EA-18G

- Electronic Warfare Replacement for EA-6B
- ALQ-218 wideband receiver combined with the ALQ-99 Tactical Jamming System
- Precision Airborne Electronic Attack
- Interference Cancellation System (INCANS)
  - INCANS enables uninterrupted communications during jamming operations
- Same Flight Control System as F/A-18E/F
  - Software changes to adjust air data position error corrections associated with fwd fuselage antennas
  - Other software enhancements for BIT and maintainability
    > Retrofit into E/F
- Status
  - First Flight 2006
  - IOC 2009
F-35 Status

- Seven flights since 15 Dec 06 first flight
- AA-1 is risk reduction testbed for SDD
  - Not Structurally Optimized
- Limited envelope clearance
- Reliable subsystem operation including EHAs
- Exercise major system functions
- Air Data AOA corrections required SW update
- Flight test to prediction data comparisons look good but prelim
- Bay environments need further characterization
- BF-1 (STOVL) first flight scheduled for May 08
V-22

- **V-22 Status**
  - Marine OPEVAL Complete
  - Marine IOC Summer 07
  - Air Force OUE (Operational Utility Evaluation Conducted in 2006)
  - Air Force IOT&E (Initial Operational Test & Evaluation) 3rd Qtr 07
  - Air Force IOC 1st Qtr 09

- **Recent FCC hardware concern is resolved.**

- **FCS Software Upgrade to be delivered in June 07**
  - Coupled Modes Improvements
  - Contingency Power
E-2D Advanced Hawkeye

• Modified E-2C to Accommodate New Radar System

• FCS Changes:
  – No H/W & CLAWS Change in SAFCS (Same PA SAS as of E-2C Hawkeye 2000)
  – Additional Components (EGI, Smartprobes & Aircraft Flight Management Computer) Integrated with FCC to Provide Info to Cockpit
  – Redesigned Control Wheel Steering & Pedestal (Throttles)
  – Redesigned Elevator Actuator - Improved Seals/Piston Rod Coating/Re-profiling to save Weight

• Program Status
  – Post CDR
  – FRR by Aug 07
CH-53K

- Heavy Lift Replacement for Marine Corp
- Fly By Wire (FBW)
- Active Inceptor System (Unique Trim)
- Control Laws
  - Rate Command Attitude Hold (RCAH) & Attitude Command Velocity Hold (ACVH)
  - Automatic approach to hover, landing, departure and wave-off feature
  - From the hover position, pilot can command Flight Director to execute the landing guidance algorithm. Satisfies ORD requirement for vertical landing requirement in the absence of external visual cues.
- Dual Boost Hyd Actuators / Transfer & Isolation Valves
- Status
  - CH-53K Contract awarded to Sikorsky April 2006
  - CH-53K Program currently in early E&MD phase
  - Sikorsky RFP and supplier down-select in progress
  - Sikorsky will select hydraulic actuator and hydraulic system integration suppliers
**P-8A Multi-mission Maritime Aircraft (MMA)**

- Boeing 737-800 platform modified to meet mission requirements
- FCS modifications include:
  - **AFCS**
    - Control Law change (same H/W) in Enhanced Digital Flight Control System (DFCS) and Stall Management Yaw Damper Computer (SMYDC)
    - FMCS Integrated into Autopilot System
  - **Mechanical Controls**
    - Control Wheel/Control Stand
    - Slat Actuator (-900 ER)/Sealed Slat for Detents 15, 20 & 25
    - Elevator Feel Computer to reduce Take-off Column Forces
    - Flap/Slat Electronic Unit (FSEU) S/W for Flap Load Relief
    - Re-route FC Cables and Pulley locations
- **Program Status – Post Aircraft Systems CDR**
MQ-8B Fire Scout

- Builds on success of MQ-8A program but adds
  - 4 bladed rotor
  - Increased fuel capacity
  - Greater payload volume
- First flight of MQ-8B variant December 2006
- IOC expected 4th Qtr FY08 on Littoral Combat Ships
Broad Area Maritime Surveillance (BAMS)

- Persistent Maritime Intelligence, Surveillance and Reconnaissance (ISR) UAS
  - Multiple vehicles allow 24hr coverage up to 7 days a week at 2,000 nm

- Final RFP released to industry

- Contract award anticipated 4th Qtr FY07

- International partners have expressed interest in participation in SDD program
UCAS-D

- Demonstrate carrier suitability of persistent ISR relevant, unmanned, LO-planform air vehicle
- Focus on maturing key technologies
- Final RFP released to industry
- Contract award anticipated 2\textsuperscript{nd} half FY07
- Precursor to eventual competitive procurement for operational vehicle
**EA-6B DFCS Upgrade**

- Developmental testing completed
  - Operational Test Observation complete November 2006
  - Validation of Retrofit Technical Directive complete in Jan 2007
  - Flight test of final SW load completed in February 2007
- Next major milestones – getting the product to the fleet
  - Verification of Technical Directive scheduled for March 2007
  - Fleet installations scheduled to start in April 2007
  - IOC June 2007
TAWS/GPWS
Terrain Avoidance Warning System/Ground Proximity Warning System

- Fielded in F-18C/D/E/F and AV-8B
- In test for EA-6B and MH-60R/S
- Ready for test in T-45C and E-2D
- Being tailored for integration in AH/UH-1Y/Z and CH-53K
- Planning for
  - incorporation of obstacle data
  - expansion to include mid-air collision avoidance capability
- Program recipient of 2006 FAA Excellence in Aviation Research Award
- Two documented “saves”
- Naval Safety Center states that TAWS/GPWS is responsible for a “statistically significant” reduction in Controlled Flight Into Terrain (CFIT) rates within the fielded platforms