

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	26,368	4,837	1,909	1,941	1,980	0	0	0	348,229
4102 Joint Primary Aircraft Training System (JPATS)	23,764	1,837	1,909	1,941	1,980	0	0	0	264,191
4376 T-38 Avionics Upgrade Program (AUP)	2,604	3,000	0	0	0	0	0	0	84,038
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	8

Note: The RDT&E test articles above include the JPATS test aircraft (T-1) funded with FY95 through FY01 funds and Ground Based Training System (GBTS) Aircrew Training Devices (ATD), conversion software, and Training Integration Management System (TIMS) components funded with FY97 through FY01 funds. It also includes two T-38C (AUP equipped) test aircraft and two ATDs.

(U) **A. Mission Description**
 Supports Air Education and Training Command's (AETC) implementation of Specialized Undergraduate Pilot Training (SUPT) and the Department of Defense initiative for joint pilot training. The Joint Primary Aircraft Training System (JPATS) is a joint USAF/USN venture to replace the Services' fleets of primary trainer aircraft (T-37 and T-34 respectively) and associated Ground Based Training Systems (GBTS). The Air Force is the Executive Service. The T-38 AUP is an integrated modernization of the T-38A and AT-38B cockpits to support mission ready fighter and bomber training. T-38 FY2002 funding is for software block updates driven by FAA-mandated changes, National Aerospace System (NAS) requirements, and enhancements identified during test and evaluation. Additionally, there are funds in this project for Phase I testing of propulsion enhancements for the T-38 aircraft and to update T-38 flight performance models, Technical Orders, and AUP software for both aircraft and Aircrew Training Devices for changes brought about by the T-38 Propulsion Modernization Program (PMP).

(U) **B. Budget Activity Justification**
 This program element is in Budget Activity 5, Engineering and Manufacturing Development (EMD) because it primarily involves the missionization of commercial derivative aircraft, equipment, and components.

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DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

05 - Engineering and Manufacturing Development

0604233F Specialized Undergraduate Pilot Training

(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	23,634	4,885	1,914	345,749
(U) Appropriated Value	23,853	4,885		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-48		
b. Small Business Innovative Research	-366			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	3,100			
e. Rescissions	-219			
(U) Adjustments to Budget Years Since FY 2002 PBR			-5	2,480
(U) Current Budget Submit/FY 2003 PBR	26,368	4,837	1,909	348,229
(U) <u>Significant Program Changes:</u>				
FY2001 includes reprogrammings to JPATS.				

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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training
	PROJECT 4102

COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4102 Joint Primary Aircraft Training System (JPATS)	23,764	1,837	1,909	1,941	1,980	0	0	0	264,191

(U) **A. Mission Description**
 The Joint Primary Aircraft Training System (JPATS) is a joint USAF/USN venture to replace the Services' fleets of primary trainer aircraft (T-37 and T-34, respectively) and associated Ground Based Training Systems (GBTS). The aircraft and GBTS will be used to train entry-level student aviators in the fundamentals of flying so they can transition into advanced training tracks leading to qualification as military pilots, navigators, and naval flight officers. The program includes the purchase of aircraft, simulators, and other associated ground-based training devices, Training Integration Management System (TIMS), instructional courseware, and logistics support.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$2,687 Incorporate changes to air vehicle as a result of test findings
 (U) \$19,676 Complete GBTS development
 (U) \$1,401 Mission Support and Government Test
 (U) \$23,764 Total

(U) **FY 2002 (\$ in Thousands)**
 (U) \$1,837 Redetermination and settlement of the Manufacturing Development contract. Studies & non recurring efforts for retrofits
 (U) \$1,837 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$1,909 Studies and non recurring efforts for retrofits
 (U) \$1,909 Total

(U) **B. Project Change Summary**
 FY2001 includes reprogrammings.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training				PROJECT 4102		
(U) C. Other Program Funding Summary (\$ in Thousands)										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	23,764	1,837	1,909	1,941	1,980	0	0	0	264,191
(U)	Other APPN									
(U)	Aircraft Procurement, Air Force, BA-3									
(U)	JPATS	133,996	223,702	209,879	302,800	313,605	344,149	303,250	222,700	2,496,881
(U)	JPATS, BA-6	0	0	39,933	9,059	8,886	258	7,413	30,500	96,049
(U)	JPATS Mod Funding	0	200	1,969	2,022	2,074	2,130	2,185	39,600	50,180
(U)	Military Construction, Air Force									
(U)	PE 0804741F, JPATS	0	0	0	0	2,000	2,000	0	0	9,738
(U)	PE 0804744F, ENJJPT	0	0	6,000	0	0	0	0	0	6,000
(U)	RDT&E, Navy, BA-7									
(U)	PE 0603208N, Training System Aircraft, H1150, JPATS	0	0	0	0	0	0	0	0	11,581
(U)	Aircraft Procurement, Navy, BA-3									
(U)	JPATS	80,607	30,400	0	0	0	0	151,536	1,694,990	2,012,888
(U)	APN 6 Spares	0	0	0	0	0	0	10,581	32,826	43,407
(U)	Military Construction, Navy	1,500	4,100	2,000	0	11,000	13,900	0	6,200	46,900
(U) D. Acquisition Strategy										
Each acquisition was competitively awarded with the intent of maximizing the use of commercially available equipment and best commercial practices. Initially, the JPATS Program competitively awarded two contracts: a Firm Fixed Price Contractor Logistics Support (CLS) - Operations and Maintenance funds - contract and a Fixed Price Incentive Firm manufacturing development (MD)/production contract with seven options. The FY02 follow-on production contract for both the air vehicle and GBTS is Firm Fixed Price.										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
05 - Engineering and Manufacturing Development					0604233F Specialized Undergraduate Pilot Training					4102			
(U) <u>E. Schedule Profile</u>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) Multi-Service OT&E (A) Complete	*												
(U) ATD, Courseware Delivery to Randolph AFB TX	*												
(U) Planning for Rate Review		*											
(U) Begin System Level Formative Evaluation (SLFE)		*											
(U) Complete SLFE			*										
(U) Milestone III					*								
(U) TIMS Delivery to Randolph AFB								X					
(U) IOC Air Force (Moody AFB)								X					
(U) Begin System-Level Multi-Service OT&E								X					
(U) Complete System-level Multi-Service OT&E									X				
(U) Begin RM & A Verification												X	
(U) Durability & Damage Tolerance Testing Complete												X	
(U) IOC Navy (NAS Pensacola)												X	
* Denotes completed milestone													
X Denotes planned milestone													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604233F Specialized Undergraduate Pilot Training				4102		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Aircraft Missionization/Test and Evaluation					2,687		612		665
(U)	Ground Based Training System (GBTS)					19,676		1,225		1,244
(U)	Other Government Costs (OGC)					1,401		0		0
(U)	Total					23,764		1,837		1,909
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon Aircraft Company	C/FPI	5 Feb 96	220,296	220,296	110,435	2,687	0	0	0	113,122
(RAC) *										
Flight Safety Services Corp.	N/A**	26 Sep 97	N/A	N/A	88,954	19,676	0	0	0	108,630
* RAC contract Total Program includes contract value, 'to ceiling,' Engineering Change Order (ECO), and Award Fee										
RAC EAC includes subcontracted GBTS effort, which is not individually reported										
** Subcontract to RAC										
<u>Support and Management Organizations</u>										
Various	Various	Various	N/A	N/A	33,371	1,401	1,837	1,909	3,921	42,439
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					199,389	22,363	0	0	0	221,752
Subtotal Support and Management					33,371	1,401	1,837	1,909	3,921	42,439
Subtotal Test and Evaluation										
Total Project					232,760	23,764	1,837	1,909	3,921	264,191
Project 4102				Page 6 of 11 Pages				Exhibit R-3 (PE 0604233F)		

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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training
PROJECT 4376	

	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4376 T-38 Avionics Upgrade Program (AUP)	2,604	3,000	0	0	0	0	0	0	84,038

(U) **A. Mission Description**
 The T-38 Avionics Upgrade Program (AUP) is an integrated modernization of the T-38A and AT-38B cockpits to support mission-ready fighter training and converts all T-38A and AT-38B aircraft to T-38C configuration. The modernized digital cockpit will include Global Positioning System (GPS), Head-Up Display (HUD), Inertial Navigation System (INS), Multi-Function Displays (MFDs), Up-Front Control Panel (UFCP), Data Transfer System (DTS), No-Drop Bombing System (NDBS), and Hands-On Throttle and Stick (HOTAS) switchology. HUD symbology will be the new USAF standard recently certified as a primary flight reference. Also included is the acquisition of two types of Aircrew Training Devices (ATDs) to replace the existing T-51 simulators. The program includes the design, integration, test, and installation of the cockpit prototype in aircraft, ATDs, and other training devices, as well as engineering services, studies, analysis and support to determine the feasibility of incorporating changes for purposes of making informed life-cycle cost business decisions. Additionally, funds are included in FY2000 and FY2001 for Phase I testing of engine operability/suitability for the T-38 Propulsion Modernization Program (PMP) and to update T-38 flight performance models, Technical Orders, and AUP software for changes brought about by the T-38 PMP. FY2002 funding is for AUP block software updates driven by FAA-mandated changes; National Aerospace System (NAS) requirements such as Global Air Traffic Management (GATM), Joint Precision Approach and Landing System (JPALS), GPS, GPS Embedded Module (GEM) issues (Selective Availability Anti-Spoofing Module (SAASM), precision and GPS approaches); and/or enhancements identified during Development Testing, Operational Testing and Force Development Evaluation (FDE), and AETC operations such as scratch pad, improvements to UFCP, HUD, Built In Test (BIT), mechanization of menus/modes and mission planning/debriefing system, ATD HUD projectors, and Computer Aided Module (CAM) operations.

- (U) **FY 2001 (\$ in Thousands)**
- (U) \$2,364 Update T-38 flight performance models, Technical Orders, and AUP aircraft and Aircrew Training Device (ATD) software for changes brought about by the T-38 PMP
- (U) \$240 Other government costs
- (U) \$2,604 Total

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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training			PROJECT 4376			
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2002 (\$ in Thousands)</u>										
(U)	\$2,500	Develop and test Block 3 and define Block X T-38C AUP aircraft and ATD software for requirements driven by FAA/NAS mandates and/or identified during Test and Evaluation and by AETC operations								
(U)	\$500	Other government cost and test								
(U)	\$3,000	Total								
(U) <u>FY 2003 (\$ in Thousands)</u>										
(U)	\$0	No Activity								
(U)	\$0	Total								
(U) <u>B. Project Change Summary</u>										
No major changes.										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	2,604	3,000	0	0	0	0	0	0	84,038
(U)	Other APPN									
(U)	PE 0804741F, T-38 Avionics Upgrade, BP 1100	82,738	74,296	98,698	98,640	54,806	52,541	40,847	92,823	595,389
(U)	PE 0804741F, T-38 Avionics Upgrade, Initial Spares, BP 1600	0	1,264	2,132	3,688	994	0	0	0	8,078
(U)	PE 0804741F, T-38 Propulsion Modification, BP 1100	30,914	57,707	65,007	67,527	64,256	67,708	70,512	378,824	802,720
(U)	PE 0804741F, T-38 Propulsion Engine Modification, Initial Spares, BP 1600	2,566	4,499	4,974	4,889	4,855	5,379	5,473	22,608	55,243
Project 4376									Exhibit R-2A (PE 0604233F)	

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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training				PROJECT 4376		
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) PE 0804741F, T-38 Ejection System Upgrade, BP 1100		12,800							12,800	
(U) D. Acquisition Strategy										
The T-38 AUP competitively awarded three contracts to a single prime: a) a cost plus award fee EMD contract with six firm fixed price production options; b) a firm fixed price CLS contract for avionics including Contractor Owned and Maintained Base Supply (COMBS) (O&M funds); and c) a fixed price award fee maintenance contract for the current and new Aircrew Training Devices (ATDs). The T-38 PMP will be comprised of four contractual efforts: a J85-5 engine modification and ejector nozzle will be sole source additions to a current contract with General Electric, b) the inlet/former/bulkhead kits will be a competitive award; c) a task order will be established on the existing Contractor Field Team (CFT) contract for kit installation; and d) the T-38 software changes required by the PMP will be added to the existing Boeing contract for the AUP. FY2002 software block updates will be changes to existing contracts.										
(U) E. Schedule Profile										
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>		
		1	2	3	4	1	2	3	4	
(U) First Production ATD Delivered			*							
(U) First Production Aircraft Delivered			*							
(U) Final Functional Configuration Audit (FCA)			*							
(U) IOT&E Phase II Complete			*							
(U) Full Rate Production Decision			*							
(U) Phase I Testing of PMP Complete				*						
(U) Required Assets Available (RAA)					*					
(U) Initial Operational Capability (IOC)						X				
(U) Initiate Software Block 3 on AUP						X				
(U) Field Block 3									X	
* Denotes completed milestone										
X Denotes planned milestone										
Project 4376			Page 9 of 11 Pages				Exhibit R-2A (PE 0604233F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604233F Specialized Undergraduate Pilot Training				PROJECT 4376		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Other Government Costs and test					240		500		0
(U)	Propulsion Modernization Program					2,364		0		0
(U)	Block 3 Software Update					0		2,500		0
(U)	Total					2,604		3,000		0
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
The Boeing Corporation	C/CPAF	31 Jul 96	68,518	68,518	63,654	2,364	2,500	0	0	68,518
St. Louis MO										
ASC/YT WPAFB OH	Various	Annual	N/A	N/A	9,601	50	60	0	0	9,711
GE, Lynn MA	CPFF	Jan 00	750	750	738	0	0	0	0	738
ASC/LP, WPAFB OH	Various	Annual	N/A	N/A	39	0	0	0	0	39
<u>Support and Management Organizations</u>										
SA-ALC/LF Kelly AFB TX	Various	Quarterly	N/A	N/A	194	0	0	0	0	194
AETC Randolph AFB TX	Various	Quarterly	N/A	N/A	150	50	125	0	0	325
OO-ALC/LIR Ogden AFB	Various	Quarterly	N/A	N/A	345	0	15	0	0	360
UT										
<u>Test and Evaluation Organizations</u>										
445 FLTS Edwards AFB CA	PO	Annual	N/A	N/A	3,382	0	300	0	0	3,682
AFOTEC Kirtland AFB NM	PO	Annual	N/A	N/A	331	140	0	0	0	471

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE					
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development		0604233F Specialized Undergraduate Pilot Training			4376		
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
						<u>Total</u>	
						<u>Program</u>	
<u>Subtotals</u>							
Subtotal Product Development		74,032	2,414	2,560	0	0	79,006
Subtotal Support and Management		689	50	140	0	0	879
Subtotal Test and Evaluation		3,713	140	300	0	0	4,153
Total Project		78,434	2,604	3,000	0	0	84,038