

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2000

BUDGET ACTIVITY
4 - Demonstration/Validation

PE NUMBER AND TITLE
**0603635M Marine Corps Ground
Combat/Supporting Arms Systems**

COST (In Millions)	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
Total Program Element (PE) Cost	54971	50375	23216	8682	7516	2816	2564	Continuing	Continuing
C1964 Anti-Armor Weapon System	424	629	613	635	865	793	529	Continuing	Continuing
C2112 Howitzer, Medium Towed 155MM (LW 155)	31763	27117	13119	0	0	0	0	0	142633
C2113 Predator Short Range Assault Weapon	14727	10681	492	0	0	0	0	0	143312
C2251 Jt Adv Amphibious Logistics Technology	1	0	0	0	0	0	0	0	1
C2256 Integrated Infantry Combat System (IICS)	309	747	605	1749	1766	1782	1795	Continuing	Continuing
C2507 Small Unit Riverine Craft (SURC)	0	3021	1757	225	10	0	0	0	5003
C2508 Internally Transportable Vehicle	0	5196	6630	6073	4875	241	240	130	23385
C2614 SMAW Follow-On	2905	2984	0	0	0	0	0	0	5889
C2615 Trajectory Corrected Munitions (TCM)	4842	0	0	0	0	0	0	0	4842
Quantity of RDT&E Articles									

(U) **Mission Description and Budget Item Justification:** This PE supports the demonstration and validation of Marine Corps Ground/Supporting Arms Systems for utilization in Marine Air-Ground Expeditionary Force amphibious operations.

(U) **Justification for Budget Activity:** This program is funded under DEMONSTRATION & VALIDATION because it develops and integrates hardware for experimental test related to specific ground weapon system applications

R-1 Line Item 58

Budget Item Justification

(Exhibit R-2, Page 1 of 28)

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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C1964
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COST (In Millions)	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
C1964 Anti-Armor Weapon System	424	629	613	635	865	793	529	Continuing	Continuing
Quantity of RDT&E Articles									

A. (U) Mission Description and Budget Item Justification:

(U) This project provides for Marine Corps participation in the Joint Anti-Armor Program entitled Javelin (Advanced Anti-Tank Weapon System - Medium (AAWS-M)) and the Anti-Armor Weapon System - Heavy (AAWS-H). The Javelin weapon system will provide the Marine Corps and Army with state-of-the-art capability to destroy sophisticated and future armored threats. No such medium anti-armor system is currently available to the infantryman. The AAWS-H is a long range, antitank weapon system that will replace the Tube Launched, Optically Tracked, Wire Guided Missile System. It will satisfy an operational requirement to provide increased range (4000 meters), increased lethality against all armored threats, to include explosive reactive armor, active protection, increased probability of hit and kill and increased gunner survivability. Possible Light Armored Vehicle-Anti Tank usage would promote commonality among Marine Corps systems .

(U) FY 1999 Accomplishments:

- (U) \$ 200 Monitored and participated in Production Qualification Test (PQT) & Preplanned Product Improvement (P3I) for Javelin by using Engineering/Technical Support.
- (U) \$ 196 Monitored and participated in advancing technical developments in the AAWS-H program by using Engineering / Technical Support.
- (U) \$ 28 Prepared necessary Marine Corps documentation for the AAWS-H program.
- (U)Total \$ 424

(U) FY 2000 Planned Program:

- (U) \$ 237 Engineering/Technical support to monitor and participate in PQT and P3I for the Javelin program.
- (U) \$ 368 Engineering and Technical Support to monitor and participate in technical developments in the AAWS-H program.
- (U) \$ 24 Prepare necessary Marine Corps documentation for the AAWS-H program.
- (U)Total \$ 629

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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C1964																																								
<p>(U) FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • (U) \$ 243 Engineering/Technical support to monitor and participate in PQT and P3I for the Javelin program. • (U) \$ 335 Engineering/Technical support to monitor and participate in technical developments in the AAWS-H program. • (U) \$ 35 Prepare necessary Marine Corps documentation for the AAWS-H program. <p>(U) Total \$ 613</p>																																										
<p>B. (U) <u>Project Change Summary</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 1999</u></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">427</td> <td style="text-align: center;">633</td> <td style="text-align: center;">610</td> </tr> <tr> <td>(U) Adjustments to Previous President's Budget</td> <td style="text-align: center;">-3</td> <td style="text-align: center;">-4</td> <td style="text-align: center;">+3</td> </tr> <tr> <td>(U) Current Budget Submit</td> <td style="text-align: center;">424</td> <td style="text-align: center;">629</td> <td style="text-align: center;">613</td> </tr> </tbody> </table> <p>(U) Change Summary Explanation:</p> <p style="padding-left: 20px;">(U) Funding: Changes in all fiscal years are due to minor affordability adjustments.</p> <p style="padding-left: 20px;">(U) Schedule: N/A</p> <p style="padding-left: 20px;">(U) Technical: N/A</p>				<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	(U) Previous President's Budget	427	633	610	(U) Adjustments to Previous President's Budget	-3	-4	+3	(U) Current Budget Submit	424	629	613																								
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(U) Current Budget Submit	424	629	613																																							
<p>C. (U) <u>Other Program Funding Summary</u> (APPN, BLI #, NOMEN)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="text-align: center;"><u>FY 1999</u></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>To</u></th> <th style="text-align: center;"><u>Total</u></th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;"><u>Compl</u></td> <td style="text-align: center;"><u>Cost</u></td> </tr> </thead> <tbody> <tr> <td>*(U) PMC BLI# 301100</td> <td style="text-align: center;">82,653</td> <td style="text-align: center;">92,737</td> <td style="text-align: center;">29,119</td> <td style="text-align: center;">1,033</td> <td style="text-align: center;">1,047</td> <td style="text-align: center;">113</td> <td style="text-align: center;">137</td> <td style="text-align: center;">0</td> <td style="text-align: center;">302,792</td> </tr> <tr> <td>(U)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) Related RDT&E</p>				<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) PMC BLI# 301100	82,653	92,737	29,119	1,033	1,047	113	137	0	302,792	(U)									
	<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) PMC BLI# 301100	82,653	92,737	29,119	1,033	1,047	113	137	0	302,792																																	
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PE NUMBER AND TITLE
**0603635M Marine Corps Ground
Combat/Supporting Arms Systems**

PROJECT
C1964

**D. (U) Schedule Profile
JAVELIN SCHEDULE**

Task Name	1995				1996				1997				1998				1999				2000				2001			
	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
Operational Testing:																												
Independent Evaluation Report (IER)																												
Live Fire Test & Evaluation Report (LFT&ER)																												
CONTRACTING PREPARATION																												
Contracting																												
PRODUCTION & FIELDING	<hr/>																											
PROGRAM CONTROL	<hr/>																											
MS III APPROVAL	<hr/>																											
Contract Award																												
FULL-RATE PRODUCTION & FIELDING	<hr/>																											
Multi-year II (Four-Year) Production Contract Award																												
Year I Production and Delivery:																												

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Budget Item Justification

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Task Name	1997			1998			1999			2000			2001			2002			2003								
	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
TOW Service Life Extension Program Cost Study								■	■	■	■																
TOW Fire and Forget Participation								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
US Army Missile Modernization Working Group								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
SET Cost as Independent Variable Objectives												■	■														
Develop Operational Requirement Document												■	■	■													
AAWS-H ANALYSIS OF ALTERNATIVES												■	■														
Establish Initial Acquisition Program Baseline												■	■														
ESTABLISH ACQUISITION STRATEGY												■	■														
DETERMINE PHASE I EXIT CRITERIA														■	■												
MILESTONE I																◆	2/2										
US Army Common Modular Missile Tech Assistance								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Counter APS Development								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Begin WSESRB Activities														■	■	■	■	■	■	■	■	■	■	■	■		
Begin Test and Evaluation Master Plan Process														■	■	■	■	■	■	■	■	■	■	■	■		
Begin Developmental Test Evaluation														■	■	■	■	■	■	■	■	■	■	■	■		

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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2112
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COST (In Millions)	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
C2112 Howitzer, Medium Towed 155MM (LW 155)	31763	27117	13119	0	0	0	0	0	142633
Quantity of RDT&E Articles									

A. (U) Mission Description and Budget Item Justification: (U) The LW155 is the replacement for the aging, operationally deficient M198 155 Howitzer for the Marine Corps and the Army. The LW155 retains the current M198 howitzer's range, but will weigh 9,000 pounds compared to the M198's 16,000 pounds. The weight reduction significantly improves transportability and mobility by sea, air, and land platforms and enables the LW155 to emplace, displace, and bold shift in half the time of the current system while increasing the rate of fire. Thus, the LW155 provides greater transportability and mobility in strategic/tactical movements. The LW155 is a joint Marine Corps and Army program, with the Marine Corps as the Lead service. The Joint Operational Requirements Document (JORD) was approved by the Assistant Commandant of the Marine Corps on 27 June 1996. The JORD was validated and approved by the Army on 29 September 1995. A MS I/II Marine Corps Program Decision Memorandum (MCPDM) was approved on 5 February 1996. After a ten month "shoot-off" between competitors a three year EMD contract was signed with Cadillac Gage Textron Inc. on 17 March 1997. On 21 December 1998, the three parties involved in the development of the LW155 signed a novation agreement whereby Vickers Shipbuilding and Engineering Limited (VSEL) took over prime contractor responsibilities from Cadillac Gage Textron. The program will complete development in FY01 and enter production in FY 02.

(U) FY 1999 Accomplishments:

- (U) \$ 2,404 Provided government program management support.
- (U) \$ 2,256 ARDEC continued matrix development engineering to system, logistics, safety, quality assurance, corrosion prevention.
- (U) \$ 548 Provided other government development engineering to system, logistics, safety, quality assurance.
- (U) \$ 19,134 Continued and completed contractor development engineering and prototype manufacturing. Restructure efforts such as Primer Feed Mechanism and Modular Artillery Charge System Compatibility, to reduce risk and enhance system performance established in the Joint Operational Requirements Document (JORD).
- (U) \$ 1,743 Conducted system development test and evaluation at Yuma Proving Grounds, AZ, ARDEC, Picatinny, NJ and ATC, Aberdeen, MD.
- (U) \$ 5,678 Conducted engineering and prototype manufacturing at Benet Labs and Watervliet Arsenal, NY.
-
- (U)Total\$ 31,763

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Budget Item Justification

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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2112
<p>(U) FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • (U) \$ 3,035 Program management support. • (U) \$ 2,556 ARDEC continues matrix development engineering to system, logistics, safety, quality assurance, corrosion prevention. • (U) \$ 16,094 Engineering and manufacturing development (EMD) contract increments to VSEL and Kara, Inc. • (U) \$ 527 Provide other government development engineering support to system, safety, logistics and quality assurance. • (U) \$ 3,461 Conduct technical test series (fatigue, recoil durability, cold, hot/humid, corrosion, transportability, logistics demonstration, spades, wear, firing tables). • (U) \$ 1,444 Conduct engineering and prototype manufacturing at Benet Labs and Watervliet Arsenal, NY. <p>(U) Total \$ 27,117</p> <p>(U) FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • (U) \$ 2,000 Program Management Support. • (U) \$ 1,000 ARDEC continues matrix development engineering to system, logistics, safety, quality assurance. • (U) \$ 5,808 EMD Contract increments (VSEL & KARA) to contract close out and final award fee. • (U) \$ 1,273 Provide other government development engineering support to logistics and quality assurance. • (U) \$ 2,638 Provide support to Multi-service Operational Test & Evaluation (MOT&E) – Marine travel costs, transportation, materials. • (U) \$ 400 Conduct engineering and prototype manufacturing at Benet Labs and Watervliet Arsenal, NY. <p>(U) Total \$ 13,119</p>		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2112
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B. (U) <u>Project Change Summary</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Previous President's Budget	32,332	23,237	12,105
(U) Adjustments to Previous President's Budget	(569)	+3,880	+1,014
(U) Current Budget Submit	31,763	27,117	13,119

(U) Change Summary Explanation:

(U) Funding: FY 1999 decrease of \$422K for SBIR Tax Assessment and \$147K Inflation Savings. FY2000 increase in the amount of \$3.03M due to \$1.5M VSEL Engineering Development, \$1.1M Kara Fire Control and \$430K additional spares, wear and firing table tests, \$1M for risk mitigation testing and reduced by \$150K for General Reduction. FY2001 increased by \$1.138M for unprogrammed operational test by MCOTEA and reduced by \$124K for PBD 604 (\$90K) and NAVCOMPT adjustment (\$34k).

(U) Schedule: Change shows restructure of program

(U) Technical: Not applicable

C. (U) <u>Other Program Funding Summary</u> (APPN, BLI #, NOMEN)	<u>FY 1998</u>	<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) PMC, BLI #218500, Howitzer, Medium Towed 155MM XM777 (LW 155)	0	0	0	11,105	90,055	197,065	142,352	238	<u>Compl</u> 0	<u>Cost</u> 440,815

(U) **Related RDT&E:** PE 0604854A (Artillery Systems-Engineering Development)

D. (U) Schedule Profile

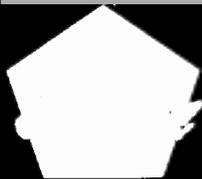
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY
4 - Demonstration/Validation

PE NUMBER AND TITLE
0603635M Marine Corps Ground
Combat/Supporting Arms Systems

PROJECT
C2112



XM777 & TAD Integrated Program Schedule - Draft

Updated 01-12-00

The Future of Towed Cannon Artillery

	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Total
Phases		Engineering & Manufacturing Development					Production...									
Milestones	▲ MS 0	▲ MS I/II					▲ LL	▲ MS III		▲ IOC			▲ FOC			
Contract Award																
Deliveries																
DT																
MOT&E																
Phases																
Milestones																
Formal Solicitation Release																
Contract Award																
Deliveries																
DT & E																
MOT&E																
SMC RDTE	6.3	14.4	13.5	36.2	31.7	27.1	13.1									142.6
SMC XM777 Prod						0	11.1	90.1	197.1	142.4	0.2					440.9
SMC XM777 Quantities								70	185	195	0					450
SMC TAD Production										0	0	33.0	18.7			51.7
Army TAD RDTE (FY01 BES)					1.0	4.8	17.4	10.7	9.9							43.8
Army XM777 Prod (FY01 BES)								0.1	7.4	26.5	42.0	103.1	133.3	81.6	56.9	450.9
Army XM777 Prod (FY01 BES)								5	20	31	64	80	51	22		273

Marines Fund Cannon R&D for Both Services

450 Guns

XM777

Army Funds TAD R&D for Both Services

273 Guns

TAD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 2000

BUDGET ACTIVITY
4 - Demonstration/Validation

PE NUMBER AND TITLE
**0603635M Marine Corps Ground
Combat/Supporting Arms Systems**

PROJECT
C2112

A. (U) Project Cost Breakdown

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Project Cost Categories			
a. Primary Hardware Development	19,134	15,786	5,808
b. Government Developmental Engineering	2,804	3,083	2,273
c. Program Management Support	2,404	3,343	2,000
d. Test and Evaluation	1,743	3,461	2,638
e. Conduct Engineering and Prototype Manufacturing, Benet & Watervliet Arsenal, NY	5,678	1,444	400
Total	31,763	27,117	13,119

B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1999	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	BudgetTo Complete	Total Program
Product Development Organizations										
Cadillac Gage Textron, Inc, New Orleans, LA	CPIF	Mar 1997	28,640	28,640	28,640	0	0	0	0	28,640
VSEL Barrow-in- Furness, UK	CPIF	Dec 1998	35,612	35,612	1,224	17,734	13,186	5,188	0	37,332
Kara Bedford, PA	CPIF	Apr 1999	2,491	2,491	0	1,400	2,600	620	0	4,620
ARDEC, Picatinny, NJ	MIPR	Oct 1996	12,115	12,115	5,337	2,256	2,556	1,000	0	11,149
ARDEC Picatinny, NJ Source Selection Evaluation Board	MIPR	Oct 1996	4,494	4,494	4,494	0	0	0	0	4,494

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Budget Item Justification

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 2000	
BUDGET ACTIVITY 4 - Demonstration/Validation					PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems				PROJECT C2112	
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1999	FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
Misc Government Accounts	MIPR	Various	11,119	11,119	7,603	548	527	1,273	0	9,951
Support and Management Organizations										
PMO LW 155, Picatinny, NJ	MIPR	Oct 1996	15,867	15,867	7,620	2,070	3,035	2,000	0	14,725
Support Contracts	Contracts	Various			2,042	344	308			2,684
Test and Evaluation Organizations										
Yuma Proving Ground, Yuma AZ (Shoot-off)	MIPR	Feb 1996	1,900	1,900	1,900	0	0	0	0	1,900
Yuma Proving Ground, Yuma AZ	MIPR	Oct 1996	12,929	12,929	1,672	1,288	3,381	1,500	0	7,841
Misc Government	MIPR	Various	3,376	3,376	3,376	30	80	1,138	0	4,624
T&E Contracts	Contracts	Various			0	425	0	0	0	425
Government Furnished Property										
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
Benet Labs, Watervliet Arsenal, NY	MIPR	Various	Various		6,726	5,678	1,444	400	0	13,248
Support and Management Property										

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Budget Item Justification

(Exhibit R-3, Page 11 of 28)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE February 2000
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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2112
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Test and Evaluation Property

	Total Prior to <u>FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	Budget to <u>Complete</u>	Total <u>Program</u>
Subtotal Product Development	54,024	27,616	20,313	8,481	0	110,434
Subtotal Support and Management	9,662	2,404	3,343	2,000	0	17,409
Subtotal Test and Evaluation	6,948	1,743	3,461	2,638	0	14,790
Total Project	70,634	31,763	27,117	13,119	0	142,633

R-1 Line Item 58

Budget Item Justification

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2113
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COST (In Millions)	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
C2113 Predator Short Range Assault Weapon	14727	10681	492	0	0	0	0	0	143312
Quantity of RDT&E Articles	51	103							

A. (U) Mission Description and Budget Item Justification:

(U) Predator (SRAW) will provide the Marine Corps with a lethal, disposable, fire and forget, top-attack, soft launch for firing from enclosed spaces, proliferable, accurate, night vision capable, lightweight, main battle tank killer. Modularity of the system will allow development of optimal warheads (flame, bunker-busting, multi-purpose) to fit on the flight module.

(U) FY 1999 Accomplishments:

- (U) \$ 11,591 Continued EMD Phase of program.
 - (U) \$ 419 Conducted Modeling & Simulation Independent Validation and Verification.
 - (U) \$ 380 Prepared for Operational Testing.
 - (U) \$ 1,881 Provided engineering/Technical services to complete Developmental Testing (DT)
 - (U) \$ 456 Provided PM/In-House Support/Engineering Change Proposals (ECP)
- (U)Total \$ 14,727

(U) FY 2000 Planned Program:

- (U) \$ 4,369 Complete EMD Phase of the program.
 - (U) \$ 1,971 Conduct Operational Testing.
 - (U) \$ 205 Complete Modeling & Simulation
 - (U) \$ 1,330 PM/In-House Support/ECPs
 - (U) \$ 2,806 Engineering/Technical Services Support
- (U)Total \$ 10,681

(U) FY 2001 Planned Program:

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Budget Item Justification

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2113
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- (U) \$ 171 PM/In-House Support
- (U) \$ 321 Engineering/Technical Services Support
- (U)Total \$ 492

B. (U) <u>Project Change Summary</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Previous President's Budget	12,781	13,371	492
(U) Adjustments to Previous President's Budget	1,946	-2,690	0
(U) Current Budget Submit	14,727	10,681	492

(U) Change Summary Explanation:

(U) Funding: FY 1999: increase of \$1946K due to reprioritization of programs within the Marine Corps. FY2000: decrease of \$2690K due to reprioritization of programs within the Marine Corps and a minor affordability adjustment.

(U) Schedule: N/A

(U) Technical: N/A

C. (U) <u>Other Program Funding Summary</u> (APPN, BLI #, NOMEN)	<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>	To <u>Compl</u>	Total <u>Cost</u>
(U) PMC, 308900, Predator (SRAW)	0	0	43,355	42,480	48,809	64,357	62,621	331,016	592,638

(U) **Related RDT&E: Not Applicable.**

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2000			
BUDGET ACTIVITY 4 - Demonstration/Validation				PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems				PROJECT C2256		
COST <i>(In Millions)</i>	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	
C2256 Integrated Infantry Combat System (IICS)	309	747	605	1749	1766	1782	1795	Continuing	Continuing	
Quantity of RDT&E Articles										

A. (U) Mission Description and Budget Item Justification: (U) USMC name for this program is now Integrated Infantry Combat System (IICS) for dismounted combat Marines. The program will enhance the Marine's battlefield capabilities through the development and integration of an assortment of Marine systems/components and technologies into a cohesive, timely and combat effective system. These systems/components include weapon, integrated helmet assembly, protective clothing, communications and target acquisition technologies. This will provide the infantryman with increased lethality, survivability and situational awareness enhancements. Initial funding in this line will be utilized to determine and exploit integration opportunities on existing infantry equipment which will be fielded in the near future. Funds will also be utilized for the Research & Development of a future integrated system which is modular in design which will enhance the infantrymans mobility, lethality, survivability and communications.

(U) FY 1999 Accomplishments:

- (U) \$ 86 Program Support and Acquisition Strategy Development
- (U) \$ 223 Studies, analysis and support services.

(U)Total\$ 309

(U) FY 2000 Planned Program:

- (U) \$ 157 Forward Financed
- (U) \$ 130 Program Support and Strategy Development
- (U) \$ 160 Develop Modeling, Simulation, and Analysis Decision Support System.
- (U) \$ 300 Studies and analysis.

(U)Total\$ 747

(U) FY 2001 Planned Program:

- (U) \$ 423 Integration of existing infantry equipment as determined and recommended by previous studies.

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Budget Item Justification

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000	
BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2256	
<ul style="list-style-type: none"> • (U) \$ 0 Integration of existing infantry equipment as determined and recommended by previous studies. This effort forward financed with \$157K of FY 00 funding. • (U) \$ 110 Continued development and coordination w/US Army Land Warrior Program. • (U) \$ 72 Studies, analysis and support services. (U)Total \$ 605 			
 B. (U) <u>Project Change Summary</u>			
	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Previous President's Budget	730	751	768
(U) Adjustments to Previous President's Budget	-421	-4	-163
(U) Current Budget Submit	309	747	605
 (U) Change Summary Explanation:			
(U) Funding: FY 1999: Decrease in the amount of \$421K was due to reprioritization of requirements within the Marine Corps.			
FY 2000: Decrease in the amount of \$4K was due to general reduction.			
FY 2001: Decrease in the amount of \$163K was due to reprioritization of requirements within the Marine Corps and PBD 604 Reduction.			
(U) Schedule: N/A			
 (U) Technical: N/A			
 (U) Related RDT&E:			
(U) PE 0602131M (Marine Corps Landing Force Technology)			
(U) PE 0603640M (Marine Corps Advanced Technology Demonstration)			
(U) PE 64657M (US Army Land Warrior Program)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2000**

BUDGET ACTIVITY
4 - Demonstration/Validation

PE NUMBER AND TITLE
**0603635M Marine Corps Ground
Combat/Supporting Arms Systems**

PROJECT
C2256

C. (U) Schedule Profile:

INTEGRATED INFANTRY COMBAT SYSTEM

ID	Task Name	1998				1999				2000				2001				2002					
		Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
1	Phase 0																						
2	Milestone 0			■																			
3	Raytheon Market Survey																						
4	A. D. Little Fightability St																						
5	Systems Integration																						
6	Integration R&D																						
7	Develop MS&A capability																						
8	KPP Development																						
9	Baseline Study																						
10	Milestone I																						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2507
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<i>COST (In Millions)</i>	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
C2507 Small Unit Riverine Craft (SURC)	0	3021	1757	225	10	0	0	0	5003
Quantity of RDT&E Articles									

A. (U) Mission Description and Budget Item Justification:
 (U) The Small Unit Riverine Craft (SURC) will provide tactical mobility and a weapons platform for elements of a Marine Air Ground Task Force (MAGTF) Ground Combat Element (GCE) in the Riverine Environment. The SURC will replace the Rigid Raiding Craft (RRC) which was fielded 12 years ago. It will augment the larger Riverine Assault Craft (RAC) in riverine operations to include troop transport, troop insertion, and extraction, convoy ops, and application of fires.

(U) **FY 1999 Accomplishments:** Not Applicable.

- (U) FY 2000 Planned Program:**
- (U) \$ 368 System Analysis for SURC integration and testing of non-developmental components.
 - (U) \$ 325 Developmental Test Plan/Conduct Developmental Testing / Performance and Functioning testing.
 - (U) \$ 150 Commercial Design Review for non-developmental integration.
 - (U) \$ 625 Procure Candidate Hulls and conduct modifications for the integration of non-developmental candidate sub-systems.
 - (U) \$ 1,483 Procure and Integrate candidate Engines, Propulsion System, Navigation and Communication System, and Weapon System Mounts into Hulls.
 - (U) \$ 70 Provide Government Project Management and Documentation Support for the SURC Program.
- (U) Total \$ 3,021

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2000		
BUDGET ACTIVITY 4 - Demonstration/Validation			PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems				PROJECT C2507		
(U) FY 2001 Planned Program:									
• (U) \$	564	Continue Integration and Testing of NDI System Components / Performance & Functioning Testing.							
• (U) \$	800	Fabrication of OT Prototype Craft / Fabrication of Gun Mount.							
• (U) \$	300	Continue System Analysis / finalize Prototype Development and Commercial Design / and Developmental Testing Plan.							
• (U) \$	93	Continue Government Project Management Office support for the SURC Program.							
(U)Total \$	1,757								
B. (U) <u>Project Change Summary</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>						
(U) Previous President's Budget	0	3038	1750						
(U) Adjustments to Previous President's Budget	0	-17	+7						
(U) Current Budget Submit	0	3021	1757						
(U) Change Summary Explanation:									
(U) Funding: FY 00 decrease of \$17K due to a minor affordability adjustment. FY 01 increase of \$7K is due to NWCF rate changes and NAVCOMPT adjustments.									
(U) Schedule: Milestone-I date was changed to 2d Qtr FY 00 due to staffing of program documentation.									
(U) Technical: N/A									
C. (U) <u>Other Program Funding Summary</u> (APPN, BLI #, NOMEN)	<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) PMC BLI # 667000, SURC	0	0	0	2156	2323	3207	0	0	7686
(U) Related RDT&E: Not Applicable.									

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Budget Item Justification

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 2000

BUDGET ACTIVITY
4 - Demonstration/Validation

PE NUMBER AND TITLE
0603635M Marine Corps Ground
Combat/Supporting Arms Systems

PROJECT
C2507

D. (U) Schedule Profile

SMALL UNIT RIVERINE CRAFT (SURC)

ID	Task Name	2000				2001				2002				2003			
		Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
1	Milestone I		◆														
2	Release RFP		◆														
3	Contractor Proposal Dev.		◆	◆													
4	Source Selection Board			◆													
5	Contract Award			◆													
6	Fabricate Prototypes			◆	◆	◆	◆										
7	Developmental Testing				◆	◆	◆										
8	Milestone II							◆									
9	Fabricate EMD Craft								◆	◆	◆	◆					
10	Operational Testing												◆	◆			
11	Milestone III																◆
12	Contract Award																
13	FOC																◆

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Budget Item Justification

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000			
BUDGET ACTIVITY 4 - Demonstration/Validation					PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems				PROJECT C2507	
A. (U) <u>Project Cost Breakdown</u>					<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
a. Government Developmental Engineering / Contract development.					0	2125	300			
b. Test and Evaluation.					0	325	609			
c. Conduct Engineering and Prototype Development.					0	501	755			
d. Program Management Support					0	70	93			
Total					0	3021	1757			
B. <u>Budget Acquisition History and Planning Information</u>										
Performing Organizations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1999	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	Budget to Complete	Total Program
Product Development Organizations										
NSWC Carderock, Suffolk, VA	WR	Oct 1999	2650	2650	0	0	2125	300	225	2650
NSWC Carderock, Suffolk, VA	WR	Oct 1999	1256	1256	0	0	501	755	0	1256
Support and Management Organizations										
ALS Inc. triangle VA	MIPR	Oct 1999	173	173	0	0	70	93	10	173
Test and Evaluation Organizations										
NSWC, Carderock, Suffolk VA	WR	Oct 1999	934	934	0	0	325	609	0	934

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Budget Item Justification

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2000			
BUDGET ACTIVITY 4 - Demonstration/Validation				PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems			PROJECT C2507		
Government Furnished Property N/A									
Item	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
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
Product Development Property									
Support and Management Property									
Test and Evaluation Property									
				Total Prior to FY 1999	FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
Subtotal Product Development				0	0	2626	1055	225	3906
Subtotal Support and Management				0	0	70	93	10	173
Subtotal Test and Evaluation				0	0	325	609	0	934
Total Project				0	0	3021	1757	235	5013

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Budget Item Justification

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
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BUDGET ACTIVITY 4 - Demonstration/Validation	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT C2508
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<i>COST (In Millions)</i>	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
C2508 Internally Transportable Vehicle	0	5196	6630	6073	4875	241	240	130	23385
Quantity of RDT&E Articles		2							

A. (U) Mission Description and Budget Item Justification: The Internally Transportable Vehicles (ITV) program was previously known as the Light Strike Vehicle (LSV) program. This project develops a joint MV-22 aircraft transportable family of light tactical, wheeled vehicles. The ITV's will provide reconnaissance units with a high mobility weapons platform. Follow-on variants will address logistics, command and control, medical and personnel movement missions. The ITV will replace the Fast Attack Vehicles (FAVs) currently employed throughout the Marine Air Ground Task Force (MAGTF).

(U) FY 1999 Accomplishments: Not Applicable.

(U) FY 2000 Planned Program:

- (U) \$ 4200 Begin Demonstration and Validation of two contract design vehicles.
 - (U) \$ 100 Provide In House program management and TAD/travel.
 - (U) \$ 646 Provide Engineering Support.
 - (U) \$ 250 Prepare for automotive test rig testing.
- (U)Total \$ 5196

(U) FY 2001 Planned Program:

- (U) \$ 5399 Complete Demonstration and Validation and begin Engineering, Manufacturing, and Development.
 - (U) \$ 168 Provide In House program management and TAD/travel.
 - (U) \$ 613 Provide Engineering Support.
 - (U) \$ 450 Begin Automotive Test Rig testing
- (U)Total \$ 6630

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2000				
BUDGET ACTIVITY 4 - Demonstration/Validation			PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems				PROJECT C2508				
B. (U) <u>Project Change Summary</u>			<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>						
(U) Previous President's Budget			0	1624	1973						
(U) Adjustments to Previous President's Budget			0	3572	4657						
(U) Current Budget Submit			0	5196	6630						
(U) Change Summary Explanation:											
(U) Funding: FY00 and FY01 increase provides for the award of two competitive contractor designs through DEM/VAL and EMD.											
(U) Schedule: N/A											
(U) Technical: N/A											
C. (U) <u>Other Program Funding Summary</u>			<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>	To	Total
(APPN, BLI #, NOMEN)										<u>Compl</u>	<u>Cost</u>
(U) PMC BLI# 204000 Light Strike Vehicle			0	0	0	0	0	15870	29039	Cont.	Cont.
(U)											
(U) Related RDT&E:											
SOCCOM joint participation in ITV program											

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Budget Item Justification

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000			
BUDGET ACTIVITY 4 - Demonstration/Validation				PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems			PROJECT C2508			
A. (U) <u>Project Cost Breakdown</u>				<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>				
Production Development				0	4200	5399				
Support and Management				0	746	781				
Test and Evaluation				0	250	450				
Total				0	5196	6630				
B. <u>Budget Acquisition History and Planning Information</u>										
Performing Organizations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1999	FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
Product Development Organizations										
MCSC	RCP				0	0	4200	5399	5950	15549
Support and Management Organizations										
NSWC, Carderock					0	0	346	200	500	1046
WES Army Eng	MIPR				0	0	75	0	0	75
NAWC,AD	WR				0	0	75	0	0	75
MCSC	WR				0	0	100	168	232	500
MCSC (PM)	RCP				0	0	150	413	627	1190
Test and Evaluation Organizations										
APG, TEST CTR	MIPR				0	0	50	200	3900	4150
NATC, PAX	RCP				0	0	200	250	350	800

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Budget Item Justification

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000	
BUDGET ACTIVITY 4 - Demonstration/Validation				PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems			PROJECT C2508	
Government Furnished Property: Not applicable								
Contract Method/Type	Award or Obligation	Delivery Date	Total Prior to FY 1999	FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
Product Development Property								
Support and Management Property								
Test and Evaluation Property								
			Total Prior to FY 1999	FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
Subtotal Product Development					4200	5399	5950	15549
Subtotal Support and Management					996	1231	5609	7836
Subtotal Test and Evaluation								
Total Project					5196	6630	11559	23385

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Budget Item Justification