

2008 13th Expeditionary Warfare Conference "21st Century Expeditionary Warfare-Challenges, Opportunities and the New Maritime Strategy" Panama City, FL

20 - 23 October 2008

Onsite Agenda NDIA Expeditionary Warfare Division (EWD) Organization Chart

Tuesday, 21 October 2008

Welcome and Opening Remarks: CAPT Andrew Buduo III, Commander

Featured Speaker

Lieutenant General George J. Flynn, USMC Commandant of the Marine Corps Representative, Deputy Commandant for Combat Development and Integration

Mr. Roger Smith Deputy Assistant Secretary of the Navy- Expeditionary Warfare

Mr. Eric Casey Maersk Line, Ltd. "Global Solutions in the 21st Century- the Defense/Commercial Partnership"

Combined Panel: Shipbuilding Requirements/Capabilities and Industry

Panel Members:

- Dr. John Pazik, Director of Ship Systems and Engineering, Office of Naval Research
- "The Ship Acquisition Process Status and Opportunities", Mr. Art Divens, Program Executive Office, Ships
- "Marine Corps Shipbuilding Requirements", BGen Walter L. Miller, USMC, Assistant Deputy Commandant, Combat Development an Integration, HQ USMC
- Mr. Michael Toner, Executive Vice President Marine Systems, General Dynamics, Inc.

Wednesday, 22 October 2008

Marine Corps Strategy for the Long War Brigadier General Ronald Johnson, USMC, Director, Operations Division, PP&O, HQMC

Marine Corps Aviation in Support of the Long War Brigadier General Jon Davis, USMC, Deputy Assistant Commandant Aviation, HQMC

MPF Support at the Blount Island Command

<u>Colonel Joe Haviland</u>, USMC Commander, Blount Island Command

Ground Equipment Requirements

<u>LT Col Ben Garza</u> PEO, Land Systems, Marine Corps Systems Command

Enhanced Company Operations Concept

<u>Colonel Vince Goulding</u>, USMC (Ret) Director, Experiment Division, Marine Corps Warfighting Laboratory

<u>Colonel Stuart Dickey</u>, USMC Commanding Officer, Expeditionary Warfare Training Group, Atlantic – "Revitalizing Amphibious Warfare Capabilities"

The Long War- Strategy to Hardware (USN Focus)

Panel Members:

• Rear Admiral Michael McDevitt, USN (Ret), Director, Center for Strategic Studies Center for Naval Analyses

Panel Members:

- Mr. George Solhan, Deputy Chief of Naval Research, Expeditionary Maneuver Warfare and Combating Terrorism
- Captain Gilmore Briklund, USN, Chief of Staff, Expeditionary Strike Group TWO

NECC Battlespace

Thursday, 23 October 2008

Keynote Speaker

• Major General Thomas Benes, USMC Director Expeditionary Warfare Division, OPNAV (N85)

Moderator:

Major General Gordon Nash, USMC (Ret) Corporate Vice President of EW and Vice President Washington D.C. Operations, Sierra Nevada Corporation

Panel Members

• CAPT Mark Mullins, USN, OPNAV N851 (Special Warfare)

Panel Members:

- CAPT Mark Mullins, USN, OPNAV N851 (Special Warfare)
- CAPT Edward Barfield, USN, OPNAV N853
- CAPT Barry Coceano, USN, OPNAV N857 (EOD/NCW)
- Mr. Kevin McConnell, Director, Fires & Maneuver Integration Division, MCC



PROMOTING NATIONAL SECURITY SINCE 1919

13TH ANNUAL EXPEDITIONARY WARFARE CONFERENCE

21st Century Expeditionary Warfare-Challenges, Opportunities and the New Maritime Strategy

ON-SITE AGENDA







OCTOBER 20-23, 2008 www.ndia.org/meetings/9700



MARRIOTT BAYPOINT RESORT > PANAMA CITY, FLORIDA

EVENT #9700

AGENDA

MONDAY, OCTOBER 20, 2008

7:00 AM	Registration Open at the Nicklaus Design Golf Course		
8:00 AM	Golf Tournament at Nicklaus Design Golf Course		
3:00-4:30 PM	Spouse Tea		
6:00-7:00 PM	Registration and Reception		
7:00 PM	Dinner- Keynote Speaker General James Jones, Jr., USMC (Ret) <i>President and Chief Executive Officer of the U.S. Chamber Institute for 21st Century Energy; Former</i> <i>Commandant of the Marine Corps</i>		
TUESDAY, OCTOBER 21,	2008		
6:30-7:30 AM	5:30-7:30 AM Registration and Continental Breakfast		
7:30-8:00 AM	Welcome and Opening Remarks		
8:00-8:45 AM	Featured Speaker Vice Admiral Barry McCullough, III, USN <i>Chief of Naval Operations Representative, Deputy CNO for Integration of Capabilities and Resources (N8)</i>		
8:45-9:30 AM	Featured Speaker Lieutenant General George J. Flynn, USMC <i>Commandant of the Marine Corps Representative, Deputy Commandant for Combat Development and</i> <i>Integration</i>		
9:30-10:00 AM	Break		
10:00-10:45 AM	Mr. Roger Smith Deputy Assistant Secretary of the Navy- Expeditionary Warfare		
10:45-11:30 AM	Mr. Eric Casey Maersk Line, Ltd. "Global Solutions in the 21st Century- the Defense/Commercial Partnership"		
11:30-12:45 PM	Networking Lunch		
12:45-2:45 PM	Shipbuilding Requirements/Capabilities and Industry Combined Panel		

Requirements Session Co-Chairman: Rear Admiral Bill Fogarty, USN (Ret), *Senior Naval Advisor, BAE Systems, Land & Armaments* Session Focus: The CNO's Shipbuilding Plan, coupled with the new Maritime Strategy, present some daunting issues and challenges to DON Resource Sponsors and Program Executives. Some examples are: "Do the warfare requirements/capabilities needed to carry out the Maritime Strategy match the shipbuilding plans?"; "Are capability trade-offs being mandated by budget realities which give the warfighter enough 'bang for the buck'?"

Industry Session Co-Chairman: Mr. Terry O'Brien, *Corporate Director, Navy Amphibious Programs, Northrop Grumman Corporation* **Session Focus:** Shipbuilding is a National Security issue that is complicated and complex and is at the forefront of Navy Force Structure discussions. Every year when delivered to Congress, The Navy's 30 Year Shipbuilding Plan has been a point of discussion with the Congress, Department of Defense and Industry and is always heavily scrutinized and commented upon. This session will

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focus on an open discussion with the Navy (customer) and the Shipbuilders to present both sides of shipbuilding. The panel consisting of DASN Ships and two leaders in Expeditionary Shipbuilding will present short remarks followed by an interactive panel of the customer and industry.

	 Moderator: Vice Admiral Doug Katz, USN (Ret) <i>BAE Systems, Land and Armaments</i> Panel Members: Dr. John Pazik Director of Ship Systems and Engineering, Office of Naval Research Rear Admiral William Landay, III, USN PEO SHIPS OPNAV N8 Speaker TBD
	 Brigadier General Ronald Johnson, USMC Director, Operations Division, PP ざつ, HQMC
2:45-3:15 PM	Break
3:15-5:15 PM	 Industry Panel Moderator: Mr. Terry O'Brien Corporate Director, Navy Amphibious Programs, Northrop Grumman Corporation Panel Members: Ms. Allison Stiller Deputy Assistant Secretary of the Navy (Research, Development and Acquisition), Ship Programs Mr. Michael Petters Corporate Vice President and President, Northrop Grumman Shipbuilding Mr. Michael Toner Executive Vice President – Marine Systems, General Dynamics, Inc.

WEDNESDAY, OCTOBER 22, 2008

6:30-7:30 AM Registration and Continental Breakfast

7:30-11:45 AM The Long War- Strategy to Concepts to Hardware (USMC Focus)

Session Chairman: Major General Harry Jenkins, USMC (Ret), President, Soaring Eagle Consulting

Session Focus: The future global threat environment will be characterized by terrorism, irregular warfare, religious extremism, ungoverned territories, and the competition for natural resources (water, energy, etc.). The Marine Corps will remain a general purpose force capable of full spectrum operations against conventional threats but with emphasis on irregular warfare. The Corps is adopting strategies and adjusting concepts and plans to meet future Long War demands through persistent forward presence, security cooperation and engagement in support of Regional Combatant Commanders theater security cooperation plans. This session will include presentations on strategy and unit regional orientation, aviation and ground equipment requirements, MPF support at the Blount Island Command and an emerging Enhanced Company Operations Concept at the Marine Corps Warfighting Laboratory.

7 :30-8:30 AM	Marine Corps Strategy for the Long War Brigadier General Ronald Johnson, USMC <i>Director, Operations Division, PP</i> の, HQMC
8:30-9:15 AM	Marine Corps Aviation in Support of the Long War Brigadier General Jon Davis, USMC Deputy Assistant Commandant Aviation, HQMC
9:15-9:45 AM	Break

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9:45-10:30 AM	MPF Support at the Blount Island Command
	Colonel Joe Haviland, USMC Commander, Blount Island Command
10:30-11:15 AM	Ground Equipment Requirements
1 1 1	PEO, Land Systems, Marine Corps Systems Command (Invited)
11:15-11:45 AM	Enhanced Company Operations Concept
	Colonel Vince Goulding, USMC (Ret)
1 1 1	Director, Experiment Division, Marine Corps Warfighting Laboratory
12:00-1:30 PM	Colonel Stuart Dickey, USMC
	Commanding Officer, Expeditionary Warfare Training Group, Atlantic – "Revitalizing Amphibious Warfare Capabilities"
1:30-3:30 PM	The Long War- Strategy to Hardware (USN Focus)

Session Chairman: Mr. Richard Diamond, *Strategic Assesments, Seapower Capabilities Center, Raytheon Corporation* **Session Focus:** No matter the outcomes in Iraq and Afghanistan, the nation will inevitably turn once again to the expeditionary capabilities of naval forces as national security instruments of choice. Much of the burden of forestalling crisis will fall to naval expeditionary forces by maintaining persistent forward presence, ensuring cooperation by expanding global maritime security collaboration and successfully projecting decisive U.S. military power when preventative measures fail. This panel will examine issues along the gamut of naval expeditionary considerations, from high-end/concept perspective, to that of non-ACAT I acquisition programs, to NECC early lessons learned and industry opportunities, to recent operational lessons learned.

1:30-3:00 PM	 Moderator: Mr. Richard Diamond Strategic Assessments, Seapower Capabilities Center, Raytheon Corporation Panel Members: Rear Admiral Michael McDevitt, USN (Ret) Director, Center for Strategic Studies, Center for Naval Analyses Captain David Balk, USN Assistant Chief of Staff (Operations), Naval Expeditionary Combat Command 		
3:00-3:30 PM	Break		
3:30-4:45 PM	 Panel Members: Mr. George Solhan Deputy Chief of Naval Research, Expeditionary Maneuver Warfare and Combating Terrorism Captain Gilmore Briklund, USN Chief of Staff, Expeditionary Strike Group TWO 		
5:00-7:00 PM	NSWC PCD Open House and Networking Reception		
7:00-10:00 PM	Pig Roast at NSWC PCD		
THURSDAY, OCTOBER 23, 2008			
7:00-7:45 AM	Registration and Continental Breakfast		
8:00-12:00 PM	Bringing Expeditionary Warfare into the 21 st Century		
Session Chairman: Mr. Skip Gaskill, Director, Marine Corps Programs, Textron Corporation			

Session Focus: As we continue to fight stability operations overseas and plan for enduring missions beyond that, we face enormous challenges in preparing for the future. The inevitability of a constrained fiscal environment will have a major impact in the

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decisions made to provide us with the capabilities to accomplish our stated tasks. The need for innovative, economical and sustainable weapons and systems are crucial to this mission success.

8:00-8:45 AM	Keynote Speaker
	Major General Thomas Benes, USMC Director Expeditionary Warfare Division, OPNAV (N85)
	Director Expeditionary warjare Division, OPIVAV (1883)
8:45-9:30 AM	 Moderator: Major General Gordon Nash, USMC (Ret) Corporate Vice President of EW and Vice President Washington D.C. Operations, Sierra Nevada Corporation Panel Members: CAPT Mark Mullins, USN OPNAV N851 (Special Warfare) CDR Dave Hebert, USN OPNAV N852 (Mine Warfare)
9:30-10:00 AM	Break
10:00-12:00 PM	 Panel Members: CAPT Edward Barfield, USN OPNAV N853 (Amphibious Warfare) CAPT Barry Coceano, USN OPNAV N857 (EOD/NCW) Mr. Kevin McConnell Director, Fires & Maneuver Integration Division, MCCDC
12:00-12:05 PM	Conference Close
12:10 PM	Lunch
	Adjourn until October 19-22, 2009

DISPLAY LAYOUT



Company	Booth Number
Shee Atika Technologies	1
The Boeing Company	2
Charleston Marine Container	3
Northrop Grumman Ship Systems	4
Maersk Line Limited	5
Textron	6
W.L. Gore and Associates	7
ARINC	8
Raytheon Corporation	9
Austal	10
Lockheed Martin Corporation	11
DRS Technologies	12
Base-X, Inc.	13
BAE Systems	14
General Dynamics	15
EWTGLANT	А
NSWC Corporate	В
OPNAV N85	С
Military Sealift Command	D

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AUSTAL

Austal's US shipyard occupies approximately 134 acres and is located in Mobile, Alabama, on the Mobile River. The shipyard waterfront is approximately 20 miles from the open Gulf.

The original assembly bay (90ft x 360ft) is capable of aluminum ship construction up to 80ft wide, 74ft high and 350ft long. The facility provides for construction material storage, fabrication and hull erection floor space. The existing 380ft wharf is connected to the building by a 65ft-long concrete launch pad. Ship launch is accomplished by transferring the ship from keel blocks to transfer cars, rolling the ship out of the building on a removable track system onto a launch barge or drydock, and subsequently flooding the barge or drydock for ship float-off.

The Northern Expansion facility was completed in November 2005. This expansion adds two large (134ft x 400ft) buildings for module fabrication/ erection and component storage, connected by 2 mezzanine levels (25ft x 400ft) for shop space, material storage, and small assembly fabrication; two additional launch pads; a combined wharf length of 750ft; and additional overhead cranes capable of lifting 40-ton modules.

In July 2008, Austal broke ground on a new 700,000sf modular manufacturing facility. This project will include an 80,000sf warehouse and 60,000sf office building. Completion of this project should enable the shipyard to double its shipyard staff to over 2,000 employees and will speed up the shipbuilding process increasing the yard's annual product output.

Austal is currently preparing the U.S. Navy's Littoral Combat Ship (LCS 2) for sea trials. The LCS 2 sea frame is based on Austal's innovative 127-meter high-speed aluminum trimaran hullform that enables the ship to reach sustainable speeds of over 40 knots and range in excess of 3,500 nautical miles, with an unmatched interior volume and payload for a vessel of this size.

Austal is preparing the second of two 107-meter Hawaii Superferries for delivery in December. Hawaii Superferry is using Austal fast-ferry technology to establish Hawaii's first high-speed vehicle-passenger service. Each catamaran can carry 866 passengers and up to 282 cars.

BAE SYSTEMS

BAE Systems mark is "We Protect Those Who Protect Us"! BAE Systems plc is the 3rd largest global defense company with 97,500 employees and \$31.4B annual sales. It is the top-ten U.S. prime contractor with presence in more than 100 nations. The US based operations have major operations in 38 states, the UK, Sweden, Israel, Germany, Mexico, Switzerland, and South Africa and a U.S. company chartered in Delaware.

There are three key operating groups; Electronics, Intelligence & Support (EI&S) Operating Group designs, develops and manufactures a wide range of electronic systems and subsystems for both military and commercial applications; to include Electronic Warfare. EI&S is a leading provider of integrated technical and professional service solutions for the U.S. national security and Federal civilian markets; to include Ship Repair. Land and Armaments is a global leader in the



Administrative Information

For questions regarding attendee participation at this conference, please contact Claudia Diaz, Meeting Planner, at (703) 247-2596 or cdiaz@ndia.org.

Conference

PROCEEDINGS

Proceedings will be made available to conference attendees one to two weeks after the conference via DTIC link. You will receive notification via e-mail once proceedings are avilable for viewing.

ID BADGES

During conference registration and check-in, each attendee will be issued an identification badge. Please be prepared to present a valid picture ID. Badges must be worn at all conference functions. design, development, production and service of armored combat vehicles, naval guns and launchers, canisters, artillery systems & intelligent munitions as well as individual and vehicle protective systems; to include Naval Guns and launchers and the Bradley Combat System. In addition, in keeping with protecting those that protect us, BAE Systems recently established a Products Group which is rapidly becoming the single-source provider of security solutions, manufacturing many of the world's most recognized brands exclusively for law enforcement, corrections, military and licensed security professionals.

BAE Systems continues to be involved in the community; America Supports You, ESGR, Armed Service YMCA, The Fisher House, Operation Homefront, USO, American Red Cross, Special Olympics and many more.

BAE Systems has a solid financial performance and reputation for program performance. A leader in science, technology and engineering and continues to have dramatic growth and investment in jobs, facilities and technology. BAE Systems has skilled and innovative people, dedicated to national security and supporting the men and women in uniform and a commitment to ethics and integrity in everything we say and do.

DRS SONAR SYSTEMS

DRS Sonar Systems, a joint venture between DRS Technologies and Thales North America, develops undersea warfare systems (UWS) for the defense and homeland security markets.

Majority owned by DRS, the joint venture company combines forces of two leading global defense technology companies. The company offers attractive and affordable undersea warfare solutions based on the leading-edge technologies of Thales and the world-class manufacturing and integration capabilities of DRS.

Formed in spring of 2007, the company is increasingly seen as a preferred provider of sonar, anti-submarine and mine warfare solutions for U.S. and non-U.S. military and homeland security applications.

DRS Sonar Systems will manufacture undersea warfare products and systems under license from Thales and serve as the point of contact for sales and support in the United States. The new company also will develop new underwater systems tailored to U.S. Navy requirements by integrating subsystems from other contractors and Thales's extensive product base.

DRS Sonar Systems is headquartered in Gaithersburg MD and is headed by Benajmin Teno, President. Telephone: 301 921-8015.

The company's parent organization, DRS C3 Systems, is a world leader in the development and production of naval display consoles, ship communication systems, radar and electronic manufacturing and integration services.

Thales is a leading international electronics and systems group, serving defense, aerospace and security markets worldwide, and supported by a comprehensive services offering. The company's civil and military technology businesses develop in parallel to serve a single objective: the security of people, property and nations. Thales employs approximately 68,000 people.

DRS Technologies, headquartered in Parsippany, New Jersey, is a leading supplier of integrated products, services and support to military forces, intelligence agencies and prime contractors worldwide. The company employs approximately 10,500 people. For more information about DRS Technologies, please visit the company's web site at www. drs.com.

General Dynamics Electric Boat

With more than a century of experience, Electric Boat has established standards of excellence in design, construction and lifecycle support of submarines for the U.S. Navy, with a shipyard in Groton, CT, and a manufacturing facility in Quonset Point, RI.

New submarine construction currently is focused on the Virginia class, representing a revolution in design and construction techniques and mission flexibility. The first U.S. Navy warship designed from the keel up for the post-Cold War era, Virginia has been optimized for maximum flexibility, these submarines will play a key role in the nation's defense with their stealth, firepower and unlimited endurance.

Electric Boat is co-producing the first 10 ships of the class, and delivered the lead ship, Virginia, in 2004. Four other ships of the class have been delivered since, the latest being the New Hampshire, eight months ahead of schedule and \$66 million under target cost.

Electric Boat's engineering and design organization embodies a broad set of skills and capabilities, including nuclear marine propulsion, hydrodynamics, acoustics, and shock and structure. At the heart of these skills and capabilities is Design/Build. Teams of Navy personnel, vendors and Electric Boat engineers, designers and waterfront construction supervisors collaborate on design and manufacturing issues, supported by advanced computer technology that enables team members to view three-dimensional digital drawings of individual components, systems or the entire submarine.

Working closely with the U.S. Navy, Electric Boat is committed to helping keep the nation's nuclear submarine fleet mission-ready by providing a range of maintenance, modernization and life-cycle support activities. Hundreds of employees are regularly engaged in this work at various locations across the United States.

Electric Boat has finished conversion of four Ohio-class submarines to an SSGN configuration, providing significant new capability to the fleet. It is a key player in the Tango Bravo program, developing breakthrough technologies such as shaftless propulsion and electrification of major systems. It is advancing concepts for a very high speed, manned submersible, and engaged in concept studies for the next-generation submarine. Electric Boat is the logical choice for designing and building the Navy's undersea force of the future.

RAYTHEON **C**OMPANY

Raytheon Company, with 2007 sales of \$21.3 billion, is a technology leader specializing in defense, homeland security and other government markets throughout the world. With a history of innovation spanning more than 86 years, Raytheon provides state-of-the-art electronics, mission systems integration and other capabilities in the areas of sensing; effects; and command, control, communications and intelligence systems, as well as a broad range of mission support services. With headquarters in Waltham, Mass., Raytheon employs 72,000 people worldwide.

SAIC

SAIC is a FORTUNE 500° scientific, engineering, and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure, and health. The company's approximately 44,000 employees serve customers in the Department of Defense, the intelligence community, the U.S. Department of Homeland Security, other U.S. Government civil agencies and selected commercial markets. SAIC had annual revenues of \$8.9 billion for its fiscal year ended January 31, 2008. For more information, visit www. saic.com. SAIC: From Science to Solutions°

N85

Expeditionary Warfare Division

Naval Expeditionary Warfare

in the 21st Century

MajGen Thomas Benes, USMC Director, Expeditionary Warfare

vision, N85





Growing Demand for Expeditionary Forces

- Forward Deployed Naval Forces
- ➢GFS Operations
- >MARSEC Operations
- Humanitarian/Disaster Relief





















Assault Echelon Long Range Plan: 33-34 Ships

- (3) LHA(R)—New Construction
- (8) LHD—ESL 2038
- (11) LPD-17—9 Under Contract
- (12) LSD-41—ESL 2035
- LSD Replacement—2018
- LHD Replacement—2023

A flexible, balanced Expeditionary Force to meet warfare demands





Connectors



Joint High Speed Vessel (JHSV)
 Landing Craft Air Cushion (LCAC) / (SLEP)
 Sea Base to Shore Connector
 Landing Craft Utility (LCU)
 T-CRAFT S&T Initiative















Mine Warfare







NECC / NSW / NSFS





NECC Modernization—C4ISR, NLW NSW—Equipment Upgrades, ISR Naval Surface Fire Support—ERM AOA Green Water—Capability Development









Maritime Prepositioning Force





Maritime Prepositioning Force (Future):

- Close joint forces to the sea base
- Arrival and assembly at sea
 - Integration of personnel and equipment
 - Vehicle and equipment transfer
- Employment of "combat ready" forces from Over-the-Horizon
 - Surface
 - Vertical
- Sustainment of Joint forces ashore
 - Delivered via vertical connectors from T-AKE
 - <u>Delivered via surface connectors from MLP</u>
 - TEU handling at sea and throughput to shore
- Reconstitution and redeployment of forces











Bringing Expeditionary Warfare into the 21st Century Blue vs. Green Or Blue in Support of Green

N-85 Toughest Job in the Navy, Minipes, DoD

The way ahead for the nation's only true expeditionary forces.

Hardest Duty in Dept of the Navy





USMC NSFS Requirements Pedigree



Bringing Expeditionary Warfare into the 21st Century

- Capt Mark Mullins, USN OPNAV N851 (Special Warfare)
- Cdr Dave Hebert, USN OPNAV N852 (Mine Warfare)

Break

- Capt Ed Barfield, USN OPNAV N853 (Amphibious Warfare)
- Capt Barry Coceano, USN OPNAV N857 (EOD/NCW)
- Mr. Kevin McConnell Director, Fires and Maneuver Integration Division, MCCDC
- Questions / Comments



Team N-85 / MCCDC



All commissioned Naval Service Officers. All have masters degrees. All served on high level staffs. All served as commanders. All combat veterans. All with multiple awards. Most have extensive Joint experience.

Bringing Expeditionary Warfare into the 21st Century

Rules of Engagement

- 15 20 Min per speaker X 2
- @ 0930 Break for 30 Minutes
- 15-20 Min per speaker X 3
- Questions / Comments
- 1210 Lunch
- Cell phone ring costs a donation to N-MC Relief!
- I am the judge, timer, and gonger.

Why We Need to Deliver











Naval Special Warfare

Navy Component of USSSOCOM

Operational Focus – Direct Action & Special Reconnaissance But...

Capable of engaging across the spectrum of Special Operations "PEOPLE ARE OUR GREATEST ASSET!"

Mobility is a cornerstone operational attribute (In, on & under the Sea; in the Air; on Land)













Naval Special Warfare

Current Service Common Capabilities



Small Arms and Weapons Mounts Night Vision Equipment Training Support Craft Pre-positioned Operational Stocks (Expeditionary camp sets) Portable Recompression Chambers









Possible Future (Navy) Service Common Capabilities

Replacement Riverine Craft NSW version of a "Green Water Craft" Tactical Vehicles Tactical Communications Equipment (A current N6 responsibility) Small Tactical Unmanned Aircraft Systems

Riverine Component of NECC



Planned Future Capability Improvements Tier I Unmanned Aircraft System Riverine Unmanned Surface Vessel Unattended Ground Sensors

U.S. Navy Mine Countermeasures

National Defense Industrial Association 13th Expeditionary Warfare Conference October 2008



CDR Dave Hebert Mine Warfare Branch Head (N852)







- Mine Threat
- The Transition Challenge
- MCM Mission Package Program Overview
- OMCM Challenges
- Summary



The Threat Across the Littorals





- The real goal of a minefield is Sea Denial, NOT the damage or destruction of a specific ship.
- Navy goal is Assured Access to defeat the minefield, NOT counter every mine.



- Over 300 Mine Types
- Over 50 Countries Possess
- Low Cost
- Simple to Deploy









Coverage Complete







Shallow Water to Beach Zone







LCS MIW Mission Package: System Coverage



		Minehunting (Detect/ Classify/ Identify)		Eng Neutralize	age Sweep
Beach Surf Zone	VTUAV+ COBRA	VTUAV+ COBRA	Surface Near Surface	ABS, EOD Mobile Unit 1	
Near surface & floating		ALMDS	↓	RAMICS	
Volume		AQS-20	Volume	AMNS	OASIS US3
and bottom mines		AQS-20	150 ft Close-Tethered Close-Close-	AMNS	OASIS US3
	SMCM UUV	AQS-20	30 ft Bottom Buried	AMNS	OASIS
Buried	LFBB		* NOTE : Depth Coverages Vary with System and		

NOTE : Depth Coverages Vary with System and Mine Type

UNCLASSIFED


MCM Package Sensor Status



1.0						
9	MCM Package Program	ACAT	Programmatics	Testing	Contractor	юс
	RMS	1C	In Low Rate Initial Production	 TECHEVAL completed on DDG-96 Mar 07 Op Assess on USS BAINBRIDGE 14 Sep 08 	Lockheed Martin	2009
	AQS-20A	2	In Low Rate Initial Production	 TECHEVAL on MH-60S completed OPEVAL w/ MH-60S Aug 09 – Oct 09 	Raytheon	2010
	AMNS	2	In Low Rate Initial Production	 MS C Approval Jan 08 DT Live Fire Ground Testing Jul 09 	Raytheon	2010
	ALMDS	2	In Low Rate Initial Production	 Commenced WSIT CT on MH-60S Apr 08 Commence TECHEVAL 2nd Qtr FY09 	Northrop Grumman	2010
	OASIS	2	Milestone C: 3QFY10	✓ Re-design PDR 12 Jun 08MH-53E OA Sep 09	ITT Corp	2011
	RAMICS	2	Milestone C: 4QFY10	 MH-60S Captive Carriage & Jettison OCT 08 Lake Glendora II Ground Testing Oct-Dec 08 	Northrop Grumman	2011
	COBRA	3	Milestone C: Jan 09	 Started Performance Validation (MH-53E) Integration flight tests on VTUAV Oct 09 	Northrop Grumman	2010
	CMS	3	Milestone C: FY14	 SD&D Contract awarded 24 Jul 08 System Requirements Review 1st Qtr FY09 	Boeing	2015
	US3	3	Milestone C: 4QFY10	 Sweep Gear integration test on USV Jul 08 End to End US3/USV/MP test Oct 08 	TBD	2014
		TBD	Milestone B: 2QFY09	CDD in Navy Staffing	TBD	2015



MCM Mission Package Evolution



MCM MM Delivery USV w/USSS (x1) (EDM) **FY07** MCM MP 1 RMMV (x1) (EDM) AMNS (x1) (EDM) Delivered Spiral Alpha Modules ALMDS (x1) (LRIP) AN/AQS-20A (x2) (LRIP) UUV (x2) (EDM) Support Equipment USV w/USSS (x1) (EDM) MCM MP 2 **FY09** RMMV (x2) (LRIP) Spiral Alpha AMNS (x1) (LRIP) Modules ALMDS (x1) (LRIP) AN/AQS-20A (x3) (LRIP) Support Equipment MCM MP 3-4 USV w/USSS (x1) (LRIP) **FY11** Spiral Alpha RMMV (x2) (Production) Modules OASIS (x1) (LRIP) AMNS (x1) (LRIP) ALMDS (x1) (LRIP) AN/AQS-20A (x3) (Production) COBRA (x1) (LRIP) Support Equipment USV w/USSS (x1) (LRIP) MCM MP 5 FY12 RMMV (x2) (Production) Alpha Module OASIS (x1) (Production) Baseline AMNS (x1) (Production) ALMDS (x1) (Production) AN/AQS-20A (x3) (Production) COBRA (x1) (Production) RAMICS (x1) (LRIP) Support Equipment MP X Systems x,y,z Spiral Bravo Support Equipment Future Modules





OMCM Challenges

Our most mature programs face many challenges (RMS, AQS-20A & ALMDS in or near Operational testing)

• Sensor False Alarms

- SONAR (HFWB, LFBB)
- LIDAR (ALMDS, RAMICS, COBRA)
 - New Data type; New viewers; Learning curve
 - High False Alarms mean longer PMA & higher False classification by PMA Operator
- CAD/CAC improvements needed
 - Real time algorithms in Common Console?
 - Post mission via OPMA?

• Reliability (Ao, MTBOMF)

- Sensor Reliability needs to meet ORD or CPD
- Support Equipment Reliability (CSTRS, Common Tow Cable) needs improvement

WorkLoad / Crew Limitations

- Streaming and Recovery of towed systems (high workload)
- PMA takes long time (Fatigue adds to problem)
- Learning Curve with new data types





- The Mine threat is real and not getting easier
- The transition to Organic MCM will have its challenges; therefore, the Navy needs Industry's help in meeting Organic IOC and preservation of current forces
 - ✓ MCM upgrades
 - ✓ MH-53 Flex
- MCM Mission Package program making progress
- We must make smart investments to reduce false alarms as they drive the Detect to Neutralize timeline





Questions?





BackUp



False Alarms Lengthen Kill Chain





Reliability



All MCO timelines are driven by required MTBF, so we must improve upon reliability to meet the requirements and increase useful life!

Bringing Expeditionary Warfare Into The 21ST Century



CAPT Ed Barfield, USN N853 Amphibious Warfare Branch Head 23 October, 2008



Demand Signal





30 yrs of responsive and successful employment across the operational spectrum has met the demand





- Innovate to Create the Effect of "More"
 - Technological Innovation make assets more capable, better integrate current capabilities
 - Operationally work deployment / employment paradigms to optimize available assets
- Leverage cooperative relationships
- Execute Mid Life Programs
- Need to continue to grow and fund the requirement for 11 + 11 + 11

"With regard to the 313 ship shipbuilding plan, I consider that to be the floor... knowing what the demands are out there, I think 313 is the minimum number..." ~ ADM Roughead



State of N853 Programs



• LPD 17 Class

- First 4 ships delivered; 3 commissioned
- 5 ships under construction in New Orleans & Pascagoula
- 10th LPD authorized and funded in FY09 Authorization and Appropriation Acts
 - 11th LPD authorized in FY09 Authorization Act: "The committee expects the budget submission for fiscal year 2010 to contain a funding request for the 11th ship of the LPD 17 class"

• JHSV (designs)

- PH1: Preliminary Design 3 contracts awarded 31 JAN 08 (Austal USA; GD/Bath Iron Works; Bollinger / INCAT USA)
- Phase II Detail Design and Construction expect selection in OCT 08
- Delivery lead vessel (Army) FY 12; delivery 1st USN vessel
 FY13

• LHA (R)

Start fabrication Dec 08



State of N853 Programs



• MPF(F)

- Increment One CDD (MLP/T-AKE) JROC and DAB approved Mar and Jul 2008 respectively
- MLP Request For Proposal (RFP) for System Design released Aug 08
- Program fully funded across the FYDP
- Ship to Shore Connector (SSC)
 - CDD complete; expect to enter Joint Staff Review Jan 09 -JROC MAY
 - R&D Craft Award anticipated FY11
- LHD 8 Contractual delivery date 15 May; target delivery date 23 March 09



Questions



Phase I Awardees DESIGN CONCEPTS FOR JHSV



BOLLINGER / INCAT USA Partnership





Austal USA

General Dynamics- BATH IRON WORKS / Rolls-Royce



<u>Return to Programs</u>



MLP Technology Development Remaining







Vehicle Transfer System Risk Reduction Full-Scale, At-Sea, Test Article VTS (TAVTS) Demo





- Heavy Lift Ship + 'Portable' DP + TAVTS = Surrogate MLP
- TAVTS Ramp mounts to Heavy Lift Ship
- TAVTS Sideport Platform mounts to Watson Class LMSR
- Will be Tested At-Sea through Sea State 3



NDIA Expeditionary Warfare Conference

13th

EXPEDITIONARY WARFARE DIRECTORATE

Navy Expeditionary Combat Branch

Supporting Navy Expeditionary Combat Command Non-Lethal Weapons, Joint Explosive Ordnance Disposal and Counter Radio-controlled IED Electronic Warfars



Partnering with Industry to Support the Force

CAPT Barry Coceano Navy Expeditionary Combat Branch Head



Expeditionary Combat Responsibilities



Requirements and Action Office for Expeditionary Warfare supporting:

- All Navy Expeditionary Combat Command (NECC) forces
- Joint Service Explosive Ordnance Disposal
- Joint Counter Radio-Controlled Improvised Explosive Device Electronic Warfare (JCREW)
- Joint Non-Lethal Weapons (JNLW)

Recognition of asymmetric threats to maritime security

- National Strategy for Maritime Security
- 2006 Quadrennial Defense Review Report
- Naval Operations Concept
- 2006 Navy Strategic Plan (NSP)
- 2008 Center for Naval Analysis C-IED Study

Unique Capabilities to Face the Asymmetric Threat





Sensor Technology

- Unmanned Systems (UAV/USV/UUV)
 - More capability in a smaller package in more varied operational environments
 - User friendly design to capture the skills of technology generation
 - Inter-operable
 - Knowledge, not data
- Standoff Detection
 - ISR applications
 - Fixed-site, Force Protection, Proliferation Security Initiative, EOD
 - Counter IED and Chemical, Nuclear, Biological

Integrated armor

- Layered and adaptive protection across spectrum to defeat multiple threats without significant increase to personnel and platform footprint
- Ground vehicles, green water-borne platforms, work sites
- Plug and play, able to shed armor when not needed

Adaptive, Deployable Networks

- Incorporate wireless technology for the battlefield
- Optimize logistic footprint
- Interoperability with the Intra-Agency, local governments, NGO's

Non-Lethal Weapons





Unmanned Systems

- UUV/UAV/Ground Robotics communications enhancement
- Underwater vehicle sensor and neutralization technology
- Ground Robotics advancements
 - Reduce time-on-target
 - Enhance manipulation capability
 - Extend operation life with advancements in power generation/supply

• Standoff Detection and Disruption

- Determine the threat before going into harms way
- Enhance survivability
- Defeat the Network*
- Spectrum of Effects: Non-kinetic, low-order, high-order neutralization

Forensics

- Radiographic systems
- Post Blast investigation
- Wireless transmission/reception*





Growing the JCREW Industrial Base

- BAA N00024-08-R-6323 released May 2008

New BAA modified to focus on Critical Technology Elements for JCREW 3.3. Available at: https://bids.acqcenter.com/jieddo/Portal.nsf/Start?ReadForm

Purpose:

- ... develop and demonstrate technologies to improve virtually all aspects of performance related to next generation CREW equipment.
- Seeking proposals that address hardware, software, technique, or technology developments

Specific areas of interest:

- Antennas And Amplifiers
- Receivers/Processing/Modulators/Integration
- Modeling And Simulation
- Common Timing And Electromagnetic Compatibility
- Additional Technology, Information, Recommendations

BAA POCs: Mary Ann Keyser – <u>maryann.keyser@navy.mil</u> Margaret Booth, (301) 744-5124, <u>margaret.booth@navy.mil</u> bidshelp@acqcenter.com

Technology and test reports on JCREW Share Point for government review





- Stand off vessel stopping
- Stand off vehicle stopping
- Reducing the size and weight and cost of directed energy systems
- Integration of directed energy systems into shipboard platforms as part of their self defense systems
- Determining contact intent







Backups





Interoperability

 Decrease Blue Force interference and fratricide across spectrum of electronic non-kinetic weapons

Environmental

- Operational Temperatures
- Humidity
- Maritime

Applications

- Terrain considerations
- Unmanned system coverage
- Get out ahead emerging communications technology







- •Develop individual Critical Technology Elements (CTEs) needed to achieve Technology Readiness Levels for CREW 3.3
- •Grow industry base for CREW components
- •Collaborate with industry on ability to develop components for open architecture system
- •Demonstrate the capabilities and limitations of a CREW open architecture system



Where does JCREW need your help?



BAA Overview

Total Proposals – 71 Round 1 / 83 Round 2/ 22 Round 3/ 55 Round 4 (\$50414K) Antennas and Amplifiers (\$11975K) 5/22 Amplifiers (\$8153K) 6/25 Mounted antennas (\$2382K) 3/8 Dismounted antennas (\$1439K) **Receivers/Processing/Modulators/Systems Integration (\$28130K)** 7/41 Transceivers (\$8664K) 5/20 Processor (\$6414K) 1/13 Direction finding (\$929K) 1/3 Next Generation Tactical Test Bed (\$2950K) 2/9 Signal Assessment (\$1347K) 1/2 Automated threat analysis (\$4863K) 3/5 Anti-Tamper (\$2958K) Modeling and Simulation (\$7154K) 3/11 Modeling Techniques (\$1684K) 1/2 Instrumented human surrogate (\$942K) 1/3 Improved environmental characterization (\$878K) 3/8 Modeling near earth propagation (\$3650K) **Common Timing and Electromagnetic Compatibility (\$3155K)** 5/20 Compatibility (\$2904K) 1/12 Network Enabled (\$251K)

Note: Other large and small business contracts also being awarded by I2WD and NEOD to support internal govn't R&D



Where is N857?



Requirements















Realignment of Capability Sponsor roles to Capability Portfolio Manager roles is being considered

Helps align N857 to the capability development and resource management approach mandated by DoD Directive 7045.20

N857/PMS 480 Capability Sponsors







NECC capability development:

MESF requirements	LCDR Reagan	michael.j.reagan@navy.mil
C5I requirements	Matthew O'Connor	matthew.oconnor@navy.mil
	Mike Polidoro	michael.polidoro@navy.mil
Sub-surface Defense	Harry Guthmuller	harry.guthmullwe@navy.mil

JCREW/JSEOD capability development:

LCDR Gareth Healy	gareth.healy@navy.mil	
Ed Ebinger	edwin.ebinger.ctr@navy.mil	
John Stansbury	john.stansbury@navy.mil	

Capability Sponsors





Non-lethal Weapons capability development:

Navy Central Action Officer	Corey Noel	corey.noel@navy.mil
	Steve Gorin	steve.gorin@navy.mil

Capability Sponsors

Kevin McConnell Fires & Maneuver Integration Division Headquarters U.S. Marine Corps (CD&I)



"We have been prepared in the past because we understood that a force in readiness must be well-trained, broadly educated, and properly equipped for employment across all forms of warfare."

--Marine Corps Vision & Strategy 2025 James T. Conway Commandant of the Marine Corps





Wave Top View of:




Marine Corps Tactical Wheeled Vehicle Strategy



- Flexible and responsive
- In light of the changing security environment and the Marine Corps' expeditionary nature the strategy will;
 - Take maximum advantage of existing platforms
 - Emphasize a mixed fleet approach that spans the "iron triangle"
 - Integrate MRAP into the fleet mix
 - Transition to a fleet of tactical vehicles that have scalable protection (integrated A-kit and armor B kits)
- We will do this through a series of Decision Points that examine changing conditions



It is not a plan to provide an armored seat for every Marine

6

Ground Combat Tactical Mobility



General Support Mobility -Retain capacity



Multipurpose Mobility -Regain payload

JLTV Family of Vehicles

> Specialized Mobility -Increase flexibility



Internally Transportable Vehicle

Decision Points to Mitigate Risk





V

Ε



Fires is almost "fixed"







EFSS

2009 – Scheduled First Fielding – 10th Marines, IOC – 1 Battery 2012 – Estimated full fielding, 10 Battery sets to OpForces, 6 systems to Schoolhouse

LW155 – M777

2005 – IOC – 1 Bn fielded – 11th Marines 2007 – Retrofit of previously fielded M777's and future production transitioned to all M777A2's with complete Digital Fire Control System (to include Excalibur Platform Integration Kit) 2011 – Estimated full fielding complete HIMARS 2006 – First Battery Fielded

2008 – IOC – 1 Bn Fielded – 5th Bn, 11th Marines 2010 – Estimated FOC – 2 Bns and Schoolhouse fielded.



Shift focus to munitions



USMC NSFS Requirements for STOM (Maneuver, Counterfire and Target Acquisition)



			Near-term	Mid-term	Far-term	
System Response		Threshold	2.5 minutes	2.5 minutes	2.5 minutes	
		Objective	Limits of technology	Limits of technology	Limits of technology	
Range	Naval Guns	Threshold	41 nm	63 nm	97 nm	
		Objective	63 nm 🔶	97 nm	Limits of technology	
	Other NSFS Systems	Threshold	200 nm	200 nm	262 nm	
		Objective	222 nm	222 nm	Limits of technology	
Accuracy & precision		Threshold	50 m CEP	50 m CEP	50 m CEP	
		Objective	20 m CEP	20 m CEP	20 m CEP	
Target acquisition		Threshold	50 nm	63 nm	97 nm	
		Objective	63 nm	97 nm	Limits of technology	
		Objective	63 nm	97 nm	Limits of technology	

Ordnance Effects	 No specific naval gun ammunition types, priorities or percentage of magazine are indicated. Development and fielding of NSFS systems should focus on warhead and operational effects. Destroy noving targets (with terminal seeker) Destroy high-payoff, point targets Destroy high-payoff, point targets Destroy hardened targets Mark targets for battlefield observation Provide obscuration (prevent enemy observation of friendly forces or own forces) Set fires to enemy material and facilities Illuminate battlefield at night. Mark targets for battlefield observation during periods of reduced visibility
Volume of fire	 Volume equally important to precision Massed fires Suppression Combined arms effects Close fire support (see illustrative scenario) Sufficient quantities are maintained to sustain desired effects over time
Sustainment	All systems sustainable via UNREP
ource: NAVAL SUR	FACE FIRE SUPPORT REQUIREMENTS FOR EXPEDITIONARY MANEUVER WARFARE 19 Mar 2002

(Hanlon Letter)



Unmanned Aircraft Systems

Robust intelligence capabilities will support all levels of command awareness and decision making



Current Operations



Shadow

Tier II

Tier III



Scan Eagle (service contract)



Desired UAS End-State



- Standardized Command and Control Interfaces
 - Standard/ scaleable Graphical User Interfaces
 - Open-architecture/ Software Reprogrammable C2 links
 - Standardized sensor data formats/ interfaces
 - "Plug-and-Play"/ Replaceable Air Vehicle
- RF Bandwidth congestion reduction
 - On aircraft/ autonomous sensor data management
 - Multi-band/ tunable C2/ sensor links
- Sensor data management/ dissemination
 - Autonomous Processing
 - Demand-pull Dissemination
 - Demand-pull Archiving
- Plug-and-Play Payloads designed to defined SWaP constraints and standardized interfaces

Future Capabilities



- Cargo UAS –emerging requirements for unmanned logistics delivery
- Persistent Strike- Developing tactic to maintain weapons platform on station for extended period without extensive sortie rate (Hunter-Killer teams)
- Adverse weather and foliage penetration capabilities
- Wide Area Surveillance
- Interoperability and Network capabilities

Focus on the Individual Marine. The individual Marine will remain our most important warfighting asset...







LWH Light Weight Helmet 3.45 lbs

Helmet Cover 0.15 lbs MTV Modular Tactical Vest 8.4 lbs

E-SAPI Enhanced Small Arms Protective Inserts (x2) 10.9 lbs

Side Small Arms Protective Inserts (x2) 7 lbs

Magazine with Ammunition (x13) 13.65 lbs

MPB Multi-purpose Bayonet 1.3 lbs

MRE Meal Ready to Eat (x3) 3.9 lbs

Infantry Combat Boot 4 lbs

IFAK Individual First Aid Kit 1.0 lbs Ballistic Eye Wear 0.15 lbs

Ear Plugs with case 0.1 lbs

Hydration System with water 6.3 lbs

M16 A4 with attachments 8.98 lbs

Pouches 1.9 lbs

G940 Green Smoke Grenade (x2) 4.0 lbs

G8811 Frag Grenade (x2) 4.0 lbs

Gloves 0.33 lbs

Knee and Elbow Pads 1.0 lbs

ILBE Individual Load Bearing Equipment 10.5 lbs

Combat Assault Sling 0.42 lbs







Individual Load Bearing Equipment

Requirement

Pavload

Lighter, Integrated, Modern, Modular, Scalable Durability, Systems Approach 2 MEU / 2 MEB Capability

Lighter, Integrated, Improved Performance Contingency Capability

Lighter, Integrated, Modular, Scalable Improved Performance (7.62) All Marines

Lighter, Integrated, Laser Protection, Compatible Inserts All Marines

Lighter, Integrated, Improved Capability All Marines

Lighter, Integrated, Modular, Scalable Quick Release, Weight Distribution, Increased Protection, Systems Approach All Marines

Lighter, Integrated, Improved Capability As Required

Lighter, Integrated, Modular, Scalable All Marines



7 Layer System

Inclement Wx Combat Shirt

Joint Headborne System

Improved Modular Eye Protection

Improved Hearing Protection / Enhancement

Improved Modular Tactical Vest / Carrier

Integrated Solution



Transfer the Load







Boston Dynamic's Big Dog



QUESTIONS?





Expeditionary Warfare Now and Into the 21st Century

Mr. Roger Smith Deputy Assistant Secretary of the Navy for Expeditionary Warfare

21 Oct 2008







DASN ExW Portfolio



								_		
Program	APPN	2008	2009	2010	2011	2012	2013	2014	2015	Total
Expeditionary Fighting vehicle	RDTE	243,932	266,052	211,876	189,333	174,149	88,005	77,475	51,436	1,302,258
Expeditionary righting vehicle	PMC				70,036	466,523	575,568	591,634	656,907	2,360,668
Joint Light Tactical Vehicle	RDTE	39,969	43,997	58,851	84,139	96,236	74,374	32,109	25,894	455,569
Joint Light Tactical Vehicle	PMC					25,220	123,490	459,195	459,195	1,067,100
Marine Personnel Carrier	RDTE	9,741	6,500	3,179	27,500	85,200	88,900	68,900	50,000	339,920
Manne Personner Carner	PMC	0	0	500	500	500	500	600	113,225	115,825
Combat Support Mobility	RDTE	4,834	3,447	3,150	3,525	2,091	1,804	1,858	1,914	22,623
Combat Support Mobility	PMC	806,518	299,088	277,195	225,806	195,772	88,117	56,435	63,243	2,012,174
Combat Fires	RDTE	9,341	7,859	8,499	4,668	7,105	7,529	7,680	7,834	60,515
Combat Tiles	PMC	292,607	134,908	158,037	53,521	23,909	8,497	8,937	9,080	689,496
Legacy Combat Maneuver	RDTE	14,766	49,382	66,497	49,055	39,483	19,894	6,175	6,397	251,649
Legacy Combat Maneuver	PMC	274,774	192,479	79,715	194,418	378,188	414,988	240,758	216,312	1,991,632
Engineering Support	RDTE									0
Engineering Support	PMC	320,961	129,914	169,434	143,837	84,013	87,544	90,084	92,494	1,118,281
Force Protection	RDTE	124,277	7,594	8,195	8,901	9,574	10,051	10,252	10,457	189,301
FOICE FIDIECTION	PMC	1,901,542	1,941,818	98,322	132,436	92,995	138,459	127,484	149,841	4,582,897
Non Lathal Waspans	RDTE	55,685	46,902	47,622	48,698	49,367	50,368	51,375	52,402	402,419
Non-Lethal Weapons	PMC									0
Tat	RDTE	502,545	431,733	407,869	415,819	463,205	340,925	255,824	206,334	3,024,254
Total	PMC	3,596,402	2,698,207	783,203	820,554	1,267,120	1,437,163	1,575,127	1,760,297	13,938,073
		4,098,947	3,129,940	1,191,072	1,236,373	1,730,325	1,778,088	1,830,951	1,966,631	16,962,327





New Acquisition Deliveries











Prog.	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
ITV												
LW155												
HIMARS												
EFSS												
LVSR												
JLTV												
EFV												
MPC												







Expedited Efforts



- MRAP
 - Produced to date
 - 13,346
 - 10,583 in theater
 - In Production
 - 2,492
 - 2,763 Awaiting GFE/in transit to theater
 - Executed >\$24.1B



- CREW
 - Produced to Date
 - 9,163 CVRJs
 - 1,143 MMBJs
 - 9,417 Chameleons
 - 1,142 Hunters
 - In Production
 - 4,265 CVRJs
 - 595 MMBJs
 - Executed >\$1.8B







Rapid Deployment Capability

- COTS/GOTS Fielding
 - gMAV --- Rotary wing UAV for EOD
 - GBD-III Laser Dazzler (pending approval)
 - Counter-Surveillance Sensors (pending approval)

Rapid Development and Deployment

- Prototype Systems Development
 - Counter Suicide Bomber Sensor
 - Route Clearance Blade
 - Chem/Bio/Explosives Sensors for boarding teams
 - Small UAV RF Reconnaissance payload

Providing Immediate Response to MARCENT and NAVCENT Needs



Future World Dynamics The Reality of Tomorrow

- Population Growth in Unsustainable Regions
- Rising Peer Competitors
 - China, India, Russia, Brazil
- Increased Resource Competition
 - Clean Water
 - Energy
- Technology Explosion Narrowing of US Edge
 - Computation
 - Nanotechnology
 - Genetics and biotechnology
- Diminishing Economic Leverage
 - Globalization
 - Integrated Economies

















- Naval Character
- Lethality
- Deployability
- Self-Sufficiency
- Adaptability
- Interoperability







- Triad of Ground Fires
 - High Mobility Artillery Rocket System
 - Lightweight 155MM Howitzer
 - Expeditionary Fire Support System
- Follow-on to SMAW
- Infantry Automatic Rifle





Self-Sufficiency

- Internally Transportable Vehicle
- Precision Aerial Delivery System
- Lightweight Water Purifier
- Expeditionary Fuel System
- Alternate Power Sources











Maneuver Warfare

- Legacy Platform Improvements
 - Amphibious Assault Vehicle
 - Light Armored Vehicle
 - M1A1 Main Battle Tank
- Next Generation
 - Expeditionary Fighting Vehicle
 - Marine Personnel Carrier
 - Joint Light Tactical Vehicle













"Invest in science and technology to provide the 'seed corn' for future capabilities and prevent technological surprise." J. T. Conway, CMC Planning Guidance

- Enhanced Small-Unit Situational Awareness
 - Sensors and Sensor Systems
 - Operational Culture Learning and Language
 - Tagging, Tracking and Locating
- Lethality and Survivability
 - Enhanced Organic Small-Unit Weapons Effect
 - Counter Improvised Explosive Devices
- Mobility
 - Individual Mobility & Combat Load Reduction
 - Small-Unit Mobility







Future Capability Process









Questions????



Global Solutions in the 21st Century – The Defense/Commercial Partnership





National Defense Industry Association

21 Oct 2008



Global Maritime Businesses



Container Shipping & Related Activities		 Maersk Line; Maersk Logistics; Safmarine; APM Terminals; Maersk Line, Limited World's largest container ship fleet (more than 550 vessels) Second largest container terminal operator (more than 45 terminals) Ship design, technical vessel operations, crewing, engineering and finance for more than 500 container vessels
Energy & Offshore	-	Maersk Oil; Maersk Contractors; Maersk Supply Service • Oil and gas exploration, production and support services • Operators of 30 rigs and 55 offshore supply vessels
Tankers & Related Activities		 Maersk Tankers; Svitzer; Norfolkline Petroleum, chemical and gas carriers (more than 150 vessels) Tug, support/salvage and ro/ro (more than 600 vessels)
Shipbuilding & Other		Odense Shipyard; Maersk Container Industri; Dansk Supermarked; Rosti • Leading global shipbuilder with five shipyards in Europe • Builders of EMMA MAERSK, world's largest container ship • Retail management and consumer plastics production in Denmark

Our Customers



→ Some of our more than 100,000 Customers



🔀 MAERSK LINE, LIMITED






> Piracy









Strategic Chokepoints





Suez Canal Maersk line, limited

Panama Canal

>1980's





🔀 MAERSK LINE, LIMITED

>Today













Global Financial Repercussions

1301

852 ---- 1011

1071 -056



"When the stock market crashed, Franklin D. Roosevelt got on the television and didn't just talk about the, you know, the princes of greed. He said, 'Look, here's what happened."" – Sen. Joe Biden

Global Issues – Global Responses



















Infrastructure

























> Tomorrow











>LANGLEY / JUPITER



Photo # NH 81279 USS Langley off San Diego, California, with USS Somers, 1928





WW II Merchant Support











> Five Maritime Prepositioning Ships converted from Maersk combination ships





> Two Ammunition Ships converted from Maersk container ships







> Eight Fast Sealift Ships converted from Sealand SL-7 container ships







>AFSB Graphics S-Class



S-Class Container Ship



Type: Post Panamax Container Ship Length: 347 Meters Beam: 42.8 Meters Speed: 24.6 Kts Availability: 25 In Service 2 Under Construction MAERSK LINE, LIMITED

Mission Support Platform



Commercial Off the Shelf Platform Flexible and Modular Capabilities Conversion Time About 1 Year Cost Effective

>AFSB Graphics S-Class







> Thank You











Future Technologies

Dr. John Pazik Office of Naval Research Ship Systems & Engineering Research Division



Distribution A: Approved for Public Release



Office of Naval Research



Naval S&T Focus Areas

- Power and Energy
- Operational Environments
- Maritime Domain Awareness
- Asymmetric and Irregular Warfare
- Information, Analysis, and Communication
- Power Projection
- Assure Access and Hold at Risk
- Distributed Operations
- Naval Warrior Performance and Protection
- Survivability and Self-Defense
- Platform Mobility

- Fleet/Force Sustainment
- Affordability, Maintainability, and Reliability





A Revolution in Platform Capability





Structures & Affordability

• Low Cost, High-Strength Materials & Processes

•HSLA-65 Steel, Titanium, Marine-grade 10% Nickel Steel, Friction Stir Welding



Hull Structural Health Monitoring

- Aluminum, Composites, Unconventional Hullforms
- •Real-Time Feedback/ Monitoring, Service Life Prognoses





Density

Power

Next Generation Integrated Power Systems

Allows all Ship Systems to be Electrical

Power and energy control

Energy Storage

High Frequency

Alternating Current

(HFAC) 4-13.8kVAC

- Right Power, Right Place, Right Time
- Drive to increase capability at reduced fuel consumption

Zonal ship service distribution **Medium Voltage Direct Current (MVDC)** 6 kVDC

ONRAMO

- **Reduced power conversion**
- Eliminate transformers
- Advanced reconfiguration

Enabling Technologies

Electric Ship

ON Rang **Medium Voltage AC Power Generation** (MVAC) 4-13.8 kVAC 60 Hz

Advanced propulsion motors

Common power conversion

High Speed Generator

200-400 Hz Power-dense generation Power-dense transformers Conventional protection

OH Partie



Distribution A: Approved for Public Release N



INtegrated TOPside

INTOP is a...

- Multi-function, multi-beam aperture that radically reduces the number of antennas required
- •Scalable family of EW, RADAR (not high power) & communications capability to support multiple classes of ships
- Modular / open RF design (apertures and electronics) to facilitate best of breed technology and cost effective upgrades





Fighting at the Speed of Light & Hypervelocity

Free-Electron Laser • High- energy laser defense system

Electromagnetic Railgun

- Pulsed-power system
- 10 rounds/minute
- 6 minute flight
- 200 nautical miles

Weapons of Mass <u>Destruction Detection</u> • Multiple detection methods • Surveillance without boarding



Ship-to-Ship Transfer & Material Handling

Flexible, responsive afloat warehousing technology

- Enables improved ship-to-ship logistics
- Improves sustainment of assembled Naval forces
- Reduces response times to humanitarian mission requirements

Interface Ramp Technologies

Large Vessel Interface Crane Technology



High Rate Vertical/Horizontal Material Movement





T-Craft Challenges





Problem:

Current Navy surface connectors have to be carried into theater within the well decks of our Amphibious ships. These Amphibious connectors carry small payloads over small distances and can only operate in low sea states.

Challenges:

- Self deploying over a long distance in high sea state unloaded
- Significantly higher payloads (4 to 10 times)
- Fully loaded unrefueled range >500nm at 40kts
- Cargo Transfer at the Sea Base in high sea states
- The ability to traverse sand bars and mud flats
- Fully amphibious landing capability

Technical barriers:

- Transition of Propulsion systems from in-water to out-ofwater
- Variable/retractable skirt geometry
- High strength, lightweight, long-wear materials
- Active ride control systems
- Human system integration
- Vehicle transfer at the sea base
- Complexity of mechanical drive system
- Hybrid electric drive options

Light weight structural materials Distribution A: Approved for Public Release



Launch and Recovery of Unmanned Vehicles

High-level Autonomy

- Dynamic mission planning/re-planning
- Advanced perception, vision-guided maneuvers
 - Obstacle avoidance
 - High Sea State Launch/Recovery

Autonomous Approach







Distribution A: Approved for Public Release



The Ship Acquisition Process Status and Opportunities

NDIA Expeditionary Warfare Conference

Mr. Art Divens Program Executive Office, Ships

21 Oct 08

<u>Distribution Statement A</u>: Approved for Public Release; Distribution Unlimited. (10/30/2008). This Brief is provided for Information Only and does not constitute a commitment on behalf of the U.S. government to provide additional information and / or sale of the system. PEO

SHIPS

San Antonio (LPD 17) Class Today

Class Capabilities

- Flight deck accommodates Marine Corps helicopters and MV-22 Osprey tilt-rotor aircraft
- Well deck can launch and recover aircushioned landing craft and amphibious vehicles

Program Status

- San Antonio (LPD 17) Delivered Jul 05, New Orleans (LPD 18) Delivered Dec 06, Mesa Verde (LPD 19) Delivered Sep 07, Green Bay (LPD 20) Delivered Aug 08
- New York (LPD 21) christened March 08, San Diego (LPD 22) keel laid May 07, Anchorage (LPD 23) keel laid Sep 07, Arlington (LPD 24) started fab. Aug 07, Somerset (LPD 25) option exercised Dec 07, LPD 26 (unnamed) \$50M AP in FY08
- LPD 17 on maiden deployment, LPD 18 deploys next year, LPD 19 completed shock trials

Concept Refinement System Development & Demonstration





Production

& Deployment



Operations

& Support

Program Executive Office, Ships

PEO

SHIPS

LHD 8 / LHA 6 Today

Class Capabilities

- LHD 8 (USS Makin Island) is the last ship of the LHD class
 - Hybrid gas turbine/diesel-electric propulsion
- LHA 6 (USS America) is a new class of ship designed for expanded aviation capabilities
 - Expanded aviation capabilities (12 MV-22s, 4 CH-53's, 4 AH-1s, & 6 F-35Bs)

Program Status

- Both ships are being built by Northrop Grumman in Pascagoula
- LHD 8 scheduled to deliver in FY09
- LHA 6 construction contract awarded June 07; Start Fab scheduled for Dec 08





Concept
RefinementTechnology
DevelopmentSystem Development
& DemonstrationProduction
& DeploymentOperations
& Support

PEO

SHIPS

Program Executive Office, Ships

Lewis And Clark (T-AKE 1) Class Today

Program Executive Office, Ships

PEO

Class Capabilities

- As a dry cargo and ammunition ship, T-AKE will directly contribute to the ability of the Navy to maintain a forward presence.
- Primary mission roles
 - Provide logistic lift from sources of supply such as friendly ports, or at sea.
 - Transfer cargo at sea to station ships and other naval warfare forces.

Program Status

- T-AKE 1 Delivered June 06, T-AKE 2 Delivered Feb 07, T-AKE 3 Delivered July 07, T-AKE 4 Delivered Nov 07, T-AKE 5 Delivered Jun 08
- T-AKE 6-9 are being built by General Dynamics/ National Steel and Shipbuilding Company in San Diego, CA
- Material has been ordered for T-AKE 10-11





MPF(F) Squadon Composition

PEO

SHIPS



Joint High Speed Vessel (JHSV)

Program Executive Office, Ships

PEO

SHIPS

Program Capability

- High speed lift ship capable of transporting cargo and personnel across intra-theater distances
- Can transport combat ready personnel and equipment
- Can offload in austere ports without reliance on infrastructure
- Phase One preliminary design contracts awarded Jan 08 to Austal, Bollinger and BIW

Program Status

 Detail Design and Construction contract for 1 ship with nine options scheduled to be awarded next month





Concept Refinement Technology Development

System Development & Demonstration Production & Deployment

Operations & Support
LCC(R)

Program Executive Office, Ships

PEO

Program Capability

- Provides afloat, in-theater command and control capability to support a command staff's presence, persistence and speed of decision. Mitigates reach back and infrastructure vulnerabilities during operations
- Supports the full range of missions and functions of an afloat Maritime Headquarters with Maritime Operations Center in support of forward deployed Fleet Commanders, JFMCC or CJTF
- Replaces LCC 19 and LCC 20

Program Status

- Start of AoA approved 22 Sep 08 to study options including T-AKE and LPD 17
- ICD approved by JROC on 17 Jul
- Program has been renamed from JCC(X) to LCC(R)



Concept Refinement Technology Development System Development & Demonstration Production & Deployment

Operations & Support

Joint Maritime Assault Connector

Program Executive Office, Ships

PEO

SHIPS

• Program Capability

- Intended to replace the current LCAC
- The in-service LCAC start to reach end of service life in FY14 and the inventory begins to fall below the existing 72 craft requirement
- Support rapid movement of USMC forces from the sea base over the beach
- Provide greater capability than current LCAC (designed to transport M1A1 with mine plow from 25 nautical miles in Sea State 3/4)
- ICD JROC Approved in Oct 2006

Program Status

- AoA approved
- Milestone A Decision in progress
- Capabilities Development Document (CDD) anticipated early FY09
- Milestone B Decision anticipated by end of FY10

Concept Refinement System Development & Demonstration Operations & Support





- Maintain mature, steady-state production
 - Most programs already serial production LPD, T-AKE
- Reuse existing military and commercial designs
 - LCC(R), MPF(F), JHSV
- Understand capability trades
 - LHA 6 well deck vs. expanded aviation support
- Leverage commercial standards
 - T-AKE, JHSV
- Use Fixed-Price Contracts when possible
 - T-AKE, JHSV, LPD 21 and out
- Partner with Industry to reduce costs

PEO

Program Executive Office. Shin



13th Annual Expeditionary Warfare Conference Requirements Generation



CAPT Buz Sorce Deputy, Surface Ships October 21, 2008

UNCLAS









Providing the right capability at the right cost to execute the MARSTRAT



Marine Corps Shipbuilding Requirements

BGen Walter L. Miller, USMC

Assistant Deputy Commandant Combat Development and Integration Headquarters, U.S. Marine Corps 21 October 2008



Marine Corps Shipbuilding Requirements



- Warfighting. Attain a minimum 33 ships (11/11/11) to generate 30 Ao for 2.0 MEB AE, plus one MPF(F) MEB to support forward presence, power projection, and execute JFEO in support of "How We Fight."
- Incremental LPD-17. Designate LPD-17 hull form for LSD replacement.
- LH(X) Right. Truncate the LHA(R) no well deck big deck at two ships and assess big deck surface interface requirements to get LH(X) right.
- 1.0 MPF(F) MEB. Attain full MPF(F) squadron capabilities and ship mix to enable 1.0 MEB vertical and surface reinforcement for MEFlevel fight from the seabase.
- NSFS. Carefully execute and monitor Analysis of Alternatives and assess all hull forms to meet NSFS requirements.

GENERAL DYNAMICS

Affordability in Shipbuilding M. W. Toner October 21, 2008

Summary of Key Points

- Describe the Design Build Process and its impact on affordability
- Describe actions to facilitate affordability
 - > Design Build
 - Collaborative environment

Examples

- > VIRGINIA Cost Plus
- > T-AKE Fixed Price
- Commercial Ships Fixed Price



Design-Build Objectives

- Design high quality, low cost, mission-ready ships which meet the operational requirements of the Navy
- Establish a cost effective process that ensures the design is complete, material is available and work packages are developed prior to construction start
- Develop a cost effective ship construction plan
 - Increase Modularization
 - Reduce construction labor and cost Goal: Achieve 3rd ship learning curve on the lead ship
 - Reduce design changes identified by trades during construction







Lewis and Clark Class Dry Cargo/Ammunition Auxiliary

Traditional Acquisition Strategy Limited Collaboration, Maximum Cost and Schedule Risk



• Phase II Period Characterized By:

- > End of competition typically results in significant design changes
 - Impacts schedule causes shipbuilder to revisit early decisions, delays detail design
 - Impacts cost performance Phase II FFP bid inadequate, shipbuilder financial risk

> Must expedite functional design to start detail design and support LLTM Order

- World shipbuilding boom LLTM in excess of 32 months
- Forces design decisions that fail to optimize total cost
- > Significant Overlap between functional and detail design rework
- > Significant Overlap between detail design and start of construction
 - Lack of a mature design at SOC results in poor cost and schedule performance
 - Build strategy is sub-optimized construction sequence is sacrificed

Design Build Acquisition Strategy Establishes Potential for Success

• For US Shipbuilding to be affordable, a paradigm shift must take place

 Create Govt/Shipbuilder partnership early enough to maximize impact of collaboration and design for producibility considerations in future shipbuilding programs



Traditional Versus Design Build Approach Lead Ship at Third Ship Cost



Design Build in Practice SEAWOLF and VIRGINIA Submarine Programs



Design Maturity at SOC Reduces Cost T-AKE 3 Represents a 30% Reduction in Cost



Design Maturity at SOC Reduces Cost Commercial Shipbuilding Examples



Conclusions

- The Government/Shipbuilder Team must Change the Navy Acquisition Strategy to Achieve the Desired Outcome
 - Realistic Cost Estimating
 - > Predictable Schedule Performance
 - > High Quality, Mission Ready Ships
- Shipbuilder Focus:
 - > Early Requirements Definition
 - > Early Functional Design Completion
 - > Work Paper ready at SOC
- Government Focus:
 - Short Competition for Good Ideas
 - Maximize Opportunities for Collaboration Before the Start of Detail Design
- Design-Build Represents the Way Ahead Results are Well Established



- > VCS Program 27% reduction in lead ship labor hours
- > PC-1 Program Lead ship on schedule, under budget, minimal design change

21st Century Expeditionary Warfare:

Expeditionary Warfare Conference

LtGen George Flynn Oct 21, 2008

Hybrid threats, blurring character of conflict, complex environments



Marine Corps Vision & Strategy 2025



The Nation's "Force in Readiness"

- Confirms:
 - Who we are
 - What we believe
 - What we do
- Foundation for operational concepts; sets our future direction
- Reaffirms our legislated role
- Grounded in our identity, ethos, values, and competencies
- Focuses efforts and investments

"This document details my vision of the future Corps and a plan for creating the Marine Corps of 2025" Gen James T. Conway



What is Expeditionary?







Combined Arms

Presence

Core Competencies

Forcible Entry

Complex Operations Joint & Multinational

Detachments





NDIA EXPEDITIONARY WARFARE DIVISION(EWD)





NECC Battlespace

Adaptive, Expeditionary, Rheostat Capacity







"USMC Strategy for the Long War"

Brigadier General Johnson Director of Operations

22 October 2008



MAGTFS ACROSS THE RANGE OF MILITARY OPERATIONS





Joint / Multinational Operations and Interagency Activities



Integrated with Combatant Commander Theater Campaign Plans



UNCLASSIFIED ARC OF INSTABILITY SOURCES OF STRESS, INSTABILITY & CONFLICT



Ungoverned Spaces

- Guatemala-Chiapas Border
- Colombia-Venezuela Border
- West Africa
- East Africa
- Arabian Peninsula
- North Caucasus Region
- Afghan-Pakistan Border
- Sulawesi-Mindanao

Urban Stress Youth Bulge Terrorism/Crime Ungoverned Energy Demand

Nuclear

Water Stress Choke points



USMC FORWARD DEPLOYED



Complementary to a Joint, Combined, Whole of Government Approach



Reservoir of capability, task organized to support the CCDR



CRISIS RESPONSE: SELECTIVELY





SECURITY COOPERATION MAGTF'S TASK ORGANIZED TO MEET CCDR REQUIREMENTS





Reinforced Infantry Battalion

Task Organized Aviation Detachment

Task Organized Combat Logistics Element

Other Detachments



NOTIONAL SC MAGTF EMPLOYMENT







MARINE EXPEDITIONARY UNITS






MEU Operations / Exercises Summary



Operations/Exercises

• 22nd MEU SOC/ Kearsarge ESG (Deployed Aug 07 – Jan 08)

•Operation Sea Angel – Cyclone Relief

•AV-8B OIF/OEF Support

•Theater Reserve / TSC CentCom

• 11th MEU SOC / Tarawa ESG (Deployed Nov 07 – Jun 08)

•Operation Sea Angel II - Cyclone Relief

•AV-8B OIF Support

•Theater Reserve/ TSC CentCom

•TSC PACOM

- 24th MEU (Deployed Mar 08 Present)
 - •Combat Operations in support of OEF •Afghanistan/ RC SOUTH

•15th MEU/ Peleliu ESG (Deployed May 08 - Present)

•Theater Reserve / TSC CentCom

•TSC PACOM

- •26th MEU / Iwo Jima ESG (Deployed Sep 08 Present)
 - Theater Reserve / TSC CentCom
- 31st MEU/ Essex ESG (Forward Deployed WestPac)
 Responded to Myanmar (Burma) Typhoon
 PACOM TSC





MEU Employment (within last 12 months) Sustained Operations Ashore (Combat Ops), Humanitarian Assistance/Disaster Relief and Theater Security Cooperation.







- USN USMC Team provides the Nations most credible forcible entry capability.
- Forcible entry is the enabler for the Joint Force
- An Amphibious MEB, requiring 17 ships is smallest forcible entry capability.
- Requirement is to land 2 x MEB, the MEF Assault Echelon.
- Must be capable at the high-end of the spectrum of conflict.





JOINT FORCIBLE ENTRY OPERATIONS







MEF ASSAULT











USNS BOBO RAMP ONTO RRDF

USNS SISLER



Prepositioning Campaign Plan POE-40









Expanding Capabilities





MPF(F) Campaign Plan Way Ahead



- Nov 08: Prepo Campaign Plan Workshop
 - MPF(F) Integration working group
 - Geo Prepo OPT
 - MPF 5-year exercise plan development
 - Includes HQMC and seabasing experimentation objectives (PP&O/CD&I)
 - Goal of one exercise per quarter
 - MARFOR/NAVFOR reps invited (G-3/4/5)
- Jan 09: HQMC publishes Prepo Campaign Plan
- Jan 09: HQMC publishes Five year exercise plan





←Exercise Sea Dragon. USNS Sisler / USS Bataan
 vicinity Fort Story, VA (Sep 08). First exercise with LMSR
 & Improved Navy Lighterage System.



LMSR INTEGRATION (NEAR TERM: 2008 – 2011)

Superson Poly





PROPOSED CONCEPT FOR MPF(F) LAYDOWN





COMMAND AND CONTROL



Examine the C2 challenges associated with supporting Enhanced Company Operations in an immature theater against an irregular threat.

- JOINT SA DOWN TO THE SQUAD LEVEL
 - Position Location Information (PLI)
 - Joint Sensor Integration
 - Commonality in C4 architecture/TTPs



- EXPERIMENTAL COMMS ARCHITECTURE AND EQUIPMENT
 - INFORM COC CAPSET V DEVELOPMENT •Transportable Multi Operational C2 handheld •Draws power/waveform from any platform •Mobility a must!





C4I CHALLENGES AFLOAT



- <u>C4I Networks & Bandwidth Management</u>
 - Increase in C2 systems, web-based applications, and shore based databases exceed current capacity of IT architecture
 - IP system for LSD not robust enough to support complex operations
 - Bandwidth:
 - Does not facilitate / support "Reach-back" support concepts
 - Inadequate to support "everything" and does not keep pace with systems & number of users
 - Adversely effects internet based applications
 - Development of IT capabilities/solutions that keep pace with requirements and an effective bandwidth management "tool" would significantly reduce the number of C4I related issues experienced by Sea Based forces





THE COMPANY CMDR'S BATTLEFIELD







AFGHANISTAN DISPERSED OPERATIONS







UNCLASSIFIED MANEUVER MV-22



- OIF Missions: • AERO SCOUT
- RAIDs
- Asslt Sppt
 - •Troops •Equipment •Casevac •TRAP

<u>Current/Future</u>:

MEU Deployments



Key Performance Parameters:

≻Airspeed≻Range

250 Kias 2000 NM

- Aerial Refuel Capable

≻Payload

24 pax 10k External





UNCLASSIFIED MANEUVER NAVAL MCM REQUIREMENTS



- The Threat
 - Proliferation of Cheap but effective sea mines
 - Mines and IEDs = "asymmetric weapon of choice"
- Assured Access: Ensure U.S. ability to Project Power at Time/Place of It's Choosing
 - Commanders Must be Able to Detect and Avoid Mines when Possible, and Breach when Necessary
 - Deep Water, SW, VSW, SZ, BZ and Ashore
- MCM capabilities critical component of Expeditionary Ops
- Carrying C-IED lessons learned forward







MARINE CORPS ISR ENTERPRISE (MCISR-E)



Objective: improve the quality, timeliness, and availability of intelligence to enable net increase in tempo and effectiveness of our operations at all echelons.

- Enterprise approach
 - Develop Distributed Common Ground System-Marine Corps
 - Leverage national, theater, joint ISR capabilities
 - Leverage USMC operational reachback (MCIA)
 - Intelligence interoperability with Coalition partners
- Persistent ISR capabilities
- Expanding All-Source and Multi-Discipline Capabilities
 - Cultural Intelligence
 - OIF: Economic Political Intelligence Cell
 - OIF: Joint Prosecution and Exploitation Center
- Improved CONOPS and capabilities for tactical intelligence
 - "Every Marine a Collector"
 - Company Level Intelligence Cells
 - Improved ISR sensors and comms at company level
- Grow the Force: >25% increase in Intel personnel during FY08-09



UNCLASSIFIED



FIRES/NSFS



Facilitates

Control

JEO.

Terminal attack control

Type II & III





NSFS CONOPS STOM Support







MEU LOGISTIC CHALLENGES



- Embarkation
 - Approx 65K Sqft available
 - MEU T/E requires approx 95K Sqft of embark space
 - Delta 30K Sqft
 - New Equipment is larger and heavier than ever before:
 - 7 Ton:
 - Does not fit through the side port ramps
 - Does not fit in LSD wind tunnel
 - UAH / ECV:
 - 2 x Heavier than original HMMWV
 - Can longer fit 4xLAV and 3xHMMWV on an LCAC
 - Design equipment that is:
 - Lighter
 - Survivable
 - "Fits" on "L" class ships

- Medical
 - "L" Class ships lack MRI or CAT SCAN equipment
 - Causes "long range" CASEVACs
 - Design & Installation of MRI / CAT Scans to fit on LHA/D would provide more complete medical care from the Sea Base



OPERATIONAL LOGISTICS JOINT PRECISION AIR DROP SYSTEM (JPADS)



Description

 JPADS is a high altitude capable guided precision airdrop system that provides increased control release from the aircraft, and reduces on ground load dispersion with accuracy. JPADS is controlled by the assistance of a mission planner laptop with precision airdrop applications, meteorology data gathering kit, and GPS re-Broadcast kit. JPADS satisfies four identified principal needs/"gaps" in the joint airdrop functional area; increased ground accuracy, standoff delivery, increased air carrier survivability, and improved effectiveness/assessment feedback regarding airdrop mission operations.

JPADS Requirement Current Status

- The ICD was approved 06 Jan 2006 by the JCB and forwarded to the JROC.
- The Army staffed the Capabilities Development Document (CDD) through the JCIDS process and the final version was approved on 26 Jan 2007.
- Nov 2007 FL FCB request wavier to use JPADS CDD in lieu of a CPD as the KPP's had not changed. Request approved January 2008.

JPADS Equipment

-	<u>System</u>	Lead	<u>Detail</u>	<u>Qty</u>	<u>AC</u>
_	JPADS-ULW	USMC	250-699 lbs	149	All
_	JPADS-2K	Army	700-2200 lbs	109	All

- JPADS-10K Army 5000-10000 lbs 28 130
- JPADS-MP USAF Helo GPS only 114 All
- MP software component computes missions for: 2K, 10K, HAHO Nav, ULW
- MP temporarily installed hardware components (AC used on: USAF C-17; Joint C130J (short & stretch); USMC Only CH-53, CH-46, MV-22)
 - Computer to compile & transmit 802.11 mission to JPADS/ HAHO Nav
 - Drops to capture and transmit winds back to MP on AC (when employed above 13000 ft MSL)
 - UHF Receiver to receive dropsonde transmission
 - GPS Repeater and antennas to retransmit GPS signals within AC
 - Cabling and connectors



FORCE PROTECTION MRAP Variants in Afghanistan



WAVE CO	AP Variants III Algilar	IISLGIII ··································
MaxxPro	MaxxPro DASH	MaxxPro
Navistar Defense	Navistar Defense	Navistar Defense
0-0		No Picture Currently Available
CATI	CATI	Ambulance
Configuration4x4Operational Length260"Operational Width120"Operational Height159"Max Speed69.2 MPHGVWR43,500 lbsMax SlopeUp to 60%Consumption Rate5.8 MPG	Configuration4x4Operational Length246"Operational Width102"Operational Height109"Max SpeedUNKGVWR38,700Max SlopeUp to 60%Consumption RateUNK	Configuration4x4Operaitonal Length260"Operational Width120"Operational Height159"Max Speed69.2 MPHGVWR43,500 lbsMax SlopeUp to 60%Consumption Rate5.8 MPG
Cougar	MK5E	USSOCOM
Force Protection Industry, Inc.	General Dynamics	BAE Land Systems
CATI	CATI	CATI
Configuration 4x4 Operaitonal Length 249" Operational Width 104" Operational Height 122" Max Speed 68.5 MPH GVWR 38,000 lbs Max Slope 60%	Configuration 4x4 Operational Length 277" Operational Width 96" Operational Height 137" Max Speed 55 MPH GVWR 38,000 Max Slope 60%	Configuration 4x4 Operational Length 266" Operational Width 113" Operational Height 134" Max Speed 65 MPH GVWR 40,340 Max Slope 60%
Consumption Rate 6.0 MPG	Consumption Rate 8.6 MPG	Consumption Rate 6.8 MPG
Cougar Force Protection Industry, Inc.	Ambulance BAE Land Systems	Buffalo Force Protection Industry, Inc.
CAT II Configuration 6x6	Ambulance Configuration Ambulance	CAT III Configuration 6x6
Configuration 6x6 Operational Length 296" Operational Width 103" Operational Height 123" Max Speed 64.4 MPH GVWR 52,000 lbs Max Slope Up to 60% Consumption Rate 5.0 MPG	Operational Width Ambulance Operational Width 108" Operational Height 134" Max Speed 67.9 MPH GVWR 52,000 lbs Max Slope 60% Consumption Rate 6.9 MPG	Coninguration 5x6 Operational Length 323" Operational Width 102.5" Operational Height 156" Max Speed 55 MPH GVWR 75,000 lbs Max Slope Not Available Consumption Rate 3,5 MPG

QUESTIONS?

Marines are "Soldiers of the Sea" that must be Fast, Agile, and capable of Maximizing their Strengths

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"HOW WE FIGHT" WARGAMES & MAGTF BATTLEBOOK



<u>SITUATION</u>

- Changes in how we fight
- Changing environment (Hybrid Threat)
- Change in administration
- Revalidation of core competencies
- Naval partnership
- Long War Concept
- POM-12 & QDR
- 202K
- MAGTF T/E Review
- Stresses on force & equipment
- Constrained resources
- Fixed in place for last 6 years



<u>OPPORTUNITY</u>

- Integrate, compliment & inform
 - HQMC, MarFors, Supporting Establishment
 - EFDS
 - Advocacy
 - MAGTF Campaign Plans
 - POM
 - Navy, Joint & Interagency Actions
 - Operational Analytics
 - Military Judgment
- "How we fight" drives resourcing decisions
- Identify risk, tradeoff & leverage points
- Sequence MAGTF capability builds 2025

A complete & compelling vision of How we Fight articulated internal to the USMC and external to our joint & interagency - <u>must drive resourcing</u>.



ENHANCED COMPANY OPERATIONS (ECO)



- Improvements focused on the Marine Rifle Company designed to increase its capabilities, agility, lethality and survivability across the full spectrum of military operations.
- Informed by:
 - Operational experience in OIF/OEF
 - Capitalize on work done on Distributed Operations
 - Results of Experimentation and Analyses







AFGHANISTAN MARINE EXPEDITIONARY UNIT



24TH MEU conducts combat operations in Afghanistan, in support of coalition objectives and defeats insurgent forces in order to assist the Government of Afghanistan in extending security, stability, and governance.

Essential Tasks:

- Defeat insurgents
- Set conditions for Afghanistan Security Forces success

- 24th Marine Expeditionary Unit
- Posture forces to counter the anticipated enemy Spring Offensive
- Combat Operations in support of the International Security Assistance Force for through Fall of 2008.





AFGHANISTAN INFANTRY BATTALION

- 2^D Bn (Rein), 7TH Mar



2/7 will conduct security, training, and mentoring operations in support of the Afghanistan Police Training Mission.

Essential Tasks:

Provide Security to Civilian - Enhance Afghanistan Police **Afghanistan Police Mentors** capabilities through Fall of 2008 Mentor, Train, and Support - Extend Afghanistan Police Authority Afghanistan Police. and Influence. **Partner and Training Operations** Winter Fall Spring

2008





Seabasing Capabilities MPF + Amphib



	2008	2025				
Close						
-Preposition the MEB						
-Conduct selective offload						
-Close the MEB to the seabase						
Assemble						
-Conduct at-sea arrival and assembly						
Employ						
-Provide MEB C2						
-Employ Surface BLT and Vertical BLTs from the seabase		Ó				
-Accommodate and operate organic surface connectors		Ŏ				
-Conduct external operations in Sea State 3 threshold/Sea State 4 objective		Ŏ				
Sustain						
-Sustain forces ashore from the seabase						
-Provide accommodations and aircraft/vehicle maintenance capability (O level/selected I level) for a MEB						
Reconstitute						
-Reconstitute at Sea		\bigcirc				





NDIA: 13th Expeditionary Warfare Conference 22 October 2008

Logistics Solutions for the Warfighter



Purpose & End State



- Broad Overview of BICmd & MPF Program
 - Impact of Command & MPF 101 Executive Primer
- <u>End State</u>: Increase Situational Awareness
 - Our Relationship with Industry
 - Niche Markets
 - Surge and Future OpTempo
 - *Obligation to the Warfighter*



Co-Located @ Jacksonville Port: DHS - Strategic Port



Surrounded by Industry!

<u>3 C's (Cars, Containers, & Coal)</u>

- 2nd Largest Commercial Port on East Coast for Automobile Imports
- Major Growth (3X) in Container Business; 3rd on East Coast by 2020.
 - Intermodal, Supply Chain, & Distribution businesses.
 - Panama Canal being Widened
- Largest City in Sq Miles in CONUS
- Impact on Blount Island.... [Good thing we purchased in 2004!] Great Investment.....



Mission



Provide Prepositioning Programs and operational logistics support to Marine Corps and DoD forces to enable them to rapidly and successfully conduct and quickly recover from assigned missions across the full spectrum of expeditionary warfare and anti-terrorist



operations.





Logistics Solutions for the Warfighter



Snapshot of Our Enterprise: 1 Commander



Marine Corps Logistics Command (Forward)

MCLC

MPF Operations, Training, and Exercises



Blount Island Command Operations/MMC

Marine Corps Support Facility Blount Island

Logistics Solutions for the Warfighter



Scope of Activities



\$500M In Ship Op

Part of a Multi-Billion Enterprise!

- War Footing!
- <u>Mission</u>: Always Ready!
 - Agile! Lean! ----- Economy of Force
- Complicated Operation and Business
 80/20 split
- Dynamic & Evolving Operational Environment



Marine Corps Support Facility -Blount Island





Logistics Solutions for the Warfighter




"Products & Services" We Provide to the USMC



- Combat Ready Equipment: 58 Tanks, 25 LAVs, 109 AAV, 1,000 wheeled vehicles, Per Squadron
- Capability Sets: Utilities, Fuel, Medical, Airfield, SeaBees Earth Moving,
- Sustainment: Ammo, Parts, Fuels, Rations, Building Material, Fleet Hospital, [30 days]
- Accurate Data: Embark Info, HAZMAT, TSS of Ships....
- Operational Logistics Services: Rapidly Deployable



Compendium of Our Current Battle Rhythm



- 8 Ship Back Loads/Down Loads: Sourcing Equipment, Repairs, & Data
 Introduction of LMSRs, Newly Fielded Equipment, Post OIF Reconstitution
- Program Oversight in Norway & Supported Exercises throughout Europe/Africa
- Direct Support to 5 Major MPF Exercises
- 6 Forward Sites in CENTCOM AOR in 4 countries; will likely grow!
 - Retrograde Ops, Equipment Rotation & Sourcing, & Maintenance Regeneration,
- Oversight of the 14 Base Functional Areas
- 30% of the "Core" Command "On the Road"



Functional Enablers



- The oversight of a \$4B+ Inventory and associated supporting enablers.....4 MEBs worth of Combat Power!
 - Equipment Maintenance & Supply
 - Data Management
 - Transportation
 - Port/Stevedore Operations
 - Container Support
 - Lighterage Support
 - Base Services



cs 🗛 Unique & Powerful Enabler

- <u>Contractors</u>
- Business: Of Course, but...
 - Partnership with Marine Corps
 - Forward Presence on every ship 24/7/365
 - Deploy into theater [quickly!]
 - 65% are Former Military; 35% have 15yrs + on the job!
- Backing of Corporate Resources
 - Access to Lean Processes, Solutions, etc.
 - Leverage to USMC's Advantage and Effectiveness



Strategic Environment





Operational Landscape

<u>USMC Challenges and Opportunities</u>

Still Sustain the Long War: Transition within CENTCOM AOR Growing the Force = Equipping the Force Retrograde, Reset, and Reconstitution



- Demand for US Marines Continues & Increases...
- Where and When? Flexibility and Agility
- BICmd = Stay Fully Engaged + Part of the Solution.



Industry Focuses on Our Core Competencies



- Supply
- Maintenance
- Distribution
- Embark/Port Operations
- Contracting
- Data Management: Asset Visibility



Niche Sea Basing / Long War Enablers & Commercial Markets



- Integration of Legacy and New Equipment
- Geo Prepositioning
- <u>Velocity</u>
- Asset Visibility
- Selective Download
- Sustainment / Maintenance at Sea
- Modular Designs
- Strategic Lift / Connectors
 Agile and Flexible: Last Tactical Mile





Niche Retrograde, Reset, and Reconstitution Enablers & Commercial Markets



- Requirements Determination
- Modeling
- Inventory Control
- Streamline Our Supply Chain
- Care in Storage
- Triage Tools
- Total Life Cycle Management!

Agile and Flexible: Get Ahead of Equipment Reset Bow Wave

Logistics Solutions for the Warfighter





Surge and Future Op Tempo



- Surge [2008-2010]
 - Retrograde from Iraq/OEF Build Up & Sustainment
 - Reset Services
 - Posturing for MPF(F) Transition
 - Infrastructure Growth/Master Plan
- Future [2010 & Beyond]
 - Post Deployment Operational Logistics Services
 - Geo Prepo site
 - MPF(F) Hub
 - Major Investments in Infrastructure/Master Plan

MPF History / Growth





MCSF-BI MILCON Program

& Reset Projects





Logistics Solutions for the Warfighter

MCSF-BI Additional Projects:

Working/FY09







Surge and Future Op Tempo

• Major Enabler to our End State:

Better postured with more industry generated solutions......



Closing Notes



- Industry leverages its muscle..
- Contractors enable our readiness..
- Maintaining an open dialogue..
- Complexity of issues cannot be underscored..
- Logistics requires more attention/solutions..
 - Senior Officers "business"
 - Driving Operations too much?
 - Like to help afford them less restraints , more options, and more responsiveness

Questions and Discussion



Marine Corps Support Facility -Blount Island





Acreage:	1235.2 Total
	-901.6 On-Island
	-333.6 Dredge Spoil and Conservation Site
Facilities	
Industrial:	670,425 SqFt (20 Buildings)
Storage:	73,788 SqFt (4 Clam Shells)
	30 acres (paved storage)
	27 acres (Lighterage storage)
Staging Area:	33 acres (Reinforced Concrete)
	25 acres (Intermodal Area)
	72 Acres (Non-paved)
<u>Slipway</u> :	3,500' X 450' Dredged to 38'
Pier Space:	5 berths total (Primary:Berth 1~1000')
<u>Crane</u> :	Pier-side Gantry at Berth 1
-Rail-mounted w/40 long ton lift capacity	
<u>Rail</u> :	Two 2000' spurs and bypass loop
<u>Distance to Sea Buoy</u>: 7 nautical miles	

Logistics Solutions for the Warfighter



Blount Island Commands



• CO, Blount Island Command

- Plans, coordinates & executes the logistics efforts in support of the MPF and MCPP-N Programs
- Reports to the CG, MCLC

• CO, Marine Corps Logistics Command (Forward)

- Executes all MCLC programs in the USCENTCOM AOR in order to provide effective and economical operational-level logistics in support of COMUSMARCENT
- Reports to the COMUSMARCENT

• CO, Marine Corps Support Facility – Blount Island

- Responsible for traditional base/facilities functions in support of Blount Island Command
- Reports to the CG, MCIEAST

Snapshot of Our Programs & Services...

.

- 16 ships & growing!
- 6 caves & 2 storage sites in Norway
- Goes to the Fight; Proven Record for over 20 years
- Major Resources [\$\$\$]
- <u>4 MEBs worth of Combat Power</u>
- Deployable Operational Logistics
 Detachments

What does BICmd do?

- "Program Executors"
- Determine Requirements, Assess, Measure & QA
- Honest Brokers; Op Forces Support
- Stewards of Our National Treasure

Where Our Contractors Fit In?

Plan, Execute, and Conduct QC

Where The Warfighter Fit In?

- Customer
- Planner
- Executor

Lt Col Ben Garza PEO LAND SYSTEMS MARINE CORPS

13th Annual Expeditionary Warfare Conference 22 October 08 Panama City, FL

ALL ABOUT THE WARFIGHT

IT'S ALL ABOUT THE WARFIGHTER



The Future of Expeditionary Mobility

PEO LAND SYSTEMS MARINE CORPS

IT'S ALL ABOUT THE WARFIGHTER



Major Defense Acquisition Program Oversight & Management

- PEO LS has entire Marine Corps' Future Tactical Mobility with enhanced survivability
 - -- EFV
 - -- MPC
 - -- JLTV

Force Projection --LW155 (M777) Transportability in Afghanistan

- Force Protection
 --MTVR w/MAS/Over 2,000 delivered in Iraq
- Value Added Through Focus, Discipline & Collaboration

"It's All About The Warfighter"

PEO LAND SYSTEMS MARINE CORPS

IT'S ALL ABOUT THE WARFIGHTER



Competency Aligned Organization

PEO LS is a separate command reporting to ASN (RDA) but...

Partners with Marine Corps Systems Command

- Similar to alignment between other DON PEOs and SYSCOMs and leverages MCSC infrastructure & services
- ASN RDA Charter and intent for PEO LS to manage ACAT I and II
- □ Major SYSCOM Roles (SECNAV INST 5400.15B)
 - Provide support services to PEOs without duplicating management responsibilities
 - -- Manage / MDA for programs other than those assigned to PEO structure
 - -- Provide for In-Service Support

□ Major SYSCOM Support Services (SECNAV INST 5400.15B)

- Oversee standard policies, technical processes and core competencies:
 - Systems Engineering
 - Integrated Logistics Support
 - Contracting
 - Finance / Comptroller





Our Mission

"Program Executive Officer Land Systems (PEO LS) will meet the Warfighter's needs by devoting full-time attention to Marine Corps Weapon Systems acquisition, while partnering with Marine Corps Systems Command, in order to develop and deliver assigned programs."

PEO LS Program Portfolio

Expeditionary Fighting Vehicle (EFV)



Lightweight

155 (M777)



Joint Light Tactical Vehicle (JLTV)



Logistics Vehicle System Replacement (LVSR)





Marine Personnel Carrier (MPC)*

Ground Air Task Oriented Radar (G/ATOR)



Common Aviation Command & Control System (CAC2S)







Outlook

The Nexus of Expeditionary and Combat Vehicle Capability

New SES Selection Underway





EFV Video





Questions?

Contact Us

at

PEOLS@usmc.mil

http://www.marcorsyscom.usmc.mil/peolandsystems





Background Slides





What is a PEO?

•DOD INST 5000.2

-"...Component Acquisition Executives (CAE) shall assign acquisition program responsibilities to a PEO for ACAT I programs...or any other **program** determined by the CAE to require dedicated executive management"

-"The PEO shall be dedicated to executive management and *shall not have* other command or staff responsibilities"

•SECNAV INST 5400.15B

- "PEOs will report directly to the Naval Acquisition Executive for all matters pertaining to acquisition"

- "PEOs devote full-time attention to managing their assigned programs and related technical support resources"

•General Rule: PEOs exercise authority for management of all ACAT Is & IIs.





Why PEO LS?

21 Aug 06 MROC decision Memo 47-2006 "The MROC supports the establishment of a Marine Corps PEO using the matrixed organizational concept."





1 Oct 07 PEO LS declared Fully Operational Capable (FOC) by ASN (RDA)

Established to enhance acquisition oversight and focus on an expanding Marine Corps portfolio of ACAT I & II ground and amphibious weapons systems.





Key Foundation Decisions

- Collocate w/ MARCORSYSCOM
- Start with Lean Staff Competency Aligned
- Value Our Credibility as Bedrock
- Help MARCORSYSCOM Build Technical Authority and Standardized Processes
- Balance Oversight and PM "Command" Responsibility ... ("Smart Oversight")
- Innovate Against Program Risk, e.g., Implement Probability of Program Success





Enhanced Company Operations

22 Oct 2008

Vince Goulding Dir, Experiment Div <u>vincent.goulding@usmc.mil</u> (703) 784-4299



MCWL: Headlights of Capability Development



"Conduct concept-based experimentation to develop and evaluate tactics, techniques, procedures and technologies...."







Apr 08: EOS Task to DC, CD&I: "Develop the ECO concept."

May 08: CG, MCWL designated lead agent

Aug 08: MCWL drafts/CMC signs A Concept for Enhanced Company Operations



Things we keep in mind...

- Concepts are as good as the Marines who execute them
- Marines are expeditionary
- Today's fight is a window to tomorrow's – not the school solution
- Technology is an <u>enabler</u>
- Success in a mature theater
- Hard issues cannot be ignored



A Concept for Enhanced Company Operations



"An approach to the operational art that maximizes the tactical flexibility offered by true decentralized mission accomplishment, consistent with commander's intent and facilitated by improved command and control, intelligence, logistics, and fires capabilities."

- A Concept for Enhanced Company Operations

- Generated by an operating force requirement and desire to grow the results of Distributed Operations
 - Recognizes that companies are conducting sustained independent operations traditionally associated with larger formations
- Catalyst for:
 - Shifting experimentation and capability development from mature theater (warfighter support) to austere theater, expeditionary operations (future force development)
 - Better defining specific requirements across DOTMLPF IOT support achievement of Marine Corps Vision & Strategy 2025



ECO Continues Our Focus on the Infantryman...





Distributed Operations 2004 - 2006

- Squad/Platoon focus (within company chain of command)
- Obj: Identify/fix train, man, equip deficiencies at individual and small unit level
- Product: Infantry Battalion Enhancement Period Program (IBEPP)
 - Training, manning, equipping based on deployment schedule
 - New Courses at Training and Education Command
 - Updated battalion T/E
- Supporting Efforts
 - Squad Fires (Type 2/3 CAS)
 - Combat Hunter
 - Infantry Skills Simulation Working Group

Enhanced Company Operations 2007 - 2010

Company focus

- Obj: Develop more agile, lethal, survivable company for full range of military operations
- Product: Standardized training, manning, equipping
 - Emphasis on Intell, C2, Logistics
 - Company-level Intell Cell (CLIC)
 - Company-level Ops Center (CLOC)

• Preliminary Results

- CLIC/CLOC were FOB-centric (warfighter support)
- Established requirements baseline
- Marine Corps Intelligence School CLIC training incorporated into PTP
- Rifle Co T/O, T/E deficiencies
 - MCWL T/O Study
 - CDD OAD ECO Study







Educated approach to an expeditionary capability










Jun- Sep (MWTC)

- <u>3.1 (CLOC-lite)</u>: Identify near term training, manning and equipment that enable dismounted infantry companies to execute C2, ops, intelligence, and fires functions in austere, expeditionary environments (Jul "09).
 - Shape UOC CAPSET V development
- <u>3.2 (C2/Log)</u>: Develop and assess next generation UOC CAPSET
 V C2 architecture and selected log initiatives (Sep '09).
- <u>3.3 (Re-supply/CASEVAC)</u>: Assess experimental re-supply and CASEVAC capabilities, training requirements, and TTPs/organizational implications associated with Distributed Operations and ECO (Jun '09).
 - Rifle Company T/O



ECO: A unique DOTMLPF Assessment Opportunity



- Doctrine
- Organization
- Training
- Materiel
- Leadership
- Personnel
- Facilities







Organization Now







Or Do We Need to Look Back for the Future?







Materiel for the Expeditionary Fight







Final Thoughts





- ECO is a logical progression
 - addresses an operational imperative
 - key enabler of Marine Corps Vision & Strategy 2025
 - opportunity look at the future force across DOTMLPF
- Objective is ensure a properly trained, adequately manned, superbly equipped company-sized organization...
- ... eminently suited for seabased, expeditionary operations Phase 0 thru Phase 5





















Potential Sequel: Evolve NACOE into the JACOE



EWTGLANT MISSION

"TO CONDUCT TRAINING AND INSTRUCTION IN THE DOCTRINE, TACTICS, AND TECHNIQUES OF NAVAL EXPEDITIONARY WARFARE, <u>WITH A FOCUS ON</u> <u>AMPHIBIOUS OPERATIONS</u>, IN ORDER TO SUPPORT OPERATIONAL COMMANDERS IN MAINTAINING FORCES READY TO PROJECT MILITARY POWER FROM THE SEA."





Arc of Instability

How much of this area is accessible:

by conventional land and air forces? by amphibious forces? by self sustaining amphibious forces? through forcible entry amphibious forces? given our current readiness, recent training and structure?

Range of Military Operations

- Conflict
- Humanitarian Assistance
- Disaster relief
- Security Cooperation
- Peace keeping
- •Presence
- Evacuation
- Reinforcement



- Deployed forward with relevant and timely capabilities
 - Maximize speed and freedom of action through seabasing, while minimizing footprint ashore.
 - Conduct joint forcible entry operations from the sea.
 - Engage in sustained operations ashore, as required.
- Focused on executing sustainable expeditionary operations

These are not capabilities inherent in our current MEU / SG

What are we doing today to ensure we have this capability in 2025? Are we doing enough?

Who speaks for the amphibious community?



Core Competencies

- Persistent forward naval engagement
- Forces and specialized detachments for service aboard naval ships, on stations and for operations ashore
- Conducts joint forcible entry operations from the sea and develops landing force capabilities and doctrine
- Conducts complex expeditionary operations in the urban littoral and other challenging environments
- Leads joint and multinational operations and enables interagency activity

Where are we focused today?





- Loss of service level advocacy for amphibious issues.
 - ESG CE \neq PHIBGRU
 - ESG CE Operationally focused and tasked
 - MEF(Fwd) \neq MEB
 - No standing MEB Staffs
 - MEF(FWD) not focused on amphibious issues
 - Elimination of annual Navy-Marine Corps Amphibious Board
- Recent focus on operational requirements have distracted the services from a key core competency.
- No large scale amphibious exercises since 9/11.
- Loss of experience and expertise (retirements, reassignments, latency)
- No single "Naval" entity to focus amphibious efforts.



Inconsistencies

- FRTP / PTP differences
 - East Coast / West Coast / Pacific
- Training and education standardization
- Amphibious education career progression
 - TBS →EWS→C&S
 - SWOS→War College
- Doctrine
 - Navy, Marine Corps, Joint
- Nesting emerging requirements/technologies
 - V22, C2 Systems, ...
- Amphibious lessons learned
- Tactics, techniques and procedures & Best practices



Guidance

"...increase naval force capability...<u>advance the amphibious and expeditionary capabilities</u> of the Combatant Commanders...strengthen concepts and training that enhance naval contributions to the Long War... <u>Continue to develop centers of excellence</u>."

Commandant's 2006 Planning Guidance

"...enhancing our capability to conduct expanded core capabilities ...<u>some capabilities require immediate attention, in</u> <u>particular our littoral capabilities</u>...expand and refine our training to include additional skills while honing our ability to command operational level campaigns.

ADM Roughead brief to the House Armed Service Committee (13 Dec 07)



Most Recently

"...We must reconnect to our naval character and proficiency, ensuring our Marines and Sailors are prepared to fulfill our role as an amphibious force in readiness and fully able to "fight from the sea"..." *CMC Washington 301724Z JUL 08*



How to best prepare

- 1. Improve what we are already doing
 - Standardize/ improve current MEU/SG predeployment training
 - Re-inject amphibious requirements
- 2. Reestablish large scale Naval training and exercises
 - MEB and ESG staff training
 - Amphibious assault exercises
- 3. Build an organization to speak for the amphib community
 - Naval in philosophy
 - With Service level authorities and visibility across the DOTMLPF



Comprehensive approach

Three Lines of Operation

Institutional Commitment / Process

Assessment / DOTMLPF Executive level venues (Warfighter, OAG, COE)

Operational/Staff Level Training

CPX, Wargames, JTFEX, Synthetic, Synthetic/Live, Live

Tactical / Unit Level Training

TCAT, FRTP-PTP, TTPs, Academics

Process <u>continues and adjusts</u> with an assessment of the current state of MEB/ESG amphibious assault capability and capacity



Initiatives

- FRTP-PTP
 - MOU/MOA
 - C2F II MEF Instruction
- MEB Forcible Entry / Amphibious Operations Exercise
 - Skill set training, planning, execution
- Establishment of Naval Amphibious Center of Excellence
- Operational Command Post Exercises
 - 1NCD, ESG-2, COMUKAMPHIBFOR
- NATO Conferences
 - NATO Alligator Conference
 - NATO Standardization Agency
 - Amphibious Operations Working Group
 - Joint Intelligence Working Group

APLANTIC B

EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC

ESG Fleet Response Training Plan (FRTP) MEU Predeployment Training Program (PTP)



- ESPP: Expeditionary Staff Planning Primer
- ESG: Expeditionary Strike Group
- WCC: Warfare Commander Conference
- NSFS: Naval Surface Fires Support
- SACC: Supporting Arms Coordination Center
- ESGINT: ESG Integrated Training
- GCT: Group Commander Training
- FST-GC: Group Commander Fleet Synthetic Training
- RUT: Realistic Urban Training
- C2X: Composite Training Unit Exercise
- **CERTEX:** Certification Exercise
- POM: Pre-Overseas Movement







Potential Sequel: Evolve NACOE into the JACOE



Phased Building Block Approach



PLANTIC STREET

EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC

Workshop Progression





Training Objectives

• USN

- Validate Battle Staff effectiveness
- Validate establishing directives
- Coordinate and plan in conjunction with Marine staff

• USMC

- Validate structure and organization
- Train MEB staff for forcible entry operations
- Coordinate and plan in conjunction with Navy staff



Endstate

- Develop a cadre of experienced officers and senior enlisted personnel with exposure / experience in amphibious MEB/ESF forcible entry operations
- Periodic amphibious MEB/ESG C2 events (synthetic) to establish depth and enhance expertise across USN/USMC
 - Include deploying ESG participants where FRTP-PTP permits
- Routinize concurrent development of other AMW skill sets in existing FRTP-PTP venues
 - Ship-to-shore movement planning and execution, amphibious craft loading and unloading, supporting arms and integrated fires during ESG C2X and CERTEX events
- Position for a future recurring live amphibious MEB/ESG exercises
 - Including amphibious MEB/ESG training capability





Potential Sequel: Evolve NACOE into the JACOE



Mission

The NACOE serves as a focal point of amphibious issues for the Navy, Marine Corps and other services and agencies in order to ensure the services are capable of fulfilling the amphibious requirements of the Maritime Strategy, Combatant Commanders' **Operational Plans, and future national security** requirements.



How the NACOE addresses the problem

The NACOE provides service-level advocacy, coordination, and integration. Specifically:

- Host and represent AMW community on Advocate forums
- Develop and coordinate training and education continua
- Develop a collaborative AMW Lessons Learned data base
- Draft and review Doctrine and Tactics, Techniques and Procedures
- Develop and review MET based training documents
- Assist in development / tracking of requirements
- Represent community in experimental and synthetic development and exercises



Functions and Tasks

- Advocacy
- Training and Education
- Lessons Learned and Best Practices
- Doctrine and Tactics, Techniques and Procedures
- Policy
- Requirements and Experimentation

AMW Community of Interest



• Matrix NACOE leverages existing knowledge and experience in the "AMW Community of Interest"

• Build robust collaborative website: Key issues, lessons learned, discussions, conference results, links to other sites, upcoming events, curriculum, planning, etc.

• Streamline the physical size of the NACOE

• Need TAD budget to foster and maintain support base



Phase 0 -

Minimum capability requirements

<u>Tasks</u>

-Build/manage collaborative AMW website

-Focus on AMW OAG and Amphibious Board coordination

- -Develop Lessons Learned and add to website
- -Parallel effort with MEB/ESG CE training process curriculum; use this package as basis for AMW AE planning courses in EWTGs

-Publication review

-Leverage EWTL/P for training capacity

Manning

-Military: 4-6 both internal and additional structure

-Civilian: 2-4 contractors to eventually become NSPS

Budget

-Plus-up EWTGL baseline and add money for contractors and TAD

Challenges of being "Naval"

 Two chains of command Operational vs supporting establishment Myriad of organizations with competing requirements Similar functions but stovepiped in approach •Two (and more) pots of money •No single source in either service Two manpower systems No amphib Sailor / Marine in assignment process Two NMCIs Two different approaches to COEs





WCOE providing mission area coverage




NARFAR







Potential Sequel: Evolve NACOE into the JACOE



2008 AMW OAG Construct



Key points

•Expanded USMC participation as voting members –Will continue to strengthen this relationship •MEF reps "got it", now back-briefing their CGs •Need more HQMC/PPO and OPNAV/N3 involvement on operational issues due to expanded scope of AMW OAG

•Inclusion of Item 16 in top 20 list is significant -Now we must build on this "wedge"

•USMC representation requested for briefs to SURFLANT and SURFOR

•Recognition of requirement for a NACOE-like capability, especially to coordinate non-materiel solution issues





Potential Sequel: Evolve NACOE into the JACOE





• Back-up slides



AMW OAG 2008-01 EXECUTIVE COMMITTEE RESULTS

FINAL TTPL AMW OAG 08-01

1	LSD MIDLIFE (INCLUDING REPAIRS) (HME)
2	LHD MIDLIFE (INCLUDING REPAIRS) (HME)
3	LCAC SLEP / READINESS (BNL)
4	LCU SUSTAINMENT / REPLACEMENT (BNL)
5	WELIN LAMBIE BOAT DAVIT (HME)
6	IMPROVED L-SHIP SELF DEFENSE (CAPSTONE, AIP, FAC, FIAC) (C5I)
7	GIG E LAN (C5I)
8	CBSP (IP BANDWIDTH) (C5I)
9	FLIGHT SAFETY PALS / NVD / SATCC (AVI)
10	ESG AND USMC C5I INTEGRATION (FIELD / BACKFIT TO GREEN BASELINE) (C5I)
11	INLS PROCUREMENT (BNL)
12	STUASS / TIER 2 UAS ESG INCORPORATION (ISR) (AVI)
13	LANDING FORCE OTH TACTICAL COMMS - HF ALE AND EMUT (C5I)
14	PROPULSION DIESEL / SSDG SUPPORT (HME)
15	L CLASS CAPABILITY TO LOAD USMC EQUIPMENT (HME)
16	ESG (CE) / MEU / MEB TRAINING (TNR)
17	MV 22 / JSF INTEGRATION (AVI)
18	OPTAR SHORTFALLS (BNL)
19	TDL LSD 41/49
20	AMW HF COMMS AND HFRG (C5I)

APPROVED: COMESG TWO, AMW OAG 08-01 CHAIR, 05 JUN 08



AMW OAG 2008-01 EXECUTIVE COMMITTEE RESULTS

SWG CHAIR POLICY ITEMS BREAKOUT

- 1. Establish a Blue Baseline for C5I
- 2. Establish a Blue/Green command and control space utilization plan and configuration control.
- 3. ESG/EOD personnel resourcing
- 4. Update TADIL Links (LSD) in ROC/POE IOT support sea-basing and global fleet station.
- 5. Re-assess policy for monorails for L Class ships.
- 6. 11 meter RHIBs outfitting on Big Decks
- 7. Shoring requirements for L Class (wet well rqmts)
- 8. MOGAS policy re-assess rqmts
- 9. FIAC Training tie to self defense
- 10. ESG (command element/PHIBGRU future of the command element
- 11. Engineman manning on LSDs
- 12. ESG Mission Definition
- 13. ESG Manning
- 14. ESG TACPUB Review and Revision
- 15. Sea Basing, L-Class ships



Background

- Combatant Commander OPLANs require forcible entry amphibious capability at MEB/ESF level
- Commitments to support OEF and OIF have impacted the ability of the USN and USMC to conduct brigade (MEB) level amphibious operations, resulting in the atrophy of critical C2 skill sets
 - Majority of USMC have done multiple tours in OEF and OIF but little experience aboard amphibious platforms
- Last East Coast MEB-size exercise was conducted in 2001 (pre-9/11)
- Focus on OEF / OIF missions has also detracted from traditional amphibious skills above the MEU level
- Restructuring of CPG-2 and CPG-3 to flag-level ESG Command Elements has further impacted AMW knowledge base
- Evaporation of Navy AMW experience; fewer naval personnel with handson experience conducting MEB level amphibious operations

Objective: Rebuild and attain the necessary skill sets to enable the Navy and the Marine Corps to exercise effective C2 to execute successful amphibious forcible entry operations



Problem

A degraded capability to conduct amphibious operations above the MEU/ESG level.

"...the skills needed for combined arms maneuver and amphibious warfare have <u>deteriorated</u>." Commandant's 2006 Planning Guidance

A lack of focus and fully integrated effort between USN/USMC to address amphibious warfare issues.

"... the Navy has not yet established a specific implementation goal for expeditionary strike groups and other forces." GAO Report Feb 2008



Specified Tasks

- Review amphibious doctrine, policies, and resourcing
 - Assess the shifting dynamics of maritime warfare
 - Ensure amphibious tenets keep pace with evolving capabilities, technologies, allies and foes
- Re-invigorate educational institutions and the professional education of our warfighters in amphibious operations
- Complement education with specific and focused training



"Refine the scope, responsibilities, authorities, and command and control for established warfare centers of excellence (WCOE). Make recommendations concerning the requirement to create additional WCOEs and recommendations to eliminate or realign legacy related organizational constructs/functions."



EXPEDITIONARY WARFARE TRAINING GROUP, ATLANTIC Problem Definition

- Current readiness assessment doesn't sufficiently portray the combat readiness of fleet forces to conduct warfare missions.
- Current WCOEs are not empowered nor credentialed to deliver an end-to-end assessment of critical warfare areas.





Missions

Articulate
Requirements

Develop
 Doctrine/TTP

Conduct Training

 Conduct Readiness Assessment

Develop Mission
 Area Concepts

Functions

- Gap Analysis
- S & T Recom
- Author CONOPS
 to Doctrine
- Develop entire training continuum
 Conduct Integrated Trng
- Assess Fleet Units
 Observe Exercises
 Analyze Operations

Tasks

- OPLAN/CONPLAN
 IPCL/ NCDP/ ICD-CDD
- FNC, Sea Trial, JCTD
- CONOPS, Tac D&E, CONOPS Validation
- Individual (A, C-School) Unit level & Integrated
- Joint/Combined
- OPLAN/CONPLAN specific
- DRRS-N/SORTS, Lessons Learned, Post-Deployment CNA Studies

EXPWCOEWRESPONSIbilitiesTLANTIC

Proposed TECOE Mission

- Develop the T & E continuum for cognizant MAGTF Element / OCCFld to support Advocate & OPFOR reqs.
- Review and validate T & R Manuals / ITS
- Review and validate all T&E curricula (POIs)
- Assign AO's to participate in MCWL/Joint experimentation
- Assign AO's ISO acquisition programs
- Serve as TECOM representation and at appropriate Advocate Forums
- Support Development and review of Doctrine & TTPs

Proposed TECOE TASKS



=TECOEs in Campaign Plan/Frago

"The Long War—Strategy to Hardware"

A Presentation for the Expeditionary Warfare Conference

22 October 2008

Michael McDevitt Vice President and Director CNA Strategic Studies



What is the long war?

- A grim reality
- Prolonged, word-wide *irregular campaign*
- A long term effort against terrorist networks and other extremists
- A struggle between violent extremism and moderation
- Direct military force is required, but we cannot kill or capture our way to victory
- A patient accumulation of quiet successes over a long time



US Defense Strategy

- Defining principle of US Defense Strategy is <u>balance</u>
 - Not the same as treating all challenges equally
 - Means setting priorities
 - Cannot expect to eliminate risk by bigger budgets
- Unlikely to repeat another Iraq or Afghanistan any time soon
 - That is: forced regime change and nation building under fire
- Strategy is use indirect approach when possible
 - Capacity building



- Prevailing in wars we have while preparing for future contingencies
 - Next-war-itis versus today's fights
- Institutionalizing counter insurgency, stability and capacity building while maintaining our traditional edge against other militaries
 - Don't treat these capabilities as exotic distractions
- Retaining traditional service expertise while being open to change in order to accomplish today's missions
 - Like it or not the new American way of war will include irregular war



The Obligations We Have Today

- Iraq will not simply "go away" with new administration
 - Success so far remains fragile
 - Some element of U.S. military power will continue to be involved
- Success in Afghanistan will be a focus for new administration
 - Shift in focus for USMC
- Deterrence of Iran, China over Taiwan, and North Korea
- Hunting down terrorists
- Support for Israel, plus other treaty obligations
- The Caribbean basin
 - Uncertain Cuban future
 - Weak governments, failed states, drugs, illegal immigration
 - Assisting Colombia



Open Security Questions—Neither Obligations Nor Trends

- Security implications of financial crisis
 - Credibility of US leadership
 - Willingness of US act
 - Ability of US to act
- What about Russia?
- Will a major ally or friend collapse (Pakistan, Saudi Arabia)?
- Will preserving access to West African oil (Gulf of Guinea) generate a new presence requirement?



Trends--Translation of China's Economic Strength into Global Influence

- Broader trend than military modernization
 - Global economic interests = global political interests
- But military modernization creates requirement for capability competition
 - US credibility in East Asia at stake
 - Access versus anti-access
 - Finger still on the trigger vis-à-vis Taiwan
- Attractiveness of "China Model" to authoritarians
 - Generates political systems competition
- Ambition to field premier military force in Asia
 - Not trying to pick a fight with Washington, but Taiwan remains a serious issue
 - Worries our allies



Trends--Demography and Anti-Americanism in Muslim World

- Youth Bulge Phenomena
 - When 30 to 40% of a nations males are in "fighting age" cohorts
 - Iraq, Afghanistan, Pakistan, Gaza, Yemen
- Demographic "armament"
 - Second, third, or fourth sons generate huge recruitment pools
 - Asymmetric advantage
- Public Opinion (predominately Muslim countries)
 - 15% favorable
 - 75% unfavorable
- Growing pool of Jihadist recruits
 - Many nations where cells can hide and survive
 - Limits range of political options available to friendly Islamic states



Trends--Enrichment of Energy Producing States that have anti-American Grievances

- Petrodollar surge in Iran, Russia and Venezuela
- Russia a longer term concern
 - Ability to revitalize conventional forces thanks to "warm" industrial base
 - Wealth underwrites restoring national pride
- Iran's wealth offsets its "demographic" disarmament
 - Engaging in proxy wars—Hezbollah and Hamas
 - Funding not an issue for nuclear weapons ambitions
 - Can support substantial anti-US insurgency in Iraq and Afghanistan
- Is Chavez a threat to long term stability?

Intersection between hostile states with money and terrorist organizations, a special concern



Trend--An Incomplete Proliferation Agenda

- Short of regime change "counter-proliferation" not a credible policy
 - Determined leaders will develop bombs
 - India, Pakistan, North Korea and probably Iran
 - Perception that Iraq and Afghanistan have removed regime change from "US table"
- Can deter use by regimes, but can we deter transfer?
- The most serious future problem is transfer to nonstate actors

Need explicit, credible policy that deters transfer to, and use by non-state actors



Trend--Global Climate Change

- Move beyond skeptics and believers debate
- Must consider as low-probability/high consequences
- Some effects of GCC are likely to be permanent and be very bad for some regions
 - Life and death situations
 - Adapt or migrate
- Developing nations least able to cope
- Implications:
 - Next administration will inject a sense of urgency
 - Expeditionary role in HA/DR will grow
 - Arctic Northwest passage



What Does This All Mean?

- If forcible regime change off the table; and responding to aggression is low probability, accepting risk by not growing high end forces a likelihood
 - "Holding our own" more likely
 - Afloat missile defense a probable exception
- Ability to redirect most of these trends is remote
 - Coping rather than shaping the order of the day
- Speaking softly, and carrying a big stick is an effective coping mechanism
 - Peacetime expeditionary operations will remain in demand
 - Peacetime forward presence enables "coping"
 - Presence also enables Maritime Security Operations
- High demand for U.S. engagement, capacity building, irregular forces, and deployable naval power projection for deterrence and alliance credibility



13th Annual Expeditionary Warfare Conference

"The Long War-Strategy to Hardware"

Mr. George W. Solhan

Deputy Chief of Naval Research Expeditionary Maneuver Warfare And Combating Terrorism S & T Department (ONR 30) Expeditionary Maneuver Warfare & Combating Terrorism S&T Department

Code 30





Sources of Stress, Instability & Conflict

Ungoverned Spaces

- Guatemala-Chiapas Border
- Colombia-Venezuela Border
- West Africa
- East Africa
- Arabian Peninsula
- North Caucasus Region
- Afghan-Pakistan Border
- Sulawesi-Mindanao

Urban Stress Youth Bulge Terrorism/Crime Ungoverned Energy Demand

Nuclear





2



Naval Expeditionary Operations





Technological Dominance



Laser-Guided Munitions



GPS Navigation and Targeting

Today, Marines and Sailors have at their disposal the world's most sophisticated military technology





Mobile Communications



Network-Centricity, Information Warfare, and Intelligence



Technological "Democratization"



Internet— Information Warfare and Intelligence



In the global war on terror and in Iraq and Afghanistan, our adversaries are leveraging sophisticated technology that is now easily available anywhere in the world—and at a modest cost.



Commercial Laser Rangefinder—Precise Targeting



Cell Phones— Mobile Comms



Handheld GPS– Location with Extreme Accuracy


A Technological "Perfect Storm"?

For decades, Western militaries have held a decisive technological advantage...



"It is by devising new weapons, and above all by scientific leadership, that we shall best cope with the enemy's superior strength."

--Winston Churchill

Today, enemies are able to acquire weapons and technology quickly and cheaply...



"Acquiring weapons for the defense of Muslims is a religious duty. If I have indeed acquired these weapons, then I thank God for enabling me to do so. And if I seek to acquire these weapons, I am carrying out a duty. It would be a sin for Muslims not to try to possess the weapons that would prevent the infidels from inflicting harm on Muslims."

--Osama bin Laden

And there also are adversaries willing to invest significantly in new technology



The 21st Century is also going to be an age of scientific change, with certain cutting-edge technologies likely to be applied to naval warfare...high-tech arms will make direct attacks on naval battlefields possible from outer space, remote altitudes and remote land bases...superconduction technology will bring superconductor ships to the naval order of battle, enabling ships to travel faster without noise...submarines will be able to go faster and deeper, with the seabed being the ideal place to build military bases."

--Chinese Naval Officers at the Navy Research Institute in Beijing



World Science and Technology Investment





World Science and Technology Publications





A Swiftly Changing Planet



Fadvantage

• In an era of increasing globalization, new technology is more readily available—and more quickly—than ever before

• The natures of "combatant" and "weapon" are changing, and new challenges can come from anywhere in the world

- We must accept the fact that adversaries will use our technology against us
- To stay competitive on tomorrow's battlefields, we must:
 - **Ensure** our people and research enterprises are more innovative

- Maintain our technological





S&T Focus to Meet Naval Needs





U.S. NAVY

Dominating the Battle in the Littorals

ONR Technology will enable Sailors and Marines to:

- Survive and Win
- be more lethal
- expand their area of influence
- be flexible in all phases of warfare
- move between kinetic and non-kinetic tactics
- predict actions of Irregular enemies
- generate combat power operationally/tactically
- Operational Adaptation in new paradigm of Hybrid Complex Warfare



Dominating the Battle in the Littorals

Programs featured in this theme include:

- Intelligence, Surveillance, and Reconnaissance
- Naval Expeditionary Overwatch
- Suicide Bomber Detection
- Maneuver
- Force Protection
- Squad Personal Power

Seabasing

- Lightweight Materials
- Air Vehicle Deep Sustainment\
- Counter-IED Research
- Conformal Antennas
- Non-lethal Weapons— Active Denial System

I will provide more detailed information as we move forward



Intelligence, Surveillance and Reconnaissance (ISR)

Vision

Develop and leverage advanced technologies for applications in future intelligence, surveillance, and reconnaissance systems. Enhance situational awareness to enable real time tactical decision making for Distributed Operations and provide proactive and predictive capabilities for Asymmetric and Irregular Warfare.



Key Research/Technology Investment Areas

Sensor Fields

- Unique Materials for Advanced Sensors
- Sensors for Entity Recognition
- Sensors for the Urban Domain
- Sensor Network
- Sensor Comm
- Relevant and Situational Information on Demand
 - Tag, Track. Locate
 - Multi-Modal Sensor Fusion and Networking
- Actionable Intelligence for Expeditionary and Irregular Warfare
 - Warfighter Interface and Decision Tools
 - Threat Prediction Models



Urban Situational Awareness

ONR through-wall sensing technology will provide vital decision-making information

ONR Program:

 Urban Situational Awareness





Program Officer

- 1. ONR research provides enhanced sensoring for Urban environments
 - ONR is Developing "through-wall" sensing
 - ONR research is focusing on improving multi-path imaging
 - Developing enhanced sensors and inference engines

2. Collaborating with Army and DARPA

- Program development began in 2007
- Investing in signal processing algorithms
- Very narrow broadband radar is a focus area

3. <u>Research Challenges</u>

- 1) Need for radar signal processing algorithms
- 2) Increased standoff range of through-wall sensors
- 3) Need for suitable inference engines



Navy Expeditionary Overwatch (NEO) Operational View





Navy Expeditionary Overwatch (NEO) Operational View

ONR technology will enable vital decision-making information and tools

ONR Program:

• Naval Expeditionary Overwatch (NEO)



Program Officer



Nelson Mills

- 1. ONR technology enables Navy expeditionary unit distributed operations
 - Responds to NECC, SOF, and USMC requirements
 - Developing communication network
 - Provides multi-sensor platform control station

2. ONR technology integrates Radar, IR, FLIR and EO for expeditionary units

- Integrates manned and unmanned sensors
- Integrates both lethal and non-lethal engagement systems
- Integrate USV, Scan Eagle UAV, and HMMWV platforms

3. <u>Research Challenges</u>

- 1) Safe and Legal Engagement Systems for UXV's
- 2) On-Board Data Processing
- 3) Cooperative Perception and Communication for UXV's



Force Protection



Vision

To allow the force to maintain operational tempo at the small unit (battalion and below) and individual Warfighter levels, the Thrust will provide technology that protects from a myriad of modes of enemy attack throughout the spectrum of warfare. Each system will be expeditionary in nature, lightweight, and capable of providing a far greater degree of protection than any comparable system currently available.

Key Research/Technology Investment Areas

Detection

- Multi-modality signature detection (THz, spectroscopy, gas chromium, RADAR)
- Optics/void detection
- Subsurface explosive hazard detection
- Directed Energy
- Confirmation through spectral signatures

Neutralization

- Explosive neutralization independent of trigger mechanism
- Magnetic/Acoustic/Seismic signatures
- Directed Energy
- Mitigation
- Advanced materials
- Bio-effects modeling and simulation
- Fiber-level modeling
 - Modular design tools



Suicide Bomber Detection

ONR technology will provide real-time decision-making information

ONR Program:

Suicide Bomber
 Detection





Lee Mastroianni

1. Bomb detection research is being applied to the suicide bomber threat

- Imaging sensors and spectroscopy
- Data fusion architecture to reduce Pfa and increase Pd
- Behavior detection and intelligent video

2. Suicide bomber detection draws upon a variety of technologies

- Passive and active NIR, MWIR, and LWIR imaging, mmW and THz imaging (2D RADAR), mmW and THz imaging (3D RADAR), LIBS and Raman Spectroscopy
- Characterization of clutter and algorithm development
- Fusion efforts in ISR realm
- Personnel and crowd tracking algorithms

3. <u>Research Challenges</u>

1) Detection at Operationally Relevant Ranges: Significant standoff is required in order to reduce exposure

- 2) Clutter/False Alarms: Automatic differentiation of potential items of interest carried on body
- 3) Data/Sensor Fusion: Combination, alignment, and analysis of data from multiple modalities
- 4) Crowd Surveillance: Investigation of moving individuals within a larger crowd



Maneuver



Vision:

Marine forces of the future will be significantly more agile, lethal, mobile and survivable. Technologies will be developed to increase the warfighting capabilities and effectiveness of the Marine Corps Air Ground Task Force (MAGTF) with emphasis on improving survivability, providing enhanced maneuver, and providing maneuver enabler systems in Distributed Operations and Asymmetric / Irregular Warfare.

Key Research / Technology Investment Areas Survivability:

- Enhanced materials for armor and vehicle structures
- Active and dynamic protection systems
- Shock mitigating seats & attenuation technologies for crew protection

Advanced Mobility:

- Advanced suspension systems for enhanced off road mobility
- On board vehicle power generation and highly efficient power train components

Maneuver Enablers:

- Situational awareness decision aids and planning tools
- Unmanned and autonomous vehicle systems



Combat Tactical Vehicle

ONR is developing affordable, cutting edge, future light armored vehicles

ONR Program:

 Combat Tactical Vehicle







- 1. CTV brings light vehicle armored technology into the 21st Century
 - Six-passenger combat variant of the Joint Light Tactical Vehicle family of vehicles
 - Configurable for various missions with crew-served weapon station, sensors, & comm suite
 - Payload of up to 6,000 pounds

2. CTV's aluminum armor-based hull design protects against IEDs

- Applique armor provides additional protection against kinetic energy and shaped-charge rounds
- Demonstrates art of the possible for next generation of inherently protected land transport

3. <u>Research Challenges</u>

- 1) Development of a tactical wheeled vehicle with increased survivability
- 2) Integration of an advanced suspension with ride height adjustment
- 3) Integration of armor structure as vehicle structure
- 4) Development & integration of high mass efficiency and active armors



Logistics



Vision:

Marines of the future will benefit from a precisely tailored level of logistic sustainment from seabased platforms to rapidly maneuvering forces ashore. Logistic delivery systems of the future will be more responsive and flexible, enabling Marines to out-pace rapidly changing operational scenarios. Likewise, delivered logistic commodities will provide more operational value per unit weight, enhancing combat unit self sufficiency and maneuverability. Finally, operational units will benefit from technologies that maximize equipment readiness by minimizing both down-time and maintenance requirements.

Key Research Topics

Asset Visibility

 Low-power high-clutter RF propagation (for wireless sensors and RFID tags

Logistic Transport

- Structural composite mechanics and fabrication (for modular lightweight bridges)
- Ergonometrics (for human load transport)
- Aeromechanics (for autonomous aerial logistic delivery) Operational Sustainment
- Raman Spectroscopy
- Membrane transport and filtration for water purification
- Solid Oxide fuel cell electrochemistry, thermoelectric materials, electrochemical capacitors and metal-air batteries
- Casualty stabilization and life support automation Maintenance Reduction
- Materials science for prevention of corrosion and wear



Squad Portable Power

Squad Portable Power will enable small combat units to optimize

portable energy sources

ONR Program:

 Squad Portable Power





Program Officer

Cliff Anderson

- 1. Squad Power Network will exploit wearable power systems
 - ONR is improving the portability of electronic devices for Marines
 - Optimizing the aggregate assembly of devices and power sources
 - Developing small power sources and load configurations

2. Squad Power Network will eliminate issues with incompatible batteries

- Research will result in weight savings for portable power
- Bridge compatibility issues with legacy portable systems
- Smart Charging systems will match each device's duty cycle

3. <u>Research Challenges</u>

1) High specific energy electrochemical capacitors to function as short term energy storage

- 2) Intelligent small scale voltage conversion and power distribution networks
- 3) Robust energy coupling approaches that facilitate ease of momentarily disconnecting devices



Seabasing Logistics

ONR Seabasing technology overcomes limitations of geographic shore bases support Program Officer

ONR Program:

• Seabasing Logistics



Dr. Geoff Main

- 1. Seabasing logistics supports a completely new concept of forward presence
 - Enables improved ship-to-ship logistics
 - Improves sustainment of assembled Naval forces
 - Reduces response times to humanitarian mission requirements
- 2. ONR is developing flexible, responsive afloat warehousing technology
 - Seabase research enables sea to shore connectors in high sea states
 - Fuel transfer from sea to shore is a vital focus area
 - Enables maritime operations where shore support is limited

3. <u>Research Challenges</u>

- 1) Ship motion prediction in high sea states for ship-to-ship transfer
- 2) Interface with and support of point-of-delivery and heavy lift aircraft
- 3) Integration of logistics systems into a COP provide better, more flexible resupply and asset visibility

Ship-to-Ship Transfer & Material Handling

Small-to-Large Vessel at-Sea Transfer

Large Vessel Interface Crane Technology





Dominating the Battle in the Littorals

Recent engagement opportunities:

- Modern Day Marine Exposition, Marine Corps Base, Quantico, VA, 30
 September 2 October 2008
- Human Social Cultural and Behavioral Sciences Workshop 8-9 Oct.
 - Dynamic Tactical Communications Network BAA 08-020 (Closed) Expeditionary Maneuver Warfare Applied Research and Advanced
 - Technology Development BAA 08-012 (Closed)
- Future engagement opportunities:
- ONR Long Range BAA 09-001. (Annual FY opportunity)
- NEO VIP Demonstration Day 14 Nov 08.



Program Officers Contact Info

Name	Program	ONR Code
Mr. Cliff Anderson	Exp Logistics	Code 30
Mr. Jeff Bradel	Maneuver (CTV)	Code 30
Mr. Martin Kruger	ISR – Urban SA	Code 30
Mr. Lee Mastroianni	Force Protection	Code 30
Mr. John Moniz	Exp C4	Code 30
Mr. Nelson Mills	NEO	NSWCDD
Mr. John Keenan	Non-Lethals	JNLWD
Mr. Dan Simons	Firepower (Fires)	Code 30
Dr. Roy Stripling	Human Performance, Training & Education	Code 30
Dr. Geoff Main	Sea Basing	Code 33
Mr. Tony Seman	Sense & Respond Logistics	Code 33

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QUESTIONS?



Operational Perspectives on Current & Future ESG Employment





Captain Gil "Happy" Birklund, USN

Chief of Staff Expeditionary Strike Group Two

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Contents



- Staff Structure
- Missions
- Worldwide Reach
- Past, Present & Future Employment
- Questions







An operational staff focused on planning and execution of expeditionary missions



Supporting the Maritime Strategy with expediionary forces



Scalable, Flexible, Deployable...supporting the Maritime Strategy



Past Employment

Pre 2006: Amphibious Group Two



- Administrative Functions
 - "Mini" Type Commander
 - Larger staff ~ 120 personnel
 - More administrative functions
 - i.e., Title 10
- Operational functions
 - ATF East (OIF)
 - HA/DR (i.e., Katrina/Rita)



An combined administrative/operational staff supporting, deploying & leading amphibious forces

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Present Employment

2006 - 2008

- Transitioned to ESG
 - Flag led staff
- Staff size halved (~60 personnel)
- C5F Deployments
 - Continuation of ESG trial concept
- Advocate for amphibious forces
 - Afloat readiness
- Liaison to USMC
 - Maintain blue/green link



An operational staff deploying and leading expeditionary forces





Future Employment



2009 and beyond... **Deployable Flag-led staff** TACTICAL/operational focus Supporting numbered fleet commander Deploying as needed Contingencies, HA/DR, NEO **USMC** partner CATF, MEBEX, etc...

ESG Way Ahead...a work in progress

Questions?







Operational Functions

Expeditionary Strike Group Command Element

- CTG 20.9 (OPCON of assigned amphibious forces)
- Crisis response (NEO, HA/DR, DSCA)
- Composite Warfare Commander



- Core enabling element for C/JTF (C/JFMCC for exercises)
- Amphibious Task Force Commander (CATF for MEB/MEF)
 - MEB level exercise planning
- Expeditionary Strike Force Commander (ESF)
- Integrate into MHQ w/MOC architecture

Surge Capable for Navy Component Commander

A scalable, flexible and deployable Navy and Marine Corps Flag staff



Administrative Functions

Advocate for Amphibious Warfare

- Senior Amphibious Staff
 - Liaison to Marine Corps (II MEF & MAGTF)
 - Amphibious Operational Advisory Group
- Afloat readiness
 - Flag level oversight of and advocacy
 - Flag liaison to Surface Type Commander

