Advance Planning Briefing to Industry

1 May 2012

Brigadier General Mark R. Wise, USMC
Commanding General Marine Corps Warfighting Lab
Vice Chief of Naval Research

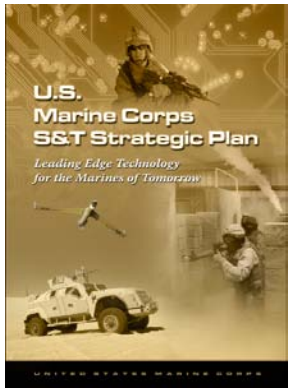
Marine Corps Warfighting Laboratory (MCWL)

VCNR

AVCNR

Executive Agent for IEDD

Dir CIED Ops



EA For S&T

Tech Dir

CG MCWL*

Chief of Staff

A Balance Between "Thoughts and Things"

Enhance the current and determine the future Marine Corps strategic landscape by defining the Marine Corps' next warfighting concepts and capabilities via development and evaluation of innovative tactics, techniques, procedures, organizations and technologies using an integral combination of concept based experimentation, technology assessments, wargaming, and analysis which will provide the strategic axis of advance for the Corps' entire enterprise. Serve as the USMC Executive Agent for Marine Corps Science and Technology (S&T), Counter Improvised Explosive Devices (CIED), and as the Marine Corps' liaison to the Joint Staff for Joint Concept Development and Experimentation.

Marine Corps Warfighting Laboratory

Counter IED | **Future Threats & Opportunities** | **Experimentation** | **Technology**

Counter IED

USMC CIED WG

CETO

Wargaming

JCDE

Experiment

Technology

OSTI

A Balance Between “Thoughts and Things”

Marine Corps Warfighting Laboratory

Counter IED | Future Threats & Opportunities | Experimentation | Technology

Counter IED | CETO | Wargaming | JCDE | Experiment | Technology | OSTI

USMC CIED WG

A Balance Between “Thoughts and Things”

Lead, advocate, and coordinate all counter-IED (C-IED) efforts in the Marine Corps in order to defeat IED networks and their associated devices. Serve as the Marine Corps’ coordinating authority for all Joint Improvised Explosive Device Defeat Organization (JIEDDO) issues.

THE IED THREAT
PERSISTENT, EXTENSIVE, & WORLDWIDE

From Oct 2009 to Sep 2011…

Worldwide Monthly
IED Events Excluding IZ/AF
Oct 2009 – Sep 2011

196 Deaths/Month
606 Wounded/Month
97 Attacks/Month

…12,950 deaths and 41,338 wounded attributed to 7,509 IED attacks worldwide.

MAGTFs must be prepared to counter the global IED threat.
Our enemy will use IEDs when we maneuver in support of national policy in the Pacific Rim and other Security Cooperation objectives.

Source: National Counter Terrorism Center
Worldwide Incidents Tracking System
https://wits.nctc.gov/FederalDiscoverWITS

Where We Are

Persistent Surveillance

Command Wire Pre-det

Low/No-Metallic Detection

RC Neutralize

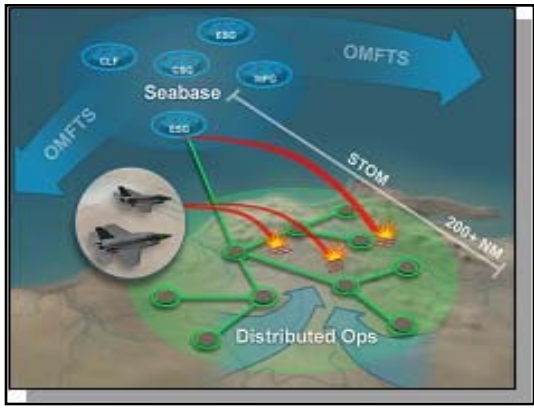
Pressure Devices

Explosive Detection

Where are we going?

- Today's Fight
  - Armored Medium Tactical Vehicle Replacement (7-ton truck)
  - MRAPs
  - Forward Operating Bases (FOBs)
- Heavy→Required to meet today's challenges, in today's theater

- We will respond to today's crisis, with today's force …TODAY!



- The Lab's job is to focus on tomorrow so we can effectively apply that mindset to tomorrow's threat, in a world "where Microsoft coexists with machetes, and stealth is met by suicide bombers"--- SecDef Gates

Where Are We Going?

Experimentation + (S&T) for the Future Middle Weight Force

- **Provide the best trained and equipped Marine units to Afghanistan**
- **Rebalance and posture the Corps for the future and aggressively experiment with and implement new capabilities and organizations**
- **Better educate and train Marines to succeed in distributed operations and increasingly complex environments**
- **Keep faith with our Marines, our Sailors and our families**

- ***"A middleweight force**, -- light enough to get there quickly, but heavy enough to carry the day upon arrival, and capable of operating independent of local infrastructure."*

- *"We will rebalance our Corps, posture it for the future and **aggressively experiment** with and **implement new capabilities** and organizations."*

- *"We will better educate and train our Marines to **succeed in distributed operations** and increasingly complex environments."*

- *"A Marine Corps that is a multi-capable, combined arms force, comfortable operating at **the high and low ends of the threat spectrum**, or in the shaded areas where they overlap."*

- *"Leverage the significant advantages that **amphibious forces** provide a maritime power"*

What does the Marine Corps need?

- **Versatile capability (Middleweight Force)**
  - **Multifunctional to max extent possible**
  - **Can evolve with the threat—open architecture mindset**
  - **Less is better**
  - **Intuitive**

"Andrew Higgins ... is the man who won the war for us. ... If Higgins had not designed and built those LCVPs, we never could have landed over an open beach. The whole strategy of the war would have been different."

Gen Dwight Eisenhower

- **Lighter / More Agile (Lighten the load)**
  - **Energy innovation**
    - **Smaller, longer lasting, more capable**
    - **Water: Man-portable, individual systems**
  - **C2**
    - **Fewer systems, more versatile**
    - **Reliance on satellites → jamming threat**
  - **Fits naval shipping**
  - **Individual Marine**
    - **Survivability → Resistant to IED Threat**
    - **Light enough to fight**

Marine Corps Warfighting Laboratory

Counter IED | Future Threats & Opportunities | **Experimentation** | Technology

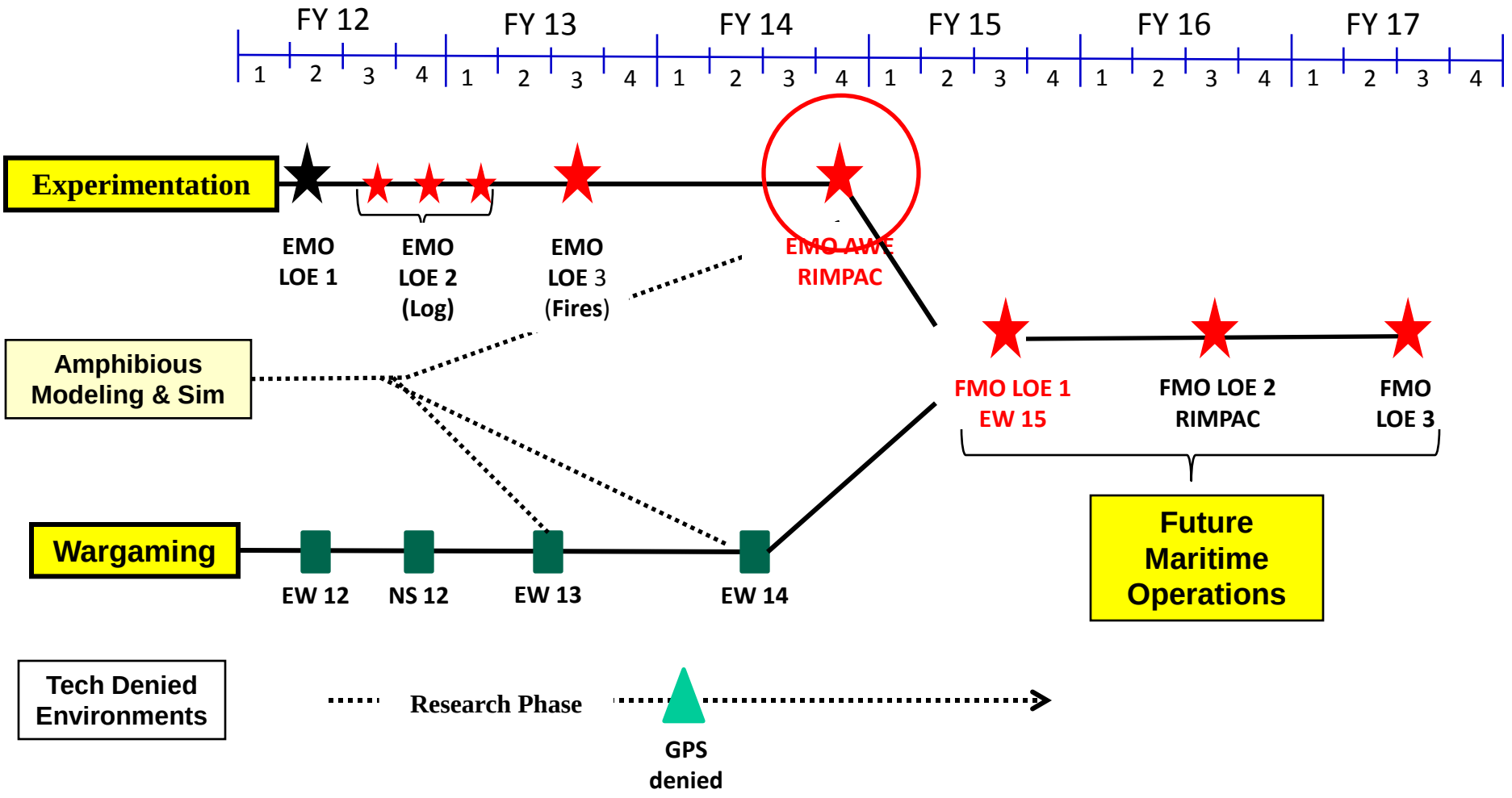
Counter IED | CETO | Wargaming | JCDE | Experiment | Technology | OSTI

USMC CIED WG

A Balance Between “Thoughts and Things”

Plan, execute, analyze, and disseminate the results of a coherent and integrated program of concept-based experimentation, including modeling and simulation (M&S) initiatives in order to inform the Deputy Commandant, Combat Development and Integration. Results include development and promulgation of new and innovative tactics, techniques, and procedures (TTPs), and recommended enhancements to current organizational structures and training, as needed

Key Link in an Important Chain



EMO LOE-1 Design/Objectives/Partners

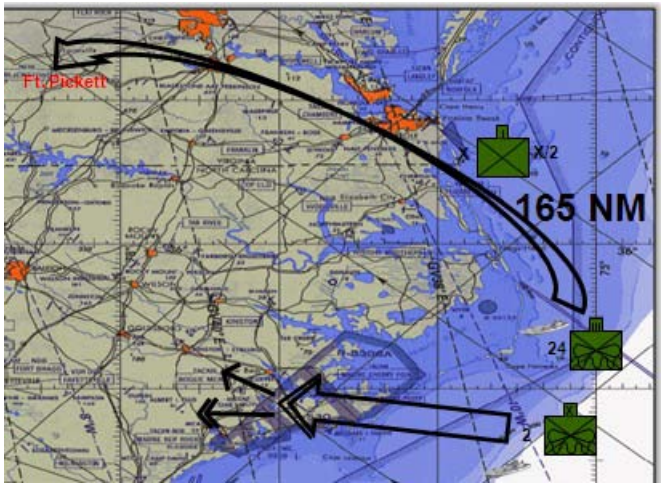
Who: Commander Fleet Forces Command, **II MEF/2d MEB**

What: Live force experiment with **24th Marine Expeditionary Unit**

When: Feb 2012

Where : From the sea (C2 from IWO ARG/MEU), ops ashore Ft Pickett VA .

Why: Generate new thinking on amphibious ops; develop/exploit emerging technologies



February 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5 D - Day X - 2	6 X - 1	7 Insertion X - Day	8 X + 1	9 X + 2	10 X + 3	11 Live Fire X + 4
EMO LOE 1						

Experiment Objectives

1. **Examine MAGTF extended range C2** ✓
2. **Examine sea based C2 organizations (LFOC/SACC/TACC/TACLOG) and relationships to facilitate sea based extended range operations.** ✓
3. **Employ/assess SOF integration** ✓
4. **Examine sea based MAGTF's ability to sustain ground forces conducting kinetic operations at extended range; include MPF-SE/T-AKE participation** ✓
5. **Examine fire support issues related to extended range, sea based operations.** ✓
6. **Employ/assess experimental C4ISR enablers** ✓
7. **Employ/assess energy efficiencies for a dismounted tactical formation** ✓

Marine Corps Warfighting Laboratory

Counter IED | Future Threats & Opportunities | Experimentation | **Technology**

Counter IED | CETO | Wargaming | JCDE | Experiment | Technology | OSTI

USMC CIED WG

A Balance Between “Thoughts and Things”

Identify, modify where appropriate, and evaluate technological capabilities that support advanced warfighting concepts. Conduct assessments of emerging commercial technologies with potential military utility

EMO LOE-1 Communications Overview

Distributed Tactical Communications System (DTCS)

Range: 300 miles (90%)
700 miles (30%)
Weight: 1.5 lbs
Power Source: BA123 (4)
Wave Form: Netted Iridium
Distribution: MEB / MEU / BLT / Comp / Plat / Squad
Notes: OTH / OTM / BLOS. Provides PLI, 2.4kbps data channel

TrellisWare Radio (TWR)

Range: Network / Link Dependent
Weight: 1.5
Power Source: MBTR Recharge / CR 123 (12)
Wave Form: MANET / VHF (PT) / UHF (PT)
Distribution: Comp / Plat / Squad / Team
Notes: -Simultaneous data and multiple digital voice
-8 hops
-2 Mb – 512Kb data channel (1-8 hops)
-Provides PLI

MAGTF Enabler-Light (MEL)

- Internally Transportable in MV-22 / CH-53
- KU SAT
-NIPR LAN (Email – File Transfer)
- DTCS / TWR (Amp)
- UHF / VHF / HF (AMP)
- 3 Workstations / 6 Tablets

DARPA Enhanced Endurance UAS
Propane Fuel Cell~6 hours
Lockheed Martin Stalker
EO/ ISR / HD

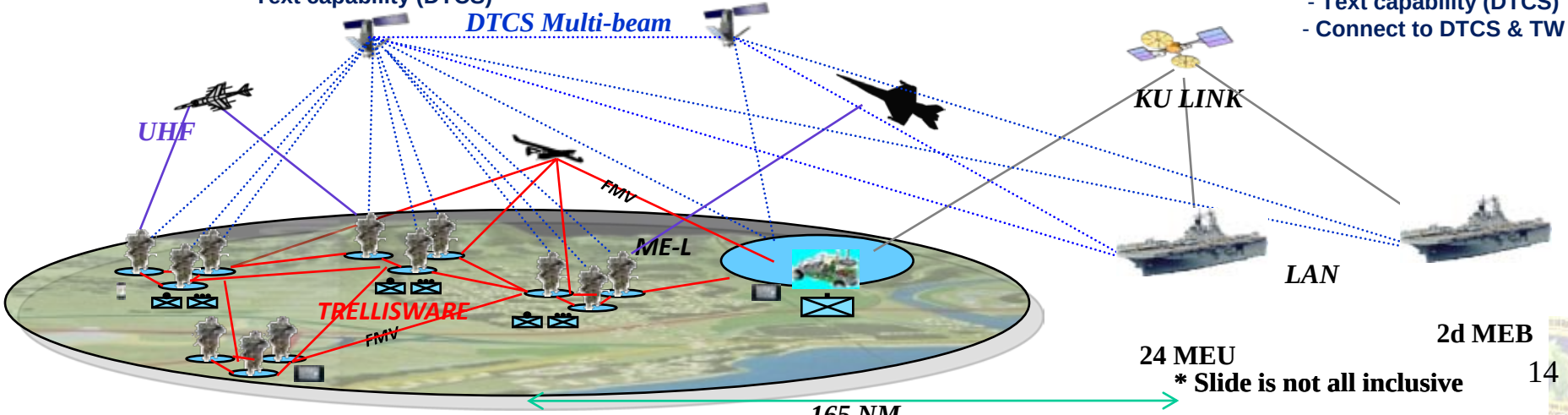
Focus on Tactical Relay

Company Digital Tablet

- View PLI (DTCS & TW)
- Email/File Transfer (TW)
- Text capability (DTCS)
- Connect to DTCS & TW

Plat / Squad Digital Device

- View PLI (DTCS & TW)
- Email/File Transfer (TW)
- Photo/Video
- Connect to DTCS & TW
- Text capability (DTCS)



* Slide is not all inclusive

Logistics Demand Reduction

ONR Gyrocopter
(MMIST)

GUSS
(Optionally Autonomous ITV)

SPACES Battery Charger

- Lighten the Load
- Tactical Logistics Distribution
- Unmanned Convoy Vehicles

Demand signals…

TATRC "Black Knight"
(Advanced Tactics, Inc.)

SLMCO 5.0 Small Unit Water Purifier

DARPA Shrike

Tactical Robotic Controller (TRC)

DARPA Switchblade

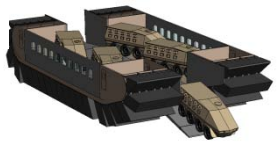
Modeling and Simulation

Efforts to Date:

- Augmented Reality Training System
- Moving Targets Engagement Training
- Intelligent Tutoring Systems





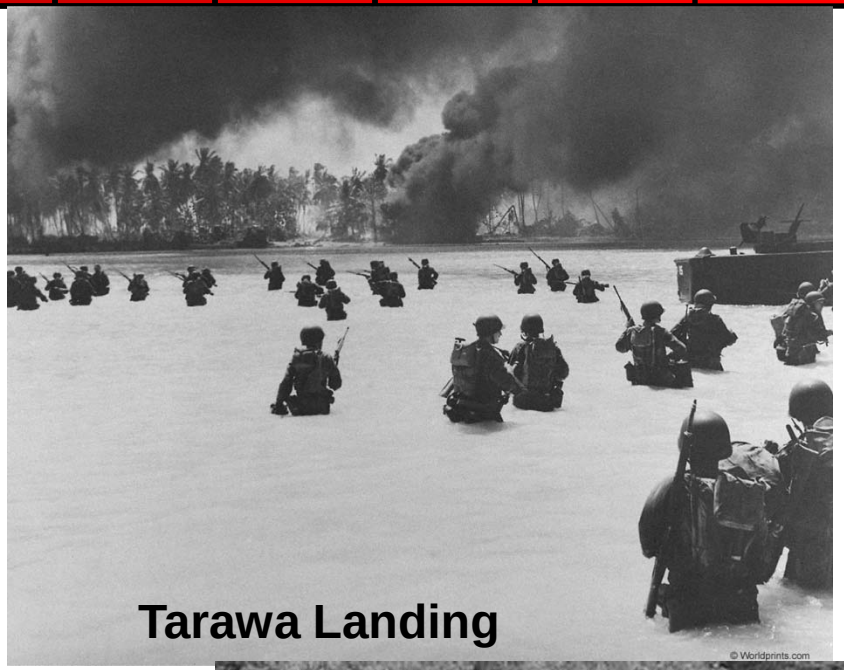



Refocusing in Order to:

- Refine and inform live-force concept-based experiments
  - Refine objectives through course of action analyses
  - Wargaming to review experiment plans prior to execution
  - Provide a means by which to execute analysis of data, post-event.
- Support enhancing Service-Level Wargaming efforts with simulation
- Support of other MCWL efforts involving models and simulations
- Participate in Joint experimentation (e.g., Joint Warfighting Challenges)
- Coordinate accreditation of USMC models used in Joint and Coalition experiments

What is the next technological “tipping point”?

- Tactical Energy / Water Solutions
- Robotics / Autonomous Capabilities
- Distributed / Deep Operations
  - Networking on the move
  - Networked long range communications
- Advanced technology to augment human information processing
- Amphibious Operations
  - Surface to Objective Maneuver
  - Rapid build up of combat power
  - Assaults of yesterday are unlikely



Tarawa Landing


Roebling Tractor

Questions