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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

P-8A POSEIDON

P-8A

December 2021 Selected Acquisition Report (SAR)



DECEMBER 31, 2021
DEPARTMENT OF THE NAVY

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Mission and Description

The primary roles of P-8A Poseidon Multi-mission Maritime Aircraft (P-8A) are persistent Anti-Submarine Warfare and Anti-Surface Warfare. The P-8A is the replacement system for the P-3C, Orion. The P-8A, is based on the 737-800 Extended Range (ERX) developed by The Boeing Company. The management of the contracted effort is located at The Boeing Company in Seattle, Washington. The system requirements are based on the P-8A CPD #791-88-09, validated and approved on June 22, 2009 and the P-8A Increment 2/3 CDD #984-98-16, validated and approved on April 13, 2016. The P-8A system will sustain and improve the armed maritime and littoral Intelligence, Surveillance, and Reconnaissance capabilities for United States Naval forces in traditional, joint and combined roles to counter changing and emerging threats. The P-8A program is structured on an evolutionary systems replacement approach that aligns the processes employed for requirements definition, acquisition strategy, and system development into a dynamic and flexible means to attain the strategic vision for tomorrow's Naval forces. The P-8A is part of the Maritime Patrol and Reconnaissance Force Family of Systems that also includes the MQ-4C Triton Unmanned Aircraft System, the EP-3, and the Tactical Operations Center.

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Executive Summary

Significant Accomplishments:

In 2021, the Maritime Patrol & Reconnaissance Aircraft program office remained focused on P-8A aircraft production, development and integration of incremental upgrades to system capabilities, fleet sustainment, and strengthening P-8A partnerships with our allies. P-8A is DoD's only long-range full spectrum Anti-Submarine Warfare (ASW), cue-to-kill platform, with substantial Anti-Surface Warfare (ASUW) and networked Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. The warfighting requirement is 138 aircraft, providing for four P-8A Quick Reaction Capability (QRC) aircraft and U.S. Naval Reserve (USNR) recapitalization.

The PB 2021 P-8A aircraft procurement funding profile increased by 9 aircraft, totaling 128 aircraft. P-8A employs an evolutionary acquisition strategy, designed since inception to deliver baseline capabilities in three increments in order to expedite a Maritime Patrol airframe replacement of the P-3C due to degrading material condition. Increment Three, comprised of four Engineering Change Proposals (ECPs) is on track to deliver and field the final ECP in FY 2026, which will provide warfighting critical ASW Signals Intelligence (ASW SIGINT), Higher than Secret (HTS) processing, enhanced track management (Minotaur) and an Enhanced Multi-static Active Coherent (MAC-E) ASW capability. P-8A aircraft deliveries continued on schedule in support of the U.S. Navy (USN) fleet squadron transition from P-3C to P-8A. Twelve aircraft production lots and associated logistics and training support are on contract with Boeing Original Equipment Manufacturer (OEM) and various P-8A suppliers. Contracting efforts for the nine additional aircraft added in the FY 2021 budget completed March 31, 2021.

As of April 18, 2022 USN fleet squadrons have taken delivery of 110 of 128 contracted P-8A aircraft. P-8A active duty fleet transition training is complete for all twelve fleet squadrons, one fleet replacement squadron and one special mission aircraft squadron. P-3C to P-8A fleet transition training of two reserve squadrons is planned to start in FY 2023. As of April 18, 2022 the P-8A Cooperative Partner (COOP) and Foreign Military Sales (FMS) activities continue on track. The Royal Australian Air Force (RAAF) has taken delivery of 12 P-8A aircraft and has elected to exercise an option for two additional aircraft contracted for in FY 2021. The FMS United Kingdom program have taken delivery of nine P-8A aircraft. The FMS Norway program have taken delivery of three of five contracted aircraft.

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

The P-8A program now exceeds 90% expended; therefore, this will be the final SAR for P-8A.

Significant Issues:

Chief of Naval Operation (OPNAV) 2018 Requirements Review Board decision set P-8A inventory at 138 aircraft; however, the PB 2021 budget funded only 128 aircraft without appropriate required support costs/support equipment procurements to enable USNR transition.

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
Feb 2000	The Broad Area Maritime and Littoral Armed Intelligence Surveillance and Reconnaissance Mission Needs Statement was validated and approved by the JROC.
Apr 2000	The P-8A Poseidon (formerly Multi-Mission Maritime Aircraft (MMA)) program received Milestone 0 approval to enter Concept Exploration.
Jan 2002	P-8A received approval to enter the Component Advanced Development (CAD) work effort on

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	January 18, 2002. CAD included competitively awarded contracts to Lockheed Martin for the Orion 21 concept (P-3 derivative) and to Boeing for the military derivative of the 737 aircraft.
Dec 2003	The MMA Operational Requirements Document (ORD)/ Capability Development Document (CDD) was validated and approved by JROC.
Jun 2004	Milestone (MS) B ADM signed and the System Development and Demonstration contract awarded to Boeing for the 737-800 Extended Range (ERX) based system.
Jun 2007	The P-8A program conducted the Critical Design Review.
Dec 2008	The Record of Decision was approved for basing 12 P-8A squadrons and one Fleet Replacement Squadron (FRS) at Naval Air Station (NAS) Jacksonville, Florida, NAS Whidbey Island, Washington, and Marine Corps Base Hawaii at Kaneohe Bay, Hawaii.
Apr 2009	Australia joined as a cooperative partner of P-8A Increment 2 (Inc 2). The Inc 2 Memorandum of Understanding (MOU) authorizes Australian participation in P-8A Inc 2 development.
Apr 2009	The P-8A program completed the Interim Program Review and awarded the Advance Acquisition Contract for LRIP Advance Procurement (AP).
Aug 2010	The Under Secretary of Defense (Acquisition, Technology and Logistics) (USD (AT&L)) signed the Milestone (MS) C ADM granting authorization to: proceed with LRIP Lots I through III that included six aircraft in FY 2010, seven aircraft in FY 2011, and 11 aircraft in FY 2012. In addition, the MS C ADM approved the request to obligate FY 2012 AP funding for FRP and authorized the Navy to proceed with Automatic Identification System, Multi-Static Active Coherent, High Altitude ASW Weapon Capability, Rapid Capability Insertion, Acoustics Algorithms, and Tactical Operations Center updates.
Jan 2011	The LRIP Lot I contract was definitized for six aircraft.
Nov 2011	The LRIP Lot II contract was definitized for seven aircraft.
Mar 2012	The Production, Sustainment, and Follow-on Development MOU authorizes Australian Procurement of Inc 2 capable P-8A aircraft, participation in development of common sustainment strategies for the life of the aircraft, and participation in development of new platform capabilities.
Sep 2012	The LRIP Lot III contract was definitized for 11 aircraft.
Jul 2013	In order to maintain fleet transition rates, the USD (AT&L) approved a change to the P-8A Acquisition Strategy to add a fourth lot of 13 LRIP aircraft in FY 2013.
Jul 2013	The LRIP Lot IV contract was definitized for 13 aircraft.
Nov 2013	The P-8A achieved IOC.
Dec 2013	The P-8A commenced first Fleet operational deployment.
Jan 2014	The USD (AT&L) signed the FRP ADM approving the FRP decision.
Feb 2014	The Australian government announced its plan to purchase eight P-8A aircraft and supporting Infrastructure.
Feb 2014	The FRP I (Lot V) contract was definitized for 16 aircraft.
Aug 2015	The FRP II Lot VI P-8A production contract definitized for nine USN and four Royal Australian Air Force (RAAF) Lot VI aircraft.
Jan 2016	P-8A FRP Lot VII (FY 2016 Aircraft Procurement, Navy (APN)-1, quantity of 16 USN and four RAAF aircraft) production contract option awarded.
Feb 2016	Two additional USN P-8A FRP Lot VII aircraft procured following the Department of the Navy's Congressional notification of the use of Buy to Budget authority under 10 United States Code 2308 received on February 22, 2016. One aircraft was procured using FY 2014 APN-1, and one aircraft was procured using FY 2016 APN-1.
Mar 2016	USD (AT&L) approved an updated P-8A Acquisition Strategy, incorporating the Inc 3 capabilities into the baseline program as a series of Engineering Change Proposals.

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Apr 2016	USD (AT&L) signed the ADM for P-8A Inc 3.
May 2016	The P-8A was re-designated to an ACAT 1C program by USD (AT&L).
Jun 2016	Assistant Secretary of the Navy for Research, Development and Acquisition (ASN (RDA)) signed the APB to support the Inc 3 strategy change.
Aug 2016	United Kingdom (UK) Embassy informed Navy International Programs Office that UK signed P-8A Letters of Offer and Acceptance (LOAs) provided in June 2016. The FMS cases provides for nine P-8A aircraft, initial logistics support and maintenance trainer suite.
Oct 2016	The first RAAF aircraft delivered October 19, 2016 (~6 weeks early) in Boeing Seattle and repositioned to Canberra, Australia on November 15, 2016 Australian Eastern Daylight Time.
Dec 2016	U.S. Navy/Boeing signed a Memorandum of Agreement for P-8A production unit pricing for FRP Lots VIII-X for 49 aircraft (31 USN, four RAAF, nine UK, and five Norway).
Mar 2017	Norway P-8A LOA signature by the Director, Norway Defense Material Agency completed during a ceremony in Oslo, Norway on March 29, 2017 with US Embassy leadership in attendance. The FMS case provides for five P-8A aircraft, associated services and equipment.
Mar 2017	The FRP Lot VIII (FY2017 APN-1, quantity of 11 USN, four RAAF and two UK aircraft) production contract awarded.
Dec 2017	The P-8A FRP Lot IX (FY2018 APN-1, quantity of seven USN and three UK aircraft) contract awarded.
Feb 2018	Awarded competitive seven year, \$2 billion P-8A Engine/Airframe Depot Repair/Overhaul contracts on February 01, 2018. First fleet P-8A inducted into the airframe depot on March 28, 2018 and completed September 2018. The first engine repair contract/induct conducted April 2018.
Apr 2018	Fleet successfully employed Air-to-Air Refueling (AAR) capability. First deployment of AAR-capable P-8A's commenced April 2018.
Apr 2018	Navy Resources and Requirements Review Board set warfighting inventory requirement at 138 P-8A aircraft, providing for Quick Reaction Capability aircraft and U.S. Naval Reserve recapitalization.
Jul 2018	New Zealand FMS LOA for four P-8A aircraft, initial support and training devices completed on July 9, 2018.
Nov 2018	South Korea FMS LOA for six P-8A aircraft and initial support completed on November 29, 2018.
Jan 2019	The FRP Lot X (FY2019 APN-1, quantity of ten USN, four UK and five Norway aircraft) production contract awarded.
Feb 2019	P-8A acquisition strategy change was signed by the ASN (RDA) on February 25, 2019 approving changes to the March 2016 P-8A Acquisition Strategy to execute the P-8A technical data Memorandum of Agreement/Special Licensing Agreement (MOA/SLA) with The Boeing Company. The MOA/SLA provides government access to P-8A technical data for the life of the program.
Dec 2019	Increment 3 ECP 6 Critical Design Review successfully completed.
Mar 2020	The FRP Lot XI (FY2020 APN-1, quantity of eight USN, four New Zealand and six South Korean aircraft) production contract awarded.
May 2020	USN squadron transition training from the P-3C to the P-8A completed.
Dec 2020	PB21 enacted profile of 128 aircraft, total required remains 138.
Mar 2021	The FRP Lot XII (FY2020 APN-1, quantity of nine USNR, two RAAF and five Germany aircraft) production contract awarded.

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Schedule

Schedule Events

Schedule Events					
Events	Development APB Objective	Current APB Development Objective/Threshold		Current Estimate/Actual	Deviation
Milestone B	May 2004	Jun 2004	Jun 2004	May 2004	None
Design Readiness Review (DRR)	Jul 2007	Sep 2007	Sep 2007	Aug 2007	None
Interim Program Review (IPR)	Apr 2009	Apr 2009	Apr 2009	Apr 2009	None
Milestone C	May 2010	Aug 2010	Aug 2010	Aug 2010	None
Initial Operational Test & Evaluation (IOT&E)					
Start	Apr 2012	Sep 2012	Sep 2012	Sep 2012	None
Complete	Feb 2013	Mar 2013	Mar 2013	Mar 2013	None
IOC	Jul 2013	Nov 2013	Nov 2013	Nov 2013	None
Full Rate Production (FRP)	Apr 2013	Jan 2014	Jan 2014	Jan 2014	None

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Performance

Performance Characteristics					Deviation
Development APB Objective	Current APB Development Objective/Threshold	Demonstrated Performance (include Date of Demonstration)	Current Estimate/Actual		
Mission Radius/Endurance Subsurface attack (nm)					
>=1,600/>=4	>=1,600/>=4	1,200/4	1,262/4	1,262/4	
Mixed Stores Loadout (ASW) (lbs)					
12,500	12,500	10,000	13,275	25,000	
Initial On-station Altitude (ft)					
49,000	49,000	25,000	39,000	39,000	
Operational Availability (ASW)					
.8	(O = T) .8	.8	TBD	.8	
Force Protection (%)					
100	(O = T) 100	100	100	100	
Net-Ready					
Fully support execution of joint operational activities	Fully support execution of joint operational activities	Fully support execution of joint critical operational activities	Met initial NR KPP compliance per MS-B exit criteria. Demonstration of full NR compliance is TBD	Fully support execution of joint critical operational activities by Increment 3 IOC	
Net Enabled ASUW Weapon					
N/A	Capability to act in the CC and 3PS roles in the NEW architecture including launching the weapon, in-flight control of the weapon, terminal guidance of the weapon, transferring/receiving control to/from another platform, and designating or acting as a 3PS	Capability to act in the CC role in the NEW architecture Including launching the weapon, inflight control of the weapon, and terminal guidance of the weapon	Capability to act in the CC and 3PS roles in the NEW architecture including launching the weapon, inflight control of the weapon, terminal guidance of the weapon, transferring/receiving control to/from another platform, and designating or acting	Capability to act in the CC and 3PS roles in the NEW architecture including launching the weapon, in-flight control of the weapon, terminal guidance of the weapon, transferring/receiving control to/from another platform, and designating or acting	

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Performance Characteristics				
Development APB Objective	Current APB Development Objective/Threshold	Demonstrated Performance (include Date of Demonstration)	Current Estimate/Actual	Deviation
		as a 3PS	as a 3PS	
Operational Availability (Ao ASUW)				
N/A	Ao ASUW > 0.8	Ao ASUW = 0.8	TBD	Ao ASUW > 0.8

Acronyms and Abbreviations

- 3PS - Third Person Source
- Ao - Operational Availability
- ASUW - Anti-Surface Warfare
- ASW - Anti-Submarine Warfare
- CC - Current Controller
- FOT&E - Follow-on Test and Evaluation
- ft - Feet
- JITC - Joint Interoperability Test Command
- KPP – Key Performance Parameters
- lbs - Pounds
- NEW - Network Enabled Weapon
- nm - Nautical miles
- NR – Network Ready

Performance Notes:

Classified Performance information is provided in the classified annex to this submission.

P-8A Operational Availability (Ao) ASW performance of 0.67 was measured during Initial Operational Test and Evaluation (IOT&E) against an Ao Anti-Submarine Warfare (ASW), requirement of 0.6. Reported P-8A deployed fleet squadron Ao ASW is 0.7.

The Net Enabled ASUW capability was demonstrated with the Harpoon II+ live fires on January 01, 2021 at the Nava Air Warfare Center Weapons Division (NAWCWD) ranges off Point Mugu CA.

Requirements Source: CPD (Increment 1), Change 2, dated May 08, 2012 and CDD (Increment 2 and 3) dated April 04, 2016

Acquisition Budget Estimate

Total Acquisition Cost

Category	Base Year	Development APB 06/04/2004	APB Change 3 (Production - Current) 02/07/2018)		Budget Estimate PB 2023		Deviation
		Objective (BY\$)	Objective (BY\$)	Threshold (BY\$)	BY\$	TY\$	
RDT&E	2010	7334.5	9232.5	10155.8	9556.9	9891.3	None
Procurement	2010	22747.0	21508.5	23659.4	23398.1	26301.7	None
MILCON	2010	134.0	365.8	402.4	363.6	406.6	None
Acq. O&M	2010	0	0	0	0	0	None
Total		30215.5	31106.8	34217.5	33318.6	36599.6	
PAUC	2010	262.744	272.867	300.154	250.516	275.185	None
APUC	2010	210.620	197.326	217.059	182.798	205.482	None

Total End Item Quantity

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	5	5
Procurement	109	128

Budget Notes:

The POE is an update to the P-8A FRP SCP and is supported by the methods employed by the Naval Air Systems Command Cost and Schedule Analysis Department (CS&A). The estimate reference is dated March 01, 2016. The December 2021 SAR is aligned with the PB 2023 budget submission.

Quantity Notes:

In April 2018, Navy Resources and Requirements Review Board (R3B) set warfighting inventory requirement at 138 P-8A aircraft, providing for Quick Reaction Capability (QRC) aircraft and U.S. Naval Reserve recapitalization. The APB quantity requires an update to reflect the R3B warfighting inventory requirement quantity of 138 P-8A aircraft. The PB 2023 P-8A aircraft procurement funding profile reflects 128 aircraft, including QRC aircraft.

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Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Procurement Cost (December 2021)	
1.	Production efforts continue on schedule and on budget. P-8A Production line stability has been actively coordinated with Boeing Defense, Space & Security (BDS) and new allied customers to mitigate risk associated with Boeing Commercial Aircraft (BCA) transition to 737 MAX production. Boeing has reduced the P-8A production effort to the Minimum Sustaining Rate of one aircraft per month to extend line viability. FY 2021 US and Royal Australian Air Force (RAAF) procurements are expected to delay a shutdown decision to 4 QTR FY 2022, pending additional FMS or Direct Commercial Sale customers. Once closed, the ability to re-open the P-8A production line is unlikely.
Original Baseline Estimate (June 2004)	
1.	The Cost Analysis Improvement Group Independent Cost Estimate for Multi-mission Maritime Aircraft Program Milestone B Review memorandum dated May 26, 2004 covered the program risks and sensitivity analysis areas of procurement costs due to labor and material, engineering effort, and software development.
Revised Original Estimate (N/A)	
None	
Admin Baseline Estimate (February 2018)	
1.	P-8A Production line stability associated with BCA 737-800 transition to the 737MAX (2019 in progress) and final USN/Cooperative Partner (COOP)/FMS pricing requirements continue at risk beyond FY 2020.

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Unit Cost

Current Baseline Compared with Current Estimate

Category (\$M)	Current APB	Current Estimate	% Change	NMC Breach
PAUC				
Cost	31106.8	33318.6		-
Quantity	114	133		-
Unit Cost	272.867	250.516	-8.19%	
APUC				
Cost	21508.5	23398.1		-
Quantity	109	128		-
Unit Cost	197.326	182.798	-7.36%	

Original Baseline Compared with Current Estimate

Category (\$M)	Original APB	Current Estimate	% Change	NMC Breach
PAUC				
Cost	30271.9	33318.6		-
Quantity	115	133		-
Unit Cost	263.234	250.516	-4.83%	
APUC				
Cost	22791.2	23398.1		-
Quantity	108	128		-
Unit Cost	211.030	182.798	-13.38%	

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Contracts

Contract Data (\$TYM)		
Contract Number	N00019-16-G-0001	
Effort Number	2	
Modification Number		
Award Date	March 19, 2019	
Definitization Date	March 19, 2019	
Order Number		
CAGE Code/CAGE Legal Name	The Boeing Company	
Contract Title	Increment 3 Platform Integration	
Contract Address	7755 East Marginal Way South Seattle, WA 98108	
Contracts/Effort Price, Quantity, and Performance (\$M)		
Initial Target Price	Current Target Price	
326.3	328.7	
Initial Ceiling Price	Current Ceiling Price	
N/A	N/A	
Contract's EAC	PM's EAC	
283.9	328.7	
Initial Quantity	Current Quantity	Delivered Quantity
0	0	0
BAC	BCWP	ACWP
246.1	168.0	196.8
BCWS	Cost Variance	Schedule Variance
173.0	-28.7	-4.9

Contract Notes:

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to incremental funding increases to Boeing Defense Space and Security for Increment 3 (Inc 3) Platform Integration development efforts. This contract (Cost-Plus-Fixed-Fee Delivery Order against Boeing Basic Ordering Agreement) supports the development of P-8A Inc 3 Platform Integration.

Cost Variance:

The unfavorable net change in the cost variance is due to cost increases due to unplanned additional software engineering and integration activities that have been driven by staffing, lab resources, and COVID-19 induced delays. The program anticipates the cost overrun to continue and not be recovered. Despite the cost variance, the program office has sufficient reserve to complete the effort.

Schedule Variance:

The unfavorable net change in the schedule variance is due to additional efforts in the Mission Systems areas required to complete material deliveries, completion of test aircraft modifications and lab upgrade efforts. Unfavorable schedule trends are likely until completion of the first aircraft modification in 3Q FY 2022.

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Contract Data (\$TYM)		
Contract Number	N00019-14-C-0067	
Effort Number	5	
Modification Number		
Award Date	January 25, 2019	
Definitization Date	January 25, 2019	
Order Number		
CAGE Code/CAGE Legal Name	The Boeing Company	
Contract Title	P-8A Production Contract for FRP Lot X	
Contract Address	7755 East Marginal Way South Seattle, WA 98108	
Contracts/Effort Price, Quantity, and Performance (\$M)		
Initial Target Price	Current Target Price	
1388.3	1388.3	
Initial Ceiling Price	Current Ceiling Price	
N/A	N/A	
Contract's EAC	PM's EAC	
1388.3		1388.3
Initial Quantity	Current Quantity	Delivered Quantity
10	10	10
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

P-8A FRP Lot X Firm Fixed Price aircraft production contract awarded for ten USN aircraft on January 25, 2019. As of January 31, 2022, all 10 FRP Lot X aircraft have delivered to the USN fleet.

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

Cost Variance:

Cost Variance reporting is not required on this (FFP) contract.

Schedule Variance:

Schedule Variance reporting is not required on this (FFP) contract.

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Contract Data (\$TYM)		
Contract Number	N00019-14-C-0067	
Effort Number	6	
Modification Number		
Award Date	March 20, 2020	
Definitization Date	March 20, 2020	
Order Number		
CAGE Code/CAGE Legal Name	The Boeing Company	
Contract Title	P-8A Production Contract for FRP Lot XI	
Contract Address	7755 East Marginal Way South Seattle, WA 98108	
Contracts/Effort Price, Quantity, and Performance (\$M)		
Initial Target Price	Current Target Price	
1188.3	1188.3	
Initial Ceiling Price	Current Ceiling Price	
1214.1	1214.1	
Contract's EAC	PM's EAC	
1188.3		1188.3
Initial Quantity	Current Quantity	Delivered Quantity
8	8	0
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

P-8A FRP Lot XI Fixed Price Incentive Fee aircraft production contract awarded for eight USN aircraft on March 30, 2020. The first FRP Lot XI aircraft delivery to the USN fleet is expected in April 2022.

Cost Variance:

Cost Variance reporting is not required on this (FPIF) contract.

Schedule Variance:

Schedule Variance reporting is not required on this (FPIF) contract.

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Contract Data (\$TYM)		
Contract Number	N00019-14-C-0067	
Effort Number	7	
Modification Number		
Award Date	March 31, 2021	
Definitization Date	March 31, 2021	
Order Number		
CAGE Code/CAGE Legal Name	The Boeing Company	
Contract Title	P-8A Production Contract for FRP Lot XII	
Contract Address	7755 East Marginal Way South Seattle, WA 98108	
Contracts/Effort Price, Quantity, and Performance (\$M)		
Initial Target Price	Current Target Price	
1324.4	1324.4	
Initial Ceiling Price	Current Ceiling Price	
1352.4	1352.4	
Contract's EAC	PM's EAC	
1324.4		1324.4
Initial Quantity	Current Quantity	Delivered Quantity
9	9	0
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

P-8A FRP Lot XII Fixed Price Incentive Fee aircraft production contract awarded for nine USN aircraft on March 31, 2021. The first FRP Lot XII aircraft delivery to the USN fleet is expected in November 2023.

Cost Variance:

Cost Variance reporting is not required on this (FPIF) contract.

Schedule Variance:

Schedule Variance reporting is not required on this (FPIF) contract.

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Technologies and Systems Engineering

Significant Technical Risks

Significant Technical Risks	
Current Estimate (December 2021)	
1.	Boeing staffing and laboratory facilities capacity issues have impacted concurrent P-8 USN and FMS software (SW) development requirement (Aircraft production, Inc 3 Integration and Training Systems). Boeing continues to pursue new SW hires and laboratory capacity to meet P-8 demand requirements.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	5	5	5	100.00%
Production	112	110	128	86.00%
Total Program Quantity Delivered	117	115	133	86.00%

Expended and Appropriated (TY \$M)

Total Acquisition Cost: 36599.6

Expended to Date: 32968.7

Percent Expended: 90.10%

Total Funding Years: 21

Years Appropriated: 20

Percent Years Appropriated: 95.00%

Appropriated to Date: 35878.2

Percent Appropriated: 98.0%

The above data is current as of: April 18, 2022

Deliveries and Expenditures Notes:

Although RDT&E deliveries commenced with the first flight test aircraft (airworthiness, T-1), it is not included in the Planned or Actual deliveries since it is not a fully configured end item. The RDT&E delivered quantities include: the second flight test aircraft (mission equipped, T-2); the third flight test aircraft (mission equipped for weapon separation testing, T-3); and T-4, T-5 and T-6, System Development and Demonstration Stage II production representative aircraft. The fleet has taken delivery of 110 total production aircraft supporting fleet transition training and operational deployment. All aircraft deliveries met fleet transition requirements.

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Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	6/4/2004	7/15/2013
Approved Quantity	34	37
Reference	Milestone B ADM	LRIP Lot IV ADM
Start Year	2010	2010
End Year	2012	2013

Rationale if Current Total LRIP Quantity exceeds 10% of the total Procurement quantities:

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the necessity to establish the initial production base and to achieve an orderly and efficient increase in both the production rate and industry workforce.

LRIP Note:

All 37 LRIP aircraft have been delivered.

Operating and Support Costs

Total Program O&S Cost Compared with Baseline

	Current APB Objective (BY\$)	Current APB Threshold (BY\$)	Current Estimate (BY\$)	Current Estimate (TY\$)	Deviation
Total O&S (\$Millions)	38060.10	41866.10	39843.26	61644.40	None

Constant Price FY 2010\$ provided for proper comparison with current APB objective and threshold values.

O&S Cost Breakdown – Total Cost by Cost Element

Category (BY\$ Million)	P-8A Poseidon
Unit-Level Manpower	11.70
Unit Operations	6.59
Maintenance	7.20
Sustaining Support	2.20
Continued System Improvements	6.19
Other	5.96
Total O&S	39.84

Due to the historical inclusion of Indirect costs as part of the P-8A APB, these costs have been addressed as "Other" O&S cost to ensure equivalency when comparing SAR 2021 to previously documented O&S cost totals.

Cost Estimate Source:

The program office estimate is an update to the P-8A December 2019 SAR O&S cost estimate and is supported by the methods employed by the Naval Air Systems Command Cost and Schedule Analysis Department (C&SA). The estimate reference is dated March 8, 2022. The December 2021 SAR is aligned with the PB 2023 budget submission.

O&S Cost Notes:

- a. Total O&S Cost increase compared to previous SAR submission primarily driven by the procurement of additional aircraft and adjustments to Increment 3 kit and install costs. Some of the increase was offset by part-level updates (reliability and intermediate-level repair) and depot-level repair updates (aircraft on ground cost and quantity reduction, engine unscheduled and scheduled removals and life limited part removals).
- b. Disposal/Demilitarization Cost Estimate and Source of Estimate:
This Rough Order of Magnitude estimate of \$32.61M (BY\$M) will be refined as the System Disposal Plan Annex to the Life Cycle Sustainment Plan is developed.
- c. Sustainment Strategy:
The P-8A O&S costs are based on limited 3-level maintenance. Post-Material Support Date contracts will be managed by Naval Supply Systems Command and the Defense Logistics Agency. Intermediate-level maintenance is currently estimated for 55 parts with additional intermediate-level capability assessments in work.
- d. For Each Acquired System or System Variant:
 - i. Quantity to Sustain: 128 (procurement funded units)

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- ii. First Operational Fiscal Year: 2012
 - iii. Final Operational Fiscal Year: 2049
 - iv. Unit Expected Service Life: 25 years
- e. Antecedent System(s) O&S Costs:
- i. The Antecedent System is the P-3C aircraft. P-3C O&S costs are based on a 3-level maintenance system. P-3C data was pulled from the Naval Visibility and Management of Operating and Support Cost database Aircraft Type Model Series Report in November 2016 (BY 2010 dollar average for FY 2004-FY 2014). The total O&S cost for P-3C is \$33.17B. This calculation is based on the FY 2004-FY 2014 average P-3C cost per operational aircraft multiplied by the number of P-8A operational aircraft years. Aircraft quantities: P-3C = 150 Total Aircraft Inventory and 141 Primary Authorized Aircraft. Flight hours per aircraft per year are: P-3C = 502. The calculation is based on summing the total operational flight hours and dividing by total operational aircraft. Indirect support for P-3C was estimated based on a ratio of mission personnel and intermediate maintenance government labor. Indirect support calculation now in alignment with P-8A calculation, by multiplying the Mission Personnel cost by a factor of 50.9%, which was determined by dividing the annual steady state P-8A Indirect Cost by the P-8A Mission Personnel cost.

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