



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-364



E-2D Advanced Hawkeye Aircraft (E-2D AHE)

As of FY 2015 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Report Documentation Page				Form Approved OMB No. 0704-0188	
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Table of Contents

Common Acronyms and Abbreviations	3
Program Information	4
Responsible Office	4
References	4
Mission and Description	5
Executive Summary	6
Threshold Breaches	7
Schedule	8
Performance	9
Track to Budget	13
Cost and Funding	14
Low Rate Initial Production	24
Foreign Military Sales	25
Nuclear Costs	25
Unit Cost	26
Cost Variance	29
Contracts	33
Deliveries and Expenditures	40
Operating and Support Cost	41

Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
\$K - Thousands of Dollars
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

E-2D Advanced Hawkeye Aircraft (E-2D AHE)

DoD Component

Navy

Responsible Office

Responsible Office

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Date Assigned May 29, 2012

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated July 31, 2009

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 2, 2013

Mission and Description

The E-2D Advanced Hawkeye Aircraft (E-2D AHE) is a carrier based, all weather, multi-mission aircraft. The E-2D AHE mission is to provide premier airborne Battle Management Command and Control and Surveillance as part of the Naval and Joint Integrated Air and Missile Defense architecture including the Naval Integrated Fire Control-Counter Air capability. The centerpiece of the E-2D AHE is the APY-9 radar system. This radar system is designed specifically to provide significantly enhanced surveillance detection and tracking capability against advanced threat aircraft and cruise missile systems in the overland, littoral, and open ocean environments. Maritime surveillance is also maintained in the open ocean scenarios. The E-2D AHE will provide early warning of hostile threats and provide the force with the right data to prosecute any engagement. Key capabilities along with the radar include the Identification Friend or Foe system and Electronic Support Measures for surveillance and combat identification, advanced mission processing capability to integrate all on-board sensor data and off-board information into a coherent tactical picture, and communications, data link, and sensor netting systems to share information across the battlespace. These capabilities allow the E-2D AHE to provide a significant contribution to execution of other mission areas such as Strike, Combat Search and Rescue, and Homeland Defense. As a part of the E-2D AHE modernization effort, the Navy also invested in integrating a full glass cockpit and full Communication Navigation Surveillance/Air Traffic Management capability. The glass cockpit will also provide the capability for the pilot or co-pilot to perform tactical mission functions.

Executive Summary

The E-2D AHE program was granted authority on March 1, 2013 to commence Full Rate Production (FRP). A contract for production of the first FRP lot of five E-2D AHE aircraft was awarded on July 24, 2013. All LRIP Lot 1 and Lot 2 aircraft have been delivered as well as two aircraft from LRIP Lot 3. All LRIP aircraft will be delivered by FY 2015; to date, 12 aircraft have been delivered. The total Program of Record is 75 aircraft. The Aerial Refueling (AR) Engineering and Manufacturing Development contract was awarded on September 27, 2013. Events for the Verification of Correction of Deficiencies period for Initial Operational Test and Evaluation were completed in October 2013. Integrated Test and Evaluation of the IOC configuration will be completed in the second quarter of FY 2014, which will support a Follow-on Operational Test and Evaluation phase prior to declaration of IOC as early as the first quarter of FY 2015. The program plans to have an In-Progress Review conducted by the Assistant Secretary of Defense for Acquisition in the second quarter of FY 2014 prior to proceeding with the FRP Lot 2 production contract which is planned to be a Multi-Year Procurement (MYP). A Secretary of Defense certification for a MYP of 32 E-2D AHE aircraft during FY 2014-2018 was made on March 1, 2013, and the FY 2014 National Defense Authorization Act contains E-2D AHE MYP authority language. The FY 2015 PB provides for 25 MYP aircraft. The FY 2014 RDT&E budget reduction adds risk to meeting the planned AR IOC.

There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches

Schedule ☐

Performance ☐

Cost RDT&E ☐

Procurement ☐

MILCON ☐

Acq O&M ☐

O&S Cost ☐

Unit Cost PAUC ☐

APUC ☐

Nunn-McCurdy Breaches

Current UCR Baseline

PAUC None

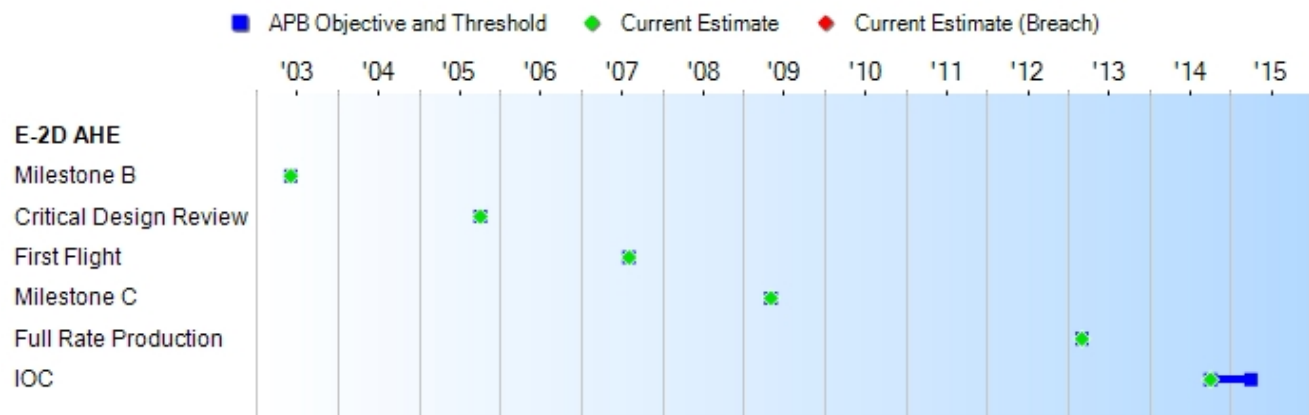
APUC None

Original UCR Baseline

PAUC None

APUC None

Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
Milestone B	MAY 2003	JUN 2003	JUN 2003	JUN 2003
Critical Design Review	NOV 2005	OCT 2005	OCT 2005	OCT 2005
First Flight	AUG 2007	AUG 2007	AUG 2007	AUG 2007
Milestone C	MAR 2009	MAY 2009	MAY 2009	MAY 2009
Full Rate Production	DEC 2012	MAR 2013	MAR 2013	MAR 2013
IOC	OCT 2014	OCT 2014	APR 2015	OCT 2014

Change Explanations

None

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Radar Ao	=>0.98	=>0.98	=>0.85	0.70	>=0.87
Survivability - Safe Egress In Crash	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.
Manpower (Full Operational Capability - FY 2020)	Aircrew Os =< 323 Maintenance Os/Es =< 34 / 1303 Support Os/Es =< 12 / 683	Aircrew Os =< 323 Maintenance Os/Es =< 34 / 1303 Support Os/Es =< 12 / 683	Aircrew Os =< 323 Maintenance Os/Es =< 34 / 1303 Support Os/Es =< 12 / 683	Aircrew Os =< 323 Maintenance Os/Es =< 34 / 1303 Support Os/Es =< 12 / 683	Aircrew Os =< 323 Maintenance Os/Es =< 34 / 1303 Support Os/Es =< 12 / 683

	Training Os/Es =< 76 / 60	Training Os/Es =< 76 / 60	Training Os/Es =< 76 / 60	Training Os/Es =< 76 / 60	Training Os/Es =< 76 / 60
Unrefueled Time On Station	=>2.0 hours at a station distance of 200nm	=>2.0 hours at a station distance of 200nm	=>2.0 hours at a station distance of 200nm	2.10 hours at a station distance of 200nm	2.10 hours at a station distance of 200nm
Flat Turn Service Ceiling	=>25,000 feet above MSL at mission profile	=>25,000 feet above MSL at mission profile	=>25,000 feet above MSL at mission profile	25,600 feet above MSL at mission profile	25,600 feet above MSL at mission profile
Level Flight Airspeed	=>300 knots true airspeed below 18,000 feet MSL	=>300 knots true airspeed below 18,000 feet MSL	=>300 knots true airspeed below 18,000 feet MSL	303.5 knots true airspeed below 18,000 feet MSL	303.5 knots true airspeed below 18,000 feet MSL
Network-Centric Military Operations (Network Readiness)	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1, (2) DISR	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1, (2) DISR	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1 (2)	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1 (2)	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1 (2)

	mandated GIG KIPs identified in the KIP declaration table, (3) NCOW RM Enterprise Services (4) IA requirements include availability, integrity, authentication, confidentiality, non-repudiation, and issuance of an ATO by the DAA (5) Operationally effective information exchanges; and MC-performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views	mandated GIG KIPs identified in the KIP declaration table, (3) NCOW RM Enterprise Services (4) IA requirements include availability, integrity, authentication, confidentiality, non-repudiation, and issuance of an ATO by the DAA (5) Operationally effective information exchanges; and MC-performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views	DISR mandated GIG KIPs identified in the KIP declaration table (3) NCOW RM Enterprise Services (4) IA requirements including availability integrity, authentication, confidentiality, non-repudiation, and issuance of an IATO by the DAA (5) Operationally effective information exchanges and MC-performance and IA attributes, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views	DISR mandated GIG KIPs identified in the KIP declaration table (3) NCOW RM Enterprise Services (4) IA requirements including availability integrity, authentication, confidentiality, nonrepudiation, and issuance of an IATO by the DAA (5) Operationally effective information exchanges and MC-performance and IA attributes, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views	DISR mandated GIG KIPs identified in the KIP declaration table (3) NCOW RM Enterprise Services (4) IA requirements including availability integrity, authentication, confidentiality, nonrepudiation, and issuance of an IATO by the DAA (5) Operationally effective information exchanges and MC-performance and IA attributes, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views
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Classified Performance information is provided in the classified annex to this submission.

Requirements Source

Capability Development Document (CDD) dated March 3, 2009

Change Explanations

None

Acronyms and Abbreviations

Ao - Operational Availability

ATO - Authorization to Operate

DAA - Designated Approval Authority

DISR - DoD Information Technology Standards and Profile Registry

Es - Enlisted

g - gravity

GIG - Global Information Grid

IA - Information Assurance

IATO - Interim Authorization to Operate

IT - Information Technology

KIPs - Key Intelligence Profiles

MC - Mission Critical

MSL - Mean Sea Level

NCOW RM - Net-Centric Operations and Warfare Reference Model

nm - nautical mile

Os - Officers

TV-1 - Technical View 1

Track to Budget

General Memo

APPN 1506 Line Item 019500 and APPN 1506 Line Item 060510 are shared with the E-2C Reproduction program, which was funded through FY 2007 and no longer requires Acquisition Category reporting as it is over 90% expended. E-2D AHE procurement funding began in FY 2008, as shown in the funding summary.

RDT&E

Appn	BA	PE
Navy 1319	05	0604234N
Project		Name
3051		Advanced Hawkeye

Procurement

Appn	BA	PE
Navy 1506	01	0204152N
Line Item		Name
019500		E-2D AHE (Shared)
Navy 1506	06	0204152N
Line Item		Name
060510		Initial Spares - E-2D (Shared)

MILCON

Appn	BA	PE
Navy 1205	01	0805976N
Project		Name
		Facilities Restoration and Mod-Training (Sunk)
Navy 1205	01	0815976N
Project		Name
		Facilities New Footprint - Trainers (Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2009 \$M			BY2009 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	4140.0	5122.6	5634.9	5576.9	4014.3	5159.9	5699.8
Procurement	13281.9	12932.0	14225.2	13556.3	14968.5	15045.0	15923.0
Flyaway	--	--	--	11363.7	--	--	13352.3
Recurring	--	--	--	10677.4	--	--	12531.0
Non Recurring	--	--	--	686.3	--	--	821.3
Support	--	--	--	2192.6	--	--	2570.7
Other Support	--	--	--	1922.0	--	--	2274.1
Initial Spares	--	--	--	270.6	--	--	296.6
MILCON	46.7	41.4	45.5	41.5	48.6	43.7	43.7
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	17468.6	18096.0	N/A	19174.7	19031.4	20248.6	21666.5

Confidence Level for Current APB Cost 50% -

The Independent Cost Estimate (ICE) to support the E-2D AHE Full Rate Production Decision Review, like all previous Cost Assessment and Program Evaluation (CAPE) estimates, is built upon a product-oriented work breakdown structure; is based on historical actual cost information to the maximum extent possible; and, most importantly, is based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department of Defense has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Programs (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	5	5	5
Procurement	70	70	70
Total	75	75	75

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	4123.5	107.0	193.2	274.4	319.4	252.3	186.5	243.5	5699.8
Procurement	4415.3	1240.8	1053.2	1126.7	1094.9	948.3	1175.0	4868.8	15923.0
MILCON	43.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.7
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2015 Total	8582.5	1347.8	1246.4	1401.1	1414.3	1200.6	1361.5	5112.3	21666.5
PB 2014 Total	8750.6	1432.3	1444.8	1540.1	1631.3	1437.9	1659.9	2558.9	20455.8
Delta	-168.1	-84.5	-198.4	-139.0	-217.0	-237.3	-298.4	2553.4	1210.7

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	5	0	0	0	0	0	0	0	0	5
Production	0	20	5	4	5	6	5	5	20	70
PB 2015 Total	5	20	5	4	5	6	5	5	20	75
PB 2014 Total	5	20	5	5	6	8	8	8	10	75
Delta	0	0	0	-1	-1	-2	-3	-3	10	0

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
2002	--	--	--	--	--	--	73.2
2003	--	--	--	--	--	--	105.8
2004	--	--	--	--	--	--	325.5
2005	--	--	--	--	--	--	541.7
2006	--	--	--	--	--	--	595.6
2007	--	--	--	--	--	--	480.8
2008	--	--	--	--	--	--	784.8
2009	--	--	--	--	--	--	467.9
2010	--	--	--	--	--	--	345.8
2011	--	--	--	--	--	--	167.8
2012	--	--	--	--	--	--	109.4
2013	--	--	--	--	--	--	125.2
2014	--	--	--	--	--	--	107.0
2015	--	--	--	--	--	--	193.2
2016	--	--	--	--	--	--	274.4
2017	--	--	--	--	--	--	319.4
2018	--	--	--	--	--	--	252.3
2019	--	--	--	--	--	--	186.5
2020	--	--	--	--	--	--	133.1
2021	--	--	--	--	--	--	67.6
2022	--	--	--	--	--	--	42.8
Subtotal	5	--	--	--	--	--	5699.8

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2009 \$M	Non End Item Recurring Flyaway BY 2009 \$M	Non Recurring Flyaway BY 2009 \$M	Total Flyaway BY 2009 \$M	Total Support BY 2009 \$M	Total Program BY 2009 \$M
2002	--	--	--	--	--	--	84.7
2003	--	--	--	--	--	--	120.6
2004	--	--	--	--	--	--	360.9
2005	--	--	--	--	--	--	585.2
2006	--	--	--	--	--	--	624.0
2007	--	--	--	--	--	--	491.7
2008	--	--	--	--	--	--	788.2
2009	--	--	--	--	--	--	464.0
2010	--	--	--	--	--	--	337.8
2011	--	--	--	--	--	--	160.0
2012	--	--	--	--	--	--	102.5
2013	--	--	--	--	--	--	115.5
2014	--	--	--	--	--	--	97.1
2015	--	--	--	--	--	--	172.1
2016	--	--	--	--	--	--	239.7
2017	--	--	--	--	--	--	273.5
2018	--	--	--	--	--	--	211.8
2019	--	--	--	--	--	--	153.5
2020	--	--	--	--	--	--	107.4
2021	--	--	--	--	--	--	53.5
2022	--	--	--	--	--	--	33.2
Subtotal	5	--	--	--	--	--	5576.9

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
2008	--	72.2	--	--	72.2	--	72.2
2009	2	404.5	--	--	404.5	67.6	472.1
2010	3	584.6	--	33.7	618.3	161.5	779.8
2011	5	848.6	--	73.9	922.5	202.9	1125.4
2012	5	855.4	--	37.0	892.4	139.1	1031.5
2013	5	773.7	--	45.6	819.3	115.0	934.3
2014	5	991.4	--	46.0	1037.4	203.4	1240.8
2015	4	800.5	--	50.9	851.4	201.8	1053.2
2016	5	860.4	--	51.8	912.2	214.5	1126.7
2017	6	822.3	--	52.8	875.1	219.8	1094.9
2018	5	671.6	--	53.8	725.4	222.9	948.3
2019	5	947.4	--	54.8	1002.2	172.8	1175.0
2020	5	970.0	--	55.8	1025.8	110.4	1136.2
2021	5	988.1	--	56.9	1045.0	113.9	1158.9
2022	5	1022.1	--	68.2	1090.3	125.2	1215.5
2023	5	918.2	--	91.8	1010.0	122.0	1132.0
2024	--	--	--	48.3	48.3	177.9	226.2
Subtotal	70	12531.0	--	821.3	13352.3	2570.7	15923.0

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2009 \$M	Non End Item Recurring Flyaway BY 2009 \$M	Non Recurring Flyaway BY 2009 \$M	Total Flyaway BY 2009 \$M	Total Support BY 2009 \$M	Total Program BY 2009 \$M
2008	--	71.8	--	--	71.8	--	71.8
2009	2	396.6	--	--	396.6	66.3	462.9
2010	3	561.2	--	32.4	593.6	155.0	748.6
2011	5	797.8	--	69.5	867.3	190.7	1058.0
2012	5	791.7	--	34.2	825.9	128.8	954.7
2013	5	704.2	--	41.5	745.7	104.7	850.4
2014	5	886.4	--	41.1	927.5	181.9	1109.4
2015	4	702.2	--	44.7	746.9	177.0	923.9
2016	5	740.1	--	44.6	784.7	184.4	969.1
2017	6	693.4	--	44.5	737.9	185.4	923.3
2018	5	555.2	--	44.5	599.7	184.3	784.0
2019	5	767.9	--	44.4	812.3	140.1	952.4
2020	5	770.8	--	44.3	815.1	87.8	902.9
2021	5	769.8	--	44.3	814.1	88.7	902.8
2022	5	780.7	--	52.1	832.8	95.6	928.4
2023	5	687.6	--	68.7	756.3	91.3	847.6
2024	--	--	--	35.5	35.5	130.6	166.1
Subtotal	70	10677.4	--	686.3	11363.7	2192.6	13556.3

Cost Quantity Information**1506 | Procurement | Aircraft Procurement, Navy**

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2009 \$M
2008	--	--
2009	2	414.7
2010	3	523.0
2011	5	774.3
2012	5	750.5
2013	5	737.7
2014	5	762.0
2015	4	739.9
2016	5	770.1
2017	6	756.0
2018	5	554.6
2019	5	767.3
2020	5	771.2
2021	5	768.4
2022	5	777.6
2023	5	810.1
2024	--	--
Subtotal	70	10677.4

Annual Funding TY\$
1205 | MILCON | Military Construction,
Navy and Marine Corps

Fiscal Year	Total Program TY \$M
2008	11.5
2009	--
2010	16.8
2011	--
2012	15.4
Subtotal	43.7

Annual Funding BY\$
1205 | MILCON | Military Construction,
Navy and Marine Corps

Fiscal Year	Total Program BY 2009 \$M
2008	11.4
2009	--
2010	16.0
2011	--
2012	14.1
Subtotal	41.5

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	6/13/2003	4/3/2011
Approved Quantity	22	15
Reference	Milestone B ADM	LRIP Lots 3 and 4 ADM
Start Year	2009	2009
End Year	2012	2012

The Current Total LRIP Quantity is more than 10% of the total production quantity due to 15 aircraft being the minimum to maintain the industrial base and ensure successful transition to Full Rate Production.

The 15 planned LRIP aircraft (including one FY 2011 supplemental) represent 20% of the total quantity. The reduction in LRIP quantities is due to the production quantity ramp changes.

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost

Unit Cost Report

	BY2009 \$M	BY2009 \$M	
Unit Cost	Current UCR Baseline (APR 2013 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

Program Acquisition Unit Cost (PAUC)

Cost	18096.0	19174.7	
Quantity	75	75	
Unit Cost	241.280	255.663	+5.96

Average Procurement Unit Cost (APUC)

Cost	12932.0	13556.3	
Quantity	70	70	
Unit Cost	184.743	193.661	+4.83

	BY2009 \$M	BY2009 \$M	
Unit Cost	Revised Original UCR Baseline (JUL 2009 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

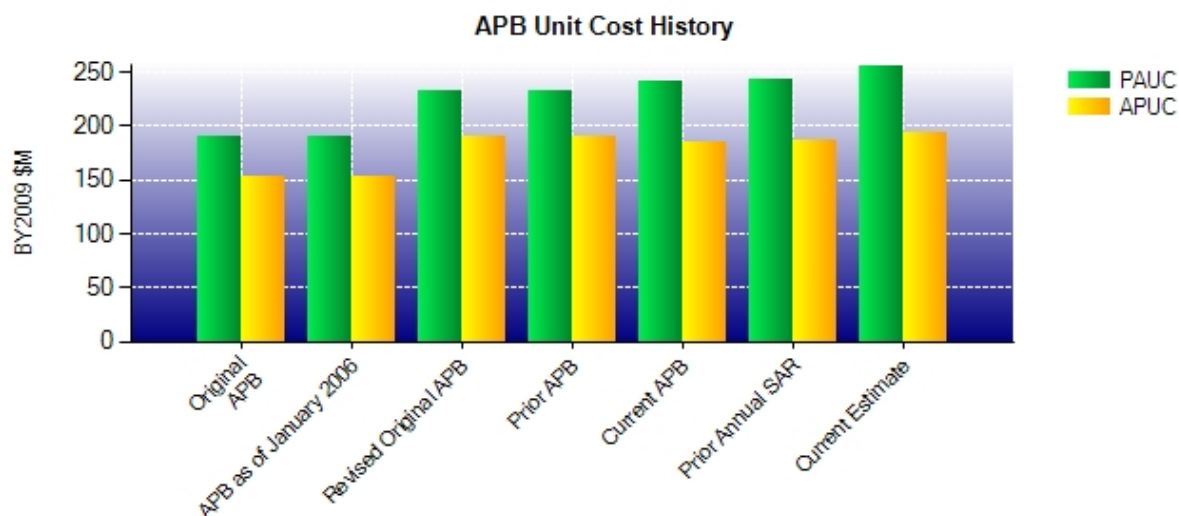
Program Acquisition Unit Cost (PAUC)

Cost	17468.6	19174.7	
Quantity	75	75	
Unit Cost	232.915	255.663	+9.77

Average Procurement Unit Cost (APUC)

Cost	13281.9	13556.3	
Quantity	70	70	
Unit Cost	189.741	193.661	+2.07

Unit Cost History



	Date	BY2009 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	JUN 2003	189.977	152.732	199.760	166.551
APB as of January 2006	JUN 2003	189.977	152.732	199.760	166.551
Revised Original APB	JUL 2009	232.915	189.741	253.752	213.836
Prior APB	JUL 2009	232.915	189.741	253.752	213.836
Current APB	APR 2013	241.280	184.743	269.981	214.929
Prior Annual SAR	DEC 2012	243.641	187.256	272.744	217.871
Current Estimate	DEC 2013	255.663	193.661	288.887	227.471

SAR Unit Cost History

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

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
199.760	5.871	0.000	3.025	8.235	28.608	0.000	8.253	53.992	253.752

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

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
253.752	2.715	0.000	20.268	14.956	-9.047	0.000	6.243	35.135	288.887

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

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
166.551	4.414	-0.572	3.241	4.910	27.393	0.000	7.899	47.285	213.836

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

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
213.836	2.791	0.000	21.716	0.974	-18.534	0.000	6.689	13.636	227.471

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	MAY 2003	MAY 2003	JUN 2003
Milestone C	N/A	MAR 2009	MAR 2009	MAY 2009
IOC	N/A	APR 2011	OCT 2014	OCT 2014
Total Cost (TY \$M)	N/A	14982.0	19031.4	21666.5
Total Quantity	N/A	75	75	75
Prog. Acq. Unit Cost (PAUC)	N/A	199.760	253.752	288.887

Cost Variance

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	4014.3	14968.5	48.6	19031.4
Previous Changes				
Economic	+18.3	+318.1	+0.6	+337.0
Quantity	--	--	--	--
Schedule	--	+761.0	--	+761.0
Engineering	+712.2	+68.2	--	+780.4
Estimating	+416.3	-1203.4	-5.5	-792.6
Other	--	--	--	--
Support	--	+338.6	--	+338.6
Subtotal	+1146.8	+282.5	-4.9	+1424.4
Current Changes				
Economic	-10.6	-122.7	-0.1	-133.4
Quantity	--	--	--	--
Schedule	--	+759.1	--	+759.1
Engineering	+341.3	--	--	+341.3
Estimating	+208.0	-94.0	+0.1	+114.1
Other	--	--	--	--
Support	--	+129.6	--	+129.6
Subtotal	+538.7	+672.0	--	+1210.7
Total Changes	+1685.5	+954.5	-4.9	+2635.1
CE - Cost Variance	5699.8	15923.0	43.7	21666.5
CE - Cost & Funding	5699.8	15923.0	43.7	21666.5

Summary Base Year 2009 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	4140.0	13281.9	46.7	17468.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+519.8	--	+519.8
Engineering	+625.0	+56.5	--	+681.5
Estimating	+358.8	-1012.9	-5.3	-659.4
Other	--	--	--	--
Support	--	+262.6	--	+262.6
Subtotal	+983.8	-174.0	-5.3	+804.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+454.0	--	+454.0
Engineering	+285.0	--	--	+285.0
Estimating	+168.1	-81.1	+0.1	+87.1
Other	--	--	--	--
Support	--	+75.5	--	+75.5
Subtotal	+453.1	+448.4	+0.1	+901.6
Total Changes	+1436.9	+274.4	-5.2	+1706.1
CE - Cost Variance	5576.9	13556.3	41.5	19174.7
CE - Cost & Funding	5576.9	13556.3	41.5	19174.7

Previous Estimate: December 2012

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-10.6
Increase due to addition of Fighter-to-Fighter Backlink, Data Fusion, Integrated Fire Control, Net Enabled Weapons J11 Message, Navigation Warfare Anti-Global Positional System Jam Electronic Protection, and Stores Performance Assessment Requested Quality. (Engineering)	+285.0	+341.3
Adjustment for current and prior escalation. (Estimating)	+3.0	+3.2
Revised estimate due to Congressional reductions in FY 2013 and FY 2014. (Estimating)	-41.0	-45.2
Revised estimate to reflect DoD internal adjustments. (Estimating)	-63.3	-74.6
Increase to funding to support Aerial Refueling (In-Flight Refueling), Fatigue Article Testing and Naval Integrated Fire Control-Counter Air testing and training simulators (Estimating)	+117.0	+136.2
Revised estimate for Aerial Refueling (In-Flight Refueling), Counter Electronic Attack, Naval Integrated Fire Control-Counter Air. (Estimating)	+152.4	+188.4
RDT&E Subtotal	+453.1	+538.7

Procurement	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-122.7
Stretch-out of procurement buy profile from FY 2015 - FY 2023. (Schedule)	0.0	+189.3
Additional schedule variance due to movement of thirteen aircraft in multiple years and addition of two production lots FY 2015 - FY 2023. (Schedule)	+454.0	+569.8
Adjustment for current and prior escalation. (Estimating)	+32.4	+34.9
Decrease due to revised Forward Pricing Rate Recommendation for Northrop Grumman Aerospace Sector labor rates. (Estimating)	-222.3	-266.1
Revised estimate due to Congressional reductions in FY 2013 and FY 2014. (Estimating)	-58.8	-65.1
Revised estimate to reflect DoD internal adjustments. (Estimating)	-40.8	-47.8
Revised estimate to reflect actuals. (Estimating)	+11.3	+20.8
Increase due to reduction in savings from adjustment in quantity from 32 aircraft to 25 aircraft in the FY 2014 - FY 2018 Multi-Year Procurement. (Estimating)	+91.5	+106.6
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+105.6	+122.7
Adjustment for current and prior escalation. (Support)	+6.0	+7.2
Increase in Other Support due to stretch-out of procurement profile from FY 2015 - FY 2023 and additional training systems. (Support)	+104.0	+160.9
Decrease in Initial Spares to reflect Congressional reduction (\$19M) and DoD internal reduction (\$19.5M). (Support)	-34.5	-38.5
Procurement Subtotal	+448.4	+672.0

MILCON	\$M	
	Base	Then

Current Change Explanations	Year	Year
Revised escalation indices. (Economic)	N/A	-0.1
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1
MILCON Subtotal	+0.1	0.0

Contracts

Appropriation: Procurement

Contract Name	LRIP Lot 3
Contractor	Northrop Grumman Corporation
Contractor Location	600 Grumman Road West Bethpage, NY 11714
Contract Number, Type	N00019-10-C-0044/4, FFP
Award Date	March 15, 2010
Definitization Date	July 22, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
94.6	N/A	0	838.7	N/A	5	838.7	838.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to this contract being initially awarded on March 15, 2010 as an advanced acquisition contract for the LRIP Lot 3 as a Not to Exceed contract in the amount of \$94.6M. The contract was definitized on July 22, 2011 and transitioned to a Firm Fixed Price contract for the procurement of five aircraft with the current contract value of \$838.7M.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this FFP contract.

Appropriation: Procurement

Contract Name **LRIP Lot 4**
 Contractor Northrop Grumman Corporation
 Contractor Location 600 Grumman Road West
 Bethpage, NY 11714
 Contract Number, Type N00019-10-C-0044/5, FFP
 Award Date April 13, 2011
 Definitization Date January 24, 2012

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
94.6	N/A	0	787.4	N/A	5	787.4	787.4

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to this contract being initially awarded on April 13, 2011 as an advanced acquisition contract for the LRIP Lot 4 as a Not to Exceed contract in the amount of \$94.6M. The contract was definitized on January 24, 2012 and transitioned to a Firm Fixed Price contract for the procurement of five aircraft with the current contract value of \$787.4M

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this FFP contract.

Appropriation: Procurement

Contract Name	FRP Lot 1
Contractor	Northrop Grumman Corporation
Contractor Location	South Oyster Bay Road 600 Grumman Road West Bethpage, NY 11714-3582
Contract Number, Type	N00019-12-C-0063/5, FFP
Award Date	February 01, 2012
Definitization Date	July 24, 2013

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
157.9	N/A	0	823.5	N/A	5	823.5	823.5

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to this contract being initially awarded on February 1, 2012 as an advanced acquisition of FRP Lot 1 as a Not to Exceed contract in the amount of \$157.9M. The contract was definitized on July 24, 2013 and transitioned to a Firm Fixed Price contract for the procurement of five aircraft with a current contract value of \$823.5M.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this FFP contract.

Appropriation: RDT&E

Contract Name **E-2D Aerial Refueling**
 Contractor Northrop Grumman Systems Corporation
 Contractor Location 600 Grumman Road West
 Bethpage, NY 11714
 Contract Number, Type N00019-13-C-0135/1, CPIF
 Award Date September 27, 2013
 Definitization Date September 27, 2013

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
226.7	N/A	0	226.7	N/A	0	226.7	226.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/24/2014)	-0.5	-1.6
Previous Cumulative Variances	--	--
Net Change	-0.5	-1.6

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to the method of taking credit for performance on the air vehicle drawing effort. Recovery in this area is expected in the next few months.

The unfavorable cumulative schedule variance is due to delayed supplier reporting and immature schedule prior to Integrated Baseline Review (IBR) as well as delays in flight testing due to weather conditions. The IBR was conducted March 18-20, 2014.

Contract Comments

This is the first time this contract is being reported.

Appropriation: Procurement

Contract Name	E-2D HITS-A
Contractor	Rockwell Collins Inc.
Contractor Location	400 Collins Road Northeast Cedar Rapids, IA 52498
Contract Number, Type	N61339-03-D-5007/2, CPIF/FPIF
Award Date	August 15, 2008
Definitization Date	August 15, 2008

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
67.1	67.1	4	179.5	179.5	7	179.5	179.5

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract options being exercised which increased the quantity from four to seven.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	+2.7	-3.1
Previous Cumulative Variances	+2.2	-0.8
Net Change	+0.5	-2.3

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to the replanning of other modifications earlier than scheduled to offset the delay due to a Naval Facilities stop work order issued to a Point Mugu, CA building contractor that affected the Hawkeye Integrated Training Systems-Aircrew (HITS-A) contract.

The unfavorable net change in the schedule variance is due to a Naval Facilities stop work order issued to a Point Mugu, CA building contractor that affected the the HITS-A contract work.

Contract Comments

This contract is more than 90% complete; therefore, this is the final report for this contract.

Appropriation: Procurement

Contract Name	E-2D HITS-M
Contractor	Rockwell Collins Inc.
Contractor Location	400 Collins Rd NE Cedar Rapids, IA 52498
Contract Number, Type	N61339-03-D-5007/4, CPIF/FFP
Award Date	April 29, 2010
Definitization Date	May 01, 2010

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
31.3	N/A	2	76.8	N/A	3	76.8	76.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract options being exercised which increased the quantity from one simulator to two.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (11/29/2013)	+0.7	-0.2
Previous Cumulative Variances	-0.7	-0.1
Net Change	+1.4	-0.1

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to less effort than originally anticipated for software engineering and manufacturing labor that was baselined using E-2C System Maintenance Trainer actual costs and Hawkeye Integrated Training Systems-Maintenance support equipment items being built by vendors rather than built in-house.

The unfavorable cumulative schedule variance is due to the subcontractor's being late to the original planned Performance Based Payments (PBP) accomplishments schedule against the updated PBP milestone plan but is favorably offset by software test and evaluation efforts being performed ahead of plan.

Contract Comments

This contract is more than 90% complete; therefore, this is the final report for this contract.

Formal Earned Value Management reporting by the contractor stopped November 2013.

Appropriation: Procurement

Contract Name **FRP Lot 2 Advanced Acquisition**
 Contractor Northrop Grumman Corporation
 Contractor Location 600 Grumman Road West
 Bethpage, NY 11714
 Contract Number, Type N00019-13-C-9999/1, FFP
 Award Date May 17, 2013
 Definitization Date

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
113.7	N/A	0	123.0	N/A	0	123.0	123.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the fact that the advanced acquisition contract for the Full Rate Production Lot 2 was awarded as a Not To Exceed (NTE) contract on May 17, 2013 for \$113.7M and on July 31, 2013, an additional \$9.3M contract modification was made. Although this contract is identified as a Firm Fixed Price, these two efforts are NTE. This contract has not yet been definitized.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this FFP contract.

Contract Comments

This is the first time this contract is being reported.

Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	5	5	5	100.00%
Production	7	7	70	10.00%
Total Program Quantity Delivered	12	12	75	16.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	21666.5	Years Appropriated	13
Expended to Date	7035.0	Percent Years Appropriated	56.52%
Percent Expended	32.47%	Appropriated to Date	9930.3
Total Funding Years	23	Percent Appropriated	45.83%

The above data is current as of 3/6/2014.

Actual quantity reflects delivery of System Development and Demonstration (SD&D) aircraft, SD&D #1 and #2; Pilot Production Aircraft #1, #2, and #3; LRIP Lot 1 #1 and #2, LRIP Lot 2 #1, #2, and #3, and LRIP Lot 3 #1 and #2.

Operating and Support Cost

E-2D AHE

Assumptions and Ground Rules

Cost Estimate Reference:

Date/Source of Estimate: February 2014/Naval Air Systems Command (NASC) 4.2

Inflation Indices Utilized: FY 2013 Office of the Secretary of Defense (OSD) rates, except for fuel which utilizes the FY 2011 OSD rate

Assumptions for Fleet Aircraft:

Flight Hours per Aircraft per Month: 40

Number of Aircraft per Carrier Airborne Early Warning (AEW) Squadron: 5

Total Number of Aircraft: 73

Total Number of Operating Years per Aircraft: 20

Total Number of Primary Authorized Aircraft (PAA): 66

- Ten 5 aircraft Carrier AEW squadrons
- One 12 aircraft Fleet Replacement Squadron (FRS)
- 2 aircraft at Air Test and Evaluation Squadron One (VX-1)*
- 2 aircraft at Naval Strike Air Warfare Center (NSAWC)*

Aircraft Flight Hours Life Limit: 9,600

Pipeline Rate: 10%

Attrition Rate: 0.3%

Total Operating Flight Hours: 586,123

Total Operating Aircraft Years: 1,304

*PAA beyond Primary Mission Aircraft Authorized and FRS aircraft are typically not included in NASC 4.2 O&S cost estimates; however, PAA for VX-1 and NSAWC have been included in the E-2D AHE O&S cost estimate.

Sustainment Strategy:

The E-2D AHE initial sustainment concept for E-2D AHE unique parts is Interim Contractor Support through Material Support Date (MSD) with common systems supported organically. For the period of MSD (1st Quarter FY 2016) through Navy Support Date (4th Quarter FY 2019), Naval Supply Systems Command Weapons System Support will support E-2D AHE unique systems through conventional and/or performance-based repair contracts with Original Equipment Manufacturers. With few exceptions, E-2D AHE unique systems have been designated as Core Capabilities and the program is pursuing the establishment of organic capabilities to comply with the U.S. Code Title 10 requirements. As these capabilities are established, business case analyses will be conducted to determine the best value sustainment strategies, whether it is organic or public-private partnership.

- o Quantity: 73 Fleet aircraft
- o Service Life: 34 years from FY 2011 through FY 2044

Antecedent Information:

The antecedent program is the E-2C Reproduction (E-2C). Annual costs for the antecedent program are based upon a three-year average of Naval Visibility and Management of Operating and Support Costs (VAMOSC) data from FY 2010 - FY 2012 where costs for the three years are summed and then divided by the sum of aircraft count for the three years. The average number of aircraft in the three-year VAMOSC dataset is 58.33. Since Naval VAMOSC does not capture Indirect Support costs, the E-2C Indirect Support cost is calculated by multiplying the E-

2C Unit-Level Manpower by the ratio of E-2D AHE Indirect Support to E-2D AHE Unit-Level Manpower.

For comparison purposes, the Total O&S Cost is the product of the Antecedent's Average Annual Cost per Unit and the Operating Aircraft Years of the new MDAP.

Unitized O&S Costs BY2009 \$M		
Cost Element	E-2D AHE Average Annual Cost Per Aircraft	E-2C Reproduction (Antecedent) Average Annual Cost Per Aircraft
Unit-Level Manpower	2.760	2.700
Unit Operations	0.546	0.415
Maintenance	6.799	3.535
Sustaining Support	0.620	0.207
Continuing System Improvements	1.422	1.034
Indirect Support	0.948	0.927
Other	0.000	0.000
Total	13.095	8.818

Unitized Cost Comments:

The Average Annual Cost Per Unit (i.e. Aircraft) for the E-2D AHE is calculated by dividing the Total O&S Cost by the Total Operating Aircraft Years for the program. The flight hour utilization rate for E-2C is 30.8 hours per aircraft per month, which contributes to the delta in Unit Operations and Maintenance cost between the E-2D AHE and E-2C. Differences between the sum of the individual cost elements and the total cost are due to the rounding of the costs of the individual cost elements.

	Total O&S Cost \$M			
	Current Production APB Objective/Threshold		Current Estimate	
	E-2D AHE		E-2D AHE	E-2C Reproduction (Antecedent)
Base Year	17334.7	19068.2	17075.5	11497.5
Then Year	23824.4	N/A	24754.4	N/A

Total O&S Costs Comments:

For comparison purposes, the Base Year Antecedent Total O&S Cost is the product of the Antecedent's Average Annual Cost per Aircraft and the Operating Aircraft Years of the new MDAP.

O&S Cost Variance		
Category	Base Year 2009 \$M	Change Explanation
Prior SAR Total O&S Estimate December 2012	16,688.2	
Cost Estimating Methodology	-180.546	Update to methodology for determining Organization level contractor maintenance cost
		Update to Unit-Level Manpower costs to include NSAWC and

Cost Data Update	+242.126	VX-1 personnel (fair share allocation of billets); Update to Consumable Cost Growth Above Inflation factor
Labor Rate	-3.725	Update to FY 2014 Military Composite Pay Rates
Energy Rate	+30.426	Update to JP-5 fuel price
Technical Input	+406.282	Update to Aviation Depot Level Repairable and Consumable Cost Per Flight Hour based on updated component reliability and pricing information; Update to Depot Planned Maintenance Interval Workload Standards; Update to flight hours based on FY 2015 PB hours
Programmatic/Planning Factors	-107.356	Update based on FY 2015 PB procurement schedule; Update based on Aircraft Planning Data File version 114
Other	0.000	
Total Changes	+387.207	
Current Estimate	17,075.452	

Disposal Costs:

The Rough Order of Magnitude estimated cost for disposal or demilitarization is \$18.25M (BY2009\$). The estimate will be refined based on future updates to the E-2D Deactivation, Demilitarization & Disposal Plan.