

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0604258A Target Systems Development
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COST (<i>In Thousands</i>)	FY1998 Actual	FY 1999 Estimate	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	11149	13038	13397	14423	16213	14756	21754	21645	Continuing	Continuing
D238 Aerial Targets	6307	5557	6465	6949	7373	7088	10196	9584	Continuing	Continuing
D459 Ground Targets	4842	7481	6932	7474	8840	7668	11558	12061	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 previously begun target materiel to maintain continuity.

B. Program Change Summary	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (<u>FY 1999</u> PB)	11328	13127	12934	14178
Appropriated Value	11688	13127		
Adjustments to Appropriated Value				
a. Congressional General Reductions	-360	-89		
b. SBIR / STTR	-277			
c. Omnibus or Other Above Threshold Reductions	-92			
d. Below Threshold Reprogramming	+190			
e. Rescissions				
Adjustments to Budget Years Since <u>FY 1999</u> PB			+463	+245
Current Budget Submit (<u>FY 2000/2001</u> PB)	11149	13038	13397	14423

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COST (<i>In Thousands</i>)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D238 Aerial Targets	6307	5557	6465	6949	7373	7088	10196	9584	Continuing	Continuing

Mission Description and Justification: 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.

FY 1998 Accomplishments:

- 2799 Continued development of HOKUM-X Rotary Wing (Canadian Cooperative Program).
 - 951 Continued enhancement of the MQM-107 Target System, including updating of obsolete parts and improved airframe maneuverability.
 - 1007 Completed development of Universal Drone Control System (UDCS).
 - 583 Conducted requirements analysis for redesign of the Target Tracking and Control System (TTCS), to allow use of system beyond year 2000.
 - 853 Continued development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices.
 - 114 Continued development of aerial virtual targets, including models of HOKUM-X and AH-1 variants.
- Total 6307

FY 1999 Planned Program:

- 1255 Complete baseline configuration and initiate update for HOKUM-X Rotary Wing Target (Canadian Cooperative Program) to include developmental integration work of UDCS Drone kits into the first aircraft.
- 1313 Continue enhancement of the MQM-107 Target system, including updating of obsolete parts to maintain producibility and supportability; manage fabrication; and improved airframe maneuverability to meet the aerodynamic performance and payload capability needed by the Army and the other services (Army assigned Tri-Service lead for MQM-107).
- 633 Integrate and install into additional targets the Universal Drone Control System (UDCS) (i.e. AH-1, HOKUM-X).
- 1085 Redesign 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 and continue to support current TTCS to maintain operations until re-designed systems are available.
- 701 Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices.

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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0604258A Target Systems Development	PROJECT D238
FY 1999 Planned Program: (continued)		
•	428	Begin development of UAV-S Target.
•	142	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
Total	5557	
FY 2000 Planned Program:		
•	760	Continue enhancement, maintenance, fabrication and storage of HOKUM-X Rotary Wing Target (Canadian Cooperative Program) includes updates for obsolescence, maintenance, and safety to support T&E programs such as Stinger and MEADS.
•	1385	Continue enhancement of the MQM-107 Target system, including updating obsolete parts to maintain producibility and supportability, manage fabrication and improved airframe maneuverability to meet the aerodynamic performance and payload capability needed by the Army, Tri-Service and customers.
•	515	Continue integration of Universal Drone Control System (UDCS) into additional targets 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.
•	515	Continue development of aerial virtual targets, including models of HOKUM-X, and AH-1 variants.
•	1388	Continue development and testing of UAV-S Target.
Total	6465	
FY 2001 Planned Program:		
•	480	Continue enhancement, maintenance, fabrication and storage of HOKUM-X Rotary Wing Target (Canadian Cooperative Program) includes updates for obsolescence, maintenance, and safety to support T&E programs such as Stinger and MEADS.
•	1427	Continue enhancement of the MQM-107 Target system, including updating obsolete parts to maintain producibility and supportability, manage fabrication, and improved airframe maneuverability to meet the aerodynamic performance and payload capability needed by the Army, Tri-Service and customers.
•	536	Continue integration of Universal Drone Control System (UDCS) into additional targets, and update system for obsolescence, maintenance and safety.
•	1472	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.
•	1965	Continue development of additional UAV-S variants, and begin fabrication and deployment of UAV-S Targets into the operational fleet in time to support Stinger and MEADS T&E.
Total	6949	
Project D238	<i>Page 3 of 7 Pages</i>	Exhibit R-2A (PE 0604258A)

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BUDGET ACTIVITY
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0604258A Target Systems Development

PROJECT
D238

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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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 1999
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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>)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D459 Ground Targets	4842	7481	6932	7474	8840	7668	11558	12061	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 weapons 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 the 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. Increased funding in FY 1999 provided the ground target surrogate vehicles required to support Comanche and BAT testing in the FY00-FY02 timeframe. These up-to-date threat representative ground targets are acquired at a greatly reduced unit cost over buying the authentic foreign vehicles.

FY 1998 Accomplishments:

- 2001 Managed and provided oversight for Primary Operating Centers operation, storage, maintenance, and configuration management of repair of Ground Target assets including acquisition of new material and spare parts.
- 139 Continued validation, accreditation, and certification and configuration controls/studies of ground targets and development/execution of safety and environmental plans.
- 1312 Continued development of virtual ground targets to support T&E. Developed two new virtual target models of a classified target and the BMP3-Surrogate target for use by developers and testers. Continued development and initiated implementation of configuration control plan for virtual targets. These target models will be utilized in Virtual Proving Ground activities and other weapon systems T&E and M&S activities.
- 851 Continued requirements definition of the Next Mobile Ground Target Surrogate.
- 539 Continued development of BMP3-S with building of second prototype at Rock Island Industrial Operations Command facility.
- Total 4842

FY 1999 Planned Program:

- 1934 Manage and provide oversight for Primary Operating Centers operation, storage, maintenance, and configuration management of repair of Ground Targets assets including acquisition of new material and spare parts.
- 1774 Continue development of virtual ground targets to support test and evaluation (ex. SCUD-B, SA8, SA6, and TZM). Implement configuration control and initiate validation efforts. Target models will be utilized in Virtual Proving Ground and other weapon systems T&E and M&S activities.
- 1169 Complete requirements definition of the Next Mobile Ground Target Surrogate.

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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0604258A Target Systems Development	PROJECT D459
FY 1999 Planned Program: (continued)		
•	2409 Complete testing of BMP3-S and begin 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 BAT T&E in the FY00 and FY02 timeframe.	
•	195 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	
Total	7481	
FY 2000 Planned Program:		
•	1950 Manage and provide oversight for Primary Operating Centers operation, storage, maintenance, and configuration management of repair of Ground Targets assets including acquisition of new material and spare parts.	
•	1878 Develop additional virtual ground targets (e.g., BTR-60, Straight Flush, HMMWV, BMP-1) to support test and evaluation. Update current models to 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.	
•	1139 Begin prototyping and testing of the Next Mobile Ground Target Surrogate.	
•	1965 Complete fabrication and begin deployment into the operational fleet, of the first ten (10) BMP3-S Ground Target Surrogates, and continue fabrication of ten (10) additional BMP3-S Surrogates for deployment into the fleet to maintain up-to-date threat representative targets that are required to support Comanche and BAT T&E in the FY00 and FY02 timeframe.	
Total	6932	
FY 2001 Planned Program:		
•	2267 Manage and provide oversight for Primary Operating Centers operation, storage, maintenance, and configuration management of repair of Ground Targets assets including acquisition of new material and spare parts.	
•	200 Update Ground Control equipment for Ground targets to overcome obsolescence and to maintain usefulness.	
•	2117 Develop additional virtual ground targets (e.g., 2S-3M, BDRM-2, T-80, TEL) 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	
•	2106 Complete 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.	
•	784 Complete fabrication and deployment into the operational fleet of BMP3-S 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	7474	

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PROJECT
D459

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).

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