

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT (PE) NAME AND NO.					
RDT&E, N /BA-4 Demonstration and Validation		0603851M Non-Lethal Warfare Demonstration and Validation					
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total	
Total PE Cost		56.459	49.150	46.971	0.000	46.971	
C2319 Non-Lethal Weapons		55.494	46.757	46.971	0.000	46.971	
C9B97A Congressional Add		0.965	0.000	0.000	0.000	0.000	
9878A Congressional Add		0.000	2.393	0.000	0.000	0.000	
Quantity of RDT&E Articles							
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>The DoDs Joint Non-Lethal Weapons Program (JNLWP) was established by the Secretary of Defense, who assigned centralized responsibility for DoD joint research and development of non-lethal weapons and technology to the Commandant of the Marine Corps as the Executive Agent. The Under Secretary of Defense for Acquisition, Technology and Logistics (USD AT&amp;L) provides direct oversight of the JNLWP.</p> <p>The efforts described in this Program Element (PE) reflect Joint Service research and development (R&amp;D) investment decisions provided by the Joint NLW Integrated Product Team, a multi-service flag level corporate board that executes the JNLWP for the Commandant of the Marine Corps. Research conducted is based on the needs and capabilities of the Services, the Special Operations Command, and the Coast Guard, as identified in the DoDs Non-Lethal Weapons Joint Capabilities Document. This coordinated joint R&amp;D development approach addresses mutual capability gaps and assures the best non-lethal technologies and equipment are provided to the operating forces while eliminating duplicative Service investment.</p> <p>This program funds Joint Service research, development, test and evaluation of non-lethal weapon (NLW) systems and technologies that by their design, provide a new non-lethal capability to minimize fatal or permanent injuries and undesired damage to property and the environment. 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.</p>							
<b>B. PROGRAM CHANGE SUMMARY:</b>							
		FY2008	FY2009	FY2010			
Funding:							
FY 2009 President's Budget:		47.876	46.902	47.617			
FY 2010 President's Budget:		56.459	49.150	46.971			
Total Adjustments:		8.583	2.248	-0.646			
Summary of Adjustments:							
a. Congressional Adjustments:			2.248				
- FY08 GWOT:		6.451					
b. SBIR/STTR Transfer:		-0.378					
c. Program Adjustments:		2.510					
d. Rate/Misc Adjustments:		0.000		-0.646			
Subtotal		8.583	0	-0.646			

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>May 2009</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-4 Adv Comp Dev &amp; Prototypes</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0603851M Non-Lethal Warfare DEM/VAL</b>				PROJECT NUMBER AND NAME <b>C2319 Non-Lethal Weapons Program</b>			
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total			
Project Cost		<b>55.494</b>	<b>46.757</b>	<b>46.971</b>	<b>0.000</b>	<b>46.971</b>			
RDT&E Articles Qty									
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>									
This project develops non-lethal weapon (NLW) systems that by their design, provide a new non-lethal capability to minimize fatal or permanent injuries and undesired damage to property and the environment. 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.									
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010			
Accomplishment/Effort Subtotal Cost		<b>2.625</b>		<b>3.393</b>		<b>3.563</b>			
RDT&E Articles Qty									
Execution oversight, administration and support of the Joint NLW Program and technologies database.									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010			
Accomplishment/Effort Subtotal Cost		<b>1.125</b>		<b>1.357</b>		<b>1.402</b>			
RDT&E Articles Qty									
Evaluation of NLWs by Service warfighting laboratories and Joint Forces Command (JFCOM) for direct user feedback of various non-lethal (NL) technologies and munitions.									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010			
Accomplishment/Effort Subtotal Cost		<b>1.305</b>		<b>1.379</b>		<b>1.101</b>			
RDT&E Articles Qty									
Modeling and simulation (M&S) of NLWs in warfighter training/war gaming models and performance effects data collection/population to demonstrate/analyze NL effects and optimize training.									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010			
Accomplishment/Effort Subtotal Cost		<b>0.248</b>		<b>0.118</b>		<b>0.000</b>			
RDT&E Articles Qty									
Pursuit of new technology through open competition of industry, academia and government laboratory sources for NL capabilities.									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010			
Accomplishment/Effort Subtotal Cost		<b>2.345</b>		<b>3.000</b>		<b>2.600</b>			
RDT&E Articles Qty									
Airburst Non-Lethal Munition (formerly known as Objective Individual Combat Weapons (OICW)) – Continue development of NL munitions for the “next generation” 25mm combat weapon to exploit air-burst munitions with NL payloads at longer ranges with existing systems.									

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N/BA-4 Adv Comp Dev & Prototypes		0603851M Non-Lethal Warfare DEM/VAL		C2319 Non-Lethal Weapons Program
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		2.400	2.055	2.125
RDT&E Articles Qty				
Program support for each service's coordination and participation in the Joint NLW Program.				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		0.770	0.000	0.000
RDT&E Articles Qty				
Mk19 NL Munition - Development of a NL munition for the 40mm Mk19 Grenade Machine Gun.				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		4.000	5.150	1.000
RDT&E Articles Qty				
Active Denial Technology (ADT) Transition - efforts continue maturation of active denial technologies in preparation for transition to joint acquisition programs of record. Changes between FY10 and FY11 capture solid state ADT transitions from Advanced Technology Development to higher levels of research and development.				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		6.260	0.000	0.000
RDT&E Articles Qty				
Continue risk reduction efforts to reduce cost, size and weight of active denial technology to meet operational user requirements for a joint active denial system. Initiate efforts to integrate active denial technology into a Mine Resistant Ambush Protected (MRAP) vehicle.				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		5.044	0.000	0.000
RDT&E Articles Qty				
Funds provided from the Joint Rapid Acquisition Cell for activities associated with preparing the Active Denial System 2 for an operational deployment in response to a joint urgent operational need statement (JUONS).				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		0.000	0.500	0.500
RDT&E Articles Qty				
Distributed Sound and Light Array (DSLAs) - Multi-sensory counter-personnel research on non-lethal acoustical/optical weapons for use as a hail and warning device.				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		6.045	6.031	6.031
RDT&E Articles Qty				
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.				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		10.030	11.086	17.523
RDT&E Articles Qty				
The advanced development of emerging technologies into the acquisition process to satisfy critical joint mission tasks. Increases to this line item represent maturing technology transitions from advanced technology development efforts.				

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			<b>May 2009</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-4 Adv Comp Dev &amp; Prototypes</b>	<b>0603851M Non-Lethal Warfare DEM/VAL</b>		<b>C2319 Non-Lethal Weapons Program</b>	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	<b>7.925</b>	<b>7.062</b>	<b>7.390</b>	
RDT&E Articles Qty				
System development and design of technology development downselected items to proceed into the acquisition cycle to provide NL technology solutions to critical joint mission tasks.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	<b>1.579</b>	<b>1.026</b>	<b>1.036</b>	
RDT&E Articles Qty				
Develop/expand the NATO Measures of Effectives (MOE) efforts, chaired by the U.S. to provide input for Defense Capabilities Initiative (DCI) and NATO assessment of NLW in the Defense planning process. Expanded interaction with component commander (COCOM) staffs to identify emerging NLW capabilities and their utility in theater operations and Homeland Security missions.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	<b>1.888</b>	<b>3.800</b>	<b>2.000</b>	
RDT&E Articles Qty				
Mission Payload Module Non Lethal Weapon System (formerly TUGV) - Development of a tube launched NL munition for integration on HMMWVs, tactical vehicles, boats and ships, with a range of 30-150 meters (T) and 10 - 500 meters (O). Mission Payload Module (MPM) will provide an improved Non-Lethal (NL) capability applicable to controlling crowds, denying/defending areas, controlling access and engaging threats while providing increased standoff for protection of friendly forces. The weapons platform will provide greater range, area coverage, duration of effects, selectability, and scalability for these non-lethal effects than current NLW systems. The first increment of MPM will be mounted on the High Mobility Multipurpose Wheeled Vehicle (HMMWV) or its replacement.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	<b>1.105</b>	<b>0.000</b>	<b>0.000</b>	
RDT&E Articles Qty				
Vehicle Lightweight Arresting Device (VLAD) - Accelerated development and acquisition of a man-portable, pre-emplaced spiked net vehicle stopper.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	<b>0.800</b>	<b>0.800</b>	<b>0.700</b>	
RDT&E Articles Qty				
Joint Integration Program (JIP) - Select and test newly developed commercial products that May meet the Joint Services' requirements for specific NL capability set common items.				
<b>(U) Total \$</b>				
	<b>55.494</b>	<b>46.757</b>	<b>46.971</b>	
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>				
<u>Line Item No. &amp; Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
<b>(U) Related RDT&amp;E:</b>				
<b>(U) RDT&amp;E, PE: 0206623M, Project: C1901, Mission Payload Module</b>		3.913		



Exhibit R-3 Cost Analysis							DATE: <b>May 2009</b>						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N /BA-4 Adv Comp Dev &amp; Prototypes</b>			<b>0603851M Non-Lethal Warfare DEM/VAL</b>			<b>C2319 Non-Lethal Weapons Program</b>							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Product Development	MIPR	ARDEC, Picatinny, NJ	19.813	5.567	10/07	5.108	10/08	5.200	Various				
Product Development	MIPR	SOCOM, McDill AFB, FL	8.856			1.785	10/08	1.580	Various				
Product Development	WR	NSWC, Various	10.877	0.936	Various	2.000	Various	2.500	Various				
Product Development	MIPR	Eglin AFB, FL	0.000	9.260	Various	4.355	Various	1.849	Various				
Product Development	MIPR	Kirtland AFB, NM	18.061	1.000	12/07	1.000	Various	1.000	Various				
Product Development	MIPR	Brooks AFB, TX	19.744	6.120	02/08	6.220	02/09	6.500	Various				
Product Development	MIPR	JWCF, Ft. Monroe, VA	9.736	1.112	02/08	1.309	02/09						
Product Development	WR/RCP	MCSC, Quantico, VA	12.350	1.437	Various	2.000	Various	0.350	Various				
Product Development	MIPR	NSMA, Arlington, VA	14.796	3.202	01/08	4.000	01/09	2.000	01/10				
Product Development	CPFF	MCLB, Albany, GA	8.316										
Product Development	MIPR	Various - M&S	11.061	1.730	Various	1.851	Various	1.101	Various				
Product Development	MIPR	Various - JIP	9.612	0.800	Various	0.800	Various	0.700	Various				
Product Development	Various	Var (Uniformed Svcs)	32.419	19.678	Various	11.444	Various	21.412	Various				
<b>Subtotal Product Dev</b>			<b>175.641</b>	<b>50.842</b>		<b>41.872</b>		<b>44.192</b>					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Support Cost	WR	MCSC, Quantico, VA	9.216	0.500	11/07	0.500	11/08	0.318	Various				
Support Cost	WR	NSWC, Dahlgren, VA	9.196	0.470	10/07	0.710	10/08	1.311	Various				
Support Cost	Various	Various	22.608	3.143	Various	3.375	Various	0.650	Various				
<b>Subtotal Support</b>			<b>41.020</b>	<b>4.113</b>		<b>4.585</b>		<b>2.279</b>					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
T&E Cost - MPM	RCP	Various	1.714	0.539	Various	0.300	Various	0.500	Various				
<b>Subtotal T&amp;E</b>			<b>1.714</b>	<b>0.539</b>		<b>0.300</b>		<b>0.500</b>					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Management													
<b>Subtotal Management</b>			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>0.000</b>					
Remarks:													
<b>Total Cost</b>			<b>218.375</b>	<b>55.494</b>		<b>46.757</b>		<b>46.971</b>					

Exhibit R-4-4a Project Schedule/Detail			DATE: <b>May 2009</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME				
RDT&E, N /BA-4 Adv Comp Dev & Prototypes	0603851M Non-Lethal Warfare DEM/VAL	C2319 Non-Lethal Weapons Program				
<b>(U) D. SCHEDULE PROFILE:</b>						
<b><u>Airburst Non-Lethal Munition (ANLM)</u></b>						
MS A:	3rd Qtr, FY2003					
MS B:	4th Qtr, FY2008					
DT / OT:	4th Qtr, FY 2010					
<b><u>Active Denial System (ADS)</u></b>						
ACTD Approved:	3rd Qtr, FY2002					
MS A:	4th Qtr, FY 2009					
<b><u>Mission Payload Module</u></b>						
MS B	1st Qtr, FY 2009	Contract Award:	2nd Qtr, FY 2009 (for SD&D)			
CDD Approval	1st Qtr, FY 2008					
Market Research/Evaluation	4th Qtr, FY 2008					
Contractor Design/Test	3rd Qtr, FY 2009					
The development of new technology NLW systems are in various stages of acquisition and the acquisition strategy for each weapon system is largely dependent on the Lead Service.						
		<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY2010 OCO</b>	<b>FY2010 Total</b>
<b><u>Program Funding Summary</u></b>						
<b><u>(APPN, BLI #, NOMEN)</u></b>						
(U) RDT&E,N		55.494	46.757	46.971	0.000	46.971

EXHIBIT R-2a, RDT&E Project Justification					DATE: <b>May 2009</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N /BA-4 Demonstration and Validation	0603851M Non-Lethal Warfare Dem/Val			C9878A Boat Trap Sys For Port Secrty/Water Craft Interdiction				
COST (\$ in Millions)	FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total			
C9999 Congressional Adds	0.000	2.393	0.000	0.000	0.000			
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
This project develops non-lethal weapon (NLW) systems that by their design, provide a new non-lethal capability to minimize fatal or permanent injuries and undesired damage to property and the environment. As identified in the Non-Lethal Effects Joint Capabilities Document, the ability to non-lethally stop vessels is a top capability gap identified by the Services.								
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Accomplishment/Effort Subtotal Cost	0.000	2.393	0.000					
RDT&E Articles Qty								
This Congressional plus-up is intended to advance technology to broaden the boat trap system effectiveness against several threat water-crafts								
(U) Total \$	0.000	2.393	0.000					
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>								
<u>Line Item No. &amp; Name</u>								
	FY 2008	FY 2009	FY 2010	FY2010 OCO				
<b>(U) Related RDT&amp;E:</b>								
(U) RDT&E PE 0603851M, Project C2319, NL Warfare Dem/Val	55.494	46.757	46.971	0.000				
<b>(U) D. ACQUISITION STRATEGY:</b>								
The JNLW Program strategy is to continue to pursue the fielding of NLW systems through modifying Commercial-Off-The-Shelf (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. The JNLWP provides RDT&E funding while the Services are responsible for procurement and operations and maintenance funding. For complex development programs, such as directed energy research, JNLWP RDT&E funds will augment Service RDT&E funding in support of joint applications.								
<b>(U) E. MAJOR PERFORMERS:</b>								

EXHIBIT R-2a, RDT&E Project Justification					DATE: <b>May 2009</b>			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME			
RDT&E, N /BA-4 Demonstration and Validation		0603851M Non-Lethal Warfare Dem/Val			C9B97A Cong/High Power Micro Sys Vehicle Immobilization			
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total		
C9999 Congressional Adds		0.965	0.000	0.000	0.000	0.000		
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
This project develops non-lethal weapon (NLW) systems that by their design, provide a new non-lethal capability to minimize fatal or permanent injuries and undesired damage to property and the environment. As identified in the Non-Lethal Effects Joint Capabilities Document, the ability to non-lethally stop vehicles is the top capability gap as identified by the Services.								
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Accomplishment/Effort Subtotal Cost		0.965	0.000	0.000				
RDT&E Articles Qty								
This Congressional plus-up is intended to advance technology to further develop high-power microwave systems for vehicle immobilization. The Service requirement for this item is based on the need to combat vehicle borne improvised explosive devices without causing harm to innocent civilians or their vehicles.								
<b>(U) Total \$</b>		<b>0.965</b>	<b>0.000</b>	<b>0.000</b>				
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>								
<u>Line Item No. &amp; Name</u>		<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY2010 OCO</b>			
<b>(U) Related RDT&amp;E:</b>								
(U) RDT&E PE 0603851M, Project C2319, NL Warfare Dem/Val		55.494	46.757	46.971	0.000			
<b>(U) D. ACQUISITION STRATEGY:</b>								
The JNLW Program strategy is to continue to pursue the fielding of NLW systems through modifying Commercial-Off-The-Shelf (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. The JNLWP provides RDT&E funding while the Services are responsible for procurement and operations and maintenance funding. For complex development programs, such as directed energy research, JNLWP RDT&E funds will augment Service RDT&E funding in support of joint applications.								
<b>(U) E. MAJOR PERFORMERS:</b>								