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VC-25B

As of FY 2021 President's Budget

Defense Acquisition Management Information Retrieval (DAMIR)

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Table of Contents

Common Acronyms and Abbreviations for MDAP Programs	3
Program Information	5
Responsible Office	5
References	6
Mission and Description	7
Executive Summary	8
Threshold Breaches	10
Schedule	11
(U//FOUO) Performance	13
Track to Budget	22
Cost and Funding	22
Charts	35
Risks	37
Low Rate Initial Production	39
Foreign Military Sales	40
Nuclear Costs	40
Unit Cost	41
Cost Variance	44
Contracts	47
Deliveries and Expenditures	48
Operating and Support Cost	49

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance ACAT - Acquisition Category ADM - Acquisition Decision Memorandum APB - Acquisition Program Baseline **APPN** - Appropriation APUC - Average Procurement Unit Cost \$B - Billions of Dollars BA - Budget Authority/Budget Activity Blk - Block BY - Base Year CAPE - Cost Assessment and Program Evaluation CARD - Cost Analysis Requirements Description **CDD** - Capability Development Document CLIN - Contract Line Item Number **CPD** - Capability Production Document CY - Calendar Year DAB - Defense Acquisition Board **DAE - Defense Acquisition Executive** DAMIR - Defense Acquisition Management Information Retrieval DoD - Department of Defense **DSN - Defense Switched Network** EMD - Engineering and Manufacturing Development EVM - Earned Value Management FOC - Full Operational Capability FMS - Foreign Military Sales FRP - Full Rate Production FY - Fiscal Year FYDP - Future Years Defense Program ICE - Independent Cost Estimate IOC - Initial Operational Capability Inc - Increment JROC - Joint Requirements Oversight Council \$K - Thousands of Dollars **KPP** - Key Performance Parameter LRIP - Low Rate Initial Production \$M - Millions of Dollars MDA - Milestone Decision Authority MDAP - Major Defense Acquisition Program MILCON - Military Construction N/A - Not Applicable O&M - Operations and Maintenance **ORD** - Operational Requirements Document OSD - Office of the Secretary of Defense O&S - Operating and Support PAUC - Program Acquisition Unit Cost PB - President's Budget PE - Program Element PEO - Program Executive Officer

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VC-25B

PM - Program Manager POE - Program Office Estimate RDT&E - Research, Development, Test, and Evaluation SAR - Selected Acquisition Report SCP - Service Cost Position TBD - To Be Determined TY - Then Year UCR - Unit Cost Reporting U.S. - United States USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics) USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

Program Information

Program Name	
VC-25B (VC-25B)	
DoD Component	

Air Force

Responsible Office

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 July 16, 2018

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 03, 2018

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 3, 2018

Mission and Description

The VC-25B Program will replace the United States Air Force Presidential VC-25A fleet which faces capability gaps, rising maintenance costs, and parts obsolescence as it ages beyond 30 years. The VC-25B Program Office will deliver two new aircraft to meet the requirements for the President to execute the three roles of Head of State, Chief Executive, and Commander-in-Chief. The Boeing 747-8 aircraft will be uniquely modified to provide the President, staff, and guests with safe and reliable air transportation with an equivalent level of communications capability and security available in the White House.

The modifications to the 747-8 aircraft will include an electrical power upgrade, dual auxiliary power units that are usable in flight, a mission communication system, an executive interior, military avionics, a self-defense system, autonomous enplaning and deplaning, and autonomous baggage loading. In addition to the aircraft modifications, this effort will involve VC-25B aircraft design, modification, integration, test, evaluation, and certification; pre-operational support; design and delivery of key end-user items, such as test benches and ground support equipment; aircraft paint; and final aircraft delivery preparations.

Executive Summary

Program Highlights Since Last Report

The VC-25B program continues its positive momentum in EMD, with aircraft modification scheduled to begin 1Q CY 2020.

The EMD Undefinitized Contract Action (UCA), initially awarded on July 17, 2018 was definitized on December 26, 2019.

Program efforts in 2019 were focused on finalizing the VC-25B design and preparing for aircraft modification. In March and April 2019, the program's two 747-8 aircraft were ferried from their storage location to the Boeing San Antonio, Texas modification facility. Since the ferry, the aircraft have undergone removals of engines and interiors as well as cribbing in preparation for modification start. The first sub-system Critical Design Review (CDR), Electrical Power Generation System (EPGS), completed in May 2019. Additional sub-system CDRs for the Engines were held in June 2019, Intercommunication System (ICS) and Mission Communications System (MCS) in July 2019, Auxiliary Power Unit (APU) and Embedded Global Positioning System/Inertial Navigation System (EGI) CDRs in August 2019, Secondary Power Distribution System (SPDS) in September 2019, Cargo Baggage Loader (CBL), Cabin Services System (CSS) and a comprehensive wiring review event was held in October 2019. The Auxiliary Power Unit (APU) and Interiors CDR were held in December 2019.

The VC-25B System CDR was initially scheduled for August 2019 and is now scheduled for January 2020. Based on previous experience, Boeing and the program office are ensuring the design engineering is correct and complete (i.e., event-based). A phased CDR/modification approach is being pursued to ensure all CDR criteria are met while modification start for mature components stays on track for early 2020. The System CDR will occur during the week of January 13, 2020 and a CDR closure review will be held in March 2020. Modification Readiness Review was held December 19-20, 2019 and aircraft modification will commence in 1Q CY 2020, Boeing continues to work efficiencies and this phased CDR/modification plan will minimize impact to the start of flight test and align program efforts to meet the VC-25B IOC date of September 2024 or sooner.

The Defense Acquisition Executive (DAE) signed full-funding direction to the SCP in December 2018 with the APB. The Air Force submitted an FY 2019 Above Threshold Reprogramming (ATR) sources to meet program commitments in FY 2019 and fully funded the program to the SCP in FY 2020 President's Budget. The program also received approval to implement a Special Termination Cost Clause (STCC), which allowed the termination liability (\$108M) to be held outside the contract, thereby allowing the \$108M to be used for contractor expenditures. The FY 2021 budget realigns out year funding within the Acquisition Program Baseline to fix ATR shortfalls and support EMD contract definitization to deliver capability by 2024. There is no change in total program cost.

The program office is actively engaging with the contractor on schedule acceleration opportunities to support the White House expectations and meet or exceed the APB threshold date for IOC.

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

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation								
Date	Significant Development Description							
January 2016	Pre-Milestone B Risk Reduction Studies							
August 2017	Purchase of two commercial 747-8 inventory aircraft							
September 2017	Preliminary Design Contract Modification							
July 2018	EMD Undefinitized Contract Action							
November 2018	VC-25B Test Evaluation and Master Plan							
December 2018	APB approved on December 3, 2018							
December 2018	System Preliminary Design Review Closure							
April 2019	Closed 2366b Certification Waivers							
April 2019	Accomplished Aircraft Ferry Flight to Modification Facility in San Antonio							
May 2019	Commenced Aircraft De-Modification							
December 2019	Completed Modification Readiness Review							
December 2019	EMD Contract Definitized							

Threshold Breaches

APB Breaches Schedule Performance Cost RDT&E Procurement MILCON 2 Acq O&M **O&S Cost** Unit Cost PAUC APUC

Nunn-McCurdy Breaches

Current UC	R Baseline	
	PAUC	None
	APUC	None
Original U	CR Baseline	
	PAUC	None
	APUC	None

Explanation of Breach

A VC-25B Program Office Estimate update for CY 2019 has resulted in an APB Acquisition Operations and Maintenance (O&M) cost breach of \$0.4M. This breach is a result of the realignment of requirements in support of the outfitting of the VC-25B Hangar Complex. The requirements were identified as Procurement (3080) funds in the Service Cost Position that informed the APB; however after analysis of the specific requirements, the proper and legal funding type was identified as Acquisition O&M. The realignment increases the Acquisition O&M from \$2.1M to \$2.5M which drives the Preliminary Design Review requirement. The Program Acquisition Unit Cost remains below APB limits.

A Program Deviation Report was submitted to SAF/AQ on January 3, 2020. This memo outlined the above reasoning for breach and also notified SAF/AQ that the program will not update the APB at this time.

Schedule



	Schedule Events				
Events	SAR Baseline Development Estimate	Curre Devel Objective	ent APB opment /Threshold	Current Estimate	
Initiate Aircraft Modification	Jan 2020	Jan 2020	Jan 2021	Feb 2020	(Ch
Initiate DT&E (First Flight)	Aug 2021	Aug 2021	Aug 2022	Nov 2021	
Start IOT&E	Jun 2023	Jun 2023	Jun 2024	Apr 2024	
Achieve RAA for IOC	Dec 2023	Dec 2023	Dec 2024	Sep 2024	
Achieve RAA for FOC	Apr 2024	Apr 2024	Apr 2025	Feb 2025	

Change Explanations

(Ch-1) The current estimate for the Initiation of Aircraft Modification has moved from January 2020 to February 2020, due to a delay in design maturity.

Notes

1/ The aircraft modification begins after the system design is determined stable by completing CDR and Modification Readiness Review. This milestone signifies the contractual requirements have been achieved to initiate aircraft modification.

2/ The primary purpose of DT&E is to verify the system's design meets all technical specifications and contract requirements have been met. DT&E is sponsored by the Program Office and can be conducted by the Government, by the contractor, or by a mix of both. DT&E employs integrated testing methodologies to the maximum extent possible. Integrated testing is the collaborative planning and execution of test phases and events to provide shared data in support of independent analysis, evaluation, and reporting by all stakeholders.

3/ Operational test is the field test, under realistic operational conditions, of any item (or key component) of the air vehicle, equipment, or support equipment for the purpose of determining the effectiveness and suitability of the system for use by the PAG and the evaluation of the results of such test. IOT&E entrance criteria are as defined in the VC-25B Test and Evaluation Master Plan.

4/ RAA for IOC is defined as the delivery, inspection, and acceptance of one fully PMR VC-25B to the PAG, at Joint Base Andrews, to enable IOC, as defined in the CDD. This mission-ready asset will have the full complement of initial product support elements, including logistics, initial spares, peculiar support equipment, Mission Communication System and Flight Deck test benches, Technical Orders, maintenance systems, and initial aircrew/maintenance training in place to ensure the VC-25B aircraft delivery is fully supportable.

5/ RAA for FOC is defined as the delivery, inspection, and acceptance of the second fully PMR VC-25B to the PAG, at Joint Base Andrews, to enable FOC, as defined in the CDD. FOC is the demonstrated capability to fully provide world-wide transportation to conduct Presidential duties as Commander-in-Chief, Chief Executive, and Head of State. FOC will be achieved once two VC-25B aircraft are fielded, all required manpower is trained and in place, logistics and maintenance systems are mission ready, and facilities exist to house the VC-25B system.

6/ Objective dates are set as a VC-25B program challenge to achieve White House Military Office-desired dates for accelerated delivery of PMR VC-25B aircraft. Trade studies are underway to accelerate the program with the intent of achieving or outperforming the objective dates for IOC and FOC. The program threshold dates align to the congressionally-mandated retirement of VC-25A aircraft by December 31, 2025, while allowing time to complete the transition.

Acronyms and Abbreviations

CDR - Critical Design Review DT&E - Developmental Test & Evaluation IOT&E - Initial Operational Test & Evaluation PAG - Presidential Airlift Group PMR - Presidential Mission Ready RAA - Required Assets Available

Track to Budget

Appn		BA	PE		
Air Force	3600	05	0401319F		
	Proj	ect	A STREET, STRE	Name	
	655250)	VC-25B		
nent					
Appn		BA	PE	1	
Air Force	3080	03	0401319F		
	Line	tem		Name	
	837240 837300))	CCTV/Audiov Base Comm	risual Equipment	
Air Force	3080	04	0401319F		
	Line	tem		Name	
	843050)	Mechanized N	Material Handling Equipment	(Sunk)
	_				
Appn		BA	PE		
Appn Air Force	3300	BA 01	PE 0401319F		
Appn Air Force	3300 Proj	BA 01 ect	PE 0401319F	Name	
Appn Air Force	3300 Proj 163002	BA 01 ect	PE 0401319F PAR Relocate Range	Name e Haz Cargo Pad and EOD	
Appn Air Force	3300 Proj 163002 173021	BA 01 ect	PE 0401319F PAR Relocate Range Presidential #	Name e Haz Cargo Pad and EOD Aircraft Recap Complex	
Appn Air Force	3300 Proj 163002 173021 AJ5003	BA 01 ect	PE 0401319F PAR Relocate Range Presidential A Operational a	Name e Haz Cargo Pad and EOD Aircraft Recap Complex and Training Facilities	
Appn Air Force	3300 Proj 163002 173021 AJ5003	BA 01 ect	PE 0401319F PAR Relocate Range Presidential A Operational a	Name e Haz Cargo Pad and EOD Aircraft Recap Complex and Training Facilities	
Appn Air Force M Appn	3300 Proj 163002 173021 AJ5003	BA 01 ect	PE 0401319F PAR Relocate Range Presidential A Operational a	Name e Haz Cargo Pad and EOD Aircraft Recap Complex and Training Facilities	
Appn Air Force M Air Force	3300 Proj 163002 173021 AJ5003 3400	BA 01 ect 2 BA 02	PE 0401319F PAR Relocate Range Presidential A Operational a PE 0401319F	Name e Haz Cargo Pad and EOD Aircraft Recap Complex and Training Facilities	
Appn Air Force M Air Force	3300 Proj 163002 173021 AJ5003 3400 Subac Gro	BA 01 ect 2 BA 02 tivity up	PE 0401319F PAR Relocate Range Presidential A Operational a PE 0401319F	Name e Haz Cargo Pad and EOD Aircraft Recap Complex and Training Facilities	

Cost and Funding

Cost Summary

		1	Fotal Acquis	sition Cost				
Appropriation	B	Y 2018 \$M		BY 2018 \$M	TY \$M			
	SAR Baseline Development Estimate	Curren Develo Objective/1	Current APB Development Objective/Threshold		SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate	
RDT&E	4557.5	4557.5	5013.3	4487.7	4819.6	4819.6	4748.9	
Procurement	51.0	51.0	56.1	20.5	52.9	52.9	21.5	
Flyaway		~		0.0			0.0	
Recurring				0.0			0.0	
Non Recurring				0.0		÷	0.0	
Support				20.5			21.5	
Other Support				20.5	++		21.5	
Initial Spares				0.0			0.0	
MILCON	403.6	403.6	444.0	400.5	429.3	429.3	427.2	
Acq O&M	1.9	1.9	2.1	2.5	2.0	2.0	2.6	
Total	5014.0	5014.0	N/A	4911.2	5303.8	5303.8	5200.2	

¹ APB Breach

Current APB Cost Estimate Reference

Service Cost Position dated November 27, 2018

Cost Notes

A VC-25B Program Office Estimate update for CY 2019 has resulted in an APB Acquisition Operations and Maintenance (O&M) cost breach of \$0.4M. This breach is a result of the realignment of requirements in support of the outfitting of the VC-25B Hangar Complex. The requirements were identified as Procurement (3080) funds in the Service Cost Position that informed the APB; however after analysis of the specific requirements, the proper and legal funding type was identified as Acquisition O&M. Since the funding has been realigned from Procurement to Acquisition O&M, the delta O&M funding to the APB threshold is \$0.4M.

The CY 2019 POE included risks for Contractor test program execution over and above for Government test requirements, and Presidential Quality. The potential impacts of the risks on program cost total \$66.05M (TY). The mitigation approaches for the risks include refinement of Contractor test program requirements with respect to combined testing, Joint Developmental Test & Evaluation and Initial Operational Test & Evaluation requirement testing, and multiple reviews and acceptances of Presidential Quality requirements.

Total Quantity										
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate							
RDT&E	2	2	2							
Procurement	0	0	0							
Total	2	2	2							

Cost and Funding

Funding Summary

	Appropriation Summary											
FY 2021 President's Budget / December 2019 SAR (TY\$ M)												
Appropriation	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total			
RDT&E	1767.7	757.9	800.9	584.6	513.6	308.1	16.1	0.0	4748.9			
Procurement	12.7	4.0	0.5	2.6	1.7	0.0	0.0	0.0	21.5			
MILCON	341.5	85.7	0.0	0.0	0.0	0.0	0.0	0.0	427.2			
Acq O&M	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	2.6			
PB 2021 Total	2121.9	850.2	801.4	587.2	515.3	308.1	16.1	0.0	5200.2			
PB 2020 Total	2083.9	847.9	720.8	588.1	516.2	354.7	68.6	0.0	5180.2			
Delta	38.0	2.3	80.6	-0.9	-0.9	-46.6	-52.5	0.0	20.0			

	Quantity Summary											
	FY 2021 President's Budget / December 2019 SAR (TY\$ M)											
Quantity Undistributed Prior FY FY FY FY FY FY TO										Total		
Development	2	0	0	0	0	0	0	0	0	2		
Production	0	0	0	0	0	0	0	0	0	0		
PB 2021 Total	2	0	0	0	0	0	0	0	0	2		
PB 2020 Total	2	0	0	0	0	0	0	0	0	2		
Delta	0	0	0	0	0	0	0	0	0	0		

Cost and Funding

Annual Funding By Appropriation

	Annual Funding 3600 RDT&E Research, Development, Test, and Evaluation, Air Force										
		TY \$M									
Fiscal Year	Quantity	End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program				
2010				14			4.7				
2011							4.5				
2012							4.0				
2013							7.6				
2014							6.4				
2015							11.0				
2016							277.4				
2017			-				311.3				
2018	-						427.2				
2019							713.6				
2020	-						757.9				
2021							800.9				
2022			÷*,				584.6				
2023							513.6				
2024							308.1				
2025							16.1				
Subtotal	2		·**.				4748.9				

	3600	I BDT&F Bese	Annual Fu	inding ent. Test. and Ev	aluation. Air	Force			
	0000	BY 2018 \$M							
Fiscal Year	Quantity	End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Fiyaway	Total Support	Total Program		
2010							5.3		
2011	-						5.0		
2012	-						4.3		
2013							8.1		
2014							6.7		
2015							11.5		
2016							284.8		
2017						144	313.2		
2018							421.2		
2019							690.1		
2020			÷.				718.4		
2021						-	744.2		
2022							532.6		
2023			++;				458.7		
2024	-						269.8		
2025							13.8		
Subtotal	2		++.				4487.7		

FY 2018 Below Threshold Reprogramming (BTR) of \$8.7M received. The VC-25B program received FY 2019 reprogramming funds in the amount of \$79.3M to support the budget with the APB. An additional \$40M reprogramming was approved in December 2019 and is not reflected in the FY 2019 totals throughout this document. FY2021 budget adjusts program phasing to align to program execution. The total cost of the program as documented in the APB remains unchanged.

		3080 Proc	Annual Fu urement Other	inding Procurement, A	ir Force			
		TY SM						
Fiscal Year	Quantity	End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2019						12.7	12.7	
2020	-					4.0	4.0	
2021						0.5	0.5	
2022					/	2.6	2.6	
2023		+				1.7	1.7	
Subtotal	-	+				21.5	21.5	

		3080 Proc	Annual Fu urement Other	inding Procurement, A	ir Force				
		BY 2018 \$M							
Fiscal Year	Quantity	End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program		
2019						12.3	12.3		
2020	-		-			3.8	3.8		
2021						0.5	0.5		
2022					/	2.4	2.4		
2023		÷.				1.5	1.5		
Subtotal	-		-			20.5	20.5		

Annual Fur 3300 MILCON Military Co	nding onstruction, Air Force
Final	TY \$M
Year	Total Program
2016	0.2
2017	29.1
2018	143.1
2019	169.1
2020	85.7
Subtotal	427.2

Annua 3300 MILCON Milita	I Funding ary Construction, Air Force
Fiend	BY 2018 \$M
Year	Total Program
2016	0.2
2017	28.2
2018	136.1
2019	157.7
2020	78.3
Subtotal	400.5

Annual Funding 3400 Acq O&M Operation and Maintenance, Air Force						
TY \$M						
Year	Total Program					
2020						
Subtotal	2.6					

Annua 3400 Acq O&M Operatio	al Funding on and Maintenance, Air Force				
BY 2018 \$M					
Year	Total Program				
2020	2.5				
Subtotal	2.5				

Charts

VC-25B first began SAR reporting in December 2018





Quantity - VC-25B



Risks

Significant Schedule and Technical Risks

1	Significant Schedule and Technical Risks
	Certification Delays (December 2019)
1.	The contractor may struggle to obtain Federal Aviation Administration certification in a timely manner
	EMD Funds Phasing (December 2019)
1.	The programs' EMD funding situation is improving, but not yet fixed.
	Yankee White Workforce Availability (December 2019)
1.	If the processing time for granting YANKEE WHITE access for VC-25B personnel is longer than the expected 18 month processing duration, the critical personnel will not be available for aircraft modification.
	Current Estimate (December 2019)
1.	Current estimate matches the In-Progress Review

Risks

Risk and Sensitivity Analysis

	Risks and Sensitivity Analysis
	Current Baseline Estimate (December 2018)
1.	Contractor has pulled certification plan approvals with Federal Aviation Administration (FAA) early in process to reduce risk of certification delays later. Program Office, contractor, and suppliers are working proactive plans to reduce certification risk.
2.	Addressed via Limitation of Government Obligations Clause updated on contract at Definitization, FY 2019 Above Threshold Reprogramming funding, and realignment in FY 2021 PB.
3.	Program Office, Air Force, and Contractor are proactively engaging with Defense Counterintelligence Security Agency (DCSA) to track and prioritize Yankee White approval packages for VC-25B workforce.
	Original Baseline Estimate (December 2018)
1.	Same as Current Estimate
	Revised Original Estimate (N/A)
lon	e
	Current Procurement Cost (December 2019)
1.	N/A

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost

Current UCR Ba	seline and Current Estimate (E	Base-Year Dollars)		
	BY 2018 \$M	BY 2018 \$M		
Item	Current UCR Baseline (Dec 2018 APB)	Current Estimate (Dec 2019 SAR)	% Change	
Program Acquisition Unit Cost			_	
Cost	5014.0	4911.2		
Quantity	2	2		
Unit Cost	2507.000	2455.600	-2.05	
Average Procurement Unit Cost				
Cost	51.0	20.5		
Quantity	0	0		
Unit Cost				

Original UCR Ba	aseline and Current Estimate (E	Base-Year Dollars)		
	BY 2018 \$M	BY 2018 \$M	% Change	
Item	Original UCR Baseline (Dec 2018 APB)	Current Estimate (Dec 2019 SAR)		
Program Acquisition Unit Cost				
Cost	5014.0	4911.2		
Quantity	2	2		
Unit Cost	2507.000	2455.600	-2.05	
Average Procurement Unit Cost			1.4.4.15	
Cost	51.0	20.5		
Quantity	0	0		
Unit Cost	-			



APB Unit Cost History									
line	Data	BY 2018	\$M	TY \$M					
nem	Date	PAUC	APUC	PAUC	APUC				
Original APB	Dec 2018	2507.000	N/A	2651.900	N/A				
APB as of January 2006	N/A	N/A	N/A	N/A	N/A				
Revised Original APB	N/A	N/A	N/A	N/A	N/A				
Prior APB	N/A	N/A	N/A	N/A	N/A				
Current APB	Dec 2018	2507.000	N/A	2651.900	N/A				
Prior Annual SAR	Dec 2018	2440.900	N/A	2590.100	N/A				
Current Estimate	Dec 2019	2455.600	N/A	2600.100	N/A				

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC	Changes						PAUC		
Estimate	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	Estimate
2651.900	5.450	0.000	0.000	2.300	-43.800	0.000	-15.750	-51.800	2600.100

		Current	SAR Bas	eline to C	Current E	stimate	(TY \$M)		
Initial APUC Development Estimate	A			Chan	ges				APUC
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	Estimate
0.000	H				**		- +		0.0

An APUC Unit Cost History is not available, since no Initial APUC Estimate had been calculated due to a lack of defined quantities.

An APUC Unit Cost History is not applicable, because both VC-25B aircraft are RDT&E funded.

SAR Baseline History								
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate				
Milestone A	N/A	N/A	N/A	N/A				
Milestone B	N/A	N/A	N/A	N/A				
Milestone C	N/A	N/A	N/A	N/A				
IOC	N/A	Dec 2023	N/A	Sep 2024				
Total Cost (TY \$M)	N/A	5303.8	N/A	5200.2				
Total Quantity	N/A	2	N/A	2				
PAUC	N/A	2651.900	N/A	2600.100				

Cost Variance

Summary TY \$M							
Item	RDT&E	Procurement	MILCON	Acq O&M	Total		
SAR Baseline (Development Estimate)	4819.6	52.9	429.3	2.0	5303.8		
Previous Changes							
Economic	+12.3	+0.1	+1.7		+14.1		
Quantity	-						
Schedule			**				
Engineering							
Estimating	-129.2		-8.4		-137.6		
Other							
Support		-0.1			-0.1		
Subtotal	-116.9		-6.7	-	-123.6		
Current Changes							
Economic	-2.7		-0.5		-3.2		
Quantity		-					
Schedule							
Engineering			+4.6		+4.6		
Estimating	+48.9		+0.5	+0.6	+50.0		
Other	1			44			
Support		-31.4			-31.4		
Subtotal	+46.2	-31.4	+4.6	+0.6	+20.0		
Total Changes	-70.7	-31.4	-2.1	+0.6	-103.6		
Current Estimate	4748.9	21.5	427.2	2.6	5200.2		

Summary BY 2018 \$M							
Item	RDT&E	Procurement	MILCON	Acq O&M	Total		
SAR Baseline (Development Estimate)	4557.5	51.0	403.6	1.9	5014.0		
Previous Changes							
Economic				(44)			
Quantity							
Schedule							
Engineering							
Estimating	-124.2		-7.9		-132.1		
Other							
Support		-0.1			-0.1		
Subtotal	-124.2	-0.1	-7.9		-132.2		
Current Changes							
Economic							
Quantity							
Schedule			**				
Engineering			+4.3		+4.3		
Estimating	+54.4		+0.5	+0.6	+55.5		
Other							
Support		-30.4			-30.4		
Subtotal	+54.4	-30.4	+4.8	+0.6	+29.4		
Total Changes	-69.8	-30.5	-3.1	+0.6	-102.8		
Current Estimate	4487.7	20.5	400.5	2.5	4911.2		

Previous Estimate: December 2018

RDT&E	\$N	1
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.7
Revised estimate to reflect an increase of \$46.2M to meet program requirements as PB 2020 estimate did not include an Above Threshold Reprogramming necessary to fully fund to the APB. (Estimating)	+51.7	+46.2
Adjustment for current and prior escalation. (Estimating)	+1.4	+1.4
Revised escalation indicies (Estimating)	+1.3	+1.3
RDT&E Subtotal	+54.4	+46.2
a part attack and	1	

Procurement	\$N	
Current Change Explanations	Base Year	Then Year
Revised estimate due to a reduction in funds required due to award being less than previous estimates (~\$16M TY). Revised estimate due to a reduction of funds as procurement of materiel was acquired by a separate program (~\$14.8M TY). Revised estimate due to a reduction of funds as a result of the realignment of requirements in support of the outfitting of the VC-25B hangar (~\$0.6M TY) (Support)	-30.4	-31.4
Procurement Subtotal	-30.4	-31.4

MILCON	\$N	1
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.5
Revised estimate to reflect realignment of funding across fiscal years, due to requirement changes in contract award (Engineering)	+4.3	+4.6
Adjustment for current and prior escalation. (Estimating)	+0.5	+0.5
MILCON Subtotal	+4.8	+4.6

Acq O&M	\$N	
Current Change Explanations	Base Year	Then Year
Revised estimate to reflect the realignment of requirements in support of the outfitting of the VC-25B Hangar Complex. (Estimating)	+0.6	+0.6
Acq O&M Subtotal	+0.6	+0.6

Contracts

Contract Identification	66	
Appropriation:	RDT&E	
Contract Name:	VC-25B	
Contractor:	The Boeing Company	
Contractor Location:	7755 E. Marginal Way S Seattle, WA 98108-4002 EA8625-16-C-6599	
Contract Type:	Firm Fixed Price (FFP)	
Award Date:	January 04, 2016	
Definitization Date:	December 26, 2019	

Contract Price								
Initial Contract Price (\$M) Current Contract Price (\$M) Estimated Price At Com					e At Completion (\$M)			
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
25.8	N/A	N/A	3912.0	N/A	N/A	3912.0	3912.0	

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to scope increases associated with risk reduction studies, purchase of two 747-8 commercial aircraft, Preliminary Design, and Engineering & Manufacturing Development.

Cost and Schedule Variance Explanations

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

Deliveries and Expenditures

Deliveries								
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered				
Development	0	0	2	0.00%				
Production	0	0	0					
Total Program Quantity Delivered	0	0	2	0.00%				

Expended and Appropriated (TY \$M)						
Total Acquisition Cost	5200.2	Years Appropriated	11			
Expended to Date	1709.9	Percent Years Appropriated	68.75%			
Percent Expended	32.88%	Appropriated to Date	2972.1			
Total Funding Years	16	Percent Appropriated	57.15%			

The above data is current as of February 10, 2020.

Operating and Support Cost

Cost Estimate Details		
Date of Estimate:	October 08, 2019	
Source of Estimate:	POE	
Quantity to Sustain:	2	
Unit of Measure:	Aircraft	
Service Life per Unit:	30.00 Years	
Fiscal Years in Service:	FY 2025 - FY 2054	

Sustainment Strategy

The Product Support Strategy for VC-25B is organic organizational level (O-level) maintenance, and Contractor Logistics Support for depot maintenance in accordance with the Depot Source of Repair assignment.

- Primary Aerospace Vehicle Inventory (PAI): 2
- Operational Availability: Mission Capability Goal: 95.7%
- Materiel Availability Goal: 75%
- · Mean Time Between Maintenance Total: .27 hours
- Service Life: 30 years

Antecedent Information

- · PAI: 2
- Operational Availability: Mission Capable Rate: 81%
- Materiel Availability Rate: 62%
- Mean Time Between Maintenance Total: .17 hours
- Service Life: 35 years

Annual O&S Costs BY2018 \$M						
Cost Element	VC-25B Average Annual Cost Per Aircraft	VC-25A (Antecedent)				
Unit-Level Manpower	26.157	20.772				
Unit Operations	6.924	6.341				
Maintenance	27.176	38.578				
Sustaining Support	41.756	28.474				
Continuing System Improvements	16.630	18.563				
Indirect Support	10.942	7.793				
Other						
Total	129.585	120.521				

VC-25B assumes full funding of program requirements (unconstrained).

VC-25A costs are based on data from AF Total Ownership Cost database, and estimated for years not represented in the database. VC-25A flight hours were normalized to VC-25B requirement for analogous comparison.

Item	Total O&S Cost \$M			
	VC-25B			
	Current Development APB Objective/Threshold		Current Estimate	VC-25A (Antecedent)
Base Year	7640.6	8404.7	7806.8	N/A
Then Year	12294.3	N/A	12598.0	N/A

Values reflect VC-25B 2019 Program Office Estimate

Equation to Translate Annual Cost to Total Cost

The VC-25B O&S annual average cost of \$129.585M (BY 2018 \$) is calculated with steady state operations beginning in FY 2025 and ending in FY2054 totaling \$7,775.1 divided by steady state TAI fleet of 2 aircraft per year beginning in FY 2025 and ending in FY 2054 totaling 60. \$7,775.1M/60 = \$129.585M per aircraft per year.

It is not possible to extrapolate this cost to a total O&S cost as it does not capture VC-25B hangar security personnel costs prior to FY 2025.

O&S Cost Variance				
Category	BY 2018 \$M	Change Explanations		
Prior SAR Total O&S Estimates - Dec 2018 SAR	7640.6	a la contra de la co		
Programmatic/Planning Factors	132.2 Update	ed inflation indices		
Cost Estimating Methodology	0.0			
Cost Data Update	0.0			
Labor Rate	0.0			
Energy Rate	34.0 Increa	sed fuel rate		
Technical Input	0.0			
Other	0.0			
Total Changes	166.2			
Current Estimate	7806.8			

Disposal Estimate Details			
Date of Estimate:	December 03, 2018		
Source of Estimate:	SCP		
Disposal/Demilitarization Total Cost (BY 2018 \$M):	0.3		

Disposal costs reflect VC-25B SCP estimate for preparation for static display.