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**CLASSIFICATION:**

<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>							<b>DATE:</b> <b>June 2001</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N /BA-4 Demonstration/Validation</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603851M Non-Lethal Warfare DEM/VAL</b>				<b>PROJECT NUMBER AND NAME</b> <b>C2319 Non-Lethal Weapons Program</b>					
<b>COST (\$ in Millions)</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Cost to Complete</b>	<b>Total Program</b>
Project Cost	<b>25.827</b>	<b>29.309</b>	<b>34.008</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>Cont</b>	<b>Cont</b>
RDT&E Articles Qty										

**(U) A. 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.

**PROGRAM ACCOMPLISHMENTS AND PLANS**

**FY 2000 Accomplishments:**

- (U) \$ 1.023 Execution oversight and administration of the Joint NLW Program and technologies database expansion.
  - (U) \$ 0.936 Evaluation of NLWs by Service warfighting laboratories for direct user feedback on various NL technologies and munitions.
  - (U) \$ 0.705 Continued 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) \$ 1.215 Continued pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities.
  - (U) \$ 0.918 NL Crowd Dispersal Cartridge – Engineering & Manufacturing Development of a NL round of munitions for the M203 40mm Grenade Launcher.
  - (U) \$ 3.000 Established a technology innovation initiative to allow pursuit of new NL materials and technologies.
  - (U) \$ 0.883 Ground Vehicle Stopper (GVS) – Continued evaluation of several proposed vehicle stopper technologies that have potential to stop/slow ground vehicles.
  - (U) \$ 0.693 Vessel Stopper System (VSS) – Continued evaluation of NL means of stopping maritime vessels and small, fast moving boats.
  - (U) \$ 4.328 Active Denial Technology (ADT) – Continued evaluation, testing and target assessment of a HMMWV mounted directed energy system.
  - (U) \$ 2.320 66mm NL Munitions – Completed testing of the 66mm vehicle launched munitions for crowd control and site security missions.
  - (U) \$ 0.533 Bounding NL Munitions – Continued development of NL bounding munitions to serve as an area denial/perimeter defense system.
  - (U) \$ 1.670 Canister Launched Area Denial System (CLADS) – Continued development of NL munitions launched from a multi-platform mounted mine dispenser.
  - (U) \$ 1.020 Foams – Continued evaluation and testing of both rigid and slippery foams and packaging delivery platforms.
  - (U) \$ 1.076 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) \$ 2.050 Concept Exploration Program (CEP) – Continued to explore and develop technical NL solutions to clear facilities and area denial for personnel.
  - (U) \$ 0.054 Joint Integration Project (JIP) – Continued to select and test commercial products that will meet the Joint Services’ requirement for specific NL capability sets items.
  - (U) \$ 2.022 Developed and evaluated new RDT&E NLW technology initiatives.
  - (U) \$ 0.796 Modular Crowd Control Munitions (MCCM) – Completed evaluation and testing of a vehicle-mounting bracket for MCCM on vehicles.
  - (U) \$ 0.585 Running Gear Entanglement System (RGES) – Continued development of a NL entanglement capability to stop small, fast moving boats.
- (U) Total \$ 25.827

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<b>FY 2001 Planned Program</b>		
<ul style="list-style-type: none"> <li>• (U) \$ 1.379 Execution oversight, administration and support of the Joint NLW Program and technologies database.</li> <li>• (U) \$ 2.096 Evaluation of NLWs by Service warfighting laboratories and Joint Forces Command (JFCOM) for direct user feedback of various NL technologies and munitions.</li> <li>• (U) \$ 0.891 Initial modeling and simulation validation and verification of NLW in the Joint Conflict and Tactical Simulation (JCATS) model and performance effects data collection.</li> <li>• (U) \$ 1.080 Continue pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities.</li> <li>• (U) \$ 0.215 66mm NL Grenades – Complete Engineering &amp; Manufacturing Development of 66mm vehicle launched grenades for crowd control and site security missions.</li> <li>• (U) \$ 0.887 Program Support for each service’s oversight and administration of the Joint NLW Program.</li> <li>• (U) \$ 0.189 Ground Vehicle Stopper (GVS) –Complete evaluation of several proposed vehicle stopper technologies that have potential to stop/slow ground vehicles.</li> <li>• (U) \$ 2.000 Continue the non-lethal technology innovation initiative to allow pursuit of new NL materials and technologies.</li> <li>• (U) \$ 4.536 Vehicle Mounted Active Denial System (VMADS) - Continue evaluation, testing and target assessment of a HMMWV mounted directed energy system.</li> <li>• (U) \$ 0.513 Running Gear Entanglement System (RGES) – Continue development of a “prop” entanglement capability to stop small, fast moving boats.</li> <li>• (U) \$ 2.759 Develop and evaluate new RDT&amp;E NLW technology initiatives.</li> <li>• (U) \$ 1.585 Foams - Continue evaluation, analysis and testing of both rigid and slippery foams and delivery methods/volumes.</li> <li>• (U) \$ 2.052 Studies and Analysis – Medical and NL casualty data research and collection; human effects assessments; acceptability analysis; and technical studies/analysis of emerging technologies for possible NL application.</li> <li>• (U) \$ 4.192 Concept Exploration Program – Continue to explore and analyze technical NL solutions for clearing facilities and area denial to personnel, and to initiate the exploration of technical solutions to incapacitate personnel, crowd control, disable vessels, and area denial to vehicles.</li> <li>• (U) \$ 0.752 Joint Integration Program (JIP) – Continue to select and test commercial products that will meet Joint Services’ requirement for specific NL capability set common items.</li> <li>• (U) \$ 0.183 40mm NL Crowd Dispersal Cartridge – Complete Engineering &amp; Manufacturing Development of a 40mm sting ball with improved range for the M203 40mm Grenade Launcher.</li> <li>• (U) \$ 1.000 NL Mortar – Initiate the development and evaluation of NL mortar demonstrators with a frangible or combustible casing.</li> <li>• (U) \$ 2.000 Initiate an environmental evaluation, impact and safety assessment, technology and remediation capability for NLW candidate systems.</li> <li>• (U) \$ 1.000 Initiate a comprehensive study of the applicability of NL technology area to Weapons of Mass Destruction (WMD).</li> </ul>		
(U) Total \$	29.309	

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-4 Demonstration/Validation</b>	<b>0603851M Non-Lethal Warfare DEM/VAL</b>	<b>C2319 Non-Lethal Weapons Program</b>
<b>FY 2002 Planned Program</b>		
<ul style="list-style-type: none"> <li>• (U) \$ 1.361 Execution oversight, administration and support of the Joint NLW Program and technologies database.</li> <li>• (U) \$ 2.257 Evaluation of NLWs by Service warfighting laboratories and Joint Forces Command (JFCOM) for direct user feedback of various NL technologies and munitions.</li> <li>• (U) \$ 0.646 Modeling and simulation validation and verification of NLW in the Joint Conflict and Tactical Simulation (JCATS) model and performance effects data collection.</li> <li>• (U) \$ 1.881 Continue pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities.</li> <li>• (U) \$ 0.484 Objective Individual Combat Weapons (OICW) – Initial development of NL munitions for the “next generation” combat weapon that will replace selected M16 Rifles, M4 Carbines and M203 Grenade Launchers.</li> <li>• (U) \$ 0.903 Program Support for each service’s oversight and administration of the Joint NLW Program.</li> <li>• (U) \$ 0.752 NL Mortar – Continue to explore and evaluate a NL mortar demonstrator with a frangible/combustible casing and drag reduction devices.</li> <li>• (U) \$ 12.298 Vehicle Mounted Active Denial System (VMADS) - Continue evaluation, testing and target assessment of a HMMWV mounted directed energy system.</li> <li>• (U) \$ 3.376 Develop and evaluate new RDT&amp;E NLW technology initiatives.</li> <li>• (U) \$ 1.022 Foams - Continue evaluation, analysis and testing of both rigid and slippery foams and delivery methods/volumes.</li> <li>• (U) \$ 2.160 Studies and Analysis – Medical and NL casualty data research and collection; human effects assessments; acceptability analysis; and technical studies/analysis of emerging technologies for possible NL application.</li> <li>• (U) \$ 3.140 Concept Exploration Program – Continue to explore and evaluate technical NL solutions to incapacitate personnel, crowd control, area denial to vehicles, and disable</li> <li>• (U) \$ 0.430 Joint Integration Program (JIP) – Continue to select and test commercial products that will meet the Joint Services’ requirement for specific NL capability set common items.</li> <li>• (U) \$ 0.800 Conduct and evaluate current and emerging NL technologies for operational utility within the naval force protection mission.</li> <li>• (U) \$ 0.400 Conduct a study to determine the operational parameters for NLWs beyond small arms range.</li> <li>• (U) \$ 2.098 Pulsed Energy Projectile (PEP) – Explore the development of laser hardware and characterization of target effects.</li> </ul>		
(U) Total \$	34.008	

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N /BA-4 Demonstration/Validation</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603851M Non-Lethal Warfare DEM/VAL</b>			<b>PROJECT NUMBER AND NAME</b> <b>C2319 Non-Lethal Weapons Program</b>					
		FY2000	FY2001	FY2002						
<b>(U) FY 2001 President's Budget:</b>		<b>26.132</b>	<b>23.580</b>	<b>23.982</b>						
(U) Adjustments from the President's Budget:										
(U) SBIR/STTR Transfer		-0.263		-0.383						
(U) Execution Adjustment		0.060								
(U) Minor Affordability Adjustment			-0.271	-0.021						
(U) Program Adjustment		-0.102	6.000	10.430						
<b>(U) FY 2002 President's Budget:</b>		<b>25.827</b>	<b>29.309</b>	<b>34.008</b>						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: See Above.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
<b>(U) B. OTHER PROGRAM FUNDING SUMMARY:</b>										
	<u>Line Item No. &amp; Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007 To Compl	Total Cost
(U)	PAN,MC BLI 162800, Non-Lethal Munitions	1.903	4.439	4.461	0.000	0.000	0.000	0.000	0.000	Continuing
(U)	PMC BLI 237100, Operations Other Than War	1.291	1.335	1.552	0.000	0.000	0.000	0.000	0.000	Continuing
<b>(U) Related RDT&amp;E:</b> Not Applicable.										
<b>(U) C. ACQUISITION STRATEGY: *</b>										
The JNLWP strategy is to continue to pursue the fielding of NLW systems through modifying COTS products for near term capabilities and the development of new technology NLW systems in various stages of Acquisition. These are balanced with efforts in modeling and simulation, experimentation, and state-of-the-art technology investment. The Acquisition Strategy for each weapon system is largely lead service dependent.										
<b>(U) D. SCHEDULE PROFILE:</b> Not Applicable.										





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Exhibit R-3 Cost Analysis										DATE: <b>June 2001</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-4 Demonstration/Validation</b>			PROGRAM ELEMENT <b>0603851M Non-Lethal Warfare DEM/VAL</b>				PROJECT NUMBER AND NAME <b>C2319 Non-Lethal Weapons Program</b>					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Award Cost	FY 00 Award Date	FY 01 Award Cost	FY 01 Award Date	FY 02 Award Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Eng Suppt											0.000	
Govt Engineering Suppt											0.000	
Program Mngmnt Suppt											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost				25.827		29.309		34.008		Continuing	Continuing	