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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 2000
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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0604258A Target Systems Development
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COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	12379	13298	13346	15101	13637	20549	21402	Continuing	Continuing
D238 Aerial Targets	5279	6417	5915	6327	6036	9106	9479	Continuing	Continuing
D459 Ground Targets	7100	6881	7431	8774	7601	11443	11923	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program funds aerial and ground target hardware and software development, maintenance and upgrade. The overall objective is to allow validation of weapon system accuracy and reliability by developing aerial and ground targets essential for Test and Evaluation (T&E). These targets are economical and expendable, remote controlled or stationary, and often destroyed in use. The Army is the Tri-Service lead under Reliance for providing rotary wing, mobile ground and assigned legacy targets for test and evaluation. The Army executes development of some Service-peculiar target requirements in support of quality assurance, lot acceptance and training; and continues development of Service-peculiar and ongoing target materiel upgrades to maintain continuity with current weapons technology and trends in modern and evolving Army weapons.

B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (FY 2000/2001 PB)	13038	13397	14423
Appropriated Value	13127	13397	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-89		
b. SBIR / STTR	-337		
c. Omnibus or Other Above Threshold Reductions		-54	
d. Below Threshold Reprogramming	-270		
e. Rescissions	-52	-45	
Adjustments to Budget Years Since FY 2000/2001 PB			-1077
Current Budget Submit (FY 2001 PB)	12379	13298	13346

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BUDGET ACTIVITY 6 - Management and Support				PE NUMBER AND TITLE 0604258A Target Systems Development				PROJECT D238		
<i>COST (In Thousands)</i>	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost	
D238 Aerial Targets	5279	6417	5915	6327	6036	9106	9479	Continuing	Continuing	
<p><u>Mission Description and Justification:</u> Provides for development, acquisition, operation, storage, update, and maintenance of realistic surrogate or acquired threat high-performance, multi-spectral aerial targets that can fully stress the latest air defense and air-to-air weapons. Modern weapons require test, evaluation, and training using threat representative aerial targets to assess their effectiveness on the battlefield. This program encompasses a family of rotary and fixed-wing targets, full-scale, miniature and subscale targets, tactical ballistic targets, ancillary devices, and remote control systems. To stress systems under test, aerial targets must have flight characteristics, signatures, and other performance factors, which emulate the modern threat. This tasking includes long-range planning to determine future target needs and development of coordinated requirement documents; the management of target research, development, test and evaluation process; execution of the validation process to ensure that surrogate targets adequately represent the threat; development and acquisition of surrogate and acquired targets; and continuing maintenance, storage, and development/enhancements/update via engineering services of the developed and acquired threat targets to ensure availability for the Test and Evaluation (T&E) customer. The US Army is the Reliance lead for rotary wing targets and the Tri-Service lead for procurement and enhancement of the MQM-107 Fixed Wing Target.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 1518 Completed baseline configuration and initiate update for Hokum-X Rotary Wing Target (Canadian Cooperative Program) to include developmental integration work of Universal Drone System (UDS) Drone kits into the first aircraft. • 1339 Continued enhancement of the MQM-107 Target system, including updating of obsolete parts to maintain producibility and supportability; manage fabrication; and correct autopilot deficiencies performance and payload capability needed by the Army and the other services (Army assigned Tri-Service lead for MQM-107). • 381 Integrated and installed the Universal Drone System (UDS) into the Hokum-X target. AH-1 integration and installation scheduled for FY00. • 782 Initiated Redesign of Target Tracking and Control System (TTCS), with state of the art computer processors, and datalink to replace obsolete system that allows system use beyond year 2000. Continue to maintain current configuration TTCS, to support on-going operations, until redesigned configuration TTCS's are available. • 794 Continued development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices. • 465 Initiated development of Unmanned Aerial Vehicle Surrogate (UAV-S) Target. <p>Total 5279</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 760 Manage the Army Rotary Wing target program (e.g., QAH-1, QUH-1, QH-50, etc.), including updates for obsolescence, maintenance, and safety to support T&E programs such as Stinger and Medium Extended Air Defense System (MEADS). Continue maintenance and storage of Hokum-X Rotary Wing Target (Canadian Cooperative Program) and complete integration of UDS into the Hokum-X target. 										
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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0604258A Target Systems Development	PROJECT D238
FY 2000 Planned Program: (continued)		
•	1385 Continue enhancement of the MQM-107 Target system, including updating obsolete parts to maintain producibility and supportability, manage fabrication and improve airframe maneuverability to meet the aerodynamic performance and payload capability needed by the Army and Tri-Service customers.	
•	515 Continue integration of Universal Drone System (UDS) into additional targets (up to 2 AH-1's) and update system for obsolescence, maintenance and safety.	
•	1227 Continue redesign and begin testing of redesigned Target Tracking and Control System (TTCS). Continue to support current TTCS to maintain operations until upgraded systems are available.	
•	675 Continue development, enhancement, maintenance and storage for all RDT&E aerial targets, towed targets, and ancillary devices.	
•	300 Continue development of aerial virtual targets, including models of Hokum-X, and AH-1 variants.	
•	1388 Continue design and development of Unmanned Aerial Vehicle Surrogate (UAV-S) Target to support Stinger (FY01-02 baselining and FY04-06 T&E) and Medium Extended Air Defense System (MEADS) T&E.	
•	167 Small Business Innovative Research/Small Business Technical Transfer (SBIR/STTR) Program.	
Total	6417	
FY 2001 Planned Program:		
•	480 Continue management and sustainment of Army Rotary Wing target program (e.g., QAH-1, QUH-1, QH-50, and Hokum-X), includes updates for obsolescence, maintenance, and safety to support T&E programs such as Stinger and Medium Extended Air Defense System (MEADS).	
•	1079 Continue enhancement of the MQM-107 Target system, including updating obsolete parts to maintain producibility and supportability, manage fabrication, and improve airframe maneuverability to meet the aerodynamic performance and payload capability needed by the Army and Tri-Service customers.	
•	436 Continue integration of Universal Drone System (UDS) into additional targets (additional AH-1's and/or Apaches), and update system for obsolescence, maintenance and safety.	
•	920 Complete testing of redesigned Target Tracking and Control System (TTCS) and begin fabrication/installation of TTCS upgrade kits into RDT&E units. Continue to support current TTCS to maintain operations until all TTCSs are upgraded.	
•	710 Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices.	
•	359 Continue development of aerial virtual targets, including models of Towed targets.	
•	1931 Continue development, fabricate and begin testing four (4) UAV-S prototypes (with control stations), to support Stinger (FY01-02 baselining and FY03 T&E).	
Total	5915	
AERIAL TARGETS Test Programs Supported: Forward Area Air Defense (FAAD) Missile Systems (Stinger, Avenger, Bradley-Stinger), Patriot, Medium Extended Air Defense System (MEADS), Comanche and, under Reliance, Air Force, Navy and defense technology programs which demand accurate threat representation in their aerial targets.		
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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0604258A Target Systems Development	PROJECT D459
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COST (<i>In Thousands</i>)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D459 Ground Targets	7100	6881	7431	8774	7601	11443	11923	Continuing	Continuing

Mission Description and Justification: This program funds Army efforts to support Test and Evaluation (T&E) of advanced weapon systems by developing surrogates and acquiring foreign equipment, and developing virtual target computer models of ground vehicle targets. These computer models are compatible with Distributed Interactive Simulation (DIS) and will be Higher Level Architecture (HLA) compliant. These products are required to adequately stress weapon systems undergoing test and evaluation. This tasking includes long-range planning to determine future target needs and development of coordinated requirement documents; the centralized management of the ground target research, development, test and evaluation process; execution of the validation process; acquisition of foreign equipment; and continuing maintenance, storage, and development/enhancement/update via engineering services of developed and acquired targets to ensure availability for test and evaluation customers. Project also manages use of current assets and operates centralized spare parts program. The US Army is the Tri-Service lead for providing ground targets for test and evaluation.

FY 1999 Accomplishments:

- 1753 Managed and provided oversight for Primary Operating Centers operation, storage, maintenance, and configuration management for the repair of existing ground target assets including acquisition of new material and spare parts.
- 2048 Continued development of virtual ground targets to support test and evaluation (e.g., Multiple Launch Rocket System (MLRS), Russian Air Defense System SA6, High Mobility Multipurpose Wheeled Vehicle (HMMWV), etc.). Implemented configuration control and initiated validation efforts. Target models will be utilized in Virtual Proving Ground and other weapon systems T&E and Modeling & Simulation (M&S) activities.
- 863 Completed requirements definition of the Next Mobile Ground Target Surrogate.
- 2436 Completed testing of BMP3-S and began fabrication of 10 BMP3-S Ground Target Surrogates, for deployment into the operational fleet, to maintain up-to-date threat representative targets which are required to support Comanche and Brilliant Anti-Armor Submunition (BAT) T&E in the FY00 and FY02 timeframe.

Total 7100

FY 2000 Planned Program:

- 1950 Manage and provide oversight for Primary Operating Centers operation, storage, maintenance, and configuration management for the repair of existing ground target assets including acquisition of new material and spare parts.
- 1578 Develop additional virtual ground targets (e.g., Straight Flush, Russian BMP-1, Russian TZM, etc.) to support test and evaluation. Update current models to add/improve InfraRed (IR) characteristics and improve visual representation. Target models will be utilized in Virtual Proving Ground and other weapon systems T&E and Modeling & Simulation (M&S) activities.
- 639 Begin prototyping of the Next Mobile Ground Target Surrogate (e.g., Transporter-Erector-Launcher (TEL), Multiple Rocket Launcher (MRL)).

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FY 2000 Planned Program: (continued)		
•	934 Begin development of family of New Generation Army Targetry System (NGATS) programs to include: initiation of Digital Multi-Purpose Range Complex (DMPRC) acquisition (for First Digitized Division, the 4 th ID at Fort Hood); prototyping and testing of All Targetry Scoring System (ATSS) to include Doppler Scoring Subsystem; and requirements analysis and program planning for Tank Thermal Target and Evasive targetry.	
•	1599 Complete fabrication and begin deployment into the operational fleet, of the first ten (10) Infantry Fighting Vehicle Russian Name BMP3-S Ground Target Surrogates to maintain up-to-date threat representative targets that are required to support Comanche and BAT T&E in the FY00 and FY02 timeframe.	
•	181 Small Business Innovative Research/Small Business Technical Transfer (SBIR/STTR) Program.	
Total	6881	
FY 2001 Planned Program:		
•	2267 Manage and provide oversight for Primary Operating Centers operation, storage, maintenance, and configuration management for the repair of existing ground target assets including acquisition of new material and spare parts.	
•	2216 Develop additional virtual ground targets (e.g., Russian Name 2S6, Russian Name 2S-3M, Soviet Multipurpose Tracked Vehicle Russian Name MTLB, Russian Name BPV-80) to support test and evaluation. Update current models, add/improve IR characteristics and improve visual representation. Target models will be utilized in Virtual Proving Ground and other weapon systems T&E and M&S activities	
•	2164 Complete initial prototyping and testing of the Next Mobile Ground Target Surrogate and begin fabrication of units for deployment into the operational fleet to maintain up-to-date threat representative targets to support T&E testing (e.g., BAT). (Delivers 1 prototype)	
•	784 Complete deployment of Infantry Fighting Vehicle Russian Name BMP3-S into the operational fleet and update system configuration to maintain up-to-date threat representative targets that are required to support Comanche and BAT T&E in the FY02 timeframe.	
Total	7431	
<p>GROUND TARGETS Test Programs Supported: Ground Targets efforts are investments which enable Department of Defense (DoD) customers to conduct appropriate developmental and operational testing, evaluation and training in the future. Weapon systems for which these developments are required include: Comanche, Longbow, Close Combat Anti-Armor Weapon System (CCAWS), Wide Area Munitions (WAM), Line-Of-Sight Antitank (LOSAT), Army Tactical Missile System (Army TACMS), Brilliant Anti-Armor Submunition (BAT), Unmanned Aerial Vehicle, (UAV-SR), Short Range Anti-Armor Weapon System (SRAW), Javelin, Sense and Destroy Armor (SADARM).</p>		
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