



MARINE AVIATION

NDIA Expeditionary Warfare Conference

September 2012



Col Jeff Mosher

Functions of Marine Aviation

Marine Aviation

- ***Offensive Air Support***
- ***Anti-Air Warfare***
- ***Assault Support***
- ***Air Reconnaissance***
- ***Electronic Warfare***
- ***Control of Aircraft and Missiles***



Marine Aviation Transition Strategy

Today

End State

KC-130 F/R/T



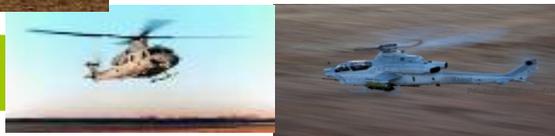
KC-130J

CH-46E



MV-22

UH-1N
AH-1W



UH-1Y
AH-1Z

F/A-18 A+
F/A-18 C
F/A-18 D
AV-8B
EA-6B



F-35B

CH-53E



CH-53K

ISR Services
RQ-7B



RQ-21A
Group 4

VH-3
VH-60

TBD

VXX

Transitions in progress

Expeditionary Marine Aviation

Marine Aviation

- **What makes us more expeditionary?**
- L-Class Shipboard Compatibility
- Increased speed
 - Platform
 - Information
 - Digital Interoperability; FMV, VMF, Link-16
- Increased Range
 - Platform
 - Sensors/Weapons
 - Communications
- Increased efficiency
 - Fuel, Batteries
 - Sustainment; O&M cost controls

MWSS

Marine Aviation

Enables All Six
Control of Aircraft and Missiles
Anti-Air Warfare
Assault Support
Aerial Reconnaissance
Offensive Air Support
Electronic Warfare

- **Expeditionary Operations**
 - MWSS is the critical enabler to ACE operations
 - Tactical and Strategic Agility
 - Realignment of MWSS under MAG
- **EAF 2000 Reconstitution**
 - AM-2 Retrograde and Refit
(7 million sq ft installed ISO OEF)
 - Next Generation Airfield Lighting/Matting



Ground/Air Task Oriented Radar (G/ATOR) Transition

Marine Aviation

- **G/ATOR: A MAGTF Weapon System**
 - Block I: Air Defense/Surveillance Radar
 - Block II: Ground Weapon Locating Radar
 - Block IV: Air Traffic Control
- Both Engineering Development Models (EDMs) are meeting integration and testing expectations
 - G/ATOR Incr. 1 EDM's are detecting and tracking air traffic at BWI.



- Program is on schedule
- Program was resourced in PB-13

**G/ATOR replaces 5 legacy radars:
TPS-63, TPS-73, TPQ-46
UPS-3 and MPQ-62**

AAO:

ACE	Qty 31 (Incr I & IV)
GCE	Qty 38 (Incr II)
Total	69

UAS Family of Systems

Control of Aircraft and Missiles
Anti-Air Warfare
Assault Support
Aerial Reconnaissance
Offensive Air Support
Electronic Warfare

Marine Aviation

- RQ-7B Weaponization approved
- RQ-21 Small Tactical UAS (STUAS) early operational capability
 - EOC started in Sep 2011
- Planned Cargo UAS deployment to OEF
 - Arrived in Nov 2011
- VMU officer primary MOS approved



KC-130J

Enables All Six
Control of Aircraft and Missiles
Anti-Air Warfare
Assault Support
Aerial Reconnaissance
Offensive Air Support
Electronic Warfare

Marine Aviation

- Active FOC by 31 Dec 2011
- Reserve transition ~ FY15-26
- Enhanced Capabilities:
 - More efficient aerial delivery
 - Twice the delivery rate for Rapid Ground Refueling (RGR) operations
 - 21% increase in speed
 - Shorter Take-off distances
 - Common engine to the MV-22
 - Advanced defensive systems
 - LAIRCM
 - Harvest Hawk



POR: 79 aircraft
AC: 3 X 15 aircraft
RC: 2 X 12 aircraft

Squadrons: 3 active, 2 reserve

Control of Aircraft and Missiles
Anti-Air Warfare
Assault Support
Aerial Reconnaissance
Offensive Air Support
Electronic Warfare

MV-22B Osprey

Marine Aviation

- FRP – 2005; IOC – 2007
- Deployments: 14; 3 OIF, 6 OEF, 5 MEU
- Missions: Raids, CASEVAC, TRAP, HA/DR, resupply, VIP, and theater security cooperation
- Goal: reduced cost per flight hour, improved readiness and maintainability, continued fleet success



POR: 360 aircraft
AC: 16 X 12 aircraft
RC: 2 X 12 aircraft

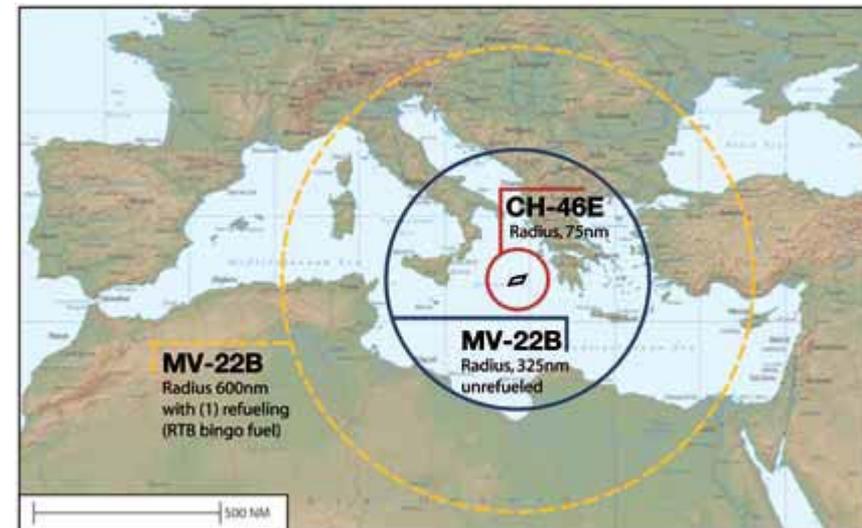
Squadrons: 16 active, 2 reserve

MV-22B Osprey

Marine Aviation



“Turns Texas into Rhode Island.”
– BGen Alles, *CG ACE MNF-W*



H-1 Upgrades Program

Control of Aircraft and Missiles
Anti-Air Warfare
Assault Support
Aerial Reconnaissance
Offensive Air Support
Electronic Warfare

Marine Aviation

- AH-1Z IOC (February 2011)
 - 85% commonality between Y/Z
 - Reduction in logistics/training requirements
- To date:
 - ~64 Yankees / ~26 Zulus delivered
- Enhanced Capabilities:
 - Yankee
 - Double the range and payload
 - 170 knots versus 130 knots Vne
 - 8 fully loaded Marines
 - Digitally integrated cockpit
 - Zulu
 - Improved Sensors – Max range
Weapons employment
 - Double the Range



POR: 349 aircraft (160 Y, 189 Z)

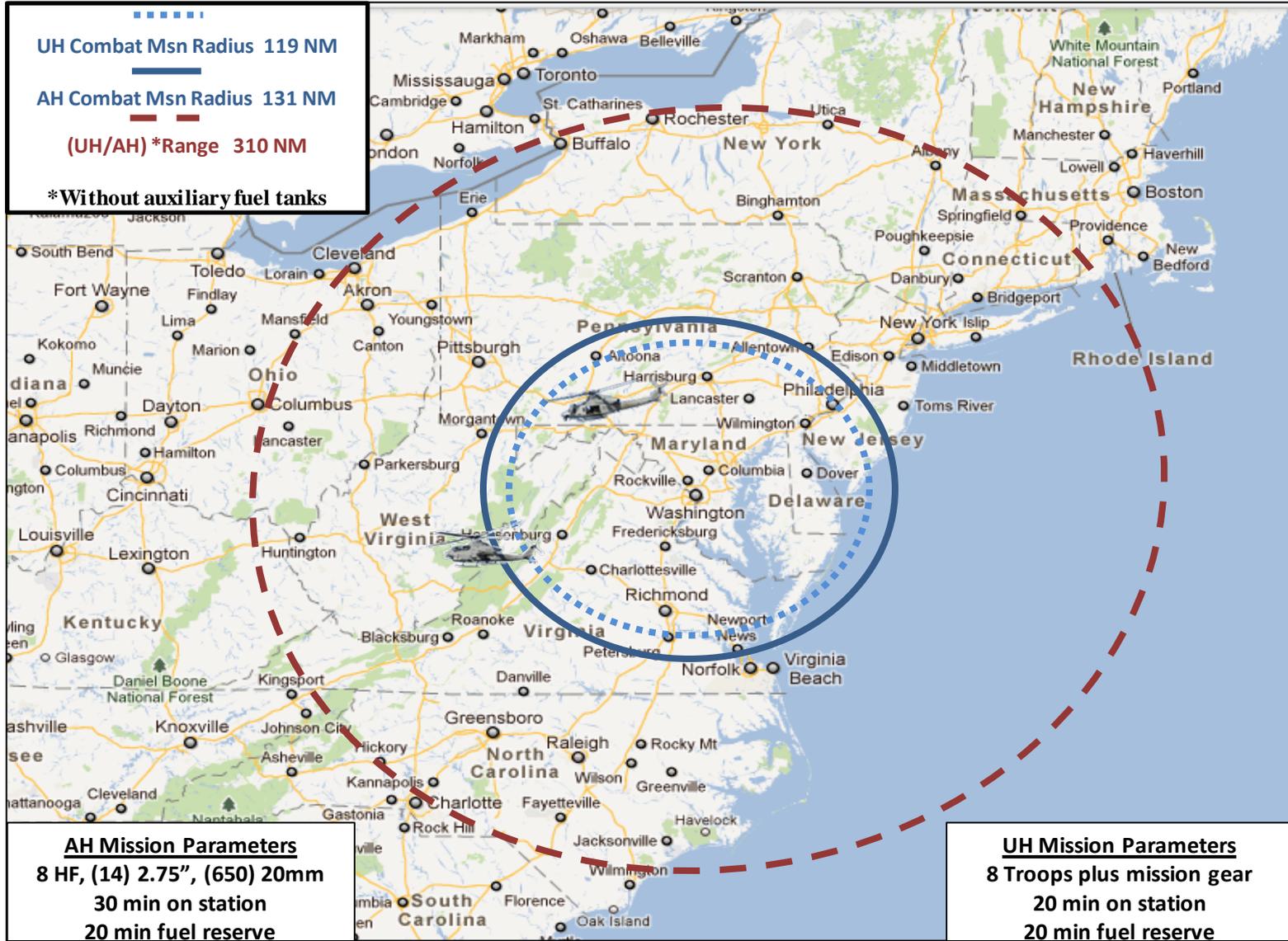
AC: 8 X 15Z / 12Y aircraft

RC: 1 X 15Z / 12Y aircraft

Squadrons: 8 active, 1 reserve

H-1Y/Z Combat Radius and Range

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F-35B JSF Update

Marine Aviation

Control of Aircraft and Missiles
Anti-Air Warfare
Assault Support
Aerial Reconnaissance
Offensive Air Support
Electronic Warfare



CH-53K Quad Chart

Marine Aviation

Program Overview

- Only ACAT1D developmental rotorcraft program in DoD
- Evolves the CH-53E design to improve operational capability, reliability, maintainability, survivability, and cost of ownership
- Only fully marinized helicopter capable of lifting 100% of the equipment in the Marine Corps' "Middle Weight Force" vertical MAGTF in support of future warfighting concepts and CMC's V&S 2025
- Program of Record: 200 aircraft

Issues

- Projected to meet and exceed all Key Performance Parameters (KPPs)
- Executing and has met all Obligation & Expenditures benchmarks since FY08
- Program converted the SDD contract to Cost Plus Incentive Fee (CPIF) in Mar 2011 IOT emphasize cost and schedule
- Fiscal constraints impacting procurement ramp indicated in the Selected Acquisition Report (SAR)

Acquisition Status

- Currently under a System Development and Demonstration (SDD) contract funded by RDT&E dollars
- MS-B Dec 05
- Preliminary Design Review Sep 09
- Critical Design Review Jul 10
- Ground Test Vehicle Light Off Jan 13
- First Flight FY14
- MS-C FY15
- IOC 1QFY19
- FOC FY27

Plans

- Ground Test Vehicle (GTV) assembly began Jan 2011 at Sikorsky's West Palm Beach facility (88% complete).
- Static Test Article (STA) is 100% complete and has been delivered to test (Stratford, CT)
- Engineering Demonstration Model (EDM-1) entered assembly in Dec 2011 (89% complete).
- EDM-2 entered assembly in Feb 2012 (38% complete).
- EDM-3 entered assembly in May 2012 (22% complete).
- EDM-4 entered assembly in Jul 2012. (1% Complete)
- The GE38-1B engine program has accumulated 2,226.1 successful test hours.
- First Marine Maintenance Det and Integrated Test Team arrive WPB, FL in Jan 2013.

CH-53K In Assembly

Marine Aviation



Capability Drivers

Marine Aviation

- Decrease the size and weight
 - Lighten the MAGTF OPT ongoing
 - 2010 MEU ACE ~ 520 K; 2020 MEU ACE ~ 800 K
- Increase the speed (tempo)
 - Sensor to shooter and Kill Chain information
 - Digital Interoperability
- MAGTF EW
 - We view the EW spectrum as battle space
 - This is space we need to dominate and exploit

Acquisition Challenges

Marine Aviation

- **Defining requirements:**
 - What is the problem we are trying to solve?
 - Healthy tension between clarity & industry creativity
 - Capability with what capacity? At what cost?
- **Contracting:**
 - Takes too long
- **Multiple transitions simultaneously**
 - USMC / DoD transitions
- **Sustainment and Relevance**
 - Sustainment for the new & legacy platforms
 - Modification / upgrade costs vs. buy new

Acquisition for the Future

Marine Aviation

- Avoid a single view of warfare
 - The only thing certain is uncertainty
 - Surprise will be the dominant factor
- Cyberspace & the EW Spectrum
- Cost imposing strategies
 - How do we make war (more) expensive for the enemy?
- Time to Train & Dwell vs. multi-mission platforms
 - Readiness – maintenance, sustainment
 - Service life – support to legacy platforms and systems
 - Simulation - training
- Expeditionary subsystems - Integrated Capabilities
 - Security and Interoperability
 - Expeditionary connectors



MARINE AVIATION



Questions

KC-130J Harvest HAWK

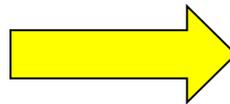
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- Persistent ISR and attack capability conducted from KC-130 J
 - Preserves refueling capability from RH AAR Pod.
- System Components
 - AN/AAQ-30 Targeting Sight System (TSS)
 - RO/RO fire control station on modified pallet
 - AGM-114P Hellfire II in place of left AAR pod
 - Griffin Stand Off Precision Guided Munitions
 - Video Downlink to Rover



CURRENT FORCE:

1 AC VMGR SQDN x 2 MISSION KIT
1 AC VMGR SQDN x 1 MISSION KIT



FORCE GOAL:

2 AC VMGR SQDN x 3 MISSION KITS

**One kit deployed since Oct 2010 - Identified 8 confirmed and multiple suspected IEDs
Employed 74 Hellfire & 13 Griffin - Feedback from supported units is outstanding**

Harvest Hawk

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MV-22 MISSION SNAPSHOT

Operation Odyssey Dawn

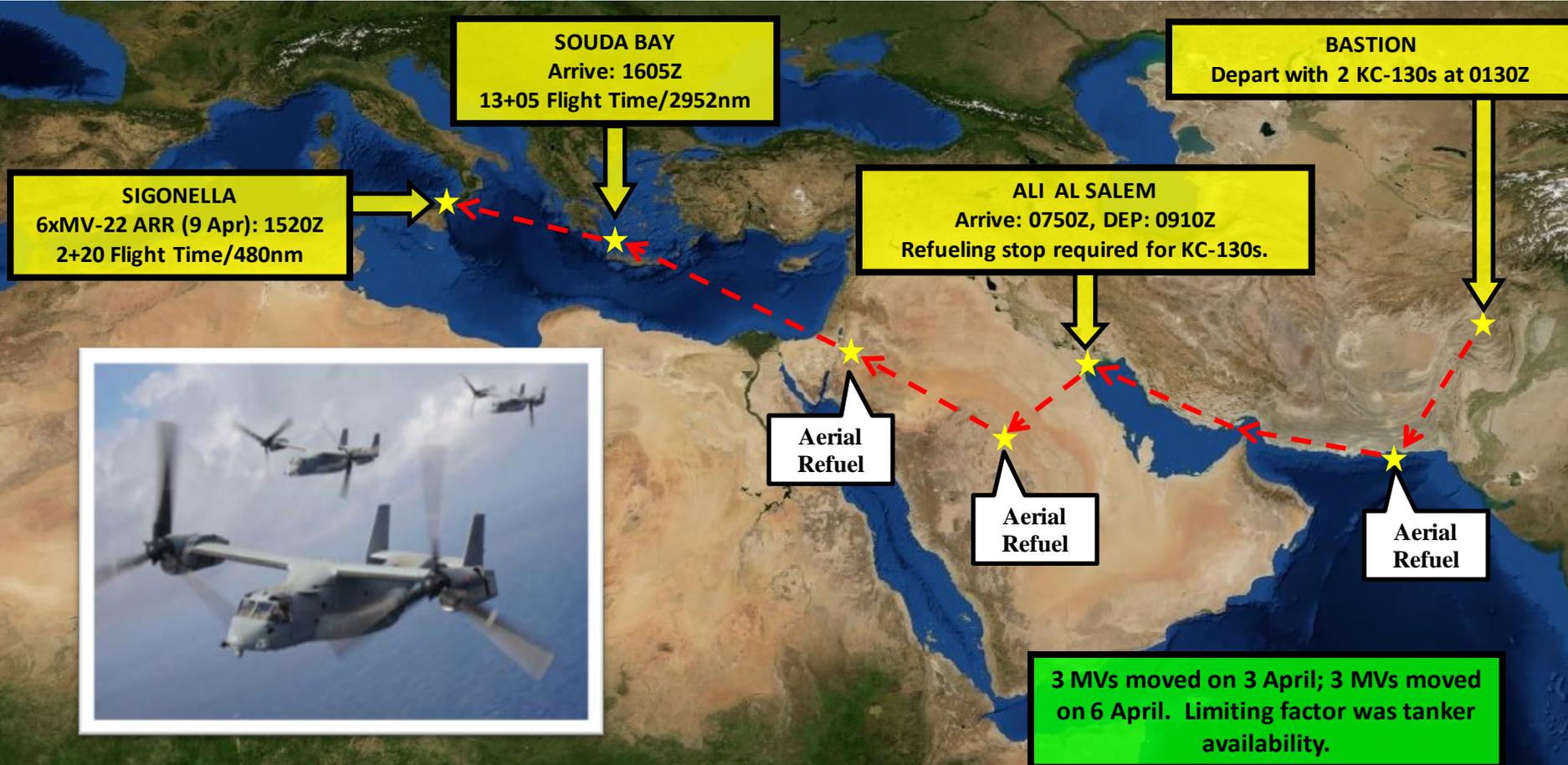
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26 MEU MV-22's prepare to launch from USS Kearsarge

Afghanistan Retrograde

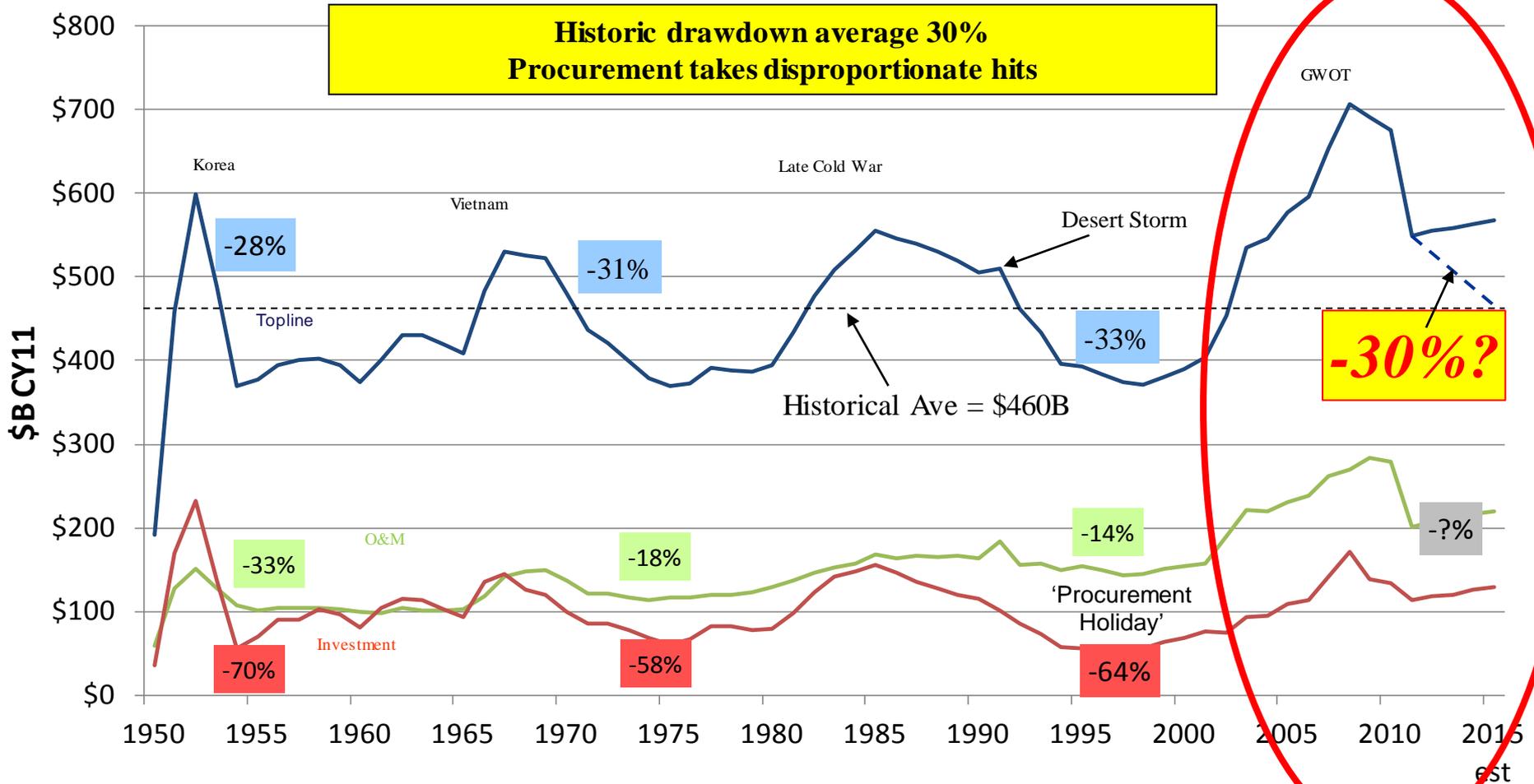
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6 x MV-22's, 3 continents, 10 countries, 3432 NM
25 Marines, 15000 lbs of cargo, 15+25 hrs

DOD Budget Context

Marine Aviation



Currently 8-11% down this slope with POM13 - \$3.93B.

DON Aviation Budget Context

PB-12 30 Year Aircraft Investment Plan

Marine Aviation

