Strategic Transformation…

Time-critical precision engagement
- MYP II: FY05-09, 210 A/C, includes 56 EA-18G
  - Contract: 30 Dec 2003
  - $1.1B Savings, $100M CRI
  - FMS increases savings
- Spiral development
  - ATFLIR
  - IDECM
  - MIDS
  - AESA
  - AMC&D
  - ACS
- Neck-down: replaces EA-6B, F-14, S-3
- $1B annual fleet operations savings

Performance better than plan
- MYP I: $700M in customer savings
- On cost, ahead of schedule
- Balanced: Survivability and stealth
- Commercial-based logistics

New, now, network centric

Network-Centric Operations
- Integrated battlespace
- 6 - 10 times capability multipliers
- Effects-based warfare
- Fast track technology transition

. . . of Tactical Aviation

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### Physical Characteristics

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing area</td>
<td>46.5 m² (500 ft²)</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Empty</td>
<td>14,288 kg (31,500 lb)</td>
</tr>
<tr>
<td>Payload</td>
<td>8,493 kg (18,727 lb)</td>
</tr>
<tr>
<td>Max TOGW</td>
<td>29,932 kg (66,000 lb)</td>
</tr>
<tr>
<td>Fuel (JP-8)</td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>6,780 kg (14,950 lb)</td>
</tr>
<tr>
<td>External*</td>
<td>7,430 kg (16,380 lb)</td>
</tr>
</tbody>
</table>

* (5) 1,820 liter (480 gallon) external tanks

Greater range and payload than the F/A-18C/D with greater reliability
F/A-18E/F Super Hornet

Key Features

High survivability/lethality
- Low radar cross section
- Low vulnerability
- Advanced electronic warfare
- Advanced radar and FLIR
- 11 weapon stations

Long range/endurance
- 6,780 kg (14,950 lb) internal fuel
- 7,430 kg (16,380 lb) external fuel
  - (5) 1,820 liter (480 gal.) external tanks
- Air refueling store for tanking

Improved deployability
- Short field performance
- Minimal support equipment

Growth Potential
- Space
- Electrical power
- Cooling
- Hydraulics

The Super Hornet will provide the capability to fight and survive well into the 21st century
F/A-18E/F Subsystems

Hydraulic system
• Independent circuits for safety/survivability
• Dual pressure hydraulics allows more compact system

Flight control system
• Proven excellent handling qualities for safety and combat maneuverability
• No angle-of-attack limitations for most combat configurations

Fuel system
• Large internal fuel capacity plus 5 external tanks
• Aerial refueling store capability

Electrical system
• Redundant generators for safety/survivability
• Significant growth capacity

Propulsion system
• Twin engines for safety/survivability
• Unrestricted engine operation
• Reliable and maintainable engines

Secondary power system
• Onboard power/cooling for ground maintenance
• Self contained engine start capability

Environmental control system
• Cooling capacity for all environmental extremes
• Significant growth capacity

F/A-18E/F systems provide robust mission capability, safety, and growth

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F/A-18E/F Key Enabling Technologies

**AESA**
- Air-to-air
- Air-to-surface

- **APG-65/73 AESA radar**
- 2–3 times longer detection range
- Simultaneous air-to-air and air-to-ground tracking

**3rd generation FLIR**

- Targeting, navigation, and laser designation
- Detection/recognition 3 to 5 times longer

- **Network Centric Operations**

- Critical information always in pilot’s field-of-view
  - Aircraft parameters
  - Weapon system status
- High off boresight visual cueing of sensors and weapons

**Avionics integration**

- Radar
- FLIR
- CIT
- Data link
- RWR
- Mission planning
- Sensor pointing
- Situation awareness format (notional)

**Payload**

- 11-store stations
- Flexible
- Asymmetric capability

**JHMCS**

- Airborne command and control asset
- Command and control
- Coordination

- **Control Center**
- **MIDS**
- **DCS**
- **Ground forces**

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Electronic Warfare Systems

ALR-67(V)3 radar warning receiver
- High pulse density
- Improved emitter ID
- Improved sensitivity

ALE-50 towed decoy
- Complement to ALQ-214
- Increases threat miss distance

ALQ-214 onboard jammer
- Defeats pulse, pulse doppler, and continuous wave threats

ALE-47 countermeasure dispenser

Integrated Defensive Electronic Countermeasures (IDECM)

Advanced electronic warfare system provides survivability against modern threats

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Large Payload Capability and Multi-Mission Flexibility

1. **Station 1 and 11**
   - Air-to-air weapons

2. **Station 2 and 10**
   - Air-to-air weapons
   - Air-to-surface weapons

3. **Station 3 and 9**
   - Air-to-air weapons
   - Air-to-surface weapons
   - Fuel tank

4. **Station 4 and 8**
   - Air-to-air weapons
   - Air-to-surface weapons
   - Fuel tank

5. **Station 5 and 7**
   - Sensors
   - Air-to-air weapons

6. **Station 6**
   - Sensors
   - Air-to-surface weapons
   - Aerial refueling store
   - Fuel tank

**Store stations**

**Significant weapon payload/flexibility increases warfighting options**

**Air-to-air payload**

**Precision strike with self-escort/self-protection**

**Airborne electronic attack**

*In long range plan for clearance*

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Advanced Flight Controls

- Excellent flying qualities
- High departure resistance
- Rapid nose-pointing capability (in excess of 30°/sec)
- Slow landing speeds
- Precise target acquisition

Plus…………..
- No angle-of-attack limits for any symmetric Air-to-air or air-to-ground configurations
- No dedicated speedbrake because traditional control surfaces used for deceleration
- Self-repairing flight controls for increased safety and combat survivability

Highly maneuverable and safe to fly
Advanced Forward Cockpit

- Head-up display (20° field-of-view)
- Up-front control/display
- Touch-sensitive LCD (10.2 cm x 12.7 cm) (4 in. x 5 in.)
- Engine/fuel display
- HOTAS controls
- Joint helmet mounted cueing system
- Multifunction color displays (12.7 cm x 12.7 cm) (5 in. x 5 in.)
- Multipurpose color display (15.2 cm x 15.2 cm) (6 in. x 6 in.)
- Nigh-vision compatible

Easy to fly – optimized for minimum pilot workload

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Advanced Aft Cockpit

- Fully missionized for increased lethality and survivability
- Complementary crew operations
- Independent controls
- Large display
  - Precise target designation
  - Improved situation awareness
- Combat capable two-seat trainer

Dual hand controllers

- Up-front control/display
  - Touch sensitive LCD
- Advanced tactical display
  - Full-color
  - (20.3 cm x 25.4 cm)
  - (8 in. x 10 in.)
- Advanced multi-purpose displays
  - Full-color LCD
  - (12.7 cm x 12.7 cm)
  - (5 in. x 5 in.)

Nigh-vision compatible

Joint helmet mounted cueing system

Large full-color display enables maximum situation awareness and targeting efficiency

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Air Superiority

- Long range dominance
  - Stealth
  - AESA radar
  - AMRamm

- Situational awareness
  - Long range AESA radar
  - ATFLIR
  - Data link
  - Electronic identification
  - Integrated digital map
  - Target data fusion

- Close-in lethality
  - High maneuverability
  - Helmet mounted display
  - Agile, high angle missile

First look – First shot – First kill
Range and Endurance
Combat Air Patrol

• 380 NM mission radius
• 2.0 hours CAP (no tanking)

The Super Hornet’s long combat air patrol time provides effective protection of sovereign airspace
Precision Attack

The Super Hornet finds and destroys targets with precision accuracy in any weather, day or night.

Weapon load flexibility

Precision weapon delivery
• All-weather, day or night
• Long standoff range
• Multiple targets per pass

Target location/designation
• High resolution SAR
• Advanced FLIR

Survivability
• Advanced countermeasures
• Maneuverability with stores
• Damage tolerant airframe/systems
**Advanced Weapons**

**Current**

**AIM-9X**
- High off-boresite capability
- Highly maneuverable
- IR countermeasures resistant

**JDAM**
- Adverse weather day/night
- Multiple targets per pass

**Planned**

**AIM-120**
- Long-range BVR
- Upgrade

**JSOW**
- Max kinematic range 70NM
- Adverse weather day/night
- Smart submunitions or unitary warhead

*Long term combat proven*

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Range and Endurance

Ship Attack Mission

- 805 NM mission radius
- 1,135 NM mission radius

Maritime Patrol

- 300 NM mission radius
- 2.3 hours patrol time
- 3.2 hours patrol time
In-Flight Refueling Tanker

- Force structure flexibility
  - Easier coordination of tanker and combat aircraft

- Long range deployment

- Increased combat effectiveness
  - Self-contained tanker force
  - Extended range combat missions
  - Increased mission duration
  - Greater weapon payload

Every F/A-18E/F is capable of serving as an in-flight refueling tanker
F/A-18E/F Survivability

Balanced approach to survivability

• Low radar cross section

• Long standoff range
  - Integrated, long range sensors
  - Standoff weapons
  - Integrated countermeasure
    - Onboard and towed jamming

• Survive if hit (low vulnerable area)
  - Twin engines
  - Active fire suppression

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F/A-18E/F Easily Deploys to Remote Sites

- Excellent short field performance
  - Very slow approach speed
  - Steep glide slope
  - Precise touchdown
  - Rugged landing gear
  - Excellent ground handling

- Minimal support equipment required
  - Excellent reliability
  - Ease of maintenance
  - Auxiliary power unit
  - Self-contained ladder
  - No liquid oxygen

U.S. Navy carrier suitability influence provides excellent austere basing capability

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Supportability Advantages

- Maintenance free APU and brake accumulators
- Expanded built-in-test (98% fault isolation capability)
- Advanced, highly reliable systems
- Higher order language software
- Electronic flight control rigging
- Improved landing gear and wheels
- 42% fewer parts than F/A-18C/D
- Engine change in less than 30 minutes
- Improved corrosion resistance
- Electronic engine control (no mechanical rigging)

Reliability and maintainability advantages
Tailored Support

- Organizational Level
  - Extensive BIT, rapid turn around
  - Daily, Turnaround inspections
  - Engine remove and replace

- Intermediate Level
  - Minimal investment required
    - Low cost solution - utilize existing USN/OEM/Regional capability
  - Extensive capability available
    - Higher level of autonomy

- Depot Level
  - No scheduled aircraft level maintenance
  - Component maintenance beyond Intermediate capability at U.S. Depot, OEM or in-country industry

F/A-18E/F support is tailored to customer requirements
Super Hornet Summary

• USG is committed to Super Hornet
  – Super Hornet is a key catalyst to foster government-to-government relations
  – Provides key capability, promotes interoperability
  – stable/declining cost…low risk – demonstrated affordability
  – E/F/G leads-to and complements F-35…No change long-term F-35 planning
  – E/F/G = F-35: Complementary capabilities – mitigates capability gap
  – Committed to long-term, stable production
• F/A-18E/F: Available now, supportable now, interoperable now
• USG prepared for direct offer: Near term aircraft, training and support
• The HIT is international
• USG/HIT prepared to offer sale and and financing alternatives
  – FMS, direct commercial, hybrid… flexible
  – Financing, leasing and other alternatives
• Relationship with USN enables affordable improvement of capability
  – Opportunities for collaborative upgrades
  – Cooperate with USN with incorporation of planned capability roadmap: Advanced sensors and network centric capability