

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>
---	--

COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	878.601	182.330	33.621	77.252	0.000	77.252	81.778	28.706	5.245	5.356	32.530	1,325.419
655340: <i>Advanced Trainer Replacement T-7A</i>	878.601	182.330	33.621	77.252	0.000	77.252	81.778	28.706	5.245	5.356	32.530	1,325.419
Quantity of RDT&E Articles	5	-	-	-	-	-	-	-	-	-	-	-

Program MDAP/MAIS Code: 436

Note

Prior Years Funding \$4.994M was executed in PE 0604233F.

A. Mission Description and Budget Item Justification

The Advanced Pilot Training (APT)/T-7A Red Hawk program will replace the Air Education Training Command's (AETC) aging T-38C fleet with new aircraft, Ground Based Training System (simulators, training devices, computer based training systems, academics, etc.), Maintenance Training System, and support infrastructure currently used in the fighter/bomber advanced Specialized Undergraduate Pilot Training track as well as in the Introduction to Fighter Fundamentals program. The APT/T-7A Red Hawk program acquisition strategy was approved by OSD (AT&L) in early FY 2017 (December 2016). At the same time, the APT/T-7A Red Hawk Team completed their Development Request for Proposal (RFP) Release Defense Acquisition Board and subsequently released the RFP to industry on 30 December 2016. The Program completed source selection evaluations and Milestone B in September 2018, and awarded a Fixed Price Incentive Firm (FPIF) Indefinite Delivery/Indefinite Quantity contract to The Boeing Company on 27 September 2018.

The Maintenance Training System (MTS) contract will be awarded through a competitive process and will be awarded in FY 2024. The MTS acquisition focuses on designing, developing, testing, producing, and fielding an optimized training system for APT/T-7A Red Hawk maintainers by integrating various forms of training media and Maintenance Training Devices (MTDs) into a blended solution. This blended solution includes the appropriate mix of hardware and software, Augmented Hardware Training Devices (AHTDs), part task trainers (PTTs), Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated Air Education and Training Command (AETC) APT/T-7A Red Hawk maintenance training requirements.

Funding contained in this platform's documentation directly aids AETC flying training enterprise to continue its overall Future Years Defense Program pilot production increase starting in FY 2020, thus reducing the USAF Pilot Shortage.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver APT/T-7A Red Hawk system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2022 \$1.506 million was expended for civilian pay expenses in this program element, and in FY 2023 \$1.900 million is forecasted for civilian pay expenses in this program element.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
--	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force</i> / BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>
--	--

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	188.898	37.121	70.043	0.000	70.043
Current President's Budget	182.330	33.621	77.252	0.000	77.252
Total Adjustments	-6.568	-3.500	7.209	0.000	7.209
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-3.500			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-6.568	0.000			
• Other Adjustments	0.000	0.000	7.209	0.000	7.209

Change Summary Explanation

FY 2022 funding was reduced by \$6.568 million for Small Business Innovation Research (SBIR).

FY 2023 funding request was decreased by \$3.500 million for Congressional Mark "Government test ahead of need".

FY 2024 Funding request was increased \$7.209 million due to ramp up of test and evaluation, development of the MTS and development of an engineering change proposal for an Automatic Ground Collision Avoidance System (GCAS), the Daily Use Ladder, and an updated On-Board Oxygen Generating System (OBOGS).

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: Advanced Pilot Training (APT) Program	182.330	33.621	77.252
Description: The Advanced Pilot Training (APT) / T-7A Red Hawk program has an approved acquisition strategy, completed Milestone B, and has progressed into the Engineering and Manufacturing Development (EMD) phase. In FY 2020, the APT/T-7A Red Hawk program concluded the Critical Design Review for the Aircraft and Ground Based Training System. This effort includes studies, analysis, acquisition documentation, market research activities, and engineering changes to reduce risk and support the acquisition strategy and engineering and manufacturing development. It also includes Program Support Costs (PSC) such as travel, Other Government Costs (OGC), and Advisory and Assistance Services (A&AS).			
FY 2023 Plans:			

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>
---	--

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
The Program plans to continue developmental test & evaluation, accept delivery of engineering manufacturing test aircrafts and multiple ground training devices. Plans also include PSC such as travel, OGC's and A&AS.			
FY 2024 Plans: The APT/T-7A Red Hawk Program plans to continue and complete developmental test & evaluation, award the Maintenance Training System (MTS) development contract, and execute an engineering change for a Ground Collision Avoidance System (GCAS), a Daily Use Ladder, and an updated On-Board Oxygen Generation System (OBOGS).			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increased due to ramp up of initial operational test and evaluation, development of the MTS and development of an engineering change proposal for GCAS, a Daily Use Ladder, and updated OBOGS.			
Accomplishments/Planned Programs Subtotals	182.330	33.621	77.252

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 03 APT000: <i>Advanced Pilot Training T-7A</i>	0.000	10.507	0.000	-	0.000	330.597	516.860	524.060	834.237	5,431.377	7,647.638
• APAF 06 APT000: <i>Advanced Trainer Replacement T-7A</i>	0.000	0.000	0.000	-	0.000	28.604	37.379	37.478	54.886	370.491	528.838
• APAF 07 Line Item 000075: <i>Other Production Charges</i>	0.000	5.160	44.409	-	44.409	30.739	95.408	154.182	7.641	16.724	354.263
• OPAF 02 822990: <i>Cargo and Utility Vehicles</i>	0.000	0.000	1.104	-	1.104	0.000	0.000	0.000	1.114	0.000	2.218
• OPAF 02 825990: <i>Materials Handling Vehicles</i>	0.000	0.000	0.401	-	0.401	0.304	0.000	0.116	0.000	0.000	0.821
• OPAF 03 Line Item 837300: <i>Base Comm Infrastructure</i>	0.000	0.700	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.700
• OPAF 04 845010: <i>Base Procured Equipment</i>	0.000	0.000	11.444	-	11.444	13.033	12.491	14.771	11.190	0.000	62.929
• MILCON PE 0804701F: <i>T-7A (Advanced Pilot Trainer) Procurement</i>	18.590	4.938	39.543	-	39.543	309.585	135.497	129.570	0.000	34.500	672.223

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
--	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>
---	--

D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
------------------	----------------	----------------	-------------------------------	------------------------------	--------------------------------	----------------	----------------	----------------	----------------	-----------------------------------	-------------------

Remarks
Total MILCON Cost Excludes \$31.600M of FY 2020 MILCON funds and \$23.400M of FY 2021 MILCON funds. MILCON Total Cost=\$727.223M

E. Acquisition Strategy

The APT/T-7A Red Hawk Program will develop, test, acquire, and sustain an affordable, agile, and integrated APT System consisting of 351 aircraft, Ground Based Training System, Maintenance Training System, support, infrastructure, and personnel to meet Air Education and Training Command's initial need date of FY 2024.

The APT/T-7A Red Hawk program's acquisition strategy leveraged market conditions by competing and awarding development, production, and initial sustainment in a single contract award. The Program completed source selection evaluations and Milestone B in September 2018, and awarded a Fixed Price Incentive Firm Indefinite Delivery/Indefinite Quantity contract to The Boeing Company on 27 September 2018 to provide for development, integration, and testing needed to meet existing APT requirements.

Additional contract options are available for Low Rate Initial Production, Full Rate Production and initial sustainment transition. The Maintenance Training System will be procured under a separate contractual vehicle.

The Maintenance Training System (MTS) acquisition strategy is to acquire Maintenance Training Devices (MTDs), and associated support structure, for an AETC Centralized Training Facility (CTF). The MTS contract will be conducted via a full and open competition per FAR Part 16. The MTS EMD phase will develop and operationalize MTDs for the CTF; and will be supported with courseware, Training System Support Center (TSSC), the technical data package, and support equipment to ensure system availability and concurrency with the aircraft. The MTS Production phase will develop and operationalize a subset of MTDs for each of the four Unit Maintenance Training Facilities (UMTFs). The Contractor Logistics Support (CLS) will encompass sustainment support of the MTDs at the CTF and UMTFs until two years post Production completion.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 5				PE 0605223F / Advanced Pilot Training				655340 / Advanced Trainer Replacement T-7A								
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training Contracts	Various	Various : TBD	789.566	125.797	Nov 2021	8.261	Feb 2023	36.940	Apr 2024	-		36.940	96.751	1,057.315	1,057.316	
Subtotal			789.566	125.797		8.261		36.940		-		36.940	96.751	1,057.315	N/A	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training Mission Support	Various	Various : Various	10.665	5.221	Nov 2021	5.068	Nov 2022	5.466	Nov 2023	-		5.466	9.113	35.533	-	
Advanced Pilot Training Direct Cite Authority Civilian Pay	Various	AFLCMC : Dayton, OH	2.387	1.506	Nov 2021	1.900	Oct 2022	2.575	Oct 2023	-		2.575	5.544	13.912	-	
Subtotal			13.052	6.727		6.968		8.041		-		8.041	14.657	49.445	N/A	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training Test Support	Various	Edwards AFB : Edwards AFB, CA	24.860	16.341	Mar 2022	9.732	Jan 2023	19.616	Jan 2024	-		19.616	34.180	104.729	-	
Subtotal			24.860	16.341		9.732		19.616		-		19.616	34.180	104.729	N/A	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Advanced Pilot Training A&AS	Various	AFLCMC : Dayton, OH	33.928	13.175	Feb 2022	7.030	Feb 2023	10.016	Feb 2024	-		10.016	6.765	70.914	-	

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>	Project (Number/Name) 655340 / <i>Advanced Trainer Replacement T-7A</i>
--	--	---

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Pilot Training PSC, Other Government Costs	Various	AFLCMC : Dayton, OH	17.195	20.290	Oct 2021	1.630	Nov 2022	2.639	Jan 2024	-		2.639	1.262	43.016	-
Subtotal			51.123	33.465		8.660		12.655		-		12.655	8.027	113.930	N/A
Project Cost Totals			878.601	182.330		33.621		77.252		-		77.252	153.615	1,325.419	N/A

Remarks
 Prior years amounts under Program 0604233F, Specialized Undergraduate Flight Training.
 Advanced Pilot Training Studies and Analysis: \$0.935M
 Advanced Pilot Training PMA Government Costs: \$1.383M
 Advanced Pilot Training A&AS: \$2.676M

FINANCIAL PERFORMANCE: Advanced Pilot Training (APT) T-7A Red Hawk Contracts is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the Advanced Pilot Training (APT) T-7A Red Hawk EMD contract is a FPIF contract with progress payments. Ten percent (10%) of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605223F / <i>Advanced Pilot Training</i>	Project (Number/Name) 655340 / <i>Advanced Trainer Replacement T-7A</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Advanced Pilot Training</i>				
Engineering and Manufacturing Development (EMD) Phase	1	2022	2	2025
Development, Test and Evaluation	1	2022	2	2025
Milestone C	2	2025	2	2025
Operational Test Readiness Review (OTRR)	1	2026	1	2026
Initial Operational Test & Evaluation (IOT&E)	2	2026	4	2026
Maintenance Training System Development	4	2024	4	2028
Full Rate Production Decision (FRPD)	2	2027	2	2027
Initial Operational Capability (IOC)	2	2027	2	2027
Aircraft / Ground Based Training System (GBTS) Production	2	2025	4	2028