



Combating Terrorism with Technology

Mr. Roger Smith
DASN (LMW)

27 Oct 2005

Responsibility



SECNAV 2005 Objectives (Objective 1d)

“Establish a Naval Innovation Laboratory environment to enable rapid acquisition and development processes for evaluating, testing and deploying of GWOT solutions. Countering IEDs, RPGs and mortars is the principal focus of this effort in 2005.”

Rapid Solutions



- **Naval Innovation Laboratory (NaIL)**

- Dahlgren, Homeland & Force Protection PAD
- New channel for prototypes to meet urgent Naval needs
 - Warfare Centers, NRL pre-aligned for rapid teaming with industry
- Compliments OSD and Joint programs (JRAC, IED TF, et al)
- Key Elements
 - Approvals w/in 30 days – *work starts immediately*
 - Budget for “Quick Starts” (\$11.2M FY07 RDT&E funds)
 - \$10M -\$15M objective (POM08 issue)
 - Project completion with reprogramming actions
 - Fielded prototypes 180 - 360 days
 - Led by sub-group of existing Technology Oversight Group (TOG)
 - N6/7, CG MCCDC, FFC, DASN(RDT&E), CNR, N8, HQMC P&R

SBIR Countermeasures Efforts



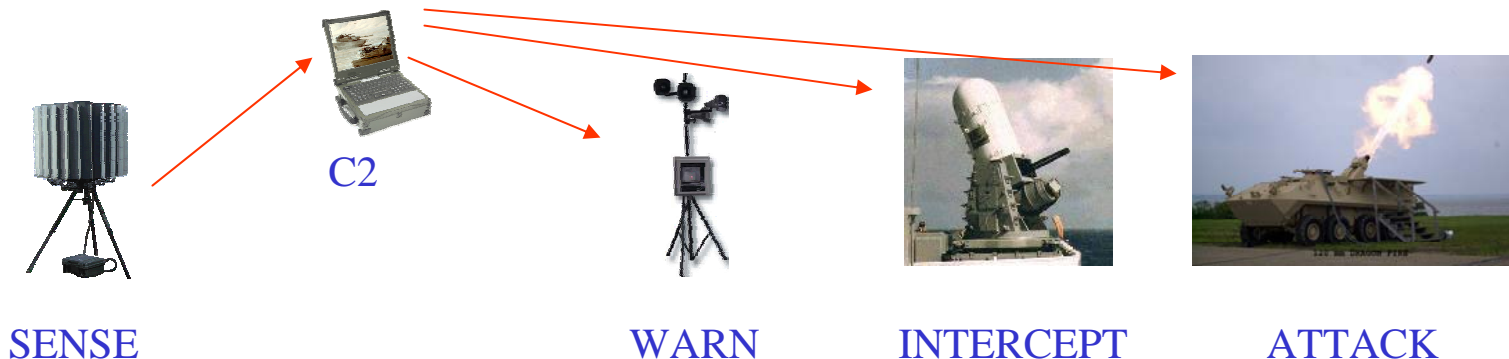
- An additional \$5M was allocated by ONR to accelerate 50 Phase I SBIR awards for Counter-fire, Counter-IED, and Counter-RPG technologies
 - IED Technology Phase I Awards:
 - UAV & Ground Vehicle Electromagnetic Sensor System, to protect convoys
 - Road Side X-Ray
 - Optical Change Detection System w/fluorescent markings
 - Flash Ladar Sensor
 - CMOS-MEMs Focal Plane Array for IR
 - Detection of trace Chemicals
 - Sensors w/small Robotic Vehicles
 - Optical change Detection System integrated to Human vision
 - HMTD & TATP Detection w/Surface Acoustic Wave Array
 - Vacuum Rapid Collection & Analysis of Particulate Samples
 - Low Cost Explosive Vapor micro System Detection System

Current Solutions



• Counter-Rocket, Artillery & Mortars (C-RAM)

- Initial FOB established and two CWIS Block IB Systems fully integrated, four guns being built to complete FOB reqmt.
- \$75M supplemental provided for the C-RAM sense & warn capability at 8 FOBs. Marines have the first two FOB priorities for C-RAM.
- Marines executing \$8.9M of ASN (RDA) 1% funds to:
 - ▶ Develop Expeditionary Capability
 - ▶ Integrate/test proposed subsystems (e.g. HALO & Dragonfire)



Joint Rapid Acquisition Success



• Electronic Counter Measures

▪ Low Cost Jammer

- ▶ SECDEF designated the Secretary of Army to execute the rapid acquisition and deployment of this system (Authority: Sec. 811, FY05 NDAA).
- ▶ Army directed NAVEODTECHDIV to execute a procurement contract for 10,000 units (\$10M included in the FY 05 Supplemental).
 - First contract was awarded to ITT industries for 2,000 units. Deliveries underway into theater.
 - Second contract was awarded to Tyco Industries (MA-COM) for 4,500 units with an additional 3,500 as follow-on option.



Operation Respond



- Established in Feb 2004
- Department of the Navy's Naval Innovation Lab and Senior Process Action Team to rapidly acquire and equip our Marines and Sailors for current wartime operations
- Department of the Navy coordinator for rapidly developing and fielding technologies for deployed warfighters

Operation Respond (Cont)



- In excess of \$520 million (\$370M USMC funds and \$143M Navy funds) has been reprogrammed to support over 120 war fighting requirements which include:
 - Vehicle and Individual Armor Protection.
 - Improvised Explosive Device Countermeasures.
 - Development and procurement of Intelligence, Surveillance, and Reconnaissance.
 - Unmanned aerial and ground vehicles.

USMC Armor Upgrades



Vehicle Armor

- Requirement & Funding summary:
 - ▶ Requirement for 5,550 HMMWVs, 1,850 MTRVs, & 2,814 M1114s (MNC-I/CJTF-76 is sourcing 542 vehicles)
 - ▶ \$472.7M programmed for these efforts via FY05 Bridge Supplemental, FY05 Funds transfer from IFF and FY05 Supplemental
 - ▶ An additional \$105.4M requested via FY06 Supplemental to complete the M1114 and MAS efforts
- Armor Installation (As of 23 Oct) :
 - ▶ HMMWV (MAK) – 2,070 out of 2,545 kits/vehicles have been installed/delivered. Estimated completion date of Nov 05, one month ahead of schedule.
 - ▶ MTRV (MAS) – Installs underway at TQ and Al Jahra (KU). 263 out of 900 kits have been installed. Estimated completion date of May 06, three months earlier than originally planned.
 - ▶ M1114 – 240 out of 2,272 delivered. Estimated completion date of May 06.





Processes & Solutions



- **Joint EOD Rapid Response Vehicle (JERRV)**

- CENTCOM/JIED IPT selected the Cougar vehicle to fulfill a joint requirement for an EOD and Engineer vehicle for blast protection from mine and IED explosions.
- First two vehicles delivered
- Requirement for 122 vehicles
 - ▶ 38 Marine Corps
 - ▶ 84 Army, Navy and Air Force
- \$92M funded from:
 - ▶ \$67.1M Joint Procurement (IFF)
 - ▶ \$24.9M Supplemental (Army)
 - ▶ Contract awarded 23 Jun 05
- DEPSECDEF Urgent & Compelling approval allowing sole source to Force Protection, Inc.





Long-Term Solutions



- **Naval “manhattan” Program to Counter-IEDS**

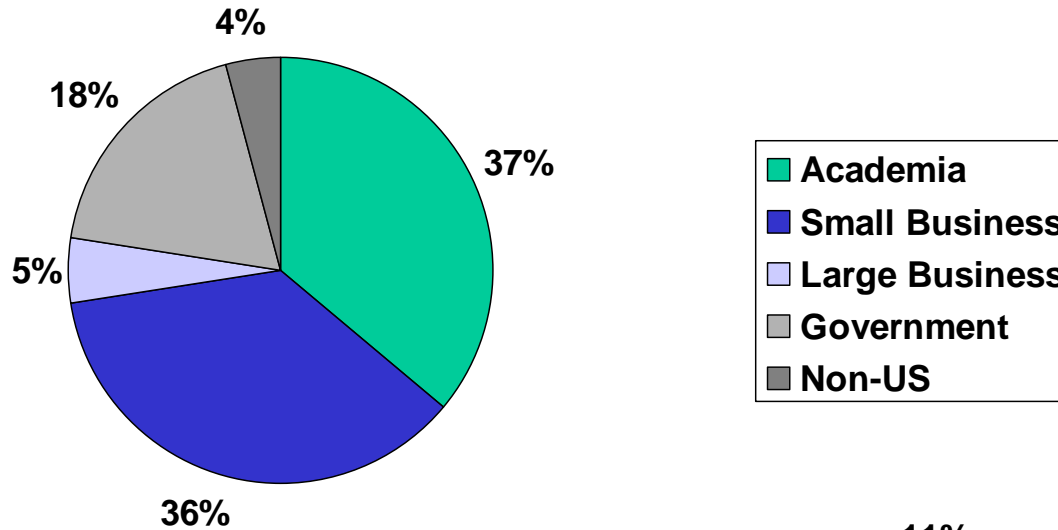
- Innovative scientific concepts to counter IED threat
- Develop/maintain long-term investment in multi-disciplinary Basic Research/Phenomenology
- Complementary to other national efforts, not competitive
- ~ 450 responses to Broad Agency Announcement (BAA)

- **Naval Research Laboratory**
- **University Affiliated Research Centers (UARCs)**
 - APL Johns Hopkins University
 - ARL Penn State University
 - ARL University of Texas
 - APL University of Washington
 - ARL University of Hawaii (being established)
- **Full U.S. Academic Community**
- **International Participation**

**Intramural
Efforts = \$15M / Yr**

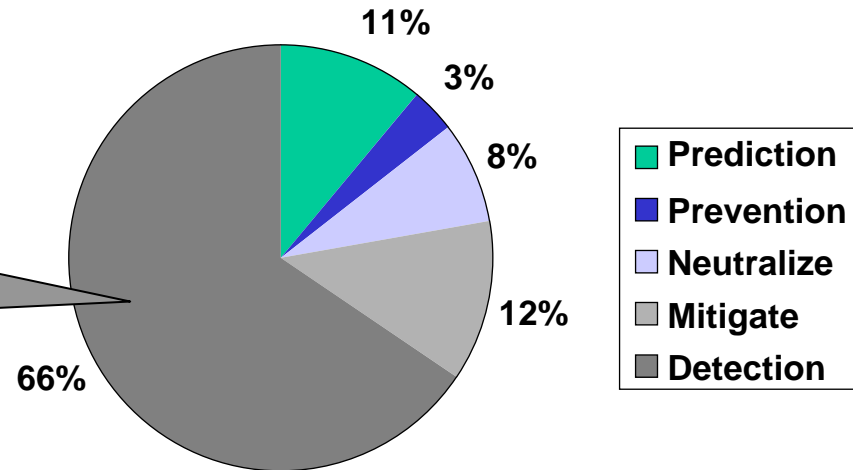
**Extramural
Efforts = \$15M / Yr**

BAA White Paper Distribution Statistics



Detection (290 Papers)

Acoustics	10
Nuclear	14
Optical	70
RF / Radar	29
Thz & mm Wave	30
Trace Detection	43
Other	36



DoD Single Manager Program for EOD Technology & Training




- **In 1971, DoD Directive 5160.62 designated SECNAV as Single Manager for DoD EOD Technology and Training to:**
 - Consolidate common EOD technology and training needs
 - Naval EOD Technology Division (NAVEODTECHDIV)
 - Naval School EOD (NAVSCOLEOD)
 - Preclude unnecessary duplication of effort
- **DoD EOD Program Board composed of Flag/General Officer Reps from All Services; Chaired by Navy Executive Manager**
 - Subordinate Joint Boards identify and validate joint EOD technology and training requirements
 - Joint Service Military Technical Acceptance Board (MTAB) determines best technology venue to meet requirement and accepts developed EOD tools, equipment and TTP for respective Services

Proposal to Expand SECNAV Single Manager responsibilities to include CREW



- **Joint IED Defeat Task Force CREW Strategy:**
 - Off ramp CREW responsibilities to Service Programs
 - Ensure common development
 - Ensure compatible, interoperable solutions
- **JCB recommended expanding scope of SECNAV Single Manager for JS EOD to encompass CREW:**
 - Joint processes and expertise in place
- **JROC recommended SECNAV as Single Manager**
- **DSD is approval authority**

**THE JOINT STAFF**
WASHINGTON, D.C. 20318-8000

**JOINT REQUIREMENTS
OVERSIGHT COUNCIL**

MEMORANDUM FOR SEE DISTRIBUTION

Subject: Joint Sponsor for Counter Radio Controlled Improvised Explosive Device Electronic Warfare

1. The Joint Requirements Oversight Council (JROC) recommends that Department lead responsibility for Counter Radio Controlled Improvised Explosive Device Electronic Warfare be assigned to the Navy as the Single Manager for Explosive Ordnance Disposal Technology and Training. Additionally, the JROC requests the Deputy Secretary of Defense favorably consider and support this recommendation and change DODD 5160.62 (Single Manager for Explosive Ordnance Disposal Technology and Training) to reflect this recommendation, as attached.

2. The JROC acknowledges Service concerns highlighted during the Joint Capabilities Board for future Improvised Explosive Device (Defeat) efforts and therefore supports: Army efforts to continue to develop a Counter Remote Controlled Improvised Explosive Device Electronic Warfare Capability Production Document; including the Defense Science Board as a stakeholder of the Department of Defense Explosive Ordnance Disposal Program Board; that the Single Manager's sponsorship does not preclude Service efforts to pursue non-Counter Radio Controlled Improvised Explosive Device (Defeat) solutions, including multi-initiated improvised explosive devices nor does it exclude any Service from future Counter Radio Controlled Improvised Explosive Device (Defeat) related efforts.

E. P. GIAMBASTIANI
Admiral, United States Navy
Vice Chairman
of the Joint Chiefs of Staff

Enclosure

DISTRIBUTION
Deputy Secretary of Defense
Under Secretary of Defense for Acquisition, Technology and Logistics
Vice Chief of Staff, US Army
Vice Chief of Naval Operations
Vice Chief of Staff, US Air Force
Assistant Commandant of the Marine Corps
Director, Joint Improvised Explosive Device (Defeat) Task Force



BACKUP

DOD EOD Technology Program



- **Single Manager responsibilities include**
 - Joint Technology & Training
 - Science, Technology, & Development
 - DOD Acquisition
 - Life-cycle Support
- **The EOD Mission Requires Specialized Systems and Equipment for:**
 - Low Signature (Magnetic and Acoustic)
 - Operation in Harsh Environments
 - Small, Mobile Deployed EOD Forces
 - Operations against varied and sophisticated IED and UXO threats



Bottom line:

EOD Forces require a “tool bag”, family of systems approach to defeat explosive hazards.

Single Manager must keep the tool bag relevant and supported.

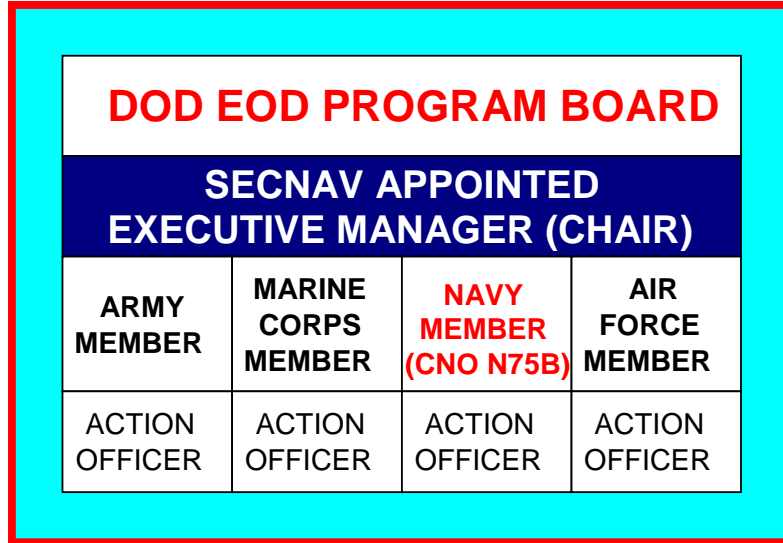
NAVEODTECHDIV



- **NAVSEA Executes DOD Single Manager responsibilities for Joint Service EOD Technology and Training**
- **Naval EOD Technology Division develops Joint Service EOD capabilities:**
 - EOD knowledge management:
 - ▶ Sole developer of EOD procedures for US EOD Forces
 - 7500+ pubs covering over 46,000 ordnance items
 - Allied and coalition force distribution
 - ▶ Acquisition and exploitation of Threat Ordnance
 - World-wide exploitation capability
 - ▶ EOD Technical Support Center
 - 24/7 Reach back capability for EOD Operators
 - EOD technology:
 - ▶ JS EOD unique S&T and RDT&E
 - Develop tools & equipment
 - ▶ JS EOD Equipment in-service engineering
 - ▶ Logistics and life-cycle support



DOD EOD Program Organization



OASD SOLIC (EOD OSD PROPONENT)

ASN RDA

PEO-LMW

PMS-EOD

NAVSEA
SEA 00V

NETC

NAVEODTECHDIV
Deputy Manager for Technology (Indian Head, MD)

CNO N75X
Executive Manager

N75XA
Executive Assistant

N757 N75X1 N75X2 N759/N769

NAVSCOLEOD
Deputy Manager for Training (Eglin AFB, FL)

DETACHMENTS
A MC N AF

DETACHMENTS
A MC N AF

MTAB
A MC N AF

TTAB
A MC N AF

ULTRA Armored Patrol Vehicle



OBJECTIVE:

- Explore new and innovative ideas/technologies for next-generation mobility platforms, with a primary emphasis on crew survivability when exposed to blast, ballistic, and fragmentation threats.

MILITARY RELEVANCE/OPERATIONAL IMPACT:

- Increased crew survivability
- Improved mobility & safety

TECHNICAL APPROACH:

- Conduct vehicle requirements analysis
- Perform technology assessments
- Develop conceptual designs
- Perform armor performance simulations
- Generate advanced armor/crew cab concepts
- Integrate new armor/crew cab solution to COTS platform
- Deliver concept vehicle to Government

PERFORMERS: GTRI, Badenoch LLC, NSWC/CD, ONR

SCHEDULE:

TASKS	FY03	FY04	FY05	FY06
Ultra APV Program		△	△	
Cab Mockup Review			△	
Fabricate Concept Vehicle			△	△
Fabricate 2 nd Crew Cab			△	△
Integrate Cab/armor/chassis			△	△
Deliver to Government				◆

ONR POC: Mr. Jeff Bradel, 703-588-2552, bradelj@onr.navy.mil