

**UNCLASSIFIED**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604735F Combat Training Ranges					PROJECT 2286	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2286	Combat Training Range Equipment	11,484	16,407	25,943	19,000	21,277	21,387	20,260	20,843	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03 - FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 Air Combat Training Systems (ACTS) provide equipment for Air Force combat training ranges to support mission training and evaluation of aircrews, as well as the operational testing of weapons systems and tactics under simulated combat conditions. This program develops the electronic, telecommunications, and instrumentation equipment/systems for the training ranges. ACTS are interoperable with Navy combat training ranges, and provide the capabilities to train aircrews in air-to-air combat, air-to-ground combat, and electronic warfare, while providing real-time monitoring and control of aircraft during large force exercises and recording events for post-mission debrief and analysis. This program develops advanced threat emitters. The Mini-Multiple Threat Emitter System (MUTES) Modification Program (M3P) upgrades existing equipment to satisfy Air Force Electronic Warfare training requirements. The required M3P modifications will enable Mini-MUTES to incorporate the latest, most lethal advanced surface-to-air threats. The Advanced Threat Emitter System (ATES) will be developed to provide a comprehensive suite of threat signals to aircrews during simulated penetrations of hostile airspace for surveillance and bombing runs, for aircrew tactics and electronic combat training. ATES will complement existing threat simulators deployed on test and training ranges by emulating signals which simulate the most advanced air defense and threat radars. ATES has potential Joint applicability. This program element also funds aircraft/pod interfaces, software interoperability among service ranges and development and integration of the Range Security Initiative (RSI) (formerly known as Advanced Message Oriented Data Security Module - AMODSM) for range/aircraft data links-specifically the Nellis Air Combat Training System (NACTS) which supports Red Flag, Green Flag and USAF Fighter Weapons School training. The Navy led Joint Tactical Combat Training System (JTCTS) development contract was stopped in FY01. The JTCTS program is undergoing acquisition restructure in FY01 and FY02. The Air Force will participate in the restructure to include Air Force unique requirements in the program.

Target System Development PE 64258F was consolidated into this PE starting in FY02. Aerial Targets are used to determine air-to-air weapons systems accuracy and reliability by developing improved aerial target systems for Air Force weapons system test and evaluation. It develops full-scale and subscale aerial targets, and target control systems. Specialized target payload subsystems are developed for requirements such as: missile scoring, electronic and infrared (IR) countermeasures, radar, and IR signature augmentation, and chaff and flare dispensing.

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<b>05 - Engineering and Manufacturing Development</b>	<b>0604735F Combat Training Ranges</b>	<b>2286</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2000 (\$ in Thousands)</u></b>		
(U) \$2,297	Continued CTR basic operating support, and system acquisition and engineering support for range and threat systems	
(U) \$620	Continued interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development	
(U) \$2,856	Developed and integrate Range Security Initiative (RSI) for the NACTS Range, and develop RSI design concept for the Tyndall Range Expansion (TRE).	
(U) \$4,647	Continued Mini-(MUTES) Multiple Threat Emitter System Modification Program (M3P)	
(U) \$964	Continued development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office	
(U) \$100	Continued Range Instrumentation Technical Support (RITS) efforts. This is a name-change from the ACTS Software Sustainment Evaluation and Test (ASSET) effort.	
(U) \$11,484	Total	
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$3,720	Continued development of the RSI for NACTS/TRE	
(U) \$2,858	Continued CTR basic operating support, and system acquisition and engineering support for range and threat systems	
(U) \$492	Continued interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development	
(U) \$2,543	Continued development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office	
(U) \$6,649	Continued Mini-(MUTES) Multiple Threat Emitter System Modification Program (M3P)	
(U) \$145	Continued Range Instrumentation Technical Support efforts	
(U) \$16,407	Total	
The following net transactions are not reflected in the FY01 program total: BTR - \$78K, and SBIR -\$561K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.		
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$1,847	Continue development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office	
(U) \$14,506	Begin Advanced Threat Emitter System development.	
(U) \$2,700	Continue interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development	
(U) \$2,700	Continue JTCTS efforts for program restructure to include acquisition strategy development and initial testing	
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		June 2001		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>05 - Engineering and Manufacturing Development</b>	<b>0604735F Combat Training Ranges</b>	<b>2286</b>		
<b>(U) A. Mission Description Continued</b>				
<b>(U) FY 2002 (\$ in Thousands) Continued</b>				
(U) \$192	Continue Aerial Target basic operating support and system acquisition and engineering support. (Moved from PE 64258F.)			
(U) \$145	Continue Range Instrumentation Technical Support efforts			
(U) \$3,853	Continue CTR basic operating support, and system acquisition and engineering support for range and threat systems			
(U) \$25,943	Total			
<b>(U) B. Budget Activity Justification</b>				
This program is in budget activity 5 - Engineering and Manufacturing Development because the Combat Training Ranges (CTR) Program directly contributes to the effectiveness and survivability of US combat forces by developing range instrumentation and training systems to increase the effectiveness of the training spectrum from individual aircrew skill training to large-scale exercises.				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	11,828	12,559	13,124	TBD
(U) Appropriated Value	12,020	16,559		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-112	-116		
b. Small Business Innovative Research	-343			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-34			
e. Rescissions	-47	-36		
(U) Adjustments to Budget Years Since FY 2001 PBR			12,819	
(U) Current Budget Submit/FY 2002 PBR	11,484	16,407	25,943	TBD
<b>(U) Significant Program Changes:</b>				
FY00 includes \$5.8M Congressional Plus-Up to fund M3P disconnects and to begin development for Range Security Initiative for NACTS.				
FY01 includes \$4.0M Congressional Plus-Up to continue development for Range Security Initiative for NACTS.				
FY02 includes Advanced Threat Emitter System (ATES) development new start effort				
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604735F Combat Training Ranges				PROJECT 2286							
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>																
		<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>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>Estimate</u>	<u>Complete</u>						
(U)	PE27429F: Appn: Other Procurement, AF (OPAF) Program Title: Combat Training Ranges	44,345	46,233	36,685	16,578	23,828	23,854	24,803	23,071	Continuing	TBD					
(U)	Initial Spares	2,055	3,772	785	786	803	820	837	856	Continuing	TBD					
(U)	Total OPAF	46,400	50,005	37,470	17,364	24,631	24,674	25,640	23,927	Continuing	TBD					
(U)	PE27429F: Appn: Aircraft Procurement, AF(APAF), Program Title: Combat Training Ranges	16,736	17,941	13,171	10,230	10,918	9,463	10,864	13,278	Continuing	TBD					
(U)	Initial Spares	265	1,244	1,379	1,406	1,441	1,477	1,509	1,542	Continuing	TBD					
(U)	Total APAF	17,001	19,185	14,550	11,636	12,359	10,940	12,374	14,820	Continuing	TBD					
(U)	PE35116F: Appn: Aircraft Procurement, AF (APAF), Program title: Aerial Targets	30,029	32,614	36,884	37,441	47,150	39,421	40,238	41,090	Continuing	TBD					
(U)	Initial Spares	885	605	101	833	1,009	505	505	506	Continuing	TBD					
(U)	Total APAF	30,914	33,219	36,985	38,274	48,159	39,926	40,743	41,596	Continuing	TBD					
<b>(U) E. Acquisition Strategy</b> The acquisition strategy is competitive, with cost plus contracts.																
<b>(U) F. Schedule Profile</b>																
					<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
					1	2	3	4	1	2	3	4	1	2	3	4
(U)	Nellis Air Combat Training System (NACTS)															
(U)	NACTS Range Security Initiative (RSI) Contract Award										*					
(U)	Mini-Mutes Multiple Threat Emitter (M3P) Development															
(U)	Field Testing												X			
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development						PE NUMBER AND TITLE 0604735F Combat Training Ranges						PROJECT 2286		
<b>(U) F. Schedule Profile Continued</b>														
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>				
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Production Decision										X				
(U) IOC											X			
(U) Advanced Threat Emitter System (ATES) Development														
(U) Development Contract Award											X			
(U) Joint Service Range Software Interoperability														
(U) Joint Service AMRAAM 5.1 Software Upgrade and Installation								X						
(U) Joint Service Tracking Instrumentation Subsystem Emulator (TISM)							*							
(U) Joint Tactical Combat Training System (JTCTS)														
(U) Tech Eval Report Complete	*													
(U) JTCTS Recovery Review Report							*							
(U) JTCTS Trade Studies & Acquisition Strategy Development									X					
(U) Contract Award												X		
(U) RITS Facility														
(U) ADDS 4.1E AF/Navy Integration				*										
(U) DDS Upgrade Air National Guard (ANG)		*												
(U) Annual Software Maintenance & Support							*			X				
(U) * = Completed event														
(U) X = Planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>05 - Engineering and Manufacturing Development</b>					<b>0604735F Combat Training Ranges</b>			<b>2286</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Aircraft Interface Development				964		2,543		1,847	
(U)	Mini-Mutes Modification Program (M3P)				4,647		6,649		0	
(U)	Advanced Threat Emitter System (ATES) Development				0		0		14,506	
(U)	Joint Service Interoperability Improvements				620		492		2,700	
(U)	JTCTS Trade Studies and Acquisition Strategy Development				0		0		2,700	
(U)	Range Instrumentation Technical Support (RITS)				100		145		145	
(U)	Combat Training Ranges Program Office Support				2,297		2,858		3,853	
(U)	Aerial Target Program Office Support				0				192	
(U)	NACTS Range Security Initiative (RSI) Development				2,856		3,720		0	
(U)	Total				11,484		16,407		25,943	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Cubic Defense (NACTS)	C/CPAF/FFP	Mar 95			31,149	2,856	3,720	0	0	37,725
Raytheon (JTCTS)	Navy Contr	Mar 95			2,500	0	0	0	0	2,500
TBD (JTCTS)	Navy Contr	TBD			0	0	0	2,000	Continuing	TBD
Sverdrup (RITS)	CPAF	Oct 00			2,385	100	145	145	Continuing	TBD
Harris Corp (M3P)	CPFF	May 98			380	4,647	6,649	0	0	11,676
TBD (Advanced Threat Emitter System) (ATES)	TBD	TBD			0	0	0	14,506	Continuing	TBD
Joint Interoperability	Navy Contract	Mar 97			3,429	620	492	2,700	Continuing	TBD
Aircraft Interface	Through MOAs with	Jun 96			1,035	964	2,543	1,847	Continuing	TBD
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE		
							June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
<b>05 - Engineering and Manufacturing Development</b>				<b>0604735F Combat Training Ranges</b>			<b>2286</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>									
<u>Product Development Organizations</u>									
	ALCs &								
	Aircraft SPO								
	Contractors								
<u>Support and Management Organizations</u>									
OO/ALC/LH, Hill AFB, UT	Various			0	110	100	210	Continuing	TBD
AAC/WRR, Eglin AFB, FL	Various			8,576	2,027	2,758	3,643	Continuing	TBD
AAC/WRA, Eglin AFB, FL	Various			0	160	0	192	Continuing	TBD
NAWC, China Lake, CA	Various			113	0	0	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>									
AAC/WRR, Eglin AFB, FL	Various			1,405	0	0	700	Continuing	TBD
46 Test Wing, Eglin AFB, FL	Various			640	0	0	0	Continuing	TBD
<b>(U) <u>Government Furnished Property:</u></b>									
	<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 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</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 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				40,878	9,187	13,549	21,198	TBD	TBD
Subtotal Support and Management				8,689	2,297	2,858	4,045	TBD	TBD
Subtotal Test and Evaluation				2,045	0	0	700	TBD	TBD
Total Project				51,612	11,484	16,407	25,943	TBD	TBD