

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603106F Logistics Systems Technology	PROJECT 2745
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<i>COST (\$ In Thousands)</i>	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
2745 Logistics Performance and Support Technology	14,115	9,069	10,786	14,015	15,603	15,566	16,270	12,876	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: Beginning in FY 1999, three projects (Project 2745, Logistics for Contingency Operations and Weapons Systems Support; Project 2940, Technology for Design and Maintenance; and Project 2950, Improved Logistics and Maintenance Performance) were combined into a single project (Project 2745, Logistics Performance and Support Technology). The total project costs for Project 2745 reflect this consolidation.

(U) A. Mission Description: This Advanced Technology Development program develops and demonstrates cost-effective technologies to improve the design, performance, and support of current and future weapon systems. This effort also develops technology to incorporate human operator, maintenance, and support considerations into the weapon systems design process and to make engineering, product support, and maintenance data electronically available throughout weapon systems' life cycles. The program provides more realistic logistics planning and combat capability assessment tools, provides technologies to reduce deployment airlift and footprint requirements, improves logistics information command and control and asset visibility, provides critical logistics risk reduction technology, and helps control total weapon systems' life cycle costs.

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(U) <u>FY 1998 (\$ in Thousands):</u>		
– (U) \$ 2,612	Developed and demonstrated technologies to enable/streamline aircraft maintenance processes. Field tested, documented, and transitioned technologies to repair composite and low-observable materials in battle and accident damaged aircraft. Continued development of electronic technical data, software, and algorithms to support the automated assessment of aircraft battle damage. Gathered baseline assessment performance data, and completed initial field test of damage assessment using paper technical orders.	
– (U) \$ 4,462	Developed and demonstrated tools and technologies to maximize efficiency and effectiveness of Air Force operational deployments. Developed, tested, documented, and transitioned technologies to enhance rapid logistics contingency planning, deployments, and operations. Transitioned specific planning tools to support deployment planning and airlift reduction, and to support beddown planning and operations. Began development of deployable capability to process waste materials generated in deployed operation to environmentally safe state and minimize requirements to return hazardous waste to continental U.S. Fully defined system concept for next generation highly reliable, reconfigurable, and easily deployable multi-function, modular support equipment.	
– (U) \$ 5,443	Developed and demonstrated analytical tools to improve efficiency of Air Force depot maintenance operations and logistics information systems. Transitioned analytical tool suites to improve the efficiency and affordability of organic depot maintenance processes and the interaction between depots and their customers at the operational wings.	
– (U) \$ 1,598	Completed, demonstrated, and transitioned analysis tools to ensure tight correlation between specific operational user requirements and systems acquisition, repair, and modification. Completed and transitioned advanced computer-based air vehicle maintainability assessment tools using high fidelity human models and maintenance task simulations to ensure designed-in supportability of fielded weapon systems.	
– (U) \$14,115	Total	
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<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$2,196 Develop, demonstrate, and transition technologies to enable/streamline aircraft maintenance processes by continuing development of electronic technical data, algorithms, and software to support automated assessment of battle damaged aircraft. Field test with trained aircraft damage assessors. - (U) \$4,668 Develop and demonstrate tools and technologies to maximize efficiency and effectiveness of Air Force operational deployments by continuing to develop technologies for next generation, multi-function, modular support equipment that are highly reliable, reconfigurable, and easily deployable. Continue to develop and field test technologies to enhance rapid contingency planning, deployments, and operations. Begin development of technology to provide wing commanders/senior logisticians with advanced information and management capabilities. - (U) \$1,453 Develop and demonstrate analytical tools by defining artificial intelligence requirements to improve efficiency of Air Force depot maintenance operations and logistics information systems. - (U) \$ 504 Investigate technologies to demonstrate the feasibility of downloading aircraft status information anytime during a flight (Passive Aircraft Status System). - (U) \$ 248 Identified as a source for SBIR. - (U) \$9,069 Total <p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 1,036 Develop and demonstrate technologies to enable/streamline aircraft maintenance processes by beginning development of diagnostics capability to provide technicians with more effective tools for isolating faults on the software intensive, reconfigurable systems found on modern aircraft and advanced aircraft systems currently in development. - (U) \$ 6,568 Develop and demonstrate tools and technologies to maximize efficiency and effectiveness of Air Force operational deployments by continuing development of technology to provide wing commanders/senior logisticians with advanced information and management capabilities, including rapid access to real-time resources status information, proactive problem identification, decision support, and process tracking. Begin development of technology to provide enhanced capability for units to manage logistics resources for deployed operations including identification of deployment support requirements, management of waste, medical and non-medical equipment, and deployment processes. Demonstrate agile/lean deployment capability, reduced airlift requirements, and reduced on-site footprint using highly-reliable, modular, multi-function support equipment for flightline maintenance. - (U) \$ 3,182 Develop and demonstrate analytical tools by using intelligent software agents and realistic human behavior models to improve the logistics aspects and operational fidelity of large-scale synthetic environments and wargames. - (U) \$10,786 Total 		
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<p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> – (U) \$ 1,210 Develop and demonstrate technologies to enable/streamline aircraft maintenance processes by continuing development of diagnostics capability to provide technicians with more effective tools for isolating faults on the software intensive, reconfigurable systems found on modern aircraft and advanced aircraft systems currently in development. – (U) \$ 7,438 Develop and demonstrate tools and technologies to maximize efficiency and effectiveness of Air Force operational deployments by continuing development of technology to provide enhanced capability for units to manage logistics resources for deployed operations including identification of deployment support requirements, management of waste, medical and non-medical equipment, and deployment processes. Continue development of technology to provide wing commanders/senior logisticians with advanced information and management capabilities, including rapid access to real-time resources status information, proactive problem identification, decision support, and process tracking. Define requirements for advanced material handling equipment and software tools which will significantly streamline cargo handling and on-load/off-load operations at aerial ports and at deployed locations. – (U) \$ 3,763 Continue development of advanced modeling and simulation technologies to improve the operational fidelity and logistics representation in large-scale synthetic environments and wargames. Research and develop high leverage, high-payoff technology concepts to improve the supportability of space-based assets and ground support segments of space operations. – (U) \$ 1,604 Develop tools and methods that automatically generate maintenance information and the associated maintenance/repair manuals directly from design, engineering, and supportability analysis data. – (U) \$14,015 Total 		
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(U) **B. Budget Activity Justification:** This program is in Budget Activity 3, Advanced Technology Development, since it develops and demonstrates cost-effective technologies to improve the design, performance, and support of current and future weapon systems.

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

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget/FY 1999 PB	14,502	8,677	7,883	10,381	Cont
(U) Appropriated Value	15,338	9,177			
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions	-502	-108			
b. SBIR	-345				
c. Omnibus/Other Above Threshold Reprogrammings	-99				
d. Below Threshold Reprogrammings	-277				
(U) Adjustments to Budget Year Since FY 1999 PB			2,903	3,634	
(U) Current Budget Submit/FY 2000 PB	14,115	9,069	10,786	14,015	Cont

(U) Significant Program Changes: The adjustments in FY 2000 and FY 2001 are due to increased Air Force emphasis on cognitive and logistics modeling and for agile support for the Expeditionary Aerospace Forces initiative.

FY 1999: \$248 identified as a source for SBIR.

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<p>(U) D. <u>Other Program Funding Summary:</u></p> <p>(U) <u>Related Activities:</u></p> <ul style="list-style-type: none">- (U) PE 0207219F, Advanced Tactical Fighter.- (U) PE 0602201F, Aerospace Flight Dynamics.- (U) PE 0602202F, Human Effectiveness Applied Research.- (U) PE 0603721N, Integrated Diagnostic System.- (U) PE 0604708F, Generic Integrated Maintenance Diagnostics Systems.- (U) PE 0604740F, Computer Resource Management Technology.- (U) PE 0605801A, Pollution Prevention Research and Development.- (U) PE 0708011F, Manufacturing Technology.- (U) This project has been coordinated through the Reliance process to harmonize efforts and eliminate duplication. <p>(U) E. <u>Acquisition Strategy:</u> Not Applicable.</p> <p>(U) F. <u>Schedule Profile:</u> Not Applicable.</p>		
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