MARINE CORPS SYSTEMS COMMAND

EQUIPPING THE WARFIGHTER TO WIN

Expeditionary Warfare Conference

Marine Corps Systems Command Report to Industry

23 October 2007

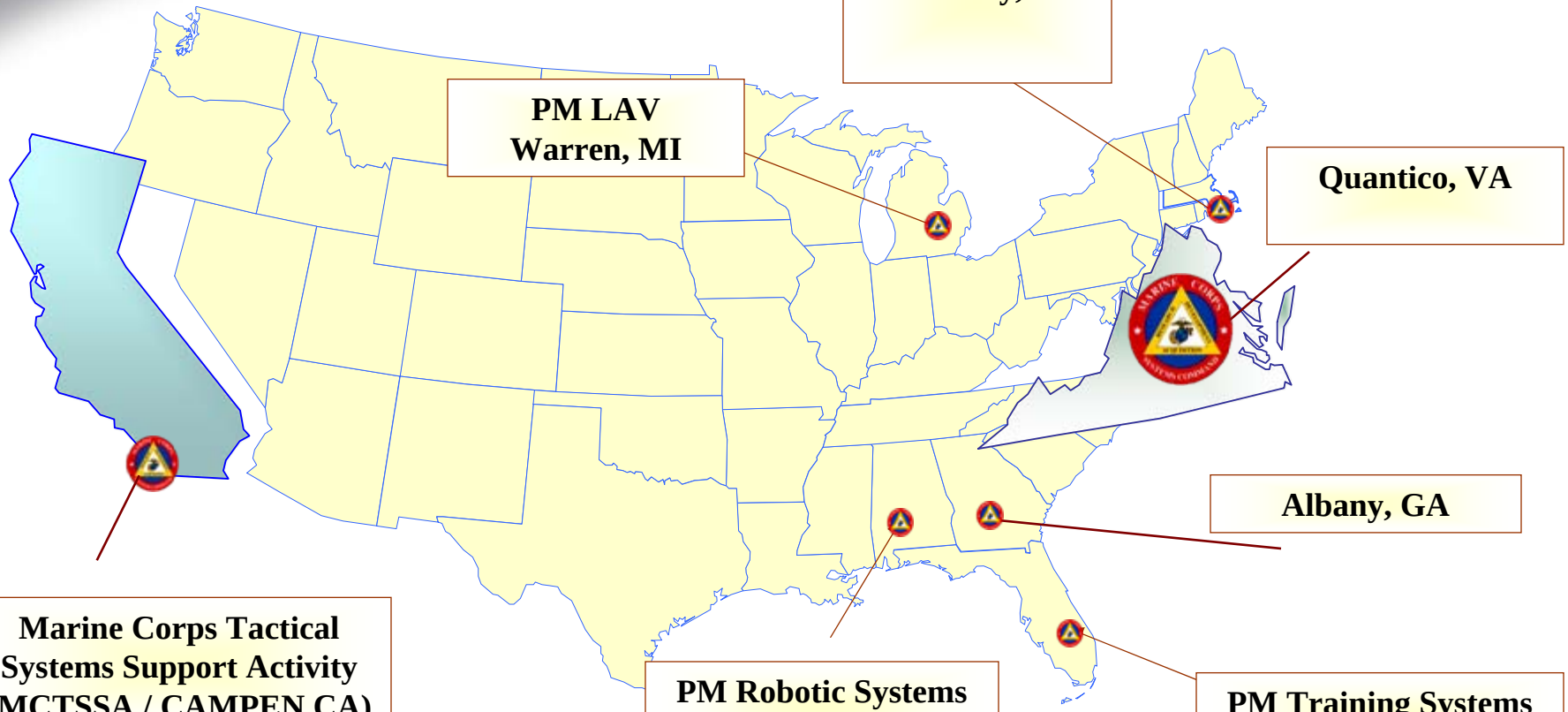
Brigadier General Michael M. Brogan
Marine Corps Systems Command

Mission

To serve as the Commandant's principal agent for acquisition and sustainment of systems and equipment used by the Operating Forces to accomplish their warfighting mission.

Workforce Principal Activities/Locations

Updated 12Sep07



Command Workforce*: 1670 – 607 Military / 1063 Civilian
**** Navy Interns Included***

Major Muscle Movements:

- Ongoing Combat Operations
- Grow-the-Force
- Reset-the-Force
- Modernization/Recapitalization

The Needs of the Force:

- Lighten the Load
- Wheeled Tactical Mobility
- Hearing Conservation
- C2 and Tactical Networks
- ISR

Credibility:

- Can you do it?

  Yes

- How long will it take?

  How long do you have?

- How much will it cost?

  How much do you have?

Accurate Portrayal of:

- Cost
- Schedule
- Performance
- Systems Engineering

Questions?

Back-up Slides

Major Muscle Movements:

- **Ongoing Combat Operations**
  - -Focus of Main Effort
  - -Joint Universal Operational Needs Statement
  - -Urgent Universal Needs Statements
  - -Reliance on Supplemental/GWOT Allowance
- **Grow- the- Force**
  - -Personnel
  - -Equipment
    - -More of the same
    - -New when it makes sense
  - -Facilities
    - -Motor Pools
    - -Offices
    - -Barracks
    - -Training Areas
- **Reset-the-force**
  - -Depot Repair
  - -Replace Worn

- **Modernization/Recapitalization**
  - -Amphibious/Forcible Entry Ops
  - -Force-in-Readiness
  - -Spectrum of Combat
  - -AFRICOM

Lighten-the-Load:

- **Personal Protective Equipment**
  - -Ergonic/Comfort
  - -Helmet
  - -Body Armor
    - Ballistic Penetration Protection
    - Blunt Force Trauma
    - Flexible
    - Heat Rejection/Retention

- **Transfer the Load**
  - -Mule
  - -DARPA Big Dog

- **Tactics, Techniques & Procedures**
  - -Distributed Operations (DO)
  - -Hunter Warrior
    - >Fused: I2, IR, UV, visible
    - >Through wall

- **Battery Commonality**

- **Systems Engineering/Integration**

  >Treat rifle squads as a system
  >Target Acquisition (Day/Night)
  >Target designation (white light, IR, and laser)
  >Helmet (protection, comm., SA, night vision)
  >CRADA (Team with us)
  >IRAD

Wheeled Tactical Mobility:

- **MRAP & MRAP II**
  - -Improved Protection
    - >Blast
    - >Acceleration
    - >Penetration
  - -**SIRALS**
    - >Seats: Best of Breed
    - >Power: 600 amps and up
    - >Armor Improvements
      - Under body
      - IED
      - RPG
- **MPC**

- **JLTV**
  - >Back to Milestone A
  - >Competitive Prototyping
  - >Challenging Requirements
    - -Survivability
    - -Weight
    - -Payload
  - >Technology Maturity
- **ITV (JORD)**
- **Competing Requirements**
  - Reduce weight/volume/fuel consumption
  - Increase survivability, payload, mobility
- **Survivability evaluation tools (models)**
- **Survivability Components/Subsystems**
  - -Seats
  - -Restraints
  - -Air Bags

Hearing Conservation: Protect the Force

- Sound Suppression/Noise Reduction
  - >Steady State
  - >Impulse
- Greater than 30 db reduction
- Compatible with helmets
- Allow Communication
- Reduce noise environment below OSHA mandated level of 86 db in high noise environments
  - >EFV
  - >Flight Deck
  - >Helicopters

C2 & Tactical Networks:

- Converge with Army C2 Systems-Joint (JROC Directed)
- Adaptive Self-Forming & Self-Healing Networks
- Find, Recognize, Authenticate and Enter/Connect
- Dynamic Network ID and Connection
- Disruption Intolerant
- Deal with
  - -Security policies
  - -Net Strength
  - -Bandwidth
  - -Comm pipe
  - -Wave forms
- C2 On-the-Move Access
- Combat ID/IFF
- COC to CAC2S to MAFTF C2
  - >Hardware
  - >Software
  - >Architecture
  - >Shelters (Power, Environment)

ISR:

- Real Time/Near Real Time Persistent Interoperable
- Open, Closed & Complex Terrain
- Actionable, Integrated, Distributed
- Sense through walls
- Detect
  - >People
  - >Explosives
  - >Chemical & Biological Agents
  - >Changes in Density
  - >Disturbed earth
- Decision Aids
- Forensic
- Difference between “sensing” and “making sense”
- Cultural mapping, threat behavior to correlate what is observed

Systems Engineering

- IMP/IMS

- SEMP/SEMS/SEDS
  - -Critical path
  - -Dependencies
  - -Predessor events

- Status/Metrics/MOEs

- Competition i.e. FOTS

- Requirements
  - -Analysis
  - -Allocation
  - -Tracibility

- Functional
  - -Analysis
  - -Allocation
    - +weight
    - +budget

- Risk Management
  - -Identification
  - -Mitigation
  - -Burn Down Plans

Wheeled Tactical Mobility;

MRAP & MRAP II – MPC, JLTV, ADM--MS “A” Competition Prototyping
understand what the human body can tolerate and design to provide that: shock, acceleration; ITV --beyond EFSS

Hearing Conservation:

Sound Suppression to protect against both impulse & steady state.
Beyond the 30 db we can get today with double (foam & maffs)
Hidden cost of ear injuries. Protect the force.

Lighten the Load:

•Call attention to NRC Summer Study –Need ingenuity get load down to 50-60 lbs

•PPE reduce weight & bulkiness while increasing protection and comfort of the helmet and body armor.

•Transfer the load - DARPA projects males/big dogs. What can be moved from shoulders & backs of Marines but still travel with and be available to them?

•New operating concepts like DO & Hunter warrior improved sensors that face I2, IR, UV exploit electromagnetic spectrum eliminate duplication in a single sight

•Get number of batteries in an infantry platoon from Mark Richter. Drive to one, power dense lightweight, rechargeable common battery.

•Stop treating Infantry Squad like a Christmas Tree on which we hang ornaments. Focus Systems Engineering on integrating his load. Why three aiming devices for white light, laser pointer and I.R.? Need one that does all three. Partner with MERS integration Lab CRADA.

C2 and Tactical Networks:

Converge with Army C2. Self-forming & healing networks, C2 on the move, combat ID/IFF progression from COC--CAC2S--MAGTF C2. All with increased demand for bandwidth, data storage, reach back and decision aids.

ISR:

ISR – Real-time and Near-Real-Time available to tactical units. Open closed and complex terrain provide actionable integrated intelligence (not just data) sense though walls detect presence of explosives & bio-chemical agents. Recognize disturbed earth changes in density (foam carbs)