SEFTIM

Considerations on Analysis of Lightning Protection System Adequacy When Required Documentation is Not Available

Mitchell Guthrie
Senior Engineer, Lightning Protection Institute Inspection Program

8:00 – 9:40 am

PROTECTIVE CONSTRUCTION I

HARBOR ISLAND BALLROOM 3

Jon Chrostowski

Session Chair

Enhancing Constructability and Reducing Construction Costs of Reinforced Concrete Blast Cells

William Zehrt, Jr.

Structural Engineer, DoD Explosives Safety Board

Structural Response of an Earth Covered Magazine to a Simulated Blast Loading

Joseph Hamilton

Engineer, Karagozian & Case, Inc.

Canadian Long Span Earth Covered Magazine – Design Challenges

Hariharasankaran Vaidyanathan

Senior Structural Engineer, Department of National Defense, Canada

Earth Covered Magazines Vertical Seismic Ground Motion Effects

Harold Sprague

Subject Matter Expert, Parsons Corp.

9:30 am – 1:30 pm

EXHIBIT HALL OPEN

NAUTILUS

9:40 – 10:20 am

NETWORKING BREAK

NAUTILUS

CONCURRENT SESSIONS

10:20 am – 12:00 pm

HAZARD CLASSIFICATION & INSENSITIVE MUNITIONS II – METHODOLOGIES

HARBOR ISLAND BALLROOM 1

Hans Øiöm

Session Chair

DOE/NNSA Insensitive High Explosive (IHE) Qualification and Testing

Dr. Lara Leininger

Director, Energetic Materials Center, Lawrence Livermore National Laboratory

Introducing the U.S. Navy Insensitive Munitions Handbook

Dr. Jerry Ward

Senior Lead Engineer, Booz Allen Hamilton

Comparison of Shock Stimuli from Current Hazard Classification Testing and Potential Threats

Paul Braithwaite

Sr. Staff Scientist, Northrop Grumman

10:20 am – 12:00 pm **AMMONIUM NITRATE – HAZARD/RISK MANAGEMENT**

HARBOR ISLAND BALLROOM 2

Daniel Granados
Session Chair

West Fertilizer Explosion – Source Energy and Structural Damage

Ben Harrison
Technical Director, ABS Group

The Behavior of Ammonium Nitrate in a Fire, Recent Events and Resulting Changes in Fire Code

Dr. Noel Hsu
VP, Global Regulatory Affairs, Orica USA, Inc.

Ammonium Nitrate Modeling in the AN Module of IMESA FR

Michael Swisdak, Jr.
Senior Scientist, A-P-T Research, Inc.

Quantitative Risk Analyses in the Commercial Explosives Industry

William Evans
Senior Industry Explosives Risk Analyst, A-P-T Research, Inc.

10:20 am – 12:00 pm **PROTECTIVE CONSTRUCTION II – STANDARDS**

HARBOR ISLAND BALLROOM 3

Gary Hogue
Session Chair

DDESB Technical Paper (TP) 15 Update and Standard ECM Designs Approved for New Construction

Ryan Bowers
Explosives Safety Engineer, Army Corps of Engineers

Effects of High Strain Rates on ASTM A992 and A572 Grade 50 Steels

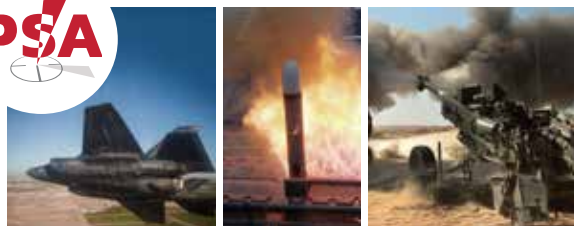
Matthew Murray
Research Mechanical Engineer, ERDC-GSL

Internal Blast Test of a Reinforced Concrete Structure

Dr. Michael Oesterle
Research Structural Engineer, NAVFAC Engineering and Expeditionary Warfare Center

12:00 – 1:00 pm

LUNCH
NAUTILUS



REGISTER TODAY

PRECISION STRIKE TECHNOLOGY SYMPOSIUM (PSTS-18)

October 23 – 25, 2018

The Johns Hopkins University Applied Physics Laboratory

Laurel, MD

NDIA.org/PSTS18

CONCURRENT SESSIONS

1:00 – 2:40 pm

HAZARD CLASSIFICATION & INSENSITIVE MUNITIONS III – APPLICATIONS AND CHALLENGES

HARBOR ISLAND BALLROOM 1

Dr. Brian Fuchs
Session Chair

Tying Hazard Classification and Inensitive Munitions Testing to Explosives Quantitative Risk Assessment Modeling

***Michael Swisdak, Jr.**
Senior Scientist, A-P-T Research, Inc.

Weapons System Hazardous Fragment Characterization

Gary Hogue
Senior Explosives Safety Expert, Naval Ordnance Safety and Security Activity

An Investigation into a Proper Heating Rate for the Slow Heating Test

Dr. David Hubble
Mechanical Engineer, NSWC Dahlgren Division

Inensitive Munitions Explosive Ordnance Disposal Challenges

Martin Pope
Technical Specialist Officer, Munitions Safety Information Analysis Center (MSIAC)

1:00 – 2:40 pm

U.S. DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD (DDESB) TOOLS AND PRACTICES

HARBOR ISLAND BALLROOM 2

James O’Kane
Session Chair

DDESB Software & Tools – Planning for the Future

Lea Ann Cotton
Safety Engineer, DoD Explosives Safety Board

Explosives Safety Siting (ESS) Software – Overview and Status

David Bianchi
Geographer, NAVFAC Naval Facilities Engineering Service Center

Explosives Safety Siting (ESS) Software Migration to Web Based Technologies

Shea Broussard
Geographer GIS, NAVFAC Engineering and Expeditionary Warfare Center

Primary Fragment Characterization Tools: A DDESB Technical Paper 16 Update

Susan Hamilton
Civil Engineer, U.S. Army Engineering and Support Center, Huntsville

1:00 – 2:40 pm

STRUCTURAL EFFECTS I – APPROACHES

HARBOR ISLAND BALLROOM 3

Stephen Struck
Session Chair

Risk-Based Explosion Assessment - Internal Explosion of Exploration Upper Stage in Vehicle Assembly Building

Jon Chrostowski
Senior Scientist, ACTA, Inc.

Modeling Reinforced Concrete Protective Construction for Impact Scenarios

Brad Durant
Research Structural Engineer, NAVFAC Naval Facilities Engineering Service Center

IME Derailed Debris Collection

Dr. Joshua Hoffman
Director of Technical Services, Institute of Makers of Explosives

Identifying Optimal Concrete Strength for Varying Levels of Blast Loading

Dr. Tarek Kewaisy
Principal Associate, Louis Berger Group

2:40 – 3:10 pm

NETWORKING BREAK

HARBOR ISLAND FOYER

CONCURRENT SESSIONS

3:10 – 4:50 pm

HAZARD CLASSIFICATION AND INSENSITIVE MUNITIONS IV – MEASUREMENTS & ESTIMATES

HARBOR ISLAND BALLROOM 1

Paul Braithwaite
Session Chair

The ARDEC Gap Test for Small Grain Gun Propellants

Erik Wrobel
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Mike Bangham
President, Bangham Engineering, Inc.

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HARBOR ISLAND BALLROOM 2

Paul Cummins
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Dr. Tarek Kewaisy
Principal Associate, Louis Berger Group

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Michael Giltrud
Principal Engineer, Applied Simulations, Inc.

Comparison of Quantity-Distance Standards for Earth-Covered Magazines in Various National/International Manuals

David Bogosian
Sr. Principal Engineer, Baker Engineering and Risk Consultants, Inc.

Earth Covered-Magazines Structural Integrity Assessments (ECMSIA)

Jeff Coulston
Chief Structural Branch, Army Engineering and Support Center

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John Tatom
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Robert Ford
President, Safety Management Services, Inc.

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William Robertson
Director Program Evaluation, DoD Explosives Safety Board

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Stephen Miller
Trials Conducting Officer, AWE PLC

5:00 pm

SYMPOSIUM ADJOURNS

The NDIA has a policy of strict compliance with federal and state antitrust laws. The antitrust laws prohibit competitors from engaging in actions that could result in an unreasonable restraint of trade. Consequently, NDIA members must avoid discussing certain topics when they are together at formal association membership, board, committee, and other meetings and in informal contacts with other industry members: prices, fees, rates, profit margins, or other terms or conditions of sale (including allowances, credit terms, and warranties); allocation of markets or customers or division of territories; or refusals to deal with or boycotts of suppliers, customers or other third parties, or topics that may lead participants not to deal with a particular supplier, customer or third party.

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BIOGRAPHIES



THIERRY CHIAPELLO

Executive Director
DoD Explosives Safety Board

Thierry Chiapello has served 29 years in the Defense Department, including five years in the Marine Corps. He has held positions in logistics, military munitions management, environmental management and explosives safety.

As executive director and chairman of the Explosives Safety Board, Chiapello has led development of a strategy to integrate explosives safety and munitions risk management. His responsibilities include maintaining and overseeing the Explosives Safety Program; integrating explosives safety tenets and requirements throughout the enterprise with a special focus on acquisition, real property and the environment; providing combatant commanders and the services with tools to identify and reduce munitions risks in operations; support the informed risk decisions of key leaders; and representing the United States on explosives safety topics.

Chiapello led development of the risk management policy for the United States and NATO that provides commanders critical information to assess and reduce munitions-related risks. He is leading the effort to identify and reduce munitions risks within South Korea and NATO, as well as working with numerous nations to quantify and eliminate munitions risks whenever possible. Chiapello is the head of delegation to the NATO Conference of National Armaments Directors, Ammunition Safety Group, and chairs the Explosives Safety and Munitions Risk Management Panel within the NATO Logistics Committee.

Previously, Chiapello led the Logistics Division at Marine Corps Systems Command (PM for Ammunition). He was the service's voting board member to the DDESB, managing the Marine Corps' explosives safety program and planning its military munitions sustainment during training, operations and contingencies. From 2004-05, he attended the Industrial College of the Armed Forces.

Chiapello also was the head of Environmental Compliance and Training at Marine Corps Base Camp Lejeune, NC, where he managed compliance with federal and state environmental regulations. He developed an award winning, 40-hour training course for Marines and routinely trained personnel from Marine Corps installations around the world. He also trained more than 1,000 Marines and civil servants on processes and requirements that resulted in balancing the mission with the environment.

As a logistics and environmental compliance officer, Chiapello provided support to the 26th Marine Expeditionary Unit. His responsibilities included preparing expeditionary units for deployments while complying with environmental regulations. During his military career, he deployed twice with the 26th MEU in support of operations Desert Shield and Desert Storm.



MG CHARLES R. HAMILTON, USA

Commanding General, 8th Theater Sustainment Command
U.S. Army

Maj. Gen. Charles R. Hamilton became the Assistant Chief of Staff of J4, United States Forces Korea, Deputy Assistant Chief of Staff, U4, United Nations Command, and Deputy Assistant Chief of Staff, C4, Combined Forces Command on 19 September 2017.

Hailing from Houston, Texas, Maj. Gen. Hamilton enlisted in the U.S. Army. Upon completion of basic and individual training, he was assigned to Fort Hood, TX. In Feb. 1988, he graduated from OCS as the Distinguished Military Graduate and was commissioned a 2nd Lt. in the Quartermaster Corps.

After graduation from the Quartermaster Basic Course, he was assigned as a Platoon Leader in the 240th Quartermaster Battalion, and later selected as aide-de-camp to the Commanding General, Troop Support Command.

Following his assignment as aide-de-camp, he attended the Quartermaster Advanced Course. Subsequent assignments include: Company Commander, 305th Quartermaster Company, Korea; Recorder DA Secretariat, HRC; CPTs Assignment Officer, HRC; Joint Intern/J4 Pentagon; Logistics Staff Officer, G-4 Pentagon; Chief of Supply and Services, 101st CSG, Fort Campbell, KY; Support Operations Officer and Executive Officer, 561st Corps Support Battalion, Fort Campbell, KY; Transformation Action Officer, G-3 Pentagon; XO to the Vice Director, DLA, Fort Belvoir, VA, Commander DLA-Fwd Bagram, Afghanistan; Battalion Commander, 498th Combat Sustainment Support Battalion, Korea, Office of the Chief of Staff as the Logistics Colonels Assignment Officer, Chief of Staff, USFOR-A South/Southwest, Kandahar Airfield, Afghanistan, Commander, 101st Sustainment Brigade, Fort Campbell, KY, deployed his

Brigade to Afghanistan "Task Force Lifeline". He was then assigned as the Executive Officer to the Army Deputy Chief of Staff, G-4. He was most recently in command of Defense Logistics Agency Troop Support.

Maj. Gen. Hamilton's education includes a Bachelor of Science in Business Administration from Virginia State University, Masters in Public Administration from Central Michigan University and a second Masters in Military Studies from Marine Corps University. His military education includes Senior Service College as a 2012 OSD Corporate Fellow, the Marine Command and Staff and the Joint Forces Staff College, the Quartermaster Officer Basic and Advanced Course, and the Combined Arms and Services Staff School. He has completed Airborne, Air Assault and Rigger School.



COL LAWRENCE NIXON, USAF

Deputy Chief of Safety

U.S. Air Force

Col Lawrence Nixon is the Deputy Chief of Safety for Headquarters Air

Force, Pentagon, Washington, DC. He is responsible for overseeing the Air Force's flight, ground, space, and weapons safety mishap prevention programs designed to preserve combat capability by preventing mishaps. Colonel Nixon received his commission as a graduate of the Air Force Reserve Officer Training Corps program at the University of Illinois, Urbana-Champaign, IL. He has held positions at the wing, major command, combatant command, Air Staff, and Joint Staff level. He has a background in the Combat Search and Rescue (CSAR) mission area in the HH-

60G Pave Hawk both operationally and as a formal training unit (FTU) evaluator pilot. Prior to his current assignment, he served as Air Combat Command's Director of Safety. His education includes a Masters from the University of Central Missouri, Warrensburg, MO and completion of Squadron Officer School, Air Command and Staff College, and Air War College.

Career assignments include Chief of Training, 47 RQF, Whiteman AFB, MO, Chief of Plans and Deployments, 66 RQS, Nellis AFB, NV, Flight Safety Officer, Air Warfare Center, Nellis AFB, NV, Flight Safety Officer, 18 WG, Kadena AB, Japan, Flight Commander, Weapons and Tactics, 512 SOS, Kirtland AFB, NM, Assistant Director of Operations,

512 RQS, Kirtland AFB, NM, Director of Operations, 36 RQF, Fairchild AFB, WA, Commander, 36 RQF, Fairchild AFB, WA, Chief, Personnel Recovery/CSAR, HQ Air Force, Pentagon, Washington, DC, Chief, Commander's Action Group, Joint Personnel Recovery Agency, Ft. Belvoir, VA, Director of Assessments, Joint Personnel Recovery Agency, Ft. Belvoir, VA.

Command Inspector General, ISAF Joint Command/V Corps, Kabul, Afghanistan, Chief, Flight Safety, HQ Air Combat Command, Joint Base Langley-Eustis, VA. Major awards and decorations include the Legion of Merit, Bronze Star, Defense Meritorious Service Medal, and Meritorious Service Medal with three oak leaf clusters.



CAPTAIN NIGEL SMITH, RAN

Director, Land EO SPO, Capability Acquisition and Sustainment Group

Royal Australian Navy

Nigel joined the Royal Australian Navy through the Australian Defence Force

Academy in January 1991. As a junior officer he enjoyed postings to the guided missile destroyers HOBART and PERTH where he gained Weapons Engineering qualifications. His head of department posting was completed in the frigate STUART. Shore postings have included the Combat Data Systems Centre, Divisional Officer at the Defence Academy, and the Directorate of Navy Weapons Systems.

Nigel has enjoyed overseas postings on the Naval Attaché's staff, Washington, and later as the Australian exchange officer to the United Kingdom Defence Ordnance Safety Group. During this three-year posting to Bristol Nigel was also the Australian representative to the NATO Ammunition Safety Group AC-326, and the Australian member on the Munitions Safety and Information Analysis Centre (MSIAC) steering committee.

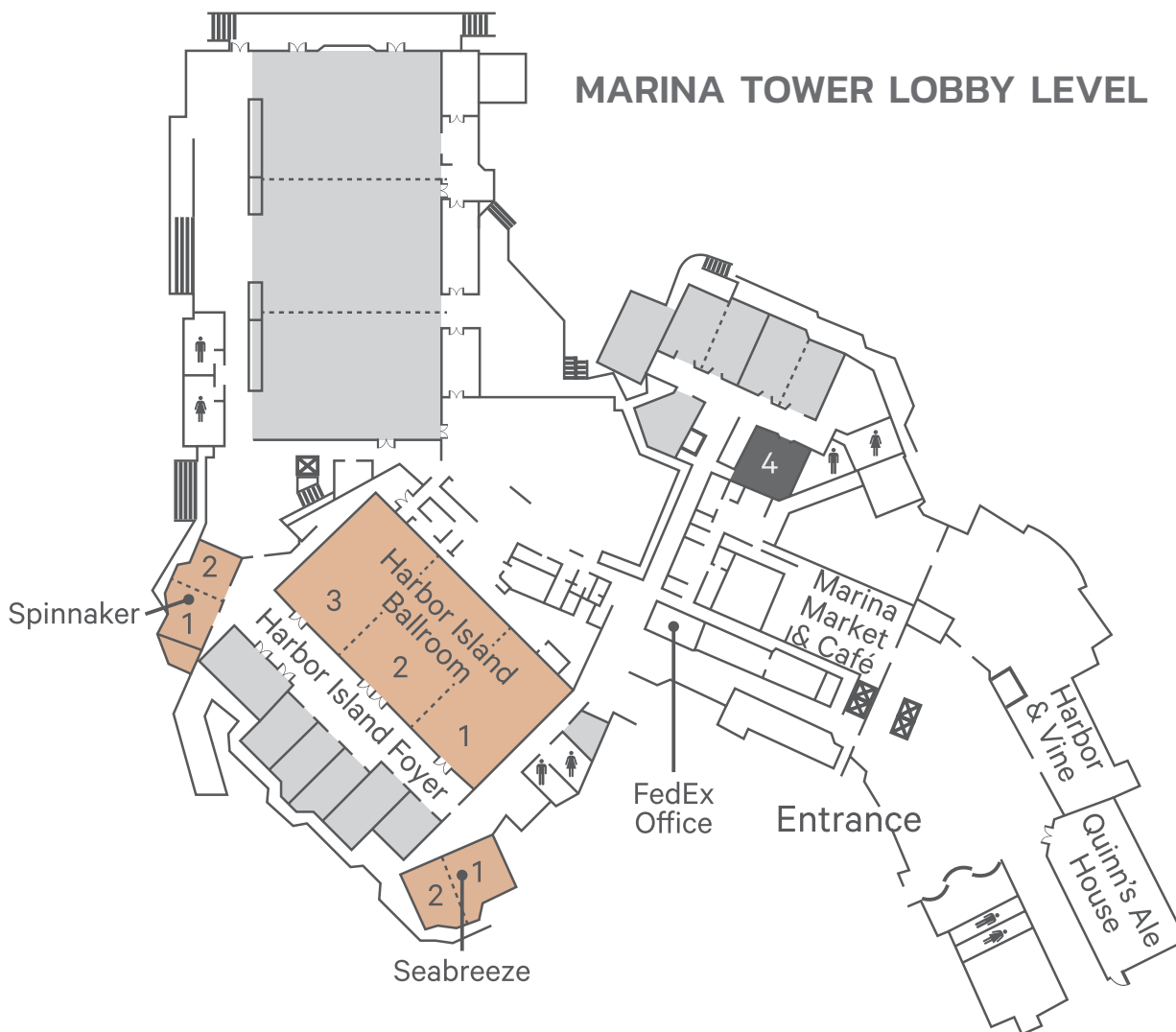
In 2015 he returned to Australia on promotion to Captain to take up the post of Director Ordnance Safety in Joint Logistics Command, with responsibility for Australian Defence explosive safety policy and regulation. During this posting he initiated a significant reform into explosive safety management in the Australian defence organisation.

Nigel assumed his current post in January 2018 as Director Land Explosive Ordnance Systems Program Office, delivering explosive ordnance acquisition projects and managing the explosive ordnance inventory for the Australian Army.

Nigel has a Bachelor's degree in Electrical Engineering, and Master's degrees in Explosive Ordnance Engineering, and Project Management. He is a Chartered Professional Engineer with the Institution of Engineers Australia.

VENUE MAP

MARINA TOWER LOBBY LEVEL



MARINA TOWER LOWER LEVEL

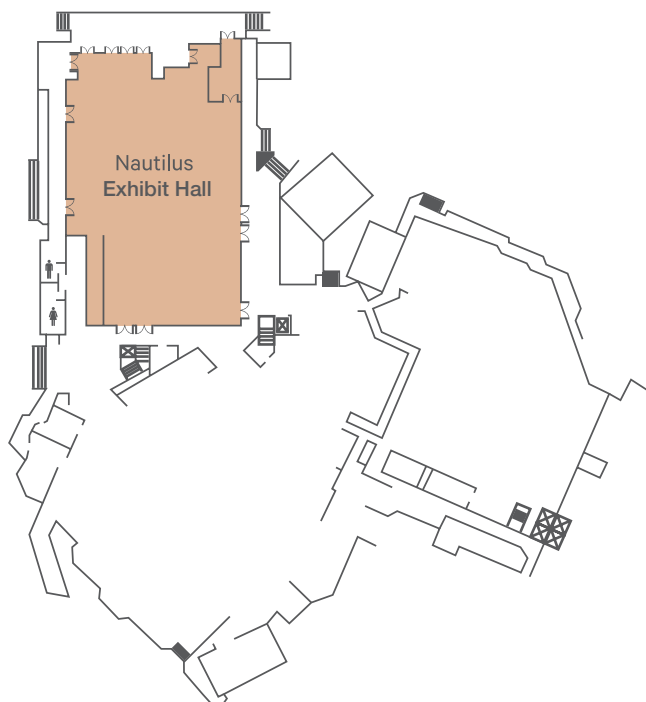


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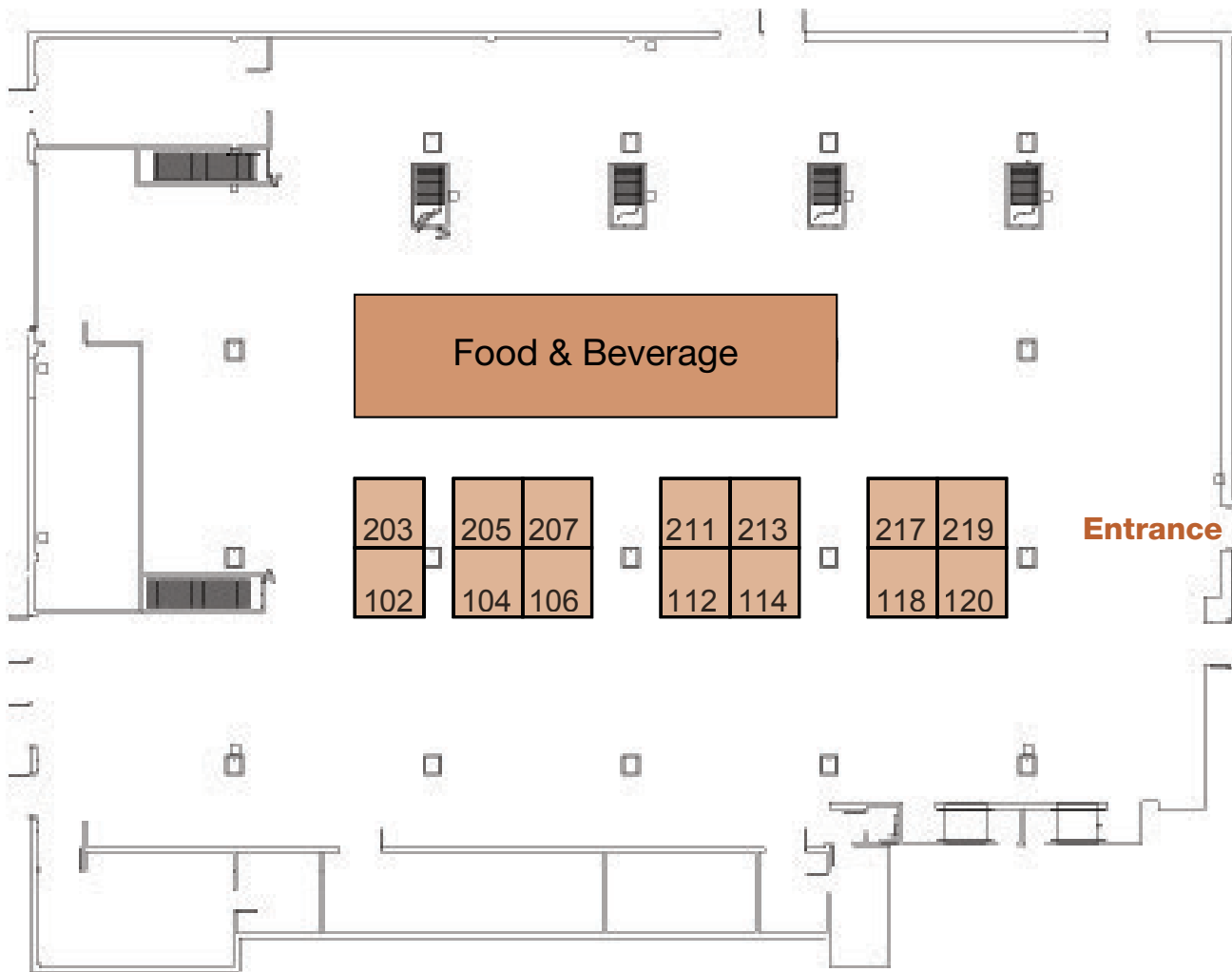
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ABS GROUP

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ABS Group (www.abs-group.com) provides technical advisory, risk management and certification services to support the safety and reliability of high-performance assets and operations. Our Advanced Engineering division evaluates explosive operations for compliance with explosive safety standards and conducts blast testing at our state-of-the-art shock tube test facility to support design verification and R&D programs and help minimize threat to life, damage to property and loss of mission.

A-P-T RESEARCH, INC.

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A-P-T Research, Inc. is a 100% employee-owned, small business based in Huntsville, Alabama. APT provides professional engineering & programmatic services in a variety of disciplines including systems engineering, risk assessment & analysis, test planning, range safety, system safety, software system safety, explosives safety, industrial & quality engineering, quality assurance, mission assurance, Independent Verification and Validation (IV&V), software development & modeling, and related areas.

ARMAG CORPORATION

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Armag is the leading manufacturer of pre-engineered and portable Magazines for safe and secure storage of ammunition and explosives. Our Magazines are designed to meet or exceed requirements prescribed by the US DoD and ATF. We are excited to announce new designs for the first 3-Bar flat-roof Earth Covered Magazine and Portable Shipboard Magazines.

BATTLEFIELD CLEARANCE TEAM LICENSING

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BCTL, Co. created the Mystic Suite of Software time saving tools to help manage your projects and operations. From monitoring work certificates to stay in compliance, to tracking work hours in the field, all on your mobile phone or tablet. Customizable tracking capability lets you track anything pertaining to a project, on a project by project basis. Visit us at www.mystichq.com for more details and your free trial.

COVERSIX SHELTERS A DIVISION OF REDGUARD

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We offer design/build capabilities for hardened modular buildings used as viewing bunkers and control rooms on military ranges and for command and control, offices, living accommodations, and others around the world. We performed live testing of our blast, ballistic and forced entry protection and use renowned third-party engineers to verify all protective design. We've received design approvals and completed work for the most stringent agencies/facilities and want to work on your next project.

DET-TRONICS

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Det-Tronics is a global leader in flame/gas detection and hazard mitigation systems for high-risk processes and critical industrial operations worldwide. Det-Tronics designs, manufactures and commissions certified SIL 2-capable flame and gas detection solutions and is part of UTC Climate, Controls & security, a unit of United Technologies Corporation (NYSE:UTX). Learn more at: www.det-tronics.com www.youtube.com/det-tronicsvideos www.linkedin.com/company/detector-electronics/

KARAGOZIAN & CASE, INC.

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Karagozian & Case, Inc. (K&C) is an internationally recognized blast consulting firm established in 1945. Since, that time K&C has been a leader in protective design serving the US Department of Defense (DoD), US Air Force, US Navy, US Army Corps Engineers, GSA, and numerous private customers all over the world. Practice areas include: Protective Design & Engineering; Modeling, Simulation & Analysis; Products & Software Development; Applied Research & Testing; Threat & Vulnerability Assessments

KF ARMORY

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KF Armory Defense LLC presents the latest innovation in ballistic and explosives safety, the Modular Interlocking Ballistic Barrier System. The MIB2S are NIJ/UL rated to defeat multiple hits of 50 Cal API-T. In testing MIB2S also defeated RPG-7 HE Frag, 200 pounds of ANFO, 1200 grain cutting charges, 10-inch platter charges and Mk211 Raufoss. The man-portable blocks can stacked to protect EOD teams from a suspicious packages, or increase range safety. Video available at www.kfarmory.com/mib2s/

LIGHTNING PROTECTION INSTITUTE INSPECTION PROGRAM

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The Lightning Protection Institute Inspection Program provides trained professionals to physically inspect installed lightning protection systems giving peace of mind to building owners, engineers and architects. Our Extended Master Inspection Program provides a respected alternative independent third-party resource for the certification of lightning protection systems for structures housing explosives; addressing NFPA, UFC, Army, Navy, and Air Force conventional and explosives safety standards.

SAFETY MANAGEMENT SERVICES, INC.

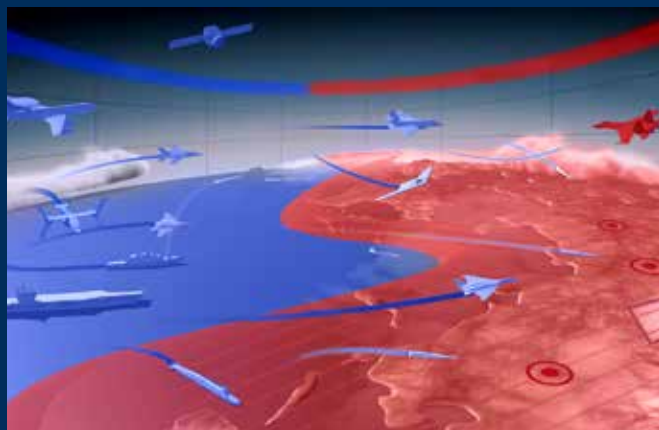
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The mission of Safety Management Services, Inc. is to safeguard people, processes, and the environment. Our mission is accomplished by assisting our clients in maintaining the safety of their operations through the systematic identification of safety-related deficiencies, along with the development and implementation of solutions based on sound principles.

VAISALA

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Accurate, reliable, and timely weather observations and forecasts are essential to defense operations. From advanced sensor technologies to turnkey solutions that detect, observe, and forecast meteorological and hydro-meteorological events, we have your solution. With Vaisala, it is possible for you to predict the unpredictable.



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