Capability Needs Near and Far

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What are we hearing about the next war?

<table>
<thead>
<tr>
<th>The Faulty Narrative</th>
<th>The Reality</th>
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<tbody>
<tr>
<td><strong>Easy War</strong></td>
<td><strong>War is Complex</strong></td>
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<tr>
<td>• Leverage advanced technology and precision-guided munitions from Air and Sea to neutralize or compel adversary</td>
<td>• Ignores lessons from past (WWII, Vietnam, Kosovo, Post DS/DS, OIF, OEF)</td>
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<td>• Avoid costly commitment of ground forces and loss of life – “no more ground combat”</td>
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<tr>
<td>• Maintain global commons (economy) and achieve National Security through deterrence, coercion, and punitive/preemptive strikes</td>
<td>• Strike alone not decisive – best maintains status quo (instability), worst escalates situation</td>
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<td>• Cheap, quick, bloodless</td>
<td>• Unrealistic Operational Environment</td>
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<td></td>
<td>• Collateral damage and impact on populace (negative media)</td>
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<td>• No shaping before or stability after</td>
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“Every attempt to make war easy and safe will result in humiliation and disaster.”

**General T. Sherman**

“Look askance at idealized, triumphalist, or ethnocentric notions of future conflict that aspire to upend the immutable principles of war: where the enemy is killed, but our troops and innocent civilians are spared. Where adversaries can be cowed, shocked, or awed into submission, instead of being tracked down, hilltop by hilltop, house by house, block by bloody block.”

**SECDEF Robert Gates, National Defense University (NDU), 29 SEP 2008**
The Complex Environment

**Essential Elements of the Complex Environment**

- A multitude of Independent Actors with No Central Control.
- Sometimes a strategy – with strategic lever to deny US freedom
- Threat, Malicious, and Neutral/Friendly Actors - variable
- Technology Enables Effective Action – Violent and Nonviolent – and Rapid Adaptation
- Lack of Governance or Rule of Law

**Ends**

- Wealth
- Resources
- Political authority
- Influence
- Sovereignty
- Identity
- Legitimacy

**Ways**

- Competition
- Cooperation
- Conflict

**Means**

- Attack the “will”
- Complexity – Chaotic Conditions – Anti-access
- Asymmetry

**Characteristics**

**Lethal**

- Well Armed
- Technology Proliferates to Many
- Non-linear Relationship between Economic and Military Power

**Durable**

- Victory Ill Defined
- Blurred Transitions, e.g. Conflict to Post Conflict
- Unexpected Friction

**Asymmetric**

- Sidestep US Preferred “Way of War” (Lever)
- Deny ISR & Strike Options
- Exploit Cyber
- Unforeseen Effects from Actions

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FY14 and Beyond Warfighter Needs

NEAR TERM

- Replicate complex operational environments
- On-demand virtual training and rehearsal
- Virtual human (combatants, non-combatants, personal)

- Standard and shareable geospatial data
- Highly mobile and scalable Command Post
- Dismounted mission command away from vehicles

- Standoff CBRN/Explosive detection
- Standoff CBRN/Explosive mitigation

- Lightweight, improved vehicle protection
- Scalable soldier power solutions (72 hours)
- Enemy detection (buildings/underground)

- Extended range precision fires (>220 KM)

- Control non-compressible bleeding
- Rapid characterizations of pathogens

- Standoff and reliable personnel identification
FY14 and Beyond Warfighter Needs

**FAR TERM**

- **Training**
  - Adaptable, learner-centric, networked tactical trainer
  - Rapid capability for synchronized live training

- **Mission Command**
  - Airspace control in unified actions
  - Location and navigation in complex environments

- **Protection**
  - Standoff route clearance and threat detection
  - Enhanced situational enemy awareness and enemy capabilities

- **Maneuver**
  - Detect, recognize, and identify targets for lethality overmatch
  - Acquire and identify targets beyond enemy direct fire ranges

- **Fires**
  - “Electric fires”

- **Sustainment**
  - Rapidly and inexpensively construct permanent and expeditionary facilities
  - Rapidly assess, upgrade, establish airports and seaports of debarkation

- **Intelligence**
  - Near real-time data processing and exploitation
  - Fully integrated human terrain planning tools

**Deep Futures:**
- **Advanced Materials** – “bullet proof soda can”
- **Biological Sciences** – human performance enhancement
- **Quantum Computing** – hyper speed processing
Technological “Wildcards” that could alter the Gaps

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<tr>
<td>• 8Hz Thermobarics</td>
<td>• EMP</td>
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<td>• 4th Generation Chem Weapons</td>
<td>• Robotics</td>
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<td>• Nano-Materials</td>
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<td>• Slingatron</td>
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<td>Against Brains and Hearts</td>
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<td>• THz Weaponry</td>
<td>• Low Energy Nuclear Reaction</td>
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Questions?