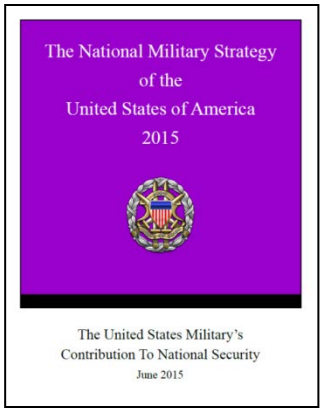
Global EOD Symposium

28 July 2015

Mr. Tom Dee
DASN ELM
Thomas.dee@navy.mil
Pentagon 4C746

Unclassified

The Asymmetric Threat

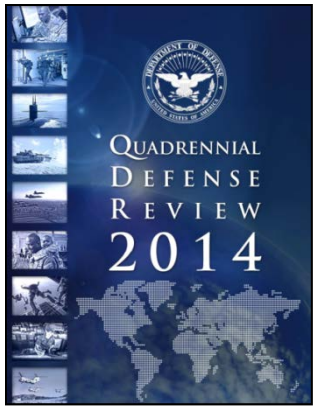


"Today's global security environment is the most unpredictable I have seen in 40 years of service. Since the last National Military Strategy was published in 2011, global disorder has significantly increased while some of our comparative military advantage has begun to erode. We now face multiple, simultaneous security challenges from traditional state actors and transregional networks of sub-state groups – all taking advantage of rapid technological change. Future conflicts will come more rapidly, last longer, and take place on a much more technically challenging battlefield. They will have increasing implications to the U.S. homeland."

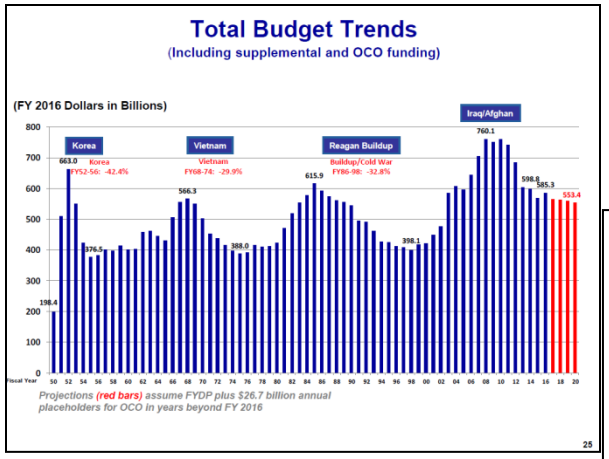
Gen Martin Dempsey, CJCS

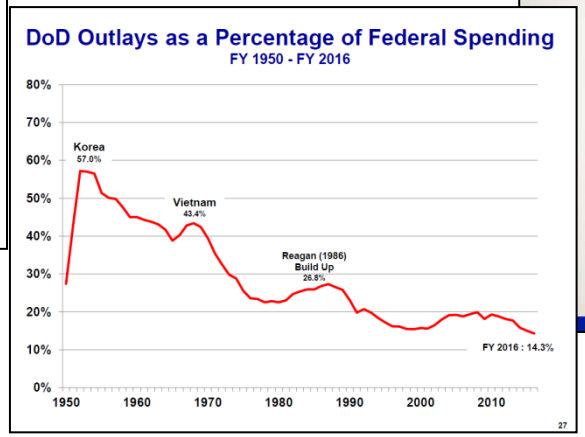
"As the United States completes its transition in Afghanistan and looks to the future, the international security environment remains uncertain and complicated. The United States will likely face a broad array of threats and opportunities and must prepare to address both effectively in the coming years... At the same time, the technology-enabled 21st century operational environment offers new tools for state and non-state adversaries such as terrorists to pursue asymmetric approaches, exploiting where we are weakest. In the coming years, countries such as China will continue seeking to counter U.S. strengths using anti-access and area-denial (A2/AD) approaches and by employing other new cyber and space control technologies."

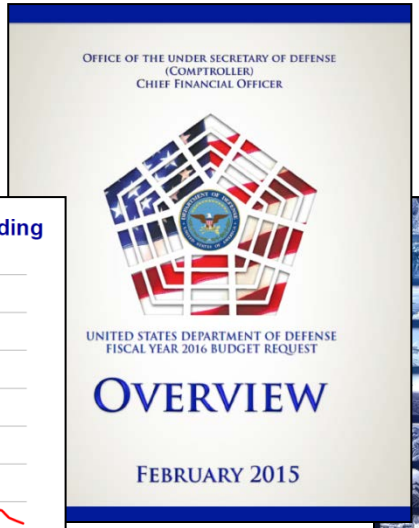
2014 QDR, 4 Mar 2014



FY16 DoD Budget Request





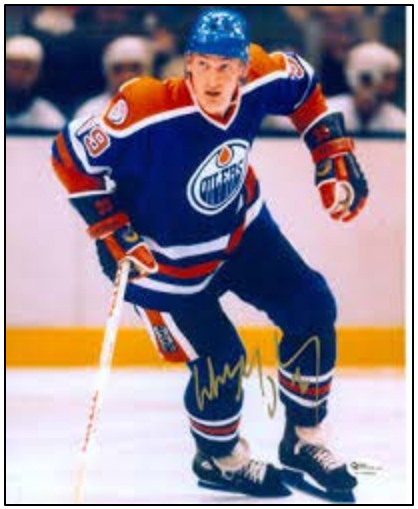


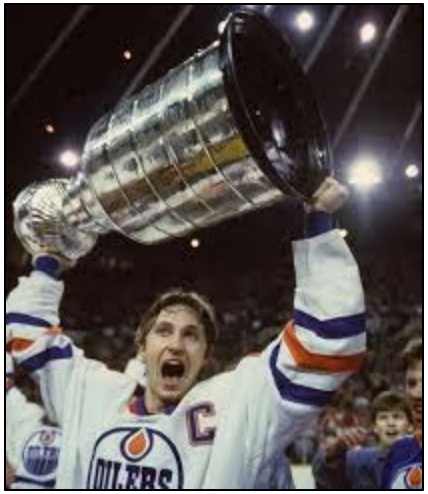
Rebalancing for a broad spectrum of conflict.

Future conflicts could range from hybrid contingencies against non-state actors to high-end conflicts against states armed with weapons of mass destruction and/or advanced anti-access and area-denial capabilities. To address this diverse range of challenges, the U.S. military will broaden its capabilities to the full spectrum of possible operations. While preserving hard-won expertise in counterinsurgency and stability operations, the Joint Force must also be prepared to battle sophisticated adversaries employing advanced warfighting capabilities, to include space and cyber capabilities. The Department will sustain robust investments in science, technology, research, and development in areas most critical to meeting future challenges or where there is greatest potential for game-changing advances.

Envisioning the Future

"A good hockey player plays where the puck is. A great hockey player plays where the puck is going to be."
Wayne Gretzky

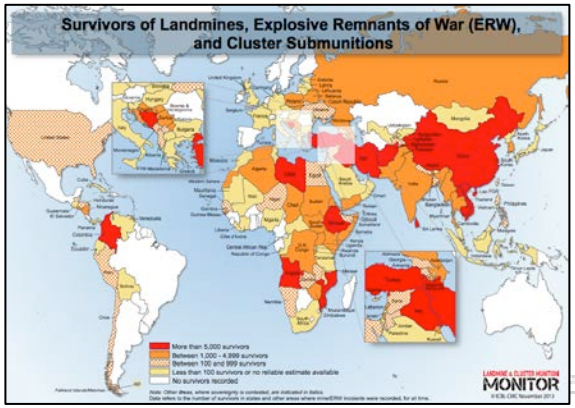


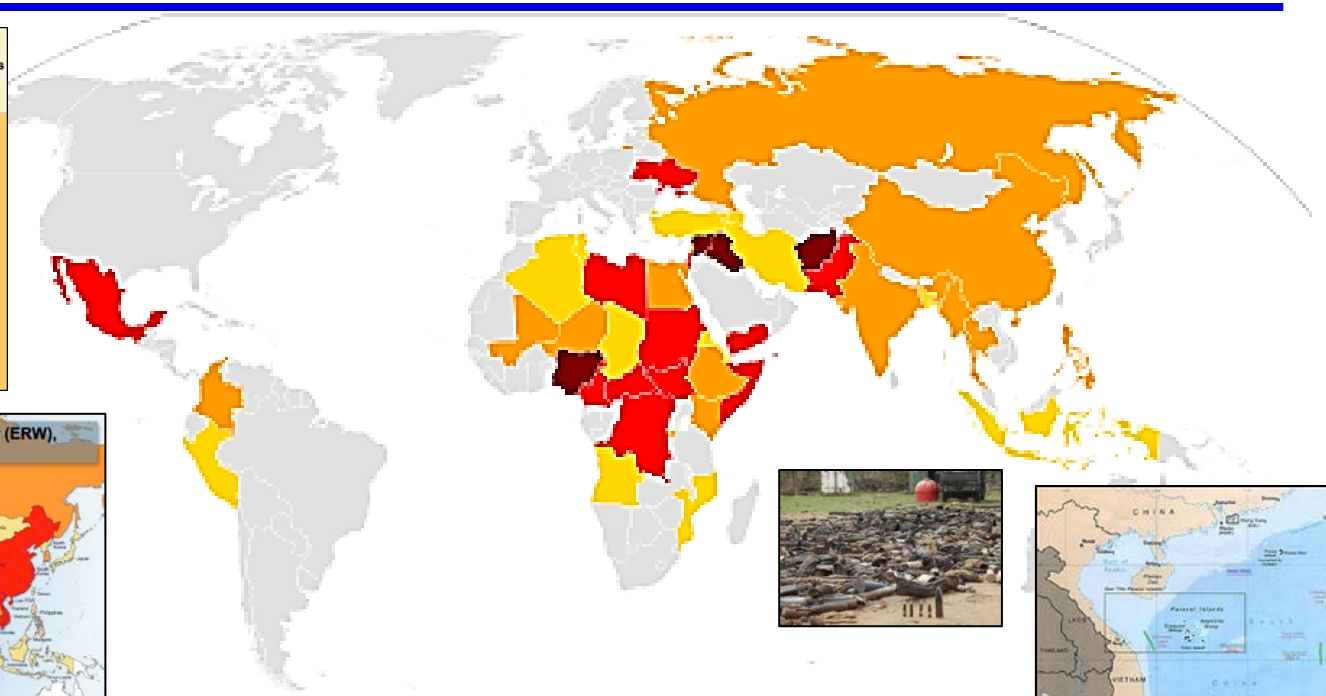


So… Where will be playing in the future?

**It's not a game plan; it's an instinct –
Embedded in our culture…**

The World is a Messy Place…



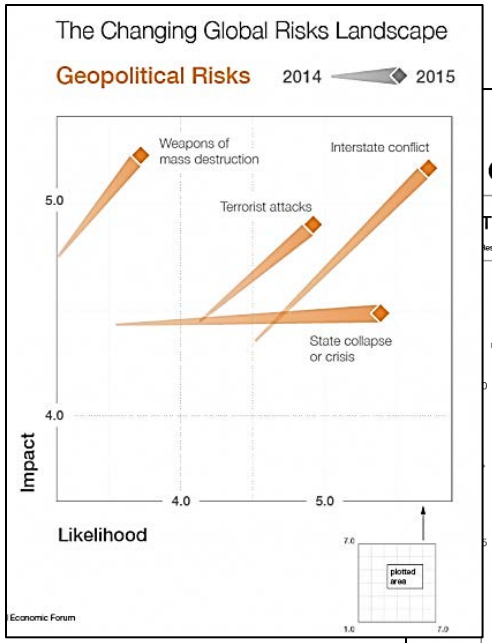


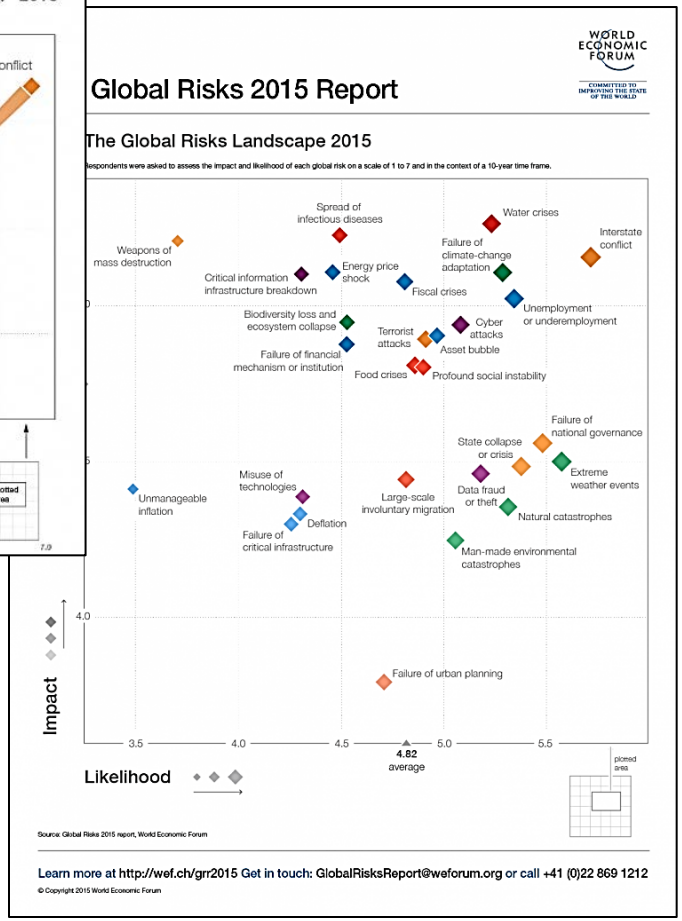
Locations of ongoing conflicts worldwide, May 2015

Major wars, 10,000+ deaths in current or past years
Wars, 1,000–9,999 deaths in current or past year
Minor conflicts, 100-999 deaths in current or past year
Skirmishes and clashes, fewer than 100 deaths in current or past year

From setting global norms to defeating terrorist threats and providing humanitarian assistance, the United States collaborates with allies and partners to accomplish a wide range of strategic, operational, and tactical goals. **2014 QDR**

World Economic Forum Global Risk Assessment



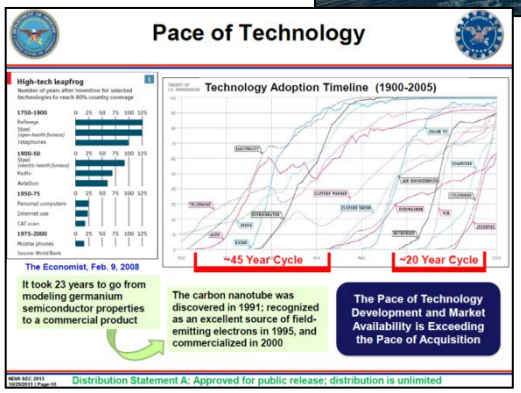


Overarching "Constellations"

Interplay between geopolitics and economics: *The interconnections between geopolitics and economics are intensifying because states are making greater use of economic tools, from regional integration and trade treaties to protectionist policies and cross-border investments, to establish relative geopolitical power. This threatens to undermine the logic of global economic cooperation and potentially the entire international rule-based system.*

Governance of emerging technologies: *The pace of technological change is faster than ever. Disciplines such as synthetic biology and artificial intelligence are creating new fundamental capabilities… At the same time, they present hard-to-foresee risks. Oversight mechanisms need to more effectively balance likely benefits and commercial demands with a deeper consideration of ethical questions and medium to long-term risks.*

Strategic Trends and Operational Environment

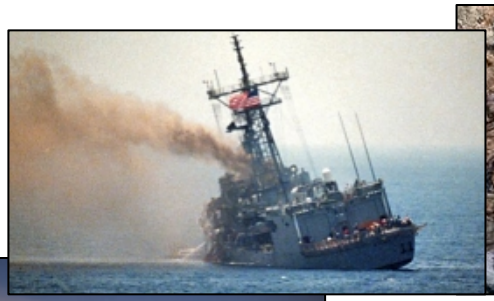


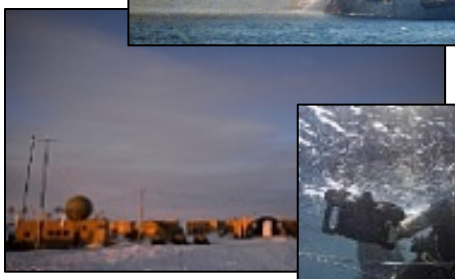
- ***Operational issues will be more complex***
  - Need to support multiple mission needs
  - A2/AD
  - Violent Extremism
  - Territorial Disputes
- ***U.S. military forces will be rebalanced.***
  - Rising importance of Asia/Pacific
- ***Pressure for reductions in federal budgets***
  - will continue to increase; therefore, DoD cannot afford to acquire capabilities exceeding military needs.
- ***Unmanned technologies***
  - will continue to improve in many different capability areas.
  - enemy systems will complicate operations
- ***Cyber domain***
  - will be a conflict environment as readily as land, sea, or air and space.
- ***Pace of technology change***
  - Commercialization, information agility, collaboration

Adaptable, Expeditionary Forces To Meet An Unknown Future

The Threat

- **The Explosive Device itself:**
  - **Conventional**
  - **Improvised**
  - **Chem / Bio / Nuclear**
- **Supporting technologies**
  - **The “kill chain”**
- **The Environment**
  - **Physical**
    - **Land / Sea / Air / Underwater**
    - **Desert / Jungle / Arctic**
    - **Urban / Remote**
  - **Cultural**
    - **Sensitive ?**
  - **Political**
    - **Economic**
- **Tactical**
  - **Permissive / Semi- / Non-permissive**
    - **The full range of military ops (ROMO)**
  - **Enemy TTP**





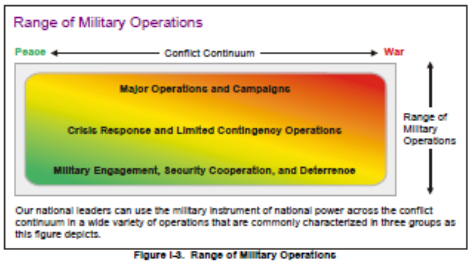


Figure I-3. Range of Military Operations

It’s more than the OOB

An Ounce of Prevention

4/29/2014 Iraq awash in military weapons - CSMonitor.com

The Christian Science Monitor - CSMonitor.com

Iraq awash in military weapons

An attack on a US convoy Sunday highlights concern over Iraq's 50 unsecured arms depots.

By Dan Murphy, Special to The Christian Science Monitor / October 20, 2003 at 12:10 pm EDT

KARBALA, IRAQ

A roadside attack on US military convoy Sunday in Fallujah, Iraq left an American armored car and munitions truck burning wrecks. No one was reported killed, but some Iraqis nearby were cheering.

The Fallujah attack typifies one of an emerging series of threats apparent since September due to the wide availability of guns and military ordnance here. The result has been a steady supply of explosives to use against coalition soldiers, more Iraqi vigilante justice, and a rise in local militia groups.

One coalition official says that up to 50 major weapons sites across Iraq with bombs, ammunition, and rifles in them are improperly secured and have probably served as a source for the home-made bombs - improvised explosive devices (IEDs) in military parlance - that have become the single biggest security threat to the coalition.

New militias are also being spawned across the country and are increasingly coming into conflict either with the coalition or with other Iraqis.

The most visible militias in recent weeks have been ones aligned to extremist Shiite clerics. Shiite Muslims make up about 60 percent of Iraq's people, and were literally second-class citizens in Saddam Hussein's Iraq. At least seven coalition soldiers - 5 of them Americans - have been killed in clashes with these militias this month.

The availability of weapons to ordinary Iraqis, not just militias, is also a concern. In May, Paul Bremer, the top coalition official here, decided to allow Iraqis to keep AK-47s, with the stipulation that they confine them to their home. But that provision has proven almost impossible to enforce, and gun-toting toughs are now a regular feature on the streets of most of Iraq's cities.

"In my opinion, we'd be a lot better off if we didn't let people keep AK-47s in their homes," says Gen. Kadhem Abdul Khalik, the chief of police for Al-Risafa district, which encompasses about half of Baghdad. "Under the old regime, there were a lot fewer guns in private hands, and that made our job easier and safer."

http://www.csmonitor.com/layout/set/print/2003/1020/p01s04-wosq.html 1/3

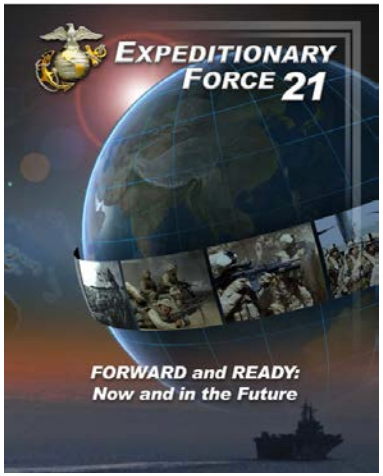
Iraq 2003

Some observers speculate that much of the munitions for constructing IEDs in Iraq may have come from large Iraqi military ordnance deposits looted by insurgents, or from stockpiles scattered in secret locations throughout that country before the war.

CRS Report for Congress RS 22330 Aug 2007

- **Integration into the Joint Force?**
- **Joint Exercises and Doctrine?**
- **Operational Planning?**
- **Threat assessments?**
- **TECHINT ?**

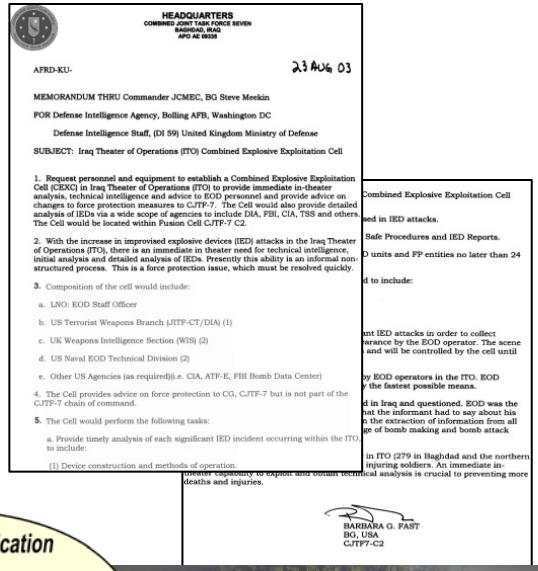
Initiative, Innovation, Expeditionary Culture



USMC
Expeditionary Force 21,
Mar 2014

The expeditionary mind-set is… derived from discipline, training, and an overwhelming need to accomplish the mission regardless of the situation. An expeditionary force is built on several key principles:

- *Solving problems with minimal support and broad guidance…*



HEADQUARTERS
COMBINED JOINT TASK FORCE SEVEN
BAGHDAD, IRAQ
APO AE 09335

AFRD-KU- 23 AUG 03

MEMORANDUM THRU Commander JCMEC, BG Steve Meekin

FOR Defense Intelligence Agency, Bolling AFB, Washington DC

Defense Intelligence Staff, (DI 59) United Kingdom Ministry of Defense

SUBJECT: Iraq Theater of Operations (ITO) Combined Explosive Exploitation Cell

1. Request personnel and equipment to establish a Combined Explosive Exploitation Cell (CEXC) in Iraq Theater of Operations (ITO) to provide immediate in-theater analysis, technical intelligence and advice to EOD personnel and provide advice on changes to force protection measures to CJTF-7. The Cell would also provide detailed analysis of IEDs via a wide scope of agencies to include DIA, FBI, CIA, TSS and others. The Cell would be located within Fusion Cell CJTF-7 C2.

2. With the increase in improvised explosive devices (IED) attacks in the Iraq Theater of Operations (ITO), there is an immediate in theater need for technical intelligence, initial analysis and detailed analysis of IEDs. Presently this ability is an informal non-structured process. This is a force protection issue, which must be resolved quickly.

3. Composition of the cell would include:

a. LNO: EOD Staff Officer

b. US Terrorist Weapons Branch (JITF-CT/DIA) (1)

c. UK Weapons Intelligence Section (WIS) (2)

d. US Naval EOD Technical Division (2)

e. Other US Agencies (as required)(i.e. CIA, ATF-E, FBI Bomb Data Center)

4. The Cell provides advice on force protection to CG, CJTF-7 but is not part of the CJTF-7 chain of command.

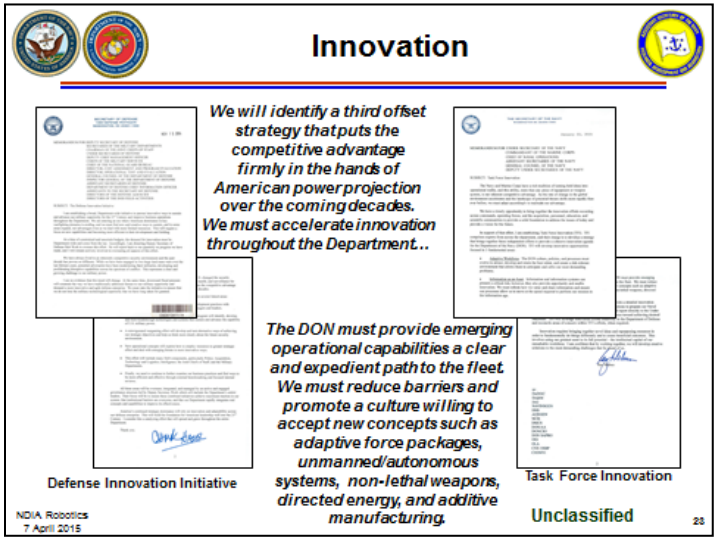
5. The Cell would perform the following tasks:

a. Provide timely analysis of each significant IED incident occurring within the ITO, to include:

(1) Device construction and methods of operation.

deaths and injuries.

BARBARA G. FAST
BG, USA
CJTF7-C2



"Ordnance Identification Lab"
60A-1-1-7
STILO
FMA / FME
JCMEC
In-Country Exploitation Team

"CEXC" Combined Explotation Cell

- **Expeditionary "Knowledge Workers"**
- **Agile and resilient**
- **Global reachback**

Unclassified

And Relationships…

Operators – Acquisition – Intel – Requirements – Resources - Technology

Unclassified

We're here to help…

114TH CONGRESS 1st Session | HOUSE OF REPRESENTATIVES | REPORT 114–102

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2016

REPORT

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ON

H.R. 1735

together with

DISSENTING VIEWS

[Including cost estimate of the Congressional Budget Office]

MAY 5, 2015.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Better Buying Power 3.0

Achieving Dominant Capabilities through Technical Excellence and Innovation

Achieve Affordable Programs
- Continue to set and enforce affordability caps

Achieve Dominant Capabilities While Controlling Lifecycle Costs
- Strengthen and expand "should cost" based cost management
- Anticipate and plan for responsive and emerging threats by building stronger partnerships of acquisition, requirements and intelligence communities
- Institutionalize stronger DoD level Long Range R&D Program Plans
- Strengthen cybersecurity throughout the product lifecycle

Incentivize Productivity in Industry and Government
- Align profitability more tightly with Department goals
- Employ appropriate contract types, but increase the use of incentive type contracts
- Expand the superior supplier incentive program
- Ensure effective use of Performance-Based Logistics
- Remove barriers to commercial technology utilization
- Improve the return on investment in DoD laboratories
- Increase the productivity of corporate IRAD

Incentivize Innovation in Industry and Government
- Increase the use of prototyping and experimentation
- Emphasize technology insertion and refresh in program planning
- Use Modular Open Systems Architecture to stimulate innovation
- Increase the return on and access to small business research and development
- Provide draft technical requirements to industry early and involve industry in funded concept definition
- Provide clear and objective "best value" definitions to industry

Eliminate Unproductive Processes and Bureaucracy
- Emphasize acquisition chain of command responsibility, authority and accountability
- Reduce cycle times while ensuring sound investments
- Streamline documentation requirements and staff reviews
- Remove unproductive requirements imposed on industry

Promote Effective Competition
- Create and maintain competitive environments
- Improve DoD outreach for technology and products from global markets
- Increase small business participation, including more effective use of market research

Improve Tradecraft in Acquisition of Services
- Strengthen contract management outside the normal acquisition chain – installations, etc.
- Improve requirements definition for services
- Improve the effectiveness and productivity of contracted engineering and technical services

Improve the Professionalism of the Total Acquisition Workforce
- Establish higher standards for key leadership positions
- Establish stronger professional qualification requirements for all acquisition specialties
- Strengthen organic engineering capabilities
- Ensure development program leadership is technically qualified to manage R&D activities
- Improve our leaders' ability to understand and mitigate technical risk
- Increase DoD support for STEM education

Continue Strengthening Our Culture of:
Cost Consciousness, Professionalism, and Technical Excellence

OFFICE OF THE UNDER SECRETARY OF DEFENSE
(COMPTROLLER)
CHIEF FINANCIAL OFFICER

UNITED STATES DEPARTMENT OF DEFENSE
FISCAL YEAR 2016 BUDGET REQUEST

OVERVIEW

FEBRUARY 2015

Open, Honest, and Complete Communication Across all Levels

Balancing Capability, Capacity, & Readiness

UNDER SECRETARY OF D
3010 DEFENSE PENTAG
WASHINGTON, DC 20301

ACQUISITION, TECHNOLOGY, AND LOGISTICS

MEMORANDUM FOR SECRETARIES OF THE MILIT
DEPUTY CHIEF MANAGEME
DEPARTMENT OF DEFENSE
DIRECTORS OF THE DEFENS
AT&L DIRECT REPORTS

SUBJECT: Implementation Directive for Better Buying
Capabilities through Technical Excellence a

Almost five years ago, then-Under Secretary Carter and I launched the first iteration of what we called Better Buying Power. Today I am issuing the attached implementing instructions for Better Buying Power 3.0. This iteration of Better Buying Power is the next step in our continuing effort to increase the productivity, efficiency, and effectiveness of the Department of Defense's many acquisition, technology, and logistics efforts.

There is more continuity than change in Better Buying Power 3.0. Core initiatives focus on: ensuring that the programs we pursue are affordable, mandating that our managers identify and pursue "should cost" savings opportunities, providing effective incentives to industry, emphasizing competition, reducing bureaucracy, improving our acquisition of contracted services, and building our professionalism. We will continue all of these efforts.

New in Better Buying Power 3.0 is a stronger emphasis on innovation, technical excellence, and the quality of our products. The technological superiority of the United States is now being challenged by potential adversaries in ways not seen since the Cold War. Efficiency and productivity are always important, but the military capability that we provide to our Warfighters is paramount. Our operational effectiveness is based on the quality of our people and the quality of our products. The former is not in doubt; the latter depends on our efforts and on those of the industrial base. We will continue our work to improve productivity and efficiency, but we must also turn our attention increasingly to our ability to innovate, achieve technical excellence, and field dominant military capabilities.

Frank Kendall

Attachment:
As stated

Better Buying Power 3.0

Achieving Dominant Capabilities through Technical Excellence and Innovation

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Continue Strengthening Our Culture of:
Cost Consciousness, Professionalism, and Technical Excellence

ASN RDA Imperatives

- Get the Requirements Right
- Make Every Dollar Count
- Perform to Plan
- Mind a Healthy Industrial base
- Rebuild our Acquisition Workforce

Honorable Sean Stackley
ASN RDA

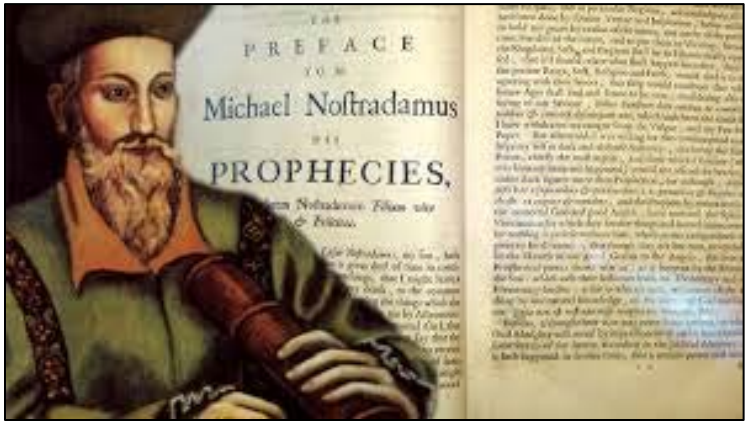
We have equipped the Navy and Marine Corps with the most capable warfare systems in the world… The issue is affordability – acquisition costs are rising faster than our topline. Simply put, without deliberate, sustained action to reverse this trend, we put the future at risk.

Hon Sean Stackley, Nov 2009

8

"Perform to Plan"

So What's Our Next Threat?



We may not know, but we need to be prepared.

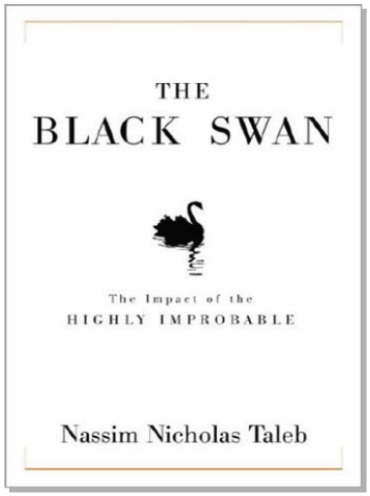
The specifics matter less than our ability to rapidly adapt…

Initiative, Innovation, Expeditionary Culture, Competence, and Relationships

Closing Thoughts

The "Black Swan" Syndrome

Cognitive biases create false expectations of predictability. Acknowledging uncertainty may allow us to adapt better to unforeseen events.



- "Black Swans": ***large-impact, impossible to predict, and rare event beyond the realm of normal expectations***
  - 9/11, Google, internet bubble
- "Outside context problem": ***Problem outside a given groups experience, with an immediate, ubiquitous and lasting impact upon it***
  - Perry's Black Ships arriving in Japan
- "Accelerating change": ***increase in rate of technological/ cultural/social progress in history (contrast to linear view)***
  - Accumulation of knowledge, access to knowledge and lowering of transactional barriers to knowledge

The improbable, high impact, unforeseen occurrence:

"Addressing Asymmetric Threat Challenges and the Fiscal Environment"

Discussion…

Current & Future Environment

The future will not be like today. As we look ahead, we see a world of increasing instability and conflict… Failed states or those that can not adequately govern their territory can become safe havens for terrorist, insurgent and criminal groups that threaten the U.S. and our allies... (former) Secretary of Defense Robert Gates described this resulting hybrid warfare as the "lethality of state conflict with the fanatical and protracted fervor of irregular warfare, where Microsoft coexists with machetes, and stealth is met by suicide bombers." This is the world in which we will live....this is where we will operate!

Commandant's Planning Guidance 2010

"Potential adversaries… compensate for U.S. conventional military superiority by developing asymmetric approaches and capabilities."

SECDEF Transformation Planning Guidance, Apr 2003

"As the United States completes its transition in Afghanistan and looks to the future, the international security environment remains uncertain and complicated. The United States will likely face a broad array of threats and opportunities and must prepare to address both effectively in the coming years... At the same time, the technology-enabled 21st century operational environment offers new tools for state and non-state adversaries such as terrorists to pursue asymmetric approaches, exploiting where we are weakest. In the coming years, countries such as China will continue seeking to counter U.S. strengths using anti-access and area-denial (A2/AD) approaches and by employing other new cyber and space control technologies.

2014 QDR, 4 Mar 2014