

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>4 - Demonstration/Validation</b>	PE NUMBER AND TITLE <b>0603851M Non-Lethal Warfare DEM/VAL</b>	PROJECT <b>C2319</b>
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COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C2319 Non Lethal Weapons Program	33895	26132	23580	23982	24390	26225	26752	Continuing	Continuing
Quantity of RDT&E Articles									

**A. (U) Mission Description and Budget Item Justification:**  
 This project covers non-lethal weapon (NLW) systems which are those systems that by their design, do not inflict fatal or permanent injuries. Instead, these systems are designed to stun, incapacitate, or hinder movement of individuals, crowds, or equipment. The availability of NLWs allows commanders less than lethal options, particularly in urban warfare and military operations other than war, i.e., peacekeeping, humanitarian assistance and disaster relief, as well as special operations.

**(U) Justification for Budget Activity:** This program is funded under Demonstration/Validation because it develops and integrates hardware for non-lethal weapons capabilities.

**(U) FY 1999 Accomplishments:**

- (U) \$ 2054 Execution oversight and administration of the Joint NLW Program and technologies database expansion.
- (U) \$ 1240 Evaluation of NLWs by Service warfighting laboratories for direct user feedback on various NL technologies and munitions.
- (U) \$ 2802 Continued pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities.
- (U) \$ 535 Continued modeling and simulation of NLW in the Joint Conflict and Tactical Simulation (JCATS) model.
- (U) \$ 575 NL Crowd Dispersal Cartridge - Continued production definition and risk reduction of a NL round of munitions for the M203 40mm Grenade Launcher.
- (U) \$ 3196 Acoustics –Demonstration and evaluation of bio-effects on target vulnerability and operator safety in the infrasound and inaudible acoustic regimes and continue work on the database.
- (U) \$ 1324 Ground Vehicle Stopper – Continued evaluation of several proposed electrical vehicle stopper technologies that have potential to stop/slow ground vehicles.
- (U) \$ 1324 Vessel Stopper System – Continued evaluation of NL means of stopping maritime vessels and small, fast moving boats.
- (U) \$ 3786 Studies and Analysis – Medical and NL casualty data collection; strategic planning; human effects assessments; and technical studies/analysis of emerging technologies for possible NL application.
- (U) \$ 1229 Area Denial – Explored and developed technical NL solutions to anti-personnel landmines.
- (U) \$ 2038 Portable Vehicle Immobilizer System (PVIS) – Complete development and testing of a pre-emplaced system to stop a vehicle (up to 7500 pounds) traveling at speeds up to 45 mph.

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**4 - Demonstration/Validation**

PE NUMBER AND TITLE

**0603851M Non-Lethal Warfare DEM/VAL**

- (U) \$ 6810 Active Denial Technology (ADT) – Evaluation, testing and target assessment of a HMMWV mounted directed energy system.
  - (U) \$ 2339 66mm NL Munitions – Continued development and testing of 66mm vehicle launched munitions.
  - (U) \$ 52 UAV NL Payloads – Continued integration of non-lethal payloads into Unmanned Aerial Vehicles (UAVs).
  - (U) \$ 1610 Bounding NL Munitions – Continued development and evaluation of NL bounding munitions to serve as an area denial/perimeter defense system.
  - (U) \$ 1006 Canister Launched Area Denial System (CLADS) – Further development of NL munitions launched from a multi-platform mounted mine dispenser.
  - (U) \$ 977 Foams – Continued evaluation and testing of foams and packaging delivery platforms.
  - (U) \$ 875 Modular Crowd Control Munitions (MCCM) –Engineering & Manufacturing Development of a ground emplaced NL “claymore” mine and initial design and test of the vehicle mounting bracket.
  - (U) \$ 123 Joint Intergration Project (JIP) – Selected and tested commercial products that will meet the Joint Services’ requirement for specific NL Capability set items.
- (U)Total 33,895

**U) FY 2000 Planned Program:**

- (U) \$ 1226 Execution oversight and administration of the Joint NLW Program and technologies database expansion.
- (U) \$ 1038 Evaluation of NLWs by Service warfighting laboratories for direct user feedback on various NL technologies and munitions.
- (U) \$ 705 Continue development of a modeling and simulation analysis tool for NLWs such as the Joint Conflict and Tactical Simulation (JCATS) model and performance effects data collection.
- (U) \$ 1215 Continue pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities.
- (U) \$ 918 NL Crowd Dispersal Cartridge – Engineering & Manufacturing Development of a NL round of munitions for the M203 40mm Grenade Launcher.
- (U) 3000 Establish a technology innovation initiative to allow pursuit of new NL materials and technologies.
- (U) \$ 883 Ground Vehicle Stopper (GVS) – Continue evaluation of several proposed electrical vehicle stopper technologies that have potential to stop/slow ground vehicles.
- (U) \$ 693 Vessel Stopper System (VSS) – Continue evaluation of NL means of stopping maritime vessels and small, fast moving boats.
- (U) \$ 4328 Active Denial Technology (ADT) – Continue evaluation, testing and target assessment of a HMMWV mounted directed energy system.
- (U) \$ 2320 66mm NL Munitions – Complete testing of the 66mm vehicle launched munitions for crowd control and site security missions.
- (U) \$ 533 Bounding NL Munitions – Continue development of NL bounding munitions to serve as an area denial/perimeter defense system.

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<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>4 - Demonstration/Validation</b>	<b>0603851M Non-Lethal Warfare DEM/VAL</b>	<b>C2319</b>

- (U) \$ 1670 Canister Launched Area Denial System (CLADS) – Continue development of NL munitions launched from a multi-platform mounted mine dispenser.
- (U) \$ 1020 Foams – Continue evaluation and testing of both rigid and slippery foams and packaging delivery platforms.
- (U) \$ 1076 Studies and Analysis – Medical and NL casualty data collection; strategic planning; human effects assessments; and technical studies/analysis of emerging technologies for possible NL application.
- (U) \$ 2050 Concept Exploration Program (CEP) – Continue to explore and develop technical NL solutions to clear facilities and area denial for personnel.
- (U) \$ 54 Joint Integration Project (JIP) – Continue to select and test commercial products that will meet the Joint Services’ requirement for specific NL capability sets items.
- (U) \$ 2022 Develop and evaluate new RDT&E NLW technology initiatives.
- (U) \$ 796 Modular Crowd Control Munitions (MCCM) – Complete evaluation and testing of a vehicle mounted NL “claymore” mine.
- (U) \$ 585 Running Gear Entanglement System (RGES) – Continue development of a NL entanglement capability to stop small, fact moving boats.
- Total \$ 26,132

**(U) FY 2001 Planned Program:**

- (U) \$ 874 Execution oversight and administration of the Joint NLW Program and technologies database.
- (U) \$ 540 Evaluation of NLWs by Service warfighting laboratories for direct user feedback of various NL technologies and munitions.
- (U) \$ 756 Initial modeling and simulation validation and verification of NLW in the Joint Conflict and Tactical Simulation (JCATS) model and performance effects data collection.
- (U) \$ 1512 Continue pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities.
- (U) \$ 215 66mm NL Munitions – Complete Engineering & Manufacturing Development of 66mm vehicle launched munitions for crowd control and site security missions.
- (U) \$ 891 Service Program Support for oversight and administration of the Joint NLW Program.
- (U) \$ 3440 Ground Vehicle Stopper (GVS) - Continue evaluation of several proposed electrical vehicle stopper technologies that have potential to stop/slow ground vehicles.
- (U) \$ 2376 Vessel Stopper System (VSS)- Continue evaluation of NL means of stopping maritime vessels
- (U) \$ 4581 Active Denial Technology (ADT) - Continue evaluation, testing and target assessment of a HMMWV mounted directed energy system.
- (U) \$ 1098 Running Gear Entanglement System (RGES) – Continue development of a NL entanglement capability to stop small, fast moving boats.
- (U) \$ 1979 Develop and evaluate new RDT&E NLW technology initiatives.
- (U) \$ 1585 Foams - Continue evaluation and testing of both rigid and slippery foams and packaging delivery platforms.
- (U) \$ 756 Studies and Analysis – Medical and NL casualty data collection; strategic planning; human effects assessments; and technical studies/analysis of emerging technologies for possible NL application.

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Budget Item Justification

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<ul style="list-style-type: none"> <li>• (U) \$ 2042 Concept Exploration Program – Continue to explore and develop technical NL solutions for clearing facilities, area denial to personnel, and to incapacitate personnel..</li> <li>• (U) \$ 752 Joint Integration Program (JIP) – Continue to select and test commercial products that will meeting the Joint Services’ requirement for specific NL capability set items.</li> <li>• (U) \$ 183 NL Crowd Dispersal Cartridge – Complete Engineering &amp; Manufacturing Development of a NL round of munitions for the M203 40mm Grenade Launcher.</li> </ul> <p>Total \$ 23,580</p>									
<b>B. (U) <u>Project Change Summary</u></b>									
	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>						
(U) Previous President’s Budget	34,512	23,277	23,782						
(U) Adjustments to Previous President’s Budget (Taxes)	(617)	2,855	(202)						
(U) Current Budget Submit	33,895	26,132	23,580						
(U) Change Summary Explanation:									
(U) Funding: FY99 decrease of \$360K due to SBIR assessment and a \$257K due to minor affordability adjustment. FY2000 increase is due to a \$3,000K congressional plus up and a \$145 decrease for minor affordability adjustment. The FY 2001 decrease is due to a minor affordability adjustment.									
(U) Schedule: N/A									
(U) Technical: N/A									
<b>C. (U) <u>Other Program Funding Summary</u></b>									
<b>(APPN, BLI #, NOMEN)</b>	<u>FY 1999</u>	<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>To</u>	<u>Total</u>
								<u>Compl</u>	<u>Cost</u>
(U) PANMC, BLI 166300, Items <\$2M	0	0	0	0	0	0	0	0	3806
(U) PAN,MC BLI 162800, Non-Lethals	984	2000	2700	2079	4136			Cont.	Cont.
(U) PMC BLI 237100, Operations Other Than War (OOTW)	0	1452	1347	1151	1139	989	1148	Cont.	Cont.
(U) <b><u>Related RDT&amp;E:</u></b> Not Applicable.									
(U) <b><u>Schedule Profile:</u></b> Not Applicable.									
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000			
BUDGET ACTIVITY <b>4 - Demonstration/Validation</b>					PE NUMBER AND TITLE <b>0603851M Non-Lethal Warfare DEM/VAL</b>				PROJECT <b>C2319</b>	
<b>A. (U) Project Cost Breakdown</b>					<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
Product Development					27055	19657	19689			
Support and Management					6840	6475	3891			
Total					33895	26132	23580			
<b>B. Budget Acquisition History and Planning Information</b>										
<b>Performing Organizations</b>										
Contractor or Government	Contract Method/Type	Award or Obligation	Performing Activity	Project Office	Total Prior to				Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
<b>Product Development Organizations</b>										
USAIC, Ft. Benning, GA	MIPR	Oct 97			1500	690	250	300	Cont	Cont
MCWL, Quantico, VA	WR	Apr 98			500	650	235	208	Cont	Cont
Lackland AFB, TX	MIPR	Feb 00					365	340	Cont	Cont
ARDEC, Picatinny, NJ	MIPR	Oct 97			15607	14192	10199	6906	Cont	Cont
NSWC, Various	WR	Oct 97			4035	1376	1296	3474	Cont	Cont
Brooks AFB, TX	MIPR	Oct 97			3605	6810	4325	4581	Cont	Cont
JWFC, Ft. Monroe, VA	MIPR	Mar 98			300	250	35	50	Cont	Cont
MCSC, Quantico, VA	WR MIPR						1026	1021	Cont	Cont
Various (M&S)	WR	Oct 97			1090	285	416	406	Cont	Cont
Various (TIP)	MIPR	Oct 97			650	2802	1510	1512	Cont	Cont
Various (Service)	MIPR							891	Cont	Cont
<b>Support and Management Organizations</b>										
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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>							DATE <b>February 2000</b>		
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MCSC, Quantico, VA	WR	Oct 97		400	977	1095	2107	Cont	Cont
NSWC, Dahlgren, VA	WR	Oct 97		756	293	405	425	Cont	Cont
CTQMCSC, Quantico, VA	RCP	Dec 97		602	3290	2669	603	Cont	Cont
Various		Oct 97		450	2280	2056	456	Cont	Cont
MCLB, Albany, GA	RCP	Jan 00				250	300	Cont	Cont
<b>Test and Evaluation Organizations</b>									
<b>Government Furnished Property N/A</b>									
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1999	FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
<b>Product Development Property</b>									
<b>Support and Management Property</b>									
<b>Test and Evaluation Property</b>									
				Total Prior to FY 1999	FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
Subtotal Product Development				27287	27055	19657	19689	Cont	Cont
Subtotal Support and Management				2208	6840	6475	3891	Cont	Cont
Subtotal Test and Evaluation									
Total Project				29495	33895	26132	23580	Cont	Cont

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