

# **Selected Acquisition Report (SAR)**

RCS: DD-A&T(Q&A)823-549



**F/A-18E/F**As of December 31, 2010

Defense Acquisition Management Information Retrieval (DAMIR)

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# **Program Information**

#### Designation And Nomenclature (Popular Name)

F/A-18E/F Super Hornet

#### **DoD Component**

Navy

# Responsible Office

#### Responsible Office

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Date Assigned July 26, 2007

#### References

#### **SAR Baseline (Production Estimate)**

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated September 17, 2000

#### Approved APB

NAE Approved Acquisition Program Baseline (APB) dated February 15, 2011

# Mission and Description

The F/A-18E/F Super Hornet is the second major model upgrade since the inception of the F/A-18 aircraft program. The single-seat F/A-18E and the two-seat F/A-18F are high performance, twin-engine, mid-wing, and multi-mission tactical aircraft designed to replace the F/A-18C (single-seat) and F/A-18D (two-seat) aircraft as they reach the end of their service lives and retire. The F/A-18E/F is designed to meet current Navy fighter escort and interdiction mission requirements, to maintain F/A-18 fleet air defense and close air support roles, as well as an increasing range of missions, including Forward Air Controller (Airborne) and Aerial Tanking, as the F/A-18E/F has proven capability to replace the S-3 as an aerial tanker. F/A-18E/F enhancements include increased range and improved carrier suitability required for the F/A-18 to continue its key strike fighter role against the advanced threats of the 21st century.

# **Executive Summary**

The F/A-18E/F Super Hornet program continues to excel. Cost, schedule, and performance were superb during this reporting period, and the program continues to deliver aircraft ahead of schedule.

As of December 31, 2010, Super Hornet aircraft have flown over 821,267 hours, and 376 Full Rate Production (FRP) Super Hornet aircraft deliveries have been completed ahead of contract delivery schedule. This brings the total deliveries to 445 aircraft (376 FRP, 62 Low Rate Initial Production (LRIP), and 7 Engineering and Manufacturing Development (EMD)). Thirteen of the Lot 33 aircraft have been delivered; delivery continues for Multi-Year Procurement II (MYP II) aircraft which include the Royal Australian Air Force (RAAF) deliveries.

A third MYP contract was definitized on September 28, 2010. Per Resource Management Decision 703 (RMD-703), the F/A-18E/F program was approved to procure 41 additional F/A-18E/F aircraft, which increased the program of record from 515 to 556.

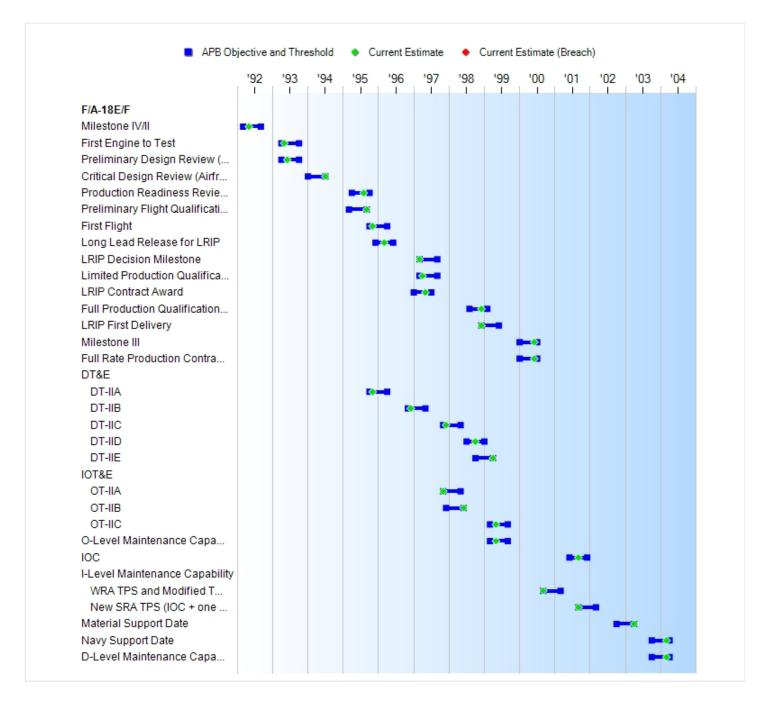
The fleet has deployed software load H5E+; software load H6E+ is in Operational Testing (OT).

There are no significant software issues at this time.

# **Threshold Breaches**

APB Breaches									
Schedule									
Performance									
Cost	RDT&E								
	Procurement								
	MILCON								
	Acq O&M								
<b>Unit Cost</b>	PAUC								
	APUC								
Nunn-McC	<b>Curdy Breache</b>	s							
<b>Current UCR I</b>	Baseline								
	PAUC	None							
	APUC	None							
Original UCR I	Baseline								
	PAUC	None							
	APUC	None							

# **Schedule**



Milestones	SAR Baseline Prod Est	Prod	nt APB uction /Threshold	Current Estimate
Milestone IV/II	MAR 1992	MAR 1992	SEP 1992	MAY 1992
First Engine to Test	APR 1993	APR 1993	OCT 1993	MAY 1993
Preliminary Design Review (Airframe)	APR 1993	APR 1993	OCT 1993	JUN 1993
Critical Design Review (Airframe)	JAN 1994	JAN 1994	JUL 1994	JUL 1994
Production Readiness Review (Airframe)	APR 1995	APR 1995	OCT 1995	AUG 1995
Preliminary Flight Qualification (Engine)	MAR 1995	MAR 1995	SEP 1995	SEP 1995
First Flight	OCT 1995	OCT 1995	APR 1996	NOV 1995
Long Lead Release for LRIP	DEC 1995	DEC 1995	JUN 1996	MAR 1996
LRIP Decision Milestone	MAR 1997	MAR 1997	SEP 1997	MAR 1997
Limited Production Qualification (Engine)	MAR 1997	MAR 1997	SEP 1997	APR 1997
LRIP Contract Award	JAN 1997	JAN 1997	JUL 1997	MAY 1997
Full Production Qualification (Engine)	AUG 1998	AUG 1998	FEB 1999	DEC 1998
LRIP First Delivery	DEC 1998	DEC 1998	JUN 1999	DEC 1998
Milestone III	JAN 2000	JAN 2000	JUL 2000	JUN 2000
Full Rate Production Contract Award	JAN 2000	JAN 2000	JUL 2000	JUN 2000
DT&E				
DT-IIA	OCT 1995	OCT 1995	APR 1996	NOV 1995
DT-IIB	NOV 1996	NOV 1996	MAY 1997	DEC 1996
DT-IIC	NOV 1997	NOV 1997	MAY 1998	DEC 1997
DT-IID	JUL 1998	JUL 1998	JAN 1999	OCT 1998
DT-IIE	OCT 1998	OCT 1998	APR 1999	APR 1999
IOT&E				
OT-IIA	NOV 1997	NOV 1997	MAY 1998	NOV 1997
OT-IIB	DEC 1997	DEC 1997	JUN 1998	JUN 1998
OT-IIC	MAR 1999	MAR 1999	SEP 1999	MAY 1999
O-Level Maintenance Capability (OPEVAL)	MAR 1999	MAR 1999	SEP 1999	MAY 1999
IOC	JUN 2001	JUN 2001	DEC 2001	SEP 2001
I-Level Maintenance Capability				
WRA TPS and Modified TPSs (IOC)	SEP 2000	SEP 2000	MAR 2001	SEP 2000
New SRA TPS (IOC + one year)	SEP 2001	SEP 2001	MAR 2002	SEP 2001
Material Support Date	OCT 2002	OCT 2002	APR 2003	APR 2003
Navy Support Date	OCT 2003	OCT 2003	APR 2004	MAR 2004

cont.				
Milestones	SAR Baseline Prod Est	Produ	nt APB uction /Threshold	Current Estimate
D-Level Maintenance Capability	OCT 2003	OCT 2003	APR 2004	MAR 2004

# **Acronyms And Abbreviations**

DT - Developmental Testing

DT&E - Developmental Test and Evaluation

IOC - Initial Operational Capability

IOT&E - Initial Operational Test and Evaluation

LRIP - Low Rate Initial Production

**OPEVAL - Operational Evaluation** 

OT - Operational Testing

SRA - Shop Replaceable Assembly

TPS - Test Program Set

WRA - Weapon Replaceable Assembly

# **Change Explanations**

None

# **Performance**

Characteristics	SAR Baseline Current APB Prod Est Production Objective/Threshold		Demonstrated Performance	Current Estimate	
Interoperability of the F/A-18E/F Communications & Data Link Suite	Achieve all IERs	Achieve all IERs	Achieve all Critical IERs	Achieve all Critical IERs	Achieve all Critical IERs
Deck Spot Factor (F/A- 18A/B/C/D =1.2)	<= 1.4	<= 1.4	<1.5	1.46	1.46
Fighter Escort Radius (F/A-18E)(internal fuel) (Nm)	>=425	>=425	>=410	462	434
Interdiction Mission Radius (Nm)					
2 external tanks (retained)	>=400	>=400	>=390	444	419
3 external tanks (retained)	>=450	>=450	>=430	489	463
Combat Ceiling (max thrust) (ft)	>50000	>50000	>=50000	52,300	51,948
Launch: Catapult WOD (C-13-1 Catapult MAXTOGW (kts))	<=25	<=25	<=30	19	19
Recovery: WOD (MK-7MOD 3) (kts)	<=10	<=10	<=15	8	8
Recovery Payload (lbs)	>9000	>9000	>=9000	9494	9327
Usable Load Factor (Subsonic; Nz) (G's)	>= +7.5	>= +7.5	>= +7.5	+7.5	+7.40
Specific Excess Power (Max Thrust, .9M, 1G, 10kft) (fps)	>=650	>=650	>600	648	631
Acceleration (.8M to 1.2M at 35kft) (sec)	<=60	<=60	<70	65	69
Additional Internal Fuel Capacity (lbs) (greater than C/D)	>=3000	>=3000	>=3000	4090	4090
Mean Time Between Operational Mission Failure (MTBOMF) (Replaces MFHBF)	>=3.2	>=3.2	>=2.6	10.0	9.3
Direct Maintenance Manhours per Flight Hour (DMMH/FH) (Replaces MH/FH)	<=5.0	<=5.0	<=9.0	6.4	5.9
Speed (Mach) Fighter Escort Mission Configuration @10,000	.98	.98	.96	.96	.96

ft with Intermediate Rated Thrust					
Empty Weight (lbs)	29950	29950	31950	30801	30968
Built-In Test (All Avionics)					
Fault Detection (%)	75	75	65	100	98.9
Fault Isolation (%)	90	90	85	100	97.6
False Alarm Rate (%)	30	30	45	86.0	39.6
Approach Speed (kts)	<=140	<=140	<=150	142	142

#### **Requirements Source:**

The requirements source documents for the F/A-18E/F program are the Operational Requirements Document (ORD) 550-88-00 approved March 22, 2000 and the Joint Requirements Oversight Council Memorandum (JROCM) 053-00.

#### **Acronyms And Abbreviations**

fps - feet per second

Ft - Feet

G - Gravitational Acceleration

IER - Information Exchange Requirement

kft - Thousand Feet

**KPP - Key Performance Parameter** 

kts - knots

lbs - pounds

M - Mach Number

MAX TOGW - Maximum Take Off Gross Weight

MFHBF - Mean Flight Hours Between Failure

MH/FH - Maintenance Hours per Flight Hour

Nm - Nautical Mile/s

Nz - Normal Load Factor, Normal Acceleration

**ORD** - Operational Requirements Document

sec - second

WOD - Wind Over Deck

# Change Explanations

None

#### Memo

Interdiction Mission Radius, Recovery Payload, Specific Excess Power, Additional Internal Fuel Capacity, Launch Wind Over Deck and Acceleration Time are estimates based on the F/A-18E aircraft.

Interdiction Mission Radius Nautical Miles (Nm) payload with:

- a. 2 external tanks + 2 Airborne Intercept Missile (AIM) -9 + 4 MK 83 Low Drag (LD) on Low Drag Pylons + Forward Looking Infrared Radar/Navigation Forward Looking Infrared Radar (FLIR/NAVFLIR).
- b. 3 external tanks + 2 AIM-9 + 4 MK 83 LD on Low Drag Pylons + Forward Looking Infrared Radar /Navigation Forward Looking Infrared Radar (FLIR/NAVFLIR).

MK is part of a serial number; it is not an acronym or an abbreviation.

Current estimated performance is based on Lot 33 Full Rate Production (FRP) 10 configuration as of October 2010. Empty Weight and Recovery Payload is based on the weight status for FRP 7 as of October 2007. Demonstrated performance (except Empty Weight and Recovery Payload) is based on latest configuration changes and current flight-derived aero-performance.

Recovery Payload: F/A-18F: 44,000 Carrier Landing Design Gross Weight (CLDGW). The F/A-18E/F at Initial Operating Capability (IOC) provided for a threshold/objective of 9,000 pounds of recovery payload.

Specific Excess Power: F/A-18E: (2) AIM-9 + (2) AIM-120 + Gun and Ammo with 60% internal fuel; and the equivalent design gross weight for the F/A-18F.

# **Track To Budget**

RDT&E				
APPN 1319	BA 07	PE 0204136N	(Navy)	
	Project E2130	(E2130) F/A-18 Squadrons/Follow-on Variant		(Sunk)
Procurement				
APPN 1506	BA 01	PE 0204136N	(Navy)	
	ICN 0145	APN 1 F/A-18E/F (Fighter) Hornet (MYP)		
APPN 1506	BA 06	PE 0204136N	(Navy)	
	ICN 0605	APN 6 Spares	(Shared)	

Current Aircraft Procurement, Navy (APN 1) funding level includes funding incorrectly tagged to the Multifunction Information Distribution System Joint Tactical Radio System (MIDS JTRS) Program (PNO 554) in the President's Budget (PB) 2012 submit. The correct funding request is captured in this report. Program will ensure correct tagging for the PB 2013 submit.

Project 1662 of PE 0204136N (F/A-18 Improvement) is currently tagged to the program's PNO 549, but does not provide RDT&E funding. Tagging will be removed to improve transparency.

# **Cost and Funding**

# **Cost Summary**

# **Total Acquisition Cost and Quantity**

	В	Y2000 \$M		BY2000 \$M		TY \$M	
Appropriation	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	5889.4	5895.2	6484.7	5895.2	5574.0	5557.6	5557.6
Procurement	32995.3	41460.3	45606.3	40742.0	36063.3	46347.3	45422.6
Flyaway	27850.7			33616.5	30453.8		37445.1
Recurring	27001.3			31896.2	29575.6		35528.5
Non Recurring	849.4			1720.3	878.2		1916.6
Support	5144.6			7125.5	5609.5		7977.5
Other Support	4304.8			5957.8	4709.4		6702.4
Initial Spares	839.8			1167.7	900.1		1275.1
MILCON	0.0	0.0		0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0		0.0	0.0	0.0	0.0
Total	38884.7	47355.5	N/A	46637.2	41637.3	51904.9	50980.2

The current estimate recommendation aims to provide sufficient resources to execute the program under normal conditions, encountering average levels of technical, schedule and programmatic risk and external influence. It is consistent with average resource expenditures on historical efforts of similar size, scope, and complexity and represents a notional 50% confidence level.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	0	0	0
Procurement	458	565	556
Total	458	565	556

A third Multi-Year Procurement (MYP) contract was definitized on September 28, 2010. Per Resource Management Decision 703 (RMD-703), the F/A-18E/F program was approved to procure 41 additional F/A-18E/F aircraft, which increased the current estimate from 515 to 556.

# **Cost and Funding**

# **Funding Summary**

# Appropriation and Quantity Summary FY2012 President's Budget / December 2010 SAR (TY\$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	5557.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5557.6
Procurement	37666.5	1828.4	2508.9	2375.6	1043.2	0.0	0.0	0.0	45422.6
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2012 Total	43224.1	1828.4	2508.9	2375.6	1043.2	0.0	0.0	0.0	50980.2
PB 2011 Total	43218.1	1828.4	539.2	2283.9	205.6	16.2	0.0	0.0	48091.4
Delta	6.0	0.0	1969.7	91.7	837.6	-16.2	0.0	0.0	2888.8

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	467	22	28	28	11	0	0	0	556
PB 2012 Total	0	467	22	28	28	11	0	0	0	556
PB 2011 Total	0	467	22	1	25	0	0	0	0	515
Delta	0	0	0	27	3	11	0	0	0	41

# **Cost and Funding**

# **Annual Funding By Appropriation**

**Annual Funding TY\$** 

1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
1992							349.5
1993							842.1
1994							1396.2
1995							1246.0
1996							801.1
1997							345.4
1998							234.6
1999							195.6
2000							132.1
2001							13.9
2002							1.1
Subtotal	•			-			5557.6

Annual Funding BY\$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
1992							391.7
1993							922.4
1994							1501.2
1995							1314.4
1996							831.0
1997							354.0
1998							238.5
1999							196.5
2000							130.8
2001							13.6
2002							1.1
Subtotal							5895.2

Annual Funding TY\$
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
1996		233.5			233.5		233.5
1997	12	1471.5		200.0	1671.5	436.8	2108.3
1998	20	1678.7		163.4	1842.1	331.0	2173.1
1999	30	2237.9		195.5	2433.4	451.3	2884.7
2000	36	2230.9		85.9	2316.8	580.3	2897.1
2001	39	2377.2		63.4	2440.6	524.0	2964.6
2002	48	2651.8		72.7	2724.5	531.2	3255.7
2003	45	2684.5		71.0	2755.5	482.1	3237.6
2004	42	2529.2		168.0	2697.2	503.6	3200.8
2005	42	2560.9		75.8	2636.7	401.1	3037.8
2006	38	2209.2		44.6	2253.8	514.2	2768.0
2007	37	2175.7		39.8	2215.5	474.8	2690.3
2008	37	2190.6		56.7	2247.3	537.5	2784.8
2009	23	1391.4		77.6	1469.0	398.7	1867.7
2010	18	1132.9		36.2	1169.1	393.4	1562.5
2011	22	1214.6		172.8	1387.4	441.0	1828.4
2012	28	1925.6		150.4	2076.0	432.9	2508.9
2013	28	1722.0		242.8	1964.8	410.8	2375.6
2014	11	910.4			910.4	132.8	1043.2
Subtotal	556	35528.5		1916.6	37445.1	7977.5	45422.6

Annual Funding BY\$
1506 | Procurement | Aircraft Procurement, Navy

		Ancial Froducine, Navy					
Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
1996		239.3			239.3		239.3
1997	12	1495.2		203.2	1698.4	443.8	2142.2
1998	20	1686.1		164.1	1850.2	332.5	2182.7
1999	30	2219.3		193.9	2413.2	447.5	2860.7
2000	36	2183.4		84.1	2267.5	567.9	2835.4
2001	39	2299.1		61.3	2360.4	506.8	2867.2
2002	48	2532.7		69.4	2602.1	507.4	3109.5
2003	45	2513.7		66.5	2580.2	451.4	3031.6
2004	42	2307.4		153.3	2460.7	459.4	2920.1
2005	42	2272.5		67.3	2339.8	355.9	2695.7
2006	38	1907.7		38.5	1946.2	444.0	2390.2
2007	37	1836.5		33.6	1870.1	400.8	2270.9
2008	37	1823.3		47.2	1870.5	447.4	2317.9
2009	23	1144.7		63.8	1208.5	328.1	1536.6
2010	18	920.1		29.4	949.5	319.4	1268.9
2011	22	971.9		138.3	1110.2	352.9	1463.1
2012	28	1516.4		118.4	1634.8	341.0	1975.8
2013	28	1333.6		188.0	1521.6	318.2	1839.8
2014	11	693.3			693.3	101.1	794.4
Subtotal	556	31896.2		1720.3	33616.5	7125.5	40742.0

Cost Quantity Information
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2000 \$M
1996	<b></b>	
1997	12	
1998	20	
1999	30	
2000	36	
2001	39	
2002	48	
2003	45	
2004	42	
2005	42	
2006	38	
2007	37	
2008	37	
2009	23	1141.4
2010	18	
2011	22	
2012	28	
2013	28	
2014	11	712.9
Subtotal	556	31896.2

#### **Low Rate Initial Production**

	Initial LRIP Decision	Current Total LRIP
<b>Approval Date</b>	3/14/1997	1/29/1999
<b>Approved Quantity</b>	62	62
Reference	Milestone II Acquisition Decision Memorandum	Navy Program Review Acquisition Decision Memorandum
Start Year	1997	1997
End Year	1999	1999

This quantity was approved during the Low Rate Initial Production (LRIP) Defense Acquisition Board (DAB) in March 1997 and was below the 10% guideline for LRIP quantities. The Quadrennial Defense Review (QDR) subsequently reduced the total procurement to a range of 548 to 785 aircraft. Due to the overall aircraft quantity reduction caused by the QDR, the LRIP quantities are above the current 10% guideline. The LRIP quantities remain as approved during the March 1997 DAB.

# **Foreign Military Sales**

Country	Date of Sale	Quantity	Total Cost \$M	Memo
Australia	5/2/2007	24	2474.0	The Program Office has a Foreign Military Sales (FMS) case with Australia for 24 F/A-18E/F aircraft. A five-year follow-on case with Australia for support and sustainment in the amount of \$357.0M is being negotiated.

There have been no changes in quantity.

# **Nuclear Cost**

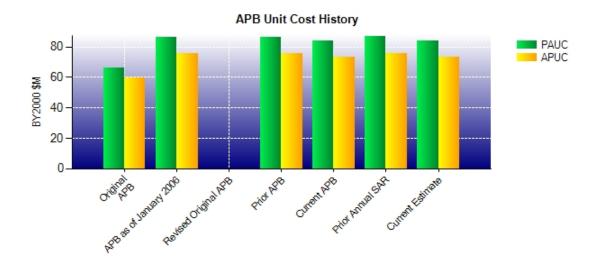
None

# **Unit Cost**

# **Unit Cost Report**

	BY2000 \$M	BY2000 \$M	
Unit Cost	Current UCR Baseline (JUL 2003 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	47568.4	46637.2	
Quantity	552	556	
Unit Cost	86.175	83.880	-2.66
Average Procurement Unit Cost (APU)	C)		
Cost	41679.0	40742.0	
Quantity	552	556	
Unit Cost	75.505	73.277	-2.95
	BY2000 \$M	BY2000 \$M	
Unit Cost	BY2000 \$M Original UCR Baseline (JUN 1992 APB)	BY2000 \$M  Current Estimate (DEC 2010 SAR)	BY % Change
Unit Cost  Program Acquisition Unit Cost (PAUC)	Original UCR Baseline (JUN 1992 APB)	Current Estimate	
	Original UCR Baseline (JUN 1992 APB)	Current Estimate	
Program Acquisition Unit Cost (PAUC)	Original UCR Baseline (JUN 1992 APB)	Current Estimate (DEC 2010 SAR)	
Program Acquisition Unit Cost (PAUC) Cost	Original UCR Baseline (JUN 1992 APB) 65944.7	Current Estimate (DEC 2010 SAR)	
Program Acquisition Unit Cost (PAUC) Cost Quantity	Original UCR Baseline (JUN 1992 APB)  65944.7 1000 65.945	Current Estimate (DEC 2010 SAR) 46637.2 556	% Change
Program Acquisition Unit Cost (PAUC) Cost Quantity Unit Cost	Original UCR Baseline (JUN 1992 APB)  65944.7 1000 65.945	Current Estimate (DEC 2010 SAR) 46637.2 556	% Change
Program Acquisition Unit Cost (PAUC) Cost Quantity Unit Cost Average Procurement Unit Cost (APUC)	Original UCR Baseline (JUN 1992 APB)  65944.7 1000 65.945	Current Estimate (DEC 2010 SAR) 46637.2 556 83.880	% Change

# **Unit Cost History**



		BY2000 \$M		TY	\$M
	Date	PAUC	APUC	PAUC	APUC
Original APB	JUN 1992	65.942	59.970	94.583	88.750
APB as of January 2006	JUL 2003	86.175	75.505	91.968	81.871
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	JUL 2003	86.175	75.505	91.968	81.871
Current APB	FEB 2011	83.815	73.381	91.867	82.031
Prior Annual SAR	DEC 2009	86.858	75.411	93.381	82.590
Current Estimate	DEC 2010	83.880	73.277	91.691	81.695

# **SAR Unit Cost History**

# Initial SAR Baseline to Current SAR Baseline (TY \$M)

Initial PAUC			PAUC						
Dev Est	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	Prod Est
94.583	-16.460	25.278	1.930	-2.510	0.670	0.000	-12.580	-3.672	90.911

# **Current SAR Baseline to Current Estimate (TY \$M)**

PAUC Changes									PAUC
Prod Est	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	Current Est
90.911	0.025	-4.572	2.025	0.465	-1.144	0.000	3.981	0.780	91.691

# Initial SAR Baseline to Current SAR Baseline (TY \$M)

Initial APUC	Initial APUC Changes							APUC	
Dev Est	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	Prod Est
88.750	-16.090	18.461	2.200	-2.510	0.510	0.000	-12.580	-10.009	78.741

# **Current SAR Baseline to Current Estimate (TY \$M)**

APUC				Char	nges				APUC
Prod Est	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	Current Est
78.741	0.068	-2.428	2.025	0.465	-1.157	0.000	3.981	2.954	81.695

# **SAR Baseline History**

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	DEC 1991	MAR 1992	MAR 1992	MAY 1992
Milestone III	DEC 1998	JAN 2000	JAN 2000	JUN 2000
IOC	N/A	SEP 2000	JUN 2001	SEP 2001
Total Cost (TY \$M)	3974.4	94583.0	41637.3	50980.2
Total Quantity	N/A	1000	458	556
Prog. Acq. Unit Cost (PAUC)	N/A	94.583	90.911	91.691

# **Cost Variance**

# **Cost Variance Summary**

Summary Then Year \$M						
	RDT&E	Proc	MILCON	Total		
SAR Baseline (Prod Est)	5574.0	36063.3		41637.3		
Previous Changes						
Economic	-23.7	-354.5		-378.2		
Quantity		+3261.9		+3261.9		
Schedule		+997.2		+997.2		
Engineering		+223.1		+223.1		
Estimating	+7.3	+103.2		+110.5		
Other						
Support		+2239.6		+2239.6		
Subtotal	-16.4	+6470.5		+6454.1		
Current Changes						
Economic		+392.2		+392.2		
Quantity		+3105.4		+3105.4		
Schedule		+128.7		+128.7		
Engineering		+35.2		+35.2		
Estimating		-746.3		-746.3		
Other						
Support		-26.4		-26.4		
Subtotal		+2888.8		+2888.8		
Total Changes	-16.4	+9359.3		+9342.9		
CE - Cost Variance	5557.6	45422.6		50980.2		
CE - Cost & Funding	5557.6	45422.6		50980.2		

Summary Base Year 2000 \$M					
	RDT&E	Proc	MILCON	Total	
SAR Baseline (Prod Est)	5889.4	32995.3		38884.7	
Previous Changes					
Economic					
Quantity		+2583.1		+2583.1	
Schedule		+868.8		+868.8	
Engineering		+200.1		+200.1	
Estimating	+5.8	+181.6		+187.4	
Other					
Support		+2008.0		+2008.0	
Subtotal	+5.8	+5841.6		+5847.4	
Current Changes					
Economic					
Quantity		+2407.0		+2407.0	
Schedule		+121.3		+121.3	
Engineering		+27.1		+27.1	
Estimating		-623.2		-623.2	
Other					
Support		-27.1		-27.1	
Subtotal		+1905.1		+1905.1	
Total Changes	+5.8	+7746.7		+7752.5	
CE - Cost Variance	5895.2	40742.0		46637.2	
CE - Cost & Funding	5895.2	40742.0		46637.2	

Previous Estimate: December 2009

Procurement	\$1	M
	Base	Then
Current Change Explanations	Year	Year
Revised escalation indices. (Economic)	N/A	+392.2
Additional Quantity variance resulting from an increase of 41 F/A-18 E/F aircraft from 515 to 556. (Subtotal)	+2163.3	+2803.7
Additional Quantity variance resulting from an increase of 41 F/A-18 E/F aircraft from 515 to 556. (Quantity)	(+2002.4)	(+2595.1)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+121.3)	(+157.2)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(+27.1)	(+35.2)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+12.5)	(+16.2)
Additional Quantity variance for the increase of 41 F/A-18 E/F aircraft. (Quantity)	+404.6	+510.3
Increase in schedule due to an acceleration of the procurement buy profile in Fiscal Year (FY) 2012. (Schedule)	0.0	-28.5
Adjustment for current and prior escalation. (Estimating)	-295.0	-333.8
Decrease in actual contract costs. (Estimating)	-32.3	-38.3
Reduction related to Multi-Year Procurement III contract award. (Estimating)	-308.4	-390.4
Adjustment for current and prior escalation. (Support)	-57.1	-64.0
Decrease in Other Support due to the extension of the quantity profile. (Support)	-44.1	-56.5
Increase in Initial Spares for additional 41 F/A-18 E/F aircraft. (Support) (QR)	+74.1	+94.1
Procurement Subtotal	+1905.1	+2888.8

(QR) Quantity Related

#### **Contracts**

# **Appropriation: Procurement**

Contract Name Airframe Multi-Year Procurement II (MYP II)

Contractor The Boeing Company
Contractor Location St. Louis, MO 63166

Contract Number, Type N00019-04-C-0014, FPEPA

Award Date December 29, 2003 Definitization Date December 29, 2003

Initial Cor	ntract Price (	(\$M)	Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
6309.0	N/A	154	8931.0	N/A	201	8931.0	8931.0	

# **Cost And Schedule Variance Explanations**

Cost and Schedule variance reporting is not required on this FPEPA contract.

#### **Contract Comments**

The MYP II contract value and quantities represent only the F/A-18E/F portion of the contract and do not include the EA-18G portion.

The increase from the initial contract price to the current contract price is a result of multiple funded modifications and the incorporation of Engineering Change Proposals (ECPs).

#### **Appropriation: Procurement**

Contract Name Airframe Multi-Year Procurement III (MYP III)

Contractor The Boeing Company
Contractor Location St. Louis, MO 63134
Contract Number, Type N00019-09-C-0019, FPIF
Award Date December 04, 2008

Definitization Date December 04, 2008

September 28, 2010

Initial Co	ntract Price (	(\$M)	Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
2770.5	2945.6	66	2775.8	2950.8	66	2775.8	2775.8	

# **Cost And Schedule Variance Explanations**

Cost and Schedule variance reporting is not required on this FPIF contract.

#### **Contract Comments**

This is the first time this contract is being reported.

The MYP III contract value and quantities represent only the F/A-18E/F portion of the contract and do not include the EA-18G portion.

The increase from the initial contract price to the current contract price is due to procurement of non-recurring effort associated with Fiscal Year (FY) 2010 airframes.

A Defense Federal Acquisition Regulation Supplement (DFARS) Subpart 234.2 Individual Deviation request was approved on June 10, 2010, by the Deputy Assistant Secretary of the Navy (Acquisition and Logistics Management) (DASN(AL&M)) to omit Earned Value Management (EVM) requirements from the contract.

Appropriation: Procurement

Contract Name F414 Engine Production Lots 11-15

Contractor GE Aircraft Engines
Contractor Location Lynn, MA 01905-2655

Contract Number, Type N00019-06-C-0088, FFP/FPEPA

Award Date April 26, 2006
Definitization Date September 27, 2007

	Initial Cor	ntract Price (	(\$M)	Current Contract Price (\$M)		Estimated Price At Completion (\$M)		
	Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
•	255.9	N/A	224	1198.9	N/A	282	1198.9	1198.9

#### **Cost And Schedule Variance Explanations**

Cost and Schedule variance reporting is not required on this FFP/FPEPA contract.

#### **Contract Comments**

On September 27, 2007, the contract was definitized with a base year plus four options for the procurement of up to 224 engines. The 224 quantity is based upon the base contract (68) and all option year (156) engines to be procured.

The increase from the initial contract price to the current contract price is a result of the following: exercising contract options, incorporation of Engine Program Descriptions (EPDs) in support of the F414 Component Improvement Program, and procurement of Long Lead Material in support of Fiscal Year (FY) 2010 and FY 2011 engines.

The current quantity of 282 represents the total F/A-18E/F engine quantity procured to date. This quantity is based upon the base contract (68), FY 2007 supplemental (6), option year one (48) engines, Royal Australian Air Force engines (24), FY 2008 supplemental (26), option year two (46), Royal Australian Air Force engines (24), Royal Australian Air Force spare engines (2) and option year three FY 2010 (36) engines, and two (2) spares and devices.

#### **Appropriation: Procurement**

Contract Name System Configuration Sets (SCS) Contract

Contractor The Boeing Company
Contractor Location St. Louis, MO 63166

Contract Number, Type N68936-09-D-0002, CPIF/CPFF/IDIQ

Award Date December 19, 2008
Definitization Date December 18, 2013

Initial Cor	ntract Price (	(\$M)	Current Contract Price (\$M)		Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
905.3	N/A	80	397.4	N/A	17	905.3	905.3

#### **Cost And Schedule Variance Explanations**

Cost and Schedule variance reporting is not required on this CPIF/CPFF/IDIQ contract.

#### **Contract Comments**

This contract includes shared costs and quantities for the F/A-18E/F and EA-18G platforms; therefore, all data is duplicated in the EA-18G SAR. Due to the nature of this Indefinite Delivery Indefinite Quantity (IDIQ) contract, the contract value, funding, and quantities are represented at a macro-level rather than per delivery order. The contract value, funding, and quantities will be the sum of all delivery orders.

The initial quantity of this IDIQ contract includes 20 SCSs, 10 System Improvement and Demonstration Products, and 50 Studies and Analysis. The current quantity of this IDIQ contract includes four (4) SCSs, five (5) System Improvement and Demonstration Products, and eight (8) Studies and Analyses.

The definitization date reflects the basic contract end date; due to the nature of this IDIQ contract, the definitization date will vary according to the delivery order.

# **Deliveries and Expenditures**

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	
Production	440	445	556	80.04%
Total Program Quantities Delivered	440	445	556	80.04%

Expenditures and Appropriations (TY \$M)					
Total Acquisition Cost	50980.2	Years Appropriated	20		
Expenditures To Date	38921.1	Percent Years Appropriated	86.96%		
Percent Expended	76.35%	Appropriated to Date	45052.5		
Total Funding Years	23	Percent Appropriated	88.37%		

The Actual Deliveries To Date and Expenditures are as of December 31, 2010. The 445 aircraft delivered include 376 Full Rate Production (FRP), 62 Low Rate Initial Production (LRIP), and 7 Engineering and Manufacturing Development (EMD).

# **Operating and Support Cost**

#### **Assumptions And Ground Rules**

Current Program: F/A-18 E/F

Flight hours per aircraft per month: 27.7

Number of 12 Primary Authorized Aircraft (PAA) E/F Squadrons in Fiscal Year (FY) 2016: 20

Number of 10 PAA E/F Squadrons in FY 2016: 10

Consumption rate, gallons per hour: 1,296

Petroleum, Oil, and Lubricant (POL) cost, JP-5 per gallon FY 2000 \$: 0.74

# of Aircraft Operating Years: 8,355

Operational Service Life: 20

Fleet Readiness Squadron (FRS) at 12-13 E & 29-31 F: 2

Antecedent program: F/A-18C/D

Consumption rate, gallons per hour: 1,127 # of Aircraft Operating Years: 1,460 Flight Hours per aircraft per month: 23.5 POL Cost, JP-5 per gallon FY 2000 \$: 0.74

Date of Estimate: February 2011

Source: Air-4.2 Operating & Support (O&S) Cost Estimate

Costs BY2000 \$M						
Cost Element	F/A-18E/F AVERAGE ANNUAL COST PER AIRCRAFT	F/A-18C/D AVERAGE ANNUAL COST PER AIRCRAFT				
Unit-Level Manpower	1.117	0.983				
Unit Operations	0.405	0.289				
Maintenance	1.979	2.097				
Sustaining Support	0.066	0.078				
Continuing System Improvements	0.532	0.524				
Indirect Support	0.235	0.204				
Other		<del></del>				
Total Unitized Cost (Base Year 2000 \$)	4.334	4.175				

Total O&S Costs \$M	F/A-18E/F	F/A-18C/D
Base Year	36214.0	
Then Year	63664.0	<del></del>

Estimate Use: Multiply the cost to operate an aircraft per year by the number of projected aircraft operating years.

Prior F/A-18E/F Selected Acquisition Reports (SARs) have been based on a cost per squadron year. In an attempt to standardize these inputs across the Naval Air Systems Command (NAVAIR), where practicable, all platforms are converting the cost per aircraft per year metric. In addition, as most Type/Model/Series (TMS) have multiple squadron make-ups, the cost per aircraft metric provides a cleaner calculation.

General: The estimate was generated using the F/A-18A-F Tactical Aircraft (TACAIR) Sustainment Cost Model V12, which updates the V11 Model Inventory and Data inputs while also incorporating evolutionary advances in commodity estimating. Aircraft, delivery and inventory are based on President's Budget (PB) 2012. As PB 2012

flight hours have not yet been published, PB 2011 Future Years Defense Program (FYDP) values were used and then extrapolated for the out years. Composite pay rates published in 2011 by the Office of Secretary of Defense (OSD) were used to calculate all military and government civilian annual salaries.

Antecedent System Values: These are based on Navy Visibility and Management of Operation and Support Costs (VAMOSC) Aircraft Type Model Series Report (ATMSR) FY 2007-2009 Data Averages for the following: 1) Cost Per Aircraft Per Year, 2) Fuel Consumption Rate, and 3) Flight Hours Per Month. Aircraft operating years represent the total for Navy VAMOSC ATMSR FY 2007-2009.

This O&S estimate is based on the current funded quantity of 556 aircraft.