Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy											Date: May 2021	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0603208N *I Training System Aircraft*							
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
Total Program Element	75.874	15.371	4.307	5.864	-	5.864	-	-	-	-	-	-
3367: *Training Aircraft Updates*	75.874	15.371	2.478	5.058	-	5.058	-	-	-	-	-	-
9099: *Physiological Episodes*	0.000	0.000	1.829	0.806	-	0.806	-	-	-	-	-	-

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). 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 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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	15.514	4.332	5.974	-	5.974
Current President's Budget	15.371	4.307	5.864	-	5.864
Total Adjustments	-0.143	-0.025	-0.110	-	-0.110
• Congressional General Reductions	-	-0.025			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.143	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.110	-	-0.110

Change Summary Explanation

Technical:

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy	Date: May 2021
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0603208N *I Training System Aircraft*

Removed Federal Aviation Administration (FAA) Next Generation Air Transportation System (NextGen) flight safety requirements from Mission Description; effort complete.

Added T-45 Follow-On: Undergraduate Jet Training System (UJTS) to Mission Description and Budget Item Justification.

Added T-45 Follow-On: Undergraduate Jet Training System (UJTS) Acquisition Strategy.

Removed TH-57 Follow-On: Advanced Helicopter Training System from Mission Description; effort complete.

Funding added to PU 3367 for T-45 Follow-on: Undergraduate Jet Training System (UJTS) starting in FY23.

Removed acquisition strategies for T-45 Training System: Required Avionics Sustainment Program (RASP) and T-6 Communication, Navigation, System/Air Traffic Management (CNS/ATM). Both research and development programs are complete.

Schedule:

T-45 Required Avionics Sustainment Program (RASP) removed from schedule. RDT&E,N program completed in FY19; no longer in budget.

Training System Improvements: FY22 study added for T-45 Follow-On: Undergraduate Jet Training System (UJTS) for continuation of pre-acquisition training system development.

Training System Improvements: T-6 Joint Study Efforts reduced from 4Q2025 to 4Q2021 to align with ongoing T-6 platform improvements plans and efforts.

Training System Improvements: T-6 CSCVR & CFIT IT&E moved to 4Q2020 through 4Q2021 due to delays in contract award.

Training Systems Improvements: Added T-45 and T-6 Integrated Logistics Support 1Q2022 to 4Q2026.

Naval Aviation Physiological Episodes: T-45 PE Support combined with T-45 Product Development efforts in order to reflect contracting actuals. T-45 and T-6 added 1Q2021-4Q2026.

Naval Aviation Physiological Episodes: GGU-25 CDR added 3Q2020

TH-57 Follow-On: Advanced Helicopter Training System (TH-73A) removed from schedule. RDT&E,N program completed in FY19; no longer in budget.

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy	Date: May 2021
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0603208N *I Training System Aircraft*

T-44 Follow-On: Multi-Engine Training System (METS) added to schedule.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy											Date: May 2021	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft*				Project (Number/Name) 3367 / *Training Aircraft Updates*			
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
3367: *Training Aircraft Updates*	75.874	15.371	2.478	5.058	-	5.058	-	-	-	-	-	-
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: Undergraduate Jet Training System (UJTS).

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, as 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, than the aircraft is worth, as it has surpassed its fatigue life by 50%, as well as 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):

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 Undergraduate Jet Training System (UJTS). The T-45 Follow-On: UJTS will ensure training commands 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.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Training System Improvements	11.093	1.960	2.613	0.000	2.613
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: Undergraduate Jet Training System (UJTS). ***FY 2021 Plans:*** Continue studies & development efforts for platform improvements for Naval Undergraduate Flight Training Systems, including T-6 Joint Study Efforts and T-45 test wing maintenance. ***FY 2022 Base 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: Undergraduate Jet Training System (UJTS) AoA and pre-acquisition studies. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The FY2022 funding request was increased by $0.653M due to expanded T-45 Test Wing Maintenance requirements and the addition of T-45 Follow-On: UJTS AoA and pre-acquisition studies in FY22.					
Title: Naval Aviation Physiological Episode (PE)	4.022	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Funding provides for design, development, integration and test of platform improvements for Naval Undergraduate Flight Training Systems to include Naval Aviation Physiological Episode (PE) Mitigation in the Training Aircrafts (T-45 and T-6). ***FY 2021 Plans:*** N/A ***FY 2022 Base Plans:*** N/A ***FY 2022 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A					
Title: T-44 Follow-On: Multi-Engine Training System (METS)	0.256	0.518	2.445	0.000	2.445
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 2021 Plans:*** Finalize all technical documentation, to include but not limited to Requirements Documents, Systems Engineering Plan (SEP), 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. ***FY 2022 Base 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 Management Plan, Life Cycle Cost, Initial Capabilities Document (ICD), Market Survey, and relative documents required during the pre-solicitation process. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The FY2022 funding request was increased by $1.927M in support of the pre-solicitation phase of the T-44 Multi-Engine Follow-On Training System (METS).					
Accomplishments/Planned Programs Subtotals	15.371	2.478	5.058	0.000	5.058

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• APN/0569: *T45 Series*	174.468	154.600	158.772	-	158.772	-	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• APN/0571: *JT Primary Acft Trnr Sys (JPATS)*	21.824	22.682	22.955	-	22.955	-	-	-	-	-	-
• APN/0549: *Trainer Acft Series*	5.604	7.085	7.849	-	7.849	-	-	-	-	-	-
• APN/0344: *Advanced Helicopter Trainer System*	237.265	185.893	163.490	-	163.490	-	-	-	-	-	-

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.

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 support 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.

T-45 Follow-on: Undergraduate Jet Training System (UJTS) - The Undergraduate Jet Training System (UJTS) recapitalizes the Navy's intermediate and advanced jet training capabilities. The program will include aircraft, simulators, 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. The preliminary acquisition strategy includes two separate contract actions: 1) Combined procurement of UJTS and ground based training devices; and 2) Interim Contractor Support for maintenance and sustainment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft*	Project (Number/Name) 3367 / *Training Aircraft Updates*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training System Improvement: T45 HUD/ PDU Study	C/CPFF	Physical Optics Corporation : Torrance, CA	0.000	1.166	Apr 2020	0.000		0.000		-		0.000	-	-	-
Training System Improvement: T6 CSCVR	C/FFP	AFMC : Tinker AFB, OK	0.000	2.824	Sep 2020	0.000		0.000		-		0.000	-	-	-
Training System Improvement: T6 CFIT	C/FFP	AFMC : Tinker AFB, OK	0.000	1.034	Feb 2020	0.000		0.000		-		0.000	-	-	-
Training System Improvement: T45 Follow-On: Undergraduate Jet Training System (UJTS) AoA	WR	NAWCAD : Patuxent River, MD	0.000	0.125	Dec 2019	0.000		0.130	Dec 2021	-		0.130	-	-	-
Training System Improvement: T-45 ADSB Out Engineering	C/CPFF	Boeing : St. Louis, MO	0.000	2.168	Dec 2020	0.000		0.000		-		0.000	-	-	-
PE: T45 Product Development	C/CPFF	John Hopkins University APL : Laurel, MD	0.000	2.583	May 2020	0.000		0.000		-		0.000	-	-	-
Prior Year Product Development costs no longer in the FYDP	Various	Various : Various	25.963	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	25.963	9.900		0.000		0.130		-		0.130	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training System Improvement: T45 Real-time Air Quality Sensor (RTAQS) Study	MIPR	AFRL RH : Wright Patterson AFB, OH	1.385	0.550	Jul 2020	0.000		0.000		-		0.000	-	-	-
Training System Improvement: T45	C/FFP	Ausley Associates, Inc. : Lexington Park, MD	1.910	0.000		0.000		0.005	Oct 2021	-		0.005	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft*	Project (Number/Name) 3367 / *Training Aircraft Updates*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support															
Training System Improvement: T6 Integrated Logistics Support	C/FFP	Ausley Associates, Inc : Lexington Park, MD	0.000	0.000		0.000		0.002	Oct 2021	-		0.002	-	-	-
Training System Improvement: T6 Joint Study Efforts	MIPR	AFRL : Wright-Patterson AFB	0.173	0.086	Nov 2019	0.059	Nov 2020	0.000		-		0.000	-	-	-
PE: T45 Systems Engineering Support	WR	Naval Medical Reserach Center : Silver Spring, MD	0.796	0.650	May 2020	0.000		0.000		-		0.000	-	-	-
PE: T45 Systems Engineering Support	WR	NAWCAD : Patuxent River, MD	0.000	0.549	Nov 2019	0.000		0.000		-		0.000	-	-	-
PE: T6 Support	WR	NAWCAD : Patuxent River, MD	1.000	0.240	Jan 2020	0.000		0.000		-		0.000	-	-	-
T44 Follow-On: Training System	WR	NAWCAD : Patuxent River, MD	0.239	0.000		0.518	Nov 2020	2.047	Nov 2021	-		2.047	-	-	-
T44 Follow-On: System Engineering Support	WR	Naval Facilities Engineering Command : Norfolk, VA	0.000	0.256	Jan 2020	0.000		0.000		-		0.000	-	-	-
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	27.787	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	33.290	2.331		0.577		2.054		-		2.054	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training System Improvements: T45 Test & Certification	WR	NAWCAD : Patuxent River, MD	2.233	0.000		0.620	Nov 2020	0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft*	Project (Number/Name) 3367 / *Training Aircraft Updates*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training System Improvements: T6 Test and Evaluation	WR	NAWCAD : Patuxent River, MD	0.053	0.000		0.055	Nov 2020	0.000		-		0.000	-	-	-
		Subtotal	2.286	0.000		0.675		0.000		-		0.000	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training System Improvements:T45 PBTH Flight Hours	C/FFP	Rolls Royce : Indianapolis, IN	0.570	0.273	May 2020	0.260	May 2021	0.265	May 2022	-		0.265	-	-	-
Training System Improvements:T45 Test Wing Maintenance	MIPR	Vertex Aerospace LLC : Madison, MS	0.000	2.248	Apr 2020	0.839	Oct 2020	2.084	Nov 2021	-		2.084	-	-	-
Training System Improvements: Travel	WR	NAVAIR : Patuxent River, MD	0.000	0.051	Oct 2019	0.127	Oct 2020	0.121	Oct 2021	-		0.121	-	-	-
Training System Improvements: T45 Project Management	WR	NAVAIR : Patuxent River, MD	2.726	0.568	Nov 2019	0.000		0.000		-		0.000	-	-	-
Training System Improvements: T6 Program Management	C/FFP	Stracon Services Group, LLC : Fort Worth, TX	0.000	0.000		0.000		0.006	Oct 2021	-		0.006	-	-	-
T44 Follow-On: Program Management Studies & Analysis	C/FFP	TBD : TBD	0.000	0.000		0.000		0.398	Dec 2021	-		0.398	-	-	-
Prior Year Mgmt costs no longer funded in FYDP	Various	Various : Various	11.039	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	14.335	3.140		1.226		2.874		-		2.874	-	-	N/A

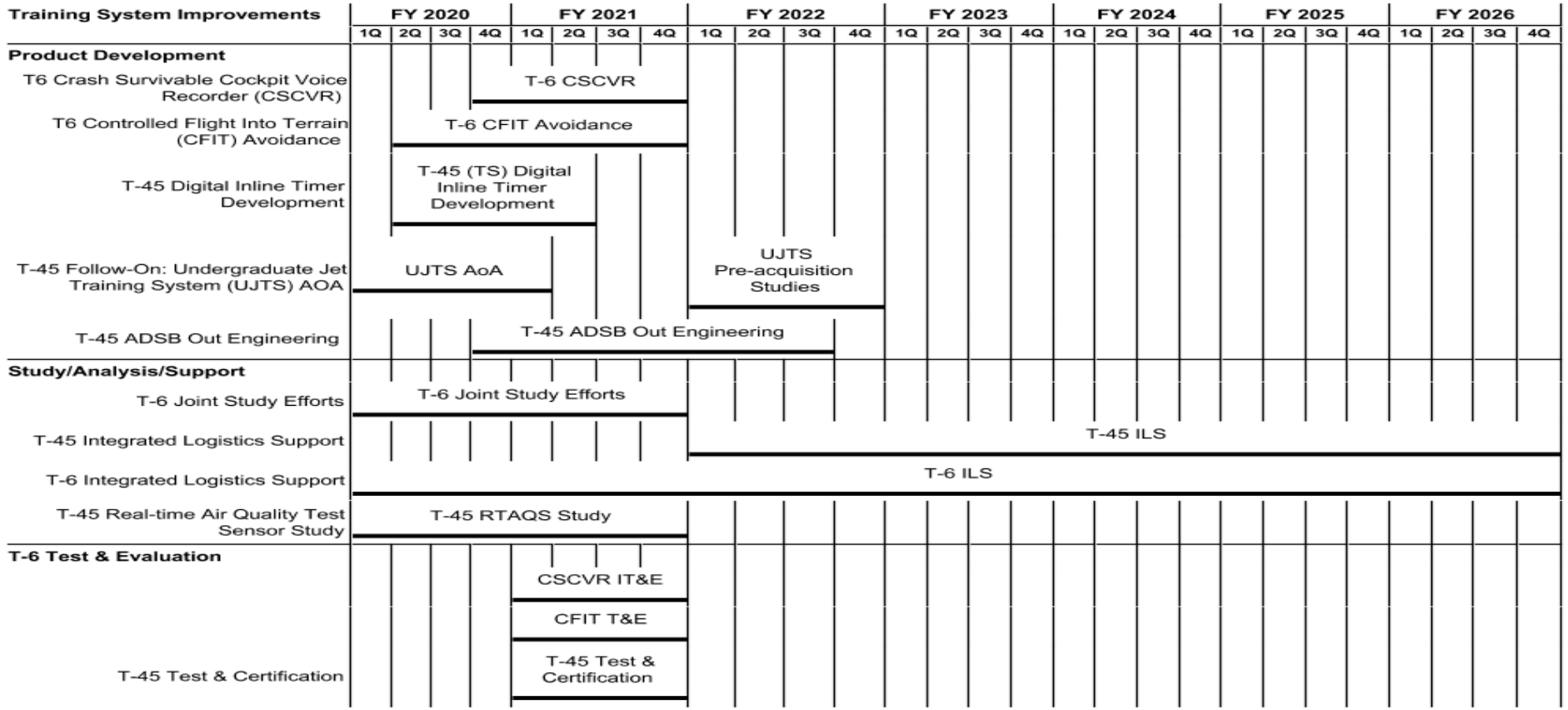
	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	75.874	15.371		2.478		5.058		-		5.058	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft*	Project (Number/Name) 3367 / *Training Aircraft Updates*	

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract

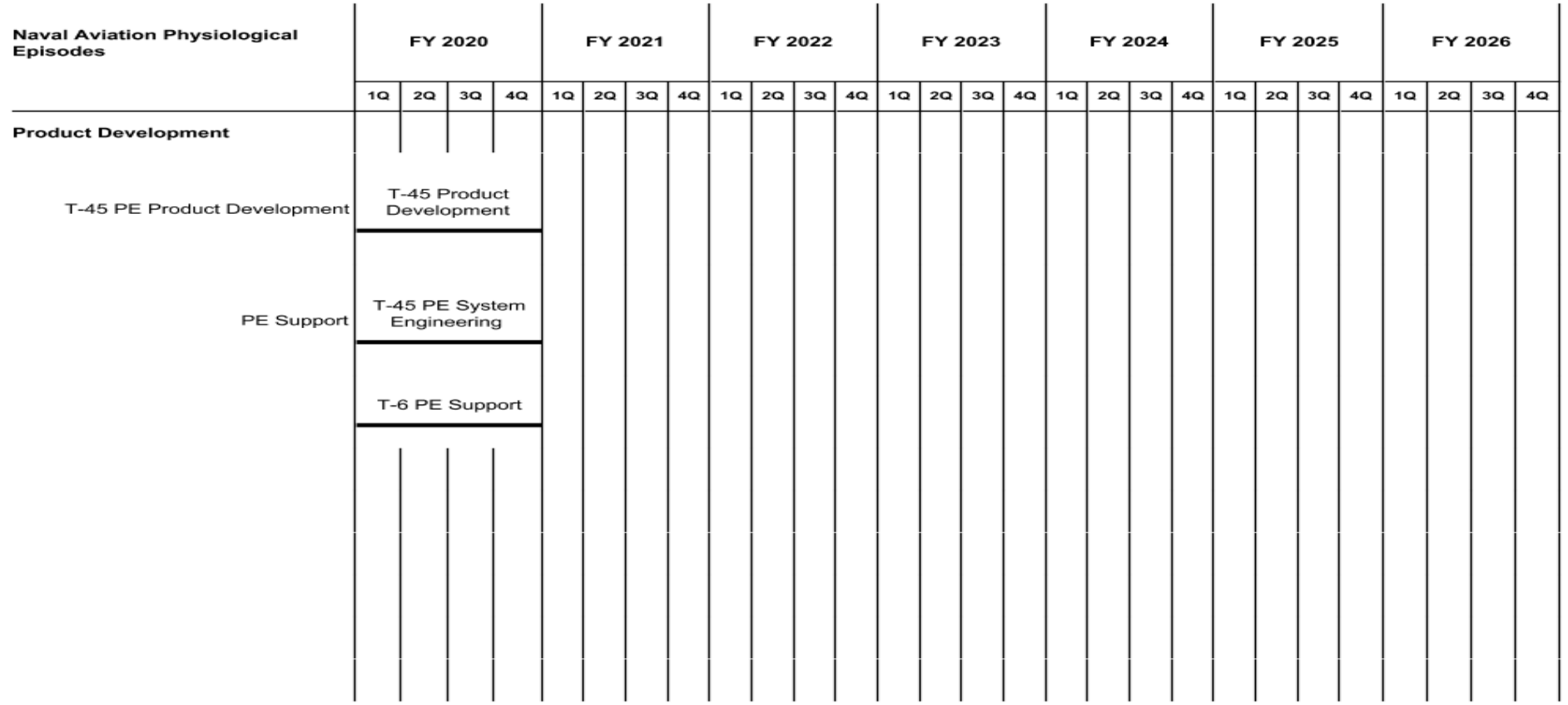
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*



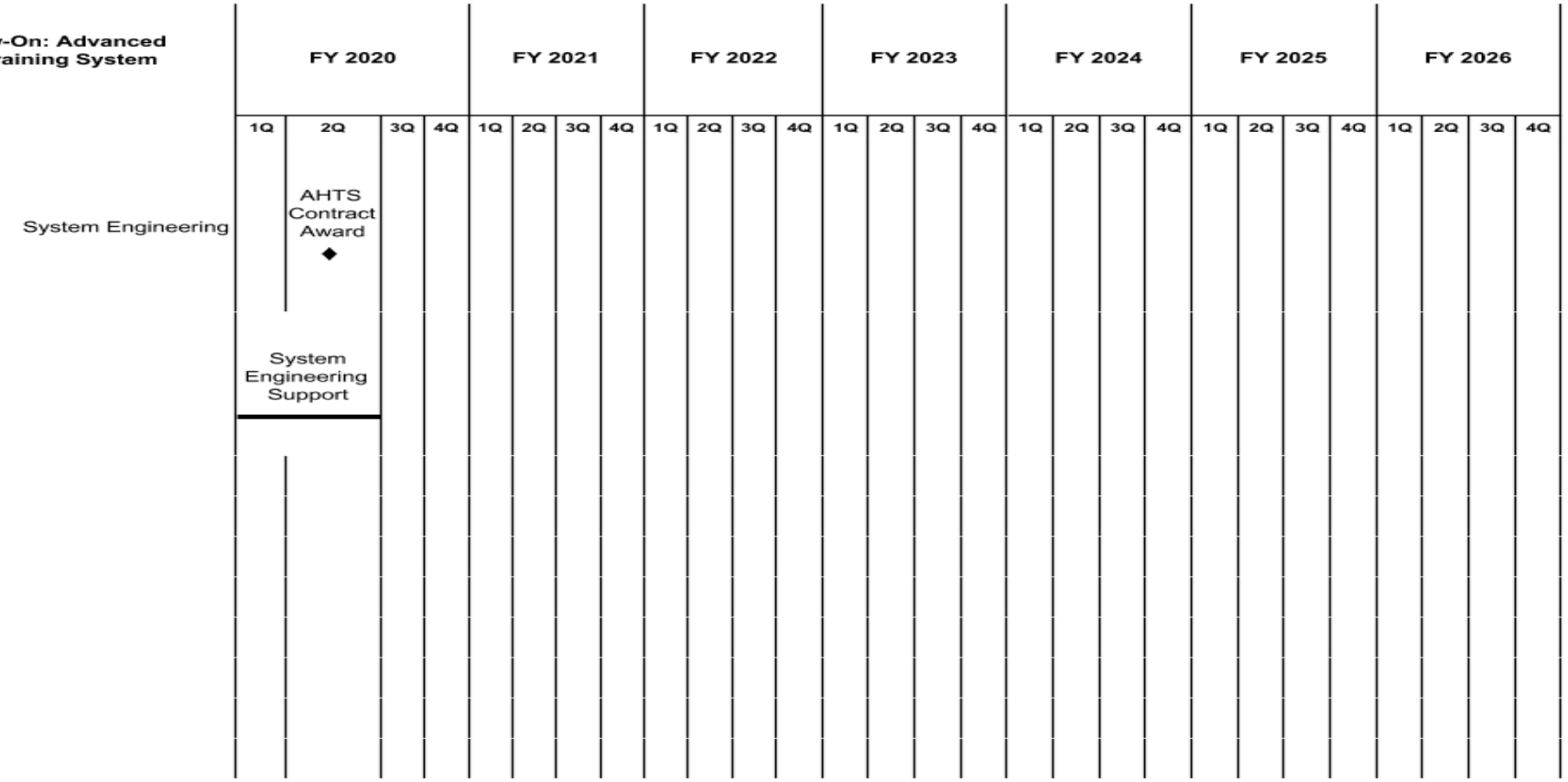
2022PB - 0603208N - 3367

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*



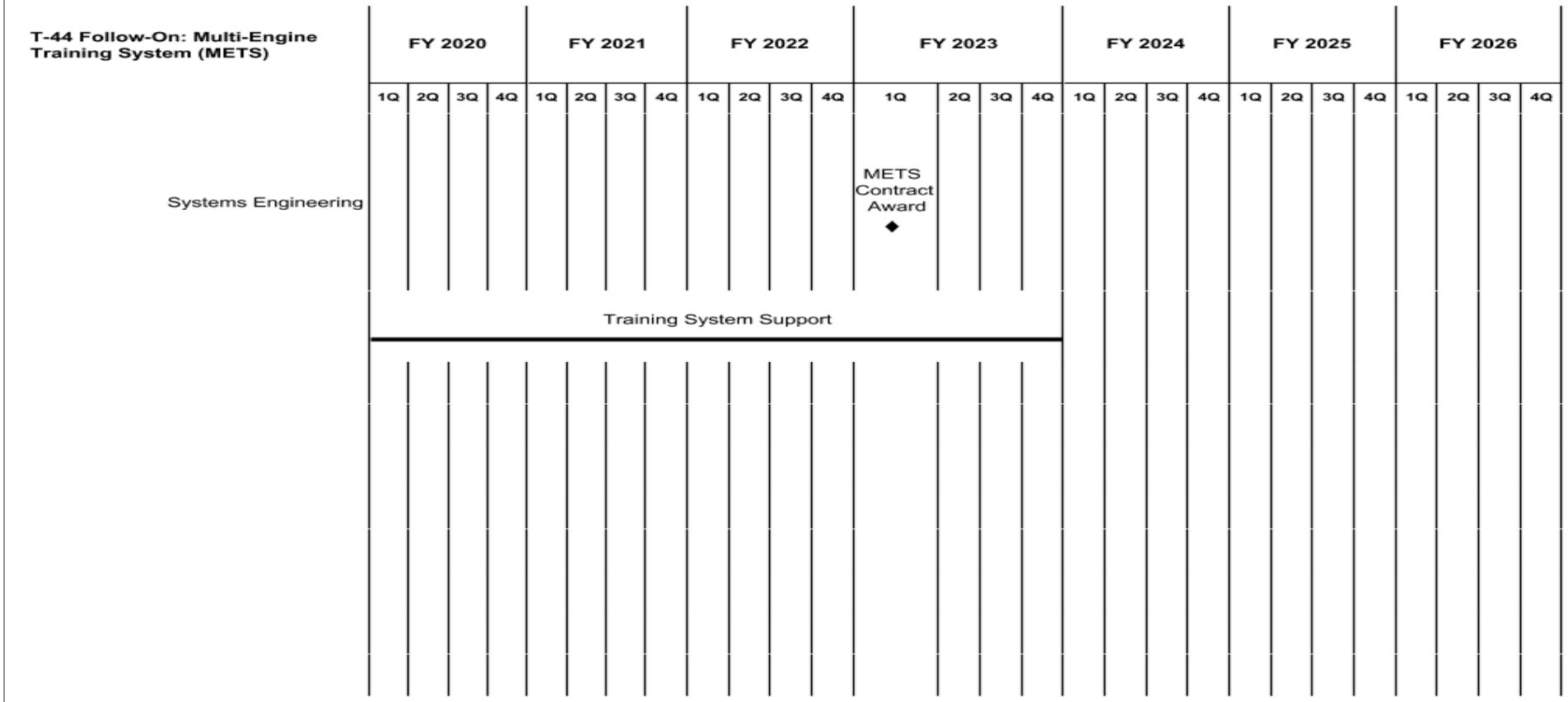
2022PB - 0603208N - 3367

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*



2022PB - 0603208N - 3367

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*



2022PB - 0603208N - 3367

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 3367 / *Training Aircraft Updates*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Training System Improvements				
Product Development: T6 Crash Survivable Cockpit Voice Recorder (CSCVR):	4	2020	4	2021
Product Development: T6 Controlled Flight Into Terrain (CFIT) Avoidance:	2	2020	4	2021
Product Development: T-45 Digital Inline Timer Development:	2	2020	2	2021
Product Development: T-45 Follow-On: Undergraduate Jet Training System (UJTS) AOA: UJTS AoA	1	2020	1	2021
Product Development: T-45 Follow-On: Undergraduate Jet Training System (UJTS) AOA: UJTS Pre-acquisition Studies	1	2022	4	2022
Product Development: T-45 ADSB Out Engineering:	4	2020	3	2022
Study/Analysis/Support: T-6 Joint Study Efforts:	1	2020	4	2021
Study/Analysis/Support: T-45 Integrated Logistics Support:	1	2022	4	2022
Study/Analysis/Support: T-6 Integrated Logistics Support:	1	2020	4	2022
Study/Analysis/Support: T-45 Real-time Air Quality Test Sensor Study:	1	2020	4	2021
T-6 Test & Evaluation: CSCVR IT&E	1	2021	4	2021
T-6 Test & Evaluation: CFIT T&E	1	2021	4	2021
T-6 Test & Evaluation: T-45 Test & Certification:	1	2021	4	2021
Naval Aviation Physiological Episodes				
Product Development: T-45 PE Product Development:	1	2020	4	2020
Product Development: PE Support: T-45 System Engineering	1	2020	4	2020
Product Development: PE Support: T-6 PE Support	1	2020	4	2020
T-44 Follow-On: Multi-Engine Training System (METS)				
Systems Engineering: T-44 Follow-On: METS Training System Support	1	2020	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy											Date: May 2021	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft*				Project (Number/Name) 9099 / *Physiological Episodes*			
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
9099: *Physiological Episodes*	0.000	0.000	1.829	0.806	-	0.806	-	-	-	-	-	-
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: T-45 Physiological Episode Mitigation	0.000	1.075	0.606	0.000	0.606
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 2021 Plans:*** Continue studies & development efforts, utilize associative learning 'artificial intelligence' platform to evaluate aircraft and maintenance data in support of PE root cause investigations for platform improvements for Naval Undergraduate Flight Training Systems, including T-45 Physiological Episode mitigation. ***FY 2022 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 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The FY2022 funding request was decreased by $0.469M due to completion of Physiological Episode Mitigation studies funded in FY21.					
Title: T-6 Physiological Episode Mitigation	0.000	0.754	0.200	0.000	0.200
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 9099 / *Physiological Episodes*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
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 2021 Plans:*** Continue studies and joint development efforts with Air Force for Joint Primary Aircraft Training System (T-6). Conduct test and evaluation of new Onboard Oxygen Generating System (OBOGS) concentrator. ***FY 2022 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. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The FY2022 funding request was decreased by $0.554M due to completion of test and evaluation events funded in FY21.					
Accomplishments/Planned Programs Subtotals	0.000	1.829	0.806	0.000	0.806

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• APN/0569: *T-45 Physiological Episode Mitigation OSIP 012-19*	174.468	154.600	158.772	-	158.772	-	-	-	-	-	-
• APN/0571: *JPATS Physiological Episode Mitigation OSIP 007-20*	21.824	22.682	22.955	-	22.955	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

Efforts under this category are expected to be limited to those efforts meeting thresholds under the abbreviated acquisition category.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft*	Project (Number/Name) 9099 / *Physiological Episodes*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
T45 PE Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.605	Nov 2020	0.292	Nov 2021	-		0.292	-	-	-
T45 PE Engineering Support	WR	Naval Medical Reserach Center : Silver Spring, MD	0.000	0.000		0.400	Nov 2020	0.264	Nov 2021	-		0.264	-	-	-
		Subtotal	0.000	0.000		1.005		0.556		-		0.556	-	-	N/A

Remarks

Cost category deleted for T-6 PE Support; effort realigned to T-6 PE Test & Evaluation to better reflect execution actuals.
Cost category added for T-45 PE Engineering Support; effort previously funded in FY20 under PU 3367.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
T45 PE Test & Evaluation	WR	NSWCPCD : Panama City Beach, FL	0.000	0.000		0.070	Nov 2020	0.050	Nov 2021	-		0.050	-	-	-
T6 PE Test & Evaluation	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.754	Nov 2020	0.200	Nov 2021	-		0.200	-	-	-
		Subtotal	0.000	0.000		0.824		0.250		-		0.250	-	-	N/A

Remarks

Cost category added for T-45 Test & Evaluation; effort previously funded in FY20 under PU 3367.

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		1.829		0.806		-		0.806	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 9099 / *Physiological Episodes*

Physiological Episodes

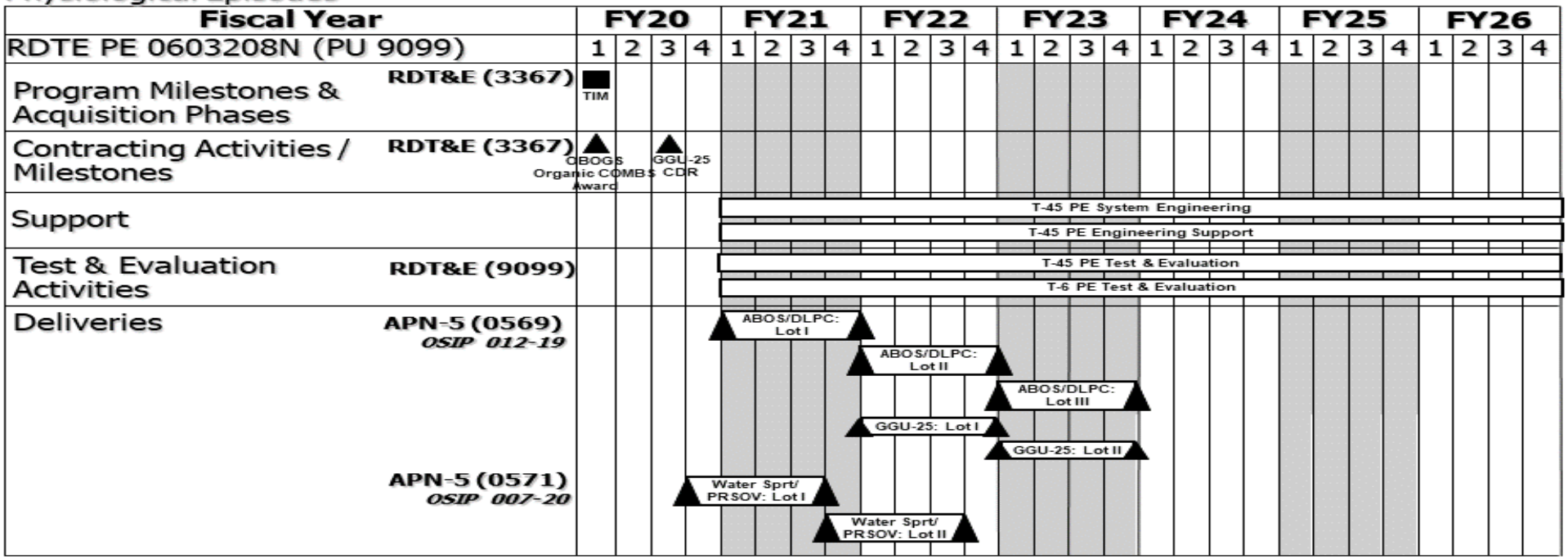


Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / *Training System Aircraft*	**Project (Number/Name)** 9099 / *Physiological Episodes*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Naval Aviation Physiological Episodes				
Support: PE Support: T-45 PE System Engineering	1	2021	4	2022
Support: PE Support: T-6 PE Engineering Support	1	2021	4	2022
Support: PE Test & Evaluation: T-45 PE Test & Evaluation	1	2021	4	2022
Support: PE Test & Evaluation: T-6 PE Test & Evaluation	1	2021	4	2022