

UNCLASSIFIED

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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</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	95.918	5.758	15.128	44.120	-	44.120	26.306	35.286	35.977	36.717	Continuing	Continuing
3367: <i>Training Aircraft Updates</i>	94.106	4.992	14.572	43.110	-	43.110	25.328	34.399	35.074	35.796	Continuing	Continuing
9099: <i>Physiological Episodes</i>	1.812	0.766	0.556	1.010	-	1.010	0.978	0.887	0.903	0.921	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for design, development, integration and test of various pre and post production platform improvements for Naval Undergraduate Flight Training Systems which include T-45, T-6, T-44, TH-57, TH-73A, T-44 Follow-On: Multi-Engine Training System (METS), and T-45 Follow-On (Undergraduate Jet Training System (UJTS)/Tactical Surrogate). Continued development engineering for improvements in reliability, maintainability, and safety are required to ensure maximum benefit is achieved to provide effective cost of ownership and availability of aircraft to meet Chief of Naval Air Training (CNATRA) student training requirements. Specific efforts include: T-45, T-6, TH-57, T-44, and TH-73A Training System Improvements such as development and sustainment engineering change proposals (ECPs), avionics reliability and modernization, corrosion prevention ECPs, obsolescence ECPs, and new solutions required to meet evolving fleet training requirements; T-45 and T-6 Physiological Episode (PE) mitigation analysis; T-44 Follow-On: METS development; and T-45 Follow-On (UJTS/Tactical Surrogate) development.

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production decision.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	5.864	15.128	25.491	-	25.491
Current President's Budget	5.758	15.128	44.120	-	44.120
Total Adjustments	-0.106	0.000	18.629	-	18.629
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.106	0.000			
• Program Adjustments	0.000	0.000	22.301	-	22.301
• Rate/Misc Adjustments	0.000	0.000	-3.672	-	-3.672

Change Summary Explanation

Technical: N/A

UNCLASSIFIED

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

Appropriation/Budget Activity	R-1 Program Element (Number/Name)
1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	PE 0603208N / <i>Training System Aircraft</i>

Cost: FY 2024 funding request was increased by \$18.629M, which included a \$30.000M increase in support of the Tactical Surrogate portion of the T-45 Follow-On (UJTS/Tactical Surrogate) development program, and a \$7.680M decrease for the UJTS portion of the program, along with an overall reduction of \$3.700M for PU 3367 and overall increase of \$0.009M for PU 9099.

Schedule: N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>				Project (Number/Name) 3367 / <i>Training Aircraft Updates</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
3367: <i>Training Aircraft Updates</i>	94.106	4.992	14.572	43.110	-	43.110	25.328	34.399	35.074	35.796	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Training System Improvements:

Funding provides for design, development, integration and test of various pre and post production platform improvements for Naval Undergraduate Flight Training Systems which include T-45, T-6, T-44, TH-57, TH-73A, T-44 Follow-On: Multi-Engine Training System (METS), and T-45 Follow-On (UJTS/Tactical Surrogate).

T-45 and T-6 Physiological Episode (PE) Mitigation:

Efforts will provide for studies and development efforts to address mitigation of the T-45 and T-6 physiological episodes.

T-44 Follow-On: Multi-Engine Training System (METS):

The T-44 Training Systems consists of the (Qty 54) T-44C aircraft, and associated family of ground based training devices. The T-44 was fielded in 1978 as the only Navy/Marine Corps Multi-Engine trainer. T-44C is the only transitional platform from single engine to multi-engine Transport and Maritime fleet aircraft. The aging platform has become less cost effective to maintain annually as it has surpassed its fatigue life by greater than 50%. In addition, the aircraft is experiencing obsolescence, diminishing manufacturing resources and material shortages, and training capability gaps (as identified in the Capabilities Based Assessment Naval Undergraduate Flight Training). This effort supports development of alternatives/efforts for replacing the T-44 Multi-Engine replacement training system and development and validation of the acquisition strategy for future procurement of the capability to continue to provide the fleet replacement squadrons with qualified and capable Naval Aviators. This effort includes, but is not limited to, market research, requirements development, evaluation of acquisition strategies, evaluation of proposals, and testing of prototypes.

T-45 Follow-On (Undergraduate Jet Training System (UJTS)/Tactical Surrogate):

The T-45 Training System consists of the T-45C aircraft, ground based training devices, curricula, and associated equipment. The T-45 is facing significant aircraft, engine, and component obsolescence issues. These issues are projected to dramatically increase operating costs and aircraft availability by 2030. This research and development effort will investigate alternatives for replacing the T-45 training system and develop and validate the acquisition strategy for the procurement of a new T-XX platform capable of being utilized both as a T-45 Follow-On Undergraduate Jet Training System (UJTS) for CNATRA, and a Tactical Surrogate aircraft for the fleet, in order to achieve cost savings initiatives associated with reducing Fleet aircraft usage. The T-45 Follow-On (UJTS) will ensure training commands continue to provide the fleet replacement squadrons with qualified and capable naval aviators. The Tactical Surrogate will allow the fleet to reduce front line aircraft usage, maintenance requirements, and costs associated with squadron post deployment / work-up cycle and Fleet Replacement Squadron training while building and maintaining tactical proficiency through a familiar, modern, and relevant surrogate aircraft. This effort includes, but is not limited to, market research, requirements and training curricula development, evaluation of acquisition strategies, evaluation of proposals, development and testing of new training technologies, and testing of aircraft, Ground Based Training System, and equipment prototypes.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy	Date: March 2023
--------------------------------------------------------------------	-------------------------

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
-----------------------------------------------------------------------------------------	----------------	----------------	---------------------	--------------------	----------------------

Title: Training System Improvements	2.457	2.559	2.974	0.000	2.974
Articles:	-	-	-	-	-

Description: Funding provides for design, development, integration and test of various pre and post production platform improvements for Naval Undergraduate Flight Training Systems which include T-45, T-6, T-44, TH-57, TH-73A, T-44 Follow-on: Multi-Engine Training System (METS), and T-45 Follow-On (UJTS) / Tactical Surrogate.

FY 2023 Plans:
Continue studies & development efforts for platform improvements for Naval Undergraduate Flight Training Systems, to include T-45 and T-6 avionics and airframe improvement studies, T-45 Test Wing Maintenance, and T-45 Follow-On (UJTS) / Tactical Surrogate pre-acquisition studies.

FY 2024 Base Plans:
N/A

FY 2024 OCO Plans:
N/A

FY 2023 to FY 2024 Increase/Decrease Statement:
FY2023 to FY2024 increase of \$0.415M due to increased T-45 maintenance and Flight Ops support requirements.

Title: T-44 Follow-On: Multi-Engine Training System (METS)	2.535	2.463	0.000	0.000	0.000
Articles:	-	-	-	-	-

Description: Funding supports research of alternatives for the T-44 Follow-On: Multi-Engine Training System (METS), to include development and validation of the acquisition strategy for future procurement of the capability, ensuring continuous support to fleet replacement squadrons with qualified and capable Naval Aviators. This effort includes, but is not limited to, market research, requirements development, evaluation of acquisition strategies, evaluation of proposals, and testing of prototypes.

FY 2023 Plans:
Develop Ground Based Training Systems (GBTS) and Contract Logistics Services (CLS) technical documentation, to include but not limited to Requirements Documents, Cybersecurity Strategy, Test and Evaluation Master Plan (TEMP), Acquisition Plan/Strategy, Funding Profile, Source Selection Plan, Risk

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy	Date: March 2023
--------------------------------------------------------------------	-------------------------

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Management Plan, Life Cycle Cost, Initial Capabilities Document (ICD), Market Survey, and relative documents required during the pre-solicitation process.					
OCO: N/A.					
FY 2024 Base Plans: No requirements in FY2024 as the program will be fully in production.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: FY2023 to FY2024 decrease to zero due to program transitioning from Development to Production in FY2023.					
Title: T-45 Follow-On Undergraduate Jet Training System / Tactical Surrogate	0.000	9.550	40.136	0.000	40.136
Articles:	-	-	-	-	-
Description: Funding supports research and development for the T-XX program (T-45 Follow-On Undergraduate Jet Training System / Tactical Surrogate), to include development and validation of the acquisition strategy for future procurement of the capability, ensuring continuous support to fleet replacement squadrons with qualified and capable Naval Aviators, and establishing the Tactical Surrogate capability for the Fleet. This effort includes, but is not limited to, market research, requirements and training curricula development, evaluation of acquisition strategies, evaluation of proposals, development and testing of new training technologies, and testing of aircraft, Ground Based Training System, and equipment prototypes. UJTS/ Tactical Surrogate funds were previously captured under the Training Systems Improvements Planned Program and have been broken out in a separate Planned Program in the BES24 cycle for visibility purposes.					
FY 2023 Plans: Develop Requirements Documents, Cybersecurity Strategy, Test and Evaluation Master Plan (TEMP), Acquisition Plan/Strategy, Funding Profile, Source Selection Plan, Risk Management Plan, Life Cycle Cost, Initial Capabilities Document (ICD), Market Survey, and relative documents required during the pre-solicitation process. Inform industry of the increased scope of the T-XX program effort to facilitate the program Request For Proposals and eventual program competition. Continue program studies to facilitate all program efforts.					
FY 2024 Base Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continuing efforts to develop Requirements Documents, Cybersecurity Strategy, Test and Evaluation Master Plan (TEMP), Acquisition Plan/Strategy, Funding Profile, Source Selection Plan, Risk Management Plan, Life Cycle Cost, Initial Capabilities Document (ICD), Market Survey, and relative documents required during the pre-solicitation process. Inform industry of the increased scope of the T-XX program effort to facilitate the program Request For Proposals and eventual program competition. Continue program studies to facilitate all program efforts.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: FY2023 to FY2024 increase of \$30.586M due to ramp up of the UJTS/Tactical Surrogate development program.					
Accomplishments/Planned Programs Subtotals	4.992	14.572	43.110	0.000	43.110

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APN/0569: <i>T45 Series</i>	155.366	199.356	170.357	-	170.357	169.978	182.577	186.029	192.593	165.995	2,997.115
• APN/0571: <i>JT Primary Acft Trnr Sys (JPATS)</i>	20.958	19.780	28.005	-	28.005	24.375	24.921	26.379	31.943	0.000	308.700
• APN/0549: <i>Trainer Acft Series</i>	7.849	9.568	16.376	-	16.376	12.509	12.673	13.125	13.597	9.894	363.646
• APN/0344: <i>Advanced Helicopter Trainer System</i>	163.490	119.816	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	648.726
• APN/0343: <i>Multi-Engine Training System (METS)</i>	0.000	107.801	289.141	-	289.141	301.908	0.000	0.000	0.000	0.000	698.850

Remarks

D. Acquisition Strategy
 Training System Improvements:
 Efforts under this category are expected to be limited to those efforts meeting thresholds under the abbreviated acquisition category.

Naval Aviation Physiological Episode:
 Efforts under this category are expected to be limited to those efforts meeting thresholds under the abbreviated acquisition category.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>
<p>T-44 Follow-On: Multi-Engine Training System (METS): A multi-engine training capability is required to provide advanced training for United States Navy (USN) and United States Marine Corps (USMC). The T-44 currently supports of Chief of Naval Air Training (CNATRA's) T-44 Multi-Engine Flight Instructor and Transition Curriculum, T-44C Advanced Multi-Engine MPTS, T-44C Multi-Engine Flight Instructor, and T-44C Intermediate E-2/C-2 MPTS syllabi. The T-44 Multi-Engine Follow-On Training System effort will be established to determine and implement the most cost efficient and effective path forward for providing Naval Aviators to the Fleet Replacement Squadrons. The acquisition program consists of a new multi-engine aircraft, Ground Based Training System (GBTS), and interim contractor maintenance/support.</p> <p>T-45 Follow-On (UJTS/Tactical Surrogate): The T-XX program facilitates a Undergraduate Jet Training System (UJTS) that recapitalizes the Navy's intermediate and advanced jet training capabilities while also establishing a Tactical Surrogate program that will allow the fleet to build and maintain tactical proficiency while reducing front line tactical aircraft use and costs. The program will include aircraft, ground based training systems, curricula, and associated equipment. Introduction of UJTS will provide higher availability, reduce operating costs, meet future strike training requirements, and provide a platform that aligns closely with strike aircraft the graduates will operate in the Fleet. Introduction of Tactical Surrogate will provide Fleet cost savings while not sacrificing aircrew flight time or tactical training. The preliminary acquisition strategy includes two separate contract actions: 1. Procurement of T-XX (UJTS and Tactical Surrogate) and ground based training systems; and 2. Interim Contractor Support for maintenance and sustainment.</p>		

UNCLASSIFIED

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

Product Development (\$ 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			
UJTS/Tactical Surrogate: UJTS Pre-Acquisition Studies	WR	NAWCTSD : Orlando, FL	0.000	0.000	Dec 2021	9.550	Dec 2022	37.189	Dec 2023	-		37.189	Continuing	Continuing	Continuing
Prior Year Product Development costs no longer in the FYDP	Various	Various : Various	36.271	0.000		0.000		0.000		-		0.000	0.000	36.271	-
Subtotal			36.271	0.000		9.550		37.189		-		37.189	Continuing	Continuing	N/A

Remarks
 UJTS/Tactical Surrogate: UJTS Pre-Acquisition Studies: Continues funding for product development support for the T-45 Follow-On (UJTS) / Tactical Surrogate at NAWCAD Pax River, MD. FY2024 funding increased by \$27.639M to support pre-acquisition efforts for the T-45 Follow-On (UJTS) / Tactical Surrogate.

Following cost category items were archived to prior year Product Development:
 Training System Improvement: T-45 ADSB Out Engineering

Support (\$ 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			
Training System Improvement: T-45 Integrated Logistics Support	C/FFP	Ausley Associates, Inc. : Lexington Park, MD	1.910	0.000	May 2022	0.007	May 2023	0.000		-		0.000	0.000	1.917	-
T-44 Follow-On: Training System	WR	NAWCAD : Patuxent River, MD	0.908	1.737	Nov 2021	2.063	Nov 2022	0.000		-		0.000	0.000	4.708	-
T-44 Follow-On: Training System	WR	NAWCTSD : Orlando, FL	0.000	0.769	Nov 2021	0.000		0.000		-		0.000	0.000	0.769	-
T-44 Follow-On: Training System	WR	FRCSE : Jacksonville, FL	0.000	0.029	Nov 2021	0.000		0.000		-		0.000	0.000	0.029	-
UJTS/Tactical Surrogate: UJTS Support	C/BA	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		2.947	Nov 2023	-		2.947	Continuing	Continuing	Continuing
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	33.452	0.000		0.000		0.000		-		0.000	0.000	33.452	-
Subtotal			36.270	2.535		2.070		2.947		-		2.947	Continuing	Continuing	N/A

UNCLASSIFIED

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

Support (\$ 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			

Remarks
UJTS/Tactical Surrogate: Fund government labor support for the UJTS/Tactical Surrogate program

Test and Evaluation (\$ 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			
Developmental Test & Evaluation (DT&E)	Various	Various : Various	2.287	0.000		0.000		0.000		-		0.000	0.000	2.287	-
Subtotal			2.287	0.000		0.000		0.000		-		0.000	0.000	2.287	N/A

Remarks
Following cost category items were archived to prior year Product Development:
Training System Improvements: T-45 Testing, Evaluation, & Certification
Training System Improvements: T6 Test and Evaluation

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			
Training System Improvements:T-45 PBTH Flight Hours	C/FFP	Rolls Royce : Indianapolis, IN	1.014	0.083	May 2022	0.336	May 2023	0.343	May 2024	-		0.343	1.200	2.976	2.904
Training System Improvements:T-45 Test Wing Maintenance	MIPR	Vertex Aerospace LLC : Madison, MS	3.856	2.315	Nov 2021	2.094	Nov 2022	2.507	Nov 2023	-		2.507	17.394	28.166	-
Training System Improvements: Travel	WR	NAVAIR : Patuxent River, MD	0.071	0.059	Oct 2021	0.122	Oct 2022	0.124	Oct 2023	-		0.124	Continuing	Continuing	Continuing
T-44 Follow-On: Program Management Studies & Analysis	C/FFP	TBD : TBD	0.004	0.000	Dec 2021	0.400	Dec 2022	0.000		-		0.000	0.215	0.619	1.013
Prior Year Mgmt costs no longer funded in FYDP	Various	Various : Various	14.333	0.000		0.000		0.000		-		0.000	0.000	14.333	-

UNCLASSIFIED

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</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			
Subtotal			19.278	2.457		2.952		2.974		-		2.974	Continuing	Continuing	N/A

Remarks
 Training System Improvements, T-45 PBTH Flight Hours: Continues funding for Power-By-The-Hour (PBTH) flight hours and support services for Retrofit Integration Testing (RIT) of T-45 aircraft and F-405 engines at Pax River, MD.

 Training System Improvements, T-45 Test Wing Maintenance: Continues funding for T-45 aircraft maintenance and support for Retrofit Integration Testing (RIT) at Pax River, MD. FY2024 funding increased from FY2023 by \$0.413M for increased maintenance and Flight Ops support requirements.

 Training System Improvements, Travel: Continues funding for PMA's consolidated travel costs required to support management and service support for product development for all programs.

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	94.106	4.992	14.572	43.110	-	43.110	Continuing	Continuing	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>Training System Improvements</i>	
Product Development: T-45 Follow-On (UJTS) / Tactical Surrogate: Pre-acquisition Studies	
Study/Analysis/Support: T-45 Integrated Logistics Support: T-45 ILS	
T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: METS Contract Award	
T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: T-44 Follow-On: METS Training System Support	
<i>Naval Aviation Physiological Episodes</i>	
Product Development: PE Support: T-45, PE System Engineering	
Product Development: PE Support: T-45, PE Engineering Support	
Product Development: PE Test and Evaluation: T-45, PE Test & Evaluation	
Product Development: PE Test and Evaluation: T-6, PE Test & Evaluation	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 3367 / <i>Training Aircraft Updates</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Training System Improvements</i>				
Product Development: T-45 Follow-On (UJTS) / Tactical Surrogate: Pre-acquisition Studies	1	2022	4	2028
Study/Analysis/Support: T-45 Integrated Logistics Support: T-45 ILS	1	2022	4	2023
T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: METS Contract Award	2	2023	2	2023
T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: T-44 Follow-On: METS Training System Support	1	2022	4	2023
<i>Naval Aviation Physiological Episodes</i>				
Product Development: PE Support: T-45, PE System Engineering	1	2022	4	2028
Product Development: PE Support: T-45, PE Engineering Support	1	2022	4	2028
Product Development: PE Test and Evaluation: T-45, PE Test & Evaluation	1	2022	4	2028
Product Development: PE Test and Evaluation: T-6, PE Test & Evaluation	1	2022	4	2028

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>				Project (Number/Name) 9099 / <i>Physiological Episodes</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
9099: <i>Physiological Episodes</i>	1.812	0.766	0.556	1.010	-	1.010	0.978	0.887	0.903	0.921	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

T-45 and T-6 Physiological Episode (PE) Mitigation:
Efforts will provide for studies and development efforts to address mitigation of the T-45 and T-6 physiological episodes.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: T-45 Physiological Episode Mitigation	0.566	0.421	0.872	0.000	0.872
Articles:	-	-	-	-	-
Description: Funding provides for design, development, integration and test of platform improvements for Naval Aviation Physiological Episode (PE) Mitigation in the T-45 Training Aircraft.					
FY 2023 Plans: Continue Physiological Episode (PE) mitigation studies and development efforts for platform improvements to the T-45 Aircraft Training System. Conduct studies on acceptable breathing resistance limits under varying hypoxic, normoxic, and hyperoxic conditions in order to inform future platform improvements.					
FY 2024 Base Plans: Continue Physiological Episode (PE) mitigation studies and development efforts for platform improvements to the T-45 Aircraft Training System. Conduct studies on acceptable breathing resistance limits under varying hypoxic, normoxic, and hyperoxic conditions in order to inform future platform improvements.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: FY2023 to FY2024 increase of \$0.451M due to increase in continuing efforts for ABOS and GGU-25.					
Title: T-6 Physiological Episode Mitigation	0.200	0.135	0.138	0.000	0.138
Articles:	-	-	-	-	-
Description: Funding provides for design, development, integration and test of platform improvements for Naval Aviation Physiological Episode (PE) Mitigation in the T-6 training aircraft.					
FY 2023 Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	----------------------------------------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Continue joint studies and development efforts with the US Air Force for platform improvements to the Joint Primary Aircraft Training System (JPATS/T-6). Continue operational field test and evaluation on newly installed OBOGS O2 concentrators. Research, develop and test installation of Automatic Backup Oxygen System (ABOS) in the T-6A. Conduct test and evaluation of prototype Integrated Sensors Phase II package.</p> <p>FY 2024 Base Plans: Continue joint studies and development efforts with the US Air Force for platform improvements to the Joint Primary Aircraft Training System (JPATS/T-6). Continue operational field test and evaluation on newly installed OBOGS O2 concentrators. Research, develop and test installation of Automatic Backup Oxygen System (ABOS) in the T-6A. Conduct test and evaluation of prototype Integrated Sensors Phase II package.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY2023 to FY2024 increase of \$0.003M to account for inflation adjustments.</p>					
Accomplishments/Planned Programs Subtotals	0.766	0.556	1.010	0.000	1.010

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• APN/0569: <i>T-45 Physiological Episode Mitigation OSIP 012-19</i>	155.366	199.356	170.357	-	170.357	169.978	182.577	186.029	192.593	165.995	2,997.115
• APN/0571: <i>JPATS Physiological Episode Mitigation OSIP 007-20</i>	20.958	19.780	28.005	-	28.005	24.375	24.921	26.379	31.943	0.000	308.700

Remarks

D. Acquisition Strategy
PE:
Efforts under this category are expected to be limited to those efforts meeting thresholds under the abbreviated acquisition category.

UNCLASSIFIED

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	----------------------------------------------------------------------

Product Development (\$ 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			
T45 PE OBOGS	C/BA	JHU/APL : Baltimore, MD	0.400	0.350	Dec 2021	0.000		0.000		-		0.000	0.000	0.750	-
Subtotal			0.400	0.350		0.000		0.000		-		0.000	0.000	0.750	N/A

Support (\$ 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			
T45 PE Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.305	0.216	Nov 2021	0.209	Nov 2022	0.716	Nov 2023	-		0.716	Continuing	Continuing	Continuing
T45 PE Engineering Support	WR	Naval Medical Reserach Center : Silver Spring, MD	0.280	0.000	Nov 2021	0.178	Nov 2022	0.000		-		0.000	0.000	0.458	-
Subtotal			0.585	0.216		0.387		0.716		-		0.716	Continuing	Continuing	N/A

Remarks
T45 PE, Systems Engineering: Continues funding for engineering support T-45 Physiological Episode (PE) mitigation program at NAWCAD Pax River, MD. Funding is increased in FY 2024 for continuing engineering efforts for ABOS and GGU-25.

Test and Evaluation (\$ 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			
Developmental Test & Evaluation (DT&E)	WR	NSWCPCD : Panama City Beach, FL	0.070	0.000	Nov 2021	0.034	Nov 2022	0.156	Nov 2023	-		0.156	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NAWCAD : Patuxent River, MD	0.757	0.162	Nov 2021	0.135	Nov 2022	0.138	Nov 2023	-		0.138	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	AFLCM/WNWK : WR AFB	0.000	0.038	May 2022	0.000		0.000		-		0.000	0.000	0.038	-
Subtotal			0.827	0.200		0.169		0.294		-		0.294	Continuing	Continuing	N/A

UNCLASSIFIED

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	----------------------------------------------------------------------

Test and Evaluation (\$ 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			

Remarks
 T45 PE, Test & Evaluation: Continues funding for engineering support for the T-45 Physiological Episode (PE) mitigation program at NSWC, Panama City Division, Panama City, FL. Funding is increased in FY 2024 for continuing test efforts for ABOS and GGU-25.
 T6 PE, Test & Evaluation: Continues funding for engineering support for the T-6 Physiological Episode (PE) mitigation program at NAWCAD Pax River, MD.

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.812	0.766	0.556	1.010	-	1.010	Continuing	Continuing	N/A

Remarks
None.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	----------------------------------------------------------------------

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>Naval Aviation Physiological Episodes</i>	
Support: PE Support: T-45 PE System Engineering	
Support: PE Support: T-6 PE Engineering Support	
Support: PE Test & Evaluation: T-45 PE Test & Evaluation	
Support: PE Test & Evaluation: T-6 PE Test & Evaluation	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>
--------------------------------------------------	-------------------------------------------------------------------------------------------	----------------------------------------------------------------------

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Naval Aviation Physiological Episodes</i>				
Support: PE Support: T-45 PE System Engineering	1	2022	4	2028
Support: PE Support: T-6 PE Engineering Support	1	2022	4	2028
Support: PE Test & Evaluation: T-45 PE Test & Evaluation	1	2022	4	2028
Support: PE Test & Evaluation: T-6 PE Test & Evaluation	1	2022	4	2028