NAVSEA
WARFARE CENTERS
Indian Head

BATTLE LAB

Naval Surface Warfare Center (NSWC) Indian Head Division (IHD) Battle Lab Overview

Presented by:

Ken Poe

Director, Battle Lab Division

Early 2000s

The State of Technology

No Smartphones

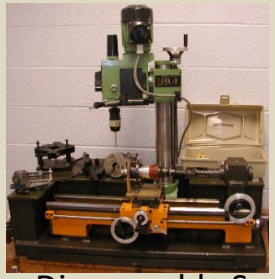
Slow Internet

(Source: Maddyz. "Girl Is Holding Hand Retro Flip Flop Mobile Phone." Adobe Stock, https://stock.adobe.com/images/girl-is-holding-in-hand-retro-flip-flop-mobile-phone/140360029, accessed on 25 October 2024.)

-As it relates to the "Warfighting Technology World"-

(Source: Africa Studio. "Obsolete Computer Set on Light Blue Background." Adobe Stock, https://stock.adobe.com/images/obsolete-computer-set-on-light-blue-background/91601862, accessed on 25 October 2024.)

- Long acquisition wait times were okay.
- Timelines were similar to now, but the speed of information was slower.
- It was relative to the time/state of technology.



Fuze Disassembly System
(Source: Naval Surface Warfare Center [NSWC] Indian Head Division [IHD].)

Hand Tool Kit
(Source: NSWC IHD.)

Explosive ordnance disposal (EOD) software runs on a V2 ruggedized computer.

(Source: Wikimedia Commons, National Cryptologic Museum.)

Around 2005—Turning Point

WAR ON TERROR

THREAT

Types of threats were changing quicker than ever.

Little background information was available on new threats.

(Source: Kimmons, S. "Sappers Become IED hunters in Iraq (Image I of 6)." DVIDS, https://www.dvidshub.net/image/2126/sappers-become-ied-hunters-iraq, 16 November 2004.)

(Source: Kimmons, S. "Sappers Become IED hunters in Iraq (Image 2 of 6)." DVIDS, https://www.dvidshub.net/image/2127/sappers-become-ied-hunters-iraq, 16 November 2004.)

-The Impact to the Warfighting Technology World-

The need to address new threats, and quickly, meant that the commercial market for equipment to make technology solutions readily available for the warfighter **grew enormously**.

However, many of these systems were **untested and not evaluated** before purchase.

NAVSEA WARFARE CENTERS Indian Head

User-Experience Examples

BATTLE LAB

Disclaimer: Not all issues are exclusive to one user group; these are fictional examples.

Military EOD

Location: Foreign Country

Scenario

Roadside unexploded ordnance. Only equipment is a robot, suit, and handheld x-ray. Kit only detects, not identifies. Need to identify target internals to safely dispose.

THERE WERE LONG WAIT TIMES FOR NEW EQUIPMENT

(Source: Greenwood, N. "Demolition Range—EOD Marines Train the PNTL EOD Team." DVIDS, https://www.dvidshub.net/image/7518683/demolition-range-eod-marines-train-pntl-eod-team, 27 October 2022.)

Border Security

Location: U.S. Border

Scenario

Partially buried item of interest in an embankment. Robot and handheld system unable to access improvised explosive device for necessary information. Approach in bomb suit.

EQUIPMENT DID NOT MEET THE OPERATIONAL NEED

(Source: Svitlana. "Security Officer and Detection Dog Inspecting Vehicle at Aerodome." Adobe Stock Security officer and detection dog inspecting vehicle at aerodrome Stock Photo | Adobe Stock, accessed on 21 October 2024.)

Law Enforcement

Location: Major U.S. City

Scenario

Major sporting event with thousands of people and locations within stadium. Need to identify, interrogate and render safe, quickly and efficiently.

EQUIPMENT DID NOT PERFORM AS EXPECTED

(Source: Petert2. "Police Officer Wearing Tactical Vest Writing Notes on a Pad." Adobe Stock, https://stock.adobe.com/images/police-officer-wearing-tactical-vest-writing-notes-on-a-pad/103931606, accessed on 21 October 2024.)

Understanding the Issue

- User Experience

THERE WERE LONG WAIT TIMES FOR NEW EQUIPMENT

Solution Not Relevant to Current Threat

EQUIPMENT DID NOT MEET THE OPERATIONAL NEED

Continued Use of Old Tools and/or Lacking Capability Altogether

EQUIPMENT DID NOT PERFORM AS EXPECTED

Information Disconnect

- Major Takeaways
  1. Long acquisition and science and technology (S&T) development timelines
  2. Requirements not delivering desired outcomes
  3. End user not involved early and often to provide feedback on operational suitability

Addressing the Issue

Technical Perspective

THERE WERE LONG WAIT TIMES FOR NEW EQUIPMENT	What can we do to get technology out the door faster?
EQUIPMENT DID NOT MEET THE OPERATIONAL NEED	How do we better understand the user's requirement?
EQUIPMENT DID NOT PERFORM AS EXPECTED	How can we communicate the capabilities and limitations of equipment to stakeholders?

Battle Lab plays a key role in identifying and evaluating solutions.

NAVSEA WARFARE CENTERS Indian Head

Who and What Is Battle Lab?

BATTLE LAB

Independent Assessor of Warfighting Equipment and Technology

Identify → **Scout** → **Evaluate and Assess** → **Feedback**

- Provide objective reviews of equipment and technology being considered, customized to sponsor time and budgetary constraints
- Have operational and technical subject matter experts (SMEs) available:
  - Military experienced
  - Scientists and engineers
- Serve as a warfighter advocate
- Have technical reach-back support

Sponsors

PMS 408 Expeditionary Missions

U.S. Customs and Border Protection, Department of Homeland Security

U.S. Department of Homeland Security

Marine Corps Systems Command

PSEAG

DEVCOM C5ISR Center

Irregular Warfare Technical Support

Department of Defense

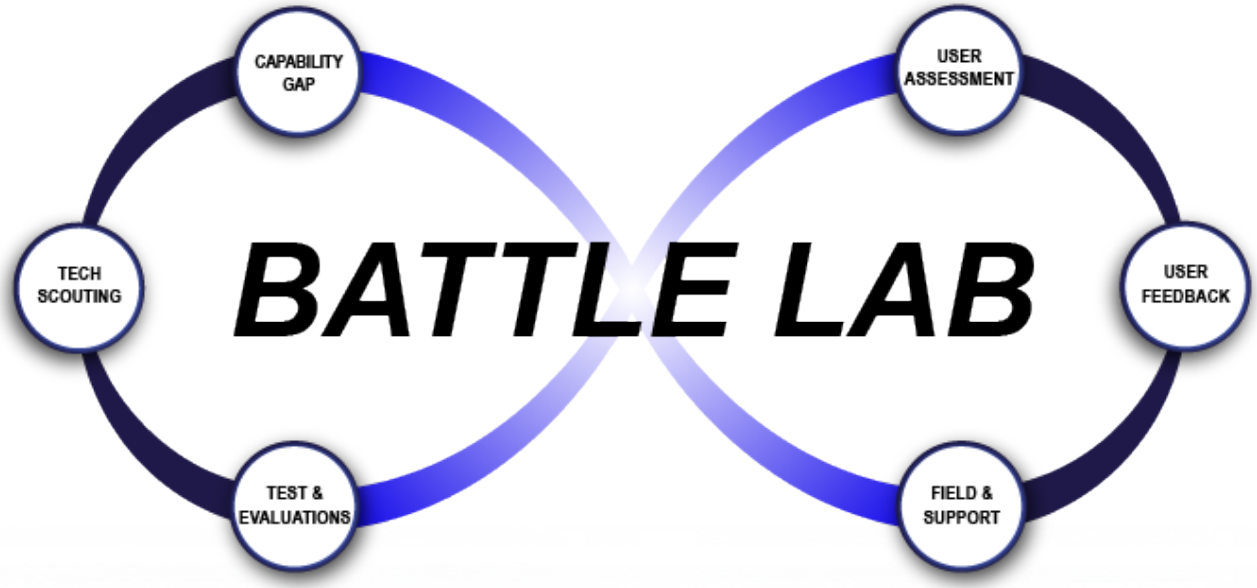
Department of the Navy, ONR, Science & Technology

Marine Corps Warfighting Lab

Provide a cycle of equipment review and evaluation to feed capability gap assessment, equipment-buying decisions, and technology implementation and inform requirements development at the speed of relevance.

How Is Battle Lab the Solution?

Independent Assessors for Warfighting Equipment and Technology



Identify → Scout → Evaluate and Assess → Feedback

What can we do to get technology out the door faster?

How do we better understand the user's requirement?

How can we communicate the capabilities and limitations of equipment to stakeholders?

NAVSEA WARFARE CENTERS Indian Head

How We Operate

BATTLE LAB

Identify

- Facilitation of threat assessments
- Warfighter workshops
  - Develop concept of operations and measures of effectiveness/suitability/performance
- Opportunities for replacement of existing kit with new technology

Scout

- Traditional request for information
- Outreach through SMEs and partners
- Warfighters
- International partners
- Trade shows

(Source: NSWC IHD.)

NAVSEA WARFARE CENTERS Indian Head

How We Operate (continued)

BATTLE LAB

Evaluate and Assess

- Technical
  - Capability and limitations assessments
  - Cybersecurity evaluations
  - Specification sheet verification and validation
- Operational
  - Operational events with user participation and feedback
  - Mission-based events to evaluate how emerging technology can be integrated into current mission sets

Events are hosted at our local test facilities or at a site convenient to the sponsor, user, or technology.






(Source: NSWC IHD.)

NAVSEA WARFARE CENTERS Indian Head

Electronic Data Assessment Tool (E-DAT)

BATTLE LAB

E-DAT

(Source: NSWC IHD.)

All-in-One Ruggedized Offline Field Data Collection Kit

- Customized form development
- Onsite collection, analysis, and reporting
- Offline environment
- Multiple mobile collection devices

Survey Examples

- Sign-in rosters
- Demographic
- Technology
- Training

Analytics Tool

- Weighted questions
- Advanced stats
- Graphing

Reporting Tool

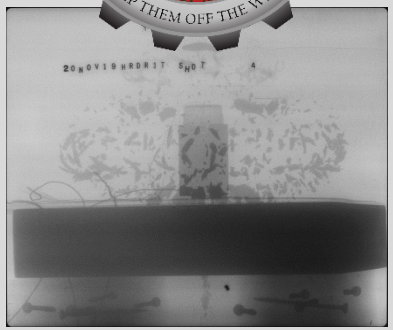
- Rapid turnaround time
- Metrics
- Custom reports

Testing Facilities: NSWC IHD Stump Neck Annex

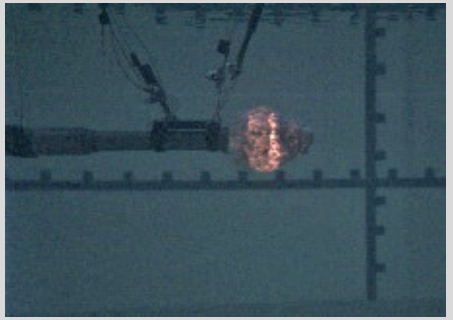
Information Exchange | Publications and Procedures | Equipment Review and Evaluation | Full Lifecycle Support

Anechoic Chamber

Magnetometer Test Range



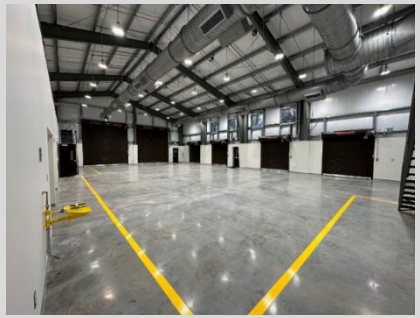
Flash X-Ray



Explosive Test Ranges

Underwater Test Tank

Unmanned Aircraft Systems Flight Ranges



Unmanned Systems (UxS) Building

Magnetometer Test Facility

Chemical Laboratories

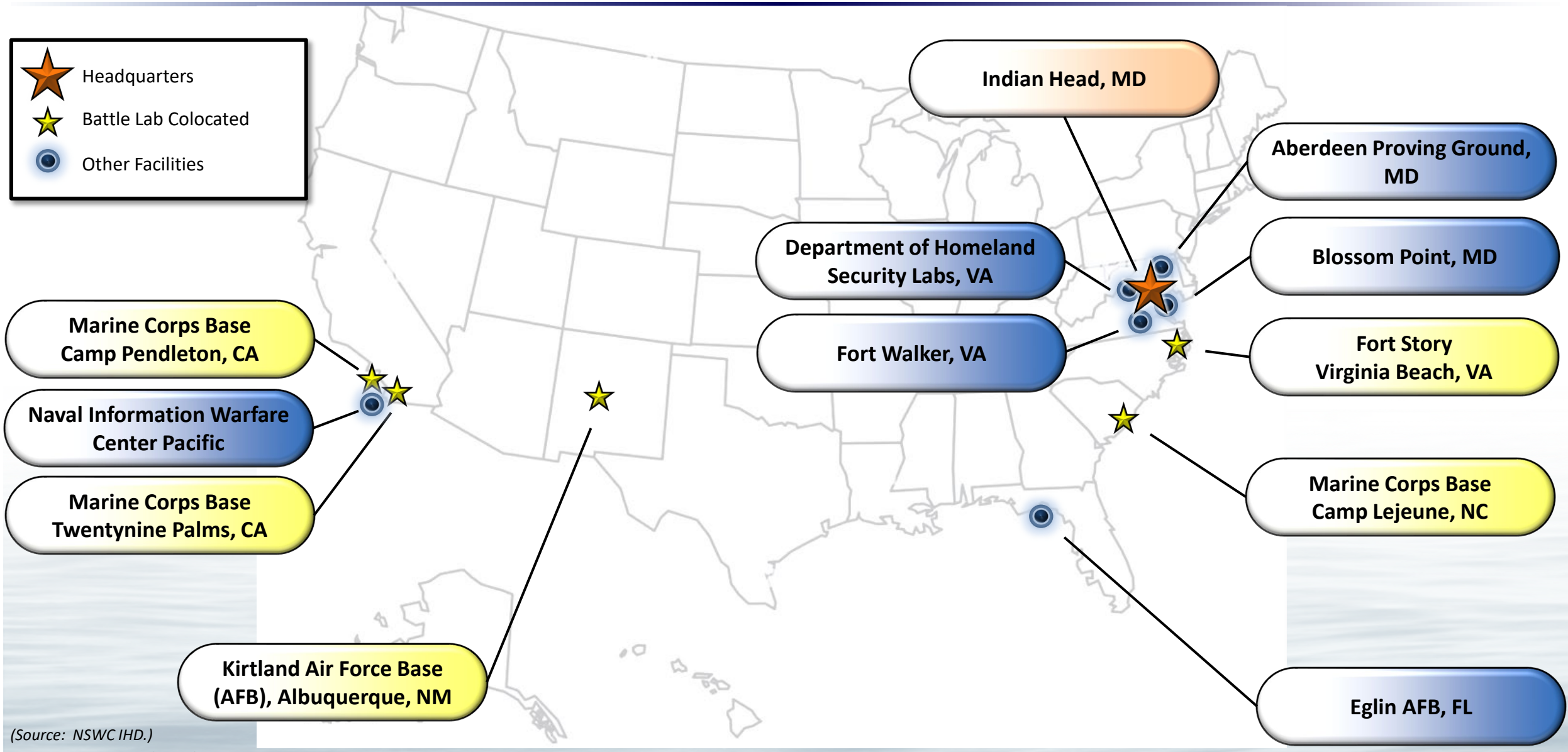
UxS Test Facility

(Source: NSWC IHD.)

NAVSEA WARFARE CENTERS Indian Head

Testing Facilities: Other Military and Nonmilitary Locations

BATTLE LAB



(Source: NSWC IHD.)

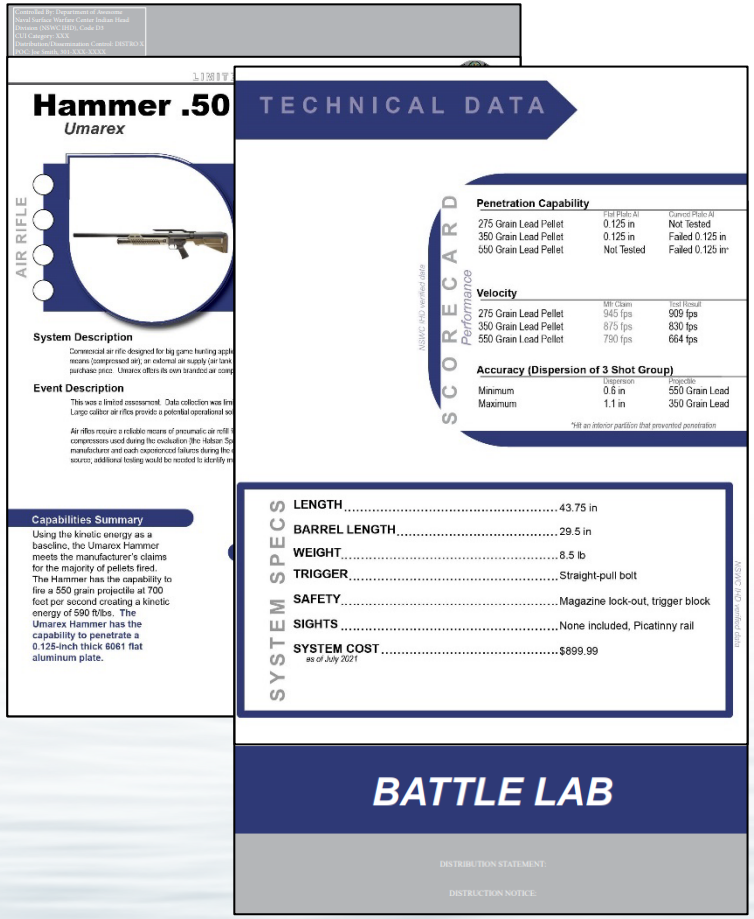
What We Provide

Feedback

- Stakeholders receive data to make decisions on equipment strategy/procurement.
- Technical results fed back into gap analysis/used to target future development.
- Developers receive results for only their system.

- EOD-relevant results uploaded on Joint EOD portal (sponsor dependent).
- Techlook pages created (where appropriate) and uploaded.

  Snapshot of the technology tested

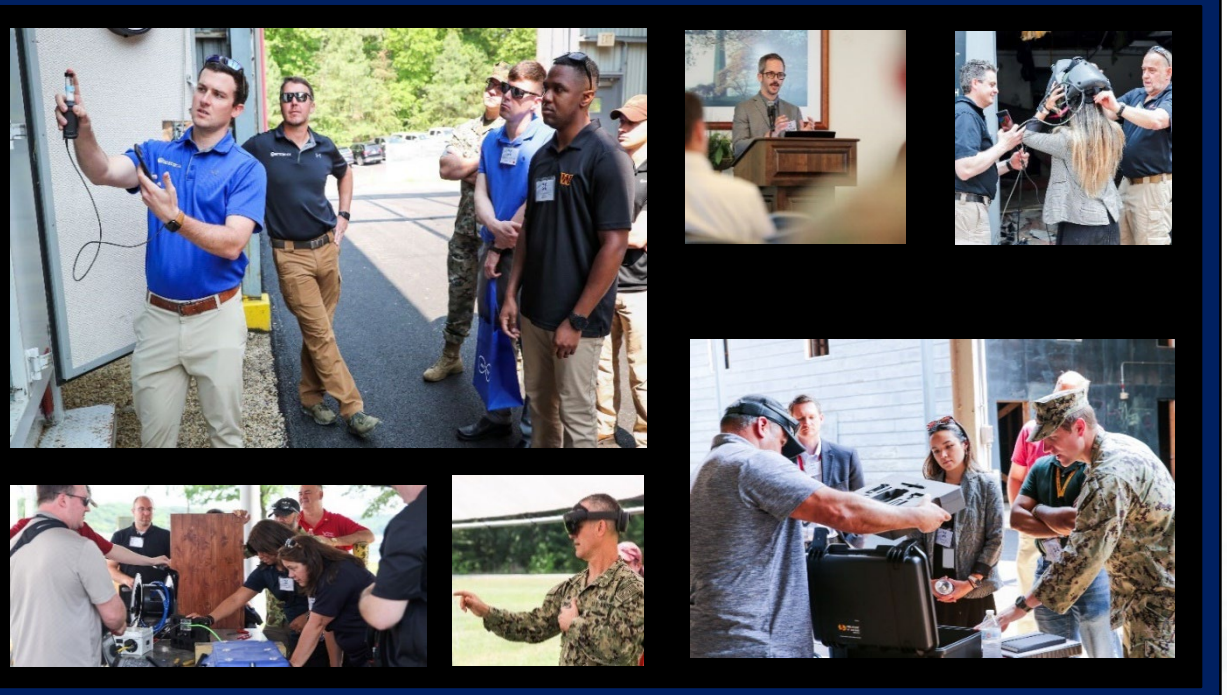


Disclaimer: This is a fictional example.
(Source: NSWC IHD.)

Battle Lab Technology Expo (BLTx)

Inaugural BLTx

22–23 May 2023 at NSWC Indian Head and Joint Base Anacostia-Bolling



Focus: Physical Security and EOD Communities

Day 1: Battle Lab Overview Briefs and Vendor-Led Technology Demos

Day 2: Project Briefs for Efforts Completed by Battle Lab

(Source: NSWC IHD.)

Provide Operationally Relevant Demonstrations of Cutting-Edge Technology

- 2023 Inaugural Event:
  - Showcase of existing and emerging technologies— all participants surveyed indicated they learned about at least one new technology
  - Cross section of organizations diverse and representative of the Joint EOD and physical security communities
- 2025 Battle Lab Event (March 25-27)
  - Focus: EOD and Physical Security
  - To be added to the invite, email: bltx@us.navy.mil or Battle_Lab@us.navy.mil

Who Is Battle Lab?

- Demonstration and Assessment Team (DAT)
  - Military Utility Assessments of Emerging S&T With Warfighters
- Explosive Detection Equipment (EDE)
  - Evaluation of Systems to Detect or Identify Explosives and Threats
- EOD Technology Assessment (ETA)
  - Evaluation of Emerging and Available Technology for EOD

(Source: NSWC IHD.)

The Issue Addressed

User Experience	Technical Perspective
THERE WERE LONG WAIT TIMES FOR NEW EQUIPMENT	What can we do to get technology out the door faster?
EQUIPMENT DID NOT MEET THE OPERATIONAL NEED	How do we better understand the user's requirement?
EQUIPMENT DID NOT PERFORM AS EXPECTED	How can we communicate the capabilities and limitations of equipment to stakeholders?

The NSWC IHD Battle Lab Impact

- Current Information on State of Technology to Drive Acquisition Strategies
- Marriage of the Geek and the Warrior to More Clearly Define Requirements
- Independent Assessment of Data to All Stakeholders



(Source: NSWC IHD.)

2025 BLTx

(Source: NSWC IHD.)

The Naval Surface Warfare Center Indian Head
EOD TECHNOLOGY CENTER
invites:

military, government, government support contractors, and state and local law enforcement

THE BATTLE LAB TECHNOLOGY EXPO

MARCH 25-27, 2025
NSWC IHD STUMP NECK ANNEX

hosting

Hands-on Operational Demos
of Latest Technology Areas for:

EOD - AT/FP - FIRST RESPONDER
PUBLIC SAFETY - PHYSICAL SECURITY

To be added to the invite, email: bltx@us.navy.mil or Battle_Lab@us.navy.mil

Points of Contact

Ken Poe
Battle Lab Division Director
kenneth.r.poe.civ@us.navy.mil

Ken Sheehy, PMP, CTEP
DAT Branch Manager
301-542-4240
kenneth.m.sheehy.civ@us.navy.mil
SIPR: Kenneth.Sheehy@navy.smil.mil

David M. Thomas
DAT Cyber Security Test Lead
951-306-9019
david.m.thomas9@navy.mil
SIPR: david.m.thomas1@navy.mil

Jody South
DAT OT&E Portfolio Manager
301-609-0317
jody.r.south.civ@us.navy.mil

Eric Dorsey
EDE Branch Manager
301-744-6936
eric.r.dorsey2.civ@us.navy.mil

Michael Shepard, Ph.D.
EDE Senior Technologist
301-744-5167
michael.r.shepard12.civ@us.navy.mil

Owen Burns
ETA Branch Manager
301-744-5258
owen.burns4.civ@usnavy.mil
SIPR: owen.burns@navy.smil.mil

Cristina Spencer
ETA Business Development Lead
301-744-5372
cristina.m.spencer.civ@us.navy.mil
SIPR: cristina.spencer@navy.smil.mil

(Source: NSWC IHD.)