CSBA

Toward a New Offset Strategy

Exploiting U.S. Long-Term Advantages to Restore U.S. Global Power Projection Capability

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Agenda

Introduction

Antecedents of a "Third" Offset Strategy

Why Not "Business As Usual"?

Enduring U.S. Advantages

Implementing a New Offset Strategy: The GSS Concept

Conclusions

Introduction

- DoD faces a period of fiscal austerity of unknown duration
- Nevertheless, numerous national security challenges cannot be ignored:
  - Resurgent Russia
  - China seeks hegemony in East Asia
  - North Korea as belligerent as ever
  - Iran expanding its missile arsenal, pursuing nuclear weapons
  - Radical Islamic threat in Iraq, Afghanistan, Africa, Central Asia
  - Adversaries deploying A2/AD systems specifically designed to threaten traditional U.S. methods of power projection

An offset strategy is needed to address growing scale and complexity of security challenges in a fiscally constrained environment

Outline

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Historical Antecedents

Past DoD Efforts to Offset Numerical Inferiority:

- **1950s** – President Eisenhower's "New Look" defense policy emphasizes large numbers of nuclear weapons, long-range bombers, and missiles.
- **1970s** – Secretary of Defense Harold Brown and Under Secretary William Perry direct DoD to develop stealth, precision strike weapons, and improved C4ISR.

M-65 Atomic Canon "Atomic Annie"

1950s

President Eisenhower *John Foster Dulles*

HB1001 "Have Blue"

1970s

Harold Brown

Eisenhower's "New Look"

B-47

- **Eisenhower determined to deter the USSR without bankrupting America.**
  - Soviet conventional forces greatly outnumbered U.S. forces
  - Soviets could probe periphery and start proxy wars to exhaust U.S., as in Korea 1950–53
- **Emphasized nuclear weapons, bomber forces, and missile forces as backstop to conventional forces:**
  - Accelerated fielding of the hydrogen bomb
  - B-47 and B-52 bombers with KC-135 tankers
  - *Atlas, Titan, and Minuteman* ICBMs
  - *George Washington* SSBN with *Polaris* SLBMs
  - U-2 and Corona satellite for strategic reconnaissance
  - BMEWS, Nike, airborne alerts, dispersal, and silos for survivability
- **Air Force budget increased to 47% of DoD spending; Army and Marine Corps budgets shrank**

Atlas

U-2 Dragon Lady

Eisenhower's "New Look"
The Key Lessons

B-47

- Nation needs a balanced strategy to confront full range of anticipated threats.
- Global air warfare capability provides valuable strategic freedom of maneuver.
- Threats of asymmetric punishment can be an effective instrument of deterrence.
- Covert operations can provide an affordable option for achieving national objectives.
- Alliances matter – they complicate enemy planning and impose costs on competitors.


Atlas


U-2 Dragon Lady

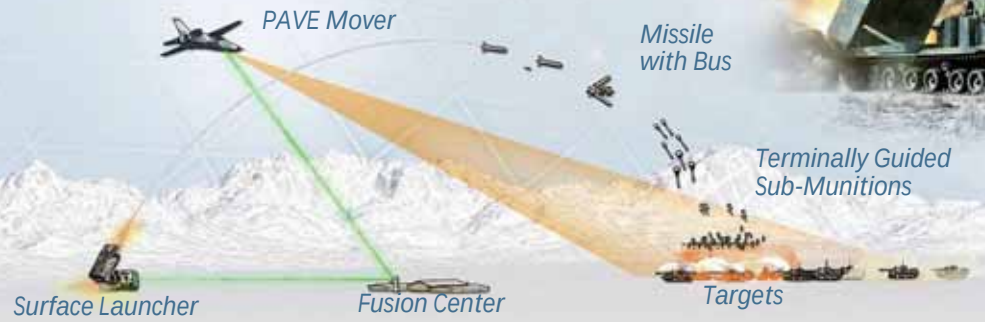
Brown / Perry Offset Strategy: Stealth, C4ISR and Precision Strike

- SecDef Harold Brown and USD William Perry devised technological "offset strategy" to counter 1970s Soviet conventional buildup.
- Core thrusts were **ISR, PGMs, stealth aircraft, anti-armor weapons, space-based ISR / comms / navigation**
  - Genesis of F-117, B-2, JSTARS, AWACS, GPS, ATACMS, BAT
- Capabilities became integral to 1980s AirLand Battle concept
- Key Lessons:
  - Technology multiplied combat effectiveness
  - Shifted competition into areas of U.S. advantage
  - "High-low" mix to meet scale of global presence requirement
  - Institutional commitment to "offset strategy" persisted from Carter to Reagan administration

E-8 JSTARS

ATACMS

Assault Breaker



Toward a Third Offset Strategy

- New offset strategy should **exploit enduring U.S. advantages** in unmanned operations, long-range and low-observable air operations, undersea warfare, and complex systems engineering in order to **project power despite adversary A2/AD capabilities.**
- New strategy should also:
  - Reduce dependence on forward bases and space-based capabilities
  - Foster novel concepts of operation that leverage mix of new and legacy capabilities
  - Increase emphasis on deterrence by denial and punishment rather than the threat to restore the status quo
    - Premium on survivable forward presence and global responsiveness
    - Hold targets at risk within A2/AD umbrella and outside immediate combat zone
  - Impose long-term costs upon rivals
  - Leverage alliances to gain positional advantage and share burdens

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Power Projection: The Capacity Challenge

- 2014 QDR argues that U.S. will have sufficient military capacity to defeat one aggressor and "deny the objectives of, or impose unacceptable costs on, another aggressor in another region."
- US will likely lack the capacity to fight and win two major theater wars in overlapping timeframes – *if* we don't project power differently.
- As the 2014 National Defense Panel Review notes:
  - "**A global war-fighting capability [is] the** *sine qua non* **of a superpower** and thus essential to the credibility of America's overall national security strategy."
  - "**U.S. military must have the capability and capacity to deter or stop aggression in multiple theaters** – not just one – even when engaged in a large-scale war."

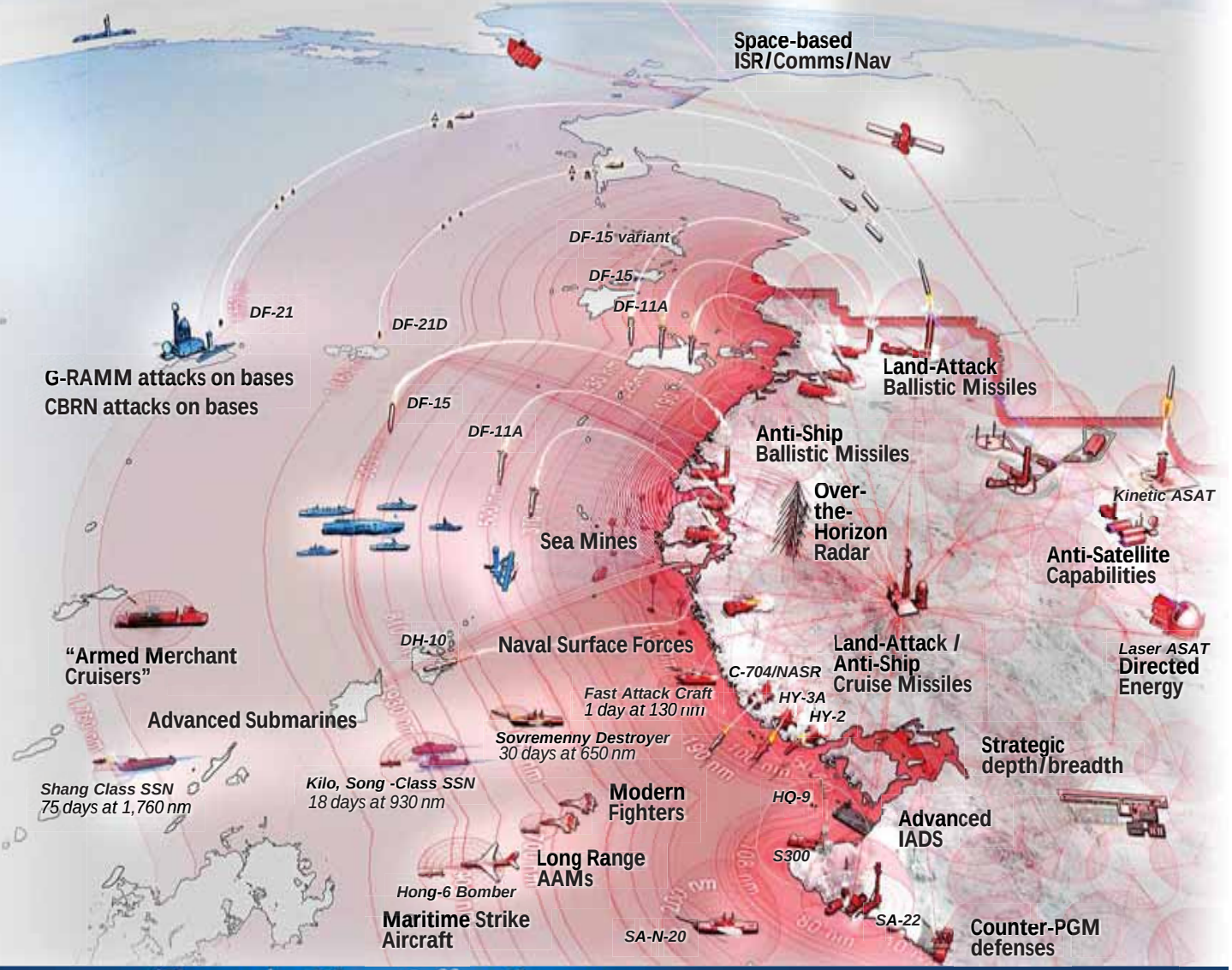
Power Projection: The Capability Challenge

- **Traditional approach to power projection:**
  - Build up combat power and logistical support.
  - Maximize airpower sortie generation from close-in land- and sea-bases.
  - Employ heavy mechanized ground forces.

- **Problems with the traditional approach:**
  - Requires political access to forward bases and littoral waters.
  - Depends on unimpeded use of ports and airfields.
  - Strategically unresponsive – requires months to prepare.
  - Difficult to implement in multiple theaters simultaneously.
  - **Entails growing operational risk…**

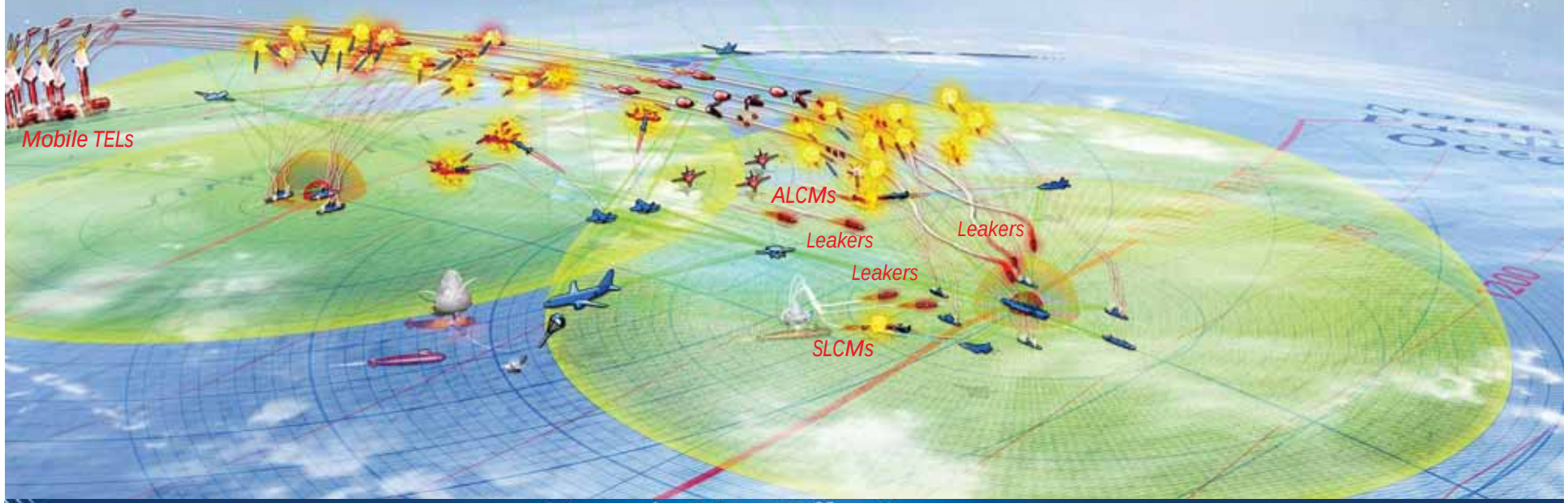
Operational Risks with the Traditional Approach

- Close-in ports and airbases vulnerable to attack
- Surface ships and carriers easier to detect, track, and attack at range
- Non-stealthy aircraft vulnerable to modern IADS
- Space no longer a sanctuary



Strategic Risks with the Traditional Approach

- **Crisis Instability:**
  - Strong incentive for enemy to preemptively attack forward U.S. bases, forces, and on-orbit satellites
- **Cost Imposition on the United States:**
  - Defending regional hubs is very costly and cheaply countered
- **Waning deterrent credibility and Allied confidence:**
  - Enemies may increasingly perceive the likely cost of U.S. intervention as high
  - Allies may begin to question credibility of U.S. security commitments



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Leverage Key Enduring Sources of U.S. Advantage

- Unmanned operations
- Extended-range air operations
- Low-observable air operations
- Undersea warfare
- Complex systems engineering and integration



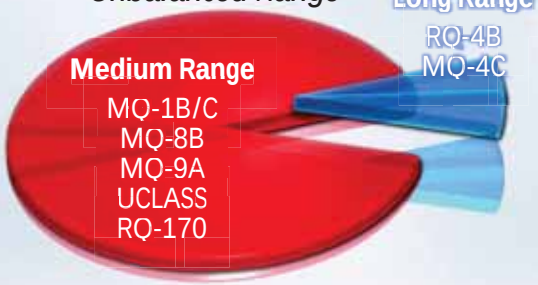

Unmanned Operations


MQ-9 takeoff

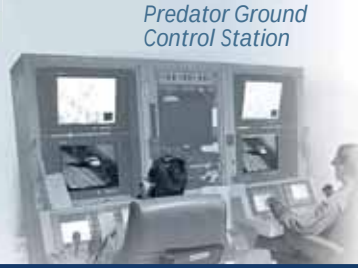
- **U.S. is a world leader in unmanned systems development and operation, as well as artificial intelligence and autonomy.**
  - We have maintained large numbers of UAS, employed them in combat, and trained operators two decades.
- **Unmanned systems can provide responsive, persistent coverage needed to find and attack mobile targets over wide areas**
- **Unmanned systems offer much lower life-cycle costs relative to manned aircraft**
- **Current and planned joint UAS fleet primarily consists of short- and medium-range aircraft, and consists almost entirely of non-stealthy aircraft.**


Avionics specialists prepare a Global Hawk

Joint UAS Fleet, FY17 Unbalanced Range



Joint UAS Fleet, FY17 Unbalanced Stealth


Predator Ground Control Station

Extended-Range Air Operations

A B-1B Lancer drops cluster munitions

- **U.S. has unmatched capability for high-tempo global ISR / strike.**
  - Over seventy years of experience developing, building, maintaining, and using heavy bombers in combat.
  - Aerial refueling is a key enabler for manned operations, and will have an even more profound effect on unmanned operations.
- **Bombers have the long combat radius to enable rapid, global response to short-notice aggression.**
  - Crew fatigue limits their ability to sustain long-range operations for extended periods.
- **Current and planned joint air portfolio is heavily weighted towards manned and short-range fighter / attack aircraft.**

B-52 landing gear test

Joint Aviation Inventory, 2014 – 2023: Unbalanced Range

Joint Aviation Inventory, 2014 – 2023: Unbalanced Manned/Unmanned Mix

B-2 Spirit, KC-135 tanker

Low-Observable Air Operations

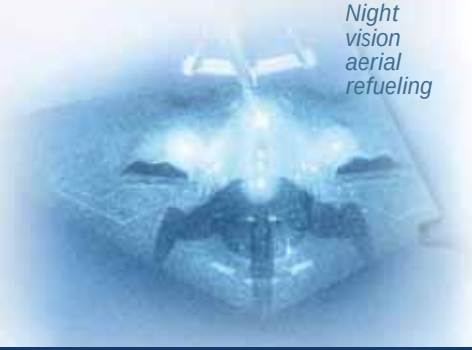
F-117 Nighthawk drops a guided bomb

- **U.S. has significant qualitative lead in design, manufacture, and operation of LO aircraft.**
  - Stealth aircraft employed in Desert Storm (1991), Kosovo (1999), Afghanistan (2001), Iraq (2003), Libya (2011), and Syria (2014).
- **Stealth enables precision attacks in denied airspace.**
- **Current and planned joint air portfolio is heavily weighted towards non-stealthy aircraft.**
- **F-35 and F-22 are more stealthy than fourth-generation fighters but have the same disadvantages resulting from their short combat radius.**

Joint Aviation Inventory, 2014 – 2023: Unbalanced Stealth

B-2 Spirit

Night vision aerial refueling



Undersea Warfare

PCU Virginia (SSN 774)

- **USN submarine force was victorious in WW2 and has conducted constant SSN/SSBN patrols since 1958.**
  - USN used TLAMs in combat many times since 1991.
- **SSNs permit operations in A2/AD environments and are difficult, costly, and time-consuming to counter.**
- **Current and planned overall Navy force structure is weighted towards surface forces, not submarine forces.**
  - In FY28, SSNs drop to 41 boats and SSGNs retire
    - Undersea payload capacity in 2028 will be 38% of 2014 capacity
  - Fewer than 12 SSBNs from FY30 to FY42

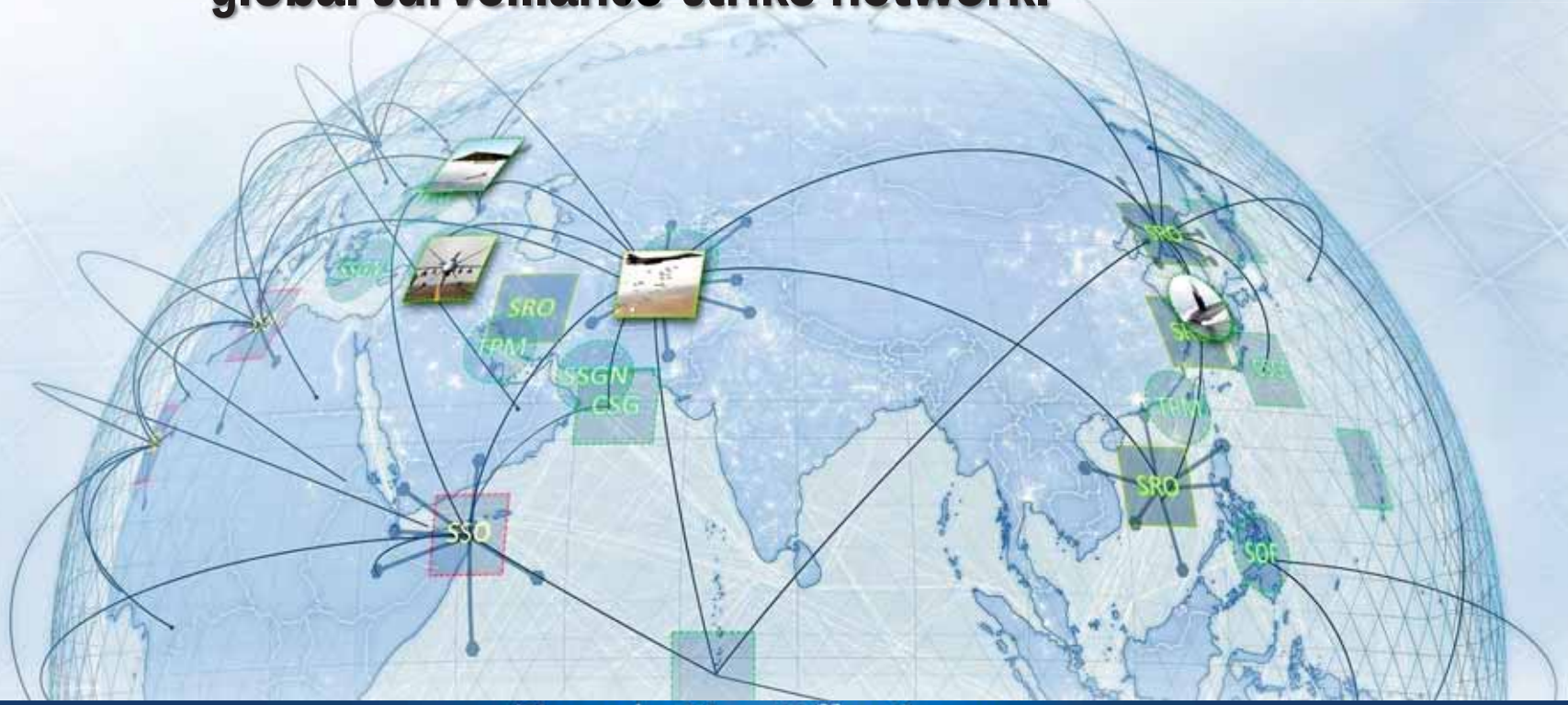
"Wet training" aboard SUBTRFAC

Navy Force Structure, 2030

Dry dock bow repair

Complex Systems Engineering

- **Military and defense industry have designed, built, and operated very complex weapons systems and architectures.**
- **To exploit this advantage, the U.S. should link heterogeneous, geographically distributed platforms into a global surveillance-strike network.**



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The Joint Global Surveillance Strike (GSS) Network

- **Leverage enduring advantages in the five capability areas to create a joint global surveillance strike (GSS) network.**
- **Attributes of the GSS:**
  - **Balanced:** Tailored attributes for different roles and environments
  - **Resilient:** Less dependent on close-in bases, reduced sensitivity to air defense threat, tolerant of disruption in space capability
  - **Responsive:** Able to generate surveillance-strike presence within hours of decision to do so
  - **Scalable:** Can be expanded to influence events in multiple locations around the world concurrently
- **With "high-low" mix of elements, GSS network could be cost-effective in *both* low-medium and medium-high threat environments.**

Exploiting Advantages in Unmanned Operations

- **Employ UAS to maintain persistent ISR-strike orbits and hedge against loss of space-based ISR, navigation, timing, and communications**
- **Develop automated aerial refueling for UAS:**
  - Refuelable UAS offer extended mission endurance with low life-cycle cost, and are an affordable way to provide scalable, persistent coverage over multiple areas at once.

- **Rebalance UAS fleet with acquisition of three new survivable, long-range systems:**
  1. Stealthy HALE ISR UAS
  2. Stealthy, refuelable land-based UCAS
  3. Stealthy, refuelable sea-based UCAS

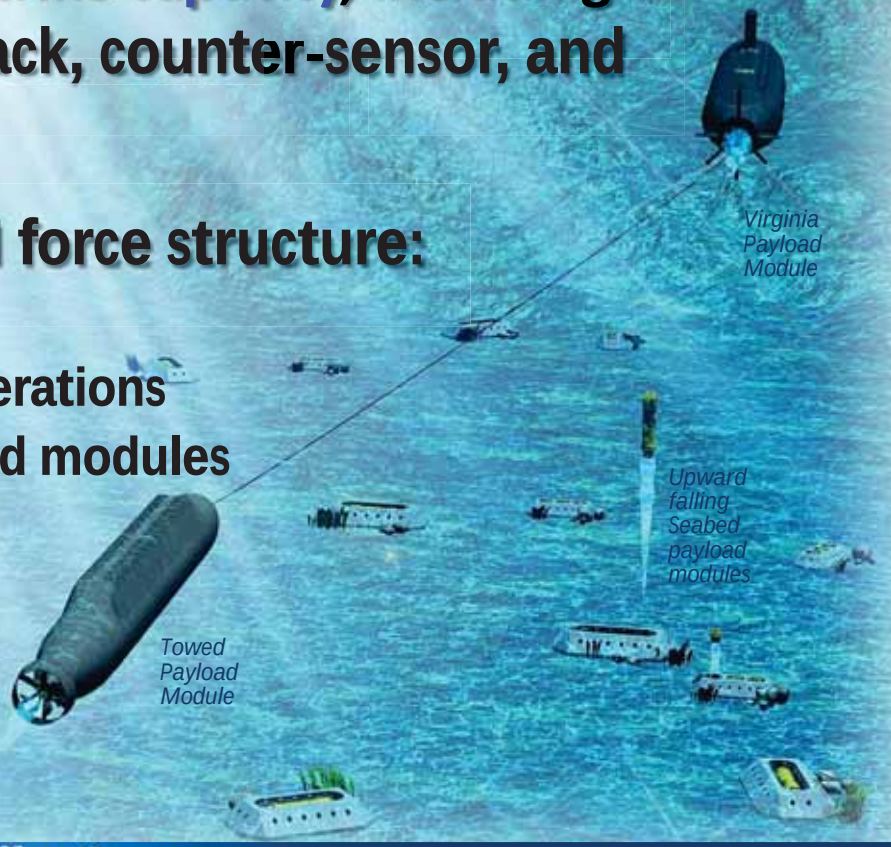
- **Acquire UUVs and payload modules to expand limited SSN capacity**

Exploiting Advantages in Long-Range / LO Air Operations

- **Harness synergy between low passive radar signatures and advance electronic attack.**
- **Focus R&D on enhanced IR signature management.**
- **Future joint long-range ISR and strike fleet should be increasingly unmanned and survivable.**
- **Develop and field stealthy HALE UAS, stealthy land- and sea-based UCAS, and LRS-B to sustain U.S. advantage in global, low-observable air operations.**
- **Missions to include:**
  - Wide-area surveillance
  - Electronic attack
  - High-volume precision strike and HDBT defeat
  - Persistent surveillance-attack
  - Mining and ASuW

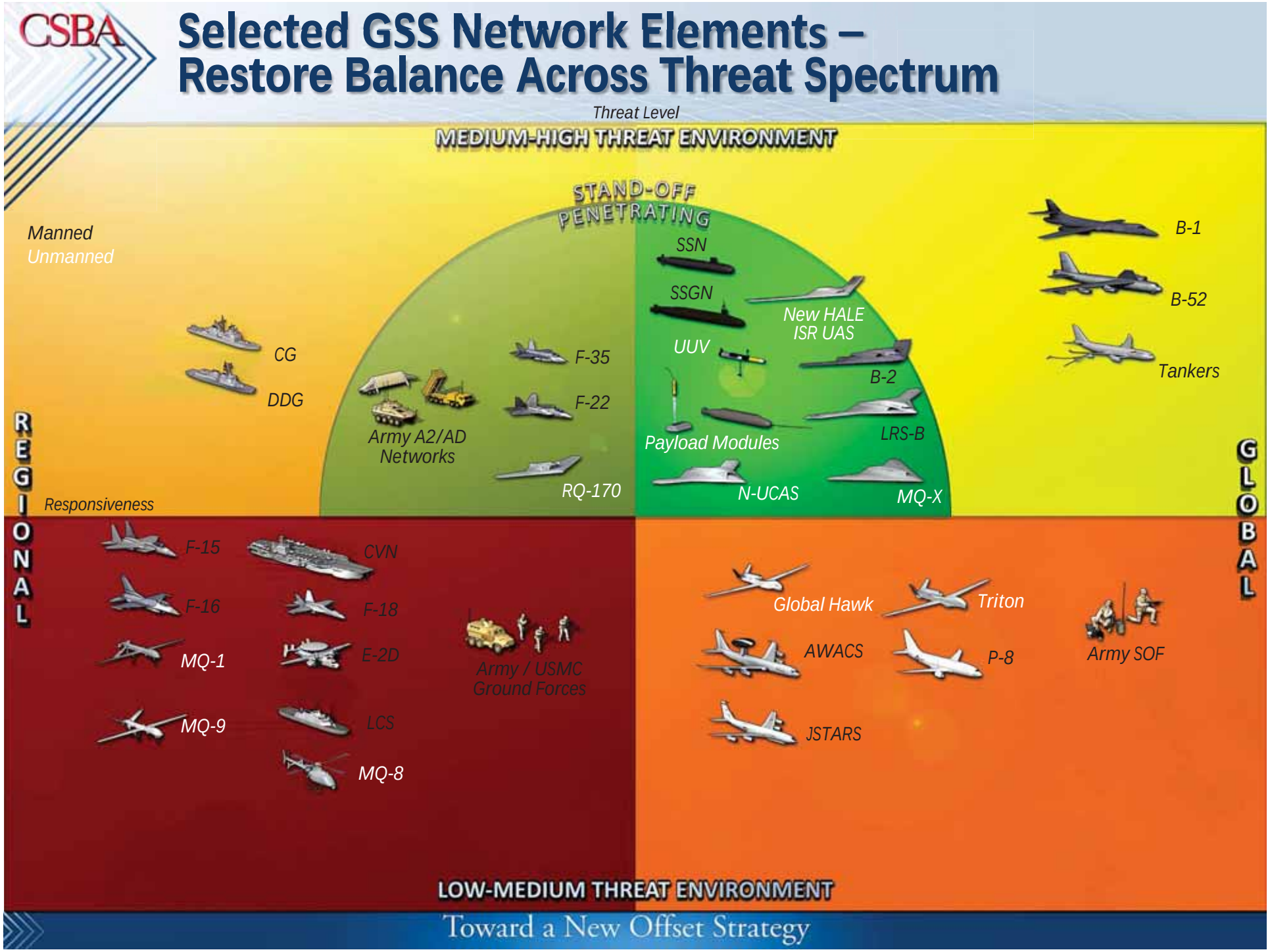
Exploiting Advantages in Undersea Operations

- SSNs and SSGNs to provide covert ISR coverage and SOF support in peacetime, as well as ASW, ASuW, counter-sensor, and counter-land attacks in wartime.
- Navy should expand undersea strike capacity, including ability to conduct electronic attack, counter-sensor, and counter-air operations.
- To mitigate decline in SSN/SSGN force structure:
  - Procure Virginia Payload Module
  - Field family of UUVs for littoral operations
  - Develop towed and seabed payload modules
  - Develop wider array of undersea weapons



Exploiting Advantages in Complex Systems Engineering

- GSS should link the nodes within a resilient and protected C3 architecture.
- Develop advanced battle management system to fuse and correlate ISR data, as well as to allocate ISR and strike resources quickly and efficiently.
- Initially rely on legacy C3 paths and core GSS platforms, and over time, add more nodes and communications paths.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Selected GSS Network Elements –
Restore Balance Across Threat Spectrum
Threat Level
MEDIUM-HIGH THREAT ENVIRONMENT
STAND-OFF
PENETRATING
Manned
Unmanned
CG
DDG
F-35
F-22
RQ-170
Army A2/AD
Networks
SSN
SSGN
UUV
New HALE
ISR UAS
B-2
Payload Modules
LRS-B
N-UCAS
MQ-X
B-1
B-52
Tankers
REGIONAL
GLOBAL
Responsiveness
F-15
F-16
MQ-1
MQ-9
CVN
F-18
E-2D
LCS
MQ-8
Army / USMC
Ground Forces
Global Hawk
Triton
AWACS
P-8
JSTARS
Army SOF
LOW-MEDIUM THREAT ENVIRONMENT
Toward a New Offset Strategy

GSS Implementation Actions

- **What should we do to make GSS a reality?**
  - Accelerate development and potentially expand procurement of LRS-B
  - Develop and field stealthy HALE UAS
  - Develop and field stealthy, refuelable, carrier- and land-based UCAS
  - Automated aerial refueling (especially for UAS/UCAS)
  - Counter-space capability to deter attacks on US satellites
  - GPS alternatives such as HALE UAS "pseudolites," advanced IMUs, and miniaturized atomic clocks

GSS Implementation Actions, cont'd

- **What else should we develop and field?**
  - Multi-mission, long-endurance UUVs
  - Undersea strike: Virginia Payload Module, seabed payload pods, towed payloads, improved TLAM, multi-mission missiles, sub-launched conventional ballistic missile
  - Expanded undersea sensor networks
  - Improved naval mines and long-range ASW weapons
  - EM rail guns and directed energy weapons
  - New counter-sensor weapons
  - Expeditionary ground-based A2/AD, including air defense missiles, coastal defense, mines, UUVs

Potential Funding Offsets

- Shed excess bases, rein in personnel costs.
- Pursue burden sharing with allies
- Refocus current programs (e.g., UCLASS, F/A-XX, MQ-X)
- Restore balance:
  - Scale-back force structure and modernization programs optimized for power projection in permissive (low-medium threat) environments

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Restoring U.S. Global Power Projection With a New Offset Strategy

- Adversaries are developing their own ISR-strike networks—with an emphasis on missile systems—to challenge conventional U.S. power projection
- To "offset," DoD should leverage its "core competencies" in unmanned systems, long-range and low-observable airpower, undersea warfare, and complex systems engineering
- Global Surveillance-Strike (GSS) network with a "high-low" mix of elements could provide balanced, resilient, globally responsive, scalable power projection capacity
- If deterrence fails, GSS network could deny the aggressor's war aims, inflict asymmetric punishment, and roll back his A2/AD network
- GSS force could reach IOC in the mid-to-late 2020s if focused R&D begins now and the government stays the course


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Questions?
Toward a New Offset Strategy