TITLE II—RESEARCH, DEVELOPMENT, TEST, & EVALUATION

OVERVIEW

The budget request contained $69.4 billion for research, development, test, & evaluation (RDT&E). The committee recommends $69.4 billion, an increase of $112.9 million to the budget request.

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		RESEARCH, DEVELOPMENT, TEST & EVALUATION, ARMY					
		TOTAL, BASIC RESEARCH	307,594	19,500	19,500		327,094
		TOTAL, APPLIED RESEARCH	671,302	202,400	202,400		873,702
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	756,359	255,425	255,425		1,011,784
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	364,973	275,648	275,648		640,621
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	5,225,675	(778,225)	2,420,404	(3,198,629)	4,447,450
		TOTAL, RDT&E MANAGEMENT SUPPORT	1,092,650	7,000	7,000		1,099,650
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	1,315,271	61,800	80,100	(18,300)	1,377,071
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, ARMY	9,733,824	43,548	3,260,477	(3,216,929)	9,777,372
		RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY					
		TOTAL, BASIC RESEARCH	448,295	(4,000)		(4,000)	444,295
		TOTAL, APPLIED RESEARCH	597,914	52,000	52,000		649,914
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	729,852	141,400	141,400		871,252
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	3,276,391	168,300	168,300		3,444,691
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	8,877,891	(558,241)	128,500	(686,741)	8,319,650
		TOTAL, RDT&E MANAGEMENT SUPPORT	756,949				756,949
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	3,350,699	184,690	188,800	(4,110)	3,535,389
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY	18,037,991	(15,851)	679,000	(694,851)	18,022,140
		RESEARCH, DEVELOPMENT, TEST & EVALUATION, AIR FORCE					
		TOTAL, BASIC RESEARCH	340,817	5,500	5,500		346,317
		TOTAL, APPLIED RESEARCH	851,703	51,400	51,400		903,103
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	787,646	61,600	61,600		849,246
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	2,754,339	(501,339)	24,500	(525,839)	2,253,000
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	5,071,490	248,835	248,835		5,320,325
		TOTAL, RDT&E MANAGEMENT SUPPORT	950,506	6,500	6,500		957,006
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	11,855,850	(76,635)	144,400	(221,035)	11,779,215
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, AIR FORCE	22,612,351	(204,139)	542,735	(746,874)	22,408,212

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		RESEARCH, DEVELOPMENT, TEST & EVALUATION, DEFENSE-WIDE					
		TOTAL, BASIC RESEARCH	222,069	10,000	10,000		232,069
		TOTAL, APPLIED RESEARCH	2,018,084	45,400	45,400		2,063,484
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	2,790,486	55,400	92,200	(36,800)	2,845,886
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	7,747,046	130,000	245,000	(115,000)	7,877,046
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	578,988	(89,116)	3,000	(92,116)	489,872
		TOTAL, RDT&E MANAGEMENT SUPPORT	808,795	73,395	86,575	(13,180)	882,190
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	4,637,948	64,310	64,310		4,702,258
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, DEFENSE-WIDE	18,803,416	289,389	546,485	(257,096)	19,092,805
		TOTAL, OPERATIONAL TEST & EVALUATION, DEFENSE	168,458				168,458
		TOTAL, RESEARCH AND DEVELOPMENT	69,356,040	112,947	5,028,697	(4,915,750)	69,468,987

ARMY RESEARCH, DEVELOPMENT, TEST, & EVALUATION

Overview

The budget request contained $9.7 billion for Army research, development, test, and evaluation (RDT&E).

The committee recommends $9.8 billion, an increase of $43.5 million to the budget request.

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		RESEARCH, DEVELOPMENT, TEST & EVALUATION, ARMY					
		BASIC RESEARCH					
0601101A	1	In-House Laboratory Independent Research	20,542				20,542
0601102A	2	Defense Research Sciences	137,898	13,000			150,898
0601102A		Chemical Mechanical Planarization			2,000		
0601102A		Desert Research Institute Terrain Analysis			5,000		
0601102A		Advanced Carbon Nanotechnology			6,000		
0601103A	3	University Research Initiatives	67,201	2,000			69,201
0601103A		Smart Responsive Nanocomposites			2,000		
0601104A	4	University and Industry Research Centers	81,953	4,500			86,453
0601104A		Modeling and Analysis of the Response Structures			1,000		
0601104A		Centers of Excellence			3,500		
0601105A	5	Force Health Protection					
		TOTAL, BASIC RESEARCH	**307,594**	**19,500**	**19,500**		**327,094**
		APPLIED RESEARCH					
0602105A	6	Materials Technology	17,559	9,000			26,559
0602105A		Advanced Lightweight Composite Armor			4,000		
0602105A		Ballistic Shields Technology			1,000		
0602105A		Cutting Tools for Aerospace Materials			2,000		
0602105A		Ceramic Armor Technology			2,000		
0602120A	7	Sensors and Electronic Survivability	32,147	5,000			37,147
0602120A		Advanced Detection of Explosives			5,000		
0602122A	8	TRACTOR HIP	7,804				7,804
0602211A	9	Aviation Technology	34,295	10,000			44,295
0602211A		Center for Rotorcraft Innovation			10,000		
0602270A	10	EW Technology	19,129	9,000			28,129
0602270A		Silver Fox UAV			5,000		
0602270A		Xenon Light Source for Non Lethal Deterrence from Small UAVs			2,000		
0602270A		Unattended Ground Sensors			2,000		
0602303A	11	Missile Technology	62,524	5,500			68,024

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0602303A		Missile Recycling Capability			1,500		
0602303A		MEMS and Nanoscale Devices			4,000		
0602307A	12	Advanced Weapons Technology	21,139	10,000			31,139
0602307A		Applied Weapons Technology			10,000		
0602308A	13	Advanced Concepts and Simulation	16,013	10,000			26,013
0602308A		Institute for Creative Technologies			10,000		
0602601A	14	Combat Vehicle and Automotive Technology	64,883	19,500			84,383
0602601A		Advanced Electric Drive			3,500		
0602601A		Hydrogen Proton Exchange Membrane Fuel Cell			10,000		
0602601A		Light Utility Vehicle			6,000		
0602618A	15	Ballistics Technology	49,163				49,163
0602622A	16	Chemical, Smoke and Equipment Defeating Technology	2,519				2,519
0602623A	17	Joint Service Small Arms Program	5,703				5,703
0602624A	18	Weapons and Munitions Technology	37,824	23,400			61,224
0602624A		Active Coatings Technology			7,400		
0602624A		Strategic Materials/Strategic Manufacturing Initiative			8,000		
0602624A		Titanium Extraction, Mining and Process Engineering Research			8,000		
0602705A	19	Electronics and Electronic Devices	39,554	40,900			80,454
0602705A		CO2 Heating and Cooling			2,000		
0602705A		E-Beam Reticle and Litho Inspection			10,000		
0602705A		Flexible Display Initiative			11,400		
0602705A		JP-8 Soldier Fuel Cell			4,000		
0602705A		Nanofluidic Electronic Bio Sensor Technology			3,500		
0602705A		Advanced Battery Technology Initiative			10,000		
0602709A	20	Night Vision Technology	23,823	6,000			29,823
0602709A		UAV MINISENS			6,000		
0602712A	21	Countermine Systems	19,293	8,000			27,293
0602712A		Explosive and Narcotic Detection Devices			8,000		
0602716A	22	Human Factors Engineering Technology	17,482	5,500			22,982
0602716A		MANPRINT			5,500		
0602720A	23	Environmental Quality Technology	16,417				16,417

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0602782A	24	Command, Control, Communications Technology	21,787				21,787
0602783A	25	Computer and Software Technology	3,590				3,590
0602784A	26	Military Engineering Technology	47,046				47,046
0602785A	27	Manpower/Personnel/Training Technology	15,207				15,207
0602786A	28	Warfighter Technology	21,707	15,600			37,307
0602786A		MRE-Neutraceuticals			3,500		
0602786A		M5 High Performance Fibers for Personnel Armor Systems			5,000		
0602786A		Soldier Systems Center			4,600		
0602786A		Antimicrobial-Nano Technology			2,500		
0602787A	29	Medical Technology	74,694	25,000			99,694
0602787A		Advanced Amputee Treatment			10,000		
0602787A		Peer-Reviewed Applied Research Initiative			15,000		
		TOTAL, APPLIED RESEARCH	**671,302**	**202,400**	**202,400**		**873,702**
		ADVANCED TECHNOLOGY DEVELOPMENT					
0603001A	30	Warfighter Advanced Technology	63,754				63,754
0603002A	31	Medical Advanced Technology	45,160	24,200			69,360
0603002A		Peer-Reviewed Advanced Technology Development Initiative			15,000		
0603002A		Lightweight Patient Monitor with Defibrillator			3,500		
0603002A		Patient Status Monitor			3,500		
0603002A		Rugged Textile Electronic Garments			2,200		
0603003A	32	Aviation Advanced Technology	48,318	92,830			141,148
0603003A		Light-weight Heavy Fuel Turbine Engines			6,900		
0603003A		Laser Peening Rotorcraft Transmission Gears			1,200		
0603003A		Helicopter Nanocrystaline Diamond Rotor Blades			2,000		
0603003A		Multilayered Sacrificial Filament Laminates			1,600		
0603005A		Portable Reconfigurable Tooling System			2,000		
0603003A		Vectored Thrust Ducted Propeller Demostrator			9,500		
0603003A		Joint Heavy Lift			10,000		
0603003A		Light-weight Armored Window Technology			1,500		
0603003A		Reconnaissance Platforms and Sensors (transfer from RDA 93)			58,130		

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603004A	33	Weapons and Munitions Advanced Technology	74,927	8,000			82,927
0603004A		Precision Molded Aspheric Optics			5,000		
0603004A		Miniaturized Spectrometer ID System			3,000		
0603005A	34	Combat Vehicle and Automotive Advanced Technology	142,866	18,495			161,361
0603005A		Armored Composite Cab			5,000		
0603005A		Composite Material Development			2,000		
0603005A		Detonation System Technology Pilot Program			1,700		
0603005A		Logistical Fuel Processors			4,100		
0603005A		Soldier Weapon Detection and Location Sensor			945		
0603005A		Abrams Improved Track			4,750		
0603006A	35	Command, Control, Communications Advanced Technology	12,066	2,000			14,066
0603006A		CECM			2,000		
0603007A	36	Manpower, Personnel and Training Advanced Technology	6,783				6,783
0603008A	37	Electronic Warfare Advanced Technology	45,322	15,100			60,422
0603008A		Advanced Antenna Technologies			2,000		
0603008A		Applied Communications and Information Networking			7,000		
0603008A		Portable and Mobile Emergency Broadband System			6,100		
0603009A	38	TRACTOR HIKE	8,777				8,777
0603015A	39	Next Generation Training & Simulation Systems	19,982	4,000			23,982
0603015A		Desert Research Institute CAVE			4,000		
0603020A	40	TRACTOR ROSE	4,956				4,956
0603103A	41	Explosives Demilitarization Technology	9,865	6,000			15,865
0603103A		Missile Recycling Center Capability			6,000		
0603105A	42	Military HIV Research	6,842				6,842
0603125A	43	Combating Terrorism, Technology Development	6,306				6,306
0603238A	44	Global Surveillance/Air Defense/Precision Strike Technology Demonstration	12,111				12,111
0603270A	45	EW Technology / FCS	16,801				16,801
0603313A	46	Missile and Rocket Advanced Technology	70,066	5,000			75,066
0603313A		UAV Gunfire Detection System			5,000		
0603322A	47	TRACTOR CAGE	15,406				15,406
0603606A	48	Landmine Warfare and Barrier Advanced Technology	25,327				25,327

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603607A	49	Joint Service Small Arms Ammo	6,581				6,581
0603654A	50	Line-Of-Sight Technology Demonstration					
0603710A	51	Night Vision Advanced Technology	51,761	50,900			102,661
0603710A		Cerberus Sensor Suite			7,000		
0603710A		HyLITE			9,200		
0603710A		Low Altitude IED Detection			7,500		
0603710A		Enhanced Night Vision Goggle			12,200		
0603710A		Portable Infrared Target Detection and Location Reporting System			1,000		
0603710A		Soldier Mobility and Rifle Tracking System			4,000		
0603710A		Helo Wire Detection and Obstacle Avoidance			4,000		
0603710A		Unmanned Aircraft Operational Awareness System			1,000		
0603710A		Personal Miniature Thermal Vision			5,000		
0603728A	52	Environmental Quality Technology Demonstrations	12,606	11,500			24,106
0603728A		Army Range Transformation- Start			10,000		
0603728A		Turboexpander			1,500		
0603734A	53	Military Engineering Advanced Technology	7,301	7,000			14,301
0603734A		Gas Engine Air Conditioning			7,000		
0603772A	54	Advanced Tactical Computer Science and Sensor Technology	42,475	10,400			52,875
0603772A		Bi-directional English-Arabic Translation System			2,900		
0603772A		X-band Interferometric Radar			2,500		
0603772A		C4ISR IDESM			5,000		
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	**756,359**	**255,425**	**255,425**		**1,011,784**
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
0603024A	55	Unique Item Identification	1,500				1,500
0603303A	55a	Reconnaissance Platforms and Sensors (Transfer from RDA 93)		47,203	47,203		47,203
0603304A	55b	Robotic Ground Systems (Transfer from RDA 93)		86,445	86,445		86,445
0603305A	56	Army Missile Defense Systems Integration (Non Space)	14,573	7,500			22,073
0603305A		Technology Transfer for Improved Medical Imaging			2,500		
0603305A		Next Generation Interceptors Material Research			5,000		
0603308A	57	Army Missile Defense Systems Integration (Space)	9,284				9,284

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603327A	58	Air and Missile Defense Systems Engineering	83,063	12,000			95,063
0603327A		Architecture Analysis Program			5,000		
0603327A		GIDS-SIAP			7,000		
0603619A	59	Landmine Warfare and Barrier - Adv Dev					
0603627A	60	Smoke, Obscurant and Target Defeating Sys-Adv Dev	5,733				5,733
0603639A	61	Tank and Medium Caliber Ammunition					
0603645A	61a	Manned Ground Vehicles (Transfer from RDA 93)		100,000	100,000		100,000
0603653A	62	Advanced Tank Armament System (ATAS) / STRYKER	26,712	15,000			41,712
0603653A		Common Remote Stabilized Sensor System			15,000		
0603747A	63	Soldier Support and Survivability	3,393				3,393
0603766A	64	Tactical Electronic Surveillance System - Adv Dev	18,907				18,907
0603774A	65	Night Vision Systems Advanced Development	6,885				6,885
0603779A	66	Environmental Quality Technology	5,166	2,500			7,666
0603779A		Aberdeen Proving Ground Asbestos Conversion Facility			2,500		
0603782A	67	Warfighter Information Network-Tactical	131,081				131,081
0603790A	68	NATO Research and Development	4,902				4,902
0603801A	69	Aviation - Adv Dev	6,249				6,249
0603802A	70	Small Arms Improvement (Weapons and Munitions -Adv Dev)					
0603804A	71	Logistics and Engineer Equipment - Adv Dev	13,375				13,375
0603805A	72	Combat Service Support Control System Evaluation and Analysis	10,659				10,659
0603807A	73	Medical Systems - Adv Dev	10,134	5,000			15,134
0603807A		Leishmaniasis			1,500		
0603807A		Pseudofollicullitis Barbae			1,000		
0603002A		Glioblast 13 Compound			2,500		
0603827A	74	Soldier Systems - Advanced Development	10,595				10,595
0603850A	75	Integrated Broadcast Service (JMIP/DISTP)	2,762				2,762
0603856A	76	SCAMP Block II					
0603869A	77	Medium Extended Air Defense System (MEADS) Concepts					
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**364,973**	**275,648**	**275,648**		**640,621**

SYSTEM DEVELOPMENT & DEMONSTRATION

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0604201A	78	Aircraft Avionics	23,451	3,000			26,451
0604201A		Helo Situational Awareness			3,000		
0604220A	79	Armed, Deployable OH-58D	13,964				13,964
0604223A	80	Comanche					
0604270A	81	EW Development ATIRCM	32,179				32,179
0604280A	82	Joint Tactical Radio	156,665				156,665
0604321A	83	All Source Analysis System	7,973				7,973
0604328A	84	TRACTOR CAGE	16,099				16,099
0604329A	85	JT Common Missile					
0604601A	86	Infantry Support Weapons /OICW	34,627	8,000			42,627
0604601A		CROWS Light			8,000		
0604604A	87	Medium Tactical Vehicles/FMTV	1,886	10,000			11,886
0604604A		Medium Tactical Vehicle Suspension Development			10,000		
0604609A	88	Smoke, Obscurant and Target Defeating Sys-SDD					
0604611A	89	JAVELIN					
0604622A	90	Family of Heavy Tactical Vehicles	3,415				3,415
0604633A	91	Air Traffic Control	4,508				4,508
0604642A	92	Light Tactical Wheeled Vehicles					
0604645A	93	Armored Systems Modernization Program	3,065,629	(3,065,629)		(3,065,629)	
0604645A	93a	FCS Common Operating Environment (Transfer from RDA 93)		2,322,200	2,322,200		2,322,200
0604646A	94	Non-Line of Sight Launch System	231,554				231,554
0604647A	95	Non-Line of Sight Cannon	107,587	50,000			157,587
0604647A		Program Increase			50,000		
0604710A	96	Night Vision Systems	26,449	6,000			32,449
0604710A		Unattended Ground Sensors			6,000		
0604713A	97	Combat Feeding, Clothing, and Equipment	3,383				3,383
0604715A	98	Non-System Training Devices	61,090				61,090
0604716A	99	Terrain Information					
0604726A	100	Integrated Meteorological Support System					
0604741A	101	Air Defense Command, Control and Intelligence - SDD	29,012				29,012
0604742A	102	Constructive Simulation Systems Development	40,572				40,572

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0604746A	103	Automatic Test Equipment Development	54				54
0604760A	104	Distributive Interactive Simulations (DIS)	22,057				22,057
0604766A	105	Tactical Surveillance Systems		2,504			2,504
0604766A		Unattended Sensors (Transfer from RDA 93)			2,504		
0604768A	106	Army Tactical Missile System (ATACMS)					
0604770A	107	Joint Surveillance/Target Attack Radar System					
0604778A	108	Positioning Systems Development (SPACE)					
0604780A	109	Combined Arms Tactical Trainer (CATT) Core	37,471				37,471
0604783A	110	Joint Network Management System	5,092				5,092
0604801A	111	Aviation					
0604802A	112	Weapons and Munitions / APKWS / GAMRAAM	87,034				87,034
0604804A	113	Logistics and Engineer Equipment - SDD	13,353	1,000			14,353
0604804A		Personal Water Disinfection			1,000		
0604805A	114	Command, Control, Communications Systems	393,062	(133,000)			260,062
0604805A		JTRS Program Reduction				(133,000)	
0604807A	115	Medical Materiel/Medical Biological Defense Equipment - SDD	5,627	4,000			9,627
0604807A		Battlefield Respirator and Ventilator			4,000		
0604808A	116	Landmine Warfare/Barrier - SDD	80,560				80,560
0604814A	117	Artillery Munitions	113,368	10,000			123,368
0604814A		Excaliber XM982			10,000		
0604817A	118	Combat Identification	2,973				2,973
0604818A	119	Army Tactical Command & Control Hardware & Software	66,980				66,980
0604819A	120	LOSAT					
0604820A	121	Radar Development / Sentinel	5,080				5,080
0604822a	122	General Fund Enterprise Business System (GFEBS)	71,119				71,119
0604823A	123	Firefinder	46,061				46,061
0604827A	124	Soldier Systems -Warrior Dem/Val	57,818	3,700			61,518
0604827A		Nomad C2 Display			3,700		
0604854A	125	Artillery Systems	5,476				5,476
0604865A	126	Patriot PAC-3 Theater Missile Defense Acquisition					
0604869A	127	Patriot/MEADS Combined Aggregate Program (CAP)	288,785				288,785

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0605013A	128	Information Technology Development	63,662				63,662
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	**5,225,675**	**(778,225)**	**2,420,404**	**(3,198,629)**	**4,447,450**
		RDT&E MANAGEMENT SUPPORT					
0604256A	129	Threat Simulator Development	23,796				23,796
0604258A	130	Target Systems Development	10,855				10,855
0604759A	131	Major T&E Investment	64,498				64,498
0605103A	132	Rand Arroyo Center	23,800				23,800
0605301A	133	Army Kwajalein Atoll	154,535				154,535
0605326A	134	Concepts Experimentation Program	31,653				31,653
0605502A	135	Small Business Innovative Research					
0605601A	136	Army Test Ranges and Facilities	369,943				369,943
0605602A	137	Army Technical Test Instrumentation and Targets	62,687	7,000			69,687
0605602A		Mobile Optical Tracking System			7,000		
0605604A	138	Survivability/Lethality Analysis	38,306				38,306
0605605A	139	DOD High Energy Laser Test Facility	17,688				17,688
0605606A	140	Aircraft Certification	2,748				2,748
0605702A	141	Meteorological Support to RDT&E Activities	8,829				8,829
0605706A	142	Materiel Systems Analysis	15,517				15,517
0605709A	143	Exploitation of Foreign Items	4,710				4,710
0605712A	144	Support of Operational Testing	75,993				75,993
0605716A	145	Army Evaluation Center	57,305				57,305
0605718A	146	Simulation & Modeling for Acq, Rqts, & Tng (SMART)	9,437				9,437
0605801A	147	Programwide Activities	54,269				54,269
0605803A	148	Technical Information Activities	32,237				32,237
0605805A	149	Munitions Standardization, Effectiveness and Safety	16,922				16,922
0605857A	150	Environmental Quality Technology Mgmt Support	4,014				4,014
0605898A	151	Management Headquarters (Research and Development)	12,908				12,908
		TOTAL, RDT&E MANAGEMENT SUPPORT	**1,092,650**	**7,000**	**7,000**		**1,099,650**
		OPERATIONAL SYSTEMS DEVELOPMENT					

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603778A	152	MLRS Product Improvement Program	114,297				114,297
0102419A	153	JT Land Attack Cruise Missile Defense (Aerostat Joint Program Office)	106,420	2,000			108,420
0102419A		MEMS Demonstration			2,000		
0203610A	154	Domestic Preparedness Against Weapons of Mass Destruction					
0203726A	155	Adv Field Artillery Tactical Data System	16,064	5,000			21,064
0203726A		Fire Support Technology Improvement Program			5,000		
0203735A	156	Combat Vehicle Improvement Programs	12,030	5,000			17,030
0203735A		Combat Vehicle Electronics			5,000		
0203740A	157	Maneuver Control System - Tactical C2	44,903				44,903
0203744A	158	Aircraft Modifications/Product Improvement Programs	409,103	3,900			413,003
23747A		Black Hawk- Nomad			3,900		
0203752A	159	Aircraft Engine Component Improvement Program	2,066				2,066
0203758A	160	Digitization	12,343				12,343
0203759A	161	Force XXI Battle Command, Brigade and Below (FBCB2)	20,201				20,201
0203801A	162	Patriot Product Improvement (Missile/Air Defense Product Improvement Program)	16,188				16,188
0203802A	163	Other Missile Product Improvement Programs	23,560				23,560
0203806A	164	TRACTOR RUT					
0203808A	165	TRACTOR CARD	6,797				6,797
0208010A	166	Joint Tactical Communications Program (TRI-TAC)	24,906				24,906
0208053A	167	Joint Tactical Ground System	12,854				12,854
0208058A	168	Joint High Speed Vessel (JHSV)	3,261				3,261
0301359A	169	Special Army Program					
0301555A	170	Classified Programs					
0301556A	171	Special Program					
0303028A	172	Security and Intelligence Activities	2,992				2,992
0303140A	173	Information Systems Security Program	22,903				22,903
0303141A	174	Global Combat Support System	79,752				79,752
0303142A	175	SATCOM Ground Environment (SPACE)	58,659				58,659
0303142A	176	WWMCCS/Global Command and Control System	13,647				13,647
0303158A	177	Joint Command and Control Program (JC2)	1,696				1,696
0305114A	178	Traffic Control, Approach and Landing System/JPALS					

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0305204A	179	Tactical Unmanned Aerial Vehicles	139,610				139,610
0305206A	180	Airborne Reconnaissance Systems	5,398				5,398
0305208A	181	Distributed Common Ground Systems	91,587	(18,300)			73,287
0305208A		Program Reduction				(18,300)	
0702239A	182	Avionics Component Improvement Program	994				994
0708045A	183	End Item Industrial Preparedness Activities	68,505	14,200			82,705
0708045A		Smart Machine Platform			4,500		
0708045A		Affordable Modular Manufacturing Process			3,200		
0708045A		Lean Munitions			4,500		
0605790D8Z		Powdered Metal Compaction Initiative			2,000		
1001018A	184	NATO Joint STARS	569				569
0607XXX	184a	Tactical Wheeled Vehicle Product Improvement Program		50,000	50,000		50,000
XXXXXXX	999	Classified Programs	3,966				3,966
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**1,315,271**	**61,800**	**80,100**	**(18,300)**	**1,377,071**
		TOTAL, RDT&E, ARMY	**9,733,824**	**43,548**	**3,260,477**	**(3,216,929)**	**9,777,372**

Items of Special Interest

Abrams improved track

The budget request contained $142.9 million in PE 63005A for combat vehicle and automotive advanced technology programs, of which, no funds were included for the Abrams Improved Track program. The Abrams Improved Track program expects to reduce life cycle costs of the M1 Abrams Main Battle Tank platform by 20 percent.

The committee is aware the M1 Abrams Main Battle Tank platform, on average puts seven to eight years of operational use on a vehicle in a single year deployment to Iraq. The committee notes in some cases tanks have put on more than 1,000 miles of operational use per month in Operation Iraqi Freedom. The committee understands this higher level of operational tempo requires additional maintenance costs and also recognizes the M1 Abrams Main Battle Tank will continue to be the primary combat vehicle in the Army's inventory until at least 2050. The committee understands the Abrams Improved Track program can generate better cost savings, and increase reliability, availability, and maintainability of the M1 Abrams Main Battle Tank fleet.

Therefore, the committee recommends $147.5 million for PE 63005A, an increase of $4.8 million, to complete the final phase of development for the Abrams Improved Track program.

Accelerated development of heavy-fuel turbine engine

The budget request contained $48.3 million in PE 63003A for aviation advanced technology, but included no funds to accelerate development of light-weight heavy fuel turbine engines.

The committee notes that the modern battlefield mandates use of heavy fuel engines to simplify logistics and increase safety. The lightweight turbine engine offers advantages for aerial vehicles. In addition, the modern turbine engine coupled to emerging electrical generator technology offers the near-term ability to reduce size and weight of ground power generators by an order of magnitude.

The committee recommends an increase of $10.0 million in PE 63003A to accelerate development of the heavy fuel turbine engine.

Advanced amputee treatment research and development

The budget request contained $74.7 million in PE 62787A for medical technology applied research, but included no funds to continue the program in clinical and applied collaborative research in amputee treatment, prosthetics, and rehabilitation.

The committee commends the Army for its efforts to initiate a collaborative applied and clinical prosthetic research activity in order to provide the best possible care for patients who have experienced combat injuries resulting in traumatic amputation. Established by the Army Surgeon General, the Amputee Care Center and the Army Amputee Patient Care Program at Walter Reed Army Medical Center provide state-of-the-art treatment and are the center of a multi-site, coordinated complex of facilities, which involve regional military medical centers, the Department of Veterans Affairs, and other military and civilian treatment facilities. The goal of the program is to ensure that amputee patients receive the kind of care that will allow them to lead lives unconstrained

by their amputation. The committee notes that a sustained research effort is necessary to achieve the goals of the program and strongly encourages the Secretary of the Army to provide funding in the program for that purpose in future budget requests.

The committee recommends an increase of $10.0 million in PE 62787A to continue the Army program in clinical and applied collaborative research in amputee treatment, prosthetics, and rehabilitation.

Advanced battery technology initiative

The budget request contained $39.6 million in PE 62705A for applied research in electronics and electronic devices.

The committee continues to note continuing requirements for small, light-weight, efficient, and portable battery and non-battery power sources for U.S. forces and of on-going applied research and development activities of the military departments that address these requirements. The committee is aware of a number of emerging battery and non-battery power technologies that have the potential for meeting the requirements of the military services, including alkaline and lithium batteries, fuel cells and other technologies. The committee recommends that such technologies be considered for potential funded research and development under the services' on-going programs on the basis of technical merit, cost-effectiveness, and the potential of a particular technology to meet service needs.

The committee recommends an increase of $10.0 million in PE 62705A for the portable battery power technology initiative.

Advanced carbon nanotechnology

The budget request contained $137.9 million in PE 61102A for defense research sciences, but included no funding for advanced carbon nanotechnology.

The committee is aware that advanced carbon nanotechnology has the potential for significant advances in the development of new sensors.

The committee recommends $143.9 million in PE 61102A for defense research sciences, an increase of $6.0 million for a multi-institution, peer reviewed program for development of advanced carbon nanotechnology.

Advanced lightweight composite armor materials for ballistic impact and blast protection

The budget request contained $17.6 million in PE 62105A for materials technology, but included no funding for advanced lightweight composite armor materials for ballistic impact and blast protection.

The committee is aware of the increasing ballistic and blast threat to vehicles on the battlefield. The committee notes that an integrated analytical, development, manufacturing and testing program is required to develop new higher performance, light weight composites for vehicle and personal armor.

The committee recommends an increase of $4.0 million in PE 62105A for advanced lightweight armor materials.

Advanced weapons technology

The budget request contained $21.1 million in PE 62307A for advanced weapons technology.

The committee understands the need to carry out applied research in support of existing and future missile defense technologies. The committee is specifically aware of the need to conduct research on systemic issues common to Terminal High Altitude Area Defense, Patriot Advanced Capability-3/Medium Extended Air Defense System, Ground-based Midcourse Defense, and future systems in areas such as radar and radio frequency sensors, electronics and micro-fabrication, optical sensors, and composite material and structures.

The committee recommends $31.1 million in PE 62307A, an increase of $10.0 million for missile defense applied technology research conducted by the Army Space and Missile Defense Command.

Aerostat joint project office

The budget request contained $106.4 million in PE 12419A for the Aerostat Joint Project Office.

The committee understands the critical role that the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) program plays in cruise missile defense. The committee further understands that the Micro Electro Mechanical (MEMS) demonstration radar system is an important risk reduction effort in the JLENS acquisition strategy.

The committee recommends $108.4 million in PE 12419A, an increase of $2.0 million for MEMS demonstration radar system project completion and additional critical technology demonstration.

Applied communications and information networking

The budget request contained $45.3 million in PE 63008A for electronic warfare advanced technology, but included no funding for applied communications and information networking (ACIN).

The committee realizes that the goal of ACIN is to revolutionize military doctrine and methods by enhancing high-value military systems with rapidly advancing commercial information technologies and innovative applications of those technologies.

The committee supports the application of state-of-the art commercial technology to improve military systems and recommends an increase of $7.0 million in PE 63008A for ACIN.

Armored systems modernization

The budget request included $3.1 billion in PE 64645A for armored systems modernization, including $105.3 million for reconnaissance platforms and sensors; $86.4 million for unmanned ground vehicles; $2.5 million for unattended sensors; $61.6 million for sustainment; $2.3 billion for system of systems engineering and program management; and $549.2 million for manned ground vehicles, as part of approximately $3.9 billion total amount requested for the Future Combat Systems (FCS) program in over 50 program elements.

The Army had allocated $19.0 billion for FCS research and development during fiscal years 2004 through 2009. Last year the Army added two years to the System Development and Demonstration

(SDD) Phase and increased the cost to $22.0 billion. Now the Army has delayed the program to 2016 and increased the development costs to $30.3 billion. Additionally, the program has been restructured into four spirals that are designed to field incremental capability into the current force. Because of its size and importance to the Army, FCS would dominate the Army's investment accounts and priorities over the next decade. The announcement that modularity will be undertaken during the same time period as FCS development has caused concern because the combined costs of $30.3 billion in the Future Years Defense Program for FCS and $69.0 billion for modularity are well above the expected Army funding profile.

Under the FCS system-of-systems approach all 18 systems are developed simultaneously, even though major differences exist in the developmental and fielding timelines of these systems. Originally, there were 157 development programs, referred to as "complementary programs," funded outside of the armored systems modernization-FCS program element. These "complementary programs," described by the Army as necessary to completely field FCS are in most instances the on-going technology development that should have been completed for FCS before entry into SDD. The complementary programs and projects are just as much FCS program-related as the projects within the armored systems modernization program element. Although the FCS hallmark is network centric war fighting, armored systems modernization-FCS program element itself contains no project for a network. The network is formed by the Warfighter Information Network Tactical (WIN–T) and the Joint Tactical Radio System (JTRS). Both of these systems are being developed outside of the FCS program structure as complementary programs. Further, JTRS has already been restructured due to schedule and cost overruns and now faces another restructure with an additional 24 month schedule delay and cost increase.

The committee has numerous concerns with the FCS program:

(1) The Office of the Secretary of Defense approved FCS entry into SDD in May 2003 without established program requirements, a network architecture or mature technologies. The Department of Defense historical acquisition record indicates that proceeding into SDD with unproven technology, will likely result in schedule slips and substantial cost overruns. And in fact, the FCS program has already been restructured at least three times. In a prepared statement for the Subcommittee on Tactical Air and Land Forces on March 16, 2005, the Government Accountability Office (GAO) indicated: "The FCS is at significant risk for not delivering required capability within budgeted resources. * * * The program's level of knowledge is far below that suggested by best practices or Department of Defense policy: Nearly 2 years after program launch and with $4.6 billion invested, requirements are not firm and only 1 of over 50 technologies are mature. As planned, the program will attain the level of knowledge in 2008 that it should have had in 2003. * * * To make FCS an effective acquisition program different approaches must be considered, including (A) setting the first stage of the program to demonstrate military capability, mature technology, and firm requirements; and

(B) bundling its other capabilities into advanced technology demonstrations until they can be put in a future stage * * *;"

(2) FCS program requirements have yet to be established. Under the current organizational construct, the GAO indicates there are as many as 10,000 individual program and project requirements;

(3) Many of the FCS systems, including unmanned systems and sensors, have parallel research and development programs outside of FCS in the Army, other services, and/or the Office of the Secretary of Defense (OSD). As an example, between what the Army classifies as FCS and non-FCS program elements, there are at least 10 unmanned aerial vehicle (UAV) projects in development. This does not include UAV programs being developed for the Army by the Defense Advanced Research Projects Agency;

(4) Technology maturity varies among the various systems and in most cases does not support being considered ready for SDD;

(5) How the FCS concept would provide for survivability against the asymmetrical threat that our military services have experienced in the global war on terrorism, remains to be demonstrated;

(6) The manned vehicle concepts are at least five tons heavier than what the Army has established as its manned vehicle weight requirement; and

(7) No current cost estimate exists for the FCS program. With the added cost of modularization, it is questionable whether both FCS and modularization are affordable.

The committee believes that the Army would benefit from a restructured FCS program that establishes a vision and future forces architecture for the Army as a whole. It is not productive to have a vision of two future Armies, one FCS-Army and the rest of the Army. Even under the best of circumstances, with everything going as planned and resources being available to fund all of the Army's extensive needs, by 2025, only 20 percent of the modularized Army would include FCS units. WIN–T, JTRS, UAV programs, ground sensors, and common operating environment, should be interoperable with the whole Army, not just the FCS-Army. Projects and supporting technology should be developed and demonstrated first and not based on a program schedule where the Army is trying "to invent on a schedule."

The committee further believes that FCS should be defined by what is currently described as the system-of-systems common operating environment, program management, and sustainment, the largest current FCS project. The remaining projects should be combined with program elements of similar purpose and/or commensurate with their requirements and technology maturity. Further, the Department of the Army should establish the command, control, communications, computers, intelligence, surveillance, and reconnaissance information technology architecture for the future force and mandate adherence to this architecture in the development of new systems as well as modification of legacy systems.

Accordingly, the committee directs that:

(1) A new program element, PE 64782A, be designated FCS common operating environment within SDD and comprised of

the current projects F55 and F61, with an authorization of $2.3 billion, the budget request;

(2) A new program element, PE 63645A, be designated armored systems modernization within the advanced component development and prototype budget activity, comprised of the current project designated F57, with an authorization of $100.0 million, a reduction of $449.2 million;

(3) A new program element, PE 63303A, be designated reconnaissance platforms and sensors within the advanced component development and prototypes budget activity, comprised of Project F52, class I and IV reconnaissance platforms and sensors, with an authorization of $47.2 million, the budget request;

(4) Class II and III reconnaissance platforms and sensors be incorporated into PE 63003A, with an authorization of $58.1 million, the budget request;

(5) Project F54, unattended sensors, be incorporated into PE 64766A, Tactical Surveillance Systems, with an authorization of $2.5 million, the budget request; and

(6) A new program element, PE 63304A, be designated robotic ground systems within the advanced component development and prototypes budget activity, comprised of Project F53, unmanned ground vehicles, with an authorization of $86.4 million, the budget request.

Army medical peer-reviewed applied research and advanced technology development initiative

The budget request contained $74.7 million in PE 62787A for applied research in medical technology and $45.2 million in PE 63002A for medical advanced technology development.

The committee notes that the primary goal of medical research and development in the Department of Defense is to sustain medical technology to effectively protect and improve the survivability of U.S. armed forces in a variety of settings including, but not limited to: conventional battlefields, areas of low-intensity conflict, and military operations other than war. Operations of U.S. forces in the global war on terrorism have placed a premium on the need for a range of medical technologies in the areas of infectious diseases, combat casualty care, military operational medicine, and health hazards for materials, that are the core applied technology for the Army's military technology applied research program. Changing military threats on the world's battlefields and homeland security requirements place more emphasis on the need for responsive technology options that could address the threat; the ability to quickly assess, develop, and demonstrate the technology; and then, the ability to rapidly insert or deploy the technology to the field. The committee also notes the wealth of new concepts from the nation's medical science and technology base and the recommendations that the committee receives for exploitation of particular technologies for addressing emerging medical requirements. The committee endorses the Army's peer-reviewed medical technology research and development program in which emerging medical technologies and concepts compete for funding on the basis of peer-reviewed technical merit and the contribution that the technology would, if implemented, make to the health and well being of the armed forces.

The committee recommends an increase of $15.0 million in PE 62787A and an increase of $15.0 million in PE 63002A, for the Army medical technology peer-reviewed applied research and advanced technology development programs, respectively.

Army space and missile defense architecture analysis program

The budget request contained $83.1 million in PE 63327A for Army air and missile defense systems engineering, but included no funding for the Army space and missile defense (ASMD) architecture analysis program.

The committee places a priority on the development of a transformational capability. The committee recognizes the contributions of the ASMD architecture analysis program towards providing critical analytical, modeling and simulation tools supporting advanced concepts and architectures for the Army's integrated air and missile defense systems program.

The committee recommends $88.1 million in PE 63327A, an increase of $5.0 million for the ASMD architecture analysis program.

Center for rotorcraft innovation

The budget request included $34.3 million in PE 62211A for Aviation and Applied Research and Technology, but included no funds for the Center for Rotorcraft Innovation (CRI).

The Center for Rotorcraft Innovation is a joint effort between the rotorcraft industry, academic research centers and government partners to increase rotorcraft research in the United States. CRI will expand collaborative rotorcraft research and development already underway between the rotorcraft industry and its government partners in the National Rotorcraft Technology Center, and will focus its new research efforts on dual-use technologies that have national security and homeland defense applications. CRI is the only effort of its kind and will be a catalyst for the long-term growth of the U.S. rotorcraft industry.

Accordingly, the committee recommends an increase of $10.0 million in PE 62211A for the CRI.

Centers of excellence

The budget request contained $82.0 million in PE 61104A for university and industry research centers and $1.9 million for university centers of excellence.

The committee notes the current Army effort to harness university research expertise for Army-unique science and technology problems. The committee further notes the Army initiative to partner university researchers at Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) with Army Training and Doctrine Command (TRADOC) Battle Labs for the acceleration of research to actual technology demonstration. The committee notes current priorities include efforts to improve tactical mobility, reduce logistics infrastructure, and increase rotorcraft survivability. The committee supports such efforts yet urges further advances in the cognitive research areas of modeling and simulation, data fusion, and human systems integration.

The committee recommends an increase of $3.5 million in PE 61104A for university centers of excellence to support human sys-

tems integration modeling, simulation, data fusion, and related efforts.

Combat vehicle electronics

The budget request contained $12.0 million in PE 23735A for combat vehicle improvements, but included no funding to develop standardized next generation electronics architectures for current combat vehicle programs.

The committee is aware that current combat vehicles face accelerated component obsolescence issues.

The committee recommends an increase of $5.0 million in PE 23735A to develop standardized next generation electronics architectures for current and future combat vehicle programs.

Common remote operating weapon station

The budget request contained $34.6 million in PE 64601A for infantry support weapons but included no funds for the Common Remote Operating Weapon Station (CROWS) Light development program. The budget request also contained $56.4 million in PE 63640M but included no funds for the CROWS program.

The CROWS system is a tactical vehicle mounted, stabilized remote weapon station system that provides day and night target detection, recognition, and engagement at long distances while allowing the soldier to remain protected by an armored vehicle; accurate shoot on-the-move capability, and one-shot-one-hit accuracy that minimizes collateral damage. The committee notes that the United States Central Command issued an urgent needs statement for additional CROWS systems in December 2004. The committee applauds the Army's expeditious manner in satisfying this urgent requirement and notes CROWS has proven its capability successfully and effectively in Operation Iraqi Freedom (OIF). As such the committee feels CROWS could also prove just as effective for marines operating in Iraq, and recommends providing six systems for test and evaluation by the Marine Corps.

The committee recognizes certain combat support and combat service support (CS/CSS) vehicle platforms cannot support the weight and size of the currently fielded CROWS system.

To address this need, the committee understands the Army has developed a reduced weight and size configuration of CROWS called CROWS Light. The committee supports this effort and believes this system can enhance force protection, survivability, and lethality of CS/CSS units performing critical convoy operations in OIF.

The committee recommends $42.6 million in PE 64601A, an increase of $8.0 million to complete the development, testing, and accelerate fielding of CROWS Light systems and recommends $58.4 million in PE63640M, an increase of $2.0 million for CROWS test and evaluation by the Marine Corps.

Communications and electronics cost module

The budget request contained $12.1 million in PE 63006A for the research and development of Command, Control, Communications Advanced Technology.

The committee believes that the Communications and Electronics Cost Module (CECM) is a critical component to realize the Depart-

ment of the Army's service-wide planned force restructure and to support appropriate homeland security response issues. The CECM is part of an advanced solution project that accelerates collaborative, near real-time trade-off analysis of prospective system design changes. In addition, the CECM allows decision makers to have affordable analysis, while addressing program managers' concerns throughout the program lifecycle. The CECM simultaneously integrates cost estimation, computer aided design activities, and work breakdown structures in a collaborative, web-enabled, efficient, and secure environment, thus reducing the cycle time in the decision process from the beginning and throughout the acquisition lifecycle.

The committee recommends $14.1 million in PE 63006A for the research and development of Command, Control, Communications Advanced Technology, an increase of $2.0 million for the development of the CECM.

Distributed common ground system

The budget request contained $156.7 million for the research and development of the Distributed Common Ground System (DCGS).

The committee notes that the DCGS program is beginning to address how data is processed from various sources. The committee believes this is a critical element in the data enterprise integration of all DCGS. Without a clear plan that addresses all DCGS capabilities, to include access, exploitation, and dissemination of information and data from other sources, DCGS will not be able to fully maximize its intelligence, surveillance, and reconnaissance processing capabilities. In addition, the committee is concerned that without a unified development structure built on a validated Capability and Maturity Model (CMM) standard that strictly controls DCGS requirements and correlates software with fewer defects, DCGS will continue to be a pretext for the services to buy new hardware.

Given the technical, developmental, and management challenges, the committee believes that DCGS should reevaluate its software development and data management structure to determine if the present organizational configuration will be able to support the transition to DCGS. The committee directs the Secretary of Defense through the Under Secretary of Defense for Intelligence, the Assistant Secretary of Defense for Networks and Information Integration, and the DCGS council to submit a report by February 15, 2006, to the Senate Committee on Armed Services, the House Committee on Armed Services, and the House Permanent Select Committee on Intelligence addressing the standards for all legacy hardware and software implementation into the joint DCGS architecture; how the processes, key practices and common features in software will mature jointly; and how current and planned data will be handled regardless of the source or asset. Additionally, this report must include a fielding plan for all DCGS.

Accordingly, the committee recommends the following for the research and development of the DCGS program: $73.3 million in PE 35208A, a decrease of $18.3 million, and $32.4 million for PE 35208F, a decrease of $8.0 million, $12.3 million in PE 35208N, $1.8 million in PE 35208BQ, $3.7 million in PE 35208G, and $1.0 million in PE 35208L.

Excalibur XM982

The budget request contained $113.4 million in PE 64814A, artillery munitions, but included no funds for Excalibur XM982 life cycle improvements.

The committee recognizes the potential benefits provided through studies of manufacturing technologies and methodologies to help lower production costs without sacrificing stated performance requirements of a weapon system. In fiscal year 2005, Excalibur XM982 lifecycle improvement program efforts were able to reduce the production cost of each projectile by 14.1 percent. The fiscal year 2006 cost reduction efforts would build upon previous work and expand into the potential production cost reduction of the canard actuation system and insensitive munitions design improvements for the base and warhead of the projectile identified in the lean design review. Cost reduction efforts will be expanded to the Excalibur XM982 common guidance capability, which is a system commonality in other weapons development programs.

Therefore, the committee recommends $123.4 million in PE 64814A, an increase of $10.0 million for the Excalibur XM982 lifecycle improvement program.

Explosive and narcotic detection devices

The budget request contained $19.3 million in PE 62712A, countermine systems, but included no funds for continued development of explosive and narcotic detection devices for vehicles and cargo containers proceeding through entry control points at various, worldwide Department of Defense facilities.

The committee notes the significance of improving capabilities of future force protection equipment. There are two detection devices currently under development which have the potential to be used for detecting trace amounts of explosives and narcotics on the inside and outside of vehicles and cargo containers. These devices should be able to complement and enhance current force protection equipment in place, or substitute when needed, for explosive and narcotic detecting canines that are unavailable to perform these duties.

Therefore, the committee recommends $27.3 million in PE 62712A, an increase of $8.0 million for continued development of explosive and narcotic detection devices.

Fire support technology improvement program

The budget request contained $16.1 million in PE 23726A for advanced field artillery tactical data systems, but included no funds for the Fire Support Technology Improvement (FSTI) program.

The FSTI program will examine and exploit emerging technologies that could improve artillery fire support efficiency and performance.

The committee recognizes the need for more rapid precision engagement of artillery targets requires artillery battle management systems that can enable soldiers to rapidly geo-reference and analyze relevant imagery and/or information; determine the status of the possible firing elements; issue fire commands; and effectively conduct battle damage assessments all in real time. The committee is aware this program's purpose is to identify gaps and develop solutions to assimilate multi-source (satellite, aircraft, and unmanned

aerial vehicle) imagery and information, and accomplish rapid georeferencing and shooting of precision artillery engagements.

The committee recommends $21.0 million in PE 23726A, an increase of $5.0 million for the continuation of the FSTI program.

Flexible display initiative

The budget request contained $39.6 million in PE 62705A for electronics and electronic devices, but included no funding for the flexible display initiative.

The committee is aware that new flexible display technology has the potential to provide the military with technology to fabricate high definition displays on rugged conformable, flexible substrates. The committee notes that the United States Display Consortium coordinates these efforts with over 80 companies, using investments from both the public and private industry to accelerate the development of technologies and products needed by the Army, other military services, and various national security agencies.

Therefore, the committee recommends an increase of $11.4 million in PE 62705A for the flexible display initiative.

Gas-engine driven air conditioning system demonstrations

The budget request contained $7.3 million in PE 63734A for military engineering, but included no funding for unitary gas-engine driven air conditioning (GEDAC) system demonstrations.

The committee is aware that GEDAC use on bases in the southwest has the potential to save significant electric power and reduce water usage. Therefore, the committee recommends an increase of $7.0 million in PE 63734A for GEDAC system demonstrations.

Geospatial information decision support-single integrated air picture

The budget request included $150.3 million in PE 63327A, PE 632879N, PE 27434F, PE 27443F, and PE 20631M for the development of the Single Integrated Air Picture (SIAP). This program seeks to provide a common aerial view of the battlespace for the warfighter.

The committee supports technologies and capabilities that provide the warfighter with a single integrated air, ground, space, and maritime picture that is the product of fused, common, continual, and accurate data. However, the committee is concerned that SIAP only addresses the air picture, and could become another stove-pipe system that will not interoperate with the ground, space, or maritime pictures. The committee supports the development of one true common operational picture that will provide the warfighter with an unambiguous, real-time picture of the battlespace.

The committee is aware that the Army has requirements to provide a consistent, accurate, and timely understanding of how space assets and capabilities affect the battlespace. Meeting this requirement demands tools that fuse geospatial and operational data for air defense and satellite control. The Geospatial Information Decision Support (GIDS) for SIAP is an intelligent software tool for warfare commanders that receives tactical information from multiple real-time ground, air, and space-based tactical data sources to provide a comprehensive battlespace picture. The committee under-

stands GIDS–SIAP will also be extended to support Army tactical missile defense needs.

The committee believes GIDS–SIAP may build the bridge between SIAP and an integrated common operational picture. However, the committee notes that this is not the final or all-encompassing solution to developing a true common operational picture.

Therefore, the committee directs the Secretary of Defense to submit a report to the congressional defense committees by March 15, 2006, on a formal acquisition strategy to clearly define the development and service-level implementation of SIAP, and a coordinated investment strategy for developing all common tactical pictures such as the air, ground, maritime, and space views.

Accordingly, the committee recommends $157.3 million for the research and development of SIAP, an increase of $7.0 million in PE 63327A, for the evaluation of software and field demonstration of GIDS–SIAP.

Handheld detection systems

The budget request contained $74.9 million in PE 63004A for weapons and munitions advanced technology but contained no funding for the miniaturized spectrometer identification system.

The committee is concerned with the well-being of uniformed personnel due to the pending threat of chemical weapons. The committee supports efforts to develop handheld sensing equipment to improve timely detection of evolving and existing threats.

Therefore, the committee recommends $77.9 million in PE 63004A, an increase of $3.0 million to develop the miniaturized spectrometer identification system.

Human systems integration

The budget request contained $17.5 million in PE 62716A for human factors engineering applied research, $68.5 million in PE 63236N for warfighter sustainment advanced technology development, and $79.4 million in PE 62202F for applied research in human effectiveness.

The committee recognizes human systems integration initiatives provide a means for reducing total lifecycle costs of weapons programs, and strongly supports efforts to consider human systems integration issues early in the acquisition cycle. The committee believes that further institutionalization and standardization of human systems integration methodologies and modeling tools are needed. The committee also remains concerned about the level of support and coordination of these initiatives within each of the military departments and throughout the Department of Defense (DOD). The committee urges the Department to complete a comprehensive review and critical assessment of human systems integration based upon the perspectives of the acquisition, personnel, and operations and management communities. The committee expects that such a review would include a review of acquisition programs that utilize such initiatives, and an assessment of the relative level of support within each military department.

Therefore, the committee recommends an increase of $5.5 million in PE 62716A for the development of manpower and personnel integration tools for modeling and predicting soldier and system performance; an increase of $6.0 million in PE 63236N to develop cog-

nitive and physiological research data under the Navy's system engineering, acquisition and personnel integration program; and an increase of $3.5 million in PE 62202F for the development of new training algorithms for the human performance integration tool program. The committee directs the Secretary of Defense to conduct a comprehensive review and assessment of human systems integration programs within the Department and to submit a report of the results to the congressional defense committees by December 31, 2005. Further, committee recommends that a panel of experts at the National Defense University collaborate, consult and independently review the DOD's assessment and submit a report of the results to the congressional defense committees within six months of initiation.

Hydrogen proton exchange membrane

The budget request contained $64.9 million in PE 62601A for combat vehicle and automotive technology, but included no funding for the hydrogen proton exchange membrane (PEM) ambient pressure fuel cell medium/heavy duty vehicle demonstration program.

The committee is aware that the hydrogen PEM fuel cell is to demonstrate zero emission, ambient pressure, highly efficient hydrogen fuel cell powered vehicles in various operating situations and conditions. The committee notes that this development supports the government's objective of tripling fuel economy while reducing harmful emissions.

The committee recommends an increase of $10.0 million in PE 62601A for the hydrogen proton exchange membrane (PEM) ambient pressure fuel cell medium/heavy duty vehicle demonstration program.

Hyperspectral longwave imager for the tactical environment

The budget request contained $51.8 million in PE 63710A for night vision but included no funding for hyperspectral longwave imager for the tactical environment (HyLITE).

The committee is aware that recent operations have both demonstrated the need for a day/night hyperspectral day/night sensor and provided a basis for improvements to the prototype HyLITE.

Therefore, the committee recommends an increase of $9.2 million in PE 63710A for HyLITE.

Integrated digital environment service model

The budget request contained $42.5 million in PE 63772A for the development of Advanced Tactical Computer Science and Sensor Technology.

The committee notes that the Department of Defense has a myriad of individual systems that have been designed, produced, and fielded to respond to specific threats, mission requirements, and information needs. The committee notes there is no single method or system to track and evaluate the interoperability characteristics of these systems, or to ensure system-of- systems configuration will work together in the battlespace.

The command, control, communications, computers, intelligence, surveillance, and reconnaissance Integrated Digital Environment Service Model (C4ISR–IDESM) seeks to provide the information technology infrastructure, applications, and support services nec-

essary to configure and manage enterprise data. The C4ISR–IDESM uses the internet on a subscription basis as needed to conduct C4ISR interoperability analysis.

Accordingly, the committee recommends $47.5 million in PE 63772A, an increase of $5.0 million for research and development of C4ISR–IDESM.

Joint Common Missile

The budget request included no funds for the Joint Common Missile (JCM) program.

The committee notes that the budget request for fiscal year 2005 projected a requirement of $271.3 million for fiscal year 2006. The committee also understands the JCM was one of the first weapon systems to be validated by the joint requirements process instituted by the Secretary of Defense and the first program approved by the Department of Defense Joint Requirements Oversight Committee through the Joint Capabilities Integration and Development System (JCIDS) process. Further, the committee notes that the JCM is currently the only air-to-ground missile with the potential to fulfill the six critical capability gaps identified in the JCIDS analysis, such as targeting time sensitive moving targets, mitigation of collateral damage, and targeting diverse target sets. Thus far, the Department of the Army and Department of the Navy have invested $406.4 million in research and development for the JCM.

Therefore, the committee strongly encourages the Secretary of Defense to reevaluate the cancellation of the Joint Common Missile program. The committee directs the Secretary of Defense to submit a report to the Congressional defense committees by December 31, 2005, that contains a Joint Requirements Oversight Council memorandum explaining how the Department of Defense will mitigate the capability gaps identified in the JCIDS analysis; a current and forecasted inventory of all air to ground missiles remaining in war reserve stockpiles; an explanation of compliance strategy and associated costs for the Department to comply with the insensitive munitions requirements of current air to ground missiles; and lastly, provide a cost comparison analysis of continuing the Joint Common Missile program versus JCM termination and continued procurement of legacy air to ground missiles to fulfill mission requirements.

JP–8 soldier fuel cell

The budget request contained $39.6 million in PE 62705A for electronics and electronic devices, but included no funding for JP–8 soldier fuel cell.

The committee is aware that light, compact, high-capacity power sources to power a variety of devices are essential to success on the modern battlefield. The committee notes that an effort is on-going to modify a commercial fuel cell to run on standard, readily available JP–8 fuel.

The committee recommends an increase of $4.0 million in PE 62705A for development of the JP–8 soldier fuel cell.

Lean munitions

The budget request contained $68.5 million in PE 78045A for manufacturing science and technology, but included no funds for the third phase of the Lean Munitions project.

The committee notes that the Army Armaments Research, Development and Engineering Command (ARDEC) is responsible for 90 percent of the munitions produced and utilized by the U.S. Army. The committee further notes that the Army's increased operational tempo and transformation plans support the need to reduce the time and cost for development and production of munitions used by our armed forces. The committee believes that the use of a standards-based, model-driven design and manufacturing lifecycle support environment would enable faster and lower cost production and sustainment of current and future munitions systems.

The committee understands that the third phase of the Lean Munitions project will focus on enterprise-wide integration and utilization of three-dimensional, model-based, standardized product data. Further, the Lean Munitions project will be expanded from a pilot demonstration to a full-scale production of machined parts, integration ARDEC's design and manufacturing lifecycle support environment, and implementation of the Lean business process into the supply chain.

The committee recommends an increase of $4.5 million in PE 78045A to continue the Lean Munitions project.

Leishmaniasis diagnostics

The budget request contained $10.1 million in PE 63807A for medical systems advanced development.

The committee notes that over 700 U.S. troops have been diagnosed with cutaneous leishmaniasis since the start of Operation Iraqi Freedom and soldiers serving in Afghanistan have been infected with visceral leishmaniasis, a more serious form of the disease that can cause organ damage and death. In addition, all blood donations from military personnel in Iraq and Afghanistan were stopped because of the potential transmission of the parasite from infected donors to non-infected recipients.

The committee believes that it is important to have a safe and effective method of early diagnosis. The Army has had under development a diagnostic skin test for leishmaniasis that is designed to be inexpensive, easy use and ideally suited for routine use in areas where limited medical services are available. This test is an important component of the overall Department of Defense program to develop effective Food and Drug Administration (FDA)-approved diagnostic and treatment products for leishmaniasis. The diagnostic test is in advanced development and has been successfully tested in humans in Phase I safety trials. The committee notes, however, that the program has not been included in the budget request because of funding limitations.

The committee recommends an increase of $1.5 million in PE 63807A to continue development of the leishmaniasis skin test.

Light utility vehicle

The budget request contained $64.8 million in PE 62601A for combat vehicle and automotive technology, but included no funding for the light utility vehicle.

The committee is aware the Army requires a low-cost, light utility vehicle (LUV) that would provide soldiers with enhanced mobility, lethality and survivability compared to the current high mobility multipurpose wheeled vehicle and understands that the design and development of a LUV demonstrator could be accelerated due to previous research in LUV technology by the National Automotive Center.

Accordingly, the committee recommends an increase of $8.0 million in PE 62601A to continue the design, development, and delivery of a LUV demonstrator.

Lightweight patient monitor with defibrillator

The budget request contained $45.2 million in PE 63002A for medical advanced technology development.

The committee recommends an increase of $3.5 million in PE 3002A to continue development of advanced capabilities in a compact, lightweight, full-featured patient monitor with defibrillator that will enable military caregivers to provide intensive care monitoring and treatment in locations and situations that would be otherwise inhibited by the size and weight of the current technology in the field.

M5 high performance fiber for personnel armor systems

The budget request contained $21.7 million in PE 62786A for warfighter technology, but included no funding for M5 high performance fiber.

The committee notes that M5 fiber, based on independent evaluation, offers the possibility of a new generation of lighter and more effective body and vehicle armor as well as similar improvement in heat resistant clothing.

The committee recognizes the urgency to provide improved personnel protection and recommends $26.7 million in PE 62786A, an increase of $5.0 million to hasten development, evaluation and small-scale field testing of M5 fiber based armor and other applications.

Mast mounted common remote stabilized sensor system

The budget request contained $26.7 million in PE 63653A for advanced tank armament systems to support the development of the Family of Stryker vehicles, but included no funds to complete the development of the Mast Mounted Common Remote Stabilized Sensor System (CRS3).

The Stryker Brigade Combat Team mission requirement states the need for a high performance mast mounted CRS3 on the Stryker Reconnaissance Vehicle and the Stryker Fire Support Vehicle. The committee is aware $2.1 million was appropriated in the National Defense Appropriations Act, 2003 (Public Law 107–248) for a mast mounted CRS3 technology demonstrator. The committee understands the next phase of development is a fully qualified and tested mast mounted CRS3 and notes additional funding would accelerate development of the mast mounted CRS3 by two years.

The committee understands a mast mounted CRS3, when fielded, increases soldier survivability, allows soldier to operate the sensor package inside the armored vehicle without degrading sensor performance, and allows soldiers to target from a defilade position.

Therefore, the committee recommends $41.7 million in PE 63653A, an increase of $15.0 million for accelerated mast mounted CRS3 development for the Stryker Brigade Combat Teams.

Medium tactical vehicle steering and suspension development

The budget request contained $1.9 million in PE 64604A for the continued development of medium tactical truck technologies and enhancements.

The committee is aware the United States Army Tank-Automotive and Armaments Command initiated an advanced steering and suspension modification program in fiscal year 2004 for its medium truck fleet. The committee supports the continued modernization of the Army's medium truck fleet through advancements in suspension and steering and further notes these modifications can provide improved mission mobility, increased vehicle maneuverability in confined areas, and allow for greater vehicle control over extreme terrains such as those found in Operation Iraqi Freedom and Operation Enduring Freedom.

Therefore, the committee recommends an increase of $10.0 million in PE 64604A to continue the development, simulation, testing, and validation of the advanced medium truck steering and suspension program.

Miniature sensor development for small and tactical unmanned aerial vehicles

The budget request contained $23.8 million in PE 62709A for night vision technology, but included no funding for miniaturized hyperspectral and coherent imaging sensors for small and tactical unmanned aerial vehicles (UAV).

The committee notes the urgent need for better sensors for small and tactical UAVs and recommends $29.8 million in PE 62709A, an increase of $6.0 million for miniaturized hyperspectral and coherent imaging sensors for small and tactical UAVs.

Missile recycling center capability

The budget request contained $9.9 million in PE 63103A for explosive demilitarization technology, but contained no funds for the Missile Recycling Center capability at Letterkenny Munitions Center (LEMC).

The committee notes that Congress appropriated funding for the tactical missile reuse and demilitarization capability at LEMC in fiscal year 2004. Fiscal year 2006 funding would furnish the LEMC with the capability to reduce the usage of open burn and detonation techniques procedures, as directed by Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition (Executive Order 13101), for disposing of tactical missiles. The additional funding will add a new module for processing warheads from the multiple launch rocket system and will support demilitarization of larger tactical missiles received from other U.S. military services.

Therefore, the committee recommends an increase of $6.0 million for Missile Recycling Center capability at LEMC.

Modeling and analysis of the response of structures

The budget request contained $82.0 million in PE 61104A for university and industry research centers, but included no funding for modeling and analysis of the response of structures (MARS).

The committee notes that MARS computer simulations will provide accurate vulnerability assessments that can be used to improve warfighter protection, enhance survivability, and facilitate rapid repair of structures.

The committee recommends $83.0 million in PE 61104A, an increase of $1.0 million for MARS.

Night vision advanced technology

The budget request contained $51.8 million in PE 63710A for night vision advanced technology initiatives, of which $0.5 million was included for the Soldier Mobility and Rifle Targeting System (SMaRTS) demonstration program.

The committee recognizes SMaRTS technology provides soldiers with an improved lightweight, low power, helmet mounted thermal and visible sensor, with a helmet mounted display and thermal weapon sight. SMaRTS significantly improves the warfighter's fight-on-the-move capability while conducting mobile military operations in urban terrain (MOUT) in many different environmental conditions where night vision goggles alone fail to provide the complete solution as required by the warfighter. The committee expects SMaRTS technology to be a critical combat enabler and expects it to improve soldier survivability in MOUT operations in all environments.

The committee recommends $55.8 million in PE 63710A, an increase of $4.0 million to continue system component definition, modeling, and design of the SMaRTS demonstration program.

Night vision enhanced vision goggle

The budget request contained $51.8 million in PE 63710A for night vision advanced technology, but included no funds to accelerate development of night vision fusion technology.

The committee recognizes that night vision capability has provided our armed forces a significant advantage over their adversaries. The committee notes that while older technology has become available to others, state-of-the-art in night vision, pixel level digital fusion of light intensification and infrared images offers a very significant advantage over previous night vision devices. The committee understands that this technology will provide vital survivability and operational enhancements.

The committee recommends an increase of $12.2 million in PE 63710A to accelerate development and fielding of enhanced night vision pixel level, digital fusion of light intensification and infrared image technology.

Night vision system air dispensing capability

The budget request contained $51.8 million in PE 63710A for night vision systems, but included no funding for unattended ground sensor air deployment from air foils or unmanned aerial vehicles.

The committee believes that in the future it will be highly advantageous to dispense unattended ground sensors from unmanned aerial vehicles.

Therefore, the committee recommends an increase of $6.0 million in PE 63710A for development and testing of unmanned aerial sensor dispensing.

Non-emitting helicopter brownout situational awareness demonstration

The budget request included $23.5 million in PE 64201A for aircraft avionics, but included no funds for a non-emitting helicopter brownout situational awareness demonstration. The committee is aware that helicopter accidents continue to occur due to brownout conditions and operations over water. While a variety of technologies exist to solve this problem, the committee is concerned that the Department of Defense has not yet demonstrated an effective and affordable solution using non-emitting technologies. The committee believes that affordable and relatively mature technologies exist to demonstrate this capability.

Therefore, the committee has included an increase of $3.0 million in PE 64201A for a non-emitting helicopter brownout situational awareness demonstration. The committee directs that these funds be used for a competitive evaluation using a helicopter platform. If the evaluation is successful in demonstrating improved capabilities and affordable technologies, the committee encourages the insertion of this capability into existing programs to improve flight handling qualities in degraded visual environments.

Patient status monitor

The budget request contained $45.2 million in PE 63002A for medical advanced technology development.

The committee notes advances in patient status monitoring technology that provide on-body sensing of physiological conditions, such as heart rate, blood pressure, and temperature via a series of wireless relays for patient monitoring and detection of a critical or life threatening event. Potential applications of the technology include the monitoring of a deployed individual or groups of individuals who might be subject to catastrophic physiological events, such as military and public safety personnel, and those with acute cardiovascular disease.

The committee recommends an increase of $3.5 million in PE 63002A to accelerate the development and evaluation of wireless-remote patient status monitoring technology.

Portable and mobile emergency broadband system

The budget request contained $45.3 million in PE 63008A for electronic warfare advanced technology, but included no funding for the portable and mobile emergency broadband system.

The committee notes that the portable and mobile emergency broadband system, based on emerging commercial technology, will allow rapid establishment of emergency communications networks.

The committee recommends an increase of $6.1 million in PE 63008A to complete critical development of the portable and mobile emergency broadband system.

Powdered metal compaction

The budget request contained $68.5 million in PE 78045A for manufacturing science and technology.

The committee notes the production of high quality, low cost net and near-net shaped parts for a variety of defense products uses traditional compacted metal powder processes in a 75 year-old process that is costly and complex. In many cases the resulting density and tensile strength of the finished parts are not sufficient to allow them to be used in many aerospace, ground vehicle, and weapons system applications.

The committee notes that the combustion driven compaction (CDC) process in which an electrically-ignited, combustible gas mixture is used to drive the press overcomes many of the problems of the current compacted powder technology. The CDC process technology is simple and controllable, capable of providing compacted metal parts that are useable in defense applications, and appears to have the potential for creating a major step forward in defense manufacturing technology in terms of performance and affordability.

The committee recommends an increase of $2.0 million in PE 78045A for a powdered metal compaction initiative to continue the development and implementation of combustion driven compaction technology for defense applications.

Pseudofollicullitus Barbae

The budget request contained $10.1 million in PE 63807A for medical systems advanced development, but included no funding for the development of a treatment for pseudofollicullitus barbae.

The committee recognizes the importance of the development of a treatment for pseudofollicullitus barbae, particularly as it affects military personnel deployability rates.

The committee recommends an increase of $1.0 million in PE 63807A for pseudofollicullitus barbae research.

Rugged textile electronic garments

The budget request contained $45.2 million in PE 63002A for medical advanced technology development, but included no funds for continuation of the development of rugged textile electronic garments for combat casualty care.

The committee continues to note advances in sensor technology, textile electronics, information management, and medical science have increased the potential for remote diagnosis, monitoring, and treatment of a range of medical conditions. Positive results from combat casualty care and electronic textiles research suggest that major improvements can be made in the survival of wounded soldiers through the use of these technologies in an integrated system. Congress has supported the development and assessment of the application of advanced textile electronic garments to combat casualty care. The committee notes that the plan for the third year of the program emphasizes the integration of advanced sensor technologies into apparel that will provide a "wear and forget" physiological status monitoring capability.

The committee recommends an increase of $2.2 million in PE 63002A to complete the final year of the rugged textile electronic garment program.

Smart responsive nano-composites

The budget request contained $67.2 million in PE 61103A for University Research Initiatives, but included no funding for smart responsive nano-composites.

The committee is aware that there is a multitude of design possibilities for nano-structured, nature-simulating materials capable of responding to outside stimuli.

The committee recommends $69.2 million in PE 61103A, an increase of $2.0 million to develop a smart responsive nano-structured material, which combines detection of toxins and alarm-release with self-cleaning and self-repairing material.

Strategic materials and strategic manufacturing initiative

The budget request contained $37.8 million in PE 62624A for weapons and munitions technology, but included no funding for the strategic materials strategic manufacturing initiative (SM2i).

The committee notes that titanium is important for weight reduction of weapons systems. The committee is aware that SM2i will link the Army's efforts to establish a reliable low-cost domestic source of titanium with advanced domestic manufacturing capabilities. The committee recommends an increase of $8.0 million in PE 62624A for SM2i.

Tactical wheeled vehicle product improvement program

The Army is preparing to make a significant capital investment in its tactical wheeled vehicle (TWV) fleet as a direct result of modularity and extreme usage rates from ongoing operations in the global war on terrorism. The Army requires the flexibility to rapidly evaluate and integrate readily available technology into TWV platforms as part of its recapitalization and modernization effort for TWVs. The committee expects these technologies to have a real-time impact and effect on existing TWVs by providing increased capability in the areas of performance. The committee report (H. Rept. 108–491) accompanying the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108–375) requires all Department of Defense manned ground systems must be assessed for adequacy in survivability and suitability against asymmetrical, unconventional threats. As such, the committee expects at the minimum, the incorporation of lessons learned from Operation Iraqi Freedom as a specific component of the TWV Product Improvement Program (PIP).

The Army's TWV recapitalization and modernization strategy will require proof-of-concept modifications and commercial-off-the-shelf proven capabilities in the key performance areas of force protection, survivability, reliability, distribution and mission enhancements and safety. The committee realizes the degree of complexity of integrating new technologies and commercial modifications into specific TWV platforms. The committee is also aware this process of "spiraling" technologies into current TWV platforms marks the first time that this has occurred as the historical trend has been to categorize the TWV fleet as a non-developmental item. The committee disagrees with this historical non-developmental item categorization of the TWV fleet and commends the Army and the Program Executive Officer for Combat Support and Combat Service Support for devising a modernization and recapitalization strategy

for the TWV fleet that includes readily available technology platform insertions. The committee supports the Army's effort and the committee believes a TWV PIP can augment and accelerate the spiraling of these needed, readily available technologies into specific TWV platforms.

Therefore, the committee recommends $50.0 million in fiscal year 2006 for the TWV PIP. The committee expects this additional funding will be prioritized and distributed accordingly across the families of light, medium and heavy tactical wheeled vehicles and to also include the family of tactical trailers. Given the noted complexity of the TWV recapitalization and modernization strategy, the committee directs the Secretary of the Army to submit a report to the congressional defense committees by February 1, 2006, describing in detail the Army's plan for integrating these product improvement modifications into the current TWV fleet. The committee expects the report to provide specific cost estimates and specific platform modifications.

Titanium extraction, mining, and process engineering research

The budget request contained $44.7 million in PE 62624A for weapons and munitions technology, but included no funding for titanium extraction, mining, and process engineering research (TEMPER).

The committee is aware that the TEMPER initiative is intended to enhance U.S. industrial capability for the efficient production of inexpensive titanium for military systems. The committee notes that titanium offers weight and performance advantages and that the process must be developed to produce titanium at a reasonable cost in order to realize those advantages in future military systems.

The committee recommends an increase of $8.0 million in PE 62624A for TEMPER.

Transparent armor

The budget request contained $48.3 million in PE 63003A for aviation advanced technology, but contained no funding for advanced lightweight armored window technology.

The committee recognizes the unique threat confronting air crews operating rotary aircraft in forward deployed areas. The committee is supportive of efforts to rapidly field advanced technologies to enhance the protection of military personnel. The committee understands that significant opportunities exist to facilitate the transition of technologies from research and development to testing and fielding, particularly in the area of self-protection. The effort to develop transparent, lightweight armor is one such opportunity, as it offers the promise of improving rotary aircraft survivability.

The committee therefore, recommends an increase of $1.5 million in PE 63003A for lightweight armored window technology.

UH–60 maintenance improvement program

The budget request contained $409.1 million in PE 23744A, aircraft modifications/product improvement programs, but included no funds for a maintenance improvement program for the UH–60 Black Hawk helicopter.

The committee notes the benefits of streamlining maintenance practices in order to reduce aircraft downtime for scheduled main-

tenance and to expedite return of the weapon system to the warfighter. The Nomad Expert Technician System (NETS), along with commercially developed software, combines to form the Nomad Aircraft Maintenance Improvement Program (NAMIP). The NETS is a maintenance productivity tool composed of a wireless, integrated, belt-mounted control module and a heads-up display mounted on a standard type baseball cap. This display allows maintenance personnel to view technical data and procedures concerning maintenance tasks without leaving their point of task. Secondly, commercially available software can adapt existing UH–60 maintenance data to integrate with the NETS displays. As a result, the NAMIP has the potential to significantly increase output productivity and reduce aircraft downtime for UH–60 maintenance facilities Army wide.

Therefore, the committee recommends $413.0 million in PE 23744A, an increase of $3.9 million for test and evaluation of the UH–60 NAMIP at Corpus Christi Army Depot and the Army National Guard Aviation Classification Repair Activity Depot.

NAVY RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Overview

The budget request contained $18.0 billion for Navy research, development, test, and evaluation (RDT&E).

The committee recommends $18.0 billion, a decrease of $15.9 million from the budget request.

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY					
		BASIC RESEARCH					
0601103N	1	University Research Initiatives	75,910				75,910
0601152N	2	In-House Laboratory Independent Research	15,500				15,500
0601153N	3	Defense Research Sciences	356,885	(4,000)			352,885
0601153N		Ocean Sciences				(4,000)	
		TOTAL, BASIC RESEARCH	**448,295**	**(4,000)**		**(4,000)**	**444,295**
		APPLIED RESEARCH					
0602114N	4	Power Projection Applied Research	94,148	13,000			107,148
0602114N		Fire Lidar			2,000		
0602114N		High Performance Frequency Modulated Fiber Optic Link			5,000		
0602114N		Retroreflecting Optical Communications for Special Operations			6,000		
0602123N	5	Force Protection Applied Research	101,650	10,000			111,650
0602123N		Secure Infrastructure Technology			6,000		
0602123N		Thin Film Battery Technology			4,000		
0602131M	6	Marine Corps Landing Force Technology	37,590				37,590
0602233N	7	Human Systems Technology					
0602234N	8	Materials, Electronics and Computer Technology					
0602235N	9	Common Picture Applied Research	57,693				57,693
0602236N	10	Warfighter Sustainment Applied Research	82,856	10,700			93,556
0602236N		Composite Ceramic UUV			2,500		
0602236N		Marine Mammal Research Program			2,200		
0602236N		Virtual Clinical Learning Laboratory			3,000		
0602236N		Partnership Simulation Laboratory			3,000		
0602271N	11	RF Systems Applied Research	47,302	4,800			52,102
0602271N		Maritime Identification and Surveillance Technology			4,800		
0602435N	12	Ocean Warfighting Environment Applied Research	49,793	12,500			62,293
0602435N		Integrated Ocean Observing System			12,500		
0602651M	13	Joint Non-Lethal Weapons Applied Research	6,000				6,000
0602747N	14	Undersea Warfare Applied Research	71,362	1,000			72,362

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0602747N		High Power and Energy Storage System			1,000		
0602782N	15	Mine and Expeditionary Warfare Applied Research	49,520				49,520
		TOTAL, APPLIED RESEARCH	**597,914**	**52,000**	**52,000**		**649,914**
		ADVANCED TECHNOLOGY DEVELOPMENT					
0603114N	16	Power Projection Advanced Technology	82,538	30,700			113,238
0603114N		DP-2 Thrust Vectoring System			8,000		
0603114N		High Power Free Electron Laser			4,700		
0603114N		Laser Radar			6,000		
0603114N		Low Cost Terminal Imaging Seeker			5,000		
0603114N		Low Power Terascale UAV Processing Engine			7,000		
0603123N	17	Force Protection Advanced Technology	71,488	44,500			115,988
0603123N		Advanced Material Systems for LCS			8,000		
0603123N		Seapower 21 Autonomous Technologies			5,000		
0603123N		Fast Ship Compact Waterjet			4,000		
0603123N		4th Generation Permanent Magnet Motor			2,000		
0603123N		High Temperature Superconducting AC Synchronous Motor			4,000		
0603123N		High Temperature Superconducting Generator			5,000		
0603123N		Project M			8,500		
0603123N		Superconducting Direct Current Homopolar Motor			5,000		
0603123N		UAV Imagery			3,000		
0603235N	18	Common Picture Advanced Technology	60,589	6,000			66,589
0603235N		Consolidated Undersea Situational Awareness			6,000		
0603236N	19	Warfighter Sustainment Advanced Technology	68,540	9,000			77,540
0603236N		Virtual At-Sea Training Initiative			3,000		
0603236N		SEAPRINT			6,000		
0603271N	20	RF Systems Advanced Technology	75,070	12,900			87,970
0603271N		Polyimide Macro Electromechanical Systems			7,400		
0603271N		Remote Ocean Surveillance System			3,000		
0603271N		Spectral Beam Combining Fiber Lasers			2,500		
0603640M	21	Marine Corps Advanced Technology Demonstration (ATD)	56,434	9,000			65,434

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603640M		Advanced Mine Detection			3,000		
0603640M		Common Remote Operating Weapon Station (CROWS)			2,000		
0603640M		Mobile Fire Support System Dragon Fire II			4,000		
0603651M	22	Joint Non-Lethal Weapons Technology Development	2,394				2,394
0603706N	23	Medical Development					
0603727N	24	Joint Experimentation (Navy Technical Information Presentation System in PB)	187,943				187,943
0603729N	25	Warfighter Protection Advanced Technology	16,068	6,300			22,368
0603729N		Naval Special Warfare Performance and Injury Prevention Program			2,600		
0603729N		Anti-Oxidant Micronutrient Program			3,700		
0603747N	26	Undersea Warfare Advanced Technology	27,603				27,603
0603757N	27	Joint Warfare Experiments					
0603758N	28	Navy Warfighting Experiments and Demonstrations	49,288	23,000			72,288
0603758N		Littoral Support Craft-Experimental			23,000		
0603782N	29	Mine and Expeditionary Warfare Advanced Technology	31,897				31,897
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	**729,852**	**141,400**	**141,400**		**871,252**
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
0603207N	30	Air/Ocean Tactical Applications	27,094	2,700			29,794
0603207N		3-D Sonar for UUV			2,700		
0603216N	31	Aviation Survivability	6,255	5,500			11,755
0603216N		Ceramic Air Deployed Sensor			2,500		
0603216N		Reduced Risk Ordnance			3,000		
0603237N	32	Deployable Joint Command and Control	41,464				41,464
0603254N	33	ASW Systems Development	7,050	8,000			15,050
0603254N		Tactical E-field Buoy Development			8,000		
0603261N	34	Tactical Airborne Reconnaissance / UAV CONOPS	3,938				3,938
0603382N	35	Advanced Combat Systems Technology	30,166				30,166
0603502N	36	Surface and Shallow Water Mine Countermeasures	122,122				122,122
0603506N	37	Surface Ship Torpedo Defense	47,039	5,000			52,039
0603506N		AN/WSQ-11 ATT and Tripwire			5,000		
0603512N	38	Carrier Systems Development (CVN-21)	167,823	8,000			175,823

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603512N		Aviation Ship Integration Center			8,000		
0603513N	39	Shipboard System Component Development	22,150	4,900			27,050
0603513N		Amorphous Metal Permanent Magnet Generator Set			1,500		
0603513N		Integrated Fight Through Power			3,400		
0603525N	40	PILOT FISH	141,369				141,369
0603527N	41	RETRACT LARCH	82,717				82,717
0603536N	42	RETRACT JUNIPER	54,887				54,887
0603542N	43	Radiological Controls	1,845				1,845
0603553N	44	Surface ASW	17,343	15,700			33,043
0603553N		Medium N Off-board Distributed Acoustic Sensor			3,700		
0603553N		Receive-While-Transmit Sonar			12,000		
0603559N	45	SSGN Design (SSGN Conversion in PB)	24,020				24,020
0603561N	46	Advanced Submarine System Development	162,953	24,000			186,953
0603561N		Large Aperture Bow and Low Cost Conformal Arrays			5,000		
0603561N		Twin-line Thin Line Towed Array			19,000		
0603562N	47	Submarine Tactical Warfare Systems	7,125				7,125
0603563N	48	Ship Concept Advanced Design	11,899	5,000			16,899
0603563N		Security Video Distribution System			5,000		
0603564N	49	Ship Preliminary Design & Feasibility Studies	27,021	4,000			31,021
0603564N		AGOR Ocean Class Research Ship Preliminary Design			4,000		
0603570N	50	Advanced Nuclear Power Systems (CVN-21)	168,373				168,373
0603573N	51	Advanced Surface Machinery Systems					
0603576N	52	CHALK EAGLE	116,230				116,230
0603581N	53	Littoral Combat Ship (LCS)	576,454	12,000			588,454
0603581N		High Strength Composite Material			12,000		
0603582N	54	Combat Systems Integration	76,975				76,975
0603609N	55	Conventional Munitions	36,940				36,940
0603611M	56	Expeditionary Fighting Vehicle (EFV/AAAV)	253,675				253,675
0603612M	57	Marine Corps Mine/Countermeasures Systems - Adv Dev: Mine Detector	3,265				3,265
0603635M	58	Marine Corps Ground Combat/Support System	500	7,500			8,000
0603635M		Urban Operations Environment Lab			5,500		

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603635M		Marine Expeditionary Rifle Squad (MERS)			2,000		
0603654N	59	Joint Service Explosive Ordnance Development	34,418				34,418
0603658N	60	Cooperative Engagement	88,135				88,135
0603713N	61	Ocean Engineering Technology Development	24,620				24,620
0603721N	62	Environmental Protection	21,977				21,977
0603724N	63	Navy Energy Program	1,595				1,595
0603725N	64	Facilities Improvement	4,158				4,158
0603734N	65	CHALK CORAL	52,769				52,769
0603739N	66	Navy Logistic Productivity	8,909				8,909
0603746N	67	RETRACT MAPLE	308,708				308,708
0603748N	68	LINK PLUMERIA	81,723				81,723
0603751N	69	RETRACT ELM	57,036				57,036
0603755N	70	Ship Self Defense	9,592				9,592
0603764N	71	LINK EVERGREEN	58,153				58,153
0603787N	72	Special Processes	47,908				47,908
0603790N	73	NATO Research and Development	10,335				10,335
0603795N	74	Land Attack Technology / AWS	14,195	66,000			80,195
0603795N		Affordable Weapon System			60,000		
0603795N		Extended Range Guided Munition			5,000		
0603795N		76mm Gun Testing			1,000		
0603851M	75	Nonlethal Weapons	43,981				43,981
0603857N	76	Joint Combat ID Evaluation Team	15,696				15,696
0603860N	77	Joint Precision Approach and Landing Systems	39,260				39,260
0603879N	78	Single Integrated Air Picture (SIAP) System Engineer (SE)	36,721				36,721
0603889N	79	Counterdrug RDT&E Projects					
0604272N	80	Tactical Air Directional Infrared Countermeasures (TADIRCM)	9,956				9,956
0604327N	81	Hard and Deeply Buried Target Defeat System (HDBTDS) Program					
0604707N	82	Space and Electronic Warfare (SEW) Architecture/Engineering Support	44,469				44,469
0604787N	83	Joint Warfare Transformation Programs	23,385				23,385
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**3,276,391**	**168,300**	**168,300**		**3,444,691**

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		SYSTEM DEVELOPMENT & DEMONSTRATION					
0604212N	84	Other Helo Development	81,112	10,000			91,112
0604212N		Joint Heavy Lift			10,000		
0604214N	85	AV-8B Aircraft - Eng Dev	15,556				15,556
0604215N	86	Standards Development	84,308	6,800			91,108
0604215N		Metrology			6,800		
0604216N	87	Multi-Mission Helicopter Upgrade Development	48,144				48,144
0604218N	88	Air/Ocean Equipment Engineering	4,558				4,558
0604221N	89	P-3 Modernization Program	7,401				7,401
0604230N	90	Naval Coastal Warfare (Warfare Support System)	2,275				2,275
0604231N	91	Tactical Command System	51,177	7,000			58,177
0604231N		Air Combat Environment Test and Evaluation			3,000		
0604231N		Multi-Wavelength Aerosolized Biologics Sensor			4,000		
0604234N	92	Advanced Hawkeye	629,682				629,682
0604245N	93	H-1 Upgrades	42,012				42,012
0604261N	94	Acoustic Search Sensors	29,522				29,522
0604262N	95	V-22A	206,376				206,376
0604264N	96	Air Crew Systems Development	10,902				10,902
0604269N	97	EA-18G	409,097				409,097
0604270N	98	EW Development	42,667				42,667
0604273N	99	VHXX Executive Helo Development	935,932				935,932
0604280N	100	Joint Tactical Radio System - Navy (JTRS-Navy)	250,766				250,766
0604300N	101	DD(X) Systems Engineering (SC-21 Total Sip System Engineering)	1,114,791	(414,800)			699,991
0604300N		Program Reduction				(414,800)	
0604307N	102	Aegis Combat System Engineering	216,313	12,000			228,313
0604307N		Advanced Radar Technology Integrated System Testbed			12,000		
0604311N	103	LPD-17 Class System Integration	11,443				11,443
0604312N	104	JASSM					
0604329N	105	Small Diameter Bomb (SDB)	9,965				9,965
0604366N	106	Standard Missile Improvements	145,634				145,634
0604373N	107	Airborne MCM	54,659				54,659

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0604503N	108	SSN-688 and Trident Mods (Submarine Systems Development)	95,499	15,500			110,999
0604503N		Affordable Towed Array			6,000		
0604503N		Common Submarine Radio Room			9,500		
0604504N	109	Air Control	10,151				10,151
0604507N	110	Enhanced Modular Signal Processor	1,079				1,079
0604512N	111	Shipboard Aviation Systems	33,029	6,500			39,529
0604512N		Aircraft Carrier Launch and Recovery Support Equipment			6,500		
0604518N	112	Combat Information Center Conversion	6,908				6,908
0604558N	113	Virginia Class Design Development	155,807	20,000			175,807
		Multi-mission Modules			20,000		
0604561N	114	SSN-21 Developments	2,928				2,928
0604562N	115	Submarine Tactical Warfare System	40,690				40,690
0604567N	116	Ship Contract Design/ Live Fire T&E (CVN-21)	55,672				55,672
0604574N	117	Navy Tactical Computer Resources	2,220				2,220
0604601N	118	Mine Development	15,392				15,392
0604603N	119	SLAM-ER					
0604610N	120	Lightweight Torpedo Development	31,826				31,826
0604618N	121	Joint Direct Attack Munition					
0604654N	122	Joint Service Explosive Ordnance Development	8,880				8,880
0604703N	123	Personnel, Training, Simulation, and Human Factors	3,097				3,097
0604721N	124	Battle Group Passive Horizon Extension System	18,456				18,456
0604727N	125	Joint Standoff Weapon Systems	13,517				13,517
0604755N	126	Ship Self Defense (Detect & Control)	45,931				45,931
0604756N	127	Ship Self Defense (Engage: Hard Kill)	46,026				46,026
0604757N	128	Ship Self Defense (Engage: Soft Kill/EW)	24,012				24,012
0604761N	129	Intelligence Engineering	5,002				5,002
0604771N	130	Medical Development	7,202	20,700			27,902
0604771N		Biomedical Research Imaging			5,000		
0604771N		Hemoglobin-Based Oxygen Carrier			8,000		
0604771N		Navy Cancer Vaccine Research Program			5,000		
0604771N		Quick Clot Hemostatic Agent			2,700		

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0604777N	131	Navigation/ID System	52,717				52,717
0604784N	132	Distributed Surveillance System	54,256	26,000			80,256
0604784N		Submarine Advanced Deployable System			26,000		
0604800N	133	Joint Strike Fighter (JSF)	2,393,013				2,393,013
0604910N	134	Smart Card Program	715				715
0605013M	135	USMC Information Technology Development	19,150	4,000			23,150
0605013M		Automated Manifest System - Tactical			4,000		
0605013N	136	Information Technology Development	60,859				60,859
0605014N	137	Defense Integrated Military Human Resources System (DIMHRS)					
0605172N	138	Multinational Information Sharing (MNIS)	33,557				33,557
0605212N	139	CH-53X RDTE	271,941	(271,941)			
0605212N		Program Restructure				(271,941)	
0605500N	140	Multi-mission Maritime Aircraft (MMA)	964,067				964,067
0508713N	141	Navy Standard Integrated Personnel System (NSIPS)					
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	**8,877,891**	**(558,241)**	**128,500**	**(686,741)**	**8,319,650**
		RDT&E MANAGEMENT SUPPORT					
0604256N	142	Threat Simulator Development	23,918				23,918
0604258N	143	Target Systems Development	52,963				52,963
0604759N	144	Major T&E Investment	39,682				39,682
0605152N	145	Studies and Analysis Support - Navy	9,629				9,629
0605154N	146	Center for Naval Analyses	49,891				49,891
0605155N	147	Fleet Tactical Development	2,266				2,266
0605502N	148	Small Business Innovative Research					
0605804N	149	Technical Information Services	714				714
0605853N	150	Management, Technical & International Support	44,847				44,847
0605856N	151	Strategic Technical Support	3,451				3,451
0605861N	152	RDT&E Science and Technology Management	63,508				63,508
0605862N	153	RDT&E Instrumentation Modernization	1,632				1,632
0605863N	154	RDT&E Ship and Aircraft Support	77,131				77,131
0605864N	155	Test and Evaluation Support	320,133				320,133

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0605865N	156	Operational Test and Evaluation Capability	13,101				13,101
0605866N	157	Navy Space and Electronic Warfare (SEW) Support	2,829				2,829
0605867N	158	SEW Surveillance/Reconnaissance Support	13,030				13,030
0605873M	159	Marine Corps Program Wide Support	28,224				28,224
0804758N	160	Service Support to JFCOM, JNTC	10,000				10,000
0909999N	161	Financing for Cancelled Account Adjustments					
		TOTAL, RDT&E MANAGEMENT SUPPORT	**756,949**				**756,949**
		OPERATIONAL SYSTEMS DEVELOPMENT					
0603660N	162	Advanced Development Projects					
0603661N	163	Retract Violet					
0101221N	164	Strategic Sub & Weapons System Support	90,022	4,000			94,022
0101221N		Common Acoustic Sensor Initiative			4,000		
0101224N	165	SSBN Security Technology Program	44,063	2,700			46,763
0101224N		Common Submarine Radio Room			2,700		
0101226N	166	Submarine Defensive Warfare Systems	8,527				8,527
0101402N	167	Navy Strategic Communications/E-6B	31,443				31,443
0203761N	168	Rapid Technology Transition (RTT)	24,653				24,653
0204136N	169	F/A-18 Squadrons	88,720				88,720
0204152N	170	E-2 Squadrons	2,256				2,256
0204163N	171	Fleet Telecommunications (Tactical)	32,694				32,694
0204229N	172	Tomahawk Weapons System	20,342				20,342
0204311N	173	Integrated Surveillance System	23,453	6,000			29,453
0204311N		IUSS Common Processor			6,000		
0204413N	174	Amphibious Tactical Support Units	4,768				4,768
0204571N	175	Consolidated Training Systems Development	42,248				42,248
0204574N	176	Cryptologic Direct Support	1,422				1,422
0204575N	177	Electronic Warfare (EW) Readiness Support	13,987				13,987
0205601N	178	HARM Improvement / AARGM	90,832				90,832
0205604N	179	Tactical Data Links	86,364				86,364
0205620N	180	Surface ASW Combat System Integration	4,519	10,000			14,519

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0205620N		Acoustic Window Applications			10,000		
0205632N	181	MK-48 ADCAP	21,619				21,619
0205633N	182	Aviation Improvements	81,546				81,546
0205658N	183	Navy Science Assistance Program	3,917				3,917
0205675N	184	Operational Nuclear Power Systems	64,054				64,054
0206313M	185	Marine Corps Communications Systems	237,081	4,890			241,971
0206313M		Reconnaissance, Surveillance and Targeting Vehicle			9,000		
0206313M		Joint Tactical Radio System Program Reduction				(4,110)	
0206623M	186	Marine Corps Ground Combat/Supporting Arms Systems	48,409	16,400			64,809
0206623M		Expeditionary Fire Support System			3,500		
0206623M		Multi-Role Intermediate Support Craft			9,500		
0206623M		Ultrasonic Consolidation of Embedded Sensors			3,400		
0206624M	187	Marine Corps Combat Services Support	10,476				10,476
0207161N	188	Tactical Air Intercept Missiles	9,384				9,384
0207163N	189	Advanced Medium Range Air-to-Air Missile (AMRAAM)	3,584				3,584
0301303N	190	Maritime Intelligence					
0301323N	191	Collection Management					
0301327N	192	Technical Reconnaissance and Surveillance					
0303109N	193	Satellite Communications (SPACE)	541,980	9,200			551,180
0303109N		JIST-NET			9,200		
0303140N	194	Information Systems Security Program	28,660				28,660
0303158N	195	Joint Command and Control Program (JC2)	5,000				5,000
0304111N	196	Special Activities					
0305149N	197	COBRA JUDY	121,261				121,261
0305160N	198	Defense Meteorological Satellite Program	9,122				9,122
0305188N	199	Joint C4ISR Battle Center (JBC)	55,326				55,326
0305192N	200	Joint Military Intelligence Programs	4,290				4,290
0305204N	201	Tactical Unmanned Aerial Vehicles	99,349	10,500			109,849
0305204N		Joint Operational Test Bed System			10,500		
0305205N	202	Endurance Unmanned Aerial Vehicles					
0305206N	203	Airborne Reconnaissance Systems	27,918	5,000			32,918

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0305206N		Passive Collision Avoidance and Reconnaissance			5,000		
0305207N	204	Manned Reconnaissance Systems	21,322				21,322
0305208N	205	Distributed Common Ground Systems	12,354				12,354
0307207N	206	Aerial Common Sensor (ACS) (JMIP)	133,642				133,642
0308601N	207	Modeling and Simulation Support	6,812				6,812
0702207N	208	Depot Maintenance (Non-IF)	10,012				10,012
0708011N	209	Industrial Preparedness	57,753	4,000			61,753
0708011N		Gas Turbine Diagnostic System			2,000		
0708011N		M-65 Bismalemide Carbon Fiber Prepreg Resin Qualification			2,000		
0708730N	210	Maritime Technology (National Shipbuilding Research Program)		100,000			100,000
0708730N		Shipbuilding Industrial Base Investment Fund			100,000		
XXXXXXX	999	Classified Programs	1,125,515				1,125,515
XXXXXXX	999	Classified Programs		12,000	12,000		12,000
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**3,350,699**	**184,690**	**188,800**	**(4,110)**	**3,535,389**
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY	**18,037,991**	**(15,851)**	**679,000**	**(694,851)**	**18,022,140**

Items of Special Interest

Advanced mine detection program

The budget request contained $56.4 million in PE 63640M for the Marine Corps advanced technology demonstration, but included no funding for the advanced mine detection program.

The committee is aware that the Marine Corps urgently needs a backpack advanced mine detection capability with minimal false alarm rates. The committee notes that the Office of Naval Research has been working to develop an advanced mine detection system based on quadrupole resonance technology that has the potential to meet Marine Corps requirements.

The committee recommends an increase of $3.0 million in PE 63640M to complete development of a quadrupole resonance technology advanced backpack mine detection system.

Affordable towed array construction

The budget request contained $95.5 million in PE 64503N for submarine system equipment development, including $4.5 million to continue the development of affordable towed array technology.

The affordable towed array construction program employs fiber optic thinline arrays to provide reliability improvements by reducing system complexity, eliminating wet end electronics, enhancing littoral capability and incorporating robust array construction methods. The committee believes that accelerating the development and fielding of fiber optic towed array technology using improved construction methods and process would provide increased performance, reliability and operational capabilities at reduced costs and earlier introduction into the fleet.

Accordingly, the committee recommends an increase of $6.0 million in PE 64503N to accelerate the development and introduction into the fleet of fiber optic thinline arrays.

Affordable weapon system

The budget request contained $14.2 million in PE 63795N for land attack technology advanced component development and prototypes.

The affordable weapons system (AWS) program began as an Office of Naval Research (ONR) advanced technology initiative to demonstrate the ability to design, develop, and build a capable and affordable precision guided weapon system at a cost that would be an order of magnitude cheaper than comparable weapons systems and in production would achieve a stable unit production cost very early in the production cycle.

The committee notes that the ONR program has been successful in all respects. In less than four years, the AWS program demonstrated the use of commercial-off-the-shelf (COTS) components to construct a 400–600 mile range, subsonic (180–220 knot), "loitering, 200 pound payload, precision strike missile with global position system/inertial navigation system guidance and control and a data link." The missile has both line-of-sight and satellite data links for interaction with ground stations and forward observers and is reprogrammable in flight. In operational use the missile would be launched from CONEX-type containers that hold between 6 and 20 missiles and could be carried on land, sea, or air plat-

forms. The initiative has demonstrated that the COTS approach can reduce costs by an order of magnitude from traditional cruise missiles. The current missile cost in large scale production, exclusive of warhead, is estimated to be approximately $65,000.

Based on the results of the AWS advanced technology demonstration, the Department of Defense and the Navy transitioned the AWS from the technology base to an accelerated advanced component development and prototype program to demonstrate the ability to produce the missile at the projected cost, produce up to 100 missiles and launch and fire control equipment for developmental and operational testing, and support user evaluation of the AWS for potential use by the fleet. The Navy is also assessing the operational requirement and concepts of operation for the system and those other activities that would be necessary to establish AWS as a program of record. The current schedule includes completion of an operational evaluation of the system during the third quarter of fiscal year 2006.

The committee recommends an increase of $60.0 million in PE 63795N to continue the development of the AWS, support developmental and operational testing and fleet evaluation of the system. Of the amount provided, up to $30.0 million may be used to continue low rate initial production of the system. The committee directs that funds to continue low rate initial production of the system will not become available for obligation until successful completion of the AWS operational evaluation.

Air combat environment test and evaluation

The budget request contained $51.2 million in PE 64231N for major test and evaluation investment.

The committee notes that in order to meet increasingly complex asymmetric threats, U.S. armed forces are transforming from a strategy based on threats to a strategy based on capabilities, and that this transformation requires sophisticated modeling, simulation, and analysis at research, development, test, and evaluation (RDT&E) and training range facilities operated by the military departments. The Air Combat Environment Test and Evaluation Facility (ACETEF) is a ground test facility whose primary purpose is to test installed aircraft systems in an integrated multi-spectral warfare environment using state-of-the-art simulation and simulation technology. The facility supports the systems development process from early mission needs and requirements development through operational testing and training. The robust and flexible modeling and simulation architecture has made possible other RDT&E and related capabilities, such as distributed or co-located battlegroup mission rehearsal for naval and joint forces.

The committee recommends an increase of $3.0 million in PE 64231N to accelerate improvements in high-fidelity simulation capabilities at the ACETEF.

Airborne reconnaissance systems

The budget request contained $27.9 million in PE 35206N for airborne reconnaissance systems, but included no funding for passive collision avoidance and reconnaissance (PCAR).

The committee is aware that unmanned aerial vehicles (UAV) must fly in regions that make them a potential hazard to commer-

cial and other manned aircraft. The committee notes that PCAR will sense an impending collision and allow the UAV to safely avoid approaching aircraft.

Therefore, to improve safety of UAV operations, the committee recommends $32.9 million in PE 35206N, an increase of $5.0 million for PCAR.

Aircraft carrier launch and recovery and support equipment modernization

The budget request contained $33.0 million in PE 64512N for shipboard aviation systems development, but included no funds for development of the aircraft carrier launch and recovery (ALRE) and support equipment (SE) modernization program.

The ALRE/SE modernization program would develop modernization strategies for existing ALRE/SE systems to reduce the human error and operating costs while improving safety and reliability. The committee understands that state-of-the-art ALRE/SE technologies and design tools are being developed for the Department of the Navy's CVN–21 future carrier, and believes that application of these technologies to the Navy's existing aircraft carrier fleet could substantially reduce operating costs for the remainder of their useful life.

Accordingly, the committee recommends $39.5 million in PE 64512N, an increase of $6.5 million, for ALRE/SE modernization program. The committee expects that $2.0 million would be for ALRE systems modernization; $2.5 million would be for development of prognostic, health monitoring, and condition-based maintenance systems; and $2.0 million would be for upgrading ALRE/SE technical data packages.

Amorphous metal permanent magnet generator set

The budget request contained $22.2 million in PE 63513N for shipboard systems advanced component development and prototypes.

The committee understands that generator sets employing amorphous metal permanent magnets have the potential to greatly increase power output, while reducing the size and weight of the generator set. Such generator technology also holds the potential for reducing lifecycle costs by increasing fuel efficiency and reducing logistics supports costs. Congress provided $1.5 million in fiscal year 2005 for development of an amorphous metal permanent generator.

The committee recommends an increase of $1.5 million in PE 63513N to continue the development and demonstration of an amorphous metal permanent magnet generator set for potential use on U.S. Navy combatants and other ships.

Aviation ship integration center

The budget request contained $167.8 million in PE 63512N for carrier systems advanced technology development and prototyping, but included no funds for the Aviation Ship Integration Center.

The Aviation Ship Integration Center supports the development and conceptualization of fully integrated advanced technology designs for future aircraft carriers. The center identifies, tests, and integrates transformational design changes and products for avia-

tion capable ships and component systems, and permits the identification and resolution of potential problems early in the development cycle, thereby reducing overall engineering costs and facilitating the introduction of transformational initiatives in the CVN–21 carrier.

The committee notes that additional funding is required to expand and complete several key initiatives by the shipbuilder and appropriate government sponsors:

(1) Identification of and experimentation with design changes that can reduce cost or improve net centric warfare capabilities;

(2) Integrate and test communications, command, control, computers, and intelligence components to ensure joint interoperability;

(3) Design flexible, modular compartments for decision centers aboard ships.

(4) In coordination with the Navy's systems commands, develop and implement leading edge modeling and simulation capabilities that allow warfighters and engineers to collaborate effectively on aircraft carrier design issues; and

(5) Implement a technical framework for facilities, networks, and simulations that will be compatible with evolving Department of Defense initiatives such as the joint distributed engineering plant and joint national training capabilities.

The committee recommends an increase of $8.0 million in PE 63512N for the Aviation Ship Integration Center.

Biomedical research imaging

The budget request contained $7.2 million in PE 64771N for medical development and demonstration, but included no funds for biomedical research imaging.

The committee continues to note the progress being made in the use of advanced imaging technology in biomedical research. The committee believes that these findings have important implications for advances in real-time medical diagnosis and treatment for the armed forces and for the application of advanced data fusion technologies in other areas.

The committee recommends an increase of $5.0 million in PE 64771N to continue development of the applications of advanced imaging technology in biomedical research.

Ceramic air deployed sensor

The budget request contained $6.3 million in PE 63216N for aviation survivability, but included no funding for ceramic air-deployed sensor.

The committee recognizes the need to develop low-cost air deployable sensors and understands that ceramic composites may offer potential to reduce sensor costs.

Therefore, the committee recommends $8.8 million in PE 63216N, an increase of $2.5 million for ceramic air deployed sensor.

CH–53X heavy lift replacement

The budget request included $272.0 million in PE 65212N and $2.5 million in PE 64212N for the CH–53X heavy lift replacement

(HLR) program. The budget request also included $6.0 million in PE 63003A for the Joint Heavy Lift (JHL) program.

As noted elsewhere in this report (sec. 219), the JHL program as currently structured and funded is a joint program in name only. The committee believes that Navy and Marine Corps future missions and required capabilities are not that different and the Secretary of Defense must ensure the JHL program is structured to meet the needs of the Army and Marine Corps.

Therefore, the committee recommends no funding in PE 65212N for HLR, a reduction of $272.0 million; $12.5 million in PE 64212N, an increase of $10.0 million for JHL; and $16.0 million in PE 63003A, an increase of $10.0 million for JHL.

Common submarine radio room

The budget request contained $95.5 million in PE 64503N for submarine system equipment development and $44.1 million in PE 11224N for the SSBN security technology program.

The committee notes that the radio room on many of today's ships uses outdated, and in some cases, obsolete technologies. As a result, the systems that support ship communications in the radio room are labor intensive, require heavy and costly maintenance, suffer from operator overload and require large numbers of highly skilled operators. The Navy developed the Common Submarine Radio Room (CSRR) in the Virginia Class submarine program and plans to standardize radio rooms across all submarine classes using the CSRR model. CSRR will reduce the cost, training, and maintenance in submarine radio rooms; and, through increased use of automation, will permit the reduction of personnel required to stand watch in the radio room. In the future, the CSRR concept may be extended to the surface fleet.

The committee recommends an increase of $9.5 million in PE 64503N and an increase of $2.7 million in PE 11224N for the Navy's unfunded requirement for the CSRR.

Consolidated undersea situational awareness

The budget request contained $60.6 million in PE 63235N for common picture advanced technology development, but included no funds to continue development of the consolidated undersea situational awareness system (CUSAS).

The committee notes that CUSAS is a decision-support system would provide knowledge superiority to undersea warfare (USW) forces through the use of advanced, interactive, decision support software. Developed initially under the Defense Advanced Research Projects Agency, CUSAS offers significant improvements in situational awareness for fleet operators through the use of high fidelity, two- and three-dimensional presentations, augmented with real-time, intelligent agent-based, tactical recommendations.

The committee notes the progress in the development of CUSAS. Over the past year, CUSAS tactical interfaces with existing submarine combat systems, and a preliminary collision avoidance capability have been developed and evaluated. The system has demonstrated the capability to interface with, process, and display all sources of sensor and intelligence data onboard a U.S. submarine. The committee believes that successful development of the CUSAS decision support system will provide a capability that would signifi-

cantly assist submarine commanders to make rapid and informed decisions in critical combat operations.

The committee recommends an increase of $6.0 million in PE 63235N to continue development of CUSAS.

Cooperative engagement capability

The conference report (H. Rept. 105–736) accompanying the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (Public Law 105–261) directed the Secretary of the Navy to report to the congressional defense committees, at least quarterly, on cooperative engagement capability and combat direction system interoperability problems and planned solutions.

The committee notes that the Navy has complied with this direction and has described a broad scope of actions taken to improve interoperability between the cooperative engagement capability and surface ship combat direction systems. The Navy's reports reflect substantial success in addressing the issues that were of concern to the conferees in 1998, and moreover, the establishment of long-range organizational procedures and a system of reliable evaluations and reviews to ensure the readiness of deploying strike groups. Accordingly, the committee agrees to terminate the quarterly reporting requirement effective October 1, 2005.

Digital shipboard voice communications

The committee applauds the Navy's efforts to explore the transition of all shipboard communications to a digital format. The committee understands that the use of this technology will save significant space and weight aboard the Navy's combat vessels by converging voice, video, and data traffic into a common network infrastructure. Even so, the committee recognizes that before the Navy selects all digital and Voice over internet protocol (VoIP) communications systems as the fleet standard, issues in quality of service and bandwidth consumption must be addressed. The committee also understands that the Department of Defense and the Navy are reluctant to move to VoIP before a universally recognized commercial standard technical solution is adopted. While the committee understands this reluctance, the committee believes that the lack of a commercial standard should not impede the adoption of promising VoIP systems, if the overall benefit of digital shipboard communications is demonstrated. To that end, the committee urges the Secretary of Defense to explore options to partner with U.S. industry to develop a universally recognized VoIP technical standard.

Hemoglobin-based oxygen carrier

The budget request contained $7.2 million in PE 64771N for medical system development and demonstration, but included no funds specifically to continue the development of hemoglobin-based oxygen carrier technology.

The committee notes that there is currently no effective method of providing front-line resuscitative treatment (i.e. immediate oxygen-carrying support) for acute blood loss to wounded soldiers on the battlefield and civilian trauma victims in an out-of-hospital setting. The single major cause of death in potentially salvageable battlefield casualties is hemorrhage and blood loss, and early intervention to treat hemorrhage provides the greatest opportunity for

reducing mortality and morbidity. Although blood transfusion is not practical in far forward or out-of-hospital settings, hemoglobin-based oxygen carriers have the characteristics of stability at room temperature that overcome many of the medical and logistical problems associated with red blood cell transfusion.

In fiscal year 2002 Congress initiated a program for evaluation of hemoglobin-based oxygen carriers for the treatment of trauma casualties. Based on the progress in the program the U.S. Naval Medical Research Center is directing a clinical development and trials program to evaluate the safety and efficacy of a particular hemoglobin-based oxygen carrier. The program is designed to serve as the basis for approval by the U.S. Food and Drug Administration and subsequent licensing of the product for military and civilian trauma applications.

The committee recommends an increase of $8.0 million in PE 64771N to continue the program for development and clinical trials of hemoglobin-based oxygen carriers for treatment of trauma casualties.

High temperature superconducting AC synchronous ship propulsion motor

The budget request contained $71.5 million in PE 63123N for force protection advanced technology development, including $23.8 million for development of surface ship and submarine hull, mechanical and electrical advanced technology and to continue development of a 36.5 megawatt class, high temperature superconducting alternating current (AC) synchronous motor.

The committee notes that development of component technologies for the all electric warship is one of the major goals of the Navy's science and technology program. To this end the Navy has pursued the development of several different technologies for ship main propulsion electric motors, including permanent magnet motors, high temperature superconducting AC synchronous motor technology, and low temperature superconducting direct current homopolar motor technology. The committee notes that permanent magnet motor technology is more mature and represents a potential near-term candidate for a ship main propulsion motor. However, the committee also notes that superconducting motor technology presents a number of advantages with respect to size and power density that, if realized, would make that technology potentially advantageous for certain applications.

In fiscal year 2003, the Navy awarded a contract for development and demonstration of high temperature, superconducting AC synchronous motor technology in a 36.5 megawatt propulsion motor and drive system that would be designed to be compatible with Navy electric warship concepts and performance requirements, and would be available to begin Navy evaluation in fiscal year 2006.

The committee recommends an increase of $4.0 million in PE 63123N to continue development and demonstration of the high temperature superconducting AC synchronous motor.

Joint integrated systems technology

The budget request contained $542.0 million in PE 33109N for satellite communications (SATCOM). The Joint integrated satellite communications (JIST–NET) is a web-based SATCOM planning

and management technology that utilizes the Department of Defense's existing internet protocol router to expand the flexibility and efficiency of military SATCOM across a broad spectrum of radio frequencies. The committee believes that developmental systems like JIST–NET, based on common standards are critical to increased SATCOM efficiency and maximizing the utilization of available spectrum resources across legacy and follow-on SATCOM.

The committee recommends $551.2 million in PE 33109N, an increase of $9.2 million to continue the JIST–NET program for development of a uniform web-based architecture for SATCOM mission planning and resource allocation.

Marine expeditionary rifle squad

The budget request contained $0.5 million in PE 63635M for Marine Corps ground combat support systems but included no funds for the development of the Marine Expeditionary Rifle Squad (MERS) program.

The MERS program focuses on the holistic, system level integration of all items worn, consumed or carried by the marine infantry rifle squad. The program's near-term efforts address integration issues resulting from the rapid fielding of urgently needed weapons and equipment to infantry squads currently operating in Operation Iraqi Freedom and the program's long term objective strategy provides marine infantry rifle squads with fully integrated future equipment systems.

The committee understands the importance and the heightened capabilities fully integrated equipment systems bring to marines operating in combat theaters of operations. The committee is aware that certain non-integrated equipment components can interfere with individual marines' ability to conduct their missions effectively, causing marines to develop ad hoc solutions to in effect generate an integrated equipment solution. The committee understands MERS is designed to prevent these problems from occurring by providing an integrated solution set to the marine rifle squad before deployment to a combat zone.

Therefore, the committee recommends $2.5 million in PE 63635A to continue the phase development strategy of the MERS program.

Marine mammal research program

The budget request contained $82.9 million in PE 62236N for warfighter sustainment applied research, but included no funds for continuation of the marine mammal research program.

The committee notes continuing public concern about the effect of sound on the behavior and well-being of marine mammals and continues to support research in these areas. The marine mammal research program investigates the effects of noise on dolphin hearing and dolphin biosonar capabilities, joint visual and acoustic surveys of the behavior of humpback whales, and also supports research in bioacoustical oceanography.

The committee recommends an increase of $2.2 million in PE 62236N to continue the program for research in marine mammal behavior, the effects of sound on marine mammals, and bioacoustical oceanography.

Metrology

The budget request contained $84.3 million in PE 64215N for standards development, including $1.4 million for calibration standards development. The budget request supports Navy lead service responsibilities in the Department of Defense (DOD) Joint Services metrology research and development program.

The DOD's metrology research and development program develops new measurement standards and capabilities to support the development, test, evaluation, and maintenance of emerging military systems. The committee notes that continued shortfalls in the metrology budgets of all the military departments have led to the erosion of critical calibration standards development and measurement services to the detriment of the development and support of new weapons systems. Recent efforts to improve research and development funding are helping, but a backlog of projects exists for fiscal year 2005 and is expected to continue to climb higher in fiscal year 2006 without outside support. The committee believes, however, initiation of the most critical unfunded projects in fiscal year 2006, particularly those in the chemical/biological and improvised explosive device detection areas, would significantly benefit the Department and the readiness of U.S. forces.

Accordingly, the committee recommends $91.1 million in PE 64215N, an increase of $6.8 million for calibration standards development.

Multi-wavelength surface scanning biologics sensor

The budget request contained $51.2 million in PE 64231N for development and demonstration of Navy tactical command systems.

The committee notes on-going research in the use of multi-wavelength excitation spectral technology for the detection and identification of biologic agents that are not discernible with conventional sensors. The current program under the advanced sensor applications program (ASAP), PE 63714D, which is being completed with fiscal year 2005 funding, has successfully developed the capability to detect bio-spores on contaminated surfaces using two-dimensional fluorescence that spectrally resolves the target in both excitation and emission dimensions. The committee notes the Navy's intention to capitalize on the success of the ASAP program and adapt the sensor technology to develop a networked capability for detection of biological agent plumes, which would be created by distribution of a biological agent as an aerosol. The committee further notes that the new work will provide a critical sensor input to the Naval Simulation System and will also enhance ongoing joint program work in predictive plume modeling.

The committee recommends an increase of $4.0 million in PE 64231N to continue the development and demonstration of two-dimensional fluorescence spectral sensing technology for real-time detection and identification of aerosolized pathogens.

Polyimide macro electromechanical systems

The budget request contained $75.1 million for RF Systems Advanced Technology in PE 63271N, but included no funds for polyimide macro electromechanical systems (PMEMS).

Cost and weight considerations are driving reduced performance communications arrays on future Navy shipbuilding programs. The

committee believes this is unacceptable in light of new architectural and advanced manufacturing techniques that will reduce the cost and weight of phased array antennas.

By using advanced flexible materials and packaging, PMEMS phase shifting and power/signal distribution offers a technology path at significantly reduced cost over conventional module based phased array designs. The committee believes that this "disruptive" technology will dramatically reduce the cost of phased arrays for multiple applications and frequency bands. A PMEMS Hybrid 2–D scanned Phased Array for an extremely high frequency (EHF) satellite communication antenna costs one tenth that of a Conventional 2–D scanned array—about $88.0 million in savings per shipset. Inherently lighter, the PMEMS Hybrid array promises additional weight savings when significantly reduced power and cooling requirements are factored. In February 2005, the PMEMS technology was evaluated favorably by the Applied Physics Lab and the Office of Naval Research. In March, the committee learned that the Assistant Secretary of the Navy for Research, Development, and Acquisition plans to initiate a PMEMS effort in fiscal year 2005 to demonstrate the technology in a shipboard environment with the goal of having it available for incorporation into the Navy's shipbuilding program sooner, rather than later. The committee agrees with this effort and an expedited schedule.

Accordingly, the committee recommends authorization of $82.5 million in PE 63271N, an increase of $7.4 million to continue the PMEMS EHF Transmit and Receive sub-array antenna demonstration program.

"Quik Clot" hemostatic agent

The budget request contained $7.2 million in PE 64771N for medical development, but included no funds for the Quick Clot hemostatic agent.

The committee notes the effectiveness of the Quik Clot hemostatic agent in its ability when applied to a battlefield wound to rapidly cause the bleeding wound to clot and stop further loss of blood. The committee is aware that when the agent is applied to a wound, an exothermic reaction takes place, which is uncomfortable to the patient and can burn the damaged tissue. The committee understands that although Quik Clot is effective on surface wounds, it has not been developed or approved for internal use.

The committee recommends an increase of $2.7 million in PE 64771N for development of a new generation of Quik Clot, that will make the agent suitable for internal use and will mitigate its undesirable thermal characteristics.

Remote ocean surveillance system

The budget request contained $75.1 million in PE 63271N for radio frequency systems advanced technology development.

The committee notes continued progress in the development of high contrast, high resolution multi-spectral sensors and image processing technology that indicate potential capabilities for detection of objects in the ocean in real-time, at various depths, and with relatively high search rates. Realization and employment of these technologies in littoral areas, estuaries, and ports would provide the capability for a remote ocean surveillance system to pro-

vide real-time capabilities for mine detection and avoidance, force protection, and identification and dissemination of information on the surface and sub-surface threat to ports and harbors.

The committee recommends an increase of $3.0 million in PE 63271N to continue the proof-of-concept development and demonstration of multi-spectral sensor and image processing technology for a remote ocean surveillance system.

Retro-reflecting optical communications for special operations

The budget request contained $94.1 million in PE 62114N for power projection applied research.

The committee notes that the Naval Research Laboratory (NRL) has conducted extensive research in the use of modulated retro-reflectors, which could eliminate the need for an unmanned aerial vehicle (UAV) to carry a laser for downlink communications Under the current program, NRL has demonstrated high power, high efficiency compact lasers and miniature retro-reflectometers, which can modulate a laser signal with data from the air vehicle as that signal is reflected back to the source, and laser interrogators to transmit and receive the signal. NRL has also demonstrated the high-speed modulation required for downloading data from new high data rate sensors, the type that might be carried on UAVs, as well as demonstrating the use of the technology in ship-to-shore communications. The committee understands that the next step in the program is the development of a miniaturized, gimbaled laser interrogator for airborne platforms.

The committee recommends an increase of $6.0 million in PE 62114N to continue the development of retro-reflecting optical communications for special operations applications.

Spectral beam combining fiber lasers

The budget request contained $75.1 million in PE 63271N for radio frequency systems advanced technology development.

The committee notes that high power lasers based on fiber laser technology might be capable of providing U.S. armed forces the same operational advantages as solid-state lasers, but could offer potential breakthroughs in reduced size, weight, complexity, and cooling requirements. The committee is informed that recently demonstrated technology for spectral beam combining fiber lasers, in which the outputs of a number of low power fiber optic lasers are combined into a single, high quality laser beam, could permit the construction of high power lasers from an array of lower power fiber laser elements at a significantly lower cost than conventional high power lasers.

The committee recommends an increase of $2.5 million in PE 63271N for advanced development and evaluation of the technology for spectral beam combining fiber lasers.

Superconducting direct current homopolar motor

The budget request contained $71.5 million in PE 63123N for force protection advanced technology development, including $23.8 million for advanced development of surface ship and submarine hull, mechanical, and electrical systems, but did not include any funds to continue development and demonstration of an advanced

main propulsion 36.5 megawatt prototype superconducting direct current (DC) homopolar motor.

The development of component technologies for the all-electric warship is one of the major goals of the Navy's science and technology program. To this end the Navy has pursued the development of several different technologies for ship main propulsion electric motors. The committee notes that superconducting motor technology presents a number of advantages with respect to size and power density that make that technology potentially advantageous for certain applications. The committee also notes that low temperature superconducting DC homopolar motor technology has the potential technical advantages of being smaller, lighter, and quieter than alternating current (AC) electric motors, and, if realized, would make the superconducting DC homopolar motor a potentially more suitable alternative for use in submarines or in other ship applications where these attributes are desired.

The committee recommends an increase of $5.0 million in PE 63123N to continue the program for development of a prototype 36.5 megawatt superconducting DC homopolar motor for ship main propulsion.

Surface warfare communications systems

The committee is concerned that the Navy may be procuring surface ship internal secure voice communications equipment that does not fully integrate the ship's internal and external communications systems, critically limiting interoperability with other ships and allied forces. This situation may require sailors to retransmit voice communications that could be seamlessly received, resulting in delay and possible inaccurate data retransmission. Such delay in combat could cost lives and endanger the ship, an unacceptable circumstance when better technology is readily available. The committee firmly believes that any secure voice system should be fully competed and be compliant with the Navy's network centric ForceNet concept. The committee urges the Secretary of the Navy to correct this situation as soon as possible by directing the commander of the Naval Sea Systems Command to consider communications integration and interoperability as a requirement in the procurement of secure voice communications equipment for the fleet.

Synthetic aperture sonar commonality

The Navy is developing synthetic aperture sonar (SAS) for application in undersea warfare against mines and against submarines. Currently, different processors are in development for different systems, and the Defense Advanced Research Projects Agency has expressed interest in one variant of the candidate processors. The committee believes that the processors for these systems should be standardized to the maximum possible extent. The committee directs the Secretary of the Navy to assess the feasibility of establishing commonality in SAS processors and the ability to achieve a best option or blend of the best capabilities which could then be defined as the common SAS processor. The Secretary shall submit a report of the results of the assessment to the congressional defense committees by March 1, 2006.

Tactical E-field buoy development

The budget request contained $7.0 million in PE 63254N for advanced component development and prototypes for anti-submarine warfare systems, including the continued development and evaluation of nonlinear dynamics and stochastic resonance (NDSR) for acoustic, magnetic, and other anti-submarine warfare sensor and signal processing applications.

The committee notes the continuing progress in the application of nonlinear dynamics science and technology to non-acoustic shallow water anti-submarine warfare and the potential for greatly improving anti-submarine warfare systems performance as a result of significantly increased electromagnetic detection ranges, enhanced sonar target discrimination, and improved signal processing. One result of this program has been the establishment of the effectiveness of E-field sensors using state-of-the-art sensor technology coupled with nonlinear signal processing.

The committee believes that an air-launched tactical E-field buoy patterned after the Air Deployed Active Receiver sonobuoy has great potential for real-time target detection and classification.

The committee recommends an increase of $8.0 million in PE 63254N to continue the program for accelerated component and prototype design, development, and testing of a tactical E-field buoy for littoral anti-submarine warfare.

Use of out of service torpedo components for unmanned undersea vehicle systems

The committee is aware that the Navy has explored the possibility of using out of service torpedo components as major elements of new Unmanned Undersea Vehicles (UUVs), including components of the Mark 46 and Mark 50 torpedoes. UUV systems must operate in the harsh undersea environment, presenting several complex engineering challenges. The committee supports the approach of using proven, pre-engineered systems and components in UUV programs. Another out of service torpedo system, the Mark 44, may also hold potential for use in UUV systems. Use of the Mark 44 torpedo body and electrical propulsion system, combined with modern low cost guidance units and sensors could provide a quick, near term demonstration capability at low cost. The committee directs the Navy to evaluate use of the Mark 44 as a low cost UUV demonstration capability, and to submit a report to the congressional defense committees on its analysis and findings by February 1, 2006.

Virtual at-sea training initiative

The budget request contained $68.5 million in PE 63236N for warfighter sustainment advanced technology development.

The committee recognizes the benefits of the Department of the Navy's program to develop a technological solution to maintain fleet readiness in the area of live fire targeting and ordnance delivery. The Office of Naval Research's Virtual-at-Sea-Training (VAST) initiative is an encouraging technology solution, which uses the application of modeling and simulation for simulation-based training, experimentation, mission planning and rehearsal, and system analysis and acquisition.

The committee recommends an increase of $3.0 million in PE 63236N for continued development of the VAST initiative.

Warfare protection advanced technology

The budget request contained $16.1 million in PE 63729N for warfare protection advanced technology, but included no funding for the Naval Special Warfare Performance and Injury Program. This program shows promise in developing an injury prevention model that will permit Navy special operating forces personnel to maintain their required peak physical conditioning while mitigating the risk of musculoskeletal injury.

The committee recommends $18.7 million in PE 63729N, an increase of $2.6 million for Naval Special Warfare Performance and Injury Prevention Program.

AIR FORCE RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Overview

The budget request contained $22.6 billion for Air Force research, development, test, and evaluation (RDT&E).

The committee recommends $22.4 billion, a decrease of $204.1 million from the budget request.

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		RESEARCH, DEVELOPMENT, TEST & EVALUATION, AIR FORCE					
		BASIC RESEARCH					
0601102F	1	Defense Research Sciences	223,894	5,500			229,394
0601102F		Space Education Consortium			5,500		
0601103F	2	University Research Initiatives	105,029				105,029
0601108F	3	High Energy Laser Research Initiatives	11,894				11,894
		TOTAL, BASIC RESEARCH	**340,817**	**5,500**	**5,500**		**346,317**
		APPLIED RESEARCH					
0602102F	4	Materials	74,156	5,000			79,156
0602102F		High Modulus Polyacrylonitrile Carbon Fiber			5,000		
0602201F	5	Aerospace Vehicle Technologies	96,679	3,000			99,679
0602201F		Active Feedback Flow Control			3,000		
0602202F	6	Human Effectiveness Applied Research	79,442	5,000			84,442
0602202F		IMPRINT			3,500		
0602202F		Satellite Threat Evaluation Environment			1,500		
0602203F	7	Aerospace Propulsion	107,523	16,500			124,023
0602203F		Advanced Engine Starter/Generator Prototype			3,500		
0602203F		Engineering Tool Improvement Program			6,500		
0602203F		Affordable Lightweight Power Supply Development			2,500		
0602203F		Aerospace Propulsion Vehicle Center			4,000		
0602204F	8	Aerospace Sensors	93,263	3,000			96,263
0602204F		Compact Optical Receiver for Loitering Stand-off Weapons			3,000		
0602500F	9	Multi-disciplinary Space Technology	81,339	6,000			87,339
0602500F		Upper Stage Engine Technology			6,000		
0602601F	10	Space Technology	84,540	9,000			93,540
0602601F		Elastic Memory Composites			4,000		
0602601F		PMEMS			5,000		
0602602F	11	Conventional Munitions	58,058				58,058
0602605F	12	Directed Energy Technology	37,709				37,709
0602702F	13	Command Control and Communications	93,316	3,900			97,216

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0602702F		Joint Battlespace Infosphere			3,900		
0602805F	14	Dual Use Science and Technology Program					
0602890F	15	High Energy Laser Research	45,678				45,678
		TOTAL, APPLIED RESEARCH	**851,703**	**51,400**	**51,400**		**903,103**
		ADVANCED TECHNOLOGY DEVELOPMENT					
0603112F	16	Advanced Materials for Weapon Systems	36,714	18,800			55,514
0603112F		Lasers for Defense Applications			4,800		
0603112F		Metals Affordability Initiative			14,000		
0603203F	17	Advanced Aerospace Sensors	35,157				35,157
0603205F	18	Flight Vehicle Technology					
0603211F	19	Aerospace Technology Dev/Demo	25,133	4,000			29,133
0603211F		Fibrous 3D Composites			4,000		
0603216F	20	Aerospace Propulsion and Power Technology	77,268	2,000			79,268
0603216F		Solid Boost Power Technology			2,000		
0603231F	21	Crew Systems and Personnel Protection Technology	29,775	3,500			33,275
0603231F		Warfighter Pocket Computer			3,500		
0603270F	22	Electronic Combat Technology	23,923				23,923
0603311F	23	Ballistic Missile Technology		10,000			10,000
0603311F		Guidance Systems Development			6,000		
0603311F		Range Safety Upgrade			4,000		
0603333F	24	Unmanned Air Vehicle Dev/Demo					
0603400F	25	Joint Unmanned Combat Air Systems (J-UCAS)	77,800				77,800
0603401F	26	Advanced Spacecraft Technology	60,915	12,000			72,915
0603401F		Free Space Optical Communications Node			4,000		
0603401F		Position Intelligence Networking Technology (Pinpoint)			4,000		
0603401F		Satellite Simulation Toolkit			3,000		
0603401F		Streaker SLV			1,000		
0603444F	27	Maui Space Surveillance System (MSSS)	5,848	5,000			10,848
0603444F		High Accuracy Network Determination System			5,000		
0603500F	28	Multi-disciplinary Advanced Development Space Technology	53,437	2,500			55,937

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603500F		Threat Warning Attack Reporting			2,500		
0603601F	29	Conventional Weapons Technology	18,660				18,660
0603605F	30	Advanced Weapons Technology	26,955				26,955
0603723F	31	Environmental Engineering Technology					
0603789F	32	C3I Advanced Development	30,125	3,800			33,925
0603789F		Massively Parallel Optical Inter-connects for Battlefield Info Exchange			3,800		
0603801F	33	Special Programs	280,135				280,135
0603850F	34	Integrated Broadcast Service					
0603924F	35	High Energy Laser Advanced Technology Program	5,801				5,801
0207423F	36	Advanced Communications Systems					
0401840F	37	AMC Command and Control System					
0804757F	38	Joint National Training Center					
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	**787,646**	**61,600**	**61,600**		**849,246**
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
0603260F	39	Intelligence Advanced Development	4,580				4,580
0603287F	40	Physical Security Equipment	21,937	5,000			26,937
0603287F		X-Ray Energy Detection System			5,000		
0603421F	41	NAVSTAR Global Positioning System III	87,364				87,364
0603430F	42	Advanced EHF MILSATCOM (SPACE)	665,257				665,257
0603432F	43	Polar MILSATCOM (SPACE)	2,185				2,185
0603434F	44	National Polar-orbiting Operational Environmental Satellite Sys (SPACE)					
0603438F	45	Space Control Technology	14,205				14,205
0603742F	46	Combat Identification Technology	51,893				51,893
0603790F	47	NATO Research and Development	3,973				3,973
0603791F	48	International Space Cooperative R&D	574				574
0603845F	49	Transformational SATCOM (TSAT)	835,769	(400,000)			435,769
0603845F		Program Reduction				(400,000)	
0603850F	50	Integrated Broadcast Service	15,344				15,344
0603851F	51	Intercontinental Ballistic Missile	44,672				44,672
0603854F	52	Wideband Gapfiller System RDT&E (Space)	93,858				93,858

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603858F	53	Space-Based Radar	225,839	(125,839)			100,000
0603858F		Program Reduction				(125,839)	
0603859F	54	Pollution Prevention	2,735				2,735
0603860F	55	Joint Precision Approach and Landing Systems	11,211				11,211
0604015F	56	Next Generation Bomber	25,135				25,135
0604327F	57	Hard and Deeply Buried Target Defeat System (HDBTDS) Program		4,000			4,000
0604327F		Penetrator Study			4,000		
0604400F	58	Joint Unmanned Combat Air Systems (J-UCAS)	272,300				272,300
0604731F	59	Unmanned Combat Air Vehicle (UCAV)					
0604855F	60	Operationally Responsive Launch	23,480	15,500			38,980
0604855F		TACSAT-3/JWS-2			13,500		
0604855F		Blue MAJIC			2,000		
0604856F	61	Common Aero Vehicle (CAV)	27,394				27,394
0207423F	62	Advanced Communications Systems	969				969
0305178F	63	National Polar-Orbiting Operational Environmental Satellite System (NPOESS)	323,665				323,665
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**2,754,339**	**(501,339)**	**24,500**	**(525,839)**	**2,253,000**
		SYSTEM DEVELOPMENT & DEMONSTRATION					
0603840F	64	Global Broadcast Service (GBS)	18,283				18,283
0604012F	65	Joint Helmet Mounted Cueing System (JHMCS)	2,912				2,912
0604222F	66	Nuclear Weapons Support	15,154				15,154
0604226F	67	B-1B	132,496				132,496
0604233F	68	Specialized Undergraduate Flight Training	8,593				8,593
0604239F	69	F-22	76,203				76,203
0604240F	70	B-2 Advanced Technology Bomber	285,205	20,000			305,205
0604240F		B-2 Development			20,000		
0604261F	70a	Personnel Recovery System (Transfer from RDAF 137a)		113,825	113,825		113,825
0604270F	71	EW Development	82,587				82,587
0604280F	72	Joint Tactical Radio	124,225				124,225
0604287F	73	Physical Security Equipment	11,153				11,153
0604329F	74	Small Diameter Bomb (SDB)	85,988				85,988

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0604421F	75	Counterspace Systems	24,651	2,000			26,651
0604421F		Space Control Test Capabilities			2,000		
0604429F	76	Airborne Electronic Attack	120,985				120,985
0604441F	77	Space Based Infrared System (SBIRS) High EMD	756,630				756,630
0604479F	78	Milstar LDR/MDR Satellite Communications (SPACE)					
0604600F	79	Munitions Dispenser Development	21,738				21,738
0604602F	80	Armament/Ordnance Development	7,786				7,786
0604604F	81	Submunitions	5,475				5,475
0604617F	82	Agile Combat Support	10,173	3,800			13,973
0604617F		Biostatic Protective Clothing			3,800		
0604618F	83	Joint Direct Attack Munition					
0604706F	84	Life Support Systems	7,315	5,000			12,315
0604706F		Integrated Oxygen Mask and Goggle System			5,000		
0604735F	85	Combat Training Ranges	6,122				6,122
0604740F	86	Integrated Command & Control Applications (IC2A)	161	3,000			3,161
0604740F		Distributed Mission Interoperability Toolkit			3,000		
0604750F	87	Intelligence Equipment	1,369				1,369
0604754F	88	Tactical Data Link Infrastructure					
0604762F	89	Common Low Observables Verification System (CLOVerS)	8,692				8,692
0604800F	90	Joint Strike Fighter (JSF)	2,474,763				2,474,763
0604851F	91	Intercontinental Ballistic Missile	32,415				32,415
0604853F	92	Evolved Expendable Launch Vehicle Program	26,093				26,093
0605011F	93	RDT&E for Aging Aircraft	24,384				24,384
0605807F	94	Test and Evaluation Support	50,000				50,000
0207256F	95	Joint Unmanned Combat Air System					
0207434F	96	Link-16 Support and Sustainment	157,677				157,677
0207443F	97	Family of Interoperable Operational Pictures (FIOP)	29,296				29,296
0207450F	98	Multi-Sensor C2 Aircraft (MC2A)	397,011				397,011
0207701F	99	Full Combat Mission Training	26,423				26,423
0305176F	100	Combat Survivor Evader Locator					
0401318F	101	CV-22	39,532	2,000			41,532

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0401318F		Nanocrystalline Diamond Coating			2,000		
	101a	KC-135 Tanker Replacement		99,210			99,210
		Transfer from RDAF 219			99,210		
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	**5,071,490**	**248,835**	**248,835**		**5,320,325**
		RDT&E MANAGEMENT SUPPORT					
0604256F	102	Threat Simulator Development	32,546				32,546
0604759F	103	Major T&E Investment	55,339				55,339
0605101F	104	RAND Project Air Force	28,354				28,354
0605306F	105	Ranch Hand II Epidemiology Study	4,188				4,188
0605502F	106	Small Business Innovation Research					
0605712F	107	Initial Operational Test & Evaluation	34,615				34,615
0605807F	108	Test and Evaluation Support / Eglin AFB Range	642,665				642,665
0605860F	109	Rocket Systems Launch Program (SPACE)	13,773	4,500			18,273
0605860F		Ballistic Missile Range Safety Technology			4,500		
0605864F	110	Space Test Program (STP)	48,157				48,157
0605976F	111	Facilities Restoration and Modernization - Test and Evaluation Support	60,561				60,561
0605978F	112	Facilities Sustainment - Test and Evaluation Support	26,238	2,000			28,238
0605978F		Low Profile Arresting Gear			2,000		
0305193F	113	Intelligence Support to Information Operations (IO)					
0804731F	114	General Skills Training	331				331
0909900F	115	Financing for Expired Account Adjustments					
0909980F	116	AC-130U Claim					
1001004F	117	International Activities	3,739				3,739
		TOTAL, RDT&E MANAGEMENT SUPPORT	**950,506**	**6,500**	**6,500**		**957,006**
		OPERATIONAL SYSTEMS DEVELOPMENT					
0605024F	118	Anti-Tamper Technology Executive Agency	7,827				7,827
0605798F	119	Defense Technology Analysis					
0101113F	120	B-52 Squadrons	22,784				22,784
0101120F	121	Advanced Cruise Missile	1,989				1,989

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0101122F	122	Air-Launched Cruise Missile (ALCM)	2,250				2,250
0101313F	123	Strat War Planning System - USSTRATCOM	29,134				29,134
0101314F	124	Night Fist - USSTRATCOM	5,013				5,013
0101815F	125	Advanced Strategic Programs	9,875				9,875
0102326F	126	Region/Sector Operation Control Center Modernization Program	18,237				18,237
0203761F	127	Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund	30,093				30,093
0207028F	128	Joint Expeditionary Force Experiment					
0207131F	129	A-10 Squadrons	51,835				51,835
0207133F	130	F-16 Squadrons	155,666	8,000			163,666
0207133F		F-16 AN/APG-68(V)10 AFRC			8,000		
0207134F	131	F-15E Squadrons	124,647				124,647
0207136F	132	Manned Destructive Suppression	9,394				9,394
0207138F	133	F-22 Squadrons	403,517				403,517
0207141F	134	F-117A Squadrons	13,600				13,600
0207161F	135	AIM 9 Product Improvement	15,639				15,639
0207163F	136	Advanced Medium Range Air-to-Air Missile (AMRAAM)	33,262				33,262
0207224F	137	Combat Rescue and Recovery	113,825	(113,825)			
0207224F		Transfer to RDAF 70a				(113,825)	
0207247F	138	AF TENCAP	10,829				10,829
0207248F	139	Special Evaluation Program	276,219	43,400			319,619
0207248F		Program Increase			43,400		
0207253F	140	Compass Call	4,650				4,650
0207268F	141	Aircraft Engine Component Improvement Program	153,265				153,265
0207277F	142	Eagle Vision	1,737				1,737
0207325F	143	Joint Air-to-Surface Standoff Missile (JASSM)	66,997				66,997
0207410F	144	Air and Space Ops Center	68,099				68,099
0207412F	145	Battle Control System	9,289				9,289
0207417F	146	Airborne Warning and Control System (AWACS)	121,565				121,565
0207423F	147	Advanced Communications Systems / TACP	28,938				28,938
0207424F	148	Evaluation and Analysis Program					
0207433F	149	Advanced Program Technology	300,673				300,673

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0207438F	150	Theater Battle Management (TBM) C4I	40,472				40,472
0207445F	151	Fighter Tactical Data Link	122,160				122,160
0207446F	152	Bomber Tactical Data Link	144,863				144,863
0207448F	153	C2ISR Tactical Data Link	14,838				14,838
0207449F	154	Command and Control (C2) Constellation	41,071				41,071
0207581F	155	Joint Surveillance and Target Attack Radar System (Joint STARS)	78,084				78,084
0207590F	156	Seek Eagle	19,510				19,510
0207591F	157	Advanced Program Evaluation	290,589				290,589
0207601F	158	USAF Modeling and Simulation	30,541				30,541
0207605F	159	Wargaming and Simulation Centers	6,369				6,369
0207697F	160	Distributed Training and Exercises	4,222				4,222
0208006F	161	Mission Planning Systems	138,475				138,475
0208021F	162	Information Warfare Support	15,204				15,204
0301310F	163	National Air Intelligence Center					
0301314F	164	COBRA BALL					
0301315F	165	Missile and Space Technical Collection		5,000			5,000
0301315F		MASINT Support to DCGS			5,000		
0301324F	166	FOREST GREEN					
0301396F	167	GDIP Collection Management					
0301398F	168	Management Headquarters GDIP					
0302015F	169	E-4B National Airborne Operations Center (NAOC)	18,909				18,909
0303131F	170	Minimum Essential Emergency Communications Network (MEECN)	57,344				57,344
0303140F	171	Information Systems Security Program	109,292				109,292
0303141F	172	Global Combat Support System	20,555				20,555
0303150F	173	Global Command and Control System	3,541	11,000			14,541
0303150F		Command and Control Service Level Management			10,000		
0303150F		Applied Research in Computing Enterprise Services			1,000		
0303158F	174	Joint Command and Control Program (JC2)	5,200				5,200
0303601F	175	MILSATCOM Terminals	273,974				273,974
0304111F	176	Special Activities					
0304260F	177	Airborne SIGINT Enterprise (JMIP)	78,920				78,920

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0304311F	178	Selected Activities					
0305099F	179	Global Air Traffic Management (GATM)	7,139				7,139
0305110F	180	Satellite Control Network (SPACE)	29,143				29,143
0305111F	181	Weather Service	28,675				28,675
0305114F	182	Air Traffic Control, Approach, and Landing System (ATCALS)					
0305116F	183	Aerial Targets	6,641				6,641
0305124F	184	Special Applications Program					
0305128F	185	Security and Investigative Activities	491				491
0305142F	186	Applied Technology and Integration					
0305148F	187	Air Force Tactical Measurement and Signature Intelligence (MASINT) Systems/Pr					
0305159F	188	Defense Reconnaissance Support Activities (SPACE)					
0305160F	189	Defense Meteorological Satellite Program (SPACE)	3,908				3,908
0305164F	190	NAVSTAR Global Positioning System (User Equipment) (SPACE)	125,778	5,000			130,778
0305164F		Combat Effectiveness Tests			5,000		
0305165F	191	NAVSTAR Global Positioning System (Space and Control Segments) / OCS	188,301				188,301
0305172F	192	Combined Advanced Applications					
0305174F	193	Space Warfare Center	411				411
0305182F	194	Spacelift Range System (SPACE)	48,854				48,854
0305193F	195	Intelligence Support to Information Operations (IO)	3,618				3,618
0305202F	196	Dragon U-2 (JMIP)	10,158				10,158
0305205F	197	Endurance Unmanned Aerial Vehicles					
0305206F	198	Airborne Reconnaissance Systems	51,769	7,000			58,769
0305206F		Project Suter			7,000		
0305207F	199	Manned Reconnaissance Systems / COBRA BALL	8,101	4,000			12,101
0305207F		EAN-105E Development			4,000		
0305208F	200	Distributed Common Ground Systems / RAS-1R	40,402	(8,000)			32,402
0305208F		Program Reduction				(8,000)	
0305219F	201	Predator UAV (JMIP)	61,007				61,007
0305220F	202	Global Hawk UAV (JMIP)	308,533				308,533
0305221F	203	Network-Centric Collaborative Target (TIARA)	8,647				8,647
0305887F	204	Electronic Combat Intelligence Support	978				978

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0305906F	205	NCMC - TW/AA System	85,222				85,222
0305910F	206	SPACETRACK (SPACE)	151,102	36,000			187,102
0305910F		Space Based Surveillance System			30,000		
0305910F		S Band Upgrade			6,000		
0305913F	207	NUDET Detection System (SPACE)	32,783				32,783
0305917F	208	Space Architect	12,878				12,878
0307141F	209	NASS, IO Technology Integration & Tool Dev	15,182				15,182
0308699F	210	Shared Early Warning (SEW)	3,295				3,295
0401115F	211	C-130 Airlift Squadron	233,028	10,000			243,028
0401115F		C-130 Weight and Balance			5,000		
0401115F		C-130 AIRCAT			5,000		
0401119F	212	C-5 Airlift Squadrons	226,479				226,479
0401130F	213	C-17 Aircraft	165,762				165,762
0401132F	214	C-130J Program	6,681				6,681
0401133F	215	Aeromedical Evacuation	2,077				2,077
0401134F	216	Large Aircraft IR Countermeasures (LAIRCM)	55,743				55,743
0401218F	217	KC-135s	1,498				1,498
0401219F	218	KC-10s	13,472				13,472
0401221F	219	KC-135 Tanker Replacement	99,210	(99,210)			
0401221F		Transfer to RDAF 101a				(99,210)	
0408011F	220	Special Tactics/Combat Control	2,156				2,156
0702207F	221	Depot Maintenance (Non-IF)	1,408				1,408
0702239F	222	Avionics Component Improvement Program					
0702806F	223	Acquisition and Management Support	3,404				3,404
0708011F	224	Industrial Preparedness	36,934	10,000			46,934
0708011F		RFID Rapid Adoption Collaboration Initiative			10,000		
0708012F	225	Logistics Support Activities					
0708026F	226	Productivity, Reliability, Availability, Maintain. Prog Ofc (PRAMPO)					
0708610F	227	Logistics Information Technology (LOGINT)	44,503				44,503
0708611F	228	Support Systems Development	10,316	5,000			15,316
0708611F		Heavy Duty Hybrid Electric Vehicle			5,000		

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0804757F	229	Joint National Training Center	2,924				2,924
0808716F	230	Other Personnel Activities	111				111
0901202F	231	Joint Personnel Recovery Agency	978				978
0901212F	232	Service-Wide Support (Not Otherwise Accounted For)					
0901218F	233	Civilian Compensation Program	7,445				7,445
0901220F	234	Personnel Administration	16,383				16,383
0901538F	235	Financial Management Information Systems Development	17,531				17,531
XXXXXXX	999	Classified Programs	6,069,810				6,069,810
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**11,855,850**	**(76,635)**	**144,400**	**(221,035)**	**11,779,215**
		TOTAL. RDT&E, AIR FORCE	**22,612,351**	**(204,139)**	**542,735**	**(746,874)**	**22,408,212**

Items of Special Interest

Active feedback flow control technology

The budget request contained $96.7 million in PE 62201F for aerospace vehicle technologies, but included no funds for advancement of intelligent aerospace systems (AIAS).

AIAS focuses on the concept and development of valuable simulation tools for Air Force engineers and scientists for assessment of proposed future Air Force weapons systems. AIAS incorporates active feedback flow control (AFFC) technology for simulation and modeling tools in the evaluations of unsteady aerodynamic, turbulence, thermal and noise studies. Currently there are no universal, validated tools available for the new weapon systems development program designer interested in using AFFC concepts at the beginning stages of design. AFFC tools are highly relevant for a broad spectrum of designs and development such as on-board intelligence for maneuvering missiles/projectiles and on-board intelligence for unmanned air vehicles/micro-unmanned air vehicles utilizing neurobiological inspired computational processes.

Therefore, the committee recommends $99.7 million in PE 62201F, an increase of $3.0 million for AIAS in the development of AFFC.

Advanced engine starter/generator system prototype

The budget request contained $107.5 million in PE 62203F, aerospace propulsion, but included no funds for the development of an advanced engine starter/generator (AESG) system for future aircraft.

The committee notes that existing engine starter/generator systems on current and future designed aircraft are physically heavy and expensive to procure and sustain. The AESG contains design and technology advancements in power-electronics and high-speed-machinery. Subsequently, the AESG has the potential to provide future aircraft with a high-powered, engine starter/generator system that is 30 percent less in weight and 28 percent lower in lifecycle cost.

Therefore, the committee recommends an increase of $3.5 million in PE 62203F for development of an advanced engine starter/generator system.

Advanced spacecraft technology

The budget request contained $60.9 million in PE 63401F for advanced spacecraft technology, but contained no funds for the intelligent free space optical communications node, precision navigation and position-intelligent networking technology (PINPOINT), satellite simulation toolkit (SST), or Streaker small launch vehicle (SLV).

The committee is concerned about the developmental risk of the transformational communications architecture, and notes that any laser-based satellite communications system will also require a radio-frequency (RF) capability. The committee believes additional risk-mitigation development is warranted for RF and laser-capable routers and low-cost adaptive switching.

The committee notes that as satellite technology advances, there is a greater requirement for satellites to more accurately determine

their position and attitude in absolute terms. Such accuracy will be necessary for advances in satellite flying formation and arrays of small satellites that will work cooperatively to perform mission requirements. PINPOINT fuses global positioning satellite transmissions and wideband ranging with a network communication system for precise satellite navigation.

The committee recognizes SST provides value to the acquisition and development of space systems via coherent systems engineering and virtual prototyping.

The committee notes that the Streaker SLV has the potential to provide affordable responsive launch for small satellites.

The committee recommends $72.9 million in PE 63401F, an increase of $12.0 million as follows: $4.0 million to develop an intelligent free space optical communications node, $4.0 million to develop PINPOINT, $3.0 million for SST, and $1.0 million for the Streaker SLV.

Aerospace propulsion

The budget request contained $107.5 million in PE 62203F for aerospace propulsion, but contained no funds for the Advanced Vehicle Propulsion Center.

The committee notes funding for the center will upgrade modeling and simulation tools necessary to produce the vehicle and propulsion technology efforts for future space and missile programs.

The committee recommends an increase of $4.0 million in PE 62203F, for the Advanced Propulsion Vehicle Propulsion Center.

Aerospace propulsion and power technology

The budget request contained $77.3 million in PE 63216F for aerospace propulsion and power technology, but contained no funds for solid boost power technology.

The committee believes continued investment in solid boost power technology is important to future propulsion systems.

The committee recommends $79.3 million for PE 63216F, an increase of $2.0 million for solid boost power technology.

Affordable lightweight power supply development

The budget request contained $107.5 million in PE 62203F for applied research in aerospace propulsion, including $30.1 million for aerospace power technology.

The committee notes the need of U.S. armed forces for efficient and robust power sources. Fuel cells, which are lighter than conventional batteries or generator power supplies, offer a high potential for reducing vehicle fuel consumption, the weight of the subsistence and combat load carried by individual soldiers, marines, sailors, and airmen in the field, environmental pollution, and an enemy's ability to detect combat vehicles. The committee further notes advances in technology and the potential for development of durable and cost-effective high temperature proton exchange membrane fuel cells that would address these operational requirements.

The committee recommends an increase of $2.5 million in PE 62203F for applied research in lightweight proton exchange membrane fuel cells.

Applied research in computing enterprise services program

The budget request contained $3.5 million in PE 33150F for development of global command and control systems, but included no funds for the applied research in computing enterprise services (ARCES) program.

The committee notes the ARCES program leverages existing systems using data fusion techniques to create new warfighting capabilities and to create network-aware software systems that optimize communication bandwidth. For fiscal year 2005, the committee understands that the ARCES program is researching solutions related to encoding techniques, dynamic information sharing between warfighters, and information security; and notes that the Congress appropriated an increase of $1.8 million for this purpose. For fiscal year 2006, the committee understands that the ARCES research program would improve intelligence gathering and sharing, reduce the total cost of military equipment ownership, lower the cost of developing future command and control systems, and extend the life cycle of existing legacy command and control systems.

Therefore, the committee recommends $4.5 million in PE 33150F, an increase of $1.0 million to continue the ARCES program.

Assured access to space

The committee believes that national security demands success in achieving assured access to space. The committee is interested in understanding all options for achieving assured access to space. Therefore, the committee directs the Secretary of Defense in conjunction with the Administrator of the National Aeronautics and Space Administration to evaluate and submit a report to the congressional defense committees by February 28, 2006, on the viability of a shuttle-derived system or any other launch system alternative that may provide increased confidence in achieving assured access to space. The evaluation should consider at a minimum industrial base issues, mission type, launch rate, reliability, infrastructure investment, and total cost.

B–2 development

The budget request contained $285.2 million in PE 64240F for B–2 systems development, but included no funds to upgrade system processors. The B–2 is the Department of Defense's most advanced long-range strike aircraft, capable of global force projection in a highly defended target environment.

The committee understands that the B–2's existing on-board processing and memory capacity is inadequate to accommodate future upgrades, and believes that they should be improved to accommodate the following future upgrades: extremely high frequency satellite communications; improved target acquisition; precision and moving target engagement; pre- and post-strike assessment; global air traffic management; and other intelligence; surveillance and reconnaissance improvements.

Therefore, the committee recommends $305.2 million for B–2 systems development, an increase of $20.0 million to upgrade system processors, and encourages the Department of the Air Force to complete funding for this upgrade in its Future Years Defense Program.

Ballistic missile technology

The budget request contained no funds for PE 63311F for ballistic missile technology. This program element has traditionally provided funding for developing, integrating, and demonstrating advanced guidance, navigation, and control technologies for ballistic missiles, space launch vehicles, and next generation strategic systems. This program element has also traditionally funded upgrades for range safety instrumentation. The committee notes that this program element was funded at $11.6 million in fiscal year 2005 and believes that such efforts should be continued.

The committee recommends $10.0 million for PE 63311F, an increase of $10.0 million, of which $6.0 million is for guidance system development and $4.0 million is for range safety upgrades.

Biostatic protective clothing

The budget request contained $10.2 million in PE 64617F for agile combat support but included no funds for the development of biostatic protective clothing.

The committee understands that the capabilities of biostatic protective clothing include a thermally efficient wicking concept made with an extruded continuous filament yarn which has the potential for superior moisture management. The committee further understands that early biostatic protective clothing prototypes have been tested and found to resolve some shortcomings associated with clothing used by those military personnel currently deployed to combat theaters of operation.

Consequently, the committee recommends $14.0 million in PE 64617F, an increase of $3.8 million for biostatic protective clothing.

C–130 airlift squadrons

The budget request contained $233.0 million in PE 41115F for C–130 development programs, but included no funds for the real-time measurement weight and balance system or for development of the automated inspection, repair, corrosion and aircraft tracking (AIRCAT) system.

The committee understands that current C–130 weight and balance calculations are based on historical survey data, rather than on actual weights flown for each mission. Further, the committee notes that miscalculated weights were a likely factor in a recent C–130 aircraft accident and in a recent commercial passenger-carrying aircraft accident. The committee understands that a real-time measurement weight and balance system could be developed that would improve aircraft safety by measuring the actual aircraft weight and center of gravity of a C–130 aircraft, thereby improving safety and cost savings. In fiscal year 2005, the committee recommended an increase of $3.0 million and notes that $2.0 million was appropriated for this system. Consequently, the committee recommends an increase of $5.0 million to qualify a real-time weight and balance system on the C–130 aircraft.

The AIRCAT system would develop tools for collection and analysis of data for the purpose of instituting a condition-based maintenance (CBM) program on the C–130 aircraft. The committee understands CBM techniques are used in many aviation activities because they improve fleet maintenance planning and management, improve safety through a better awareness of flight worthiness,

and reduce total ownership costs. Therefore, the committee recommends an increase of $5.0 million for this purpose.

The committee recommends $243.0 million in PE 41115F, a total increase of $10.0 million.

Commercial communications bandwidth

The committee recognizes the important contribution commercial satellite communications systems provide to military operations. The need for commercial bandwidth to supplement military systems will remain a requirement into the future. As a result, the committee believes a long-term commitment to the appropriate use of commercial satellite communications capacity is in the U.S. government's best interest. The committee believes a multi-year procurement strategy with the use of annual contract options would provide sufficient commitment to industry and provide the government ample flexibility to terminate work as necessary. The committee recommends use of this alternative to procure commercial bandwidth to support military operations for those cases where it is the most efficient and effective procurement method.

Cost analysis for space acquisitions

The committee is alarmed by the number of space acquisition programs experiencing unexpected cost growth over the past decade. Virtually every major space acquisition program has experienced or sits dangerously close to a Nunn-McCurdy breach. The committee believes the Air Force may have prevented this cost growth if they had incorporated quality independent cost analysis.

The committee is troubled about the Department of the Air Force's ability to provide objective, credible, and competent cost estimates for its space acquisition process and has therefore asked the Government Accountability Office to assess the Department's cost analysis capability. The committee is concerned that this is representative of the general state of Department of Defense acquisition policy, acquisition management, the defense industrial base and related matters.

The committee notes the Department of the Air Force has neither a formal training program nor a career development program for its cost analysts, and a minimal number of cost analysts work in the Space and Missile Systems Center (SMC) program offices. The role of the financial management cost estimation organization at SMC has declined. At a strategic level, the Air Force Cost Analysis Agency has insufficient resources—funding, personnel, and data—to develop and sustain a robust cost analysis capability that will meet the demands of future Air Force space acquisition. The committee directs the Secretary of the Air Force to take the steps necessary to address the deficiencies in the area of cost analysis.

Counter space systems

The budget request contained $24.7 million in PE 64421F for counter space systems, but contained no funds for space control test capabilities.

The committee recognizes the proposed utility that space control test capabilities could have for command and control, modeling and simulation, and testing of space control systems. However, the committee is concerned that this system is currently designed for one

specific space control program with a questionable future. The committee believes not enough planning has been performed on how this system could incorporate the space control systems currently in development.

The committee recommends $26.7 million in PE 64421F for counter space systems, an increase of $2.0 million for space control test capabilities, and directs that these additional funds be used to explore incorporating the capabilities of the Rapid Attack and Identification Detection and Reporting System and the Counter Communication System.

Defense research science

The budget request contained $223.9 million in PE 61102F for defense research science, but contained no funds for the Space Education Consortium at the Network Information and Space Security Center (NISSC).

The committee believes strongly in the development of our nation's space professionals and that towards this purpose, the partnership between academia, industry, and the government must continue to evolve. The committee recognizes that a key component of this partnership is the Space Education Consortium at the NISSC.

The committee recommends an increase of $5.5 million in PE 61102F, for the establishment of the Space Education Consortium at the NISSC.

Distributed mission interoperability toolkit program

The budget request contained $0.2 million in PE 64740F for development of integrated command and control applications, but included no funds for the distributed mission interoperability toolkit (DMIT) program.

The DMIT is a suite of software tools that enables on-demand, trusted, interoperability among and between air mission command, control, communication, computer and intelligence (C4I) systems and mission simulator models. The committee understands that the DMIT program leverages best practices from the commercial sector including the use of open architectures, existing and emerging web standards, and state-of-the-art technologies to provide a more efficient translation of air mission tasks from C4I systems into a format compatible with mission simulator formats. Furthermore, the committee notes that Congress appropriated an increase of $5.6 million in fiscal year 2005 for this purpose.

The committee recommends $3.2 million in PE 64740F, an increase of $3.0 million for continuation of the DMIT program.

Engineering tool improvement program

The budget request contained $107.5 million in PE 62203F, aerospace propulsion, but included no funds for the engineering tool improvement program (ETIP).

The committee notes Congress has appropriated funding for the ETIP since fiscal year 2003. The ETIP improves upon existing modeling and simulation tools as well as supports the development of new modeling and simulation tools. These modeling and simulation tools address spacecraft component interactions such as solid rocket motor heat transfer, insulation performance, plume dispersion

and liquid rocket engine power balance. The ETIP will be used to develop the integrated reusable launch vehicle analysis tool that determines weight, size and performance of future two-stage-to-orbit vehicle concepts. The ETIP directly supports efforts toward land based strategic deterrents and operationally responsive spacelift.

Therefore, the committee recommends an increase of $6.5 million in PE 62203F for the ETIP.

F–16 block 30 AN/APG–68(V)10 radar upgrade

The budget request contained $155.7 million in PE 27133F for development of new capabilities for the F–16 series aircraft, of which $47.6 million would be for development of the AN/APG–68(V)10 radar for block 50 F–16 aircraft, but included no funds for the development of the AN/APG–68(V)10 radar for integration into the Air Force Reserve Command's (AFRC) block 30 F–16 aircraft.

The AN/APG–68(V)10 radar upgrade program would provide improved performance and savings compared to the block 30 F–16's existing AN/APG–68(V)5 radar. The committee understands that the AN/APG–68(V)10's increased reliability features combined with newer, more available digital parts will significantly decrease annual operations and support costs. Additionally, the committee understands that the AN/APG–68(V)10 will provide the block 30 F–16 with high-resolution synthetic aperture radar maps that would allow the employment of precision-guided munitions in all-weather conditions.

To save annual operating costs and to provide improved radar capabilities, the committee recommends $163.7 million in PE 27133F, an increase of $8.0 million for the development and integration of the AN/APG–68(V)10 radar into the AFRC's block 30 F–16 aircraft.

Fibrous three dimensional composites for conformal load-bearing antenna structures

The budget request contained $25.1 million in PE 63211F, aerospace technology development and demonstration, but included no funds for fibrous three-dimensional composites for conformal load-bearing antenna structures (CLAS).

The committee notes that three-dimensional fibrous woven composite structures are a key enabling technology to the incorporation of CLAS on future weapons systems sensor antennas. Three-dimensional fibrous woven composite structures incorporate unitized structural design methodologies which show the potential to reduce cost, part count, joint stress concentrations, manufacturing time and weight. CLAS has the potential to provide future weapons systems used for fighter interdiction, cruise missile detection, detection and tracking of moving ground targets under trees, missile boost phase intercept support, and air traffic control for unmanned aerial vehicles with more capable sensor antennas.

Therefore, the committee recommends $29.1 million for PE 63211F, an increase of $4.0 million for three-dimensional fibrous woven composite structures for CLAS.

Fixed-installation x-ray detection system

The budget request contained $21.9 million in PE 63287F, physical security equipment, but included no funds for development of a fixed-installation x-ray detection system.

The committee notes the increasing requirement of force protection measures against all acts of future terrorism for worldwide Department of Defense personnel and installations. The committee supports advanced technological development of a fixed-installation, high energy transmission, commercial x-ray system that operates in excess of three mega-electron volts and combines Compton scattering technology with integrated radiological threat detection. This technology could result in a more effective and efficient method of detecting devices containing explosives and weapons of mass destruction. Furthermore, this system has the potential to increase expedited throughput at installation entry points while simultaneously decreasing system manpower support requirements, thereby increasing overall force protection for the warfighter.

Therefore, the committee recommends $26.9 million in PE 63287F, an increase of $5.0 million for development of a fixed-installation, high energy transmission x-ray detection system.

Global positioning system

The budget requested $87.4 million in PE 63421F for Global Positioning System (GPS).

The committee recognizes the significance of GPS to both the civil and military communities and therefore the impact from loss of this capability. The committee is concerned with the increasingly sophisticated threats against GPS. The committee believes this may warrant an earlier than planned introduction of the operational capability of GPS III.

The committee directs the Secretary of the Air Force to explore and submit a report to the congressional defense committees by February 28, 2006, on the merit of truncating the planned purchases of the GPS IIF satellites and the accelerated introduction of the GPS III satellites.

Global positioning system user equipment

The budget requested $125.8 million in PE 35164F for Global Positioning System (GPS) user equipment, but contained only $5.4 million for testing of Joint GPS Combat Effectiveness (JGPSCE) through the Joint Navigation Warfare Center.

The committee recognizes the increased proliferation of jamming technology aimed at GPS and notes JGPSCE testing is designed to abate this threat. The committee believes the Department of Defense should continue to remain several steps ahead of foreign adversaries in addressing this threat.

The committee recommends $130.8 million in PE 35164F, an increase of $5.0 million for increased support of the JGPSCE tests.

High modulus polyacrylonitrile carbon fiber

The budget request contained $74.2 million in PE 62102F, materials, but included no funds for high modulus polyacrylonitrile (PAN) carbon fiber.

The committee notes that high modulus PAN carbon fiber research and development is in line with and supportive of the Air

Force's initiatives for advanced composite parts development and carbon fiber sourcing. High modulus PAN carbon fiber is in demand by composite manufacturers for the production of military aircraft, as well as components of missiles and satellites where there is a need for material stiffness at a relatively low weight. Currently only one manufacturer of high modulus PAN carbon fiber exists and is located overseas. The committee urges the Department of Defense to secure a domestic-based manufacturer of high modulus PAN carbon fiber.

Therefore, the committee recommends $79.2 million for PE 62102F, an increase of $5.0 million for the development and certification of a domestic-based manufacturer of high modulus PAN carbon fiber.

KC–135 replacement program

The budget request contained $99.2 million for the KC–135 replacement program.

In committee report (H. Rept. 108–106) accompanying the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108–136) and committee report (H. Rept. 108–491) accompanying the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108–375), the committee expressed concern that a substantial portion of the Air Force's KC–135 air refueling tanker fleet will reach simultaneous maturity, and will require substantial investment to operate, maintain, and eventually replace this fleet. The committee notes that the average age of the KC–135 air refueling tanker fleet is 44 years, and understands that the KC–135 fleet has accumulated significantly more flying hours during the past four years to support aerial refueling missions in Operation Enduring Freedom, Operation Iraqi Freedom and Operation Noble Eagle. To address this concern, the committee notes that section 8132 of the Department of Defense Appropriations Act, 2005 (Public Law 108–287) appropriated $100.0 million in a tanker replacement transfer fund for this purpose, and further notes that the Department of the Air Force plans to begin a systems development and demonstration program to replace the KC–135 fleet in fiscal year 2006.

The committee strongly encourages the Department of the Air Force to use the appropriated funds provided in fiscal year 2005, and its authorized and appropriated funds for fiscal year 2006, to proceed apace in the KC–135 tanker replacement program during fiscal year 2006 to ensure that the United States retains a strong and sustainable aerial refueling capability.

Joint battlespace infosphere security initiative

The budget request contained $93.3 million in PE 62702F, command control and communications, but included no funds for the joint battlespace infosphere (JBI) security initiative.

The committee recognizes the potential JBI could provide to integrate data from numerous global information management sources for Joint Task Force operations relying upon the net-centric concept. JBI builds on the base of commercial-off-the-shelf (COTS) software which is enhanced to enable system survivability, scalability and performance demanded by the Department of Defense. Current implementation of COTS public key infrastructure,

multi-level security guards, and firewalls are not sufficient to guarantee the level of trustworthiness required with a net-centric information enterprise. In order to transition JBI functionality to the warfighter, it must be able to provide a secure, trusted information management system. Additional funding would enable software testing, validation, and submission of the JBI system for certification.

Therefore, the committee recommends $97.2 million for PE 62702F, an increase of $3.9 million for the JBI security initiative, in support of an unfunded Air Force priority.

Laser threat warning attack reporting

The budget request contained $53.4 million in PE 63500F for multi-disciplinary advanced development space technology, but contained no funds for Laser Threat Warning Attack Reporting (LTWAR) for space.

The committee believes the nation has an obligation to protect and defend its space assets. Given the potential for laser threats to those assets, the committee believes that there must be increased research and development of warning sensors that would provide notice of laser intrusion or attack.

The committee recommends $55.9 million in PE 63500F, an increase of $2.5 million for LTWAR.

Lasers for advanced manufacturing and defense applications

The budget request contained $36.7 million in PE 63112F, advanced materials for weapons systems, but included no funds for lasers for advanced manufacturing and defense applications (LAMDA).

The committee notes the potential for the LAMDA program to provide an expanded capability to meet manufacturing and materials testing requirements at the Air Force Research Laser Hardened Materials Evaluation Laboratory while simultaneously providing a mechanism for transferring defense technology to the commercial marketplace. LAMDA also demonstrates the capacity to provide new capabilities for wide-ranging national defense applications such as micro-fabrication for missile defense, rapid prototyping and repair capability for weapon systems sustainment and laser materials interaction testing for survivability of U.S. weapons systems.

Therefore, the committee recommends for PE 63112F, an increase of $4.8 million for LAMDA, in support of an unfunded Air Force priority.

Low profile arresting gear

The budget request contained $26.2 million in PE 65978F for sustained activities at Air Force test and evaluation facilities.

The committee notes that a number of airports are used by both commercial and military aircraft, and that the installation of arresting gear equipment required by military aircraft may cause interference with commercial flights. To address this problem, one initiative is the introduction of a low profile arresting system that will minimize physical interference and obstructions to commercial aircraft. The system is designed to remove runway side obstructions, meet the requirements of the Air Force's airfield obstruction

reduction initiative, increase operational safety, and reduce maintenance costs compared to the legacy arresting gear systems currently in use.

The committee recommends $28.2 million in PE 65978F, an increase of $2.0 million for test and evaluation of the low profile arresting gear.

Management of black and white space

The committee remains convinced that the integration of black (classified) and white (unclassified) space activities enhances national security. The creation of a closer relationship between the black and white space communities benefits the nation by avoiding unnecessary redundancy in systems, reducing barriers necessary to effective information sharing, leveraging the capability of both communities, and facilitating much needed communications about common issues. As such, the committee encourages continued focus on the following areas:

(1) Continued integration of black and white space programs: The committee commends the recent decision by the Secretary of Defense and the Director, Central Intelligence to produce a single system for the military and intelligence communities in the Space Radar Program and encourages the two organizations to seek additional opportunities for joint research and development, information sharing, and program management;

(2) Requirements: In the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108–136), Congress required the Department of Defense (DOD) to develop a space science and technology (S&T) strategy to set goals and a process for achieving those goals. In a report to Congress entitled "New Department of Defense Space Science and Technology Strategy Provides Basis for Optimizing Investments, but Future Versions Need to be More Robust," the Government Accountability Office found that DOD's plan should contain stronger links to DOD's requirements generating processes, identifying additional measures for assessing progress in achieving strategic goals, and explicitly covering all efforts related to space S&T. The committee believes it is necessary to ensure there are mechanisms in place to develop such links within and between black and white space. The committee believes this includes both partnership and coordination of funding of space S&T efforts;

(3) Space Control: Given the military's reliance on space systems, it is imperative to develop a plan to protect and defend our space assets, but one that does not limit our ability to operate in space as required. The committee encourages cooperation between black and white space systems development to ensure all appropriate measures are taken to ensure data integrity and hardware survivability. The committee expects the Administration will consider the policy implications of its space control plans and begin a necessary and continued dialogue with Congress;

(4) Systems Architecture and Horizontal Integration: The committee believes there is significant value in the development of a community-wide architecture for a horizontal integration of intelligence, surveillance, reconnaissance, and com-

munications systems. The fate of recent classified and unclassified programs in this area suggests that much more work must be performed before achieving program stability; and

(5) Space Acquisitions: The national security space acquisition performance over the past decade has been unacceptable. Both classified and unclassified space programs have suffered unrealistic baselines, idealistic cost estimates, inadequate technology development before systems design, and insufficient government systems engineering oversight and expertise. Despite suggestions that reforms have been enacted to address the inadequacies of the acquisition system, the committee remains unconvinced that sufficient progress has been achieved. Management structures and processes must be put into place to address these problems and return the national security space acquisitions culture to one that pursues visionary perspectives and achieves success in high risk endeavors.

Manned reconnaissance systems

The budget request contained $8.1 million in PE 35207F for Manned Reconnaissance Systems.

The committee notes the potential of the EAN–105E phased array SIGINT antenna to significantly enhance mission performance of the Rivet Joint aircraft.

The committee recommends an increase of $4.0 million in PE 35207F to complete range and flight testing of this antenna on the RC–135 test-bed aircraft.

Maui space surveillance system

The budget request contained $5.8 million in PE 63444F for the Maui space surveillance system, but included no funding for the High Accuracy Network Determination System (HANDS).

The committee recognizes that the HANDS capability would reduce the potential for collisions of space assets by reducing errors in the current space-object maintenance catalog.

The committee recommends $10.8 million in PE 63444F, an increase of $5.0 million for HANDS.

Metals affordability

The budget request included $36.7 million in PE 63112F for advanced materials for weapon systems.

The committee supports the continued government-industry collaboration provided through the Metals Affordability Initiative, providing significant improvements in the manufacturing of specialty metals for aerospace applications for the private and government sectors of the aerospace industry.

The committee recommends an additional $14.0 million in PE 63112F for the Metals Affordability Initiative.

Miniaturized targeting sensor development

The budget request contained $93.3 million in PE 62204F for electro-optical sensor and related development but contained no funding specifically for a compact, ultra-sensitive optical receiver to improve smart and loitering stand-off weapons targeting.

The committee strongly supports efforts to develop improved sensors with gains in size, weight, power-consumption requirements,

and capability. The committee recognizes the potential battlefield applications facilitated by developing more intelligent and precise sensors, particularly as they may be utilized in unmanned systems. The committee supports further development of opto-electronic technologies with the aim of producing smaller, lighter, and less costly capabilities.

Therefore, the committee recommends an increase of $3.0 million in PE 62204F specifically to develop a compact ultra-sensitive optical receiver to improve smart and loitering stand-off weapons targeting.

Missile and space technical collection

The committee is aware of the work the National Air and Space Intelligence Center (NASIC) is conducting in the MASINT field and its value to the warfighter at the strategic, operational, and tactical intelligence levels.

The committee recommends an increase of $5.0 million for NASIC to develop a capability that would facilitate the use of data collected by airborne platforms and sensors for MASINT applications.

Multi-disciplinary space technology

The budget request contained $81.3 million in PE 62500F for multi-disciplinary space technology, but contained no funds for development of upper stage engine technology.

The committee believes access to space is a national security issue and notes that investment in upper stage engine technology would advance liquid rocket technology for that purpose.

The committee recommends $87.3 million in PE 62500F, an increase of $6.0 million for upper stage engine technology.

Nanocrystalline diamond coating

The budget request contained $39.5 million in PE 41318F for CV–22 development, but included no funds for nanocrystalline room temperature diamond coating. The CV–22 is a Special Operations Forces (SOF) variant of the V–22 vertical lift, multi-mission tiltrotor aircraft and will provide a capability to insert, extract, and re-supply special operation forces into politically or militarily denied areas.

The committee understands that nanocrystalline room temperature diamond coating technology has been developed with characteristics that offer promise for significantly improved anti-icing protection on aircraft surfaces such as the radome on the CV–22 aircraft. The committee further understands that this coating material has applications for protection against surface erosion caused by sand and other abrasive materials encountered in potential CV–22 operating locations, and that application of nanocrystalline room temperature diamond coating technology may result in future savings by reducing costs for replacement of expensive aircraft components and surfaces.

Accordingly, the committee recommends $41.5 million in PE 41318F, an increase of $2.0 million for development of the nanocrystalline room temperature diamond coating technology.

Operationally responsive launch

The budget request contains $23.5 million in PE 64855F for operationally responsive launch, but contained no funds to accelerate the TACSAT–3/Joint Warfighting Space-2 (JWS–2) demonstration or for Blue MAJIC.

The committee believes the TACSAT–3/JWS–2 demonstration would provide three significant opportunities. First, it would move the Department of Defense closer to providing rapid augmentation and reconstitution of space capabilities. Second, the demonstration would assess the potential capability of on-orbit assets dedicated to operational and tactical commanders. And third, the demonstration would allow the Department to analyze the ability of small satellites to provide niche capabilities as well as complement and supplement larger satellites.

The committee understands the importance of blue force tracking in the effort to reduce fratricide and increase force protection. The committee recognizes Blue MAJIC will provide the field commander a significant tool to improve blue force tracking. The committee also realizes that Blue MAJIC will pursue a strategy that furthers the employment of responsive launch and integrates current technology into operations.

The committee recommends $39.0 million in PE 64855F for operationally responsive launch, an increase of $13.5 million for the TACSAT–3/JWS–2 demonstration and $2.0 million for Blue MAJIC.

Penetrator study

The committee understands that Hard and Deeply Buried Targets (HDBTs) pose a threat to national security and that currently, the Department of Defense does not have the capability to hold many of these targets at risk. The committee further understands that the Commander, United States Strategic Command has a need to conduct sled tests that would evaluate the feasibility of various options for penetrator weapons that could be used against HDBTs.

The committee authorizes $4.0 million in PE 64327F for a penetrator test that would evaluate the feasibility of various options for different types of penetrators that could hold HDBTs at risk. The committee intends that this study be completed by the end of fiscal year 2006. Should additional funds above the $4.0 million be required for this study, the Secretary of Defense should submit a reprogramming request to the congressional defense committees.

Project Suter

The budget request contained $1.0 million in PE 35206F for the development of Advanced Technology and Sensors.

The committee is supportive of Project Suter, which experiments with concepts, systems, tactics, techniques, and procedures that enable warfighters to access and utilize comprehensive, dynamic information superiority operations against conventional and asymmetric threat targets. The committee notes that the Joint Expeditionary Force Experiment 2004 demonstrated some of Project Suter's capabilities which provided real-time defeat of enemy command and control, intelligence, surveillance, and reconnaissance,

and other weapon capabilities by leveraging existing Department of Defense information technology systems.

Accordingly, the committee recommends an increase of $7.0 million in PE 35206F, for the research and development of Project Suter.

Quick-donning oxygen mask

The budget request contained $7.3 million in PE 64706F for development of life support systems, but included no funds for an integrated oxygen mask and goggle system.

The committee notes that current Air Mobility Command (AMC) procedures for smoke in the cockpit require pilots to don both an oxygen mask and a separate anti-smoke goggle to provide respiratory and ocular protection. However, the committee understands that the existing anti-smoke goggles were never designed to integrate with the oxygen mask's suspension assembly and that, in an emergency, the anti-smoke goggles would be donned after donning the oxygen mask resulting in a situation where the pilot would not have ocular protection until the separate anti-smoke goggles were in place. As a result of this situation, the committee understands that development of an integrated oxygen mask and goggle systems is AMC's number one initiative on its life support item development list.

Consequently, the committee recommends $12.3 million in PE 64706F, an increase of $5.0 million, for development on an integrated oxygen mask and goggle system.

Radio frequency identification rapid adoption collaboration initiative

The budget request contained $36.9 million in PE 78011F for manufacturing technology development.

The committee notes the development and application of radio frequency identification (RFID) for monitoring the inventory and shipment of cargo and parts. Similar in principle to the use of optical bar coding, radio frequency identification permits stand-off monitoring of the progress of a coded item through a supply chain. The committee notes proposals for implementing RFID in Department of Defense production and supply chains that could result in significant improvements in inventory management and cost savings in the operation of the enterprise supply chain. One such proposal would develop a methodical adoption process for using RFID technology by small and medium enterprise suppliers within DOD supply chain and develop an electronically coordinated lean manufacturing toolkit for their use.

The committee recommends an increase of $10.0 million in PE 78011F for the establishment of a collaborative initiative for a pilot program to demonstrate the potential for rapid adoption of RFID technology in defense enterprise supply chains.

Rocket systems launch program

The budget request contained $13.8 million in PE 68560F for the rocket systems launch program, but contained no funds for the ballistic missile range safety technology system (BMRST).

The committee places a high priority on a responsive launch capability and believes BMRST may play a promising role in fielding that capability.

The committee recommends $18.3 million in PE 68560F, an increase of $4.5 million to explore the application of BMRST in the development of a responsive launch capability.

Satellite threat evaluation environment development

The budget request contained $79.4 million in PE 62202F for human effectiveness applied research, but contained no funds for Satellite Threat Evaluation Environment Development (STEED).

The committee recognizes STEED would determine threats against space-based assets, quantify those threats, determine threat capabilities and locations, and aid decision-makers in preparing adequate defensive counterspace responses to those threats

The committee recommends $80.9 million in PE 62202F, an increase of $1.5 million for STEED.

Single integrated space picture

The budget request contained $85.2 million in PE 35906F for the development of the Single Integrated Space Picture (SISP) program.

The committee notes that SISP seeks to provide situational awareness of space capabilities, threats and operations. The program's objectives are to provide a common operational picture of space to include surveillance, warning, communications, data relay, and navigation between various forces. The committee believes these goals are important to the development of a true common operational picture. However, the committee does not believe SISP should be developed in a vacuum or to serve a service-specific requirement. The committee believes that in order to have a true common operational picture, commanders must be able to see air, ground, space, and maritime assets to make combat decisions.

The committee directs the Secretary of Defense to refer to the Single Integrated Air Picture report language elsewhere in this report.

Space based infra-red system high

The budget request contained $756.6 million in PE 64441F for the Space Based Infra-Red System High (SBIRS) program.

The committee has expressed repeated concern regarding the continued cost increases, schedule delays, and technical problems associated with the program. The committee maintains strong support of a next generation early warning capability and of the SBIRS program. However, should the program continue to exceed the cost and schedule benchmarks set after the establishment of another new baseline for SBIRS and its associated cost estimates, the committee may be forced to find an alternative to the SBIRS program.

The committee recognizes the Department of the Air Force is currently performing an independent program assessment reviewing the technical and cost baselines of the SBIRS program. The committee directs the Secretary of Defense to review and certify the final results of the assessment and submit a copy of the certified

assessment to the congressional defense committees and congressional intelligence committees within 30 days after its completion.

Space cadre

The committee commends the efforts in coordination and development of a space cadre over the last year by each of the services and the National Security Space Office. The committee recognizes the remarkable progress made; however, the committee continues to see some measure of resistance and a lack of consistent vision for the space cadre.

The committee firmly believes the success of our nation's future activities in space, and the quality of our national security, depends on the professional development and sustainment of a qualified space cadre. This requires changes to training, education, personnel systems, assignment processes, and promotion criteria, for example. The committee believes that this enterprise demands nothing short of a culture change across the Department of Defense and in particular within the Air Force. The committee believes it is important that this cultural change take root in the Air Force in a deeper and more visible manner than the other services. The corporate Air Force leadership must embrace this change.

Given past performance, the committee believes that as the developer and acquisition agent of space systems designed to satisfy the needs of all services, the Air Force must focus more of its space cadre efforts specifically on acquisitions. The importance of the skills required by competent teams to build and acquire space systems cannot be underestimated. These skills must be developed and rewarded at all levels of the Air Force, but most importantly, at senior levels of leadership. Critical acquisition positions must be filled with experienced personnel to satisfy the demands of these important positions. The committee recommends the Department of the Air Force focus portions of its space cadre effort on the acquisition workforce and in the context of the requirements and intent of the Defense Acquisitions Workforce Improvement Act (Public Law 101–510) for the purpose of improving space acquisition performance.

Space radar

The budget request contained $225.8 million in PE 63858F for space radar.

In an attempt to address the technical and affordability concerns of Congress, the Air Force has proposed the development of a quarter-scale space radar demonstration. The committee applauds and encourages the refreshing thinking within the Air Force that conceived of a subscale demonstration option as a part of the space radar acquisition strategy. The application of this type of solution to other space programs in the future may validate the program and prevent many of the problems that plague space systems acquisition.

The intelligence community and warfighters have asked for a radar capability and have little concern about which platform collects the data. The committee believes that the future success and stability of the space radar program rests in the demonstration of a national radar capability in which a space demonstration is a component integrated with air and ground components.

The first step towards producing a successful and stable program is the development of a comprehensive demonstration program that will provide an opportunity to assess the utility versus the cost of a space radar system in the context of a broader radar capability. The committee understands the keys to producing an affordable and effective space radar solution will be the integration of airborne and space radar assets and the development of a robust and highly advanced ground exploitation system. The demonstration program must fully incorporate these components of an integrated radar capability. To date, neither component has received sufficient emphasis or investment. The committee supports the demonstration of a greater capability of these components in the context of space assets using existing classified and unclassified data sources and believes a demonstration of this capability should be conducted prior to investment in a new space system or significant development of the proposed space demonstration.

The committee is convinced that the Air Force is still in the planning process and has not yet fully considered the requirements for the described demonstration program. The committee does not believe the Air Force has sufficiently emphasized affordability as a key objective, and encourages the Air Force to reassess the range of technical options available to provide increased utility to both the intelligence and warfighter communities.

The committee recommends $100.0 million in PE 63858F, a reduction of $125.8 million for the space radar program. The committee directs program funds be invested in the demonstration of the following:

(1) Ground exploitation capability;

(2) Horizontal integration;

(3) Continued radar technology maturation;

(4) New technology breakthroughs that will lower the payload weight and cost.

The committee recommends the Air Force thoroughly plan a demonstration program maximizing the use of ground, airborne, and existing space assets before committing to the new development of a subscale spacecraft. The committee directs the Secretary of the Air Force, in coordination with Director of the National Geospatial-Intelligence Agency and the Director of the National Reconnaissance Office, to develop and submit a report to the congressional defense committees and congressional intelligence committees by February 1, 2006, with a detailed five-year (fiscal years 2006 through 2010) radar demonstration program plan that will incorporate the above direction and focus on risk reduction, modeling and simulation, ground and air demonstrations and tests, and the use of all planned or existing space assets. The program plan should include an option for the launch of a space demonstration no earlier than fiscal year 2009 and should provide annual technical and cost milestones that if met will provide confidence in a technically feasible and affordable development plan for space radar. The committee directs the Secretary of Defense and the Director of National Intelligence to perform a detailed national utility study, develop a joint concept of operations for a future horizontally integrated radar capability, and submit a report to the congressional defense committees and congressional intelligence commit-

tees by February 28, 2006, on the utility study and the concept of operations.

Space situational awareness

The budget request contained $151.1 million in PE 35910F for Spacetrack, but contained no funds to accelerate the space based surveillance system or the upgrade to the Air Force Space Surveillance System.

The committee believes that our space assets remain vulnerable and that the nation has the responsibility to protect and defend these assets from any threat. The foundation of any credible policy regarding protection and defense of U.S. space assets is a comprehensive space situational awareness system. The committee is concerned that the development of a comprehensive space situational awareness system is moving forward too slowly and without a coherent strategy or vision.

The committee recommends $187.1 million in PE 35910F for Spacetrack, an increase of $30.0 million for the acceleration of the space based surveillance system and $6.0 million to accelerate the S-band upgrade to the Air Force Space Surveillance System.

Space technology

The budget request contained $84.5 million in PE 62601F for space technology, but contained no funds for elastic memory composites or for polyimide macro electromechanical systems (PMEMS) for space.

The committee notes space-qualified elastic memory composite materials can significantly improve the reliability of on-orbit spacecraft deployment mechanisms and may enable collapsible, lower-weight composite tank structures.

The committee is concerned by affordability issues of a radar system in space and is interested in pursuing breakthrough technology that may provide low cost, high payoff solutions for the future. The committee sees promise in the ability of PMEMS to reduce power aperture requirements to levels that permit dramatic reductions in the size, weight, cooling and power consumption of a space radar system and therefore total system size and cost.

The committee recommends $93.5 million for PE 62601F, an increase of $4.0 million for elastic memory composites and $5.0 million for PMEMS.

Transformational satellite communications system

The budget request contained $835.8 million in PE 63845F for the transformational satellite communications systems (TSAT).

The committee recognizes the necessity of the capability that TSAT would provide for the warfighter. The development and deployment of this technology would transform military communications and enable additional military capabilities.

The committee understands that before the capability of TSAT or a similar system can be fielded, the space acquisition community must succeed in no less than eight high-risk technical areas.

The committee notes space acquisition has been characterized with repeated cost overruns, schedule delays, and reduction of expected capability. The Government Accountability Office and the Defense Science Board's Young panel have highlighted the systemic

problems leading to multiple acquisition failures and provided recommendations to correct the causes. These problems include reliance on immature technology, overdependence on the contractor for program management, and a lack of government systems engineering and cost analysis expertise.

In an effort to achieve transformation, the Air Force has continued to initiate programs that are technologically revolutionary. The committee commends the Department of the Air Force on its vision for the solutions of the future and its desire to embrace risk, but is not confident the current acquisition system can accommodate the risk associated with leaps to revolutionary technology.

Acquisition and management practices, as well as industry standards and quality control must be vastly improved and, in some cases, rebuilt before the country can endeavor to achieve the transformation planned in the current budget. Today's critical transformation opportunities exist in finding new ways for the acquisition community to do business and address the fundamental need for change. Once the systemic shortfalls are addressed, the Department should once again push the envelope on technology and risk for its military space systems. Until then, and to address those shortfalls, the committee recommends an evolutionary versus revolutionary approach. The committee remains convinced, given the current state of acquisition, that this approach will provide more capability to the warfighter sooner and do so in a more cost effective manner.

The committee believes, given current acquisition schedules, that funding for evolving Wideband Gapfiller System and Advanced Extremely High Frequency capabilities will not be required until fiscal year 2007. As such, the committee directs the Secretary of the Air Force to conduct an independent analysis of alternatives as described in Section 912 of this Act.

The committee recommends $435.8 million in PE 63845F, a reduction of $400.0 million for TSAT. The committee directs the Department to shift the focus of the TSAT program in fiscal year 2006 from award of an acquisition contract to continued development and risk reduction of the critical technologies that will allow the deployment of this capability to the warfighter. These technologies should include development of internet protocol, a router in space, and laser communications. The committee urges the Department of Defense to consider a more prudent balance between technical risk and providing increased capability to the warfighter during the Quadrennial Defense Review and the fiscal year 2007 and fiscal year 2008 budget submissions.

Warfighter pocket computer development

The budget request contained $29.8 million in PE 63231F, crew systems and personnel protection technology, but included no funds for the warfighter pocket computer development.

The committee notes the potential combat capability the warfighter pocket computer could bring to the Battlefield Air Operations (BAO) kit. The BAO kit is an integrated terminal attack control capability that enables special operations forces battlefield airmen to find, track, target and control friendly aircraft, as well as other weapons assets, and then provide follow-on target damage assessment. The effort to develop a rugged, sub-notebook sized

computer to assist in these combat duties could greatly enhance the development and capability of the BAO kit's battlefield air targeting man-aided knowledge improvement effort.

Therefore, the committee recommends $33.3 million for PE 63231F, an increase of $3.5 million for warfighter pocket computer development.

DEFENSE-WIDE RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Overview

The budget request contained $18.8 billion for Defense-wide research, development, test, and evaluation (RDT&E).

The committee recommends $19.1 billion, an increase of $289.4 million to the budget request.

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		RESEARCH, DEVELOPMENT, TEST & EVAL, DEFENSEWIDE					
		BASIC RESEARCH					
0601101E	1	Defense Research Sciences	130,090				130,090
0601111D8Z	2	Government/Industry Cosponsorship of University Research					
0601114D8Z	3	Defense Experimental Program to Stimulate Competitive Research	9,164				9,164
0601120D8Z	4	National Defense Education Program	10,282				10,282
0601384BP	5	Chemical and Biological Defense Program	72,533	10,000			82,533
0601384BP		Chemical/Biological Defense Basic Research Initiative			10,000		
		TOTAL, BASIC RESEARCH	**222,069**	**10,000**	**10,000**		**232,069**
		APPLIED RESEARCH					
0602000D8Z	6	Insensitive Munitions-Exploratory Development	5,176				5,176
0602227D8Z	7	Medical Free Electron Laser	9,845	10,000			19,845
062227D8Z		Medical Free Electron Laser			10,000		
0602228D8Z	8	Historically Black Colleges and Universities (HBCU) Science	13,887				13,887
0602234D8Z	9	Lincoln Laboratory Research Program	29,914				29,914
0602301E	10	Computing Systems and Communications Technology					
0602302E	11	Embedded Software and Pervasive Computing					
0602303E	12	Information & Communications Technology	198,831				198,831
0602304E	13	Cognitive Computing Systems	200,799				200,799
0602383E	14	Biological Warfare Defense	145,354	4,000			149,354
0602383E		Multivalent Asymmetric Protocols for Biological Defense			4,000		
0602384BP	15	Chemical and Biological Defense Program	187,787	20,000			207,787
0602384BP		Chemical/Biological Defense Applied Research Initiative			20,000		
0602702E	16	Tactical Technology	361,562				361,562
0602712E	17	Materials and Electronics Technology					
0602715E	18	Materials and Biology Technology	294,188				294,188
0602716BR	19	WMD Defeat Technology	206,487				206,487
0602716E	20	Electronics Technology	241,736	1,400			243,136
0602716E		Scalable Active Memory Processing Engines			1,400		
0602717BR	21	WMD Defense Technologies	106,708				106,708

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0602787D8Z	22	Medical Technology					
1160401BB	23	Special Operations Technology Development	13,595	10,000			23,595
1160401BB		ANGLEFIRE for Full Spectrum Close-In Layered Shield			10,000		
1160407BB	24	SOF Medical Technology Development	2,215				2,215
		TOTAL, APPLIED RESEARCH	**2,018,084**	**45,400**	**45,400**		**2,063,484**
		ADVANCED TECHNOLOGY DEVELOPMENT					
0603002D8Z	25	Medical Advanced Technology					
0603121D8Z	26	SO/LIC Advanced Development	34,529				34,529
0603122D8Z	27	Combating Terrorism Technology Support	55,301	32,000			87,301
0603122D8Z		Program Increase			25,000		
0603122D8Z		Portable Armor Wall System			3,000		
0603122D8Z		Large Vehicle Inspection Using Magnetic Quadrupole Resonance			4,000		
0603160BR	28	Counterproliferation Advanced Development Technologies	96,143				96,143
0603175C	29	Ballistic Missile Defense Technology	136,241	(5,000)			131,241
0603175C		Program Reduction				(16,800)	
0603175C		Aluminum Nitride Wide Bandgap Devices			4,000		
0603175C		Conceptual Study Alternative Boost Phase Defense			7,800		
0603225D8Z	30	Joint DoD-DoE Munitions Technology Development	25,102				25,102
0603285E	31	Advanced Aerospace Systems					
0603286E	32	Advanced Aerospace Systems	75,866				75,866
0603287E	33	Space Programs and Technology	223,811				223,811
0603384BP	34	Chemical and Biological Defense Program	164,481	15,000			179,481
0603384BP		Chemical/Biological Defense Development Initiative			15,000		
0603400D8Z	35	J-UCAS					
0603618D8Z	35a	MANPADS Defense Program (Transfer from RDDW 89)		6,000	6,000		6,000
0603648D8Z	36	Joint Capability Technology Demonstrations (L-83)	35,000				35,000
0603704D8Z	37	Special Technical Support					
0603711BR	38	Arms Control Technology					
0603712S	39	Generic Logistics R&D Technology Demonstrations	22,360	2,000			24,360
0603712S		Connectory for Rapid Identification of Advanced Technology			2,000		

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603712S	39a	Generic Logistics R&D Technology Demonstrations		4,800			4,800
0603712S		Emerging/Critical Interconnection Technology			4,800		
0603713S	40	Distribution Process Owner Technology Development and Implementation	10,000				10,000
0603716D8Z	41	Strategic Environmental Research Program	64,101				64,101
0603727D8Z	42	Joint Warfighting Program	10,205				10,205
0603739E	43	Advanced Electronics Technologies	214,378				214,378
0603750D8Z	44	Advanced Concept Technology Demonstrations	163,649	10,000			173,649
0603750D8Z		Event Management Visualization and Data Analysis			1,000		
0603750D8Z		SPIKE Missile Development and Production			9,000		
0603755D8Z	45	High Performance Computing Modernization Program	189,747	7,100			196,847
0603755D8Z		Army Space and Missile Defense Simulation Upgrade			7,100		
0603760E	46	Command, Control and Communications Systems	216,408				216,408
0603762E	47	Sensor and Guidance Technology (DW 48a&b)					
0603763E	48	Marine Technology					
0603764E	49	Land Warfare Technology / FCS	139,100				139,100
0603765E	50	Classified DARPA Programs	162,534				162,534
0603766E	51	Network-Centric Warfare Technology	136,899				136,899
0603767E	52	Sensor Technology	189,452				189,452
0603768E	53	Guidance Technology	103,272				103,272
0603769DSE	54	Distributed Learning Advanced Technology Development	14,689				14,689
0603781D8Z	55	Software Engineering Institute	25,209				25,209
0603805S	56	Dual Use Application Programs					
0603826D8Z	57	Quick Reaction Special Projects/Challenge Program (IFF)	110,717				110,717
0603832D8Z	58	Joint Wargaming Simulation Management Office	34,928				34,928
0603941D8Z	59	Test & Evaluation Science & Technology	28,614				28,614
0603942D8Z	60	Technology Link	3,435				3,435
0605160D8Z	61	Counterproliferation Support					
1160402BB	62	Special Operations Advanced Technology Development	104,315	(16,500)			87,815
1160402BB		Surveillance Augmentation Vehicle-Insertable on Request			3,500		
1160402BB		Advanced Tactical Laser Program				(20,000)	
		TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	**2,790,486**	**55,400**	**92,200**	**(36,800)**	**2,845,886**

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
0603228D8Z	63	Physical Security Equipment					
0603527D8Z	64	RETRACT LARCH	6,683				6,683
0603709D8Z	65	Joint Robotics Program	11,755				11,755
0603714D8Z	66	Advanced Sensor Applications Program	18,275				18,275
0603851D8Z	67	Environmental Security Technical Certification Program	30,632				30,632
0603879C	68	Advanced Concepts, Evaluations And Systems					
0603881C	69	Ballistic Missile Defense Terminal Defense Segment	1,143,610	25,000			1,168,610
0603881C		THAAD			25,000		
0603882C	70	Ballistic Missile Defense Midcourse Defense Segment	3,266,196	170,000			3,436,196
0603882C		Test Resources			50,000		
0603882C		Additional Flight Test			100,000		
0603882C		Program Reduction Block 2008 Interceptors 36-40				(25,000)	
0603882C		Ballistic Missile Defense Signal Processor			25,000		
0603882C		Throttleable Control System			10,000		
0603882C		Two Color Seeker			10,000		
0603883C	71	Ballistic Missile Defense Boost Defense Segment	483,863				483,863
0603884BP	72	Chemical and Biological Defense Program	100,796	25,000			125,796
0603884BP		Chemical/Biological Defense Program Development Initiative			25,000		
0603884C	73	Ballistic Missile Defense Sensors	529,829				529,829
0603886C	74	Ballistic Missile Defense System Interceptor	229,658				229,658
0603888C	75	Ballistic Missile Defense Test & Targets	617,456				617,456
0603889C	76	Ballistic Missile Defense Products	455,152	(50,000)			405,152
0603889C		Program Reduction Block 2008 C2BMC				(30,000)	
0603889C		Program Reduction Hercules Block 2010				(5,000)	
0603889C		Program Reduction Joint Warfighter Support Block 2008				(15,000)	
0603890C	77	Ballistic Missile Defense Systems Core	447,006	(40,000)			407,006
0603890C		Program Reduction				(40,000)	
0603891C	78	Special Programs - MDA	349,522				349,522
0603920D8Z	79	Humanitarian Demining	14,305				14,305

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0603923D8Z	80	Coalition Warfare	5,777				5,777
0604016D8Z	81	Department of Defense Corrosion Program	5,141				5,141
0604400D8Z	82	J-UCAS					
0604648D8Z	83	Joint Capability Technology Demonstrations (L-36)	3,000				3,000
0604722D8Z	84	Joint Service Education and Training Systems Development					
0605017D8Z	85	Reduction Of Total Ownership Cost	24,824				24,824
0303191D8Z	86	Joint Electromagnetic Technology (JET) Program	3,566				3,566
		TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**7,747,046**	**130,000**	**245,000**	**(115,000)**	**7,877,046**
		SYSTEM DEVELOPMENT & DEMONSTRATION					
0604051D8Z	87	Defense Acquisition Challenge Program (DACP)	28,975				28,975
0604384BP	88	Chemical and Biological Defense Program	280,908				280,908
0604618D8Z	89	MANPADS Defense Program	13,349	(13,349)			
0604618D8Z		Program Reduction				(7,349)	
0604618D8Z		Transfer to RDDW 35a				(6,000)	
0604709D8Z	90	Joint Robotics Program	13,745				13,745
0604764K	91	Advanced IT Services Joint Program Office (AITS-JPO)	9,325				9,325
0604771D8Z	92	Joint Tactical Information Distribution System (JTIDS)	11,075				11,075
0605013BL	93	Information Technology Development	19,574	(10,400)			9,174
0605013BL		Program Reduction				(10,400)	
0605015BL	94	Information Technology Development-Standard Procurement System	5,074				5,074
0605016D8Z	95	Financial Management System Improvements	75,987	(39,000)			36,987
0605016D8Z		Program Reduction				(39,000)	
0605018DSE	96	Defense Integrated Military Human Resources System (DIMHRS)	20,322	(10,000)			10,322
0605018DSE		Program Reduction				(10,000)	
0605019D8Z	97	Acquisition Domain	3,600	(1,500)			2,100
0605019D8Z		Program Reduction				(1,500)	
0605140D8Z	98	Trusted Foundry	31,655				31,655
0605648D8Z	99	Defense Acquisition Executive (DAE) Pilot Program	1,000				1,000
0303129K	100	Defense Message System	13,367	(13,367)			
0303129K		Program Reduction				(13,367)	

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0303140K	101	Information Systems Security Program		3,000			3,000
0303140G		Intelligence Analyst Education and Training			3,000		
0303141K	102	Global Combat Support System	17,952				17,952
0303158K	103	Joint Command and Control Program (JC2)	14,580				14,580
0305840K	104	Electronic Commerce	6,698				6,698
0305840S	105	Electronic Commerce					
0901200D8Z	106	BMMP Domain Management and Systems Integration	11,802	(4,500)			7,302
0901200D8Z		Program Reduction				(4,500)	
		TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	**578,988**	**(89,116)**	**3,000**	**(92,116)**	**489,872**
		RDT&E MANAGEMENT SUPPORT					
0603704D8Z	107	Special Technical Support	19,916				19,916
0603757D8Z	108	Training Transformation (T2)					
0603835D8Z	109	Transformation Initiatives Program	10,152				10,152
0603858D8Z	110	Unexploded Ordnance Detection and Clearance					
0604140D8Z	111	Capital Asset Management System-Military Equipment	4,812				4,812
0604774D8Z	112	Defense Readiness Reporting System (DRRS)	13,475				13,475
0604875D8Z	113	Joint Systems Architecture Development	9,254				9,254
0604940D8Z	114	Central Test and Evaluation Investment Development (CTEIP)	128,759				128,759
0604943D8Z	115	Thermal Vicar	7,278				7,278
0605104D8Z	116	Technical Studies, Support and Analysis	31,075	1,000			32,075
0605104D8Z		National Defense University Technology Pilot Program			1,000		
0605110BR	117	Critical Technology Support					
0605110D8Z	118	USD (A&T) –Critical Technology Support	1,999				1,999
0605114D8Z	119	BLACK LIGHT					
0605116D8Z	120	General Support to C3I					
0605117D8Z	121	Foreign Material Acquisition and Exploitation	36,895				36,895
0605123D8Z	122	Interagency Export License Automation					
0605124D8Z	123	Defense Travel System	20,441				20,441
0605126J	124	Joint Theater Air and Missile Defense Organization	81,504				81,504
0605128D8Z	125	Classified Program USD(P)					

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0605130D8Z	126	Foreign Comparative Testing	35,738	575			36,313
0605130D8Z		Weather Scout UAV			575		
0605161D8Z	127	Nuclear Matter	12,442				12,442
0605170D8Z	128	Support to Networks and Information Integration	10,706				10,706
0605200D8Z	129	General Support to USD (Intelligence)	5,282				5,282
0605384BP	130	Chemical and Biological Defense Program	81,425				81,425
0605502BR	131	Small Business Innovation Research					
0605502C	132	Small Business Innovative Research					
0605502D8Z	133	Small Business Innovative Research					
0605502E	134	Small Business Innovative Research					
0605710D8Z	135	Classified Programs - C3I					
0605790D8Z	136	Small Business Innovation Research	1,983				1,983
0605798S	137	Defense Technology Analysis	5,393				5,393
0605799D8Z	138	Force Transformation	19,927	80,000			99,927
0605799D8Z		Full Spectrum Effects Platform, Project Sheriff			10,000		
0605799D8Z		Common Bus Development			20,000		
0605799D8Z		Small Payloads			50,000		
0605801K	139	Defense Technical Information Services (DTIC)					
0605801KA	140	Defense Technical Information Center (DTIC)	49,969	(7,600)			42,369
0605801KA		Program Reduction				(7,600)	
0605803SE	141	R&D in Support of DoD Enlistment, Testing and Evaluation	8,853				8,853
0605804D8Z	142	Development Test and Evaluation	8,873				8,873
0605898E	143	Management Headquarters (Research and Development) DARPA	49,472				49,472
0301555G	144	CLASSIFIED Programs					
0301556G	145	SPECIAL PROGRAM					
0303169D8Z	146	Information Technology Rapid Acquisition	5,580	(5,580)			
0303169D8Z		Program Reduction				(5,580)	
0305193D8Z	147	Intelligence Support to Information Operations (IO)	13,940				13,940
0305193G	148	Intelligence Support to Information Operations (IO)					
0901585C	149	Pentagon Reservation	17,386				17,386
0901598C	150	Management Headquarters - MDA	99,327				99,327

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0901598D8W	151	IT Software Dev Initiatives	1,694				1,694
XXXXXXX	999	Classified Programs	15,245	5,000			20,245
XXXXXXX	999	Classified Programs (MASINT)			5,000		
		TOTAL, RDT&E MANAGEMENT SUPPORT	**808,795**	**73,395**	**86,575**	**(13,180)**	**882,190**
		OPERATIONAL SYSTEMS DEVELOPMENT					
0604130V	152	Defense Information Systems for Security (DISS)	16,850				16,850
0605127T	153	Partnership for Peace (PfP) Information Management System	5,660				5,660
0607384BP	154	Chemical and Biological Defense	10,093				10,093
0208043J	155	Classified Programs	1,570				1,570
0208045K	156	C4I Interoperability	65,517				65,517
0208052J	157	Joint Analytical Model Improvement Program					
0301011G	158	Cryptologic Activities					
0301301L	159	General Defense Intelligence Program					
0301318BB	160	HUMINT (Controlled)					
0301398L	161	Management Headquarters GDIP, DIA					
0301555BB	162	Classified Programs					
0301556BB	163	SPECIAL PROGRAM					
0302016K	164	National Military Command System-Wide Support	659				659
0302019K	165	Defense Info Infrastructure Engineering and Integration	5,466				5,466
0303126K	166	Long Haul Communications (DCS)	1,470				1,470
0303131K	167	Minimum Essential Emergency Communications Network (MEECN)	7,438				7,438
0303140D8Z	168	Information Systems Security Program	12,546				12,546
0303140G	169	Information Systems Security Program	462,211	5,000			467,211
0303140G		Pacific Wind			4,000		
0303140G		Computer Science and Internet Security Degree Program			1,000		
0303149J	170	DISA Mission Support Operations	3,426				3,426
0303149J	171	C4I for the Warrior	3,549				3,549
0303149K	172	C4I for the Warrior	6,311				6,311
0303150K	173	Global Command and Control System	52,331				52,331
0303153K	174	Joint Spectrum Center	14,097				14,097

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0303165K	175	Defense Collaboration Tool Suite (DCTS)					
0303170K	176	Net-Centric Enterprise Services (NCES)	79,018				79,018
0303610K	177	Teleport Program	12,180				12,180
0304210BB	178	Special Applications for Contingencies	21,116				21,116
0304345BQ	179	National Imagery and Mapping Program					
0305102BQ	180	Defense Imagery and Mapping Program		19,000			19,000
0305102BQ		GeoSAR			4,000		
0205620N		NGA-NAVAIR Experimental Activity- Tactical Sensors			15,000		
0305125D8Z	181	Critical Infrastructure Protection (CIP)	11,363				11,363
0305127BZ	182	Foreign Counterintelligence Activities					
0305146BZ	183	Defense Joint Counterintelligence Program (JMIP)	20,406				20,406
0305146D8Z	184	Defense Joint Counterintelligence Program (JMIP)					
0305183L	185	Defense Human Intelligence (HUMINT) Program (DHIP)					
0305190D8Z	186	C3I Intelligence Programs					
0305191D8Z	187	Technology Development					
0305193L	188	Intelligence Support to Information Operations (IO)					
0305199D8Z	189	Net Centricity	8,387				8,387
0305202G	190	Dragon U-2 (JMIP)					
0305206G	191	Airborne Reconnaissance Systems					
0305207G	192	Manned Reconnaissance Systems					
0305208BQ	193	Distributed Common Ground Systems					
0305208G	194	Distributed Common Ground Systems					
0305208L	195	Distributed Common Ground Systems					
0305883L	196	Hard and Deeply Buried Target (HDBT) Intel Support					
0305884L	197	Intelligence Planning and Review Activities					
0305885G	198	Tactical Cryptologic Activities		14,000			14,000
0305885G		Guardrail Common Sensor			10,000		
0305885G		Project Raincoat			4,000		
0305889G	199	Counterdrug Intelligence Support					
0307141G	200	NASS, IO Technology Integration & Tool Dev					
0307207G	201	Aerial Common Sensor (ACS) (JMIP)					

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION

(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
0708011S	202	Industrial Preparedness	18,219	5,600			23,819
0708011S		Copper-based Casting Technology			5,600		
0708011D8Z	202a	Defense Manufacturing Technology		2,000	2,000		2,000
0708012S	203	Logistics Support Activities	2,900				2,900
0902298J	204	Management Headquarters (JCS)	5,762				5,762
1001018D8Z	205	NATO Joint STARS	25,474				25,474
1160279BB	206	Small Business Innovative Research/Small Bus Tech Transfer Pilot Prog					
1160403BB	207	Special Operations Aviation Systems Advanced Development	104,330				104,330
1160404BB	208	Special Operations Tactical Systems Development	63,513	15,710			79,223
1160404BB		Special Operations Combat Assault Rifle			8,500		
1160404BB		Multi-role, Anti-armor, Anti-personnel Weapons System			6,800		
1160404BB		Ballistic Lightweight Enabled Helmet (ABLE) for Armed Forces			410		
1160405BB	209	Special Operations Intelligence Systems Development	33,167				33,167
1160408BB	210	SOF Operational Enhancements	66,313				66,313
1160421BB	211	Special Operations CV-22 Development	29,954				29,954
116045BB	212	Special Operations Aircraft Defense Systems	38,824				38,824
1160426BB	213	Operations Advanced Seal Delivery System (ASDS) Development	2,040				2,040
XXXXXXX	999	Classified	3,425,788	3,000			3,428,788
XXXXXXX		Program Increase			3,000		
		TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**4,637,948**	**64,310**	**64,310**		**4,702,258**
		TOTAL, RDT&E, DEFENSE WIDE	**18,803,416**	**289,389**	**546,485**	**(257,096)**	**19,092,805**

Items of Special Interest

Accelerated intelligence analyst education and training

The committee is aware that the defense intelligence community needs a new generation of intelligence analysts due to the emergence of new missions and the retirement of older analysts. The committee further understands that there are very few colleges and universities that provide organized degree programs that can lead to intelligence analyst certification in preparation for subsequent entry into the defense intelligence analyst career field. The lack of such programs is compounded by the lengthy security clearance process, making it more challenging to develop a qualified analyst pool. The committee recommends an increase of $3.0 million in PE 33140G for the National Security Agency to establish a process to identify those college and university curriculums that may lead to intelligence analyst certification. This funding may also be used to identify those security clearance eligible students enrolled in such programs who may also be interested in pursuing a career as an intelligence analyst.

Accelerating transition and fielding of advance technologies for emerging critical operational needs of special operations forces

The committee believes that the U.S. Special Operations Command (SOCOM) would particularly benefit by access to the Director of Defense Research and Engineering's Quick Reaction Special Projects Program. Unique among combatant commands, SOCOM has full acquisition authority for special operations peculiar equipment, material, and supplies. Recent combat experience has demonstrated the urgent need for several new items of special operations peculiar equipment that the Commander, SOCOM has no readily available authority to develop and procure for his troops in combat. Since this sort of quickly emerging requirement is precisely what the Quick Reaction Special Projects Program is intended to support, the committee believes the Commander, SOCOM, should be allowed to avail himself of this authority.

Accordingly, the committee directs the Director, Defense Research and Engineering, to make $10.0 million of the increased funding recommended by the committee elsewhere in the committee report available for the exclusive use of the Commander, SOCOM.

Advanced concept technology demonstrations

The budget request contained $163.6 million in PE 63750D8Z for advanced concept technology demonstrations, but included no funds for shoulder fired smart round (SPIKE) urban warfare system development. The SPIKE missile fills a critical need for a low-cost, light-weight fire and forget missile for ground troops to use against lightly armored and other material targets and has possible maritime application as well.

The committee recommends an increase of $9.0 million in PE 63750D8Z, for SPIKE missile development.

Advanced tactical laser program

The budget request contained $104.3 million in PE 1160402BB for special operations advanced technology development, including

$61.8 million for the advanced tactical laser advanced concept technology demonstration program (ATL ACTD). The committee expressed concern with the ATL ACTD program in the committee report on H.R. 4200 (H. Rept. 108–491). Despite the committee's doubts about the military feasibility of continuing development of a large chemical tactical laser for deployment aboard a C–130 aircraft, the budget request for fiscal year 2006 for the ATL ACTD is $20.0 million higher than was projected in the fiscal year 2005 budget request. The committee notes that this program comprises 13 percent of the U.S. Special Operations Command (SOCOM) research and development budget and is projected to consume more than $340.0 million in additional SOCOM research and development funds in fiscal year 2007 and beyond. The committee believes that SOCOM has more urgent and useful priorities for research and development funding than the ATL ACTD.

The committee recommends $41.8 million in PE 1160402BB, a reduction of $20.0 million for the ATL ACTD.

Alternative fuels

The committee understands alternative fuels are comprised solely or partially from sources other than fossil fuel and notes the benefit of alternative fuels as a possible means for reducing reliance upon foreign oil reserves.

Bio-diesel and ethanol, fuel products made of soybeans and corn, respectively, meet existing federal guidelines that facilitate increased consumption of alternative fuels. The committee notes that officials in the Department of the Army and the Department of Defense have taken steps towards greater alternative fuel use, including the purchase of alternative fueled vehicles.

The committee urges further research and development in the area of alternative fuels and expects the Department of Defense to continue its efforts to make greater use of such products and to increase the number of alternative fueled vehicles.

Army space and missile defense simulation upgrade

The budget request contained $189.7 million in PE 63755D8Z for the Department of Defense high performance computing modernization program.

The Army Space and Missile Defense Command (SMDC) Simulation Center is a mission critical computer facility, which was established to provide supercomputer computational, high performance network, and storage capabilities. The center supports the development, testing, and integration of strategic defense technologies and simulations, including computational physics and chemistry, weapons design, and force modeling for SMDC, the Missile Defense Agency, the Navy, and the Army.

The committee notes increased requirements for end-to-end simulation, testing, and evaluation of advanced interceptors and sensors. These requirements include extrapolating data beyond the capabilities of existing wind tunnels to determine interceptor performance for programs such as the kinetic energy interceptor, lightweight endoatmospheric projectile, and Standard Missile 3. As sensors are upgraded to meet new threats, support boost phase discrimination, target signature discrimination, and cruise missile defense, improved seeker image analysis is required. In conjunction

with planned increases in network bandwidth and improved architectures, the proposed upgrades will triple the center's classified computational capability.

The committee recommends an increase of $7.1 million in PE 63755D8Z for the SMDC simulation center upgrade program.

Asymmetric protocols for biological defense

The budget request contained $145.4 million in PE 62383E for biological warfare defense applied research.

A military or terrorist scenario in which aerosolized biological agents such as anthrax spores or smallpox virus are used would almost certainly result in mass casualties. Weaponized forms of the agents offer significant challenges to medical treatments that are not found in naturally occurring forms. While antibiotics are the only approved method for treating anthrax, the 2003 bioterrorist anthrax attack in Washington, D.C., showed that antibiotics are unfortunately not adequate to provide full treatment against inhalation anthrax. The committee also notes that there are a number of biological agents that could, with appropriate development and weaponization, be used in biological warfare or in a terrorist attack. Developing specific protections against all possible biological agents presents a significant challenge. As a result, the committee believes there is a need for therapeutics that would provide broad spectrum protection against a range of possible biological agents and also work in concert with other methods of treatment.

The committee notes research in therapeutics, sponsored by the Defense Advanced Research Projects Agency, shows good results from laboratory testing in mice against pox virus and against anthrax and appears to have the potential for providing broad spectrum protection. Other tests have involved therapeutics that may reinforce the innate immunity of the host. A detailed review of the research in November 2004 indicates that the results of the research to date are promising and the program is ready to move into trials with larger animals.

The committee recommends an increase of $4.0 million in PE 62383E for applied research in multivalent asymmetric protocols that would provide broad spectrum protection for biological defense.

Ballistic missile defense

The budget request contained $7.8 billion for ballistic missile defense.

The committee notes that the budget request represents a $1.0 billion decrease from the fiscal year 2006 projections contained in the fiscal year 2005 request. Given that the Department of Defense had to make difficult programmatic decisions, the committee approves of the overall strategy employed in revising the fiscal year 2006 request for ballistic missile defense. While the committee understands that the spiral development strategy employed by the Department for ballistic missile defense is appropriate to the research and development nature of the ballistic missile defense program elements, the committee also notes that rigorous testing that leads to fielding of operational systems takes priority over future block research and development efforts. Thus, the committee recommends a reallocation of the request to focus on testing and field-

ing of near term capability ballistic missile defense elements. The committee also encourages the Department to continually reevaluate future block efforts in light of the results from operationally realistic testing to ensure that future year research and development efforts in one program do not get too far ahead of the actual performance results of the baseline system being tested, such as with Ground-based Midcourse Defense and the Airborne Laser program.

The committee recommends $7.9 billion, an increase of $100.0 million.

Boost defense segment

The budget request contained $483.9 million in PE 63883C for boost phase defense. The committee notes that the Airborne Laser (ABL) program met two major milestones in late 2004 and that the program has been structured so as to require achievement of incremental knowledge points prior to the scheduled lethal demonstration in 2008. The committee approves of this program restructuring that facilitates objective evaluations of program performance by the Department of Defense at specified knowledge points.

The committee notes that to make progress towards the 2008 lethal demonstration, the System Integration Laboratory Laser Long Run Performance Test, scheduled in fiscal year 2005, is a critical milestone. The committee directs the Secretary of Defense to submit with the fiscal year 2007 budget request a specific evaluation of the System Integration Laboratory Laser Long Run Performance Test. Included in this specific evaluation shall be an assessment of how the test fared against duration goals set prior to the test, the ability to duplicate this duration at expected ABL aircraft operating altitudes, and the ballistic missile threats that can be defeated with confidence by laser firings of the duration tested.

While the committee supports the knowledge point approach taken by the Department towards the Airborne Laser program, it also recognizes that decisions on future funding support must take into account the operational capabilities and costs of a deployed boost phase defense system. The committee notes that while the Department has stated in the budget request that the ABL program is the primary boost phase defense program, funds are also requested for the Kinetic Energy Interceptor (KEI) or System Interceptor Program. Accordingly, the committee includes a provision (sec. 231) that would require the Secretary to submit a report on a capability and cost estimate comparison between the ABL, KEI and any other boost phase defense system under consideration by the Department.

For purposes of comparison, the report shall assume the planned ABL and KEI Block 2010 capabilities as submitted in the fiscal year 2006 budget request. The report should include the following elements in its comparison of the Airborne Laser and Kinetic Energy Interceptor programs:

(1) An assessment of the operational capabilities of the two systems against ballistic missiles launched from North Korea or a location in the Middle East against the continental United States, Alaska, or Hawaii;

(2) An assessment of the quantity of operational assets required for deployment periods of seven days, thirty days, ninety days, and one year;

(3) Basing options, including forward-deployed options for Airborne Laser and for both land and sea-based options for the Kinetic Energy Interceptor; and

(4) An assessment of life-cycle costs to include research and development efforts, procurement, deployment, operating and infrastructure costs.

Core

The budget request contained $447.0 million in PE 63890C for ballistic missile defense (BMD) systems core.

Within the program, the request reflected an increase of $63.9 million for BMD information management systems. While the committee notes that additional funds are required to support the Missile Defense Agency (MDA) Center, Von Braun Complex, the MDA Campus, and enterprise applications compliance requirements, it does not support the full amount of the requested increase.

The committee recommends $407.0 million in PE 63890C, a decrease of $40.0 million for BMD information management systems.

Midcourse defense segment

The budget request contained $3.3 billion in PE 63882C for ballistic missile defense (BMD) midcourse defense segment.

The committee is concerned that the test program for Ground-based Midcourse Defense (GMD) may not be adequately resourced in the budget request based on recent reports from an independent review team chartered by the Director, Missile Defense Agency to review the GMD test program following recent GMD flight test failures. The independent review team recommended additional ground test and expanded qualification test resources for the GMD program. The committee recommends an increase of $50.0 million for additional ground test units and expanded qualification testing to support the GMD test program. The committee further recommends an increase of $100.0 million for an additional flight-intercept test from an operational silo to be conducted as soon as practicable.

The committee notes that the budget request includes $50.0 million for long lead procurement of Block 2008 ground based interceptors 31–40. The committee believes that testing of the Block 2004 and Block 2006 capabilities takes priority over long lead procurement for Block 2008 interceptors. The committee recommends reallocating resources from Block 2008 ground based interceptors 36–40 to fund the higher priority effort of ensuring the ground test program is robust and fully resourced. Accordingly, the committee recommends funding only the first 5 (31–35) of the additional 10 Block 2008 interceptors, a reduction of $25.0 million.

The committee notes that the Department of Defense has announced plans to cancel the dual booster strategy and instead will rely upon the Orbital Sciences (OBV) booster in the future. The committee also understands that the Department has yet to make a final decision on what option to pursue for termination of the Lockheed Martin (BV+) booster procurement. While the committee takes no action with respect to any savings that may be realized in shifting to the single booster approach, the committee does encourage the Department to consider applying any future savings to flight test ground based interceptors.

The budget request contained $836.0 million for Aegis BMD, including $24.8 million for the Japanese Cooperative Program. The committee is encouraged by the recent successful intercept of an Standard Missile-3 (SM–3) Block I Missile. The committee fully supports the Aegis BMD program and provides $881.0 million for AEGIS BMD, an increase of $45.0 million as follows: $25.0 million to support development of the Aegis Ballistic Missile Defense signal processor; $10.0 million to accelerate the throttleable divert and axial control system as a risk reduction alternative to the existing solid divert and attitude control system design; and $10.0 million to accelerate integration of the two-color seeker into the SM–3 Block IB Kinetic Warhead.

The committee recommends $3.4 billion in PE 63882C, an increase of $170.0 million for the midcourse defense segment.

Missile defense advanced technology

The committee notes that the Director, Missile Defense Agency and the Commander, U.S. Army Space and Missile Defense Command (SMDC) signed a Memorandum of Agreement (MOA) in March 2005 that covers research, development, testing, and transition of advanced technology for the Ballistic Missile Defense System. This MOA retains overall program planning and direction for advanced technology programs at the Missile Defense Agency. Further, the MOA establishes a Kill Vehicle Center of Excellence at SMDC and assigns other advanced technology projects to the SMDC Technical Center.

The committee understands the critical role of the SMDC Technical Center in advanced technology development for missile defense. The committee encourages the Missile Defense Agency to incorporate in its Future Year Defense Plan budget process an investment strategy to support technology innovation for future missile defense advanced technology programs.

Procurement funding and transition of ballistic missile defense systems to services

The committee is concerned that the Department of Defense has not yet clearly established a mechanism or specified the criteria under which the Missile Defense Agency (MDA) transfers responsibility for continued development and procurement of missile defense systems to the services. The committee urges the Department to reach an agreement on how to properly allocate sufficient budgetary resources to ensure the seamless transition of ballistic missile defense elements to the services prior to submission of the fiscal year 2007 budget request.

The committee is concerned with the Future Year Defense Plan (FYDP) strategy for procuring Aegis ballistic missile defense (BMD) and Terminal High Altitude Area Defense (THAAD) systems, assuming that both programs are successful in their planned developmental intercept flight tests. The Aegis BMD program is delaying important upgrades, particularly for a two-color infrared seeker and a throttleable divert attitude and control system, and assumes an inefficient production rate due solely to fiscal constraints. Similarly, THAAD's outyear funding is also inadequate. The MDA has already identified a sizeable shortfall for THAAD in fiscal year

2006 and the FYDP assumes only one THAAD firing unit will be procured.

The committee urges the Department to reevaluate its acquisition strategy in the next budget cycle and ensure that systems such as Aegis BMD and THAAD have a coherent strategy that is adequately funded to transition fielded elements to the services.

Products

The budget request contained $455.2 million in PE 63889C for ballistic missile defense (BMD) products, an increase of $71.4 million from the fiscal year 2005 appropriation.

The committee notes that the budget request contained an increase of $118.1 million for command and control, battle management and communications (C2BMC) Block 2006 and an increase of $65.1 million for C2BMC Block 2008. While the committee understands the importance of C2BMC to the BMD System, it does not support such a significant increase in spending on C2BMC Block 2008 until C2BMC Block 2006 has completed operationally realistic testing involving actual intercept tests. The committee authorizes $45.9 million for C2BMC Block 2008, a decrease of $30.0 million. The committee notes that even with this funding decrease in C2BMC Block 2008, the authorization represents an increase of $22.0 million for all block C2BMC spending compared to the fiscal year 2005 appropriation. The committee also directs the Department to focus its efforts on C2BMC performance in support of near term Block 2006 requirements.

The committee notes that the request contains $11.0 million for Hercules Block 2010. While the committee supports the overall goal of the Hercules program, consistent with other recommendations in this report, it does not support funding for future year block efforts prior to successful operational testing of more near term projects. The committee recommends $6.0 million for Hercules Block 2010, a decrease of $5.0 million.

The committee notes that the budget request contained $56.5 million for Joint Warfighter Support, more than double the fiscal year 2005 appropriation. The committee does not believe such a significant increase is warranted and notes that a portion of the increase is to expand BMD system Exercise and War Gaming to include fielding of new capabilities. While the committee understands the need to look to the future as part of spiral development, the committee also notes that efforts looking at new capabilities are somewhat premature until the nearer term capabilities are successfully tested. The committee recommends $41.5 million, a decrease of $15.0 million, for Joint Warfighter Support Block 2008.

System interceptor

The budget request contained $229.7 million in PE 63886C for System Interceptor. As noted previously, the committee supports the Department of Defense's (DOD) restructuring of the Kinetic Energy Interceptor (KEI), or System Interceptor, program with the fiscal year 2006 budget. This restructuring appropriately emphasizes the development of a quick acceleration booster as the critical knowledge point for the KEI program. The program office plans for a KEI booster demonstration in fiscal year 2008.

While the focus on KEI booster development is appropriate, the committee also understands that the need to identify and intercept a target in the boost phase presents technological and operational challenges to either a directed energy or kinetic energy weapon. In the KEI operational scenario, the command and control, battle management and communications (C2BMC) system faces a challenging timeline to facilitate intercept while the ballistic missile is still in the boost phase. Therefore, the committee encourages the Department to demonstrate the C2BMC timeline and fire control performance as a critical knowledge point prior to the end of fiscal year 2006.

The committee notes that the Future Year Defense Plan profile for the KEI program reflects substantial increases in program funding requirements beginning in fiscal year 2007. While the committee supports the DOD's approach to boost phase defense, the committee observes that the Department must carefully evaluate the affordability of future year spending requirements for boost phase defense programs and must reevaluate future plans based on demonstrated performance of both the Airborne Laser (ABL) and KEI programs. Should the ABL program fail to meet its specified requirements at the designated program knowledge points, the committee fully expects the Department to quickly reevaluate the primary and secondary boost-phase options and to adjust future budget requests accordingly.

The committee recommends $229.7 million, the amount of the budget request for the System Interceptor program.

Technology

The budget request contained $136.2 million in PE 63175C for ballistic missile defense technology.

The committee understands that the Department of Defense has determined that the High Altitude Airship (HAA) Advanced Concept Technology Demonstration (ACTD) has experienced weight problems and that the projected time to resolve certain performance problems exceeds the criteria for continuation as an ACTD program. The committee also notes that other organizations within the Department are pursuing HAA programs for homeland defense. The committee recommends no funding for the HAA program, a decrease of $16.8 million.

The committee is aware of the potential enhancements that improved wide bandgap devices offer for high power, high frequency radars that have applications for missile defense. The committee recommends an increase of $4.0 million to enable the development of and insertion opportunities for Aluminum Nitride Substrates for wide bandgap devices in missile defense system radars.

Given the importance of intercepting ballistic missiles in the boost phase, the committee believes that the Department should be open to considering additional and potentially less expensive options for boost phase defense. The committee observes that the Air Force has conducted some preliminary studies into the feasibility of using the advanced medium range air-to-air missile (AMRAAM) launched from tactical aircraft to intercept ballistic missiles in boost phase ascent. The committee believes that tactical aircraft or unmanned aerial vehicles (UAVs) may potentially offer an alter-

nate launch platform for air intercept missiles for boost phase defense.

The committee recommends an increase of $7.8 million in PE 63175C for architectural studies to determine the technical feasibility of the concept of using tactical systems in the AMRAAM family launched from tactical aircraft or UAVs as platforms from which to interdict threat ballistic missiles in their boost phase using "hit-to-kill" technologies. This study shall include an evaluation of the modifications required to the seeker of the selected interceptor missile to perform boost phase intercept missions.

Terminal defense segment

The budget request contained $1.1 billion in PE 63881C for ballistic missile defense terminal defense segment.

The committee is encouraged by the aggressive flight test schedule for the Terminal High Altitude Air Defense (THAAD) program, with 10 flight tests scheduled for fiscal years 2005 through 2007. The committee also understands that the program is still trying to recover from both a plant explosion at the boost motor/thrust vector actuation supplier in 2003 and a funding reduction in fiscal year 2005. Observing that the THAAD program represents a potentially near term fielding capability, the committee recommends an increase of $25.0 million for THAAD risk reduction.

The committee further notes that the first THAAD fire unit is scheduled to be fielded in fiscal year 2009. While the committee fully supports the THAAD program, it also has concerns on the exact plans for transitioning THAAD to the Department of the Army and for future year funding once transitioned to an operational status. The committee directs the Secretary of the Army to submit by March 1, 2006, a report to the congressional defense committees that specifies the testing milestones that must be met by the Missile Defense Agency prior to transitioning THAAD fire units to the Army as well as the Department of the Army's Future Year Defense Plan funding for fiscal years 2008 through 2012 to support transitioning and fielding of the THAAD system.

Testing

The committee notes that the Ground-based Midcourse Defense system experienced several test setbacks last year. The committee notes that the root cause of testing failures must be clearly identified. The committee directs the Director, Operational Test and Evaluation to include an independent assessment of the root cause of all testing failures encountered during the previous year in each annual assessment of ballistic missile defense testing submitted in accordance with section 232(h) of the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107–107).

In addition, the committee notes that in the most recent annual report, the Director, Operational Test and Evaluation identified multiple concerns about the Missile Defense Agency's ability to characterize the operational capability of the Ground-based Midcourse Defense system's limited defensive operations against long-range ballistic missiles. The committee directs the Director, Operational Test and Evaluation to submit an evaluation of the Missile Defense Agency's efforts to address these concerns in the next annual assessment report.

Business management and modernization program

The budget request contained $172.1 million in research and development for the development of the business management modernization program (BMMP). This program is the Department of Defense's (DOD) plan to transform and modernize its business and financial processes and systems. BMMP seeks to tie together and to ensure interoperability between financial, accounting, human resources, logistics, acquisition, information technology infrastructure, and strategic planning and budgeting systems.

The committee is supportive of the new Defense Business Systems Management Committee (DBSMC) that was established as a result of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108–375) and the leadership that has recently occurred. The committee strongly encourages the Secretary of Defense and the DBSMC to review and implement section 332 of Public Law 108–375 as it lays the foundation for defense business systems architecture, modernization, and accountability.

In addition, the committee notes that the BMMP program office has not finalized a strategy to expend the remainder of its fiscal year 2005 appropriated dollars, and has not provided a plan detailing program specific goals for the fiscal year 2006 budget request. The committee does not support funding for an information technology program that does not have firmly established requirements or a schedule to deliver capabilities that are unclear at this time.

Accordingly, the committee recommends a decrease of $55.4 million for the development of BMMP.

Chemical/biological defense research, development, test and evaluation program

The budget request contained a total of $898.0 million for chemical and biological defense research, development, test, and evaluation (RDT&E), including $72.5 million in PE 61384BP for basic research, $187.8 million in PE 62384BP for applied research, $164.5 million in PE 63384BP for advanced technology development, $100.8 million in PE 63884BP for advanced component development and prototypes, $280.9 million for system development and demonstration, $81.5 million in PE 65384BP for RDT&E management support, and $10.1 million for operational systems development. The budget request also contained $145.4 million in PE 62383E for the Defense Advanced Research Projects Agency (DARPA) biological defense research program.

The committee notes that the changing chemical and biological threat, both to U.S. armed forces on the world's battlefields and to U.S. homeland security, places more emphasis on the need for responsive technology options that could address the threat; the ability to quickly assess, develop, and demonstrate the technology; and then, the ability to rapidly insert or deploy the technology in fielded systems. The committee also continues to note the wealth of new concepts and technologies of varying levels of maturity that emerge annually from the nation's science and technology base.

The committee recommends continuation of the chemical and biological defense research and development initiatives established in the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108–375), one in the basic research category, one in applied research category and one in the advanced

technology development category, and adds an additional initiative in advanced component development and prototyping. These initiatives will provide the opportunity for emerging technologies and concepts to compete for funding on the basis of technical merit and on the contribution that the technology could make to the chemical and biological defense capabilities of the armed forces and to homeland defense. The new advanced component development and prototyping initiative will provide a means to enhance transition of the most promising mature technologies from the science and technology base to acquisition programs. The committee encourages the use of the broad agent announcement in soliciting proposals for candidate projects under each of the initiatives.

Chemical/biological defense basic research initiative

The committee recommends that the technologies to be considered for funding under the basic research initiative include, but are not limited to the following:

(1) Engineered pathogen identification and countermeasures ("Bug to Drug");

(2) Fluorescence Activated Sensing Technology; and

(3) Multipurpose biodefense immunoarrays

The committee recommends an increase of $10.0 million in PE 61384BP for the chemical/biological defense basic research initiative.

Chemical/biological defense applied research and advanced technology development initiatives

The committee recommends that technologies to be considered for funding under the applied research and advanced technology development initiatives include, but are not limited to the following:

(1) Improved prophylaxis against neurotoxin effects;

(2) Novel vaccine platform development;

(3) Novel vaccine/therapeutic delivery means;

(4) Advanced concepts in regenerative air filtration;

(5) Wide-area detection and warning systems;

(6) Broad specificity enzyme-based destruction of agents;

(7) Sensor placement/optimization for next generation battle space management; and

(8) Rapid antibody-based biological countermeasures.

The committee recommends an increase of $20.0 million in PE 62384BP to continue the chemical/biological defense applied research initiative, an increase of $15.0 million in PE 63384BP to continue the chemical/biological defense advanced technology development initiative.

Chemical/biological defense advanced component development and prototyping initiative

During its review of the fiscal year 2006 budget request the committee noted that the budget request for the total chemical and biological defense research and development program increased $183.1 million compared to the amount provided in fiscal year 2005, but also noted that the amount requested for advanced component development and prototypes decreased by $24.9 million. The committee notes that activities supported by this budget category are

critical to the transition of promising technologies from the science and technology base into development and that additional funding is required to meet the validated objectives of the chemical biological defense program in the areas of:

(1) Medical surveillance concepts and prototypes;
(2) Wide-area surveillance, cueing, detection and warning;
(3) Broad-spectrum therapeutics; and
(4) Broad spectrum detection capabilities.

Consequently, the committee recommends $125.8 million in PE 63884BP, an increase of $25.0 million for the advanced component development and prototyping initiative.

Combating terrorism technology support

The budget request contained $55.3 million in PE 63122D8Z for combating terrorism technology support advanced technology development.

The combating terrorism technology support program develops technology and prototype equipment that addresses needs and requirements with direct operational application in the national effort to combat terrorism. The program addresses defense, interagency, and international requirements for combating terrorism technology. Projects support anti-terrorism, counter-terrorism, intelligence and terrorism consequence management activities to: conduct tactical operations; protect military forces, civilian personnel, installations, infrastructure elements and the general population from terrorist attack; detect, neutralize, and mitigate the effect of conventional and unconventional devices; conduct surveillance and tracking of terrorists; conduct threat and incident assessments; and process and disseminate information. As a part of the program, international allies have worked jointly with the United States to fund a variety of key technologies that provide the U.S. armed forces, law enforcement agencies, and first responders with key enabling tools to counter terrorism.

The committee notes and highly commends the contributions made by the Technical Support Working Group in the development, demonstration, and fielding of advanced technologies for the fight against terrorism.

The committee recommends $80.3 million in PE 63122D8Z, an increase of $25.0 million for the combating terrorism technology support program to develop and field critical operational capabilities to counter and protect against terrorist chemical, biological, and explosive threats against military and civilian targets.

Connectory for rapid identification of advanced technology

The budget request contained $22.4 million in PE 63712S for generic logistics research and development technology demonstrations, but included no funding for continuation of the connectory project.

The objective of the connectory project is to develop a capability for the rapid identification of technology sources for the Department of Defense (DOD) that would provide the Department with instant access to the industrial base, and permit the rapid identification of promising sources of new, creative technical solutions for current combat and anti-terrorism programs. The committee notes the progress in the program and plans for developing methods for

screening manufacturers and their products and linking these sources to DOD buyers and prime contractors, forming business networks to potentially lower the cost of procurement, and analyzing industries in a region to identify the location of emerging technology clusters.

The committee recommends an increase of $2.0 million in PE 63712S for continuation of the connectory project for rapid identification of technology resources.

Defense Advanced Research Projects Agency

The Defense Advanced Research Projects Agency (DARPA) has been a leader and innovator in basic scientific research and defense science and technology for decades. Originally chartered to prevent technological surprise, DARPA promotes revolutionary technology innovations by focusing on high-risk, high-payoff technologies that offer new military capabilities and complement the military departments' nearer-term science and technology programs. The committee has supported ever increasing funding for DARPA as the only agency not tied to a military service mission and the demands of a service budget to produce quick results. Recognizing that some of DARPA's high-risk programs may not be successful, the committee encourages DARPA to continue its focus on the development, demonstration, and transition of high-risk, high-payoff technology to the military departments and to U.S. industry.

At the same time, the committee recognizes that the pursuit of the more futuristic technologies must be tempered by the hard fact that we are a nation at war and our armed forces have immediate needs for innovative technical solutions across a variety of disciplines. The committee commends DARPA on its quick reaction support and fielding of advanced innovative technologies to meet emerging critical operational needs of our forces in Operation Iraqi Freedom and elsewhere in support of the global war on terrorism.

The committee believes DARPA should continue to redirect some of its more futuristic efforts to the solution of today's combat problems. Those immediate needs involving detection, sensing, protection, surveillance, and a host of other issues that may well be "DARPA hard" problems that the Agency should be examining, rather than some of the more futuristic efforts in the DARPA program. Therefore, although the committee is pleased with the overall progress in the defense science and technology program, the committee believes that increased priority must continue to be given to the nearer-term requirements of the combatant commanders and U.S. armed forces in the field.

Defense integrated military human resources system

The budget request contained $20.3 million in PE 65018SE for research, testing, development, and evaluation of the defense integrated military human resources system (DIMHRS). The committee notes this is an ambitious program that entails the development and implementation of a single personnel and pay system that will support all military personnel, active, guard, reserve, and retired. This program seeks to transform the military personnel and pay processes.

While the committee supports the concept of a single integrated pay and personnel system, the committee remains highly concerned

that this program will not deliver such promised capabilities. The Department of the Air Force testified that DIMHRS will only be a 60 percent solution for its pay and personnel requirements; and the United States Marine Corps testified that DIMHRS is a degraded capability from its current pay and personnel system. The Department of the Army, which will be first to receive DIMHRS, has not clearly inventoried its legacy pay and personnel systems to determine which ones will be terminated or will migrate to DIMHRS.

The committee directs the Secretary of Defense to submit to the Senate Committee on Armed Services and the House Committee on Armed Services by February 15, 2006, a strategy to address the four military services' concerns that DIMHRS will not be a 100 percent solution for its service-specific requirements. This plan will address how DIMHRS will accommodate these deficiencies, for example, interface standards for legacy systems and or plans to augment DIHMRS capabilities to satisfy these service specific requirements.

Accordingly, the committee recommends $10.3 million for PE 65018SE, a decrease of $10.0 million for the research, testing, development, and evaluation of DIMHRS.

Defense manufacturing technology

The budget request included no funds in PE 78011D8Z for the defense manufacturing technology program.

The committee notes that the manufacturing technology (ManTech) program in the Department of Defense (DOD) is a critical funding vehicle for advancing and enabling the fielding of new technologies to the warfighter. The ManTech program supports the development of key manufacturing processes that target throughput rates, affordability, process-driven product performance, and the ability to sustain a hardware item in some form of rate production over its lifecycle.

The committee recommends an increase of $2.0 million in PE 78011D8Z for the defense manufacturing technology program.

Defense message system

The budget request contained $13.4 million for PE 33129K for research, development, testing and evaluation for the defense message system (DMS). This program is one of the warfighters' message systems, by providing secure and accountable messaging services.

The committee notes that DMS was initially created to satisfy a Department of Defense (DOD) requirement for a secure message system to replace the aging and archaic Automated Defense Information (AUTODIN) system. At the inception of this program, email use was widespread, and the Defense Information Systems Agency (DISA) proposed satisfying this requirement with an email system encrypted with a public key infrastructure (PKI) system, as is done by commercial industry and other government agencies. However, the intelligence community rejected the DISA proposal citing security issues. To address these concerns, DISA generated an elaborate, expensive proposal to modify an existing email system, to include the procurement of other hardware and software to support it. The committee notes that Department has spent more than $9.0 billion to implement DMS and to keep AUTODIN operational.

However, the intelligence community, continues to cite security issues and does not use DMS.

Additionally, the committee questions the continued development of this program when the Department is providing duplicative capabilities with Internet Protocol version 6, standard Microsoft Outlook, and PKI systems to its users.

Therefore, the committee recommends no funds in PE 33129K, a decrease of $13.4 million for research, development, testing, and evaluation of DMS.

Defense science and technology funding

The budget request contained $10.5 billion for the Department of Defense science and technology program, including all defense-wide and military service funding for basic research, applied research, and advanced technology development. The request included $1.7 billion for the Army, $1.8 billion for the Navy, $1.9 billion for the Air Force, and $5.0 billion for Defense-Wide science and technology (including $3.1 billion for the Defense Advanced Research Projects Agency (DARPA)). The committee recommends $11.4 billion for the Department of Defense science and technology program, an increase of $901.6 million to the budget request. The committee's recommendation includes $2.2 billion for the Army (an increase of $477.3 million), $2.0 billion for the Navy (an increase of $189.4 million), $2.1 billion for the Air Force (an increase of $118.5 million), and $5.1 billion for Defense Agency science and technology, an increase of $116.4 million (including $3.1 billion for DARPA, an increase of $11.4 million).

The committee regards defense science and technology investments as critical to maintaining U.S. military technological superiority in the face of growing and changing threats to U.S. national security interests around the world. The budget request is $2.2 billion (or 24 percent) less than the $13.1 billion provided for fiscal year 2005 and is approximately $28.0 million less than the fiscal year 2005 request ($240.0 million less when adjusted for inflation). The committee notes that the budget request is 2.5 percent of the total defense budget request (compared to 2.6 percent of the request in fiscal year 2005) and does not meet the goal of 3 percent established by the 2001 Quadrennial Defense Review.

The past year has provided numerous examples of successful technology development and deployment. The men and women of the U.S. armed forces are better equipped, trained, and protected because of revolutionary breakthroughs emerging from the technology base. The committee commends the Department for the response of the defense science and technology base to the emerging critical operational needs in support of the global war on terrorism and Operation Iraqi Freedom. Elsewhere in this report the committee has recommended increased funding to further accelerate the transition of advanced technologies.

The committee notes that earlier this year the National Research Council of the National Academies of Science and Engineering released its congressionally directed report "Assessment of Department of Defense Basic Research." The report concluded that the Department is managing its basic research program effectively, but made a number of recommendations regarding the program. The committee directs the Secretary of Defense to report to the Con-

gress with the Fiscal Year 2007 budget request the actions being taken or recommended by the Department to implement the recommendations contained in the report.

The committee is deeply concerned about sustaining and maintaining DOD science and technology infrastructure, about the projected loss to the defense science and engineering work force over the next ten years of an estimated 13,000 scientists, mathematicians, engineers, and technicians, and about the actions necessary to enable the Department to recruit and maintain a skilled and trained defense science and engineering work force. In the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108–375), Congress established a pilot program "Science, Mathematics and Research for Transformation (SMART)" within the Department to provide targeted education assistance to individual seeking a baccalaureate or an advanced degree in science and engineering disciplines that are critical to national security. Elsewhere in this report, the committee has recommended a provision which will build on the SMART program and improve DOD's ability to recruit, develop, and retain individuals critical to fulfilling the Department's national security mission.

Despite the positive aspects of DOD's science and technology program, the committee is concerned about long-term projections for reductions in DOD science and technology as a percentage of total obligation authority, and in short-term trends in the science and technology accounts of some of the military departments and defense agencies. The committee cannot emphasize too strongly the need for the Department to maintain a strong and robustly funded science and technology program that will provide the advanced technologies needed to assure technical dominance of our armed forces on any current or future battlefield.

Defense technical information center

The budget request contained $50.0 million in PE 65801KA for the Defense technical information center (DTIC).

The center's mission is to provide a timely and effective exchange of scientific and technical information (STI) and research and engineering information, to improve the quality and resource effectiveness of the Department of Defense's (DOD) research. The committee notes that DTIC provides centralized acquisition, processing, storage, retrieval, and dissemination of STI, including information that is restricted, controlled and classified. In addition, DTIC's knowledge management and leading edge information technology applications seek to improve information services and STI transfer to benefit DOD's warfighters, scientists, engineers, and managers. While the committee understands that DTIC processes and disseminates STI and performs studies and analysis, the committee is concerned that DTIC's request increased almost 20 percent from fiscal year 2005 without clearly identifying what the requirements are for the increased funding request, even after several attempts by the committee to ascertain the rationale.

Accordingly, the committee recommends $42.4 million in PE 65801KA, a decrease of $7.6 million for DTIC research and development.

Emerging/critical interconnection technology

The budget request contained $22.4 million in PE 63712S for generic logistics research and development technology demonstrations.

The committee notes that printed circuit boards are fundamental components of military navigation, guidance and control, electronic warfare, missile, and surveillance and communications equipment. The committee notes that printed circuit boards for military systems have unique design requirements for high performance, high reliability, and the ability to operate under extreme environmental conditions that require the use of high density, highly rugged, and highly reliable interconnection technology. The committee also notes that the commercial printed circuit board industry focuses on the design and high-volume production of low-cost boards and the United States has lost much of its printed circuit board manufacturing capability to overseas sources. The committee recognizes the need to enhance the U.S. capability for development and production of high density, highly reliable printed circuit boards for use in U.S. military systems.

The committee recommends an increase of $4.8 million in PE 63712S to continue the program for development of emerging and critical printed circuit interconnection technology.

Event management visualization and data analysis

The budget request contained $163.6 million in PE 63750D8Z for advanced concept technology demonstrations. The committee understands that combatant commanders need automated tools that streamline and de-conflict data input from multiple sources. In addition, the commanders also have a requirement to consolidate information into an efficient and effective display of situational awareness, in support of adaptive planning and incident management.

The Event Management Framework (EMF) improves the process of data correlation from multiple sources to build a consolidated view that provides actionable information in a fast, cost effective and accurate manner. EMF correlates multiple factors for event reasoning purposes, provides customized displays to multiple end users, and enhances the decision making process. This program incorporates techniques to use a rules-based methodology to improve communication and coordination among agencies, commands, and coalition forces by relaying information while protecting sensitive data.

Accordingly, the committee recommends an increase of $1.0 million in PE 63750D8Z for the development of EMF.

Force transformation

The budget request contained $19.9 million in PE 65799D8Z for force transformation, but contained no funds for the Full Spectrum Effects Platform, Project Sheriff.

Project Sheriff is an Office of Force Transformation initiative to rapidly field for operational experimentation transformational concepts such as target discrimination, speed of light weapons, fused sensors, and cognitive computing working in concert with active protection to produce weapons effects capabilities scalable from non-lethal to lethal. The committee believes Project Sheriff will sig-

nificantly expand a tactical commander's options and should be rapidly developed for fielding.

The committee recommends an increase of $10.0 million for PE 65799D8Z for force transformation, Project Sheriff.

GeoSAR mission enhancements

The committee understands that GeoSAR is a revolutionary mapping system that directly supports the National Geospatial Intelligence Agency's need for sophisticated mapping products. The committee also understands that GeoSAR products can meet combatant commander needs for geospatial mapping.

The committee provides $4.0 million for GeoSAR mission enhancements as follows: $2.1 million for field-deployable processing for rapid response and $1.9 million for radar system upgrades to support both mapping and intelligence requirements.

Guardrail Common Sensor

The budget request contained no funding in PE 35885G for Guardrail Common Sensor (GRCS) support for on-board sensors equipment.

The committee is very concerned with the degraded operational status of the GRCS program. The program contains no specific defense cryptologic funds for the continual upgrade and modification of sensors to exploit evolving signals intelligence (SIGINT) requirements. The global war on terrorism has proven that the SIGINT threat has evolved beyond most of the GRCS collection and exploitation capabilities. The fiscal year 2005 supplemental addressed some of this problem by providing additional funding for the rapid insertion of quick reaction capabilities but only as clip-in suites, and not part for the baseline funding profile for all GRCS operational systems. The committee believes that it is imperative that all four GRCS systems be upgraded to a common software-reprogramable baseline to allow the GRCS systems to meet the current threats, immediately and dynamically.

The committee recommends an increase of $10.0 million in PE 35885G for the SIGINT common configuration baseline for the GRCS.

Information assurance

The committee believes the Department of Defense (DOD) should do more to implement effective tamper resistant software capabilities on critical components and technologies. The committee continues to believe the Department must ensure a comprehensive anti-tamper policy to employ defenses against a variety of sophisticated threats. Such threats could potentially threaten our nation's strategic advantage and weaken the industrial base's technological competitiveness in the international marketplace.

The committee notes that the conference report (H. Rept. 108–354) accompanying the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108–136) directed the Secretary of Defense to assess the utility of tamper-resistant security software and other innovative software security tools in protecting critical DOD command, control, communications and intelligence software and incorporate such protections, as appropriate, into the Department's information assurance programs. Accordingly, the committee di-

rects the Secretary to submit to the Senate Committee on Armed Services and the House Committee on Armed Services by December 31, 2005, the results of that assessment and the protective measures implemented into the Department's information assurance programs as a consequence of that review.

Information Systems Security Program

The budget request contained $462.2 million in PE 33140G for the Information Systems Security Program.

The committee understands the importance of video intelligence in providing critical situational awareness to the warfighter on the battlefield. The committee understands the value of the digital video products provided by the Pacific Wind video system.

The committee recommends an increase of $4.0 million in PE 33140G for Pacific Wind as follows: $1.5 million to upgrade the video compression standard to enable high-definition images and $2.5 million to make the system two-way (full-duplex) capable.

Intelligence analyst education and training

The committee is aware that the defense intelligence community needs a new generation of intelligence analysts due to the emergence of new missions and the retirement of older analysts. The committee further understands that there are very few colleges and universities that provide organized degree programs that can lead to intelligence analyst certification in preparation for subsequent entry into the defense intelligence analyst career field. The lack of such programs is compounded by the lengthy security clearance process, making it more challenging to develop a qualified analyst pool.

The committee recommends an increase of $3.0 million in PE 33140G for the National Security Agency to establish a process to identify those college and university curriculums that may lead to intelligence analyst certification. This funding may also be used to identify those security clearance eligible students enrolled in such programs who may also be interested in pursuing a career as an intelligence analyst.

Large vehicle inspection using magnetic quadrupole resonance

The budget request contained $55.3 million in PE 63122D8Z for Combating Terrorism Technology Support.

The committee notes the development, demonstration, and employment of scanning explosives detection systems that use nuclear magnetic quadrupole resonance technology to detect the presence of explosives with a greatly enhanced detection probability and reduced false alarm rate.

The committee recommends an increase of $4.0 million in PE 63122D8Z to accelerate the development and evaluation of magnetic quadrupole resonance technology for the screening of cargo and large vehicles for the presence of explosives. The committee understands that this funding will support the completion of the final phase of the program.

M–291 skin decontamination kits

The committee is concerned about the availability of M–219 skin decontamination kits for the Department of Defense. The M–291 is

the only Food and Drug Administration approved, standard individual issue skin decontamination kit fielded by the U.S. armed forces. The kit protects and decontaminates skin from all known nerve and blister agents without harm to the skin.

Currently, the U.S. Army maintains a limited production capability to manufacture M–291 kits for the Department. The committee understands that infrequent and low volume requirements have resulted in long lead times and inefficient production costs. The committee also understands that the M–291 kit is in demand by city and state governments, first responders, emergency personnel, and the Department of Homeland Security.

The committee encourages the U.S. Army to increase the M–291 kit production rate to a more cost-effective level. The increased manufacturing rate would also allow an increase in the number of M–291 kits that could be made available for purchase by the various Homeland Security activities.

Man portable air defense system defense program

The budget request included $13.3 million in PE 64618D8Z for systems development and demonstration (SDD) to develop and demonstrate low cost, rapidly fieldable infra-red countermeasures (IRCM) options and $10.4 million in procurement to "examine new techniques" to reduce the cost and lead time required to protect aircraft against the man portable air defense system (MANPADS) threat at "expeditionary airfields and urban areas."

The following points need to be considered:

(1) SDD programs require validated requirements and mature technologies that have been demonstrated in at least a laboratory or test range environment. There are no validated requirements for this program, nor have any technologies been demonstrated;

(2) The concept for this program was considered by the Department of Homeland Security for its on-going program to protect civilian aircraft from the MANPADS threat and was rejected. Consequently, this program would be unique to the military services;

(3) Entry into SDD requires an independent program cost estimate. No such cost estimate exists; and

(4) The committee believes the Secretary of Defense should not be managing programs that are inherently within the purview of the military services.

In addition to the fact this is a science and technology program in content and scope of work and not an SDD program, the committee remains concerned that the concept for this program remains seriously flawed. At this point it has not been determined whether the concept requires surface to air missiles to be detected and engaged in very short time-lines from the ground or whether the deployed system would alert the presumed target aircraft to a MANPADS firing, requiring the target aircraft to dispense onboard countermeasures. Given the detection, decision, engagement times involved, engagement geometry, and having to fire surface to air missiles or high powered lasers at a threat missile is problematical, perhaps fratricidal. Further, a similar, but far less complex problem of detecting and engaging rockets, artillery, and mortars has been examined and the per system cost is well over $200.0 mil-

lion—20 times what is being discussed by program officials as an estimated cost.

Finally, the Secretary of Defense needs to examine the policy and budget implications of deploying systems to expeditionary airfields to protect against the MANPADS threat while leaving U.S. airfields totally unprotected.

Accordingly, the committee authorizes $6.0 million in PE 63618D8Z, a new science and technology program element, and directs within the funds authorized that an independent evaluation be completed of the concept of operations and on the cost of the proposed system solution. Further, the committee authorizes no funds for procurement due to the lack of supporting justification.

Medical free electron laser

The budget request contained $9.8 million in PE 62234D8Z for medical free electron laser applied research.

The committee notes that the medical free electron laser program seeks to develop advanced, laser-based applications for military medicine and related materials research. Because free electron lasers provide unique pulse features and tunable wavelength characteristics that are unavailable in other laser devices, their use broadens the experimental options for the development of new laser-based medical technologies. The program is a merit-based, peer-reviewed, competitively awarded research program, the majority of which is focused on developing advanced procedures for rapid diagnosis and treatment of battlefield related medical problems.

The committee recommends an increase of $10.0 million in PE 62234D8Z, to continue the merit-based, peer-reviewed, competitively awarded program in medical free electron laser applied research.

National Defense University technology pilot program

The budget request contained $31.1 million in PE 65104D8Z for the Office of Secretary of Defense technical studies, support, and analysis.

In fiscal year 2002 at the request of the President, National Defense University (NDU), Congress added funds to enable the university to establish a pilot research and analysis program that would focus on defense policy issues that have significant technology elements. The objective of the program is to determine how the United States can maintain its competitive edge against other military adversaries at a time when commercial information technology (IT) is readily available on the global market. The committee requests that the NDU President and the Director, Defense Research and Engineering report the results of the program and plans for future efforts with the submission of the fiscal year 2007 budget request to Congress.

The committee recommends $32.1 million in PE 65104D8Z, an increase of $1.0 million to continue the NDU technology pilot program.

Operationally responsive space

The budget request contained $19.9 million in PE 65799D8Z for operationally responsive space, but included no funds for development of the common bus.

The committee believes the nation must develop a responsive space capability and envisions that this capability may transform the battlefield and the space community far more than any other initiative. The committee believes a responsive space capability must include a set of common launch vehicles, common satellite standards, and flexible payloads that are engineered for common interfaces. The committee recognizes that the development of a common bus is the first critical step towards a responsive space system; however, the committee is concerned by the lack of coordination and focus on the development of payloads for small satellites.

The committee recommends an increase of $20.0 million for common bus development and an increase $50.0 million for small satellite payload development in PE 65799D8Z. The committee authorizes the funds for small satellite payload development to be used as required by section 913 of the National Defense Authorization Act for Fiscal Year 2006.

Project M shock mitigation technology

The committee notes the progress in the Office of Naval Research's application of shock mitigation technology, initially developed under the Defense Advanced Research Projects Agency's (DARPA) Project M program, to mitigation of the shock experienced by high-speed boats operating in littoral waters. The focus of the program has been to develop semi-active and fully-active shock mitigating seats to reduce the high shock and vibration experienced by the Navy SEALS Mark V patrol craft crew and passengers in high-speed special operations. The program has also been exploring the use of a Look-Ahead Detection System which observes the approaching ocean surface and sends warnings to the seat to enable shock-compensating motion before the shock impacts the hull. The results of at-sea tests show significant promise for mitigating the shock experienced in the Mark V–B special operations craft in sea conditions ranging from mid-Sea State 3 to low-Sea State 4 at speeds of 30 to 48 knots.

The committee encourages the Commander, U.S. Special Operations Command to review the results of the testing on the shock-mitigating seats for possible application to the Mark V patrol craft and consideration by the Director, DARPA, of the application of the Project M technology to DARPA's new program for development of a high-speed assault craft.

Raincoat

The budget request contained $22.0 million in PE 35885G for tactical signal intelligence technology, but contained no funding for Project Raincoat at the National Security Agency (NSA).

The NSA's Project Raincoat provides new surveillance tracking and reasoning assessment technology that will assist in the detection, identification, and monitoring of signals intelligence. The project uses a behavioral science approach, and link analysis founded on analytic operator experience to cue sensors automatically to pre-identified signals activity. The result alerts operators when a correlation is established, and effectively increases operator efficiency through a targeted search strategy in the platform's receivers.

Therefore, the committee recommends $26.0 million in PE 35885G, an increase of $4.0 million for Project Raincoat.

Rapid acquisition incentives

The budget request contained $5.6 million in PE 33169D8Z for the information technology (IT) Rapid Acquisition Incentives (RAI) program.

This program is intended to provide funding for pilot initiatives that will support the Department of Defense's efforts to transition to a network-centric environment. The committee notes that while this program's goal to deliver practical business case-based operational solutions is admirable, the committee is not supportive of authorizing funding for IT programs which have not been specifically targeted. The committee is concerned that RAI does not outline which activities or projects will be financed, establish the requirements, or what capabilities are promised, and how such capabilities will be fielded.

Accordingly, the committee recommends no funding in PE 33169D8Z, a decrease of $5.6 million for the development of the RAI program.

Scalable active memory processing engines

The budget request contained $242.7 million in PE 62716E for applied research in electronics technology.

The committee notes that the Defense Advanced Research Projects Agency's polymorphous computing architectures program is developing a revolutionary approach to the implementation of embedded computing systems to support reactive multi-mission, multi-sensor, and in-flight retargetable missions. This revolutionary approach will also significantly reduce the payload adaptation, optimization, and verification process.

The committee notes that massively parallel processing technologies being developed under the Scalable Active Memory Processing Engines program will provide significantly enhanced on-board sensor processing capabilities in an accelerated timeframe and significantly improve front-end processing for ballistic missile defense radars, as well as on-board missile discrimination processing.

The committee recommends an increase of $1.4 million in PE 62716E to accelerate the development of scalable, low-power, ultra-high performance processors for ballistic missile defense and other applications.

Special operations advanced technology development

The budget request contained $104.3 million in PE 116402BB for special operations advanced technology development, but contained no funds for the surveillance augmentation vehicle-insertable on request (SAVIOR) system.

The SAVIOR system promises to increase force protection for troops operating in cluttered, urban environments. SAVIOR is a mobile, intelligent sensor suite that can alert ground forces to the presence of a threat with its intensive surveillance network.

The committee recommends $107.8 million for PE 116402BB, special operations advanced technology development, an increase of $3.5 million for development of the SAVIOR system.

Special Operations Command small weapons acquisition

The committee believes that the unique acquisition authority possessed by the U.S. Special Operations Command (SOCOM) is a key element of the command's ability to respond effectively to common special operating forces operator needs and to address rapidly emerging requirements. Even so, major acquisition programs must be managed with a due regard to competition, unless the need for a quick solution is paramount. In that regard, the SOCOM program to acquire a combat assault rifle to replace six different weapons is on track to be a success. The committee expects that the same success will be demonstrated by the ongoing combat pistol acquisition program. The committee believes that operator needs should drive the requirements process, but also believes that the combination of the weapon requirements and product delivery schedule must not be so narrow as to restrict the command to a single source solution except under extraordinary circumstances.

The committee is also aware of another emerging requirement that should be explored. The committee understands that high technology, extreme long-range sniper systems are being commercially developed that could provide special forces operators with a quantum leap in sniper capability over today's fielded systems. The committee understands that special forces snipers have tested these systems and believe they may be superior to the weapons they now employ. The committee urges the Commander, U.S. Special Operations Command to review these U.S. developed technologies and consider acquiring these systems for special forces operators.

Special Operations Command tactical tanker fleet

The committee is concerned about the long-term viability of the U.S. Special Operations Command (SOCOM) C–130 tactical tanker fleet, given persistent center wing box problems and the proposed cancellation of the C–130J modernization program. The small size of the SOCOM fleet, combined with heavy, on-going operational demands, make taking aircraft out of service for extensive center wing box and avionics upgrades problematic. The committee supports the command's ongoing C–130 fleet modernization program but is concerned that these upgrades are relatively short-term fixes that do not address the long-term need for newer, modern aircraft. The committee believes that SOCOM tactical tanker requirements should be considered as part of the overall C–130J program assessment conducted by direction of the committee elsewhere in this report as part of the Mobility Capability Study and Quadrennial Defense Review. Accordingly, the committee directs the Secretary of Defense to consider SOCOM tactical tanker requirements in the final decision on the C–130J procurement and to submit a report to the Senate Committee on Armed Services and the House Committee on Armed Services with the Department of Defense's plan for the modernization of the SOCOM C–130 tanker fleet through 2022 by February 15, 2006.

Special operations tactical systems development

The budget request contained $63.5 million in PE 116404BB for special operations tactical systems development, but contained no funds for further development of the special operating forces com-

bat assault rifle (SCAR) and no funds for the multi-role, anti-armor, anti-personnel weapons system (MAAWS) multi-target warhead.

The committee believes that the SCAR is an urgently needed replacement for the existing M–4 system that should be field tested and refined as quickly as possible for special forces operator employment.

The MAAWS multi-target warhead is a unique 84 millimeter round with 2 warheads that will fire from existing weapons designed to defeat threat forces protected by hardened barriers. The committee notes that this item is on the unfunded priority list of the Commander, Special Operations Command.

The committee recommends $78.8 million for PE 116404BB special operations tactical systems development, an increase of $8.5 million to further develop the SCAR and an increase of $6.8 million for the MAAWS multi-target warhead.

Special operations technology development

The budget request contained $13.6 million in PE 116401BB for special operations technology development, but contained no funds for the Angel Fire for Full Spectrum Close-In Layered Shield (FCLAS) system.

The Angel Fire for FCLAS active protection system is a promising integrated sensor and counter-measure package with the potential to provide increased protection to lightly protected military aircraft and vehicles in hostile environments. Such systems are urgently needed in today's increasingly lethal operating environments.

The committee recommends $23.6 million for PE 116401BB special operations technology development, an increase of $10.0 million for the Angel Fire for FCLAS system.

Tactical exploitation of innovative sensors

The committee strongly supports the joint experimental aviation activity established between Naval Air Systems (NAVAIR) and the National Geospatial Intelligence Agency (NGA) for the tactical exploitation of innovative sensors. The committee understands the partnership promises to improve and accelerate the development and fielding of transformational capabilities to both NGA and the Department of the Navy by leveraging and integrating manned aircraft, unmanned aircraft, lighter than air vehicles, and ground systems. The committee strongly supports the emphasis to improve tasking, collection, processing, exploitation, and dissemination activities within the broad framework of the national intelligence, surveillance, and reconnaissance community. The committee recommends an increase of $15.0 million in PE 35102BQ for sensor development and flight operations in support of the NGA–NAVAIR Experimental Aviation Activity.

OPERATIONAL TEST AND EVALUATION, DEFENSE

Overview

The budget request contained $168.5 million for Operational Test and Evaluation, Defense.

The committee recommends $168.5 million, no change to the budget request.

Title II - RESEARCH, DEVELOPMENT TEST AND EVALUATION
(Dollars in Thousands)

Account	Line	PROGRAM TITLE	FY 2006 Authorization Request	Committee Change	Committee Increase	Committee Decrease	FY 2006 Committee Authorization
		OPERATIONAL TEST & EVALUATION, DEFENSE					
0603941D8Z	1	Test & Evaluation Science & Technology					
0604940D8Z	2	Central Test and Evaluation Investment Development (CTEIP)					
0605118D8Z	3	Operational Test and Evaluation	43,928				43,928
0605131D8Z	4	Live Fire Testing	10,340				10,340
0605804D8Z	5	Development Test and Evaluation	114,190				114,190
		TOTAL, OPERATIONAL TEST & EVALUATION, DEFENSE	**168,458**				**168,458**

LEGISLATIVE PROVISIONS

SUBTITLE A—AUTHORIZATION OF APPROPRIATIONS

Section 201—Authorization of Appropriations

This section would establish the amounts authorized to be appropriated for research, development, test, and evaluation for the Department of Defense for fiscal year 2006.

Section 202—Amount for Defense Science and Technology

This section would establish basic research, applied research, and advanced technology development funding levels for the Department of Defense for fiscal year 2006.

SUBTITLE B—PROGRAM REQUIREMENTS, RESTRICTIONS, AND LIMITATIONS

Section 211—Annual Comptroller General Report on Future Combat Systems Program

This section would establish an annual review of the Future Combat Systems program by the Comptroller General to be submitted to Congress by March 15, of each year. The report would include the extent to which such systems development and demonstration (SDD) program is meeting established performance, cost, and schedule goals; the plan for such SDD for the next fiscal year; and a conclusion whether such SDD program is likely to be completed at a cost not in excess of the most recent Selected Acquisition Report. The final report required by this section would be submitted at the completion of the systems development and demonstration milestone.

Section 212—Objective Requirements for Non-line-of-sight Cannon System not to be Diminished to Meet Weight Requirements

This section would require the Secretary of Defense to ensure that the objective requirements established for the Non-Light-of-Sight Cannon not be diminished in order to achieve the weight requirements in existence as of April 14, 2003.

Section 213—Independent Analysis of Future Combat Systems Manned Ground Vehicle Transportability Requirement

This section would require the Secretary of Defense to complete an independent analysis and submit a report to the congressional defense committees by February 1, 2006 on the Future Combat Systems key performance parameter transportability requirement for the manned ground vehicles (MGV). The analysis would seek to determine whether:

(1) Such a requirement can be supported by the projected extended planning period, inter- and intra-theater airlift force structure and is justified by any likely deployment scenario envisioned by current operational plans;

(2) Mature technologies have been demonstrated that allow this requirement to be met while demonstrating at least equal

lethality and survivability of the current manned vehicles or their equivalent, intended to be replaced; and

(3) The projected unit procurement cost warrants the investment required to deploy these vehicles.

The committee is concerned that the transportability performance requirement is inconsistent with the maturity of relevant technologies and projected airlift mobility capabilities, compromises lethality and survivability, and unnecessarily costly for the projected benefit. The current MGV weight exceeds by over 25 percent of that required to meet the MGV objective.

Section 214—Amounts for Armored Systems Modernization Program

This section would prescribe the fiscal year 2006 authorization and budget activity for the specific projects requested in the Armored Systems Modernization Program.

Section 215—Limitation on Systems Development and Demonstration of Manned Ground Vehicles Under Armored Systems Modernization Program

This section would prohibit the use of funds authorized for appropriation to be obligated for systems development and demonstration of manned ground vehicles for the armored systems modernization program until mature technologies have been demonstrated in a relevant environment to provide at least equaled lethality and survivability compared with the manned ground vehicles intended to be replaced by such ground vehicles.

Section 216—Testing of Internet Protocol Version 6 by the Naval Research Laboratory

This section would amend section 331 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108–375) to require the Secretary of Defense to conduct the testing and evaluation of internet protocol version six required by that section through the Naval Research Laboratory. This section would also require that the Secretary submit an annual report on the testing and evaluation to the congressional defense committees for fiscal years 2006 through 2008.

Section 217—Program to Design and Develop Next-Generation Nuclear Submarine

This section would require the Secretary of the Navy to carry out a program to design and develop a class of nuclear submarines that will serve as a successor to the Virginia class of nuclear submarines. This section would require the Secretary to commence design of the next generation nuclear submarine to follow the Virginia class, beginning construction in about fiscal year 2014.

The committee is aware that for the first time in 50 years, the Navy does not have a program to develop a nuclear submarine. Nuclear submarines, beginning with the Nautilus, have provided unmatched, important capabilities for this nation, and were instrumental in winning the Cold War.

In the last five decades the United States has developed an unequaled capability to design, develop and manufacture the world's top nuclear submarines. However, the committee is aware that this unique capability to design nuclear submarines is perishable. The recent example of the United Kingdom's problems with its new Astute class nuclear submarine is a clear indication of what happens when the submarine design capability is not maintained.

The committee understands that the only means by which the United States can expect to maintain its design capability is to continue to employ those designers to develop new submarine designs.

The committee is aware that existing submarine designs have emphasized open ocean capabilities. While the Virginia, Seawolf, and Los Angeles classes all operate effectively in the littoral, they were optimized for the open ocean. The committee believes that for the foreseeable future, the littoral rather than open ocean is the area of greatest importance. The committee sees an opportunity to maintain nuclear submarine design expertise developing a new class of nuclear submarine optimized for the littoral. This design shall make maximum use of emerging technologies, including those spawned by the joint Navy-Defense Advanced Research Projects Agency (DARPA) Tango Bravo project to develop a design optimized for littoral operations that dramatically reduces submarine cost while providing applicable warfighting capability equal to or greater than the Virginia class.

Section 218—Extension of Requirements Relating to Management Responsibility for Naval Mine Countermeasures Program

This section would extend to 2011 the requirement established in section 216 of the National Defense Authorization Act for Fiscal Years 1992 and 1993 (Public Law 102–190), as most recently amended by section 212 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 104–314), that the Secretary of Defense and the Chairman of the Joint Chiefs of Staff annually certify the adequacy of the Navy's mine countermeasures program.

The section would require that the Secretary, in certifying that the budget submitted to Congress and the Future Years Defense Plan propose sufficient resources for executing the updated mine countermeasures master plan, ensure that the budget meets the requirements of section 2437 of title 10, United States Code. Section 2437 provides that whenever a new major defense acquisition program begins development a sustainment plan shall be developed for the existing system that would be replaced by the system under development and that an appropriate level of budgeting be provided to sustain the existing system until the replacement system is fielded and assumes the major responsibility for the mission of the existing program. The committee notes that in the U.S. Naval Mine Countermeasures Plan for fiscal year 2006, the Navy plans to begin decommissioning the MHC–51 class mine hunting ships, based in part on assumptions regarding the fielding schedule for the Littoral Combat Ship. The committee believes that the Navy's assumption regarding the fielding schedule for Littoral Combat Ship is premature.

The section would amend the requirement to notify Congress prior to any reprogramming action relative to the Navy's mine

countermeasures program as long as the reprogramming action does not affect certification of the program provided to Congress by the Secretary of Defense.

The section would also require that the Secretary forward to the congressional defense committees with the Secretary's annual certification of the adequacy of the Navy's mine countermeasures program a copy of the Navy's Mine Countermeasures Plan which supports that certification.

Section 219—Single Joint Requirement for Heavy Lift Rotorcraft

The committee is aware that the Army and the Marine Corps both need a future transport helicopter to replace existing heavy lift rotorcraft. The committee also notes that costs for Defense Department weapons systems, including rotorcraft, continue to escalate making it imperative that the Department take advantage of any and all means including reducing the number of system development programs where it make sense to contain costs. Additionally, the Department must take advantage of economies of scale in production.

Present world-wide operations have demonstrated that the future for ground forces is joint operations with the Army and the Marine Corps. A key ingredient in these operations is systems interoperability. One way to not only contain costs but also facilitate interoperability is to, where possible; develop joint systems for the Army and the Marine Corps. While in the past there may have been a desire on the part of both services to differentiate by using different equipment, this is no longer a valid fundamental consideration. The committee is aware that present timelines for heavy lift rotorcraft replacement are not the same for the Army and the Marine Corps. Recognizing this, the committee believes that it is possible to establish a competitive program based on a single joint requirement that phases rotorcraft delivery in a manner to meet both service schedules.

Currently, the Joint Heavy Lift Rotorcraft (JHL) program is "joint" in name only and is only intended to be the Department of the Army's next-generation heavy lift rotorcraft to replace the Army's CH–47 "Chinook." The Marine Corps has its own program, the Heavy Lift Replacement (HLR), intended to replace the CH–53 "Super Stallion." The budget request includes $272.0 million in PE 65212N for systems development and demonstration for this program. The committee strongly believes that the foundation on which the JHL must proceed to development and production is a single, joint requirement, validated and approved by the Secretary of Defense. While it may not be possible for each service to include precisely the capability it desires, it must be possible to agree on the essential capabilities to be included in JHL and at the same time draft a requirement that does not in and of itself force a particular technology solution.

In the past issues such as corrosion control requirements, range, lift capability and ship basing have been used to justify separate programs. However, it is clear that in the future both the Army and the Marine Corps will operate from and be transported by ship and therefore, require the same level of corrosion control, be subject to other considerations mandated by ship based operations, and need be capable of similar long ranges.

This section would require the Secretary of the Navy and the Secretary of the Army to develop a single, common JHL requirement for approval by the Joint Requirement Oversight Council and the Secretary of Defense. This section would further direct that the Secretary of Defense not authorize the JHL program to begin until a validated and approved joint requirement exists. It is imperative that a common set of requirements be established in the immediate future to preclude unnecessary delays in upgrading the military services heavy lift capability.

Section 220—Requirements for Development of Tactical Radio Communications Systems

This section would direct the Secretary of Defense to provide a comprehensive report that would:

(1) Assess the Department of Defense's (DOD) immediate requirements for tactical radio communications, and whether these requirements may be satisfied with the purchase of legacy radios;

(2) Ensure that DOD users may rapidly acquire tactical radio communications utilizing existing technologies or mature systems readily available in the commercial marketplace; and

(3) Apply DOD Instruction 5000.2 to JTRS in a manner that does not permit the Milestone B entrance requirements to be waived.

This section would also give the Joint Program Executive Officer (JPEO) for the Joint Tactical Radio System program the authority and control of execution year research and development funding for all the clusters and the waveform developments for JTRS. The committee believes the JPEO must have these authorities to successfully manage a program of this size and cost. This section would also allow the JPEO to transition technologies through Systems Development and Demonstration and Production and Deployment (SDD) more quickly. The committee strongly believes that interim radio communication capabilities should be evolutionary and be able to transition to the long-term system solution with maximum hardware and software reuse.

The Joint Tactical Radio System (JTRS) program is a family of interoperable, advanced software-defined radios. The committee has serious concerns that Cluster 1 program, the first and largest of several clusters has encountered significant cost overruns, severe schedule delays, and performance problems. The committee expects that the Department's compliance with subsection (a)(2) of this section will result in the elimination of the current JTRS waiver process. This would allow the services to purchase tactical radio communications to fulfill their immediate requirements. The committee believes that given recent developments that include the stop-work order and the show cause letter to the contractor, the Secretary should thoroughly reevaluate and assess the Department's requirements for tactical radio communications, the JTRS program and its promised capabilities.

Section 221—Limitation on Systems Development and Demonstration of Personnel Recovery Vehicle

The Air Force budget request included $113.8 million in PE 27224F, within the operational systems development budget activity, for Combat Rescue and Recovery, all of which is for systems development and demonstration of the Personnel Recovery Vehicle (PRV).

This section would limit any obligation of funding for the Personnel Recovery Vehicle until 30 days after the Secretary of Defense:

(1) Certifies that the requirements and schedule for the PRV have been validated and are reasonable and necessary;

(2) Certifies that all technologies required to meet the requirements are mature;

(3) Certifies that no other aircraft, and no other modification of an aircraft in the Department of Defense inventory can meet the PRV requirement; and

(4) Provides an independent cost and manpower estimate for the PRV.

The committee also deletes all funding for operational systems development in PE 27224F and places the requested $113.8 million in systems development and demonstration, PE 64261F, Personnel Recovery Vehicle.

Section 222—Separate Program Element Required for Each Significant Research, Development, Test and Evaluation Project

In its annual budget requests for research, development, test, and evaluation (RDT&E), the Department of Defense continues to aggregate more and more projects within individual program elements. In addition, the Department continues to incorrectly apply its own directives in the classification of its programs and projects by budget activity, for example, Personnel Recovery Vehicle and Man Portable Air Defense System Defense.

This section would require that any RDT&E project, whose estimated expenditures and proposed appropriations for that project exceed $100.0 million, is assigned its own program element.

Further, the committee continues to encourage the Department to follow its own directives in the proper budget activity classification of RDT&E programs.

Section 223—Small Business Innovation Research Phase III Acceleration Pilot Program

This section would require the Secretary of Defense to designate the secretary of a military department to establish a pilot program to transition at least 10 Phase II Small Business Innovative Research (SBIR) projects into Phase III annually. The pilot would run for three years. Small businesses are our nation's engine of technology innovation. The federal government and the Department of Defense (DOD) spend significant sums annually on Phase I and Phase II Small Business Innovative Research (SBIR) technology development that has yet to be fully transitioned into production (Phase III). While the primary focus of the program is to fund Phase III in the commercial marketplace, the committee recognizes that Department has managed the SBIR program with the military

customer as the focus. The committee believes that too many innovative technologies developed with DOD support and funding are subsequently neglected because many DOD acquisition programs are managed by large prime contractors with no visibility into the SBIR program and the promising technologies under development. While the committee is reluctant to direct consideration of SBIR Phase II projects as Phase III projects in subcontractual arrangements, the committee believes that a more focused effort to transition promising technologies will benefit both the warfighter and the taxpayer. The committee urges the Secretary to designate the military department that has demonstrated the greatest success in transitioning these technologies, and to consider implementing a process to provide incentives to defense contractors to subcontract to DOD SBIR firms, in a manner similar to procedures used for minority, women-owned, and veteran owned small businesses.

Section 224—Revised Requirements Relating to Submission of Joint Warfighting Science and Technology Plan

This section would amend section 270 of the National Defense Authorization Act for Fiscal Year 1997 (Public Law 104–201) to require submission of the Joint Warfighting Science and Technology Plan required by that section biennially, rather than annually. This section would also repeal the requirement for the plan to contain review and assessment summaries.

Section 225—Shipbuilding Industrial Base Improvement Program for Development of Innovative Shipbuilding Technologies, Processes, and Facilities

This section would establish a Shipbuilding Industrial Base Program for the U.S. shipbuilding industry to improve the efficiency, cost-effectiveness, and quality of U.S. ship construction, and promote the international competitiveness of U.S. shipyards. Under this program, the Secretary of the Navy may provide funds for the development of modernized shipbuilding infrastructure and innovative design and production technologies and processes for naval vessels. The Secretary may also provide funds from this program to shipyards for the acquisition of such infrastructure, technologies, and processes. Participants of the program should have the ability to develop infrastructure, technologies, and processes that are beneficial to or needed by the shipbuilding industry based on inefficiencies discovered in a periodic assessment of program design, engineering, and production engineering; organization and operating systems; steelwork production; and ship construction and outfitting.

The committee is aware that a 2005 shipbuilding industrial base study conducted by the Department of Defense identified weaknesses in the naval ship construction program and recommended a specific set of targeted investments to increase efficiency and modernize the U.S. shipbuilding infrastructure, including physical facilities, critical processes, specialized labor pool, unique tools, and the associated systems and processes. The committee is encouraged that the United States Shipbuilders have embraced the National Shipbuilding Research Program as an effective and efficient means to collaborate on innovation in shipbuilding and ship repair. The

committee believes that the Department can take advantage of this existing collaboration as an effective vehicle to address shipyard productivity issues related primarily to naval ship design practices.

The committee believes the Shipbuilding Industrial Base Improvement Program established under this section would enable infrastructure modernization of the U.S. shipbuilding industry to include collaborative work by the nation's shipyards in several key areas: design-for-production, ship design/engineering processes, production engineering methodology, enhanced supply chain integration, and organization and operating system optimization associated with naval ship construction programs.

The committee recommends an increase of $100.0 million in PE 78730N only for the Shipbuilding Industrial Base Improvement Program. A key aspect of the fiscal year 2006 recommended authorization would be design optimization projects of several ship classes—a mix of those classes in production as well as new design classes—including a coordinated effort to collect lessons learned across ship platforms and share productive methods among the programs.

Section 226—Renewal of University National Oceanographic Laboratory System Fleet

This section would authorize the Secretary of the Navy to develop a plan for a program to construct ships for the University National Oceanographic Laboratory System (UNOLS) Fleet and would require that the Secretary include in the plan provisions for the construction of up to four Ocean class ships. The section would also authorize $4.0 million in PE 63564N, Ship Preliminary Design and Feasibility Studies, to conduct feasibility assessments and initiate design of the first ship of the class.

Section 227—Limitation on VXX Helicopter Program

This section would limit the obligation of research, development, test and evaluation funds, or procurement funds, for acquisition of pilot production helicopters for the VXX helicopter program until the Secretary of the Navy certifies to the congressional defense committees that the results of the tests conducted by the fleet of test article helicopters for the VXX program demonstrate that VXX helicopters in the VXX mission configuration can be produced without significant further design modification.

The budget request contained $935.9 million in PE 64273N for the VXX executive helicopter development program, including funds for the first of three payments for five pilot production helicopters. The VXX executive helicopter program is developing a replacement for the VH–3D helicopter.

The committee notes that the VXX program schedule plans for the concurrent development and production of both three test articles and pilot production helicopters. While the committee understands the need to develop and produce the VXX as rapidly as possible, it further notes that the Department of Defense, Director of Operational Test and Evaluation's Fiscal Year 2004 Annual Report includes remarks that the program's acquisition strategy violates the "fly before buy" concept, and that risk reduction and robust execution of a test-fix-fly program could require additional schedule

margin to ensure that an appropriate amount of testing be accomplished before pilot production vehicles are procured.

SUBTITLE C—MISSILE DEFENSE PROGRAMS

Section 231—Report on Capability and Costs for Operational Boost/Ascent-Phase Missile Defense Systems

This section would require the Secretary of Defense to conduct an assessment of the missile defense programs, particularly the Airborne Laser and Kinetic Energy Interceptor, which are designed to protect against boost/ascent-phase ballistic missile attacks. This section would also require a capability and cost assessment of each boost/ascent-phase system.

The committee directs the Secretary to submit a report to the congressional defense committees by October 1, 2006, on the results of this assessment.

Section 232—Required Flight-Intercept Test of Ballistic Missile Defense Ground-based Midcourse System

The section would authorize $100.0 million above the budget request for the midcourse defense segment, for one additional flight-intercept test of the Ground-based Midcourse Defense (GMD) system. This is in addition to the regularly planned flight tests of the GMD system conducted by the Missile Defense Agency, and the test shall be conducted as soon as practicable.

TITLE III—OPERATION AND MAINTENANCE

OVERVIEW

The budget request contained approximately $108.0 billion in operation and maintenance funds to ensure the U.S. military can fight and meet the demands of each combatant commander. These funds will be used to train U.S. forces, purchase equipment and spare parts, repair older equipment, and transport equipment and personnel around the world. These funds, however, will not be used to fund the global war on terrorism (GWOT). The committee understands the administration will request emergency supplemental funds for fiscal year 2006 to meet that requirement. Nevertheless, the committee believes that costs directly associated with the GWOT are embedded in the fiscal year 2006 budget request. The committee has appropriately transferred these funds out of the committee's recommended funding for fiscal year 2006 to the "bridge" supplemental fund found in title XV of this bill, where the funds are authorized to be obligated for the GWOT expenses.

For the last two years, the committee has closely examined the ability of the secretaries of the military departments to reset and reconstitute military equipment that has returned from deployment. What is surprising to the committee is not the level of operation and maintenance funds needed, but rather the need for significantly higher procurement funds. Because equipment used in Iraq and Afghanistan is not being returned for maintenance and it is undergoing significant operational tempo under harsh conditions, the services will not repair the equipment, but replace it.