



www.mcwl.quantico.usmc.mil

MCWL

Command Brief

Col. Douglas Jerothe

Chief of Staff

26 January 2005



Mission



MCWL conducts *concept-based experimentation* to develop and evaluate *tactics, techniques, procedures and technologies* in order to enhance Marine Corps warfighting capabilities.





Tenets of the MC S&T



- CG MCCDC responsible for guidance / oversight of MC RDT&E and S&T
- CG MCCDC exercises oversight through CG MCWL
 - CG MCWL establishes & coordinates MC S&T process, conducts technical and programmatic reviews
 - Ensures coordination with MCWL / SYSCOM / ONR / HQMC
- CNR responsible for execution of Naval S&T
 - VCNR supports CNR in this role
- Code 35 (353) manages the execution of ONR portion of MC S&T and provides oversight of Blue in support of Green

Must speak with one voice on S&T matters!!



USMC S&T IPT

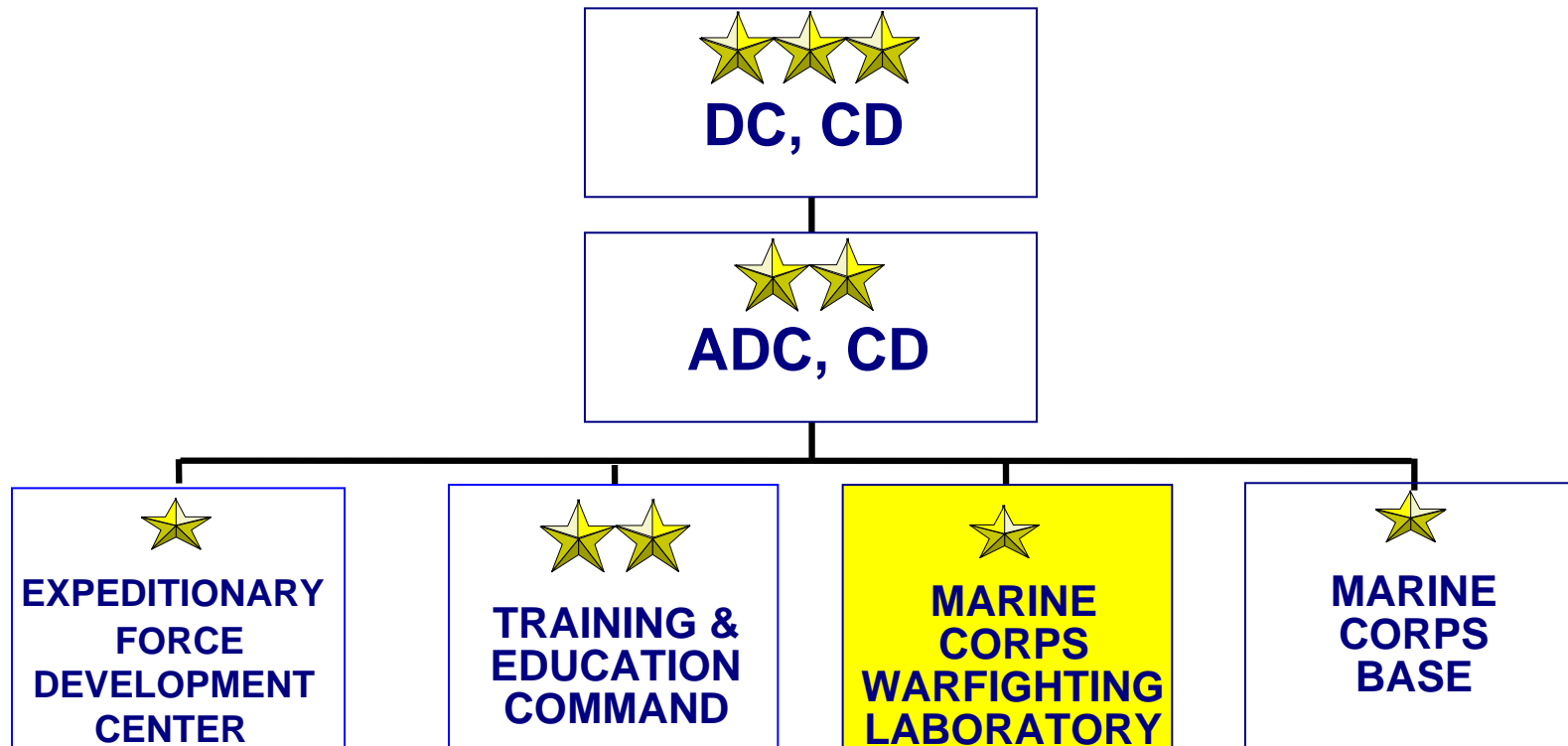


- Reports to CG MCCDC via CG MCWL
- Functions IAW MCO 3960.6:
 - Develop USMC S&T Program and Process
- Conduct Annual USMC S&T Assessment
 - Identify S&T Issues, Recommend Solutions
 - Track Program Execution
 - Facilitate Transition
 - Review / Prioritize Potential USMC ATDs /ACTDs



Organizational Placement

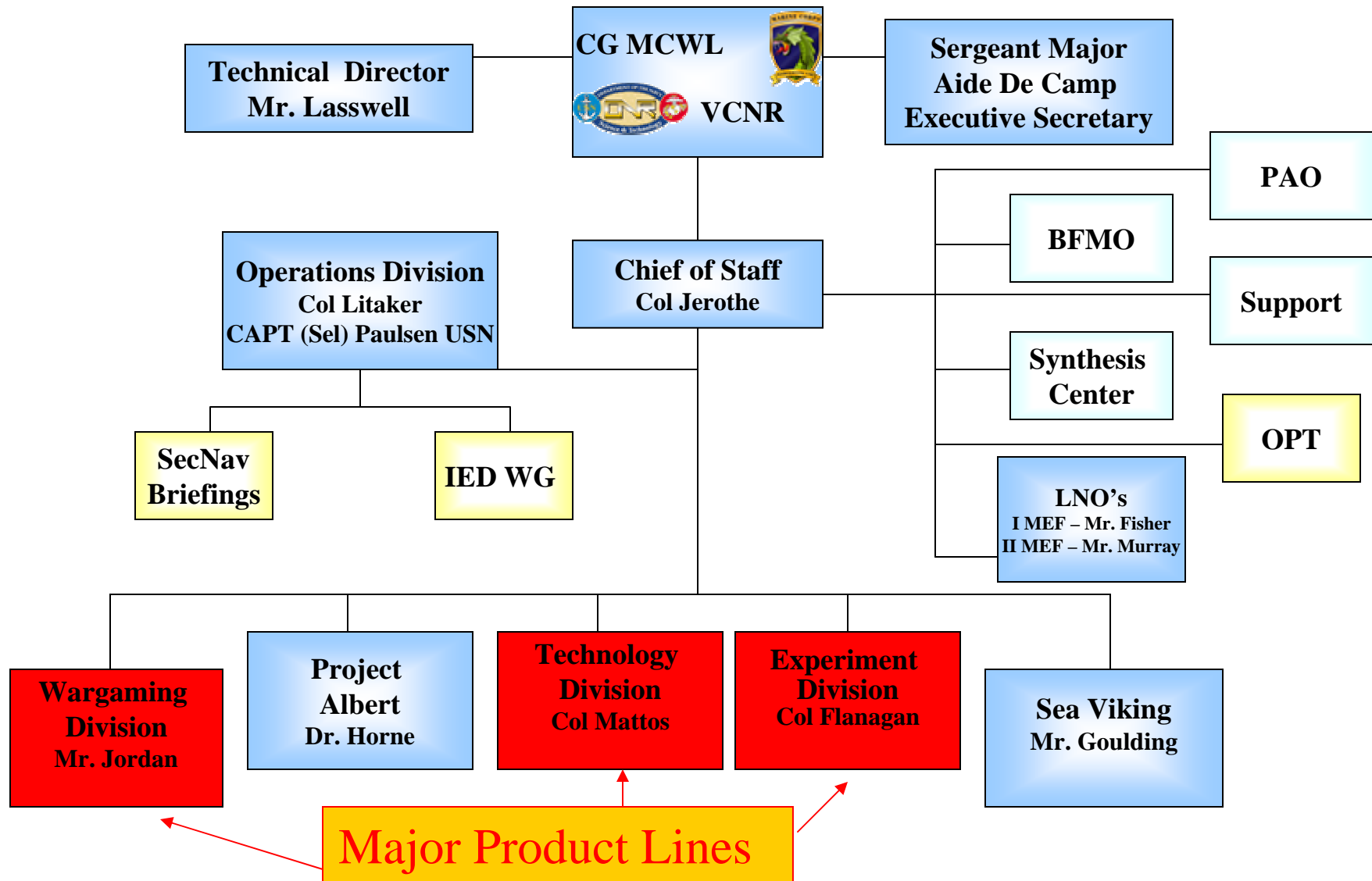
(<http://www.mccdc.quantico.usmc.mil>)



The Lab CG is also Vice Chief of Naval Research, Executive Agent for S&T, and EA for Tech Support to OIF/OEF

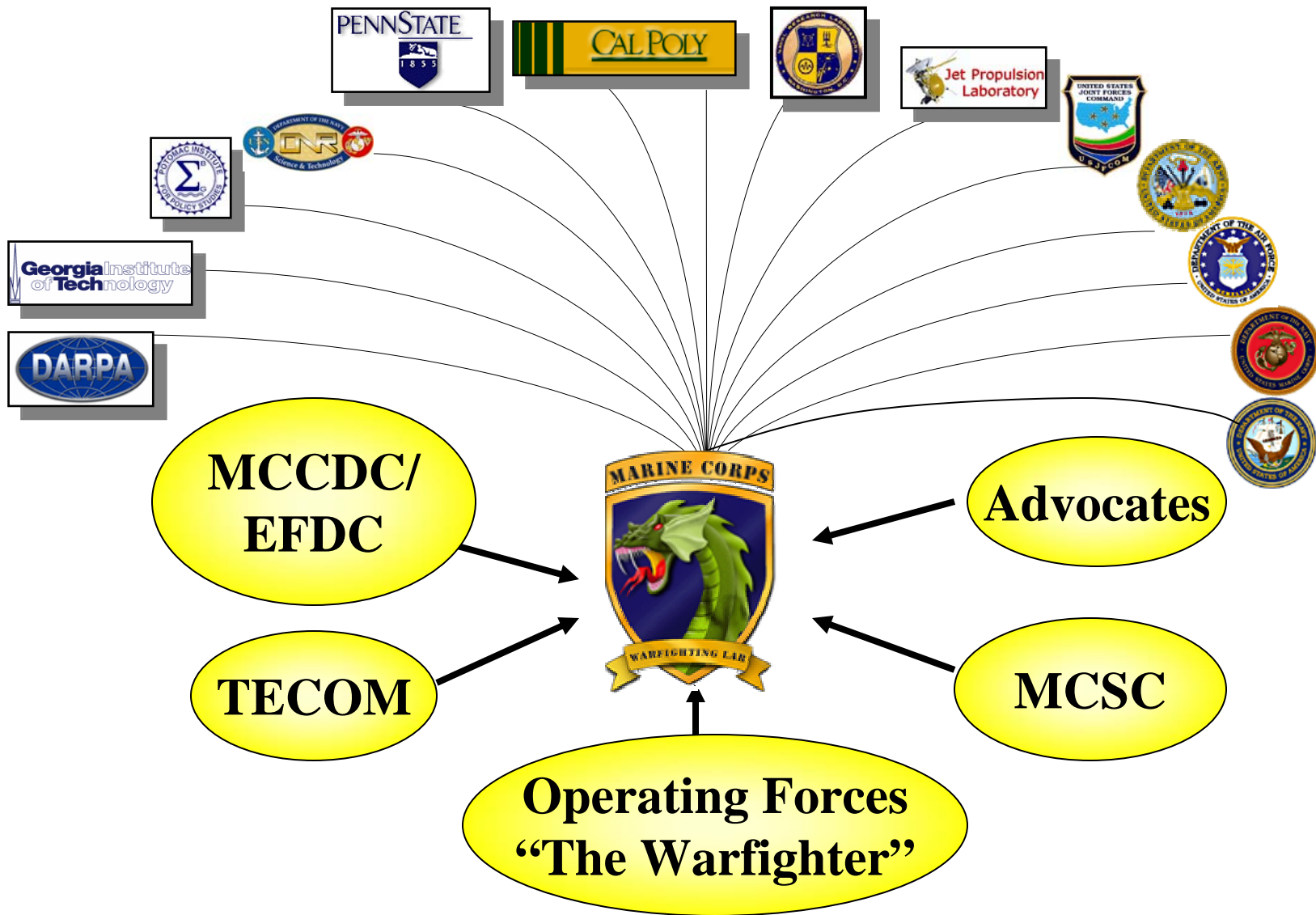


MCWL Organization





Integrated Team Effort





Experimentation Philosophy



- Innovation is more than technological change. Must consider tactics, organization and training.
- Results of experimentation are based on a combination of analytical rigor and operational assessment
- Marine Corps must credibly engage Joint Concept Development and Experimentation (JCDE)



Experimentation Continuum



The Three Worlds of Innovation and Transformation



Solving Immediate Problems



The Next Service

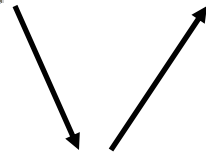
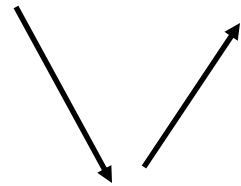


The Service After Next

Marine Corps Experimentation and S&T supports Naval Transformation Roadmap



Experimentation Series





Sea Viking 06



- **Hypothesis:**
 - That a forward deployed Marine Air Ground Task Force, with enhanced training and equipment, can support and conduct immediate Joint Forcible Entry Operations
- **Campaign Objective:**
 - Develop & assess selected additional capabilities a forward deployed, seabased MAGTF needs to conduct:
 - Seabased Operations
 - *Operational Maneuver from the Sea (OMFTS)*
 - *Ship to Objective Maneuver (STOM)*
 - Distributed Operations
- **CMC Guidance:**
 - Additive capability....
 - Experiment first....
 - Consider OPTEMPO and Cost....
 - Unit size....

Take Seabasing to the Next Level

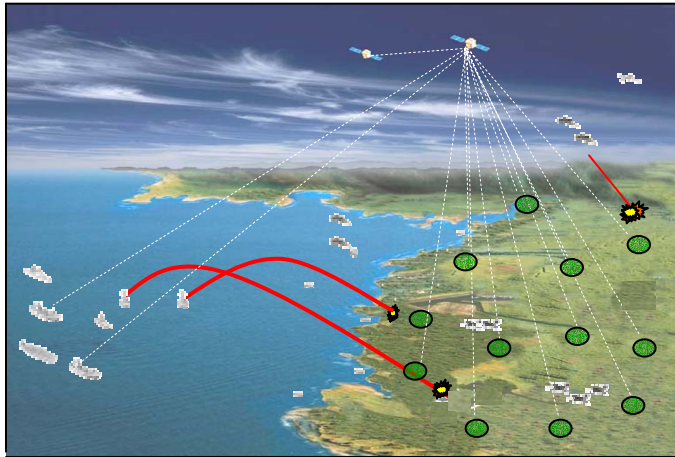


Sea Viking 06 DO Experimentation

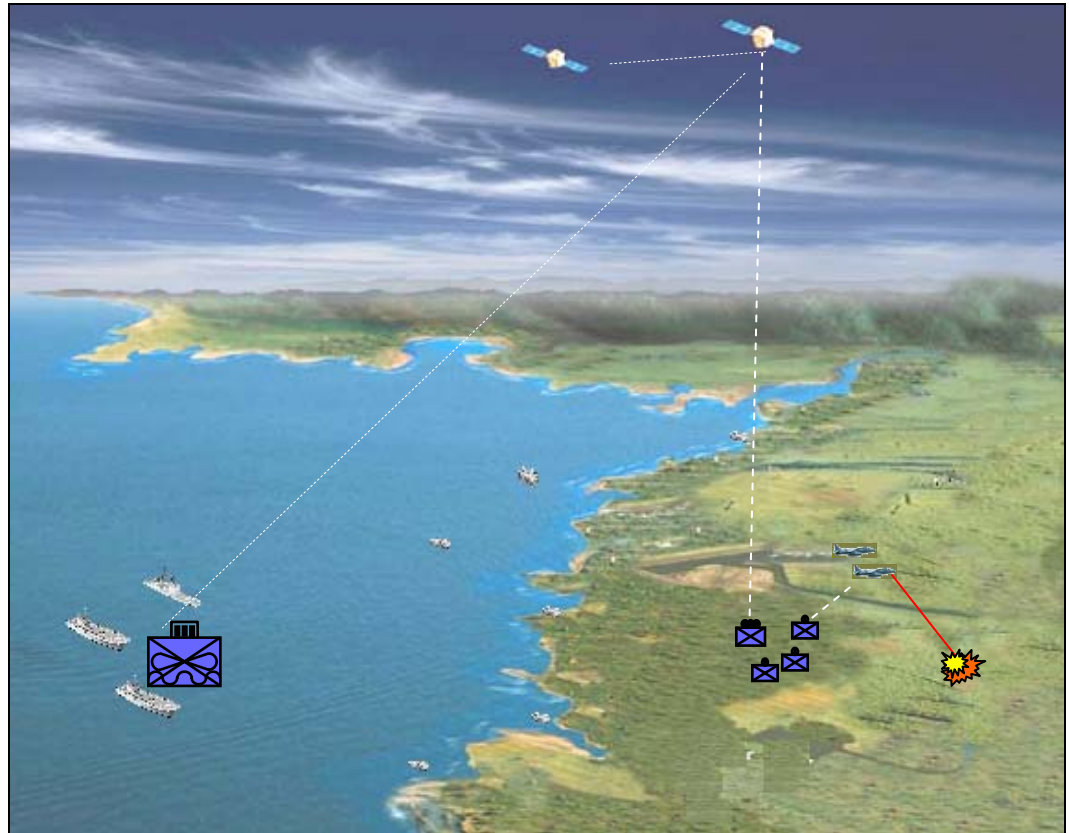
Concept to IOC



Distributed Operations Concept



Distributed Operations 2006



Primary Task: Prepare a rifle platoon for employment as a DO force, with a deploying MAGTF, by the end of 2006.



LOE 1 Training Phase



- **General:**

- Build upon existing Marine Corps Training and MCWL experience: USMC Schools, T & R Manuals – “Collective Training Standards - Level Changes”, BUST/SASO

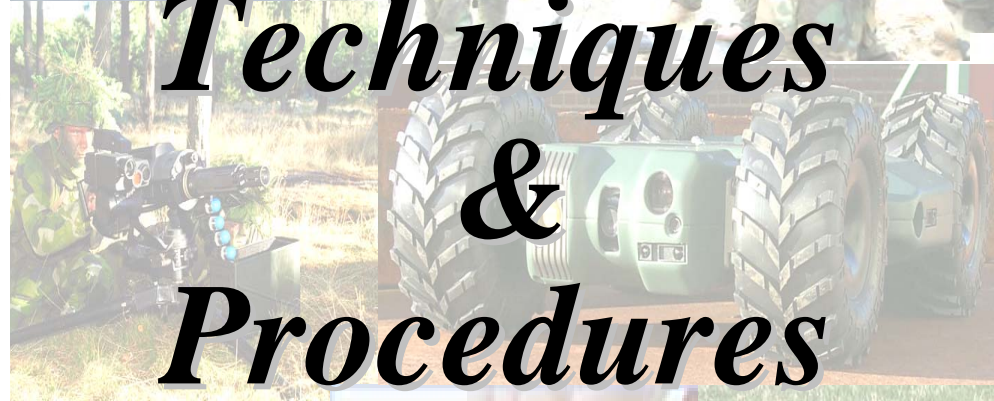
- **Method:**

- Schools Phase: Train leaders and selected individuals in fundamentals and special skills
- Small Unit Enhancement Training (SUET): Training package to prepare the unit for the LOE

- **Emphasis:**

- Reinforce fundamentals: combat patrolling, navigation, medical, communications, etc.
- Enhance Small Unit skills and capabilities
 - Patrolling over extended ranges / mounted and dismounted
 - Surveillance and Reconnaissance
 - Close Air Support / Indirect Fires
 - Facilitation of Follow-on Forces

*Technologies
Tactics
Techniques
&
Procedures*



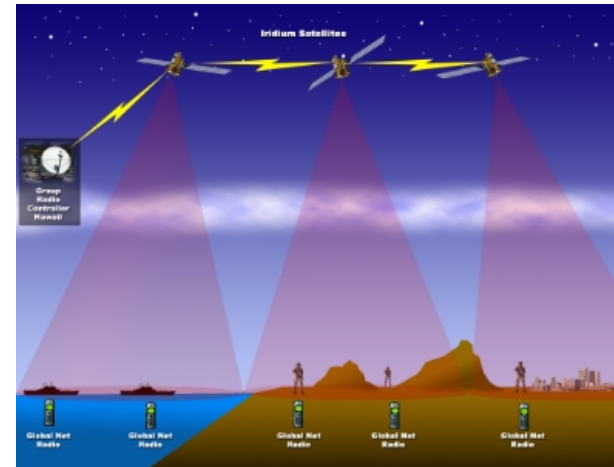


Expeditionary Tactical Communications System (ETCS)

Capt. Matt Simmons



- Purpose
 - Provide OTH/OTM communications to disembarked Marine
- Description
 - Modified IRIDIUM
 - Global Net Radio based upon 9505 handset with internal GPS
 - Push to talk netted voice communications
 - PLI reporting and display
 - No ground based infrastructure for deploy forces
 - 128 bit AES commercial encryption



ETCS: Basic Equipment





On The Move Combat Operations Center (OTM COC)



Capt. Andrew Dausman

- Purpose
 - Provide an OTM/OTH COC to the infantry battalion commander
- Description
 - Enhanced UOC for OTM/OTH employment
 - Provides both voice and data communications
 - Integrates OTH Expeditionary Tactical Communications System (ETCS)
 - C2PC and AFATDS integrated via wireless LAN
 - Incorporates Spray Cool technology for rugged, compact server



[Return](#)



Internally Transportable Vehicle

Maj. John Tomczyk



- Purpose
 - Provide mobility to DO platoon and vertical assault force
- Description
 - Fit (and have flown) in CH-46 and CH-53
 - Relatively high performance vehicles
 - Training/Maintenance
 - Similar to incidental and mechanic training for IFAV/HMMWV, estimate 2 days
 - Standard automotive technology
 - Contractor supported training and maintenance





Dragon Runner (MGS)

Capt. Kyle Patton



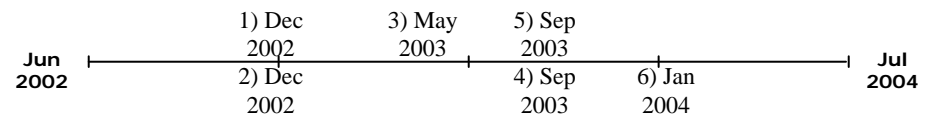
Specifications

- Elevate situational awareness / extend limit of human observation (around the corner capability) in an urban environment day or night
- Provide a limited, automated LP/OP capability at the small unit level (“Sentry Mode”)
- Provide a man-portable, toss-able system that will provide observational coverage in confined areas
- Increase real-time feedback to the small unit leader

Plans & Status

- AWD development
- MIL freq for both C^C/Video
- Custom internal antenna
- Improved motion sensors
- Collapsible handle for tossing
- 6x min zoom camera
- Payload interface
- Improved handheld controller
- Custom backpack

Schedule



1. Assessment of mini zoom, Assessment of daylight readable display
2. Assessment of AWD sheet metal prototype
3. radio/antennae testing and assessment
4. Mk II urethane assessments
5. Dragon Runner REV1 software real-world operational evaluation
6. Dragon Runner Mk II LTA



Telepresent Rapid Aiming Platform (TRAP)

Major John Tomczyk



Specifications

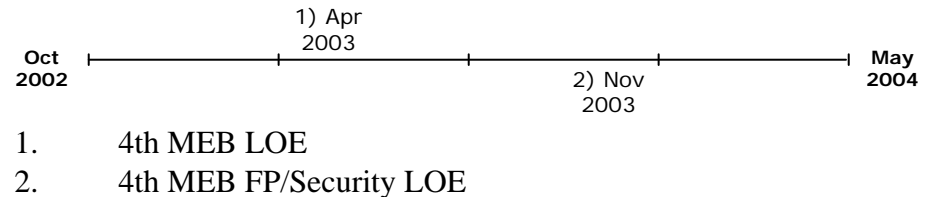


- Tripod firing platform that serves as a mount for 5.56, 7.62, or .50 caliber rifles
- Mounted weapon is controlled by the operator remotely. The tripod has electric servos able to traverse and elevate the weapon, as well as actuate the trigger
- Two cameras, an observation/scan camera mounted on the tripod and an aiming camera mounted on the weapon and bore-sighted, enable the operator to observe a sector of fire for enemy activity and to aim the weapon on a target

Plans & Status

- Working with MCSC and 4th MEB to integrate TRAP systems into FP and perimeter security requirements
- Examining TRAP integration with sensor suites/C2 systems
- Refining TRAP hardware based on 4th MEB LTA

Schedule





ERC (Explosive Resistant Coating)



- **Explosive Resistant Coating is a polyurea based material applied to .202 High Hard Steel**
- **Armor kits to bring its ballistic characteristics to the benchmark standards - 3/8 Rolled Homogeneous Armor (RHA) Kits.**
- **ERC proven to work and TTP for field installation developed.**
- **Used to back up current preferred ARL kit vehicle armor system .**



Dust Abatement

Maj. Anthony Graves-Buckingham



BEFORE



AFTER



Plans & Status

- MCWL/MWSS-273 conducted Dust Abatement training and assessment with PAM materials in support of Operation Iraqi Freedom.
- MCWL will provide Technical Assessment Officer to monitor and assess the performance of the PAM's being tested and to provide technical advice to MARCORSSCOM, NRL and JRAC. This will provide documentation and allow further testing to take place if needed.
- MCWL to assess improved PAM on January 22-23, 2004 at MCAGCC 29 Palms, CA..

Specifications

- Polyacrylimide (PAM) used in conjunction with Superabsorbants and Aluminum Chloride
- Basic application is for LZ 200 x 200
- 1200 gal water (min) for application per LZ
- MCWL arranged for purchase of enough materials to cover 25 LZ's for use in support of OIF.
- Follow-on purchases were made by MCSC for 50 LZ's worth of materials.

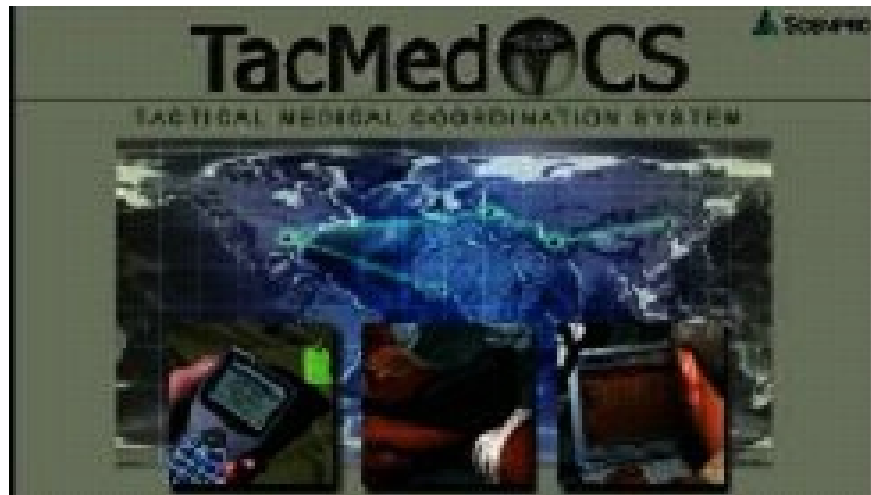
Schedule

1. Improved/Combined Tri-PAM Evaluation, 29 Palms
2. Formal Demo, Yuma
3. NRL brief to MCWL
4. Dust Abatement after action report
5. Dust Abatement Testing, OIF
6. Dust Abatement Testing, 29 Palms



Tactical Medical Coordination System

LCDR Sharon L. Moser



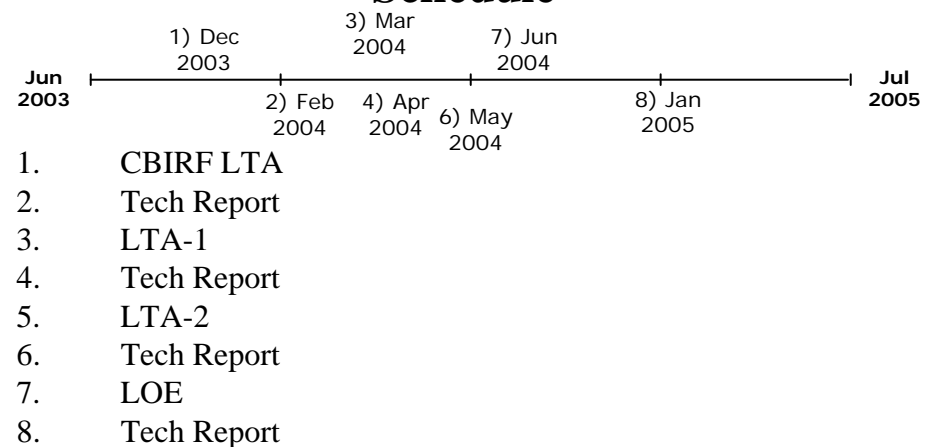
Specifications

- Exploitation of RF technology for casualty location, individual identification, and evacuation priority listing.
- Automates some of the existing casevac process to reduce processing time and increase accuracy.
- Creates historical record medical units providing treatment.

Plans & Status

- External Coordination: NAMRL, OP - 931, TMIP - J
- Issues / Challenges: TMIP - J schedule slippage; Lack of medical information architecture / standards; Frequency allocation
- Initial prototype trials at Fleet Hospital echelon completed as part of OIF.
- Expeditionary Medicine TTP development

Schedule





X-Files--After Action Reports

(Mr.Larry Adkinson)



Marine Corps Warfighting Laboratory

Millennium Dragon 02 (MD 02)



Experiment After Action Report

To improve Naval expeditionary warfighting capabilities across the spectrum of conflict for current and future operating forces.

30 July – 12 August 2002

Marine Corps Warfighting Laboratory

*Project Metropolis Tactical Warrior
Experiment: Phase Two
Guam, USA*



To improve Naval expeditionary warfighting capabilities across the spectrum of conflict for current and future operating forces.

Squad Advanced Marksman (SAM) Experiment After Action Report

January 2003



Tech Support to OIF



- **The Lab assigned role by CG MCCDC**
 - Coordinated S&T support from DARPA/ONR
 - Liaisons forward (*Steve Fisher and John Murray*)
 - Develop and lead the **Marine Corps IED Working Group**
 - Assess and **Evaluate Tech Proposals**
 - Prepare and Conduct Monthly Briefs to SecNav
- **Experimental Technologies made available for Operational Assessment in Iraq/Afghanistan**
 - **ProMet TTPs and Training Program**
 - Prototypes taken forward



IED Working Group



- **Responsibilities:**

- Integrates with Army
- Represents Marine Corps
- Coordinates with OSD TF
- Tracks new technologies
- Observes Yuma testing
- Coordinates with MEFs
- **Establishes requirements**
- **Sets funding priorities**

- **Milestones:**

- Established OIF jammer requirement
- Coordinated testing of **ICE** compared to **Warlock**
- Coordinated **OPAL** testing and operator training
- Coordinated receipt of **robots** for EOD

Initially one Major; grown to Colonel + seven
(With liaisons with Army TF and FBI)



Questions?