

*2012*  
**ONR Naval  
S&T Partnership  
Conference & ASNE Expo**

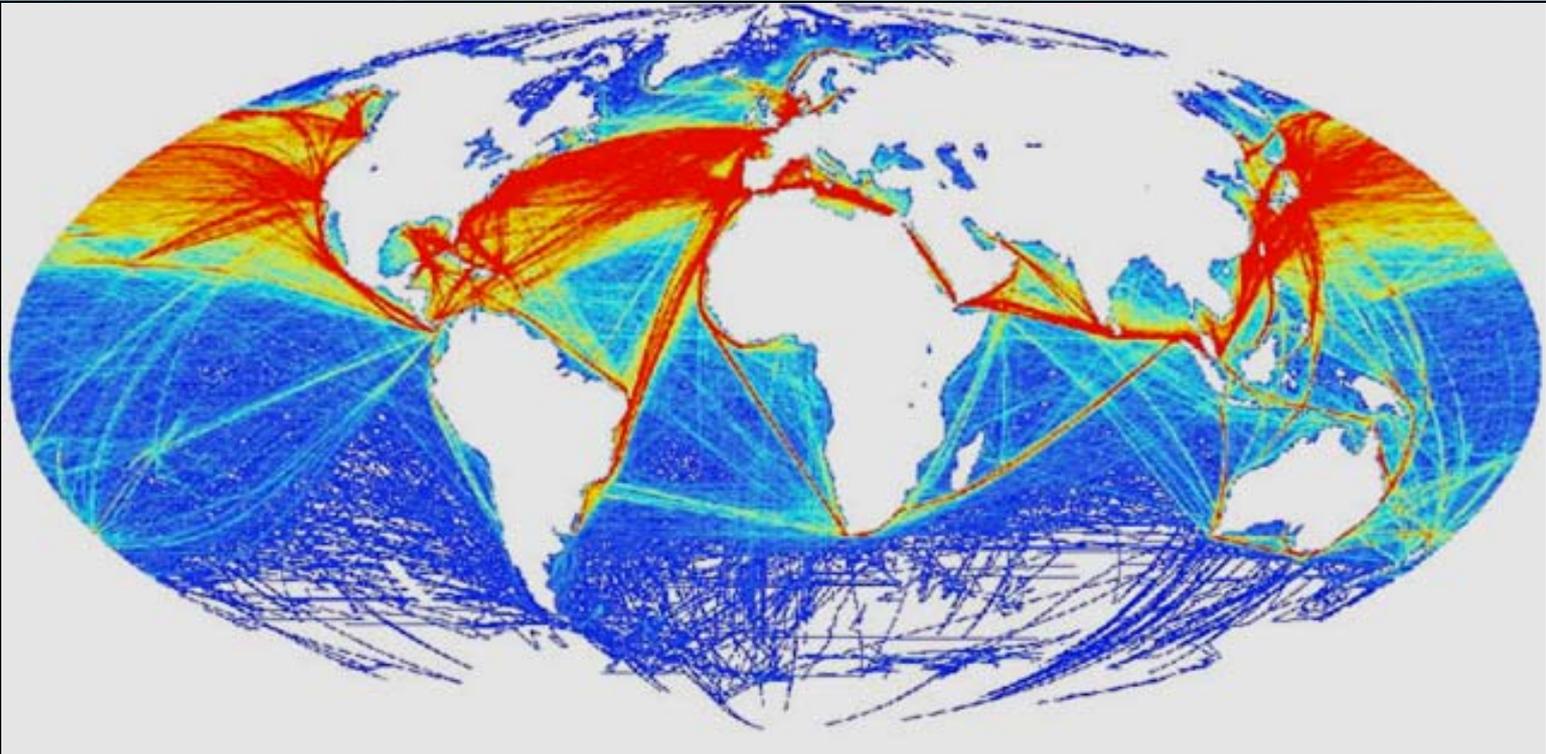
**Marine Corps  
Capability Development**

*Mitigating warfighting gaps through S&T*

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# Maritime Nation--Global Dependencies



- 75% of people live w/in 200mi of a coastline
- 70% of surface is water
- 95% of international comms travel via underwater cables

- 30,000 ships are underway daily carrying 93% of the world's international commerce
- 49% of the world's oil travels through 6 major chokepoints

# Future Operational Environment



Wars Amongst the People



Hybrid Threat Capabilities



Complex Terrain



Information Environment



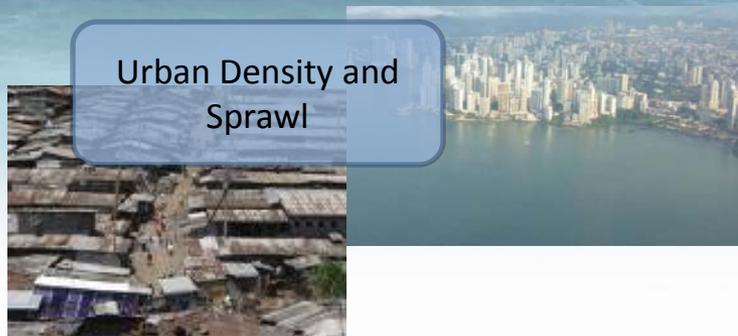
# Trends –



## The future establishes the requirement....



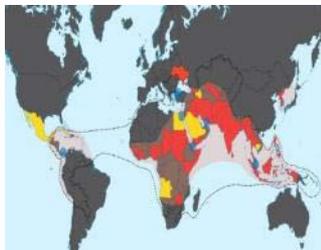
Demographic  
Dichotomy



Urban Density and  
Sprawl



Growing Resource  
Scarcity



Uneven Prosperity



Economic/Global  
Power  
Shift Toward Asia



Character and Conduct of  
Warfare  
Continue to Blur

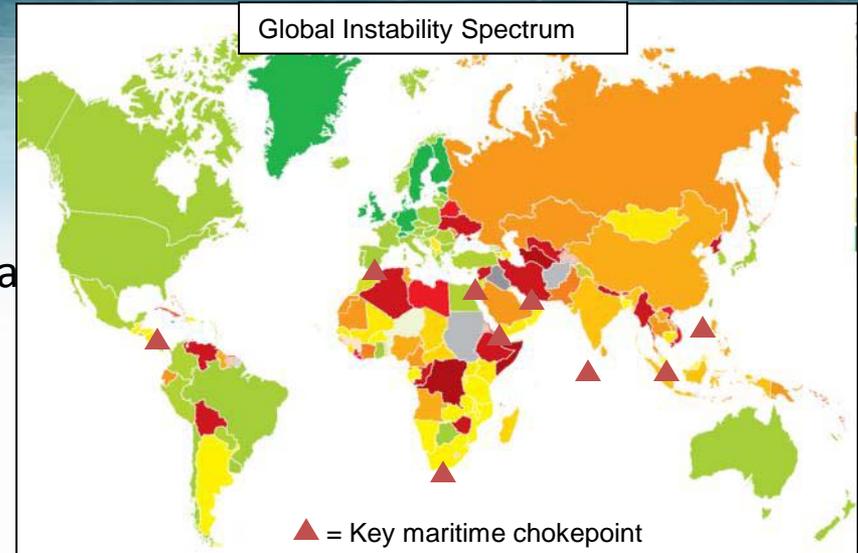
Struggle for Sovereign  
Legitimacy



# Crisis Response



- Events rarely evolve in exactly the way we expect...*plans are good, flexibility is necessary*
- Instability accompanies changes in the global order, threatens interests directly...and all Americans indirectly
- The Joint force plans for the things we can anticipate...*the enemy gets a vote*
- Expands nation's ability beyond kinetic strike – into the 'human domain'
- The nation's ability to intervene rapidly from the sea.. "*most ready when the nation is least ready.*"
- Tactical deterrence, crisis-containment, situation development and decision-making
- *Respond to today's crisis, with today's force, today*





# Marine Corps Force Development System

- Marine Corps Force Development System (MCFDS)
  - Core, deliberate force development process for the Marine Corps
  - Coordinated process that includes:
    - Providing capabilities development guidance
    - Conducting integrated capability planning and programming
    - Implementing solutions, and assessing implementation effectiveness
- Integrated Capabilities Planning
  - Documented within the Marine Corps Enterprise Integration Plan (MCEIP)
    - Wargame
    - Capabilities Analysis
    - Gap Analysis
    - Solutions Analysis
    - Capability Investment Plan and Risk Assessment



# Gap and Solutions Analysis

- Gap Analysis (April – June annually)
  - Gaps and shortfalls in capability identified from the annual CBA Wargame; aligned to the Marine Corps Capabilities List (MCCL)
  - Analysis concludes with a prioritized Marine Corps Gap List (MCGL) reflective of both the Operating Forces and Headquarters Supporting Activities
- Solutions Analysis (July – September annually)
  - Examines capability gaps (MCGL) across the DOTMLPF framework to develop solution strategies to mitigate gaps
  - Each solution strategy is supported by a set of actions and responsible organizations that lays out the roadmap for implementing the identified solutions
  - Solution strategies and tasks are documented in the Marine Corps Solutions Planning Directive (MCSPD)



# POM-15 MCGL

- Advocates and Supporting Establishment/Headquarters identified gaps in Marine Corps capabilities
  - Inability to achieve a Task to Standard under a given set of Conditions
  - Ex. Proficiency, sufficiency, lack of existing capability, need for replacement, policy limitations

Joint Capability Area	# Gaps
1. Force Support	20
2. Battlespace Awareness	24
3. Force Application	45
4. Logistics	36
5. Command & Control	44
6. Net-Centric	43
7. Force Protection	14
8. Building Partnerships	4
9. Corporate Mgmt & Support	7

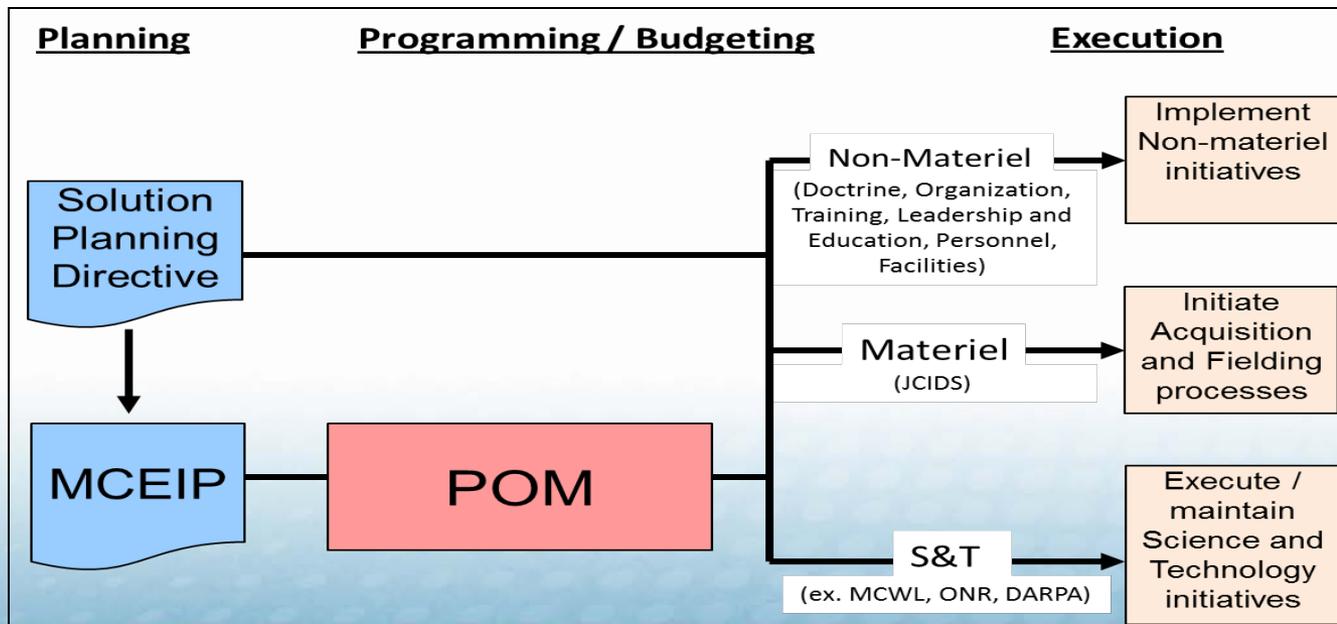
MCGL Top 10

Gap Rank	Gap ID	Gap Title	Operational Risk	MC Capability
1	15-3.1-G3	Provide surface assault lift during amphibious maneuver	High	3.1 Maneuver Forces
2	15-3.1-G1	Standoff explosive hazard detection	High	3.1 Maneuver Forces
3	15-3.2-G10	Electronic Attack	Medium	3.2 Engage Targets
4	15-3.2-G8	EW Services Architecture	Medium	3.2 Engage Targets
5	15-3.2-G7	EWCC Structure	Medium	3.2 Engage Targets
6	15-3.2-G5	EW Training	Medium	3.2 Engage Targets
7	15-1.3.2-G1	Personnel Readiness	Medium	1.3 Human Capital Management
8	15-5.3-G3	Electronic Surveillance	Medium	5.3 Conduct Planning
9	15-3.1-G4	Conduct clandestine and overt maneuver of recon elements	Medium	3.1 Maneuver Forces
10	15-7.1.2.1.4-G1	EW Force Protection	Medium	7.1 Prevent Attack



# Solutions Implementation

- Fully integrated solutions are identified, fielded, and transitioned to the Operating Forces and Supporting Establishment
  - Materiel and non-materiel solutions are identified in the MCSPD and recommended for investment via the MCEIP
  - S&T initiatives incorporated into the S&T Strategic Plan (MCWL)





# Example:

## Standoff Explosive Hazard Detection

Importance to warfighter - #2 on POM-15 MCGL

- Consistently high operational risk due to inability to detect explosive hazards to quickly identify the safe stand-off requirement while on the maneuver 100% of the time

Current warfighting requirements

- Maneuver elements require the ability to quickly detect and identify the Net Explosive Weight (NEW) in order to classify the Explosive Obstacle (EO) to determine the critical safe stand-off

Ongoing ONR project

- IDD 2.0 Field Conditioning for Operational Use. Development and testing of physical conditioning protocols to ensure that IED Detector Dogs remain effective for standoff detection of explosives and explosive precursors



# Example:

## Clandestine/Overt Maneuver of Recon

Importance to warfighter - #9 on POM-15 MCGL

- Recon battalions lack clandestine amphibious connectors and infiltration systems which degrades their ability to maneuver to gain access to a medium to high threat environment

Current warfighting requirements

- Enables assigned elements to gain access to the environment and maintain maneuver, conduct specialized forms of maneuver in support of ground recon operations, and execute the mission without detection

Ongoing ONR project

- Design and integration of advanced camouflage technologies onto a USMC ground vehicle in order to reduce probability of detection



# Example: Intelligence Collection

Importance to warfighter - #13 on POM-15 MCGL

- Limited ability to establish persistent all-source collection against targets operating in complex terrain

Current warfighting requirements

- USMC must be able to collect against targets using cover, concealment, camouflage, and deception while operating from the sea base

Ongoing ONR project

- Autonomous Information-Based Surveillance Control. Differentiates between the value of information derived from mission tracks in order to inform collection planning and management functions
- Compact Wide Area Reconnaissance and Spectral Sensor (CWARSS) provides robust autonomous detection of HME, hidden target, camouflage, and taggants which results in actionable intelligence from the sensor to the warfighter



# Implications of an Urbanized Future

- Enhanced situational awareness & persistent surveillance
  - Track Friendly
  - Track Enemy
- Influence Enemy & Neutrals
  - Information Ops
  - EM (incl. cyber) dominance
- Compel Enemy & Neutrals
  - Lethal & Non-lethal
- Possible Solution Sets
  - Biological & technological enhancements
    - Cognitive
    - Physical
  - Robotics, unmanned, & autonomous