

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 1999</b>
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<b>BUDGET ACTIVITY</b> <b>3 - Advanced Technology Development</b>	<b>PE NUMBER AND TITLE</b> <b>0603205F Flight Vehicle Technology</b>
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COST (\$ In Thousands)	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
Total Program Element (PE) Cost	4,998	7,007	5,992	4,258	521	440	0	0	Continuing	Continuing
2978 Flight Vehicle Technologies	3,806	5,151	4,624	3,585	277	270	0	0	Continuing	Continuing
4398 Air Base Technology	1,192	1,856	1,368	673	244	170	0	0	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: This program element (PE) will be eliminated in FY 2004 and the ongoing technical programs will be transferred to PEs 0603245F, Flight Vehicle Technology Integration, and 0603112F, Advanced Materials for Weapon Systems.

(U) **A. Mission Description:** This Advanced Technology Development program develops and demonstrates advanced aerospace vehicle subsystems, aerodynamic/flight controls, and vehicle-pilot interface technologies for improved aerospace vehicle performance, decreased vulnerability, and reduced logistics support. This program also demonstrates technologies for fixed and bare base assets, including airfield pavements, energy systems, air base survivability, air base recovery, protective systems, fire protection, and crash rescue.

(U) **B. Budget Activity Justification** This program is in the Budget Activity 3, Advanced Technology Development, since it develops and demonstrates technologies for existing aerospace vehicle system upgrades and/or new system developments that have military utility and address warfighter needs.

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<b>(U) C. <u>Program Change Summary (\$ in Thousands):</u></b>					
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost Cont</u>
(U) Previous President's Budget/FY 1999 PB	5,441	7,035	7,476	7,043	
(U) Appropriated Value	5,766	7,035			
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions	-188	-28			
b. SBIR	-140				
c. Omnibus/Other Above Threshold Reprogrammings	-37				
d. Below Threshold Reprogrammings	-403				
(U) Adjustments to Budget Year Since FY 1999 PB			-1,484	-2,785	
(U) Current Budget Submit/FY 2000 PB	4,998	7,007	5,992	4,258	Cont.
 (U) Significant Program Changes: Changes to this program since the previous President's Budget are due to higher priorities within the Science and Technology (S&T) Program.					
FY 1999: \$212 identified as a source for SBIR.					

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 1999</b>		
<b>BUDGET ACTIVITY</b> <b>3 - Advanced Technology Development</b>				<b>PE NUMBER AND TITLE</b> <b>0603205F Flight Vehicle Technology</b>				<b>PROJECT</b> <b>2978</b>		
<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
2978 Flight Vehicle Technologies	3,806	5,151	4,624	3,585	277	270	0	0	Continuing	Continuing
<p><b>(U) A. <u>Mission Description:</u></b> This program designs, develops, and demonstrates manned and unmanned aerospace vehicle technologies for improved performance, reliability, maintainability, and supportability while increasing affordability, and mission effectiveness. It is focused on exploiting advancements in aerospace vehicle component and subsystem technologies, aerodynamic/flight control technologies, and vehicle-pilot integration technologies.</p> <p><b>(U) <u>FY 1998 (\$ in Thousands):</u></b></p> <ul style="list-style-type: none"> <li>- (U) \$2,313      Developed real-time flight attack replanning technologies to enhance high priority target kill. Provides on-board software for automatic in-flight mission replanning for the foundation of future technology developments for aerospace vehicles.</li> <li>- (U) \$462        Developed software for multiple ship integrated control strategies to enable the safe and effective cooperative employment of manned and unmanned strike vehicles for air combat operations.</li> <li>- (U) \$1,031     Developed and demonstrated advanced integrated aerospace vehicle subsystems which included flight worthy electric stabilator to provide increased performance and decreased vulnerability while decreasing both cost and supportability requirements.</li> <li>- (U) \$3,806     Total</li> </ul> <p><b>(U) <u>FY 1999 (\$ in Thousands):</u></b></p> <ul style="list-style-type: none"> <li>- (U) \$2,205     Develop technologies for automatic in-flight replanning for the cockpit to reduce pilot workload. These benefits will be seen in future aerospace vehicle designs and technologies.</li> <li>- (U) \$1,023     Develop algorithms for multiple ship integrated control strategies to enable the safe and effective cooperative employment of manned and unmanned strike aerospace vehicles for air combat operations.</li> <li>- (U) \$1,767     Develop advanced integrated aerospace vehicle subsystems to provide increased performance and decreased vulnerability while decreasing both cost and logistic supportability requirements. Fabricate flight critical stabilator actuator to demonstrate operational and military utility.</li> <li>- (U) \$156        Identified as a source for SBIR.</li> <li>- (U) \$5,151     Total</li> </ul>										
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BUDGET ACTIVITY <b>3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603205F Flight Vehicle Technology</b>	PROJECT <b>2978</b>
<p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> <li>- (U) \$2,209 Develop technologies for automatic in-flight replanning for the cockpit to reduce pilot workload. These benefits will be seen in future aerospace vehicle designs and technologies.</li> <li>- (U) \$854 Develop algorithms for multiple ship integrated control strategies to enable the safe and effective cooperative employment of manned and unmanned strike aerospace vehicles for air combat operations.</li> <li>- (U) \$1,561 Develop advanced integrated aerospace vehicle subsystems to provide increased performance and decreased vulnerability while decreasing both cost and logistic supportability requirements. Continue flight critical stabilator actuator test to demonstrate operational and military utility.</li> <li>- (U) \$4,624 Total</li> </ul> <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> <li>- (U) \$1,649 Develop technologies for automatic in-flight re-planning for the cockpit to reduce pilot workload. These benefits will be seen in future aerospace vehicle designs and technologies.</li> <li>- (U) \$694 Develop algorithms for multiple ship integrated control strategies to enable the safe and effective cooperative employment of manned and unmanned strike aerospace vehicles for air combat operations.</li> <li>- (U) \$1,242 Develop advanced integrated aerospace vehicle subsystems to provide increased performance and decreased vulnerability while decreasing both cost and logistic supportability requirements. Continue flight critical stabilator actuator test to demonstrate operational and military utility.</li> <li>- (U) \$3,585 Total</li> </ul> <p>(U) <b>B. <u>Project Change Summary - Description of Significant Changes:</u></b> Changes to this program since the previous President's Budget are due to higher priorities within the Science and Technology (S&amp;T) Program.</p> <p>(U) <b>C. <u>Other Program Funding Summary:</u></b></p> <p>(U) <u>Related Activities:</u></p> <ul style="list-style-type: none"> <li>- (U) PE 0602201F, Aerospace Flight Dynamics.</li> <li>- (U) PE 0603216F, Aerospace Propulsion and Power.</li> <li>- (U) PE 0603245F, Flight Vehicle Technology Integration.</li> <li>- (U) This project has been coordinated through the Reliance process to harmonize efforts and eliminate duplication.</li> </ul> <p>(U) <b>D. <u>Acquisition Strategy:</u></b> Not Applicable.</p> <p>(U) <b>E. <u>Schedule Profile:</u></b> Not Applicable.</p>		
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<b>BUDGET ACTIVITY</b> <b>3 - Advanced Technology Development</b>				<b>PE NUMBER AND TITLE</b> <b>0603205F Flight Vehicle Technology</b>				<b>PROJECT</b> <b>4398</b>		
<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
4398 Air Base Technology	1,192	1,856	1,368	673	244	170	0	0	Continuing	Continuing
<p><b>(U) A. <u>Mission Description:</u></b> This project develops technologies for fixed and bare base operations, including airfield pavements, energy systems, air base survivability, air base recovery, protective systems, fire protection, and crash rescue.</p> <p><b>(U) <u>FY 1998 (\$ in Thousands):</u></b></p> <ul style="list-style-type: none"> <li>- (U) \$992      Developed and demonstrated aircraft and air base fire fighting technologies including environmentally-safe fire fighting agents, vehicles, equipment, personnel protective clothing, fire risk assessment techniques, and fire fighter training systems.</li> <li>- (U) \$200      Developed and demonstrated advanced shelter hardening techniques to protect existing air base buildings and assets to support Air Expeditionary Force (AEF) operations</li> <li>- (U) \$1,192      Total</li> </ul> <p><b>(U) <u>FY 1999 (\$ in Thousands):</u></b></p> <ul style="list-style-type: none"> <li>- (U) \$624      Develop aircraft and air base fire fighting and power generation technologies including clean environmentally safe fire fighting agents, equipment, personnel protective clothing, fire risk assessment techniques, and fire fighter training systems.</li> <li>- (U) \$1,013      Develop technologies, utilities, and shelters that improve air base operations. These technologies include completion of the acoustic cycle heat pump that reduces airlift requirements in support of AEF operations rapid deployment.</li> <li>- (U) \$163      Construct an air transportable shelter advanced development model for field testing to support AEF operations rapid deployment.</li> <li>- (U) \$56      Identified as a source for SBIR.</li> <li>- (U) \$1,856      Total</li> </ul>										
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<p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> <li>- (U) \$528 Develop aircraft and air base fire fighting and power generation technologies including clean environmentally safe fire fighting agents, equipment, personnel protective clothing, fire risk assessment techniques, and fire fighter training systems.</li> <li>- (U) \$727 Develop technologies, utilities, and shelters that improve air base operations. These technologies include completion of the acoustic cycle heat pump that reduces airlift requirements in support of Air Expeditionary Force (AEF) operations rapid deployment.</li> <li>- (U) \$113 Construct an air transportable shelter advanced development model for field testing to support AEF operations.</li> <li>- (U) \$1,368 Total</li> </ul> <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> <li>- (U) \$260 Develop aircraft and air base fire fighting and power generation technologies including clean environmentally safe fire fighting agents, equipment, personnel protective clothing, fire risk assessment techniques, and fire fighter training systems.</li> <li>- (U) \$357 Develop technologies, utilities, and shelters that improve air base operations. These technologies include completion of the acoustic cycle heat pump that reduces airlift requirements in support of AEF operations rapid deployment.</li> <li>- (U) \$56 Construct an air transportable shelter advanced development model for field testing to support AEF operations rapid deployment.</li> <li>- (U) \$673 Total</li> </ul> <p>(U) <b>B. <u>Project Change Summary - Description of Significant Changes:</u></b> Changes to this program since the previous President's Budget are due to higher priorities within the Science and Technology (S&amp;T) Program.</p>		
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<b>3 - Advanced Technology Development</b>	<b>0603205F Flight Vehicle Technology</b>	<b>4398</b>
<p>(U) <b>C. <u>Other Program Funding Summary:</u></b></p> <p>(U) <u>Related Activities:</u></p> <ul style="list-style-type: none"> <li>- (U) PE 0602201F, Aerospace Flight Dynamics.</li> <li>- (U) PE 0603307F, Air Base Operability Advanced Technology Development.</li> <li>- (U) PE 0603231F, Crew Systems and Personnel Protection Technology.</li> <li>- (U) This project has been coordinated through the Reliance process to harmonize efforts and eliminate duplication.</li> </ul> <p>(U) <b>D. <u>Acquisition Strategy:</u></b> Not Applicable.</p> <p>(U) <b>E. <u>Schedule Profile:</u></b> Not Applicable.</p>		
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