

Headquarters U.S. Air Force

Integrity - Service - Excellence

USAF/Industry Partnership



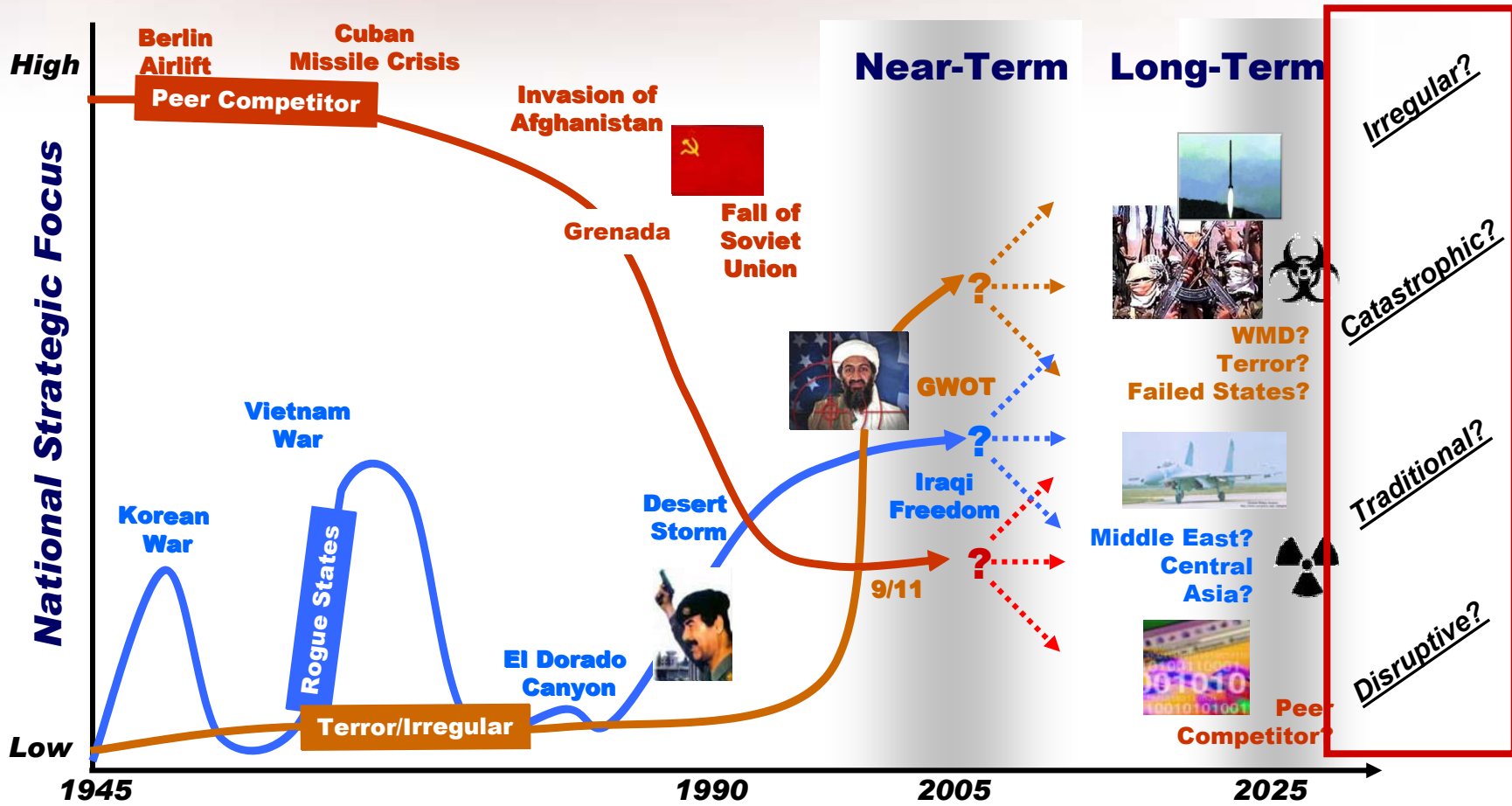
U.S. AIR FORCE

**Brig Gen Mike Worden
Director of Operational Plans
and Joint Matters**

2 June 2005



Changing Environment: Then, Now, and Tomorrow



Mutually Assured Destruction

**Flexible Response
The New Look**

**Deterrence, Presence,
Crisis Response,
Reconstitution**

**Protect, Prevent, Prevail
Shape, Respond, Prepare**

**OSD
Challenge
Areas**

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Transforming the Force

Next 5 Years



Innovative Concepts

- CONOPS / CRRA
- Programming / Acquisition Needs
- Future Total Force
- AF Battle Labs

Exploiting Technology

Applications

- Precision Munitions
- Stealth
- Directed Energy / ABL
- Battle Labs

Network Centric

- Air Operations Center
- Link 16
- C2 constellation

Mixing Old and New

- CAS w/ heavy bombers
- NT ISR / Strike
- Special Ops

Modernizing the Force

- Recapitalization
- Funding Trends
- Our Future

**Effective Partnership –
USAF and Industry**

Transformed Future Force



- **Global Military Leverage**
 - Control Air and Space
 - Exploit the Mediums
- **Enables the Joint Mission**
- **Smaller yet More Capable**

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Innovative Concepts: CONOPS ... Drives All We Do

Global Power



Global Reach



Global Vigilance



Joint Vision



USAF Vision

Air & Space Expeditionary Forces

**Global Strike
CONOPS**

**Homeland Security
CONOPS**

**Global Mobility
CONOPS**

**Global Persistent Attack
CONOPS**

**Nuclear Response
CONOPS**

**Space & C4ISR
CONOPS**

Agile Combat Support

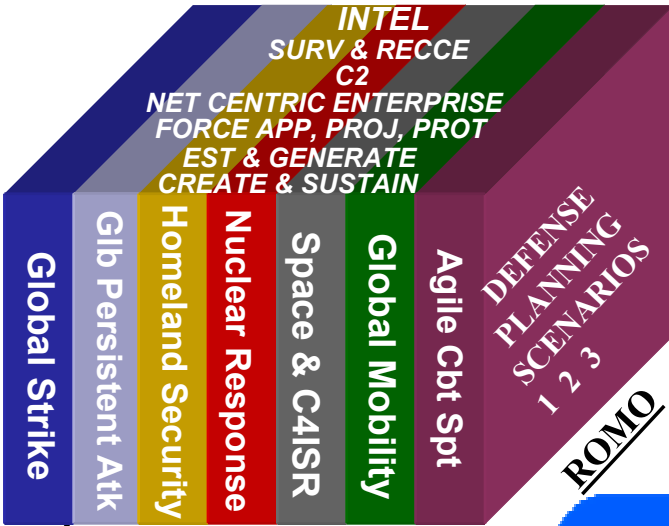
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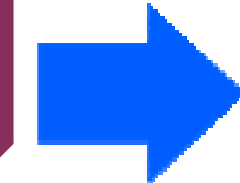
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Innovative Concepts: Required Capabilities to Combat Effects

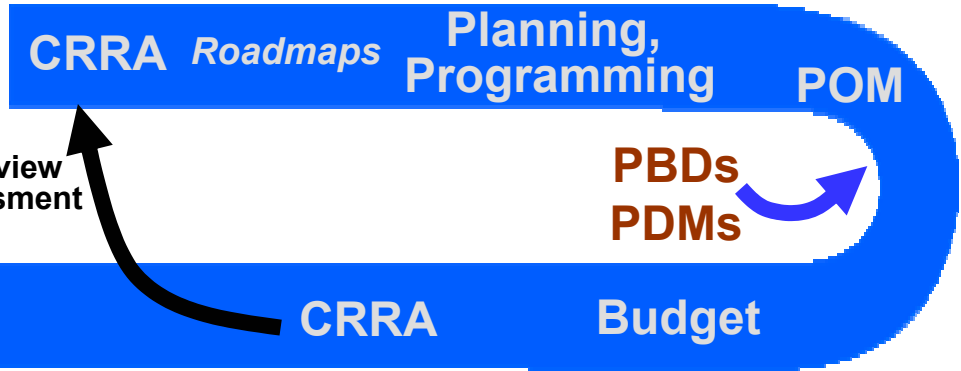
CAPABILITY AREAS



CONOPS



Capabilities Review and Risk Assessment



Air & Space Expeditionary Forces & Reach-back Forces



People, Organizations, Equipment, Training

Feedback



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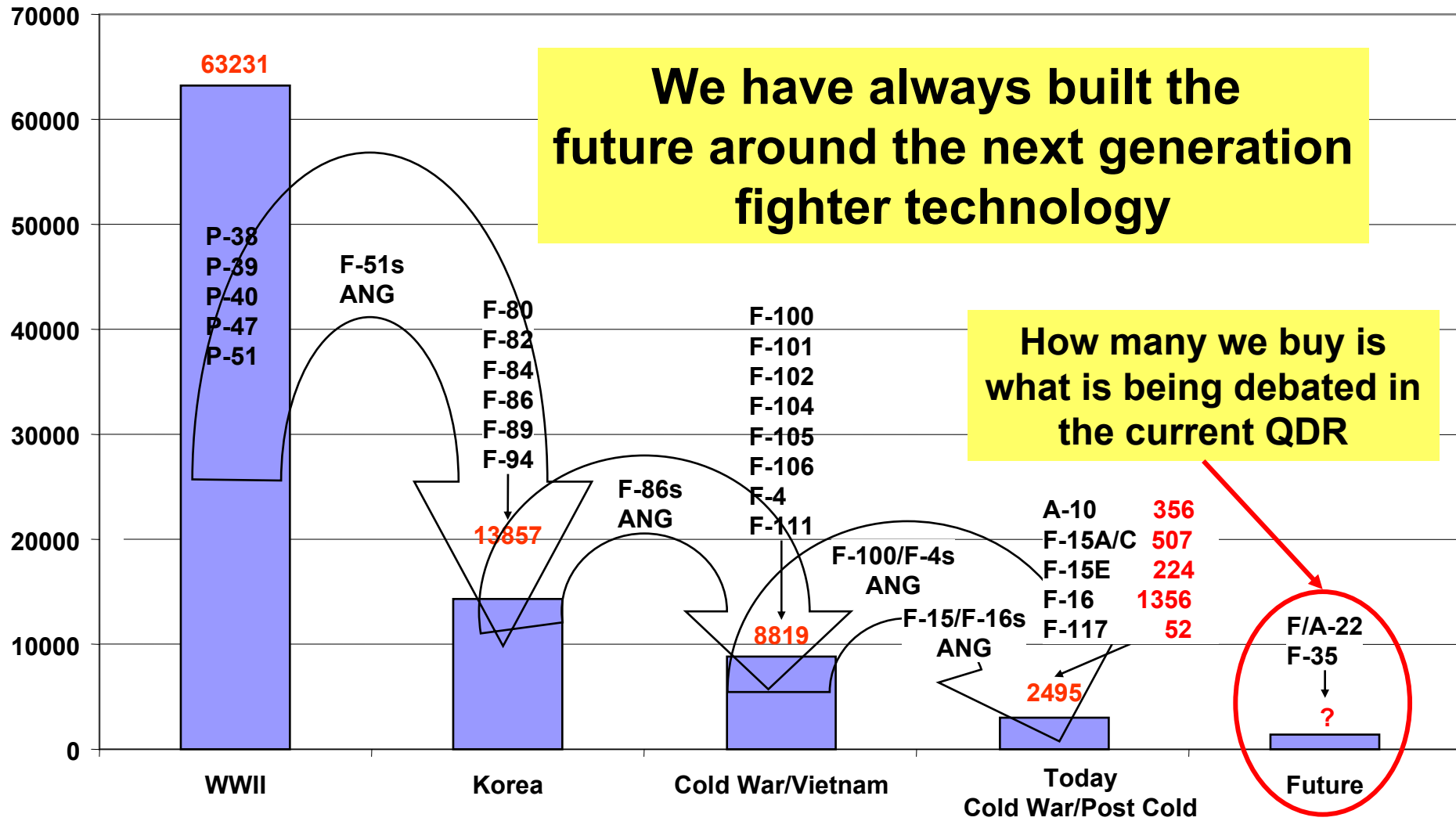
Innovative Concepts: Challenges: Capability Needs

- **Global information Grid**
 - C2 Battle Management
- **Air Refueling**
 - Tanker recapitalization
- **Airlift**
- **Information Operations**
- **Spacelift**
 - Operationally Responsive Spacelift
- **Joint Warfighting Space**
 - Counter-space
- **Close Air Support**

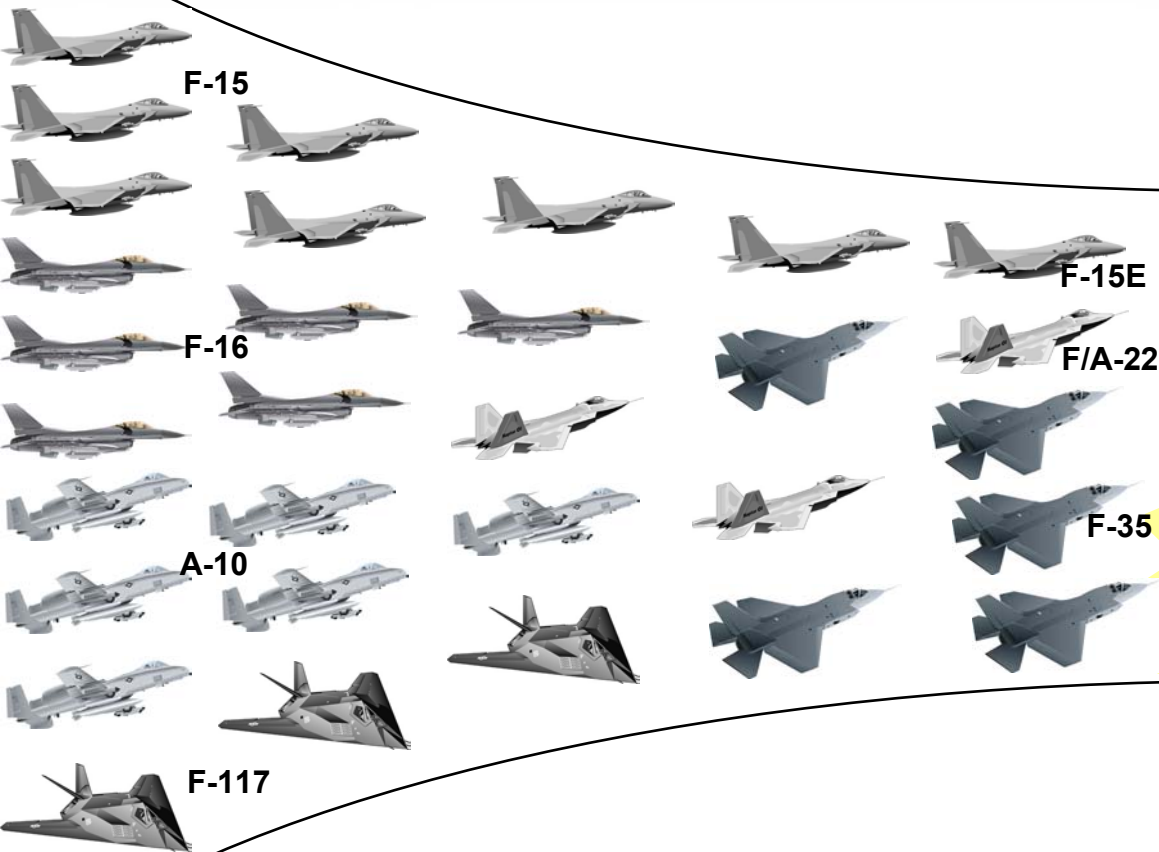


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Innovative Concepts: Future Total Force



Innovative Concepts: FTF ... Exp & Tech vs. Downsize



Smaller Force...

- Integrate with ARC
- 25% Fewer Fighters
- Divest less capable fighters to help fund recapitalization

But More Capable!

- More reliable
- Higher crew ratios
- 100% Precision Guided Munitions Capable
- Predominately Low Observable
- Improved Sensors
- Networked



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Innovative Concepts: USAF Battlelabs





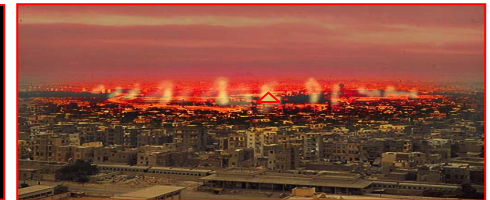
Exploiting Technology: Applications - Precision Engagement

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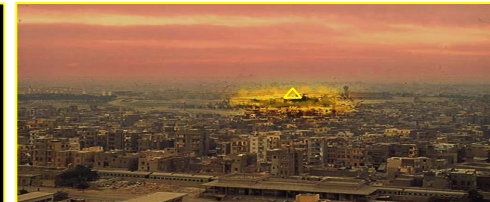
World War II

1,500 B-17s
One target – 9000 bombs
3,300 ft accuracy



Vietnam

30 F-4s
One target – 176 bombs
400 ft accuracy



Desert Storm

1 F-117
2 targets – 2 bombs
10 ft accuracy
Clear night



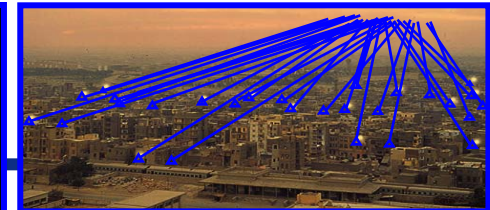
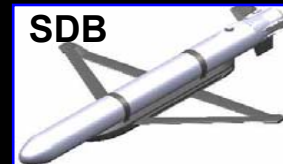
Today

1 B-2
80 targets – 80 bombs
All weather



The Future

1 B-2: 80 – 240 Small Diameter Bombs
2 x F/A-22: 16 SDBs – 16 targets
+ Provides ISR / Counter Air



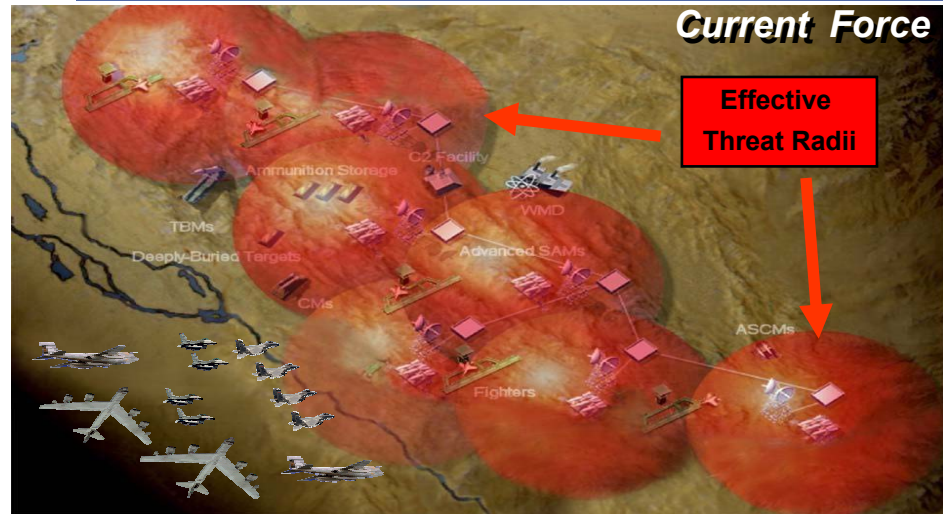
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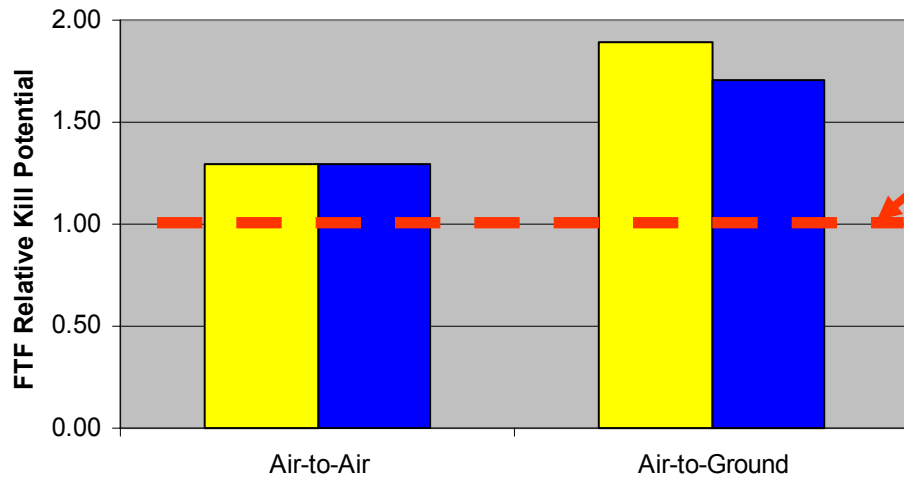


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Exploiting Technology: Applications – Stealth Improving Future Force Performance



■ Kick Down the Door Phase
 ■ Decisive Operations Phase



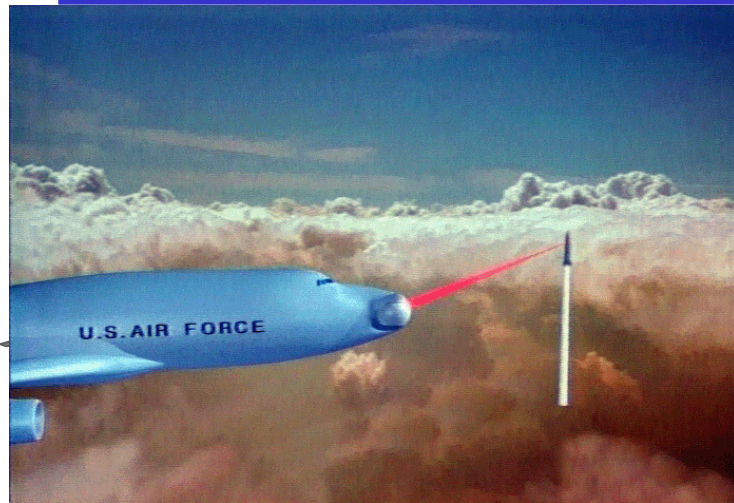
FTF modernization improves capability by increasing access, availability, accuracy and payload with significantly reduced force size



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Exploiting Technology: Applications – Directed Energy, ABL

Primary Mission: Kill Ballistic Missiles (BMs) during boost phase



Secondary Missions:

- Early BM launch warning
- Launch site location
- Cueing to BMD systems
- Impact point prediction

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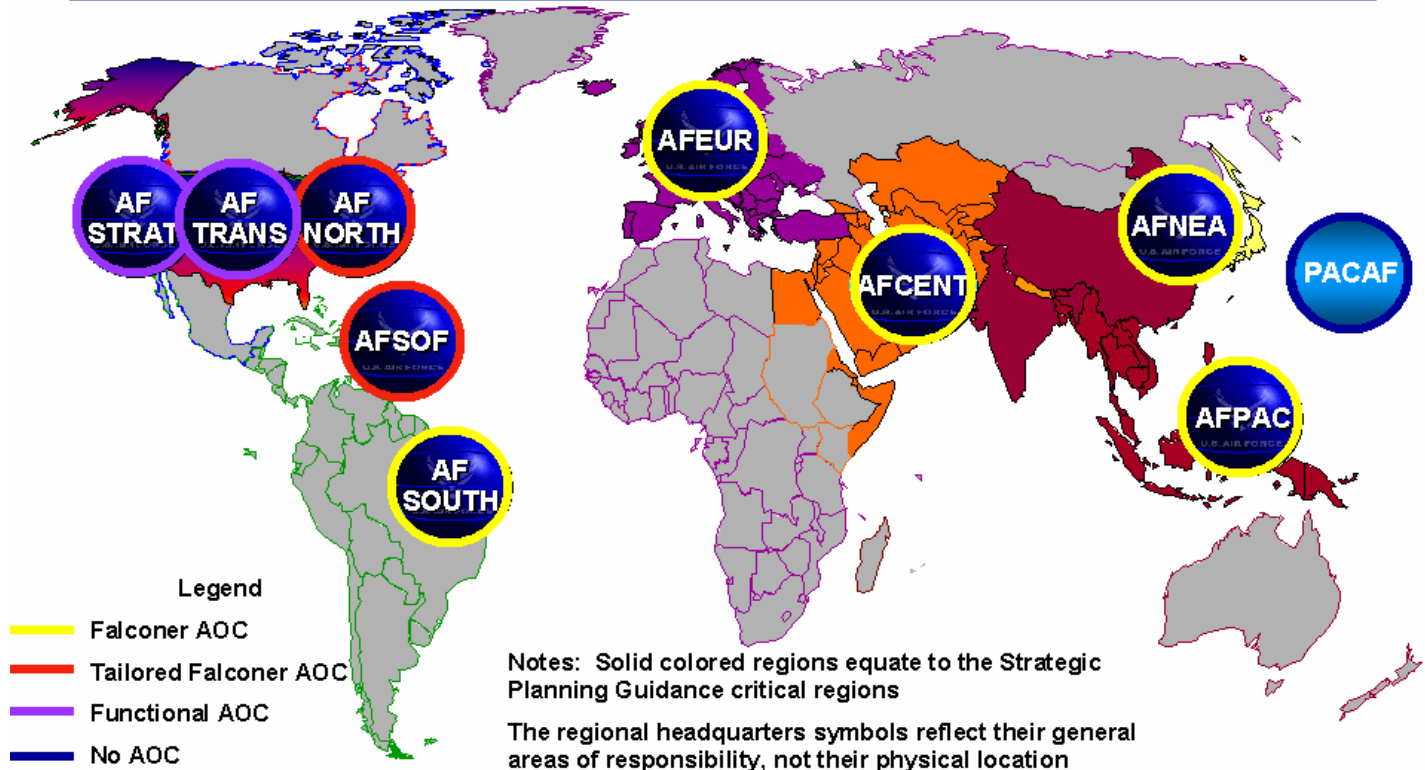


Exploiting Technology: Network Centric – AF WFHQ & AOC

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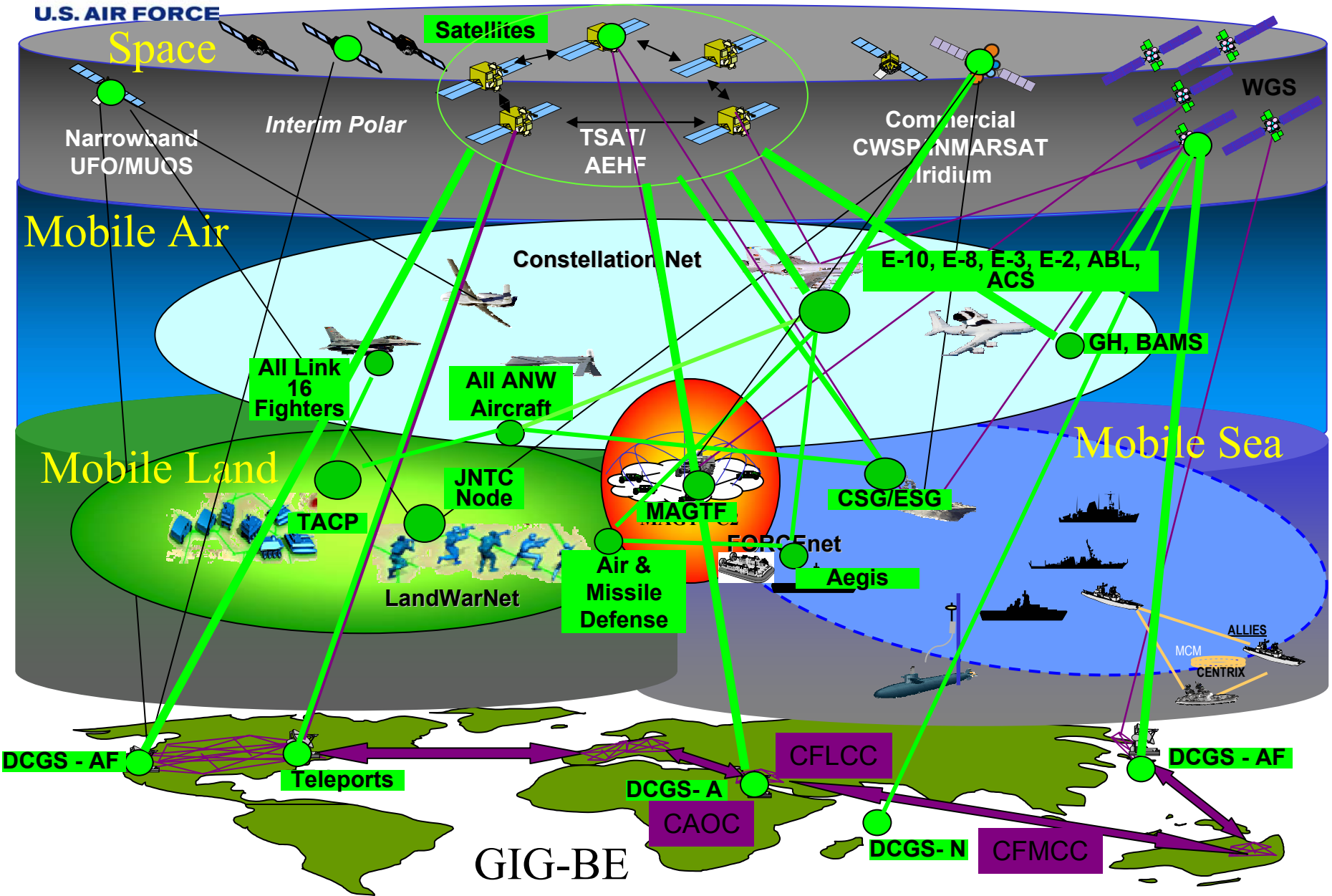
■ Air and Space Operations Centers

- Distributed; smaller footprint
- Human Engineering
- Ability to replicate data
- Deployment package





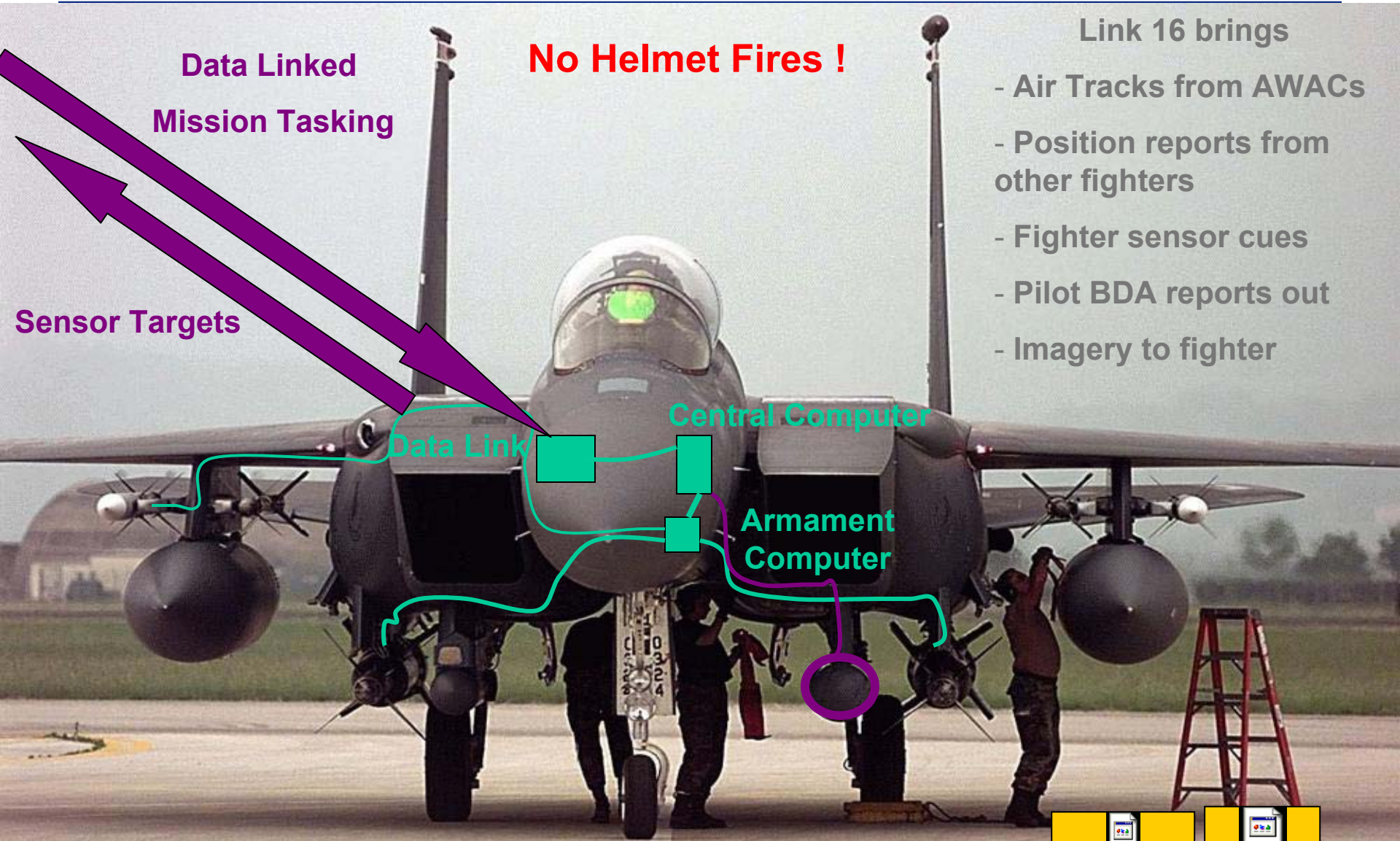
Exploiting Technology: Network Centric – C2 Constellation





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Exploiting Technology: Network Centric – Netting F-15s w/Link 16



Sensor Targets

Data Linked

Mission Tasking

No Helmet Fires !

- Link 16 brings
- Air Tracks from AWACs
 - Position reports from other fighters
 - Fighter sensor cues
 - Pilot BDA reports out
 - Imagery to fighter

Data Link

Central Computer

Armament Computer



Exploiting Technology: Mixing Old with New

- **New Capability for Legacy Platforms**
- **Close Air Support w/heavy bombers**
- **Special Operations**





**Sum of All Wisdom:
Cursor over Target**

Target Area

All Source Intelligence indicates that an enemy facility is present in the vicinity of FN8646.

Data Gathered from NSA intercepts, Group websites, and space imagery show terrorist activities in the area, but nothing yet conclusive. 0800Z031220.

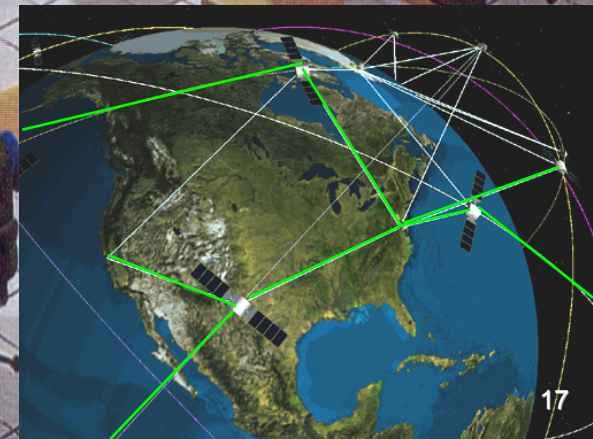


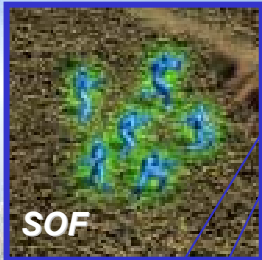
Incoming SIGINT intelligence from Navy SSN operating in the area indicates active terrorist operations in the vicinity. 0800Z031222.

SIGINT report confirmed by most recent space imagery collection. 0800Z031222.



**Information shared between
National Agencies, Services & Coalitions**





Enemy facility located – occupants unknown, no other intel available.

Latest Imagery:



PBA Analysis:

Facility used for bomb-making and Leadership meetings.

Nearest sensors:

Global Hawk (20 min ETA)
E-10 on orbit in vicinity
SOF team (2 hours ETA)

FN86924687



CURSOR OVER THE TARGET OPTIONS:

- CUE
- INVESTIGATE**
- ID
- SHADOW
- IO
- TARGET

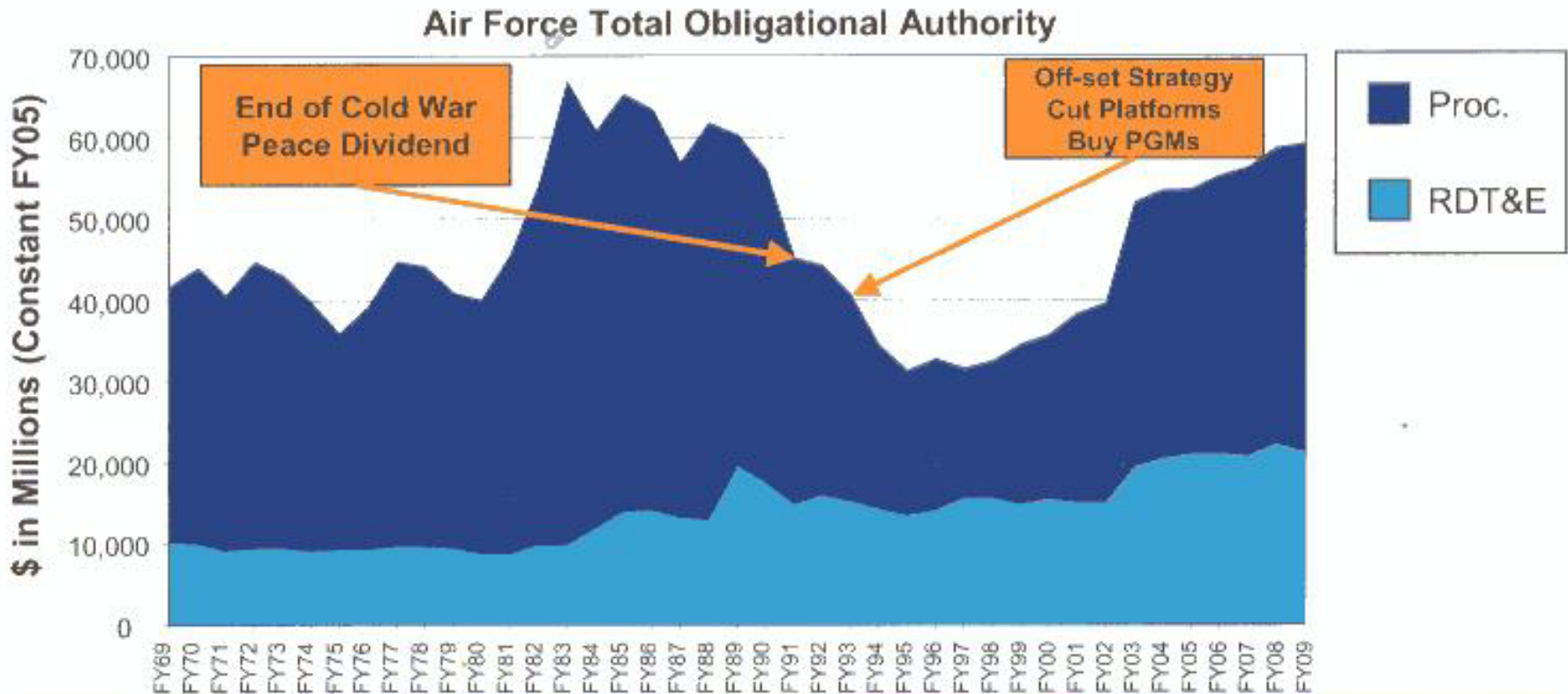
RECOMMENDATIONS :

- Retask Global Hawk
- Move E-10 to support
- Notify SOF team
- Cross-cue sensors



Modernizing the Force: Recapitalizing, the History

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Air Force “modernization bathtub” result of a number of intentional decisions, but currently we are facing some unintended consequences...



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Modernizing the Force: Recapitalizing, a Joint Issue

DoD Equipment Ages (years)		
Air Force	2005	FYDP
Fighter/Attack Aircraft	17	20+
Bomber	30	35
Airlifter	23	23
Tanker	42	45
Navy/Marine Corps		
Battle Force Ships	16	17
Fighter/Attack Aircraft	14	15
Marine Corps Helo/Tilt-Rotor	25	5
Ground Combat Vehicles	15	18
Army		
Ground Combat Vehicles	14	19
Helos	18	20

- Tankers are older than their crews and any other system in DoD inventory
- Air Force fighter fleet on average older than Navy's battle fleet ships
- Almost one-fifth the tactical airlift fleet is under restriction or grounded



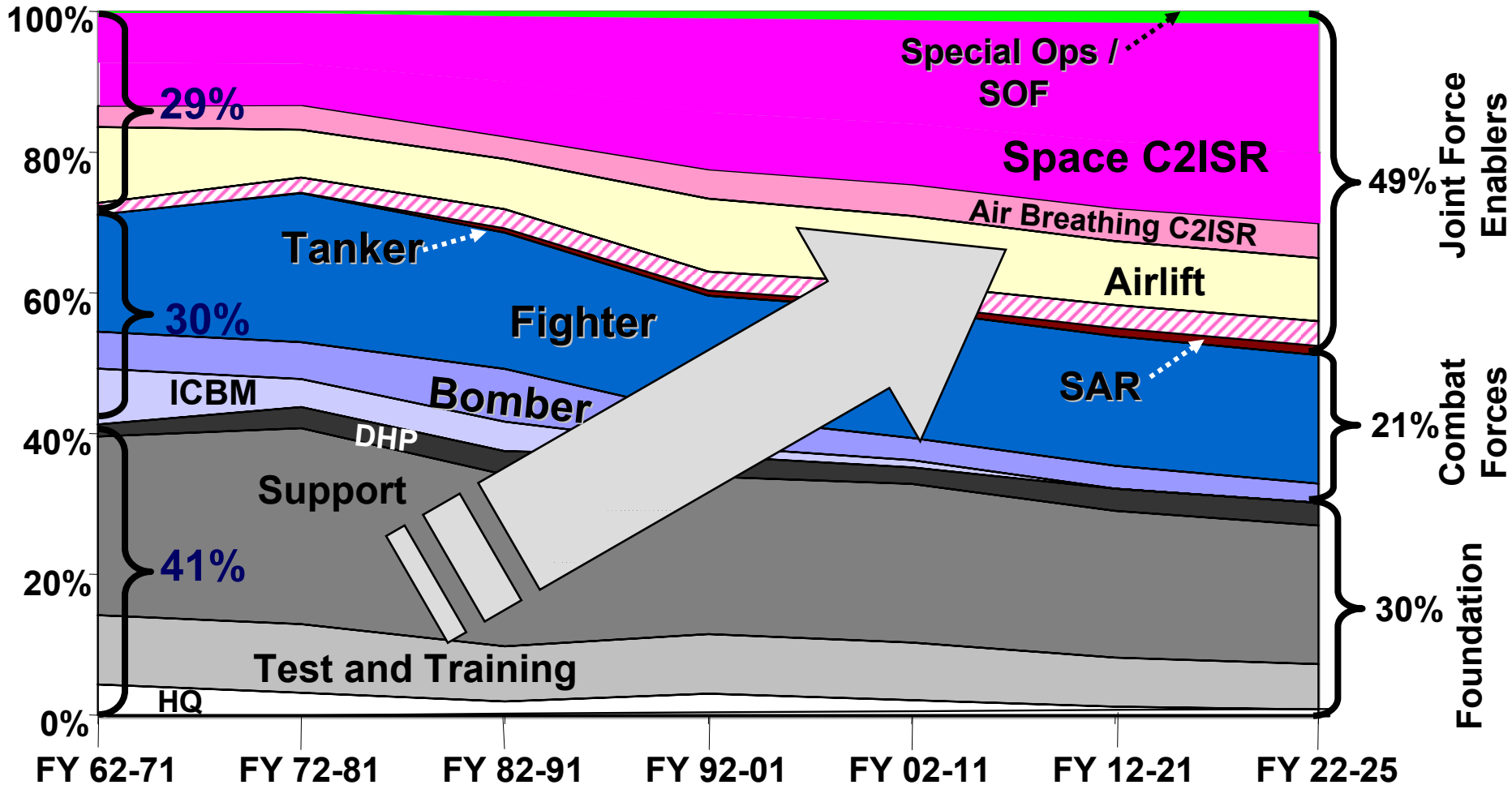
"The last KC-135 pilot has not yet been born."

– Chief of Staff of the Air Force John P. Jumper



Modernizing the Force: Recapitalizing, AF Mission Funding Trends

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Reductions in combat forces and overhead have paid for increased emphasis on joint force enablers



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Modernizing the Force: Our Future - F/A-22, C-17, KC-X, and E-10



F/A-22



C-17



KC-X



E-10

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Effective partnership: **USAF and industry**

- **Downsizing—cost impacts**
 - TOA concerns
 - High price per unit (B-2s, F/A-22?)
- **Rapid, responsive acquisition**
- **Stay engaged with Battlelabs**
 - **Air Warfare, UAV, Info Warfare, C2, Air Mobility, Space, Force Protection**
- **Foreseeing and countering disruptive technologies**
 - **Anti-GPS, Anti-Stealth**
- **Robust system engineering—open architectures**
- **American industrial base with/vs. Europe**
 - **Conflict: A400M vs. C-130, F-15/16 vs. Eurofighter, tankers**
 - **Cooperation: JSF, Joint Ventures**
- **Integrating technical and non-technical**
 - **Decision support software, other tools**
 - **Effects-based assessment**
 - **F2T2EA**



Joint Effects & CONOPS ... Drives All We Do

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AEF 1

AEF 2

AEF 3

AEF 4

AEF 5

AEF 6

AEF 7

AEF 8

AEF 9

AEF 10



Global Vigilance



Global Reach



Global Power

AIR & SPACE EXPEDITIONARY FORCES

**Global Strike
CONOPS**

**Global
Persistent
Attack
CONOPS**

**Nuclear
Response
CONOPS**

**Homeland
Security
CONOPS**

**Global
Mobility
CONOPS**

**Space &
C4ISR
CONOPS**

Agile Combat Support CONOPS

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See First

Understand First

Act First



**AIR
AND
SPACE
OPERATIONS**

Headquarters U.S. Air Force

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Back ups



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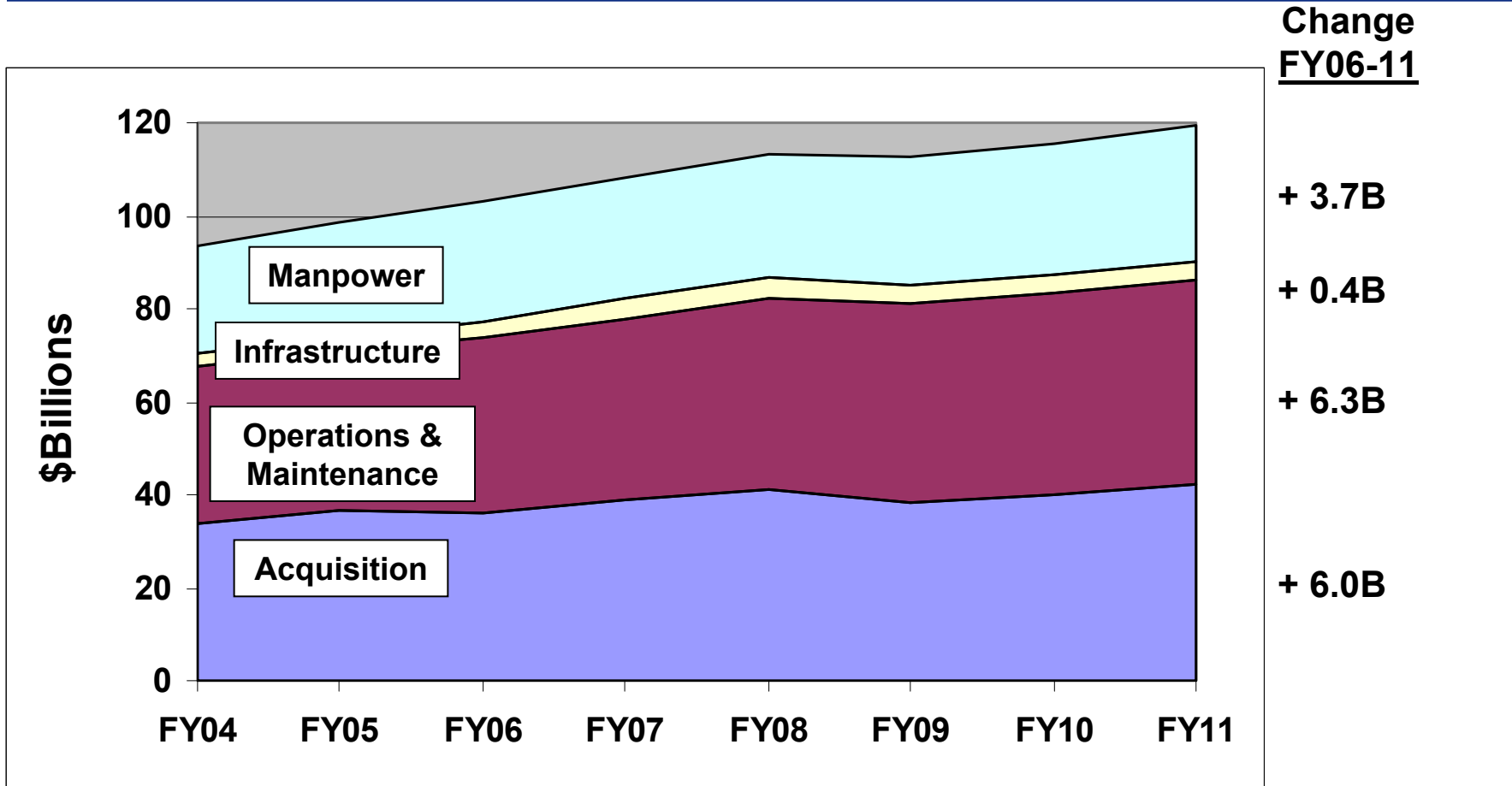
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USAF Fiscal Projections

FY 06-11

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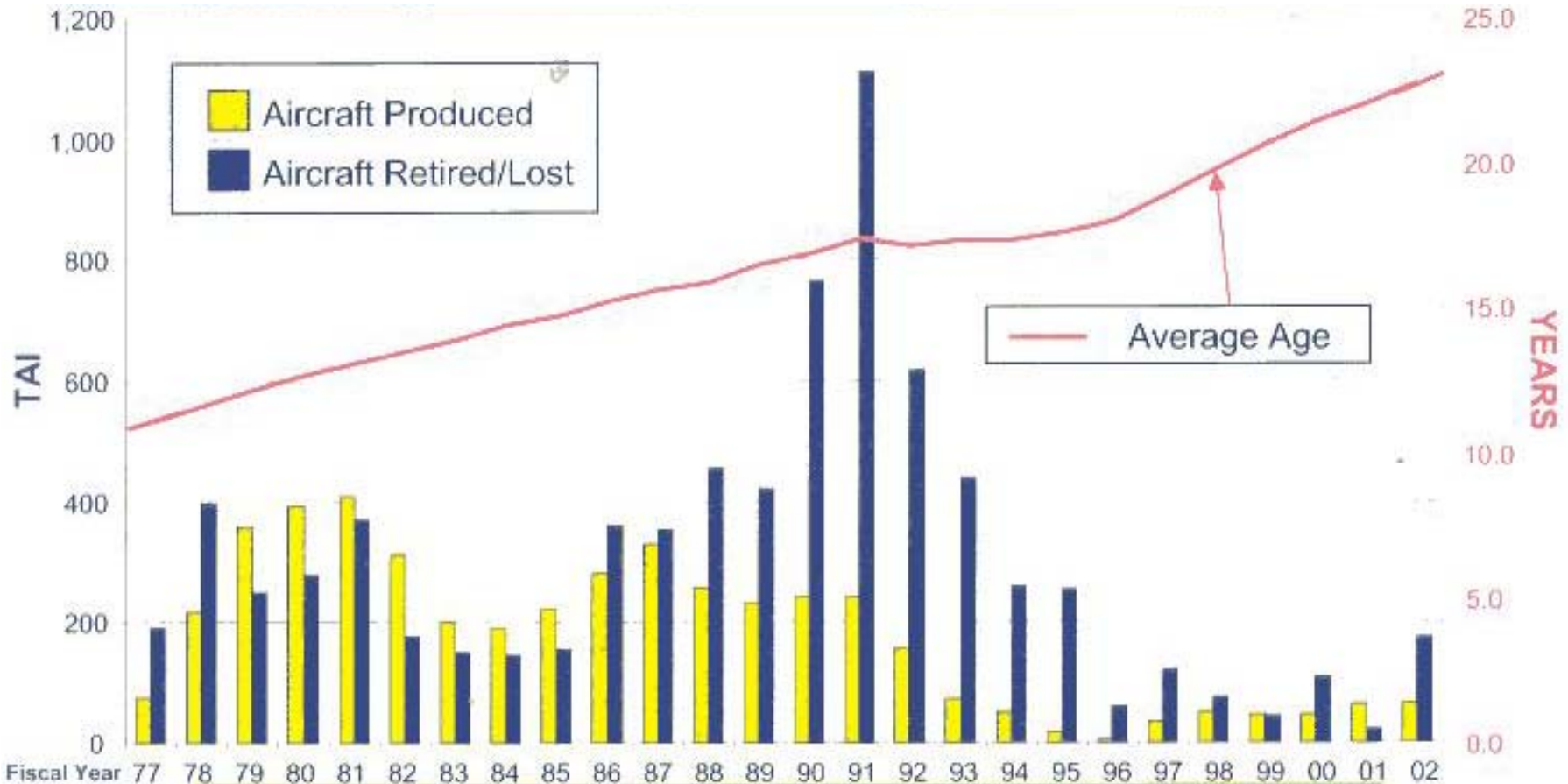




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Recapitalize the Force

Production, Reduction drive AF Aircraft Age



**Controlling average age requires
balancing divestiture and procurement**



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Recapitalize the Force

Aging AF Aircraft



Simultaneous aging challenges across the entire fleet



Recapitalizing the Force: Five Decades of Shaping the Future

