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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604800F Joint Strike Fighter EMD	PROJECT 653831
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COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
653831 Joint Strike Fighter	0	0	299,540	1,321,726	1,927,241	1,853,319	1,631,937	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 The Joint Strike Fighter (JSF) program will develop and field a family of aircraft that meets the needs of the USN, USAF, and USMC and allies, with optimum commonality among the variants to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding for the program.

PROGRAM FUNDING BREAKOUT REFLECTS NAVY AND AIR FORCE FUNDING. DEPICTED FUNDING EXCLUDES ANTICIPATED FOREIGN FUNDING FOR EMD (TBD).

(U) **FY 1999 (\$ in Thousands)**

(U) \$0 No Activity
 (U) \$0 Total

(U) **FY 2000 (\$ in Thousands)**

(U) \$0 No Activity
 (U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**

(U) \$595,502 Prepare for and commence execution of Engineering and Manufacturing Development (EMD) for a tri-service family of aircraft, continue development of an alternate engine for production and provide mission support, including program office functions.
 (U) \$595,502 Total

Notes:
 - This program element continues development efforts budgeted in Program Element 0603800F prior to and during fiscal year 2001.
 - December 1998 Selected Acquisition Report (SAR) reflected total EMD cost estimate of \$19.8B (\$TY) funded by USAF, USN, and anticipated (but not finalized) foreign sources.

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05 - Engineering and Manufacturing Development			0604800F Joint Strike Fighter EMD				653831			
(U) <u>B. Budget Activity Justification</u>										
This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT encompassing new end-item engineering and manufacturing development for the next generation strike fighter prior to production approval decision.										
(U) <u>C. Program Change Summary (\$ in Thousands)</u>										
			<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>	<u>Total Cost</u>		
(U)	Previous President's Budget (FY 2000 PBR)		0		0		536,586	TBD		
(U)	Appropriated Value									
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions									
	b. Small Business Innovative Research									
	c. Omnibus or Other Above Threshold Reprogram									
	d. Below Threshold Reprogram									
	e. Rescissions		0							
	f. Other		0					TBD		
(U)	Adjustments to Budget Years Since FY 2000 PBR					-237,046				
(U)	Current Budget Submit/FY 2001 PBR		0			299,540		TBD		
(U) <u>Significant Program Changes:</u>										
The FY 2001 decrease of \$237,046 reflects a -\$107,000 transfer to JSF Pre-EMD Program Element 0603800F, a -\$130,000 due to JSF EMD rephasing and a program adjustment decrease of \$46.										
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>										
		<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</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									
(U)	RDT&E 0603800F	456,137	249,088	129,538	0	0	0	0		1,695,723
(U)	RDT&E 0603800N	471,290	239,907	131,566	0	0	0	0		1,742,506
(U)	RDT&E 0603800E	0	0	0	0	0	0	0		118,006
(U)	UNITED KINGDOM	34,096	26,101	0	0	0	0	0		200,291
(U)	MULTI-LATERAL (Note 1)	7,500	5,100	1,700	0	0	0	0		32,100
(U)	CANADA	3,000	2,700	600	0	0	0	0		10,600
Project 653831									Page 2 of 6 Pages	Exhibit R-2 (PE 0604800F)

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(U) D. Other Program Funding Summary (\$ in Thousands)

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</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) ITALY	10,000	0	0	0	0	0	0		10,000
(U) RDT&E 0604800N	0	0	295,962	1,324,048	1,932,487	1,859,938	1,639,111	Continuing	TBD
(U) Other APPN									
(U) USAF 0207142F	0	0	0	0	0	18,000	587,308	Continuing	TBD
(U) APN-1 0204800N	0	0	0	0	0	0	57,735	Continuing	TBD

Note 1: Multi-Lateral countries include Netherlands, Norway and Denmark.

Note 2: 'FY99 1999 Actual - RDT&E 0603800F' understated in ABIDES by \$2.537M. Below Threshold Reprogram (BTR) not reflected in ABIDES database.

(U) E. Acquisition Strategy

Ongoing pre-EMD activities center around three distinct objectives that provide a sound foundation for the start of EMD in fiscal year 2001:

- (1) facilitating the Services' development of fully validated, affordable operational requirements;
- (2) lowering risk by investing in and demonstrating key leveraging technologies that lower the cost of development, production and ownership; and
- (3) demonstrating operational concepts.

Early warfighter and technologist interaction is an essential aspect of the requirements definition process, and key to achieving JSF affordability goals. To an unprecedented degree the JSF Program is using cost-performance trades early, as an integral part of the weapon system development process. The Services are defining requirements through an iterative process, balancing weapon system capability against life cycle cost at every stage. Each iteration of requirements is provided to industry. They evolve their designs and provide cost data back to the warfighters. The warfighters evaluate trades and make decisions for the next iteration. This process produced the Services' first Joint Initial Requirements Document (JIRD I) in 1995 and the second and third iterations in 1997 and 1998, respectively. The Services continue to refine their requirements through this process, which will culminate in the Operational Requirements Document (ORD) in FY 2000 to support the Milestone II decision.

A sizable technology maturation effort is underway to reduce risk and life cycle cost (LCC) through technology maturation and demonstration. The primary emphasis is on technologies which have been identified as high payoff contributors to affordability, supportability, survivability, and lethality. Numerous demonstrations have been accomplished and others are in process to validate performance and life cycle cost impact to component, subsystem, and the total system.

A multi-year \$2.2 billion JSF Concept Demonstration effort commenced in November 1996 with competitive contract awards to Boeing and Lockheed Martin for Concept Demonstration Programs. These competing contractors will build and fly concept demonstrator aircraft, conduct concept unique ground demonstrations, and

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(U) **E. Acquisition Strategy Continued**
 continue refinement of their ultimate delivered weapon system concepts. Specifically, Boeing and Lockheed Martin will demonstrate commonality and modularity, STOVL hover and transition, and low speed handling qualities of their respective weapon system concepts. Pratt and Whitney is providing propulsion hardware and engineering support for both Boeing's and Lockheed Martin's on-going JSF Concept Demonstration efforts. The JSF Alternate Engine Program with General Electric, continues development of an alternate engine source for production.

Current program efforts will culminate in downselect to a single prime weapon system contractor for EMD at Milestone II in FY 2001. JSF procurement (USAF variant) is planned to begin in FY 2005, with advance procurement for Lot 1 in FY04. Procurement for USMC begins with Lot 2 in FY06. Procurement of the Navy variant begins with Lot 4 in FY08.

(U) **F. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
(U) Milestone II and Award of EMD Contract	1	2	3	4	1	2	3	4	1	2	3	4
										X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604800F Joint Strike Fighter EMD			PROJECT 653831		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U) Engineering and Manufacturing Development (EMD) (Note 1)					0	0	595,502			
(U) Total					0	0	595,502			
Note 1:										
- Additional funding breakout is TBD pending source selection for JSF EMD in FY 2001.										
- Excludes TBD anticipated foreign funding.										
(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 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
EMD (Note 1)	TBD	TBD			0	0	0	595,502	Continuing	TBD
<u>Product Development Organizations</u>										
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
Note 1:										
- Additional funding breakout is pending source selection for JSF EMD in FY 2001.										
- Excludes TBD anticipated foreign funding.										
- Total program funding is TBD.										
(U) Government Furnished Property:										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
<u>Support and Management Property</u>										
<u>Test and Evaluation Property</u>										

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(U) Government Furnished Property Continued:

Note:
 - Additional funding breakout is pending source selection for JSF EMD in FY 2001.
 - Total program funding is TBD.

<u>Subtotals</u>	<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	0	0	0	595,502	TBD	TBD
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project	0	0	0	595,502	TBD	TBD

Note:
 - Excludes TBD anticipated foreign funding.
 - Total program funding is TBD.