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Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-436



Advanced Pilot Training (APT)

As of FY 2020 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Sensitivity Originator

No originator information is available at this time.

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
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

Advanced Pilot Training (APT)

DoD Component

Air Force

Responsible Office

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Date Assigned:

References

SAR Baseline (Development Estimate)

Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated September 25, 2018

Approved APB

Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated September 25, 2018

Mission and Description

The Advanced Pilot Training (APT) program will replace the T-38C and associated Ground Based Training Systems (GBTS) used in the United States Air Force's Specialized Undergraduate Pilot Training program, which provides advanced training for pilots in Air Education and Training Command's fighter and bomber track as well as its Introduction to Fighter Fundamentals course. The T-38C currently used for advanced training first entered service in 1961. The APT aircraft, with updated avionics and an improved GBTS, will bring new capabilities including improved high gravitational force and high angle of attack maneuvering, and will provide training opportunities more closely aligned with today's fourth and fifth-generation fighters.

The new aircraft and training systems will be fielded at five bases: Joint Base San Antonio-Randolph, Texas; Laughlin Air Force Base (AFB), Texas; Vance AFB, Oklahoma; Columbus AFB, Mississippi; and Sheppard AFB, Texas.

Executive Summary

Program Highlights Since Last Report

The Milestone Decision Authority approved Milestone (MS) B on September 25, 2018. The United States Air Force awarded a Fixed Price Incentive Firm Indefinite Delivery/Indefinite Quantity contract to The Boeing Company on September 27, 2018. The award of this contract followed a deliberate, meticulous, and transparent source selection process. The program conducted a Post-Award Conference from November 13-15, 2018.

With the award of the Engineering and Manufacturing Development effort, the program is proceeding with system development and test. Upcoming events include System Requirements Review, Integrated Baseline Review, Simulator Preliminary Design Review (PDR), and Aircraft PDR / Critical Design Review.

In accordance with 2366b certification for APT made at the MS B, the MDA approved two waivers. The PDR provision was waived, and is currently planned no later than one year post MS B. The MDA also approved a waiver for the requirement to determine that the program complies with all relevant policies, regulations, and directives of the Department of Defense (DoD) as it pertains to compliance with the DoD policy on the development of an Independent Technical Risk Assessment (ITRA). The USAF will reevaluate the need for an ITRA prior to a MS C decision based on applicable requirements in effect at that time.

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
September 2018	The Milestone Decision Authority approved Milestone (MS) B on September 25, 2018
November 2018	The program conducted a Post-Award Conference from November 13-15, 2018.

Threshold Breaches

APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone B	Sep 2018	Sep 2018	Sep 2018	Sep 2018
CDR	Mar 2020	Mar 2020	Sep 2020	Mar 2020
Milestone C	Jun 2023	Jun 2023	Dec 2023	Jun 2023
FRP Decision	Apr 2025	Apr 2025	Sep 2025	Apr 2025
RAA	Oct 2025	Oct 2025	Mar 2026	Oct 2025

Change Explanations

None

Notes

1/ RAA shall be completed NLT 90 days prior to declaring IOC. RAA is used in lieu of IOC and is defined as delivery of the following: minimum of 14 aircraft, Ground Based Training System, necessary in-place logistics elements, necessary in-place operational elements, AETC training enterprise, installation infrastructure, facilities, APT Program Office, and contractor support, procedures, and processes capable of sustaining operations.

Acronyms and Abbreviations

AETC - Air Education and Training Command
 CDR - Critical Design Review
 NLT - Not Later Than
 RAA - Required Assets Available

Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold	Demonstrated Performance	Current Estimate	
Sustainment – Operational Availability (Ao) for Aircraft Sustainment – Materiel Availability (Am) for Aircraft Sustainment – Operational Availability (Ao) for each GBTS simulator (WST, OFT, UTD)				
Ao ≥ 80% at 20,000 fleet hours. (Am) ≥ 76% at 20,000 fleet hours. Ao ≥ 95%	Ao ≥ 80% at 20,000 fleet hours. (Am) ≥ 76% at 20,000 fleet hours. Ao ≥ 95%	(T=O) Ao ≥ 80% at 20,000 fleet hours. (Am) ≥ 76% at 20,000 fleet hours. Ao ≥ 95%	TBD	Ao ≥ 80% at 20,000 fleet hours. (Am) ≥ 76% at 20,000 fleet hours. Ao ≥ 95%
Sustained G for Aircraft.				
≥ 7.5 Gs	≥ 7.5 Gs	≥ 6.5 Gs	TBD	≥ 7.5 Gs
GBTS– The ability to accurately display objects as well as the ability to accurately replicate aircraft performance to enable positive transference of skill sets from the GBTS to the aircraft				
Visual Acuity - The mean visual resolution for the WST and OFT (at 9,000 feet and 6,000 feet respectively) shall be less than or equal to 2.5 arc-minutes per optical line pair and must include accurate and relative aircraft sizing, shape, features, angle off, aspect angle and closure rates at these distances. Performance Fidelity - The WST and OFT shall replicate in form all cockpit controls, switches and avionics systems as well as applicable cockpit controls, switches and avionics systems in function. The WST and OFT performance shall enable positive transference of syllabus required skill sets from the GBTS to the aircraft.	Visual Acuity - The mean visual resolution for the WST and OFT (at 9,000 feet and 6,000 feet respectively) shall be less than or equal to 2.5 arc-minutes per optical line pair and must include accurate and relative aircraft sizing, shape, features, angle off, aspect angle and closure rates at these distances. Performance Fidelity - The WST and OFT shall replicate in form all cockpit controls, switches and avionics systems as well as applicable cockpit controls, switches and avionics systems in function. The WST and OFT performance shall enable positive transference of syllabus required skill sets from the GBTS to the aircraft.	(T=O) Visual Acuity - The mean visual resolution for the WST and OFT (at 9,000 feet and 6,000 feet respectively) shall be less than or equal to 2.5 arc-minutes per optical line pair and must include accurate and relative aircraft sizing, shape, features, angle off, aspect angle and closure rates at these distances. Performance Fidelity - The WST and OFT shall replicate in form all cockpit controls, switches and avionics systems as well as applicable cockpit controls, switches and avionics systems in function. The WST and OFT performance shall enable positive transference of syllabus required skill sets from the GBTS to the aircraft.	TBD	Visual Acuity - The mean visual resolution for the WST and OFT (at 9,000 feet and 6,000 feet respectively) shall be less than or equal to 2.5 arc-minutes per optical line pair and must include accurate and relative aircraft sizing, shape, features, angle off, aspect angle and closure rates at these distances. Performance Fidelity - The WST and OFT shall replicate in form all cockpit controls, switches and avionics systems as well as applicable cockpit controls, switches and avionics systems in function. The WST and OFT performance shall enable positive transference of syllabus required skill sets from the GBTS to the aircraft.
Net-Ready				

N/A	N/A	N/A	N/A	N/A
Force Protection				
N/A	N/A	N/A	N/A	N/A
System Survivability				
N/A	N/A	N/A	N/A	N/A
Energy: Fuel capacity for Aircraft				
The aircraft's unrefueled range shall be sufficient to effectively complete the most fuel-demanding APT syllabus directed sortie.	The aircraft's unrefueled range shall be sufficient to effectively complete the most fuel-demanding APT syllabus directed sortie.	(T=O) The aircraft's unrefueled range shall be sufficient to effectively complete the most fuel-demanding APT syllabus directed sortie.	TBD	The aircraft's unrefueled range shall be sufficient to effectively complete the most fuel-demanding APT syllabus directed sortie.
Training				
Core personnel (pilots, GBTS operators and maintainers) shall be trained with the APT FoS to the proficiency level relevant to flight test requirements (AFMC) and SUPT, PIT, and IFF syllabi (AETC) as well as associated maintenance directives. Core AFMC pilots and maintainers will complete training NLT 60 days prior to the first EMD aircraft delivery. Core AETC pilots and maintainers will complete training NLT 60 days prior to the first AETC assigned aircraft delivery; Core GBTS operators will complete training NLT 30 days prior to delivery of GBTS components (WST, OFT, UTD)	Core personnel (pilots, GBTS operators and maintainers) shall be trained with the APT FoS to the proficiency level relevant to flight test requirements (AFMC) and SUPT, PIT, and IFF syllabi (AETC) as well as associated maintenance directives. Core AFMC pilots and maintainers will complete training NLT 60 days prior to the first EMD aircraft delivery. Core AETC pilots and maintainers will complete training NLT 60 days prior to the first AETC assigned aircraft delivery; Core GBTS operators will complete training NLT 30 days prior to delivery of GBTS components (WST, OFT, UTD)	(T=O) Core personnel (pilots, GBTS operators and maintainers) shall be trained with the APT FoS to the proficiency level relevant to flight test requirements (AFMC) and SUPT, PIT, and IFF syllabi (AETC) as well as associated maintenance directives. Core AFMC pilots and maintainers will complete training NLT 60 days prior to the first EMD aircraft delivery. Core AETC pilots and maintainers will complete training NLT 60 days prior to the first AETC assigned aircraft delivery; Core GBTS operators will complete training NLT 30 days prior to delivery of GBTS components (WST, OFT, UTD)	TBD	Core personnel (pilots, GBTS operators and maintainers) shall be trained with the APT FoS to the proficiency level relevant to flight test requirements (AFMC) and SUPT, PIT, and IFF syllabi (AETC) as well as associated maintenance directives. Core AFMC pilots and maintainers will complete training NLT 60 days prior to the first EMD aircraft delivery. Core AETC pilots and maintainers will complete training NLT 60 days prior to the first AETC assigned aircraft delivery; Core GBTS operators will complete training NLT 30 days prior to delivery of GBTS components (WST, OFT, UTD)

Requirements Reference

Capability Development Document (CDD) for Advanced Pilot Training Family of Systems approved by Joint Requirements Oversight Council Memorandum dated October 31, 2016.

Change Explanations

None

Notes

1/ Net-Ready, Force Protection, and System Survivability KPPs considered "not-applicable" by JROC per Joint Staff J6 adjudication as of the October 31, 2016 JROC Memorandum.

Acronyms and Abbreviations

AETC - Air Education and Training Command
AFMC - Air Force Materiel Command
Am - Materiel Availability
Ao - Operational Availability
FoS - Family of Systems
GBTS - Ground Based Training Systems
Gs - Gravitational Force
IFF - Introduction to Fighter Fundamentals
NLT - Not Later Than
O - Objective
OFT - Operational Flight Trainer
PIT - Pilot Instructor Training
SUPT - Specialized Undergraduate Pilot Training
T - Threshold
UTD - Unit Training Device
WST - Weapon System Trainer

Track to Budget

RDT&E

Appn	BA	PE
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Air Force 3600 05 0605223F

Project	Name
655340	Advanced Trainer Replacement T-X

Procurement

Appn	BA	PE
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Air Force 3010 07 0804701F

Line Item	Name
75	Advanced Trainer Replacement T-X

Air Force 3010 03 0804701F

Line Item	Name
APT000	Advanced Trainer Replacement T-X

Air Force 3010 06 0804701F

Line Item	Name
APT000	Advanced Trainer Replacement T-X

Air Force 3080 04 0804701F

Line Item	Name
845010	Advanced Trainer Replacement T-X

MILCON

Appn	BA	PE
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Air Force 3300 02 0804701F

Project	Name
BMZ000	Advance Trainer Replacement

Air Force 3300 01 0804701F

Project	Name
VARIOUS	Advance Trainer Replacement

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2018 \$M			BY 2018 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	1237.4	1237.4	1361.1	1244.2	1315.3	1315.3	1326.6
Procurement	6669.0	6669.0	7335.9	6654.2	8395.8	8395.8	8408.3
Flyaway	--	--	--	5251.9	--	--	6651.2
Recurring	--	--	--	4824.5	--	--	6110.0
Non Recurring	--	--	--	427.4	--	--	541.2
Support	--	--	--	1402.3	--	--	1757.1
Other Support	--	--	--	917.1	--	--	1140.7
Initial Spares	--	--	--	485.2	--	--	616.4
MILCON	169.0	169.0	185.9	170.7	200.2	200.2	202.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	8075.4	8075.4	N/A	8069.1	9911.3	9911.3	9937.7

Current APB Cost Estimate Reference

Service Cost Position dated September 10, 2018

Cost Notes

If an Independent Cost Estimate, Component Cost Estimate, or Program Office Estimate has been completed for the program in the previous year, list any program risks identified in the estimates, the potential impacts of the risks on program cost, and approaches to mitigate the risks.

Schedule Risk to EMD: The September 2018 SCP accounts for the condensed acquisition timeline for EMD on this program. Therefore, there is a risk that Milestone C may not occur in FY22, potentially impacting cost and production timeline. Risk mitigation for this schedule risk includes the program proactively engaging with the contractor to ensure milestones are met and the government restricts any scope creep that could potentially impact schedule.

Contract Type Risk for Production: As with any long-term fixed price production contract, the SCP recognizes that the EPA clause may not sufficiently account for changes to the economic environment. If the EPA does not prove sufficient to economic realities, the contractor may be at risk for financial instability. Adjustments and reassessments may be necessary in the future as the production contract gets underway to ensure the contractor's financial health is maintained.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	5	5	5
Procurement	346	346	346
Total	351	351	351

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2020 President's Budget / December 2018 SAR (TY\$ M)									
Appropriation	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
RDT&E	105.1	245.5	348.5	263.9	197.9	119.6	34.1	12.0	1326.6
Procurement	0.0	0.0	0.0	0.3	333.6	333.4	496.5	7244.5	8408.3
MILCON	0.0	0.0	31.6	15.5	0.0	51.2	15.6	88.9	202.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2020 Total	105.1	245.5	380.1	279.7	531.5	504.2	546.2	7345.4	9937.7
	--	--	--	--	--	--	--	--	--

Quantity Summary										
FY 2020 President's Budget / December 2018 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Development	5	0	0	0	0	0	0	0	0	5
Production	0	0	0	0	0	12	12	16	306	346
PB 2020 Total	5	0	0	0	0	12	12	16	306	351
	--	--	--	--	--	--	--	--	--	--

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2011	--	--	--	--	--	--	0.6
2012	--	--	--	--	--	--	2.2
2013	--	--	--	--	--	--	0.6
2014	--	--	--	--	--	--	1.5
2015	--	--	--	--	--	--	7.8
2016	--	--	--	--	--	--	4.1
2017	--	--	--	--	--	--	5.7
2018	--	--	--	--	--	--	82.6
2019	--	--	--	--	--	--	245.5
2020	--	--	--	--	--	--	348.5
2021	--	--	--	--	--	--	263.9
2022	--	--	--	--	--	--	197.9
2023	--	--	--	--	--	--	119.6
2024	--	--	--	--	--	--	34.1
2025	--	--	--	--	--	--	12.0
Subtotal	5	--	--	--	--	--	1326.6

Annual Funding 3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2018 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2011	--	--	--	--	--	--	0.7
2012	--	--	--	--	--	--	2.4
2013	--	--	--	--	--	--	0.6
2014	--	--	--	--	--	--	1.6
2015	--	--	--	--	--	--	8.1
2016	--	--	--	--	--	--	4.2
2017	--	--	--	--	--	--	5.7
2018	--	--	--	--	--	--	81.4
2019	--	--	--	--	--	--	237.2
2020	--	--	--	--	--	--	330.1
2021	--	--	--	--	--	--	245.1
2022	--	--	--	--	--	--	180.2
2023	--	--	--	--	--	--	106.8
2024	--	--	--	--	--	--	29.8
2025	--	--	--	--	--	--	10.3
Subtotal	5	--	--	--	--	--	1244.2

Annual Funding								
3010 Procurement Aircraft Procurement, Air Force								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2022	12	203.8	40.7	29.0	273.5	55.5	329.0	
2023	12	193.6	37.7	21.8	253.1	76.1	329.2	
2024	16	250.4	49.0	39.8	339.2	153.9	493.1	
2025	26	399.3	78.5	19.0	496.8	204.7	701.5	
2026	34	464.2	130.6	46.8	641.6	244.2	885.8	
2027	48	645.3	182.4	67.3	895.0	315.9	1210.9	
2028	48	641.3	181.9	73.4	896.6	143.1	1039.7	
2029	48	642.1	182.7	99.3	924.1	147.1	1071.2	
2030	48	645.9	184.2	62.8	892.9	150.3	1043.2	
2031	48	651.6	186.2	56.8	894.6	154.0	1048.6	
2032	6	92.5	26.1	23.9	142.5	43.6	186.1	
2033	--	--	--	0.6	0.6	27.6	28.2	
2034	--	--	--	0.7	0.7	28.6	29.3	
Subtotal	346	4830.0	1280.0	541.2	6651.2	1744.6	8395.8	

Annual Funding								
3010 Procurement Aircraft Procurement, Air Force								
Fiscal Year	Quantity	BY 2018 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2022	12	179.9	36.0	25.6	241.5	49.0	290.5	
2023	12	167.6	32.6	18.9	219.1	65.9	285.0	
2024	16	212.5	41.6	33.8	287.9	130.6	418.5	
2025	26	332.2	65.3	15.8	413.3	170.3	583.6	
2026	34	378.6	106.5	38.2	523.3	199.2	722.5	
2027	48	516.0	145.9	53.8	715.7	252.6	968.3	
2028	48	502.8	142.6	57.5	702.9	112.2	815.1	
2029	48	493.5	140.6	76.3	710.4	113.0	823.4	
2030	48	486.7	138.8	47.3	672.8	113.3	786.1	
2031	48	481.4	137.5	42.0	660.9	113.8	774.7	
2032	6	67.0	18.9	17.3	103.2	31.6	134.8	
2033	--	--	--	0.4	0.4	19.6	20.0	
2034	--	--	--	0.5	0.5	19.9	20.4	
Subtotal	346	3818.2	1006.3	427.4	5251.9	1391.0	6642.9	

End Item related costs include aircraft procurement and labor associated with the end item quantity.
Non end item related costs includes potential changes to program scope that are not associated with the quantity of the primary unit of measure.

Annual Funding 3080 Procurement Other Procurement, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2021	--	--	--	--	--	0.3	0.3
2022	--	--	--	--	--	4.6	4.6
2023	--	--	--	--	--	4.2	4.2
2024	--	--	--	--	--	3.4	3.4
Subtotal	--	--	--	--	--	12.5	12.5

Annual Funding 3080 Procurement Other Procurement, Air Force							
Fiscal Year	Quantity	BY 2018 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2021	--	--	--	--	--	0.3	0.3
2022	--	--	--	--	--	4.2	4.2
2023	--	--	--	--	--	3.8	3.8
2024	--	--	--	--	--	3.0	3.0
Subtotal	--	--	--	--	--	11.3	11.3

Annual Funding 3300 MILCON Military Construction, Air Force		
Fiscal Year	TY \$M	
	Total Program	
2020	31.6	
2021	15.5	
2022	--	
2023	51.2	
2024	15.6	
2025	13.5	
2026	10.1	
2027	27.4	
2028	29.9	
2029	8.0	
Subtotal	202.8	

Annual Funding 3300 MILCON Military Construction, Air Force		
Fiscal Year	BY 2018 \$M	
	Total Program	
2020		28.9
2021		13.9
2022		--
2023		44.1
2024		13.2
2025		11.2
2026		8.2
2027		21.8
2028		23.3
2029		6.1
Subtotal		170.7

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	9/11/2018	9/11/2018
Approved Quantity	35	35
Reference	Milestone B ADM	Milestone B ADM
Start Year	2023	2023
End Year	2034	2034

The Current Total LRIP Quantity is more than 10% of the total production quantity . The Milestone B ADM signed on September 11, 2018 approved an LRIP quantity of 35 aircraft. The program is acquiring 351 production aircraft composed of 346 procurement funded aircraft and 5 RDT&E funded aircraft. The 5 RDT&E funded aircraft will be upgraded to the production configuration. Therefore, the LRIP quantity is not more than 10% of the total 351 production quantity.

Foreign Military Sales

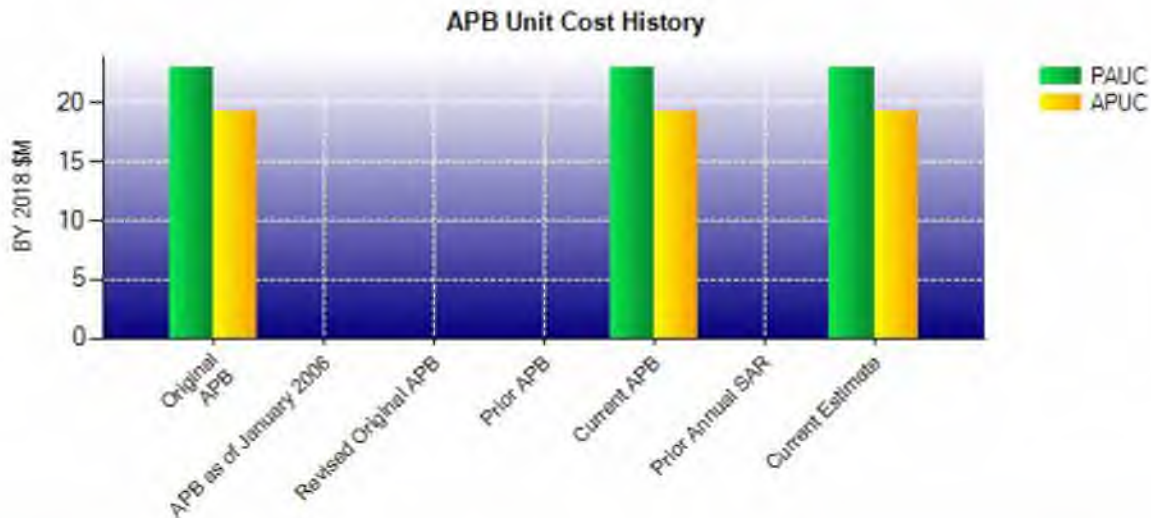
None

Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2018 \$M	BY 2018 \$M	% Change
	Current UCR Baseline (Sep 2018 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	8075.4	8069.1	
Quantity	351	351	
Unit Cost	23.007	22.989	-0.08
Average Procurement Unit Cost			
Cost	6669.0	6654.2	
Quantity	346	346	
Unit Cost	19.275	19.232	-0.22
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2018 \$M	BY 2018 \$M	% Change
	Original UCR Baseline (Sep 2018 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	8075.4	8069.1	
Quantity	351	351	
Unit Cost	23.007	22.989	-0.08
Average Procurement Unit Cost			
Cost	6669.0	6654.2	
Quantity	346	346	
Unit Cost	19.275	19.232	-0.22



APB Unit Cost History					
Item	Date	BY 2018 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Sep 2018	23.007	19.275	28.237	24.265
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	Sep 2018	23.007	19.275	28.237	24.265
Prior Annual SAR	N/A	N/A	N/A	N/A	N/A
Current Estimate	Dec 2018	22.989	19.232	28.313	24.301

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
28.237	0.110	0.000	0.000	0.000	-0.051	0.000	0.017	0.076	28.313

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
24.265	0.096	0.000	0.000	0.000	-0.077	0.000	0.018	0.037	24.301

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	Sep 2018	N/A	Sep 2018
Milestone C	N/A	Jun 2023	N/A	Jun 2023
IOC	N/A	Oct 2025	N/A	Oct 2025
Total Cost (TY \$M)	N/A	9911.3	N/A	9937.7
Total Quantity	N/A	351	N/A	351
PAUC	N/A	28.237	N/A	28.313

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1315.3	8395.8	200.2	9911.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+11.3	--	--	+11.3
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+11.3	--	--	+11.3
Current Changes				
Economic	+4.7	+33.1	+0.5	+38.3
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-4.7	-26.7	+2.1	-29.3
Other	--	--	--	--
Support	--	+6.1	--	+6.1
Subtotal	--	+12.5	+2.6	+15.1
Total Changes	+11.3	+12.5	+2.6	+26.4
CE - Cost Variance	1326.6	8408.3	202.8	9937.7
CE - Cost & Funding	1326.6	8408.3	202.8	9937.7

Summary BY 2018 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1237.4	6669.0	169.0	8075.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+11.5	--	--	+11.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+11.5	--	--	+11.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-4.7	-20.5	+1.7	-23.5
Other	--	--	--	--
Support	--	+5.7	--	+5.7
Subtotal	-4.7	-14.8	+1.7	-17.8
Total Changes	+6.8	-14.8	+1.7	-6.3
CE - Cost Variance	1244.2	6654.2	170.7	8069.1
CE - Cost & Funding	1244.2	6654.2	170.7	8069.1

Previous Estimate: September 2018

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+4.7
Revised estimate due to a shift in funding from FY20 to FY21 and FY22 causing a base year only cost variance. (Estimating)	-0.3	0.0
Adjustment for current and prior escalation. (Estimating)	-0.9	-0.9
Adjustment for current and prior escalation (Estimating)	-3.5	-3.8
RDT&E Subtotal	-4.7	0.0

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+33.1
Adjustment for current and prior escalation (Estimating)	-20.5	-26.7
Additional funding for base level procured equipment. (Support)	+11.3	+12.5
Decrease in Other Support (Air Force) estimating adjustment for current and prior escalation (Support)	-3.8	-4.1
Decrease in Initial Spares (Air Force) estimating adjustment for current and prior escalation (Support)	-1.8	-2.3
Procurement Subtotal	-14.8	+12.5

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+0.5
Refined estimate due to a change in estimating assumption for Base #2 (Estimating)	+2.2	+2.6
Adjustment for current and prior escalation. (Estimating)	-0.5	-0.5
MILCON Subtotal	+1.7	+2.6

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: Advanced Pilot Training
Contractor: Boeing (Defense, Space, and Security)
Contractor Location: 6200 JS McDonnell Blvd
 Saint Louis, MO 63134-1939
Contract Number: FA8617-18-D-6219
Contract Type: Fixed Price Incentive(Firm Target) (FPIF), Firm Fixed Price (FFP)
Award Date: September 27, 2018
Definitization Date: September 27, 2018

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
813.4	865.2	5	813.4	865.2	5	813.4	813.4

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date		0.0
Previous Cumulative Variances		--
Net Change		+0.0

Cost and Schedule Variance Explanations

None

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because earned value management reporting has not yet commenced due to the contract is not yet baselined.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	5	0.00%
Production	0	0	346	0.00%
Total Program Quantity Delivered	0	0	351	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	9937.7	Years Appropriated	9
Expended to Date	61.2	Percent Years Appropriated	37.50%
Percent Expended	0.62%	Appropriated to Date	350.6
Total Funding Years	24	Percent Appropriated	3.53%

The above data is current as of March 11, 2019.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	September 10, 2018
Source of Estimate:	SCP
Quantity to Sustain:	350
Unit of Measure:	Aircraft
Service Life per Unit:	40.00 Years
Fiscal Years in Service:	FY 2023 - FY 2073

Information provided from the September 2018 SCP for MS B.

Total aircraft quantity is 351. 350 aircraft will be sustained by AETC. 1 aircraft will be sustained by AFMC and is not part of the SCP.

Sustainment Strategy

The APT Program Office's sustainment strategy leverages existing United States Air Force maintenance and supply capabilities and locations to most efficiently deliver system reliability, operational availability, maintainability, and affordability to the user. The sustainment strategy was developed to provide the Government "freedom of choice" throughout the life cycle by posturing for organic sustainment. The Government will operate with an Organizational level (O-level), limited Intermediate level (I-level) and Depot level (D-level) of repair for the APT Program. This will mirror the current T-38C maintenance construct, consisting of base dependent competed contract workforce and civil service support. The Contractor will provide pre-operational support through the completion of EMD. Contractor Field Service Representatives (FSRs) will be positioned at each of the five training locations to provide initial training and long-term, on-site product support assistance. The Contractor will provide FSR support as required for each depot location. The depot maintenance strategy will be implemented at the delivery of the first production aircraft, but not later than Initial Operational Capability. Subsequent depot operations will expand incrementally based upon the Depot Maintenance Activation Working Group developed activation plan. The APT Program Office will closely coordinate with the Air Force Sustainment Center to facilitate planning, execution, and evaluation of the D-level process and the follow-on stand-up of commodity support capability. Limited Interim Contractor Support will be used for D-Level repair of unique/peculiar items until organic capability is stood up.

Antecedent Information

The antecedent system is the T-38 system. T-38 costs are based on average cost data on a 10-year average cost from FY2007-FY2016, provided by the 2017 T-38 System Program Office Sustainment Program Office Estimate. The T-38C data was normalized by cost element using FH, TAI or PAA, where TAI was 436, PAA was 343 of PAA, and the average flying hours were 88,247. The costs were then adjusted to 101,052 flight hours in order to provide a similar cost comparison between the two systems.

Annual O&S Costs BY2018 \$M			
Cost Element	APT		T-38 (Antecedent) 2017
	Average Annual Cost Per Aircraft		
Unit-Level Manpower	0.484		0.444
Unit Operations	0.728		0.432
Maintenance	1.442		0.519
Sustaining Support	0.121		0.042
Continuing System Improvements	0.189		0.173
Indirect Support	0.082		0.471
Other	0.000		0.000
Total	3.046		2.081

APT cost are derived from the total O&S costs in the September 2018 SCP.

T-38 costs are derived from the normalized FY2017 costs from the 2017 T-38 SPO Sustainment POE.

Item	Total O&S Cost \$M			
	APT			T-38 (Antecedent)
	Current Development APB Objective/Threshold	Current Estimate		
Base Year	44666.9	49133.6	42638.9	12616.6
Then Year	85983.2	N/A	85983.2	N/A

APT total O&S costs from the September 2018 SCP.

T-38 total O&S costs represent AFTOC data from 2002-2016, in BY18\$. The data was normalized by cost element using the 10-year average of flying hours (FH), total aircraft inventory (TAI) or primary aircraft authority (PAA). The costs were then adjusted to 101,052 flight hours in order to provide a similar cost comparison between the two systems.

Equation to Translate Annual Cost to Total Cost

APT Total O&S Costs \$M (BY18\$) = Annual Costs BY 2018 \$M * 40 year service life * 350 aircraft.

O&S Cost Variance		
Category	BY 2018 \$M	Change Explanations
Prior SAR Total O&S Estimates - Sep 2018 SAR	44666.9	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	-2028.0	Base year only change due to the use of updated indices consistent with the September 2018 SCP. Base Year

reflects the BY18\$ found in the SCP memo.

Total Changes	-2028.0
Current Estimate	42638.9

Disposal Estimate Details

Date of Estimate: September 10, 2018
Source of Estimate: SCP
Disposal/Demilitarization Total Cost (BY 2018 \$M): 88.6

Disposal costs are derived from the SCP.