TITLE IV

RESEARCH, DEVELOPMENT, TEST AND EVALUATION

Funds appropriated under this title provide the resources required to conduct a program of research, development, test and evaluation, including research in basic science, applied research, advanced technology development, demonstration and validation, engineering and manufacturing development, and operational systems development.

The President's fiscal year 2016 budget requests a total of $69,784,963,000 for research, development, test and evaluation appropriations.

SUMMARY OF COMMITTEE ACTION

The Committee recommends research, development, test and evaluation appropriations totaling $70,324,687,000 for fiscal year 2016. This is $539,724,000 above the budget estimate.

Committee recommended research, development, test and evaluation appropriations for fiscal year 2016 are summarized below:

SUMMARY OF RESEARCH, DEVELOPMENT, TEST AND EVALUATION APPROPRIATIONS

[In thousands of dollars]

Account	2016 budget estimate	Committee recommendation	Change from budget estimate
Research, Development, Test and Evaluation:			
Research, Development, Test and Evaluation, Army	6,924,959	7,096,935	+171,976
Research, Development, Test and Evaluation, Navy	17,885,916	18,236,645	+350,729
Research, Development, Test and Evaluation, Air Force	26,473,669	25,874,116	−599,553
Research, Development, Test and Evaluation, Defense-Wide	18,329,861	18,926,433	+596,572
Operational Test and Evaluation, Defense	170,558	190,558	+20,000
Total:	69,784,963	70,324,687	+539,724

REPROGRAMMING GUIDANCE FOR ACQUISITION ACCOUNTS

The Secretary of Defense is directed to continue to follow the reprogramming guidance as specified in the report accompanying the House version of the Department of Defense appropriations bill for fiscal year 2008 (House Report 110–279). Specifically, the dollar threshold for reprogramming funds will remain at $20,000,000 for procurement and $10,000,000 for research, development, test and evaluation.

Also, the Under Secretary of Defense (Comptroller) is directed to continue to provide the congressional defense committees quarterly, spreadsheet-based DD Form 1416 reports for service and defense-wide accounts in titles III and IV of this act. Reports for titles III and IV shall comply with guidance specified in the explanatory statement accompanying the Department of Defense Appropria-

tions Act for Fiscal Year 2006. The Department shall continue to follow the limitation that prior approval reprogrammings are set at either the specified dollar threshold or 20 percent of the procurement or research, development, test and evaluation line, whichever is less. These thresholds are cumulative from the base for reprogramming value as modified by any adjustments. Therefore, if the combined value of transfers into or out of a procurement (P–1), or a research, development, test and evaluation (R–1) line exceeds the identified threshold, the Secretary of Defense must submit a prior approval reprogramming to the congressional defense committees. In addition, guidelines on the application of prior approval reprogramming procedures for congressional special interest items are established elsewhere in this report.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION OVERVIEW

Basic Research.—The fiscal year 2016 budget request includes $2,088,929,000 for basic research in Research, Development, Test and Evaluation for the Army, Navy, Air Force and Department of Defense. This amount is $188,759,000 below the below fiscal year 2015 enacted level. The Committee believes that further investment in basic research must continue. Basic research is the foundation of innovative breakthroughs that are critical to maintaining the Nation's future technological edge. Investments in basic research not only provide advances in technology for our military men and women but also provide an important incubator for national labs and academic research institutions. These investments also encourage partnerships and collaboration with industry. In order to keep pace with the global challenges to come, the Committee believes that additional funding should be allocated to Federal research. Therefore, the Committee recommends $2,317,429,000 for basic research, an increase of $228,500,000 over the 2016 budget request and a $39,741,000 increase over the fiscal year 2015 enacted level.

Alternative Energy Research.—The Committee continues to support the fiscal and operational value of investing in alternative energy research. The recommendation includes an additional $75,000,000 for Army, Navy and Air Force research and development to continue research of promising alternative energy technologies, such as renewable energies, alternative fuels, and energy efficiencies. The Committee encourages the services to focus on the ability of platforms, installations, and personnel to operate with a diverse mix of fuels.

Solar Research in Dry-Dust Areas.—The Committee supports efforts by the Department of Defense to become more energy efficient. These efforts have demonstrated cost savings and are an important part of the 2010 and 2015 Quadrennial Defense Reviews and the Department of Defense's Operational Energy Strategy. Renewable energy, including solar, is an important part of these efforts. Last year, the Army broke ground on its largest solar energy plant at Fort Huachuca in Arizona. Covering 155 acres, the plant is projected to provide not less than 25 percent of the Fort's electricity. The Committee believes solar initiatives are also important for overseas operations, particularly in the Middle East and Africa, where in country supplies are unreliable and large amounts of en-

ergy often need to be transported to theater. However, dry-dust problems can prevent the optimal use of solar energy in some areas. Therefore, the Committee urges the Department of Defense to continue research into the use of solar energy in dry-dust regions.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY

Appropriations, 2015	$6,675,565,000
Budget estimate, 2016	6,924,959,000
Committee recommendation	7,096,935,000

The Committee recommends an appropriation of $7,096,935,000. This is $171,976,000 above the budget estimate.

COMMITTEE RECOMMENDED PROGRAM

The following table summarizes the budget estimate for this appropriation, the Committee recommendation, and the Committee recommended adjustments to the budget estimate:

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY			
	BASIC RESEARCH			
1	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	13,018	13,018	....
2	DEFENSE RESEARCH SCIENCES	239,118	279,118	+40,000
3	UNIVERSITY RESEARCH INITIATIVES	72,603	72,603	....
4	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	100,340	105,340	+5,000
	TOTAL, BASIC RESEARCH	425,079	470,079	+45,000
	APPLIED RESEARCH			
5	MATERIALS TECHNOLOGY	28,314	68,314	+40,000
6	SENSORS AND ELECTRONIC SURVIVABILITY	38,374	53,374	+15,000
7	TRACTOR HIP	6,879	6,879	....
8	AVIATION TECHNOLOGY	56,884	56,884	....
9	ELECTRONIC WARFARE TECHNOLOGY	19,243	19,243	....
10	MISSILE TECHNOLOGY	45,053	55,053	+10,000
11	ADVANCED WEAPONS TECHNOLOGY	29,428	41,428	+12,000
12	ADVANCED CONCEPTS AND SIMULATION	27,862	27,862	....
13	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	68,839	105,839	+37,000
14	BALLISTICS TECHNOLOGY	92,801	112,801	+20,000
15	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY ...	3,866	3,866	....
16	JOINT SERVICE SMALL ARMS PROGRAM	5,487	5,487	....
17	WEAPONS AND MUNITIONS TECHNOLOGY	48,340	63,340	+15,000
18	ELECTRONICS AND ELECTRONIC DEVICES	55,301	64,301	+9,000
19	NIGHT VISION TECHNOLOGY	33,807	35,807	+2,000
20	COUNTERMINE SYSTEMS	25,068	38,068	+13,000
21	HUMAN FACTORS ENGINEERING TECHNOLOGY	23,681	23,681	....
22	ENVIRONMENTAL QUALITY TECHNOLOGY	20,850	20,850	....
23	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	36,160	36,160	....
24	COMPUTER AND SOFTWARE TECHNOLOGY	12,656	12,656	....
25	MILITARY ENGINEERING TECHNOLOGY	63,409	77,409	+14,000
26	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	24,735	24,735	....
27	WARFIGHTER TECHNOLOGY	35,795	40,795	+5,000
28	MEDICAL TECHNOLOGY	76,853	76,853	....
	TOTAL, APPLIED RESEARCH	879,685	1,071,685	+192,000
	ADVANCED TECHNOLOGY DEVELOPMENT			
29	WARFIGHTER ADVANCED TECHNOLOGY	46,973	56,973	+10,000
30	MEDICAL ADVANCED TECHNOLOGY	69,584	77,584	+8,000
31	AVIATION ADVANCED TECHNOLOGY	89,736	89,736	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
32	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	57,663	69,663	+12,000
33	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY ...	113,071	120,571	+7,500
34	SPACE APPLICATION ADVANCED TECHNOLOGY	5,554	5,554	....
35	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECH-NOLOGY	12,636	12,636	....
37	TRACTOR HIKE	7,502	7,502	....
38	NEXT GENERATION TRAINING & SIMULATION SYSTEMS	17,425	17,425	....
39	TRACTOR ROSE	11,912	11,912	....
40	COMBATING TERRORISM, TECHNOLOGY DEVELOPMENT	27,520	33,520	+6,000
41	TRACTOR NAIL	2,381	2,381	....
42	TRACTOR EGGS	2,431	2,431	....
43	ELECTRONIC WARFARE TECHNOLOGY	26,874	34,874	+8,000
44	MISSILE AND ROCKET ADVANCED TECHNOLOGY	49,449	99,449	+50,000
45	TRACTOR CAGE	10,999	10,999	....
46	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM	177,159	222,159	+45,000
47	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	13,993	13,993	....
48	JOINT SERVICE SMALL ARMS PROGRAM	5,105	5,105	....
49	NIGHT VISION ADVANCED TECHNOLOGY	40,929	40,929	....
50	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	10,727	15,727	+5,000
51	MILITARY ENGINEERING ADVANCED TECHNOLOGY	20,145	30,145	+10,000
52	ADVANCED TACTICAL COMPUTER SCIENCE & SENSOR TECH-NOLOGY	38,163	38,163	....
53	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECH-NOLOGY	37,816	37,816	....
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	895,747	1,057,247	+161,500
	DEMONSTRATION & VALIDATION			
54	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	10,347	24,347	+14,000
55	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION (SPACE)	25,061	25,061	....
56	LANDMINE WARFARE AND BARRIER—ADV DEV	49,636	45,757	−3,879
57	SMOKE, OBSCURANT AND TARGET DEFEATING SYS–ADV DEV	13,426	13,426	....
58	TANK AND MEDIUM CALIBER AMMUNITION	46,749	46,749	....
60	SOLDIER SUPPORT AND SURVIVABILITY	6,258	301	−5,957
61	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM—AD	13,472	13,472	....
62	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	7,292	7,292	....
63	ENVIRONMENTAL QUALITY TECHNOLOGY	8,813	8,813	....
65	NATO RESEARCH AND DEVELOPMENT	6,075	6,075	....
67	LOGISTICS AND ENGINEER EQUIPMENT—ADV DEV	21,233	21,233	....
68	MEDICAL SYSTEMS—ADV DEV	31,962	31,962	....
69	SOLDIER SYSTEMS—ADVANCED DEVELOPMENT	22,194	23,194	+1,000
71	ANALYSIS OF ALTERNATIVES	9,805	9,805	....
72	TECHNOLOGY MATURATION INITIATIVES	40,917	35,917	−5,000
73	ASSURED POSITIONING, NAVIGATION AND TIMING (PNT)	30,058	30,058	....
74	INDIRECT FIRE PROTECTION CAPABILITY INCREMENT 2–INTERC	155,361	155,361	....
	TOTAL, DEMONSTRATION & VALIDATION	498,659	498,823	+164
	ENGINEERING & MANUFACTURING DEVELOPMENT			
76	AIRCRAFT AVIONICS	12,939	12,939	....
78	ELECTRONIC WARFARE DEVELOPMENT	18,843	18,843	....
79	JOINT TACTICAL RADIO	9,861	4,546	−5,315
80	MID–TIER NETWORKING VEHICULAR RADIO	8,763	8,763	....
81	ALL SOURCE ANALYSIS SYSTEM	4,309	4,309	....
82	TRACTOR CAGE	15,138	15,138	....
83	INFANTRY SUPPORT WEAPONS	74,128	78,580	+4,452
85	JAVELIN	3,945	3,945	....
87	AIR TRAFFIC CONTROL	10,076	10,076	....
88	SMALL UNMANNED GROUND VEHICLE	40,374	9,050	−31,324
89	NIGHT VISION SYSTEMS—SDD	67,582	67,582	....
90	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	1,763	1,763	....
91	NON–SYSTEM TRAINING DEVICES—SDD	27,155	21,723	−5,432
92	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE -SDD	24,569	24,569	....
93	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	23,364	23,364	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
94	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	8,960	8,960	....
95	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS)—SDD	9,138	9,138	....
96	COMBINED ARMS TACTICAL TRAINER (CATT) CORE	21,622	21,622	....
97	BRIGADE ANALYSIS, INTEGRATION AND EVALUATION	99,242	99,242	....
98	WEAPONS AND MUNITIONS—SDD	21,379	21,379	....
99	LOGISTICS AND ENGINEER EQUIPMENT—SDD	48,339	46,539	− 1,800
100	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS—SDD	2,726	2,726	....
101	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT	45,412	45,412	....
102	LANDMINE WARFARE/BARRIER—SDD	55,215	55,215	....
104	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFT-WARE	163,643	131,899	− 31,744
105	RADAR DEVELOPMENT	12,309	12,309	....
106	GENERAL FUND ENTERPRISE BUSINESS SYSTEM [GFEBS]	15,700	21,155	+ 5,455
107	FIREFINDER	6,243	2,967	− 3,276
108	SOLDIER SYSTEMS—WARRIOR DEM/VAL	18,776	18,776	....
109	ARTILLERY SYSTEMS	1,953	1,953	....
110	INFORMATION TECHNOLOGY DEVELOPMENT	67,358	60,358	− 7,000
111	ARMY INTEGRATED MILITARY HUMAN RESOURCES SYSTEM (A–IMH	136,011	99,011	− 37,000
112	ARMORED MULTI-PURPOSE VEHICLE	230,210	219,259	− 10,951
113	JOINT TACTICAL NETWORK CENTER (JTNC)	13,357	13,357	....
114	JOINT TACTICAL NETWORK (JTN)	18,055	18,055	....
115	TRACTOR TIRE	5,677	5,677	....
116	COMMON INFRARED COUNTERMEASURES (CIRCM)	77,570	53,570	− 24,000
117	AIRCRAFT SURVIVABILITY DEVELOPMENT	18,112	18,112	....
118	WIN–T INCREMENT 3—FULL NETWORKING	39,700	27,331	− 12,369
119	AMF JOINT TACTICAL RADIO SYSSTEM	12,987	12,987	....
120	JOINT AIR-TO-GROUND MISSILE [JAGM]	88,866	74,966	− 13,900
121	PAC–2/MSE MISSILE	2,272	2,272	....
122	ARMY INTEGRATED AIR AND MISSILE DEFENSE [AIAMD]	214,099	224,099	+ 10,000
123	MANNED GROUND VEHICLE	49,247	49,247	....
124	AERIAL COMMON SENSOR	2	2	....
125	NATIONAL CAPABILITIES INTEGRATION	10,599	10,599	....
126	JOINT LIGHT TACTICAL VEHICLE ENG AND MANUFACTURING	32,486	32,486	....
127	AVIATION GROUND SUPPORT EQUIPMENT	8,880	8,880	....
128	PALADIN INTEGRATED MANAGEMENT [PIM]	152,288	152,288	....
129	TROJAN—RH12	5,022	5,022	....
130	ELECTRONIC WARFARE DEVELOPMENT	12,686	12,686	....
	TOTAL, ENGINEERING & MANUFACTURING DEVELOP-MENT	2,068,950	1,904,746	− 164,204
	RDT&E MANAGEMENT SUPPORT			
131	THREAT SIMULATOR DEVELOPMENT	20,035	27,535	+ 7,500
132	TARGET SYSTEMS DEVELOPMENT	16,684	16,684	....
133	MAJOR T&E INVESTMENT	62,580	67,580	+ 5,000
134	RAND ARROYO CENTER	20,853	20,853	....
135	ARMY KWAJALEIN ATOLL	205,145	205,145	....
136	CONCEPTS EXPERIMENTATION PROGRAM	19,430	19,430	....
138	ARMY TEST RANGES AND FACILITIES	277,646	280,146	+ 2,500
139	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	51,550	51,550	....
140	SURVIVABILITY/LETHALITY ANALYSIS	33,246	33,246	....
141	AIRCRAFT CERTIFICATION	4,760	4,760	....
142	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	8,303	8,303	....
143	MATERIEL SYSTEMS ANALYSIS	20,403	20,403	....
144	EXPLOITATION OF FOREIGN ITEMS	10,396	10,396	....
145	SUPPORT OF OPERATIONAL TESTING	49,337	49,337	....
146	ARMY EVALUATION CENTER	52,694	52,694	....
147	SIMULATION & MODELING FOR ACQ, RQTS, & TNG [SMART]	938	938	....
148	PROGRAMWIDE ACTIVITIES	60,319	60,319	....
149	TECHNICAL INFORMATION ACTIVITIES	28,478	28,478	....
150	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY	32,604	47,604	+ 15,000
151	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	3,186	3,186	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
152	MANAGEMENT HEADQUARTERS (RESEARCH AND DEVELOPMENT)	48,955	48,955	....
	TOTAL, RDT&E MANAGEMENT SUPPORT	1,027,542	1,057,542	+30,000
	OPERATIONAL SYSTEMS DEVELOPMENT			
154	MLRS PRODUCT IMPROVEMENT PROGRAM	18,397	18,397	....
155	TRACTOR PULL	9,461	9,461	....
156	WEAPONS AND MUNITIONS PRODUCT IMPROVEMENT PROGRAMS	4,945	4,945	....
157	TRACTOR SMOKE	7,569	7,569	....
158	APACHE BLOCK III	69,862	40,862	−29,000
159	BLACKHAWK RECAP/MODERNIZATION	66,653	66,653	....
160	IMPROVED CARGO (CHINOOK) HELICOPTER	37,407	27,707	−9,700
161	FIXED WING AIRCRAFT	1,151	1,151	....
162	IMPROVED TURBINE ENGINE PROGRAM	51,164	51,164	....
163	EMERGING TECHNOLOGIES FROM NIE	2,481	2,481	....
164	LOGISTICS AUTOMATION	1,673	1,673	....
166	FAMILY OF BIOMETRICS	13,237	13,237	....
167	PATRIOT PRODUCT IMPROVEMENT	105,816	28,200	−77,616
169	AEROSTAT JOINT PROJECT OFFICE	40,565	40,565	....
171	JOINT AUTOMATED DEEP OPERATION COORDINATION SYSTEM	35,719	35,719	....
172	COMBAT VEHICLE IMPROVEMENT PROGRAMS	257,167	257,167	....
173	MANEUVER CONTROL SYSTEM	15,445	15,445	....
175	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	364	364	....
176	DIGITIZATION	4,361	4,361	....
177	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	3,154	3,154	....
178	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	35,951	35,951	....
179	TRACTOR CARD	34,686	34,686	....
180	INTEGRATED BASE DEFENSE—OPERATIONAL SYSTEM DEV	10,750	10,750	....
181	MATERIALS HANDLING EQUIPMENT	402	402	....
183	LOWER TIER AIR AND MISSILE DEFENSE [AMD] SYSTEM	64,159	64,159	....
184	GUIDED MULTIPLE-LAUNCH ROCKET SYSTEM [GMLRS]	17,527	34,727	+17,200
185	JOINT TACTICAL GROUND SYSTEM	20,515	20,515	....
187	SECURITY AND INTELLIGENCE ACTIVITIES	12,368	....	−12,368
188	INFORMATION SYSTEMS SECURITY PROGRAM	31,154	31,154	....
189	GLOBAL COMBAT SUPPORT SYSTEM	12,274	12,274	....
190	SATCOM GROUND ENVIRONMENT (SPACE)	9,355	9,355	....
191	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	7,053	7,053	....
193	INTEGRATED BROADCAST SERVICE (IBS)	750	750	....
194	TACTICAL UNMANNED AERIAL VEHICLES	13,225	13,225	....
195	AIRBORNE RECONNAISSANCE SYSTEMS	22,870	22,870	....
196	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	25,592	25,592	....
199	RQ–7 UAV	7,297	12,297	+5,000
201	WIN–T INCREMENT 2—INITIAL NETWORKING	3,800	3,800	....
202	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	48,442	62,442	+14,000
	TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	1,124,761	1,032,277	−92,484
9999	CLASSIFIED PROGRAMS	4,536	4,536	....
	TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY	6,924,959	7,096,935	+171,976

COMMITTEE RECOMMENDED ADJUSTMENTS

The following table details the adjustments recommended by the Committee:

[In thousands of dollars]

Line	Item	2015 budget estimate	Committee recommendation	Change from budget estimate
2	Defense Research Sciences	239,118	279,118	+40,000
	Authorization adjustment: Basic research program increase	....	....	+40,000

[In thousands of dollars]

Line	Item	2015 budget estimate	Committee recommendation	Change from budget estimate
4	University and Industry Research Centers	100,340	105,340	+ 5,000
	Basic research program increase	....	....	+ 5,000
5	Materials Technology	28,314	68,314	+ 40,000
	Program increase	....	....	+ 40,000
6	Sensors and Electronic Survivability	38,374	53,374	+ 15,000
	Program increase	....	....	+ 15,000
10	Missile Technology	45,053	55,053	+ 10,000
	Program increase	....	....	+ 10,000
11	Advanced Weapons Technology	29,428	41,428	+ 12,000
	Program increase: Thermal management technology	....	....	+ 12,000
13	Combat Vehicle and Automotive Technology	68,839	105,839	+ 37,000
	Program increase	....	....	+ 12,000
	Program increase: Alternative energy research	....	....	+ 25,000
14	Ballistics Technology	92,801	112,801	+ 20,000
	Program increase	....	....	+ 20,000
17	Weapons and Munitions Technology	48,340	63,340	+ 15,000
	Program increase	....	....	+ 15,000
18	Electronics and Electronic Devices	55,301	64,301	+ 9,000
	Program increase	....	....	+ 9,000
19	Night Vision Technology	33,807	35,807	+ 2,000
	Program increase	....	....	+ 2,000
20	Countermine Systems	25,068	38,068	+ 13,000
	Program increase	....	....	+ 5,000
	Program increase: Explosives detection technology	....	....	+ 8,000
25	Military Engineering Technology	63,409	77,409	+ 14,000
	Program increase	....	....	+ 14,000
27	Warfighter Technology	35,795	40,795	+ 5,000
	Program increase	....	....	+ 5,000
29	Warfighter Advanced Technology	46,973	56,973	+ 10,000
	Program increase	....	....	+ 10,000
30	Medical Advanced Technology	69,584	77,584	+ 8,000
	Program increase: Peer-reviewed military burn research program	....	....	+ 8,000
32	Weapons and Munitions Advanced Technology	57,663	69,663	+ 12,000
	Program increase: High energy laser research	....	....	+ 12,000
33	Combat Vehicle and Automotive Advanced Technology	113,071	120,571	+ 7,500
	Program increase	....	....	+ 7,500
40	Combating Terrorism—Technology Development	27,520	33,520	+ 6,000
	Program increase: Force protection radar development	....	....	+ 6,000
43	Electronic Warfare Technology	26,874	34,874	+ 8,000
	Program increase	....	....	+ 8,000
44	Missile and Rocket Advanced Technology	49,449	99,449	+ 50,000
	Program increase	....	....	+ 50,000
46	High Performance Computing Modernization Program	177,159	222,159	+ 45,000
	Program increase	....	....	+ 45,000
50	Environmental Quality Technology Demonstrations	10,727	15,727	+ 5,000
	Program increase	....	....	+ 5,000
51	Military Engineering Advanced Technology	20,145	30,145	+ 10,000
	Program increase	....	....	+ 5,000
	Program increase: Natural gas research	....	....	+ 5,000
54	Army Missile Defense Systems Integration	10,347	24,347	+ 14,000
	Program increase	....	....	+ 14,000
56	Landmine Warfare and Barrier—Adv Dev	49,636	45,757	− 3,879
	Improving funds management: Test and evaluation funding ahead of need	....	....	− 3,879
60	Soldier Support and Survivability	6,258	301	− 5,957
	Restoring acquisition accountability: Rapid Equipping Force non-base budget program	....	....	− 5,957
69	Soldier Systems—Advanced Development	22,194	23,194	+ 1,000
	Program increase	....	....	+ 1,000
72	Technology Maturation Initiatives	40,917	35,917	− 5,000
	Improving funds management: Prior year carryover ...	....	....	− 5,000
79	Joint Tactical Radio	9,861	4,546	− 5,315

[In thousands of dollars]

Line	Item	2015 budget estimate	Committee recommendation	Change from budget estimate
	Restoring acquisition accountability: Rifleman radio operational test delay	....	....	−5,315
83	Infantry Support Weapons	74,128	78,580	+4,452
	Program increase	....	....	+2,000
	Transfer modular handgun system: Army-requested from WTCV lines 18, 19, 22, 29	....	....	+1,500
	Transfer CROWS: Army-requested from PAA line 3	....	....	+952
88	Small Unmanned Ground Vehicle	40,374	9,050	−31,324
	Restoring acquisition accountability: EMD contract funding ahead of need	....	....	−31,324
91	Non-System Training Devices—Eng Dev	27,155	21,723	−5,432
	Budget documentation disparity: LVC–IA excess	....	....	−5,432
99	Logistics and Engineer Equipment—Eng Dev	48,339	46,539	−1,800
	Improving funds management: Prior year carryover ...	....	....	−4,800
	Program increase	....	....	+3,000
104	Army Tactical Command & Control Hardware & Software ..	163,643	131,899	−31,744
	Improving funds management: Tactical enhancement IOT&E funding ahead of need	....	....	−1,000
	Restoring acquisition accountability: TNOM lack of acquisition strategy	....	....	−30,744
106	General Fund Enterprise Business System [GFEBS]	15,700	21,155	+5,455
	Transfer GFEBS–SA: Army-requested from OPA line 102	....	....	+5,455
107	Firefinder	6,243	2,967	−3,276
	Improving funds management: L88 prior year carryover	....	....	−3,276
110	Information Technology Development	67,358	60,358	−7,000
	Improving funds management: Prior year execution ..	....	....	−7,000
111	Integrated Personnel and Pay System-Army [IPPS–A]	136,011	99,011	−37,000
	Restoring acquisition accountability: Inc II release 2.0 contract delay	....	....	−37,000
112	Armored Multi-Purpose Vehicle [AMPV]	230,210	219,259	−10,951
	Restoring acquisition accountability: Program management growth	....	....	−4,000
	Improving funds management: Test funding ahead of need	....	....	−6,951
116	Common Infrared Countermeasures [CIRCM]	77,570	53,570	−24,000
	Improving funds management: Prior year carryover due to contract delay	....	....	−24,000
118	WIN–T Increment 3—Full Networking	39,700	27,331	−12,369
	Improving funds management: Prior year carryover due to contract delay	....	....	−12,369
120	Joint Air-to-Ground Missile [JAGM]	88,866	74,966	−13,900
	Restoring acquisition accountability: Excess T&E funding due to EMD contract delay	....	....	−13,900
122	Army Integrated Air and Missile Defense [AIAMD]	214,099	224,099	+10,000
	Program increase: Cybersecurity research	....	....	+10,000
131	Threat Simulator Development	20,035	27,535	+7,500
	Program increase	....	....	+7,500
133	Major T&E Investment	62,580	67,580	+5,000
	Program increase: Cyber vulnerabilities research	....	....	+5,000
138	Army Test Ranges and Facilities	277,646	280,146	+2,500
	Program increase	....	....	+2,500
150	Munitions Standardization, Effectiveness and Safety	32,604	47,604	+15,000
	Program increase	....	....	+15,000
158	Apache Product Improvement Program	69,862	40,862	−29,000
	Improving funds management: Product development and support costs prior year carryover	....	....	−29,000
160	Chinook Product Improvement Program	37,407	27,707	−9,700
	Improving funds management: Prior year carryover ...	....	....	−9,700
167	Patriot Product Improvement	105,816	28,200	−77,616
	Restoring acquisition accountability: Only for near-term urgent improvements	....	....	−77,616
184	Guided Multiple-Launch Rocket System [GMLRS]	17,527	34,727	+17,200

[In thousands of dollars]

Line	Item	2015 budget estimate	Committee recommendation	Change from budget estimate
	Program increase: Insensitive munition rocket motor research	....	....	+17,200
187	Security and Intelligence Activities	12,368	....	−12,368
	Improving funds management: Prior year carryover ...	....	....	−12,368
199	RQ–7 UAV	7,297	12,297	+5,000
	Program increase	....	....	+5,000
202	End Item Industrial Preparedness Activities	48,442	62,442	+14,000
	Program increase: Army manufacturing technology program	....	....	+14,000

Improved Turbine Engine Program [ITEP].—The fiscal year 2016 budget request includes $51,164,000 for the Improved Turbine Engine Program [ITEP]. The Committee notes that contrary to previous budgets, the Army now plans to retain no less than two engine developers through milestone B to ensure competition in the program. The Committee believes that providing adequate and stable funding for ITEP sufficient to carry at least two engine developers is important to reduce risk, achieve appropriate technology maturity, and set the conditions for ultimate program success.

Patriot Modernization.—In February 2015, the Army initiated an analysis of alternatives [AoA] to determine the most cost effective strategy to upgrade or replace the current Patriot radar within the integrated air and missile defense architecture. The results of this AoA will directly affect the cost assessment of the Army's overall Patriot modernization strategy. The Committee finds it prudent to await the results of this AoA, which will be completed in September 2015, before continuing to invest significant funding to improve the current radar system.

Therefore, the Committee recommends deferring radar upgrades that could become obsolete in the near-term, and recommends funding only for urgent near-term improvements in fiscal year 2016, a reduction of $77,616,000 to the budget request.

Material Development, Characterization, and Computational Modeling.—The Committee recognizes the importance of evaluating materials and technologies, as well as designing and developing methodologies and models to enable enhanced lethality and survivability. Methods such as computational research allow for the development of models that predict the mechanical properties of materials that are used in research and development at the U.S. Army Research Laboratory [ARL]. These models and simulations, which are based on quantum mechanics, statistical mechanics principles and thermodynamic simulations, and are tested via cold spray synthesis and mechanical testing, provide a cost savings to the Department of Defense by simulating materials prior to testing them to ensure mechanical properties will work together. Additionally, these methodologies allow for the enhanced development of technologies such as lightweight armors, protective structures, kinetic energy active protection, ballistic shock and mine blast protection, helmet technologies to prevent traumatic brain injury and numerous other uses. The Committee encourages ARL to continue the utilization of computational modeling and simulations research to achieve greater cost savings.

Strategic Materials Research.—The Committee continues to recognize the importance of the Army Research Laboratory [ARL] in expanding research, education and technology development efforts in materials and metals processing science and engineering, aiming to transform the affordability, performance and environmental sustainability of strategic materials. The Committee further notes that ARL's Open Campus concept benefits the Army, the academic community and industry through collaboration involving ARL's research staff and facilities, leading to continued technological superiority for the U.S. warfighter. The Committee encourages the Army to consider accelerating expansion of its recently initiated Open Campus approach to its Materials and Manufacturing Science laboratories to benefit strategic materials research.

Optimization of Ammunition Manufacturing.—The Committee understands that the Army is the single manager for conventional ammunition for the Department of Defense and is responsible for ensuring effective life cycle management of conventional ammunition products. This includes development and optimization of ammunition manufacturing processes as well as development and integration of new materials. The Committee believes that the manufacturing of conventional ammunition could be assisted by automating and optimizing propellant production processes and integrating new materials. These processes and materials may reduce cost, increase ammunition performance and enhance soldier safety. The Committee encourages the Secretary of the Army to equip the national technical industrial base with new and emerging manufacturing processes and materials in order to achieve these goals.

Small Airborne Networking Radio.—The Committee is encouraged to see funding in the fiscal year 2016 budget to begin activities in support of the Small Airborne Networking Radio [SANR], which will provide simultaneous voice, data and video communications to all Army tactical aircraft. Given the long lead time to integrate radios into airborne platforms, the Committee is concerned by the timeline to deliver both SANR and the Small Airborne Link 16 Terminal [SALT] capabilities. A delay in procurement of next generation radios will require the Army's airborne platforms to rely on legacy radios that provide primarily voice connectivity. The Committee encourages the Army to continue development and procurement of SANR and SALT in order to fully leverage ground and airborne networks for increased situational awareness and connectivity.

Simulation Training.—The Committee acknowledges that simulation training is a cost-effective means by which military units can improve tactical decision-making skills and readiness in realistic scenarios otherwise found only in theater combat operations. The Committee encourages the Department to continue expansion of simulation training and seek the appropriate combination of government owned and operated simulators as well as contractor support in order to maximize efficiency and effectiveness.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY

Appropriations, 2015	$15,958,460,000
Budget estimate, 2016	17,885,916,000
Committee recommendation	18,236,645,000

The Committee recommends an appropriation of $18,236,645,000. This is $350,729,000 above the budget estimate.

COMMITTEE RECOMMENDED PROGRAM

The following table summarizes the budget estimate for this appropriation, the Committee recommendation, and the Committee recommended adjustments to the budget estimate:

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY			
	BASIC RESEARCH			
1	UNIVERSITY RESEARCH INITIATIVES	116,196	146,196	+30,000
2	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	19,126	19,126	....
3	DEFENSE RESEARCH SCIENCES	451,606	506,606	+55,000
	TOTAL, BASIC RESEARCH	586,928	671,928	+85,000
	APPLIED RESEARCH			
4	POWER PROJECTION APPLIED RESEARCH	68,723	86,723	+18,000
5	FORCE PROTECTION APPLIED RESEARCH	154,963	184,963	+30,000
6	MARINE CORPS LANDING FORCE TECHNOLOGY	49,001	57,001	+8,000
7	COMMON PICTURE APPLIED RESEARCH	42,551	42,551	....
8	WARFIGHTER SUSTAINMENT APPLIED RESEARCH	45,056	45,056	....
9	ELECTROMAGNETIC SYSTEMS APPLIED RESEARCH	115,051	115,051	....
10	OCEAN WARFIGHTING ENVIRONMENT APPLIED RESEARCH	42,252	42,252	....
11	JOINT NON-LETHAL WEAPONS APPLIED RESEARCH	6,119	6,119	....
12	UNDERSEA WARFARE APPLIED RESEARCH	123,750	152,350	+28,600
13	FUTURE NAVAL CAPABILITIES ADVANCED TECHNOLOGY DEV	179,686	179,686	....
14	MINE AND EXPEDITIONARY WARFARE APPLIED RESEARCH	37,418	37,418	....
	TOTAL, APPLIED RESEARCH	864,570	949,170	+84,600
	ADVANCED TECHNOLOGY DEVELOPMENT			
15	POWER PROJECTION ADVANCED TECHNOLOGY	37,093	37,093	....
16	FORCE PROTECTION ADVANCED TECHNOLOGY	38,044	38,044	....
17	ELECTROMAGNETIC SYSTEMS ADVANCED TECHNOLOGY	34,899	34,899	....
18	MARINE CORPS ADVANCED TECHNOLOGY DEMONSTRATION [ATD]	137,562	137,562	....
19	JOINT NON-LETHAL WEAPONS TECHNOLOGY DEVELOPMENT	12,745	12,745	....
20	FUTURE NAVAL CAPABILITIES ADVANCED TECHNOLOGY DEV	258,860	258,860	....
21	MANUFACTURING TECHNOLOGY PROGRAM	57,074	57,074	....
22	WARFIGHTER PROTECTION ADVANCED TECHNOLOGY	4,807	4,807	....
23	UNDERSEA WARFARE ADVANCED TECHNOLOGY	13,748	13,748	....
24	NAVY WARFIGHTING EXPERIMENTS AND DEMONSTRATIONS	66,041	66,041	....
25	MINE AND EXPEDITIONARY WARFARE ADVANCED TECHNOLOGY	1,991	4,491	+2,500
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	662,864	665,364	+2,500
	DEMONSTRATION & VALIDATION			
26	AIR/OCEAN TACTICAL APPLICATIONS	41,832	41,832	....
27	AVIATION SURVIVABILITY	5,404	5,404	....
28	DEPLOYABLE JOINT COMMAND AND CONTROL	3,086	3,086	....
29	AIRCRAFT SYSTEMS	11,643	11,643	....
30	ASW SYSTEMS DEVELOPMENT	5,555	5,555	....
31	TACTICAL AIRBORNE RECONNAISSANCE	3,087	3,087	....
32	ADVANCED COMBAT SYSTEMS TECHNOLOGY	1,636	1,636	....
33	SURFACE AND SHALLOW WATER MINE COUNTERMEASURES	118,588	96,388	−22,200
34	SURFACE SHIP TORPEDO DEFENSE	77,385	77,385	....
35	CARRIER SYSTEMS DEVELOPMENT	8,348	8,348	....
36	PILOT FISH	123,246	123,246	....
37	RETRACT LARCH	28,819	28,819	....
38	RETRACT JUNIPER	112,678	112,678	....
39	RADIOLOGICAL CONTROL	710	710	....
40	SURFACE ASW	1,096	1,096	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
41	ADVANCED SUBMARINE SYSTEM DEVELOPMENT	87,160	83,360	−3,800
42	SUBMARINE TACTICAL WARFARE SYSTEMS	10,371	10,371	....
43	SHIP CONCEPT ADVANCED DESIGN	11,888	11,888	....
44	SHIP PRELIMINARY DESIGN & FEASIBILITY STUDIES	4,332	4,332	....
45	ADVANCED NUCLEAR POWER SYSTEMS	482,040	482,040	....
46	ADVANCED SURFACE MACHINERY SYSTEMS	25,904	25,904	....
47	CHALK EAGLE	511,802	511,802	....
48	LITTORAL COMBAT SHIP [LCS]	118,416	88,416	−30,000
48A	FRIGATE DEVELOPMENT	....	30,000	+30,000
49	COMBAT SYSTEM INTEGRATION	35,901	35,901	....
50	OHIO REPLACEMENT PROGRAM	971,393	971,393	....
51	LITTORAL COMBAT SHIP [LCS] MISSION PACKAGES	206,149	193,179	−12,970
52	AUTOMATIC TEST AND RE–TEST	8,000	8,000	....
53	CONVENTIONAL MUNITIONS	7,678	7,678	....
54	MARINE CORPS ASSAULT VEHICLES	219,082	219,082	....
55	MARINE CORPS GROUND COMBAT/SUPPORT SYSTEM	623	623	....
56	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	18,260	18,260	....
57	COOPERATIVE ENGAGEMENT	76,247	76,247	....
58	OCEAN ENGINEERING TECHNOLOGY DEVELOPMENT	4,520	4,520	....
59	ENVIRONMENTAL PROTECTION	20,711	20,711	....
60	NAVY ENERGY PROGRAM	47,761	62,761	+15,000
61	FACILITIES IMPROVEMENT	5,226	5,226	....
62	CHALK CORAL	182,771	174,771	−8,000
63	NAVY LOGISTIC PRODUCTIVITY	3,866	3,866	....
64	RETRACT MAPLE	360,065	330,065	−30,000
65	LINK PLUMERIA	237,416	237,416	....
66	RETRACT ELM	37,944	37,944	....
67	LINK EVERGREEN	47,312	47,312	....
68	SPECIAL PROCESSES	17,408	17,408	....
69	NATO RESEARCH AND DEVELOPMENT	9,359	9,359	....
70	LAND ATTACK TECHNOLOGY	887	887	....
70	JOINT NONLETHAL WEAPONS TESTING	29,448	29,448	....
71	JOINT PRECISION APPROACH AND LANDING SYSTEMS	91,479	91,479	....
73	DIRECTED ENERGY AND ELECTRIC WEAPON SYSTEMS	67,360	40,222	−27,138
74	GERALD R. FORD CLASS NUCLEAR AIRCRAFT CARRIER	48,105	127,205	+79,100
75	REMOTE MINEHUNTING SYSTEM (RMS)	20,089	20,089	....
76	TACTICAL AIR DIRECTIONAL INFRARED COUNTERMEASURES	18,969	18,969	....
77	ASE SELF–PROTECTION OPTIMIZATION	7,874	7,874	....
78	MH–XX	5,298	5,298	....
79	LX (R)	46,486	75,486	+29,000
80	JOINT COUNTER RADIO CONTROLLED IED ELECTRONIC WARFARE	3,817	3,817	....
81	PRECISION STRIKE WEAPONS DEVELOPMENT PROGRAM	9,595	9,595	....
82	SPACE & ELECTRONIC WARFARE [SEW] ARCHITECTURE/ENGINE	29,581	25,246	−4,335
83	OFFENSIVE ANTI–SURFACE WARFARE WEAPON DEVELOPMENT	285,849	285,849	....
84	JOINT LIGHT TACTICAL VEHICLE ENGINEERING/MANUFACTURING	36,656	36,656	....
85	ASW SYSTEMS DEVELOPMENT—MIP	9,835	9,835	....
86	ELECTRONIC WARFARE DEVELOPMENT—MIP	580	580	....
	TOTAL, DEMONSTRATION & VALIDATION	5,024,626	5,039,283	+14,657
	ENGINEERING & MANUFACTURING DEVELOPMENT			
87	TRAINING SYSTEM AIRCRAFT	21,708	21,708	....
88	OTHER HELO DEVELOPMENT	11,101	11,101	....
89	AV–8B AIRCRAFT—ENG DEV	39,878	32,668	−7,210
90	STANDARDS DEVELOPMENT	53,059	53,059	....
91	MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT	21,358	21,358	....
92	AIR/OCEAN EQUIPMENT ENGINEERING	4,515	4,515	....
93	P–3 MODERNIZATION PROGRAM	1,514	1,514	....
94	WARFARE SUPPORT SYSTEM	5,875	5,875	....
95	TACTICAL COMMAND SYSTEM	81,553	73,553	−8,000
96	ADVANCED HAWKEYE	272,149	225,149	−47,000

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
97	H–1 UPGRADES	27,235	27,235	....
98	ACOUSTIC SEARCH SENSORS	35,763	35,763	....
99	V–22A	87,918	87,918	....
100	AIR CREW SYSTEMS DEVELOPMENT	12,679	12,679	....
101	EA–18	56,921	56,921	....
102	ELECTRONIC WARFARE DEVELOPMENT	23,685	23,685	....
103	VH–71A EXECUTIVE HELO DEVELOPMENT	507,093	507,093	....
104	NEXT GENERATION JAMMER [NGJ]	411,767	398,767	−13,000
104A	NEXT GENERATION JAMMER [NGJ] INCREMENT II	....	13,000	+13,000
105	JOINT TACTICAL RADIO SYSTEM—NAVY (JTRS–NAVY)	25,071	25,071	....
106	SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	443,433	398,933	−44,500
107	LPD–17 CLASS SYSTEMS INTEGRATION	747	747	....
108	SMALL DIAMETER BOMB [SDB]	97,002	69,502	−27,500
109	STANDARD MISSILE IMPROVEMENTS	129,649	129,649	....
110	AIRBORNE MCM	11,647	11,647	....
111	MARINE AIR GROUND TASK FORCE ELECTRONIC WARFARE	2,778	2,778	....
112	NAVAL INTEGRATED FIRE CONTROL–COUNTER AIR SYSTEMS ENG	23,695	23,695	....
113	UNMANNED CARRIER LAUNCHED AIRBORNE SURVEILLANCE AND STRIKE (UCLASS) SYSTEM	134,708	484,708	+350,000
114	ADVANCED ABOVE WATER SENSORS	43,914	43,914	....
115	SSN–688 AND TRIDENT MODERNIZATION	109,908	109,908	....
116	AIR CONTROL	57,928	57,928	....
117	SHIPBOARD AVIATION SYSTEMS	120,217	120,217	....
118	AIR AND MISSILE DEFENSE RADAR (AMDR) SYSTEM	241,754	241,754	....
119	NEW DESIGN SSN	122,556	147,556	+25,000
120	SUBMARINE TACTICAL WARFARE SYSTEM	48,213	60,213	+12,000
121	SHIP CONTRACT DESIGN/LIVE FIRE T&E	49,712	45,752	−3,960
122	NAVY TACTICAL COMPUTER RESOURCES	4,096	4,096	....
123	VIRGINIA PAYLOAD MODULE (VPM)	167,719	167,719	....
124	MINE DEVELOPMENT	15,122	15,122	....
125	LIGHTWEIGHT TORPEDO DEVELOPMENT	33,738	27,338	−6,400
126	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	8,123	8,123	....
127	PERSONNEL, TRAINING, SIMULATION, AND HUMAN FACTORS	7,686	7,686	....
128	JOINT STANDOFF WEAPON SYSTEMS	405	405	....
129	SHIP SELF DEFENSE (DETECT & CONTROL)	153,836	145,336	−8,500
130	SHIP SELF DEFENSE (ENGAGE: HARD KILL)	99,619	99,619	....
131	SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	116,798	116,798	....
132	INTELLIGENCE ENGINEERING	4,353	4,353	....
133	MEDICAL DEVELOPMENT	9,443	9,443	....
134	NAVIGATION/ID SYSTEM	32,469	32,469	....
135	JOINT STRIKE FIGHTER (JSF)—EMD	537,901	537,901	....
136	JOINT STRIKE FIGHTER (JSF)	504,736	504,736	....
137	JSF FOLLOW ON DEVELOPMENT–MARINE CORPS	59,265	20,798	−38,467
138	JSF FOLLOW ON DEVELOPMENT–NAVY	47,579	21,244	−26,335
139	INFORMATION TECHNOLOGY DEVELOPMENT	5,914	5,914	....
140	INFORMATION TECHNOLOGY DEVELOPMENT	89,711	94,711	+5,000
141	CH–53K	632,092	632,092	....
142	SHIP TO SHORE CONNECTOR (SSC)	7,778	7,778	....
143	JOINT AIR-TO-GROUND MISSILE [JAGM]	25,898	25,898	....
144	MULTI-MISSION MARITIME AIRCRAFT [MMA]	247,929	143,813	−104,116
144A	MULTI-MISSION MARITIME AIRCRAFT [MMA] INCREMENT 3	....	104,116	+104,116
145	DDG–1000	103,199	103,199	....
146	TACTICAL COMMAND SYSTEM—MIP	998	998	....
147	TACTICAL CRYPTOLOGIC SYSTEMS	17,785	17,785	....
148	SPECIAL APPLICATIONS PROGRAM	35,905	35,905	....
	TOTAL, ENGINEERING & MANUFACTURING DEVELOPMENT	6,308,800	6,482,928	+174,128
	RDT&E MANAGEMENT SUPPORT			
149	THREAT SIMULATOR DEVELOPMENT	30,769	30,769	....
150	TARGET SYSTEMS DEVELOPMENT	112,606	77,552	−35,054
151	MAJOR T&E INVESTMENT	61,234	61,234	....
152	JOINT THEATER AIR AND MISSILE DEFENSE ORGANIZATION	6,995	6,995	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
153	STUDIES AND ANALYSIS SUPPORT—NAVY	4,011	4,011	....
154	CENTER FOR NAVAL ANALYSES	48,563	48,563	....
155	NEXT GENERATION FIGHTER	5,000	5,000	....
157	TECHNICAL INFORMATION SERVICES	925	925	....
158	MANAGEMENT, TECHNICAL & INTERNATIONAL SUPPORT	78,143	78,143	....
159	STRATEGIC TECHNICAL SUPPORT	3,258	3,258	....
160	RDT&E SCIENCE AND TECHNOLOGY MANAGEMENT	76,948	76,948	....
161	RDT&E SHIP AND AIRCRAFT SUPPORT	132,122	132,122	....
162	TEST AND EVALUATION SUPPORT	351,912	351,912	....
163	OPERATIONAL TEST AND EVALUATION CAPABILITY	17,985	17,985	....
164	NAVY SPACE AND ELECTRONIC WARFARE [SEW] SUPPORT	5,316	5,316	....
165	SEW SURVEILLANCE/RECONNAISSANCE SUPPORT	6,519	6,519	....
166	MARINE CORPS PROGRAM WIDE SUPPORT	13,649	13,649	....
	TOTAL, RDT&E MANAGEMENT SUPPORT	955,955	920,901	−35,054
	OPERATIONAL SYSTEMS DEVELOPMENT			
174	STRATEGIC SUB & WEAPONS SYSTEM SUPPORT	107,039	107,039	....
175	SSBN SECURITY TECHNOLOGY PROGRAM	46,506	46,506	....
176	SUBMARINE ACOUSTIC WARFARE DEVELOPMENT	3,900	4,700	+800
177	NAVY STRATEGIC COMMUNICATIONS	16,569	16,569	....
178	RAPID TECHNOLOGY TRANSITION (RTT)	18,632	11,132	−7,500
179	F/A–18 SQUADRONS	133,265	134,765	+1,500
179	FLEET TELECOMMUNICATIONS (TACTICAL)	62,867	51,067	−11,800
180	SURFACE SUPPORT	36,045	36,045	....
181	TOMAHAWK AND TOMAHAWK MISSION PLANNING CENTER [TMPC]	25,228	25,228	....
182	INTEGRATED SURVEILLANCE SYSTEM	54,218	54,218	....
183	AMPHIBIOUS TACTICAL SUPPORT UNITS	11,335	11,335	....
184	GROUND/AIR TASK ORIENTED RADAR	80,129	65,629	−14,500
185	CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	39,087	34,329	−4,758
186	CRYPTOLOGIC DIRECT SUPPORT	1,915	1,915	....
187	ELECTRONIC WARFARE [EW] READINESS SUPPORT	46,609	46,609	....
188	HARM IMPROVEMENT	52,708	16,164	−36,544
189	TACTICAL DATA LINKS	149,997	142,497	−7,500
190	SURFACE ASW COMBAT SYSTEM INTEGRATION	24,460	24,460	....
191	MK–48 ADCAP	42,206	47,706	+5,500
192	AVIATION IMPROVEMENTS	117,759	117,759	....
194	OPERATIONAL NUCLEAR POWER SYSTEMS	101,323	101,323	....
195	MARINE CORPS COMMUNICATIONS SYSTEMS	67,763	82,763	+15,000
196	COMMON AVIATION COMMAND AND CONTROL SYSTEM	13,431	13,431	....
197	MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYSTEMS	56,769	56,769	....
199	MARINE CORPS COMBAT SERVICES SUPPORT	20,729	20,729	....
200	USMC INTELLIGENCE/ELECTRONIC WARFARE SYSTEMS [MIP]	13,152	13,152	....
201	AMPHIBIOUS ASSAULT VEHICLE	48,535	48,535	....
202	TACTICAL AIM MISSILES	76,016	36,016	−40,000
203	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM)	32,172	32,172	....
208	SATELLITE COMMUNICATIONS (SPACE)	53,239	47,439	−5,800
209	CONSOLIDATED AFLOAT NETWORK ENTERPRISE SERVICES	21,677	21,677	....
210	INFORMATION SYSTEMS SECURITY PROGRAM	28,102	28,102	....
211	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	294	294	....
213	NAVY METEOROLOGICAL AND OCEAN SENSORS-SPACE [METOC]	599	599	....
214	JOINT MILITARY INTELLIGENCE PROGRAMS	6,207	6,207	....
215	TACTICAL UNMANNED AERIAL VEHICLES	8,550	8,550	....
216	UAS INTEGRATION AND INTEROPERABILITY	41,831	41,831	....
217	DISTRIBUTED COMMON GROUND SYSTEMS/SURFACE SYSTEMS	1,105	1,105	....
218	DISTRIBUTED COMMON GROUND SYSTEMS/SURFACE SYSTEMS	33,149	23,149	−10,000
219	RQ–4 UAV	227,188	227,188	....
227	RQ–4 MODERNIZATION	150,854	150,854	....
220	MQ–8 UAV	52,770	52,770	....
221	RQ–11 UAV	635	635	....
222	RQ–7 UAV	688	688	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
223	SMALL (LEVEL 0) TACTICAL UAS (STUASLO)	4,647	4,647	....
224	RQ–21A	6,435	6,435	....
225	MULTI-INTELLIGENCE SENSOR DEVELOPMENT	49,145	39,645	− 9,500
226	UNMANNED AERIAL SYSTEMS (UAS) PAYLOADS [MIP]	9,246	9,246	....
227	MODELING AND SIMULATION SUPPORT	4,757	4,757	....
228	DEPOT MAINTENANCE (NON–IF)	24,185	24,185	....
231	MARITIME TECHNOLOGY (MARITECH)	4,321	4,321	....
	TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	2,229,988	2,104,886	− 125,102
9999	CLASSIFIED PROGRAMS	1,252,185	1,402,185	+ 150,000
	TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY	17,885,916	18,236,645	+ 350,729

COMMITTEE RECOMMENDED ADJUSTMENTS

The following table details the adjustments recommended by the Committee:

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
1	University Research Initiatives	116,196	146,196	+ 30,000
	Basic research program increase	....	....	+ 30,000
3	Defense Research Sciences	451,606	506,606	+ 55,000
	Authorization adjustment: Basic research program increase	....	....	+ 55,000
4	Power Projection Applied Research	68,723	86,723	+ 18,000
	Program increase	....	....	+ 18,000
5	Force Protection Applied Research	154,963	184,963	+ 30,000
	Program increase	....	....	+ 5,000
	Program increase: Alternative energy research	....	....	+ 25,000
6	Marine Corps Landing Force Technology	49,001	57,001	+ 8,000
	Program increase: Cyber research	....	....	+ 8,000
12	Undersea Warfare Applied Research	123,750	152,350	+ 28,600
	Authorization adjustment: Accelerate undersea warfare research	....	....	+ 18,600
	Program increase: Underwater energetics research	....	....	+ 10,000
25	Mine and Expeditionary Warfare Advanced Technology	1,991	4,491	+ 2,500
	Program increase	....	....	+ 2,500
33	Surface and Shallow Water Mine Countermeasures	118,588	96,388	− 22,200
	Restoring acquisition accountability: MHU change to acquisition strategy	....	....	− 9,300
	Maintain program affordability: LDUUV product development	....	....	− 12,900
41	Advanced Submarine System Development	87,160	83,360	− 3,800
	Maintain program affordability: Universal Launch and Recovery Module	....	....	− 3,800
48	Littoral Combat Ship [LCS]	118,416	88,416	− 30,000
	Restoring acquisition accountability: Frigate development—transfer to line 48A	....	....	− 30,000
48A	Frigate Development	....	30,000	+ 30,000
	Restoring acquisition accountability: Frigate development—transfer from line 48	....	....	+ 30,000
51	LCS Mission Modules	206,149	193,179	− 12,970
	Restoring acquisition accountability: Remove Anti-submarine warfare [ASW] operational assessment of non-requirements-compliant developmental asset	....	....	− 12,970
60	Navy Energy Program	47,761	62,761	+ 15,000
	Program increase	....	....	+ 15,000
62	CHALK CORAL	182,771	174,771	− 8,000
	Classified program adjustment	....	....	− 8,000
64	RETRACT MAPLE	360,065	330,065	− 30,000

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	Classified program adjustment	....	....	−30,000
73	Directed Energy and Electric Weapon Systems	67,360	40,222	−27,138
	Restoring acquisition accountability: Long lead materials for non-competitive test event in fiscal year 2019	....	....	−27,138
74	Gerald R. Ford Class Nuclear Aircraft Carrier (CVN 78–80)	48,105	127,205	+79,100
	Authorization adjustment: Full ship shock trials for CVN–78	....	....	+79,100
79	LX (R)	46,486	75,486	+29,000
	Adjustment adjustment: Accelerate LX (R)	....	....	+29,000
82	Space and Electronic Warfare [SEW] Architecture/Engineering Support	29,581	25,246	−4,335
	Restoring acquisition accountability: Project 2140 program adjustment	....	....	−4,335
89	AV–8B Aircraft—Eng Dev	39,878	32,668	−7,210
	Maintain program affordability: Final Fit AIM–120C new start lack of full funding	....	....	−7,210
95	Tactical Command System	81,553	73,553	−8,000
	Restoring acquisition accountability: Project 2213 Joint Mission Planning System software development contract award delay	....	....	−8,000
96	Advanced Hawkeye	272,149	225,149	−47,000
	Maintain program affordability: Defer Delta System/Software Configuration 4 new starts due to aerial refueling cost and effort	....	....	−26,100
	Restoring acquisition accountability: Defer Delta System/ Software Configuration 5 non-Counter Electronic Attack growth	....	....	−30,900
	Program increase: Radar development	....	....	+10,000
104	Next Generation Jammer [NGJ]	411,767	398,767	−13,000
	Next Generation Jammer Increment II: Transfer to line 104A	....	....	−13,000
104A	Next Generation Jammer [NGJ] Inc II		13,000	+13,000
	Next Generation Jammer Increment II: Transfer from line 104	....	....	+13,000
106	Surface Combatant Combat System Engineering	443,433	398,933	−44,500
	Restoring acquisition accountability: ACB 16 post-Preliminary Design Review requirements growth	....	....	−28,000
	Restoring acquisition accountability: AEGIS Combat System Engineering Development Site unjustified growth	....	....	−10,000
	Maintain program affordability: Far-Term Interoperability Improvement Plan lack of justification	....	....	−6,500
108	Small Diameter Bomb [SDB]	97,002	69,502	−27,500
	Restoring acquisition accountability: Joint Miniature Munitions Bomb Rack Unit contract award delay	....	....	−3,500
	Maintain program affordability: Retain previous SDB Increment II integration schedule to reduce risk of H14+ integration schedule	....	....	−24,000
113	Unmanned Carrier Launched Airborne Surveillance and Strike [UCLASS] System	134,708	484,708	+350,000
	Program increase: Competitive air vehicle risk reduction activities	....	....	+300,000
	Program increase: Government and industry source selection preparation	....	....	+50,000
119	New Design SSN	122,556	147,556	+25,000
	Program increase: Virginia Class Submarine hydrodynamic enhancements	....	....	+25,000
120	Submarine Tactical Warfare System	48,213	60,213	+12,000
	Authorization adjustment: Accelerate submarine combat and weapon system modernization	....	....	+12,000
121	Ship Contract Design/ Live Fire T&E	49,712	45,752	−3,960
	Improving funds management: Project 3108 dual band radar replacement integration early to need	....	....	−6,960

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	Restoring acquisition accountability: Non-recurring engineering for Special Operations Forces capabilities for integration into Mobile Landing Platform—Afloat Forward Staging Base	....	....	+3,000
125	Lightweight Torpedo Development	33,738	27,338	−6,400
	Restoring acquisition accountability: HAAWC restructured program delays	....	....	−6,400
129	Ship Self Defense (Detect & Control)	153,836	145,336	−8,500
	Restoring acquisition accountability: Fire Control Loop Improvement Project Phase 2 unjustified program scope expansion	....	....	−8,500
137	Joint Strike Fighter Follow On Development—Marine Corps	59,265	20,798	−38,467
	Restoring acquisition accountability: FOD excessive growth	....	....	−38,467
138	Joint Strike Fighter Follow On Development—Navy	47,579	21,244	−26,335
	Restoring acquisition accountability: FOD excessive growth	....	....	−26,335
140	Information Technology Development	89,711	94,711	+5,000
	Program increase	....	....	+5,000
144	Multi-mission Maritime Aircraft [MMA]	247,929	143,813	−104,116
	Increment 3: Transfer to line 144A	....	....	−104,116
144A	Multi-mission Maritime Aircraft [MMA] Increment 3	....	104,116	+104,116
	Increment 3: Transfer from line 144	....	....	+104,116
150	Target Systems Development	112,606	77,552	−35,054
	Program termination: Parrotfish	....	....	−4,054
	Restoring acquisition accountability: GQM–173A acquisition strategy	....	....	−31,000
176	Submarine Acoustic Warfare Development	3,900	4,700	+800
	Authorization adjustment: Accelerate combat rapid attack weapon	....	....	+800
178	Rapid Technology Transition [RTT]	18,632	11,132	−7,500
	Maintain program affordability: Unjustified growth	....	....	−7,500
179	F/A–18 Squadrons	133,265	134,765	+1,500
	Program increase: Noise reduction research	....	....	+1,500
181	Fleet Telecommunications (Tactical)	62,867	51,067	−11,800
	Budget documentation disparity: JALN–M demonstration lack of justification	....	....	−11,800
186	Ground/Air Task Oriented Radar [G/ATOR]	80,129	65,629	−14,500
	Maintain program affordability: Block II test assets early to need	....	....	−14,500
187	Consolidated Training Systems Development	39,087	34,329	−4,758
	Improving funds management: Tactical Combat Training Systems [TCTS] funds carryover	....	....	−4,758
190	HARM Improvement	52,708	16,164	−36,544
	Restoring acquisition accountability: AARGM–ER acquisition strategy	....	....	−36,544
191	Tactical Data Links	149,997	142,497	−7,500
	Improving funds management: Network Tactical Common Data Link contract award delays	....	....	−7,500
193	MK–48 ADCAP	42,206	47,706	+5,500
	Authorization adjustment: Accelerate torpedo upgrades	....	....	+5,500
196	Marine Corps Communications Systems	67,763	82,763	+15,000
	Program increase: Radar enhancements	....	....	+15,000
202	Tactical AIM Missiles	76,016	36,016	−40,000
	Restoring acquisition accountability: Block II scope expansion	....	....	−40,000
208	Satellite Communications (SPACE)	53,239	47,439	−5,800
	Budget documentation disparity: JALN–M demonstration lack of justification	....	....	−5,800
218	Distributed Common Ground/Surface Systems	33,149	23,149	−10,000
	Restoring acquisition accountability: Defer DCGS–N Increment II growth pending completion of acquisition/ resourcing strategy	....	....	−10,000
225	Multi-Intelligence Sensor Development	49,145	39,645	−9,500

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
999	Restoring acquisition accountability: P–8 Quick Reaction Capability scope expansion	....	....	−9,500
	Classified Programs	1,252,185	1,402,185	+150,000
	Classified program adjustment	....	....	+150,000

Navy Budget Justification Materials.—The Committee notes the marked improvements to the Navy's congressional budget justification documents, as requested in Senate Report 113–211, and looks forward to the Navy continuing its emphasis to provide greater level of detail and clarity in future submissions. In addition to examining the budget justification documents submitted in accordance with the Financial Management Regulations, the Committee during its budget review relies heavily on supplemental briefing materials and information. The Committee finds the quality of these supplemental briefing materials to be inconsistent among program offices, often omitting basic information required for program reviews, or failing to amplify information provided in the congressional budget justification documents. In addition, the Committee finds the response time for additionally requested information excessive, allowing insufficient time for further review. Therefore, the Committee urges the Secretary of the Navy to work with the congressional defense committees to improve the timeliness and quality of information provided in support of future budget submissions.

Virginia Payload Module [VPM].—The fiscal year 2016 budget request includes $167,719,000 to continue development of the Virginia Payload Module in support of production beginning in fiscal year 2019. According to the Navy, the VPM concept was proposed to compensate for the decline in strike capacity precipitated by the planned retirement of converted *Ohio* class guided missile submarines scheduled in the mid- to late- 2020s. The Committee recommends full funding of the Navy's request; however, the Committee remains concerned with the program's stability, cost and schedule pressures. Therefore, the Committee amends the reporting requirement previously included in Division C of the Joint Explanatory Statement accompanying the Consolidated Appropriations Act, 2014 (Public Law 113–76), to a quarterly submission, and directs the Secretary of Navy to include in this quarterly report planned and actual performance of program metrics identified in the March 2015 report provided to the congressional defense committees.

In addition, the fiscal year 2016 budget request includes $12,900,000 in program element 0603502N and $3,800,000 in program element 0603561N for the development and evaluation of non-strike payloads for possible insertion into VPM. The Committee finds this inconsistent with the VPM concept as proposed, and is concerned with the technical risk this adds to delivering the VPM on cost and schedule. Therefore, the Committee recommends no funding for these specific efforts.

Directed Energy.—The fiscal year 2016 budget request includes $67,360,000 for a sea-based demonstration of an electromagnetic railgun on board a Joint High Speed Vessel in fiscal year 2016 and

to purchase materials for a second, more complex sea-based demonstration in fiscal year 2019. The Committee continues its strong support for an electromagnetic railgun program, but remains concerned with the Navy's acquisition approach to this developmental program that has limited competition for major components more than 5 years before the program is scheduled to enter the formal Department of Defense acquisition process. The Committee notes that the proposed complex fiscal year 2019 sea-based demonstration continues to drive the Navy towards a single material solution. The Committee does not agree with this acquisition approach and recommends no funds for the fiscal year 2019 sea-based demonstration.

E2–D Advanced Hawkeye.—The fiscal year 2016 budget request includes $272,149,000 for continued modernization of the E2–D Advanced Hawkeye airborne early warning aircraft, an increase of $95,449,000 over amounts appropriated in fiscal year 2015. The Committee notes that the budget request includes funds for the development of three distinct software configurations in fiscal year 2016, each consisting of multiple efforts. The Committee further notes that the most costly effort within in these software configuration upgrades is for the development of an aerial refueling capability. The E2–D Hawkeye will enter full rate production in fiscal year 2016, and received congressional authority to enter into a multi-year procurement contract in fiscal year 2014, which requires stable program requirements and configurations. Developing, testing and integrating an aerial refueling capability adds technical risk to the program, and will likely result in significant additional costs to modernization efforts.

The Committee believes that executing the development of an aerial refueling capability in concert with a multitude of other, lower priority upgrades is technically and fiscally risky, and recommends that the Navy limit its fiscal year 2016 efforts to high priority upgrades only, specifically the development of aerial refueling and counter electronic attack capabilities. Therefore, the Committee does not recommend funding for fiscal year 2016 new start efforts to be fielded concurrently with an aerial refueling capability in software configuration 4, a reduction of $26,100,000 from the request, and recommends that funds appropriated for software configuration 5 be invested towards counter electronic attack only, a reduction of $30,900,000 from the request. The Committee recommends full funding of the Navy's aerial refueling capability, and recommends an additional $10,000,000 only for radar development to overcome limitations of existing capabilities.

Further, the Committee directs the Assistant Secretary of the Navy for Research, Development and Acquisition to submit with the fiscal year 2017 budget submission cost estimates for each planned E2–D Hawkeye Delta System/Software Configuration Build that delineate the content of each configuration, as well as total development, test and integration costs by effort within each configuration. In addition, the Assistant Secretary of the Navy for Research, Development and Acquisition is directed to identify any unfunded requirements for improved airborne surveillance and battle management command control systems to protect against sophisticated adversaries with anti-ship cruise and ballistic missiles.

Next Generation Jammer [NGJ] Increment II.—The fiscal year 2016 budget request includes $13,000,000 to initiate Increment II of the Next Generation Jammer. The Committee recommends fully funding this request and establishing a separate budget line to increase program visibility and accountability. The Committee directs the Navy to follow this structure in future budget submissions.

Unmanned Carrier-Launched Airborne Surveillance and Strike [UCLASS] System.—The fiscal year 2016 request includes $134,708,000 for the UCLASS program to continue development of the shipboard integration and command and control system segments as previously scheduled. The Committee notes that the request includes $20,100,000 for source selection activities of the air segment to support an air vehicle development contract award in fiscal year 2017, but no funding to continue technology risk reduction activities for the air vehicle in fiscal year 2016 in support of that contract award.

With submission of the fiscal year 2016 request, the Navy announced a delay to the UCLASS program pending completion of a Department of Defense-led strategic portfolio review that is intended to inform the fiscal year 2017 budget request. This proposal will result in an additional 1½ year delay in the establishment of an early operational UCLASS capability. According to senior Navy leadership, this delay risks the Navy "losing ground" in developing unmanned aviation from an aircraft carrier. Further, the Committee questions the strategy of dissolving industry teams under contract for competitive air vehicle risk reduction activities prior to awarding a technology development contract. Therefore, the Committee recommends $300,000,000 only for continued competitive air vehicle risk reduction activities. In addition, the Committee recommends $50,000,000 for Government and industry preparation of source selection and development contract award activities.

As previously stated in Senate Report 113–211, the Committee believes that stable requirements are critical to ensuring program success, and restates its direction to the Secretary of the Navy to obtain Joint Requirements Oversight Council approval of the UCLASS capability development document [CDD] prior to issuing the final Request for Proposals for the air segment.

Multi-mission Aircraft Increment III.—The fiscal year 2016 budget request includes $104,116,000 for Increment III of the P–8 Multi-mission Aircraft. The Committee recommends fully funding this request and establishing a separate budget line to increase program visibility and accountability. The Committee directs the Navy to follow this structure in future budget submissions.

Small Business Strategies.—The Committee notes that the Assistant Secretary of the Navy for Research, Development and Acquisition [ASN (RD&A)] in January 2015 directed Program Executive Offices and Heads of Contract Activities to formulate small business strategies that incorporate and promote small business participation across contracts under their purview. The Committee further notes that ASN (RD&A) directed the Small Business Innovation Research/Small Business Technology Transfer [SBIR/STTR] program to focus on improving program transitions to yield a greater return on investment from Navy research and development funds. The Committee believes that a robust small business indus-

trial base is essential to maintaining a technological edge over potential adversaries and therefore directs ASN (RD&A) to provide, with the fiscal year 2017 budget submission, an update on the implementation of measures taken to promote small business participation in Navy acquisition.

Readiness of Aging Air Vehicle Fleet.—The Committee is concerned about the critical funding and maintenance challenges the Navy faces in maintaining the readiness of its air vehicle fleet and extending the useful life of aging aircraft. The Committee recognizes the valuable role university affiliated research institutions offer to the Department of Defense to address these challenges with the ability to respond rapidly to new technology requirements and address shortages of qualified scientists and engineers caused by employee turnover within Department of Defense organizations. The Committee recommends an additional $30,000,000 for basic university research, and encourages the Navy to support academic institutions with strong capabilities in aviation and aerospace structures and materials testing and evaluation to enhance readiness of Navy and Department of Defense air vehicle fleets.

Cyber Security and Cloud Computing.—The Committee recognizes progress being made in developing new and practical approaches for cyber security and secure cloud computing to protect critical cyber systems and reduce loss of classified information to potential adversaries. The Committee understands that encryption technologies contribute towards these goals. Therefore, the Committee encourages the Navy and Marine Corps to continue research into encryption technologies and to focus on implementation, integration and software tooling support.

Navy Alternative Energy Research.—As in previous years, the Committee recommends an increase for Navy alternative energy research. The Committee notes the fiscal and operational value of investing in alternative energy research, and encourages the Navy to expand ocean renewable energy testing, research, develop and deploy maritime security systems, support at-sea surveillance and communications systems and explore opportunities to reduce the cost of energy and increase energy security at coastal Department of Defense facilities. Further, the Committee encourages the Navy to invest in renewable energy demonstration activities relating to Department of Defense facilities and activities in coordination with other Federal agencies and entities.

Power Generation and Storage Research.—The Committee notes the importance of lithium-ion batteries to the Department of Defense and is concerned with safety incidents that limit their operational fielding. Therefore, the Committee believes that the development and qualification of technologies to reduce the risk of thermal runaway in lithium-ion batteries should be prioritized within energy storage research.

Smart Sensing Technology.—The Committee recognizes the need to continue improving intrusion detection and security screening capabilities by leveraging advanced and reliable non-intrusive technologies. The Committee notes advancements in the area of nanotechnology that offer the potential use in developing sensors to detect biohazards, explosives, propellants and other threats. There-

fore, the Committee encourages the Navy to invest in advanced anti-intrusion detection technologies.

U.S. Marine Corps Asset Lifecycle Management.—The Committee understands the U.S. Marine Corps is reducing costs associated with routine vehicle maintenance through research and development in vehicle remanufacturing and monitoring. The Committee encourages the Office of Naval Research to continue its investment in these areas.

Interdisciplinary Expeditionary Cyber Research.—The Committee notes the significant investment by the Department of Defense in basic cyber research in recent years. However, the Committee is concerned that this research does not consider the inter-disciplinary nature of cyber systems and focuses on the strategic level while excluding the consideration of the role of human behavior. The Committee encourages the Office of Naval Research to develop a multi-disciplinary science and technology strategy addressing dynamic cyber defense and tactical cyberspace operations. Further, the Committee encourages the Navy to examine prototyping and developing technology capabilities for expeditionary cyberspace operations.

Underwater Energetics Research.—The Committee recommends an additional $10,000,000 for the Office of Naval Research to support development of advanced warhead and explosives concepts for undersea warfare, and an assessment of global developments in energetic materials.

Arctic Center of Excellence.—The Committee notes that the United States has a vested interest in the security and stability of the Arctic region. The Committee believes that with the Arctic becoming increasingly accessible and more broadly transited in the coming decades by both Arctic and non-Arctic nations, it is imperative that the United States be prepared to operate in the Arctic Region when needed. The Committee is pleased that the Department of Defense is enhancing its focus on the Arctic region by releasing its Arctic Strategy in November 2013 and that the Department of the Navy released its updated Arctic Roadmap in February 2014. The Committee believes it is important for the Department to continue to invest in training exercises, partnerships, infrastructure, and capabilities necessary to meet strategic objectives in the Arctic region and to support potential operations. The Committee encourages the Department of Defense, and the Department of the Navy in particular, to continue research efforts to develop security capabilities and strategies for the Arctic region.

The Committee notes that the Navy's Arctic Roadmap includes a plan to identify the requirements for an Arctic Center of Excellence in fiscal year 2015. The Committee directs the Navy to complete identification of these requirements and to report to the Committee on these requirements and the Navy's plans not later than December 31, 2015. The Committee encourages the Navy to coordinate with other Government agencies, academic institutions, and existing polar research efforts that can provide support and promote United States security interests.

Monitoring of Sea Ice in the Arctic Basin.—The Committee notes that as an Arctic nation extending through the State of Alaska, United States national security interests extend into the entire

Arctic region. The Committee encourages the Department of Defense, working with the Office of Naval Research and its academic partners, to expand its understanding of the Arctic region's physical environment. The Committee recognizes that such data could be key to the development of strategies for national security, natural resource protection and efficient commerce in the Arctic region.

Predictive Analytics.—The Committee notes that equipment failures and performance degradation on naval platforms drive unplanned downtime, reduce operational availability and increase the cost of maintenance. The Committee understands there are available proven commercial tools that leverage equipment sensor data and similarity-based modeling to remotely predict and diagnose mechanical issues well ahead of time, allowing equipment failure to be prevented through planned maintenance activities. The Committee encourages the Department of the Navy to seek opportunities to conduct field trials of these commercially available remote monitoring and diagnostic systems to determine if they can help increase readiness and reduce maintenance costs.

Land-based Power Generation Test Bed.—The Committee notes that the Navy is developing advanced ship electric power systems to support high power weapons and sensors, and to improve ship energy efficiency. An important element for the operation of high power weapons and sensors is the energy magazine concept that would integrate and expand ship power distribution circuits, power conversion, and energy storage. The Committee believes a cost-effective approach to maturing power generation technology is the development of a land-based representative integrated ship power system to include power generation, energy storage, power distribution, and power loads, upon which high power weapons and sensors could be tested. The Committee encourages the Secretary of the Navy to perform a cost-benefit analysis to determine the total cost savings of such a land-based power generation test bed.

Free Space Optical Communication Technology Demonstrator.— The Committee understands there is a potential need for new and emerging compact and affordable Free Space Optical Communication [FSOC] technologies for tactical high bandwidth line-of sight data link needs in multiple environments. The Committee encourages the Secretary of the Navy to asses FSOC technology for use by the Marine Corps that has been demonstrated on multiple DOD applications, can be implemented from ground, air or sea-borne platforms, and is completely eye-safe.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, AIR FORCE

Appropriations, 2015	$23,643,983,000
Budget estimate, 2016	26,473,669,000
Committee recommendation	25,874,116,000

The Committee recommends an appropriation of $25,874,116,000. This is $599,553,000 below the budget estimate.

COMMITTEE RECOMMENDED PROGRAM

The following table summarizes the budget estimate for this appropriation, the Committee recommendation, and the Committee recommended adjustments to the budget estimate:

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	RESEARCH, DEVELOPMENT, TEST & EVAL, AIR FORCE			
	BASIC RESEARCH			
1	DEFENSE RESEARCH SCIENCES	329,721	384,721	+55,000
2	UNIVERSITY RESEARCH INITIATIVES	141,754	141,754	....
3	HIGH ENERGY LASER RESEARCH INITIATIVES	13,778	13,778	....
	TOTAL, BASIC RESEARCH	485,253	540,253	+55,000
	APPLIED RESEARCH			
4	MATERIALS	125,234	125,234	....
5	AEROSPACE VEHICLE TECHNOLOGIES	123,438	123,438	....
6	HUMAN EFFECTIVENESS APPLIED RESEARCH	100,530	100,530	....
7	AEROSPACE PROPULSION	182,326	187,326	+5,000
8	AEROSPACE SENSORS	147,291	147,291	....
9	SPACE TECHNOLOGY	116,122	116,122	....
10	CONVENTIONAL MUNITIONS	99,851	99,851	....
11	DIRECTED ENERGY TECHNOLOGY	115,604	115,604	....
12	DOMINANT INFORMATION SCIENCES AND METHODS	164,909	170,909	+6,000
13	HIGH ENERGY LASER RESEARCH	42,037	42,037	....
	TOTAL, APPLIED RESEARCH	1,217,342	1,228,342	+11,000
	ADVANCED TECHNOLOGY DEVELOPMENT			
14	ADVANCED MATERIALS FOR WEAPON SYSTEMS	37,665	47,665	+10,000
15	SUSTAINMENT SCIENCE AND TECHNOLOGY (S&T)	18,378	18,378	....
16	ADVANCED AEROSPACE SENSORS	42,183	42,183	....
17	AEROSPACE TECHNOLOGY DEV/DEMO	100,733	100,733	....
18	AEROSPACE PROPULSION AND POWER TECHNOLOGY	168,821	178,821	+10,000
19	ELECTRONIC COMBAT TECHNOLOGY	47,032	47,032	....
20	ADVANCED SPACECRAFT TECHNOLOGY	54,897	64,897	+10,000
21	MAUI SPACE SURVEILLANCE SYSTEM [MSSS]	12,853	12,853	....
22	HUMAN EFFECTIVENESS ADVANCED TECHNOLOGY DEVELOPMENT	25,448	25,448	....
23	CONVENTIONAL WEAPONS TECHNOLOGY	48,536	43,036	−5,500
24	ADVANCED WEAPONS TECHNOLOGY	30,195	37,195	+7,000
25	MANUFACTURING TECHNOLOGY PROGRAM	42,630	42,630	....
26	BATTLESPACE KNOWLEDGE DEVELOPMENT & DEMONSTRATION ..	46,414	46,414	....
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	675,785	707,285	+31,500
	ADVANCED COMPONENT DEVELOPMENT			
27	INTELLIGENCE ADVANCED DEVELOPMENT	5,032	5,032	....
29	SPACE CONTROL TECHNOLOGY	4,070	4,070	....
30	COMBAT IDENTIFICATION TECHNOLOGY	21,790	21,790	....
31	NATO RESEARCH AND DEVELOPMENT	4,736	4,736	....
33	SPACE PROTECTION PROGRAM (SPP)	30,771	30,771	....
34	INTERCONTINENTAL BALLISTIC MISSILE	39,765	39,765	....
36	LONG RANGE STRIKE	1,246,228	1,246,228	....
37	TECHNOLOGY TRANSFER	3,512	8,512	+5,000
38	HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM	54,637	54,637	....
40	WEATHER SATELLITE FOLLOW-ON	76,108	21,108	−55,000
44	OPERATIONALLY RESPONSIVE SPACE	6,457	19,957	+13,500
45	TECH TRANSITION PROGRAM	246,514	271,514	+25,000
46	GROUND BASED STRATEGIC DETERRENT	75,166	75,166	....
49	NEXT GENERATION AIR DOMINANCE	8,830	8,830	....
50	THREE DIMENSIONAL LONG-RANGE RADAR	14,939	8,139	−6,800
51	NAVSTAR GLOBAL POSITIONING SYSTEM (USER EQUIPMENT)	142,288	142,288	....
52	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT	81,732	96,732	+15,000

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	TOTAL, ADVANCED COMPONENT DEVELOPMENT	2,062,575	2,059,275	−3,300
	ENGINEERING & MANUFACTURING DEVELOPMENT			
55	ELECTRONIC WARFARE DEVELOPMENT	929	929	....
56	TACTICAL DATA NETWORKS ENTERPRISE	60,256	60,256	....
57	PHYSICAL SECURITY EQUIPMENT	5,973	5,973	....
58	SMALL DIAMETER BOMB [SDB]	32,624	32,624	....
59	COUNTERSPACE SYSTEMS	24,208	24,208	....
60	SPACE SITUATION AWARENESS SYSTEMS	32,374	32,374	....
61	SPACE FENCE	243,909	243,909	....
62	AIRBORNE ELECTRONIC ATTACK	8,358	8,358	....
63	SPACE BASED INFRARED SYSTEM [SBIRS] HIGH EMD	292,235	292,235	....
64	ARMAMENT/ORDNANCE DEVELOPMENT	40,154	40,154	....
65	SUBMUNITIONS	2,506	2,506	....
66	AGILE COMBAT SUPPORT	57,678	59,678	+2,000
67	LIFE SUPPORT SYSTEMS	8,187	8,187	....
68	COMBAT TRAINING RANGES	15,795	11,795	−4,000
69	F–35—EMD	589,441	589,441	....
71	EVOLVED EXPENDABLE LAUNCH VEHICLE PROGRAM (SPACE)	84,438	228,038	+143,600
72	LONG RANGE STANDOFF WEAPON	36,643	14,100	−22,543
73	ICBM FUZE MODERNIZATION	142,551	142,551	....
74	F–22 MODERNIZATION INCREMENT 3.2B	140,640	140,640	....
75	GROUND ATTACK WEAPONS FUZE DEVELOPMENT	3,598	3,598	....
76	NEXT GENERATION AERIAL REFUELING AIRCRAFT KC–46	602,364	602,364	....
77	ADVANCED PILOT TRAINING	11,395	11,395	....
78	CSAR HH–60 RECAPITALIZATION	156,085	156,085	....
80	ADVANCED EHF MILSATCOM (SPACE)	228,230	253,230	+25,000
81	POLAR MILSATCOM (SPACE)	72,084	72,084	....
82	WIDEBAND GLOBAL SATCOM (SPACE)	56,343	56,343	....
83	AIR AND SPACE OPS CENTER 10.2	47,629	47,629	....
84	B–2 DEFENSIVE MANAGEMENT SYSTEM	271,961	271,961	....
85	NUCLEAR WEAPONS MODERNIZATION	212,121	212,121	....
86	F–15 EPAWSS	186,481	127,681	−58,800
87	FULL COMBAT MISSION TRAINING	18,082	18,082	....
88	COMBAT SURVIVOR EVADER LOCATOR	993	993	....
89	NEXTGEN JSTARS	44,343	44,343	....
91	PRESIDENTIAL AIRCRAFT REPLACEMENT	102,620	102,620	....
92	AUTOMATED TEST SYSTEMS	14,563	14,563	....
	TOTAL, ENGINEERING & MANUFACTURING DEVELOP-MENT	3,847,791	3,933,048	+85,257
	RDT&E MANAGEMENT SUPPORT			
93	THREAT SIMULATOR DEVELOPMENT	23,844	23,844	....
94	MAJOR T&E INVESTMENT	68,302	68,302	....
95	RAND PROJECT AIR FORCE	34,918	34,918	....
97	INITIAL OPERATIONAL TEST & EVALUATION	10,476	10,476	....
98	TEST AND EVALUATION SUPPORT	673,908	673,908	....
99	ROCKET SYSTEMS LAUNCH PROGRAM (SPACE)	21,858	21,858	....
100	SPACE TEST PROGRAM (STP)	28,228	28,228	....
101	FACILITIES RESTORATION & MODERNIZATION—TEST & EVAL	40,518	40,518	....
102	FACILITIES SUSTAINMENT—TEST AND EVALUATION SUPPORT	27,895	27,895	....
103	REQUIREMENTS ANALYSIS AND MATURATION	16,507	24,007	+7,500
104	SPACE TEST AND TRAINING RANGE DEVELOPMENT	18,997	18,997	....
106	SPACE AND MISSILE CENTER (SMC) CIVILIAN WORKFORCE	185,305	180,305	−5,000
107	ENTERPRISE INFORMATION SERVICES (EIS)	4,841	3,841	−1,000
108	ACQUISITION AND MANAGEMENT SUPPORT	15,357	15,357	....
109	GENERAL SKILL TRAINING	1,315	1,315	....
111	INTERNATIONAL ACTIVITIES	2,315	2,315	....
	TOTAL, RDT&E MANAGEMENT SUPPORT	1,174,584	1,176,084	+1,500
	OPERATIONAL SYSTEMS DEVELOPMENT			
112	GPS III—OPERATIONAL CONTROL SEGMENT	350,232	350,232	....
113	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING	10,465	8,565	−1,900

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
114	WIDE AREA SURVEILLANCE	24,577	24,577	....
117	AIR FORCE INTEGRATED MILITARY HUMAN RESOURCES SYSTEM	69,694	29,694	− 40,000
118	ANTI–TAMPER TECHNOLOGY EXECUTIVE AGENCY	26,718	26,718	....
119	HC/MC–130 RECAP RDT&E	10,807	4,807	− 6,000
121	B–52 SQUADRONS	74,520	74,520	....
122	AIR–LAUNCHED CRUISE MISSILE [ALCM]	451	451	....
123	B–1B SQUADRONS	2,245	2,245	....
124	B–2 SQUADRONS	108,183	108,183	....
125	MINUTEMAN SQUADRONS	178,929	166,729	− 12,200
126	STRAT WAR PLANNING SYSTEM—USSTRATCOM	28,481	28,481	....
127	NIGHT FIST—USSTRATCOM	87	87	....
128	WORLDWIDE JOINT STRATEGIC COMMUNICATIONS	5,315	5,315	....
131	SERVICE SUPPORT TO STRATCOM—SPACE ACTIVITIES	8,090	8,090	....
132	MQ–9 UAV	123,439	123,439	....
134	A–10 SQUADRONS	....	16,200	+ 16,200
135	F–16 SQUADRONS	148,297	188,297	+ 40,000
136	F–15E SQUADRONS	179,283	192,079	+ 12,796
137	MANNED DESTRUCTIVE SUPPRESSION	14,860	14,860	....
138	F–22 SQUADRONS	262,552	262,552	....
139	F–35 SQUADRONS	115,395	53,921	− 61,474
140	TACTICAL AIM MISSILES	43,360	43,360	....
141	ADVANCED MEDIUM RANGE AIR–TO–AIR MISSILE (AMRAAM)	46,160	38,160	− 8,000
143	COMBAT RESCUE AND RECOVERY	412	412	....
144	COMBAT RESCUE—PARARESCUE	657	657	....
145	AF TENCAP	31,428	31,428	....
146	PRECISION ATTACK SYSTEMS PROCUREMENT	1,105	1,105	....
147	COMPASS CALL	14,249	14,249	....
148	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	103,942	103,942	....
149	JOINT AIR–TO–SURFACE STANDOFF MISSILE [JASSM]	12,793	9,793	− 3,000
150	AIR AND SPACE OPERATIONS CENTER [AOC]	21,193	21,193	....
151	CONTROL AND REPORTING CENTER [CRC]	559	559	....
152	AIRBORNE WARNING AND CONTROL SYSTEM [AWACS]	161,812	155,512	− 6,300
153	TACTICAL AIRBORNE CONTROL SYSTEMS	6,001	6,001	....
155	COMBAT AIR INTELLIGENCE SYSTEM ACTIVITIES	7,793	6,793	− 1,000
156	TACTICAL AIR CONTROL PARTY—MOD	12,465	12,465	....
157	C2ISR TACTICAL DATA LINK	1,681	1,681	....
159	DCAPES	16,796	16,796	....
161	SEEK EAGLE	21,564	21,564	....
162	USAF MODELING AND SIMULATION	24,994	24,994	....
163	WARGAMING AND SIMULATION CENTERS	6,035	6,035	....
164	DISTRIBUTED TRAINING AND EXERCISES	4,358	4,358	....
165	MISSION PLANNING SYSTEMS	55,835	55,835	....
167	AF OFFENSIVE CYBERSPACE OPERATIONS	12,874	12,874	....
168	AF DEFENSIVE CYBERSPACE OPERATIONS	7,681	7,681	....
171	GLOBAL SENSOR INTEGRATED ON NETWORK (GSIN)	5,974	5,974	....
177	SPACE SUPERIORITY INTELLIGENCE	13,815	13,815	....
178	E–4B NATIONAL AIRBORNE OPERATIONS CENTER [NAOC]	80,360	65,760	− 14,600
179	FAMILY OF ADVANCED BLoS TERMINALS (FAB–T)	3,907	3,907	....
180	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK	75,062	75,062	....
181	INFORMATION SYSTEMS SECURITY PROGRAM	46,599	46,599	....
183	GLOBAL COMBAT SUPPORT SYSTEM	2,470	2,470	....
186	AIRBORNE SIGINT ENTERPRISE	112,775	112,775	....
189	GLOBAL AIR TRAFFIC MANAGEMENT (GATM)	4,235	4,235	....
192	SATELLITE CONTROL NETWORK (SPACE)	7,879	7,879	....
193	WEATHER SERVICE	29,955	29,955	....
194	AIR TRAFFIC CONTROL, APPROACH, & LANDING SYSTEM (ATC)	21,485	19,485	− 2,000
195	AERIAL TARGETS	2,515	2,515	....
198	SECURITY AND INVESTIGATIVE ACTIVITIES	472	472	....
199	ARMS CONTROL IMPLEMENTATION	12,137	9,137	− 3,000
200	DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES	361	361	....
203	SPACE AND MISSILE TEST AND EVALUATION CENTER	3,162	3,162	....
204	DEVELOPMENT SPACE INNOVATION, INTEGRATION AND RAPID TECHNOLOGY	1,543	1,543	....
205	INTEGRATED BROADCAST SERVICE	7,860	7,860	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
206	SPACELIFT RANGE SYSTEM (SPACE)	6,902	6,902	....
207	DRAGON U–2	34,471	34,471	....
208	ENDURANCE UNMANNED AERIAL VEHICLES	....	5,000	+ 5,000
209	AIRBORNE RECONNAISSANCE SYSTEMS	50,154	42,154	− 8,000
210	MANNED RECONNAISSANCE SYSTEMS	13,245	13,245	....
211	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	22,784	22,784	....
212	PREDATOR UAV (JMIP)	716	....	− 716
213	RQ–4 UAV	208,053	203,053	− 5,000
214	NETWORK–CENTRIC COLLABORATIVE TARGET [TIARA]	21,587	13,987	− 7,600
215	COMMON DATA LINK (CDL)	43,986	43,986	....
216	NATO AGS	197,486	138,397	− 59,089
217	SUPPORT TO DCGS ENTERPRISE	28,434	28,434	....
218	GPS III SPACE SEGMENT	180,902	180,902	....
220	JSPOC MISSION SYSTEM	81,911	79,911	− 2,000
221	RAPID CYBER ACQUISITION	3,149	3,149	....
222	NUDET DETECTION SYSTEM (SPACE)	14,447	14,447	....
223	SPACE SITUATION AWARENESS OPERATIONS	20,077	20,077	....
225	SHARED EARLY WARNING [SEW]	853	853	....
226	C–130 AIRLIFT SQUADRON	33,962	33,962	....
227	C–5 AIRLIFT SQUADRONS	42,864	22,864	− 20,000
228	C–17 AIRCRAFT	54,807	54,807	....
229	C–130J PROGRAM	31,010	39,010	+ 8,000
230	LARGE AIRCRAFT IR COUNTERMEASURES [LAIRCM]	6,802	6,802	....
231	KC–10S	1,799	1,799	....
232	OPERATIONAL SUPPORT AIRLIFT	48,453	38,453	− 10,000
233	CV–22	36,576	27,776	− 8,800
235	SPECIAL TACTICS/COMBAT CONTROL	7,963	7,963	....
236	DEPOT MAINTENANCE (NON–IF)	1,525	1,525	....
237	LOGISTICS INFORMATION TECHNOLOGY [LOGIT]	112,676	68,400	− 44,276
238	SUPPORT SYSTEMS DEVELOPMENT	12,657	12,657	....
239	OTHER FLIGHT TRAINING	1,836	1,836	....
240	OTHER PERSONNEL ACTIVITIES	121	121	....
241	JOINT PERSONNEL RECOVERY AGENCY	5,911	5,911	....
242	CIVILIAN COMPENSATION PROGRAM	3,604	3,604	....
243	PERSONNEL ADMINISTRATION	4,598	4,598	....
244	AIR FORCE STUDIES AND ANALYSIS AGENCY	1,103	1,103	....
246	FINANCIAL MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT	101,840	95,540	− 6,300
	TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	4,230,197	3,980,938	− 249,259
9999	CLASSIFIED PROGRAMS	12,780,142	12,248,891	− 531,251
	TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, AIR FORCE	26,473,669	25,874,116	− 599,553

COMMITTEE RECOMMENDED ADJUSTMENTS

The following table details the adjustments recommended by the Committee:

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
1	Defense Research Sciences	329,721	384,721	+ 55,000
	Authorization adjustment: Basic research program increase	....	....	+ 45,000
	Program increase: Air Force Education and Outreach Program	....	....	+ 10,000
7	Aerospace Propulsion	182,326	187,326	+ 5,000
	Program increase	....	....	+ 5,000
12	Dominant Information Sciences and Methods	164,909	170,909	+ 6,000
	Program increase	....	....	+ 6,000

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
14	Advanced Materials for Weapon Systems	37,665	47,665	+10,000
	Program increase: Metals affordability research			+10,000
18	Aerospace Propulsion and Power Technology	168,821	178,821	+10,000
	Program increase: Silicon carbide research			+10,000
20	Advanced Spacecraft Technology	54,897	64,897	+10,000
	Program increase			+10,000
23	Conventional Weapons Technology	48,536	43,036	−5,500
	Improving funds management: Forward financing			−5,500
24	Advanced Weapons Technology	30,195	37,195	+7,000
	Program increase: Counter-electronics high power microwave advanced missile			+7,000
37	Technology Transfer	3,512	8,512	+5,000
	Program increase			+5,000
40	Weather System Follow-on	76,108	21,108	−55,000
	Improving funds management: Prior year carryover			−55,000
44	Operationally Responsive Space	6,457	19,957	+13,500
	Authorization adjustment: Increase to match previous year funding level			+13,500
45	Tech Transition Program	246,514	271,514	+25,000
	Program increase: Alternative energy research			+25,000
50	Three Dimensional Long-Range Radar [3DELRR]	14,939	8,139	−6,800
	Restoring acquisition accountability: Test and evaluation support early to need			−6,800
52	Cyber Operations Technology Development	81,732	96,732	+15,000
	Authorization adjustment: Increase USCC cyber operations tech development			+15,000
66	Agile Combat Support	57,678	59,678	+2,000
	Program increase			+10,000
	Improving funds management: Forward financing			−8,000
68	Combat Training Ranges	15,795	11,795	−4,000
	Improving funds management: Forward financing			−4,000
71	Evolved Expendable Launch Vehicle Program (SPACE)—EMD	84,438	228,038	+143,600
	Program increase: Rocket engine development			+143,600
72	Long Range Standoff Weapon	36,643	14,100	−22,543
	Restoring acquisition accountability: Acquisition strategy			−18,643
	Restoring acquisition accountability: Test support and program management early to need			−3,900
80	Advanced EHF MILSATCOM (SPACE)	228,230	253,230	+25,000
	Program increase: Protected tactical demonstration			+25,000
86	F–15 EPAWSS	186,481	127,681	−58,800
	Restoring acquisition accountability: EMD funding early to need			−58,800
103	Requirements Analysis and Maturation	16,507	24,007	+7,500
	Program increase			+7,500
106	Space and Missile Center [SMC] Civilian Workforce	185,305	180,305	−5,000
	Maintain program affordability: Excess to need			−5,000
107	Enterprise Information Services [EIS]	4,841	3,841	−1,000
	Improving funds management: Forward financing			−1,000
113	Specialized Undergraduate Flight Training	10,465	8,565	−1,900
	Improving funds management: Forward financing			−1,900
117	AF Integrated Personnel and Pay System [AF–IPPS]	69,694	29,694	−40,000
	Improving funds management: Forward financing, excluding funding for audit readiness			−40,000
119	HC/MC–130 Recap RDT&E	10,807	4,807	−6,000
	Restoring acquisitiion accountability: Block 8.1 funding early-to-need			−6,000
125	Minuteman Squadrons	178,929	166,729	−12,200
	Budget documentation disparity: Airborne launch control system funding request unclear			−12,200
134	A–10 Squadrons		16,200	+16,200
	Authorization adjustment: Sustain avionics software development			+16,200

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
135	F–16 Squadrons	148,297	188,297	+40,000
	Program increase: Radar improvements—Air National Guard	....	....	+40,000
136	F–15E Squadrons	179,283	192,079	+12,796
	Transfer F–15: Air Force-requested from APAF Line #22	....	....	+12,796
139	F–35 Squadrons	115,395	53,921	−61,474
	Restoring acquisition accountability: Follow on development excessive growth	....	....	−61,474
141	Advanced Medium Range Air-to-Air Missile [AMRAAM]	46,160	38,160	−8,000
	Restoring acquisition accountability: Program delay	....	....	−8,000
149	Joint Air-to-Surface Standoff Missile [JASSM]	12,793	9,793	−3,000
	Improving funds management: Forward financing ...	....	....	−3,000
152	Airborne Warning and Control System [AWACS]	161,812	155,512	−6,300
	Restoring acquisition accountability: Delayed contract award	....	....	−6,300
155	Combat Air Intelligence System Activities	7,793	6,793	−1,000
	Improving funds management: Forward financing ...	....	....	−1,000
178	E–4B National Airborne Operations Center [NAOC]	80,360	65,760	−14,600
	Maintain program affordability: Excess funding for low frequency transmit system	....	....	−14,600
194	Air Traffic Control, Approach, and Landing System [ATCALS]	21,485	19,485	−2,000
	Maintain program affordability: Unjustified program growth in program management administration	....	....	−2,000
199	Arms Control Implementation	12,137	9,137	−3,000
	Improving funds management: Forward financing ...	....	....	−3,000
208	Endurance Unmanned Aerial Vehicles	....	5,000	+5,000
	Program increase	....	....	+5,000
209	Airborne Reconnaissance Systems	50,154	42,154	−8,000
	Improving funds management: Forward financing ...	....	....	−8,000
212	MQ–1 Predator A UAV	716	....	−716
	Maintain program affordability: Funding not required	....	....	−716
213	RQ–4	208,053	203,053	−5,000
	Improving funds management: Forward financing ...	....	....	−5,000
214	Network-Centric Collaborative Targeting	21,587	13,987	−7,600
	Restoring acquisition accountability: Version 5.0.4 funding early-to-need	....	....	−7,600
216	NATO AGS	197,486	138,397	−59,089
	Transfer NATO AGS: Air Force-requested to APAF Line #79	....	....	−59,089
220	JSPOC Mission System	81,911	79,911	−2,000
	Restoring acquisition accountability: Excessive cost growth	....	....	−2,000
227	C–5 Airlift Squadrons (IF)	42,864	22,864	−20,000
	Improving funds management: Forward financing ...	....	....	−20,000
229	C–130J Program	31,010	39,010	+8,000
	Program increase: In-flight Prop Balancing System	....	....	+8,000
232	Operational Support Airlift	48,453	38,453	−10,000
	Improving funds management: Forward financing ...	....	....	−10,000
233	CV–22	36,576	27,776	−8,800
	Restoring acquisition accountability: Improved inlet solution program delay	....	....	−8,800
237	Logistics Information Technology [LOGIT]	112,676	68,400	−44,276
	Improving funds management: Forward financing, excluding funding for audit readiness	....	....	−44,276
246	Financial Management Information Systems Development	101,840	95,540	−6,300
	Improving funds management: Forward financing, excluding funding for audit readiness	....	....	−6,300
	Classified Programs	12,780,142	12,248,891	−531,251
	Classified adjustment	....	....	−531,251

Adaptive Engine Transition Program.—The Committee supports the continued emphasis on research and development in the next generation of turbine engine technology. The Committee notes that there are potential applications of this technology to both legacy and future combat aircraft. The Committee encourages the Air Force to continue investing in these critical technologies and supporting multiple industry partners to ensure competition during the next phase of development.

Air Force Alternative Energy.—The Committee is encouraged by the Air Force's energy conservation and efficiency initiatives as well as its investment into promising renewable energy. The Committee urges the Air Force to continue its critical research in this field and encourages the Assistant Secretary of the Air Force for Installations, Environment and Energy to develop a strategy to bridge the gap between investment in energy research and development, and the demonstration and use of that technology to meet Air Force enterprise requirements.

Long Range Stand-Off Weapon.—The Committee supports the Air Force's program to develop a follow-on capability to the Air Launched Cruise Missile to penetrate advanced integrated air defense systems from significant stand-off range. The Committee is pleased that the Air Force accelerated the program's milestone A decision in the President's budget request from the second quarter of fiscal year 2017 to the first quarter of fiscal year 2016. The Committee provides $14,100,000 in fiscal year 2016, an increase of $10,662,000 over the fiscal year 2015 enacted level, and encourages the Air Force to maintain the funding profile of $1,747,300,000 from fiscal years 2017 through 2020, given the strategic importance of the program.

Ground Based Strategic Deterrent Acquisition.—The Committee recognizes that the Air Force is currently exploring options to acquire a replacement for the Minuteman III system, the Ground Based Strategic Deterrent [GBSD]. The Committee believes the use of full and open competition provides the best opportunity for the Department of Defense to benefit from innovation, improved contractor performance, and reduced costs. Not later than 90 days after enactment of this act, the Secretary of the Air Force shall provide the congressional defense committees the GBSD acquisition strategy to include a detailed description of Air Force's plans to use competitive awards throughout the acquisition process.

Combat Rescue Helicopter.—The Committee is pleased that the fiscal year 2016 budget request includes funding for the combat rescue helicopter throughout the future years defense plan, consistent with the service cost position. However, the Committee is concerned with the timing and number of system demonstration test article [SDTA] aircraft in the fiscal year 2016 budget request. The Committee encourages the Air Force to reconsider the timing and number of the research and development-funded aircraft to ensure the most efficient use of resources to support the program test schedule and the industrial base until low rate initial procurement begins.

Joint Surveillance and Target Attack Radar System [JSTARS].— The Committee supports the fiscal year 2016 budget request of $44,343,000 for JSTARS recapitalization and is pleased with the

recent approval of the Materiel Development Decision to enable the Air Force to begin technology development and award technology maturation contracts. However, the Committee remains concerned with the duration of the design and development phase of the program and the delay of initial operational capability until 2023. As delineated in the report accompanying the Senate version of the Department of Defense Appropriations Act, 2015 (Senate Report 113–211), the Committee continues to view the program as primarily an integration effort that will utilize mature, affordable, and existing components on a commercially available aircraft. Last year, the Committee directed the Secretary of the Air Force to reassess the acquisition strategy to shorten the development phase. The Committee encourages the Air Force to work with industry partners and apply the tenets of Better Buying Power 3.0 to reduce the duration and cost of the design and development phase and reflect the revised schedules and funding levels in the fiscal year 2017 budget request.

Given the time required to develop and procure the new aircraft, the Committee understands that the Air Force plans to extend the service life of the current E–8 JSTARS fleet until the middle of the next decade. The Committee directs the Secretary of the Air Force to submit a plan to the congressional defense committees, to accompany submission of the fiscal year 2017 budget, that outlines how industrial and logistics degradation of the E–8 fleet will be avoided as well as upgrades to the fleet to ensure the platform will continue to meet warfighter needs for combat operations. The plan should include schedules and annual funding requirements.

High Speed Test Track.—The Committee supports the Air Force's efforts to modernize its high speed testing system in order to meet aerodynamic testing requirements for new missile systems. The Committee understands that a high speed test track that can accommodate speeds up to Mach 4 would enable the Air Force to carry out needed tests for advanced weapons systems at lower costs and with decreased vibration compared to legacy test tracks. The Committee encourages the Air Force to complete an analysis of alternatives of the design, build, and cost of a modern high speed test track.

B–2 Ejection Seats.—The Committee understands that the Air Force is currently conducting market research to develop an acquisition strategy for a B–2 ejection system qualification program. The Committee encourages the Air Force to proceed with a full and open competition for the development, qualification, and acquisition of the ejection seat upgrade.

F–16 Radar Upgrades.—The Committee is concerned about the long-term health of the active electronically scanned array radar industrial base. The Committee believes that competition among multiple suppliers is important to reduce costs and improve performance. Therefore, the Committee directs the Secretary of the Air Force to submit a report to the congressional defense committees, not later than 90 days after enactment of this act, on how the Air Force will address phase two of North American Aerospace Defense Command/U.S. Northern Command Joint Urgent Operational Needs [JUON] NC–0008 to include an acquisition strategy on all

aspects of the solution set. The report should address the Air Force's radar modernization plan for the entire F–16 fleet.

U–2.—The fiscal year 2016 budget request supports the continued operation of the U–2 fleet as well as prudent actions to retire the fleet beginning in fiscal year 2019. The fiscal year 2016 budget request includes $34,471,000 in Research, Development, Test and Evaluation [RDT&E], Air Force for further development of the ASARS–2B radar. The Committee is concerned that the Air Force is committing resources to improve a radar that it does not intend to use on the U–2 aircraft prior to retirement. Therefore, none of the fiscal year 2016 RDT&E funding may be obligated until the Secretary of the Air Force provides a report to congressional defense committees justifying the use of funds, validating the requirement, and a plan to develop, acquire, and field the modernized radar.

Long-Range, Multi-Day Endurance ISR Capability.—The Department of Defense Appropriations Act, 2015 (Public Law 113–235) provided $20,000,000 to support development of a capability in response to the U.S. Africa Command joint emerging operational need statement [USAFRICOM JEON] AF–0005. The Committee notes that the Air Force has completed four phases of test article flights to demonstrate a capability in response to USAFRICOM JEON AF–0005, including an 80 hour, long endurance flight demonstration in December 2014. The Committee recommendation includes $5,000,000, to be combined with previously appropriated but not yet obligated funds, for test articles necessary to reduce airworthiness risk, improve interoperability, and characterize the flight envelope to validate a low-cost and effective solution for persistent aerial surveillance. Additionally, the Committee directs the Joint Staff to submit a plan to the congressional defense committees, not later than 90 days after enactment of this act, on the Department's current plan to address USAFRICOM JEON AF–0005.

SPACE PROGRAMS

Rocket Engine Development.—The budget request for fiscal year 2016 includes $84,438,000 for Evolved Expendable Launch Vehicle next generation rocket engine development. The Committee continues to view the effort to develop and field an advanced U.S. rocket booster engine as a national security imperative and believes planned Air Force investments for fiscal year 2016 are insufficient to meet the need for a new engine in 2019. Therefore, the Committee recommends an additional $143,600,000 for the Air Force to implement a full scale engine development program that meets Evolved Expendable Launch Vehicle program requirements for national security payload launches. Given the importance of this issue, the Air Force should move expeditiously to spend appropriated funding for this effort.

Advanced Extremely High Frequency Protected Tactical Waveform.—The Committee supports the Air Force's development of a new Advanced Extremely High Frequency [AEHF] Protected Tactical Waveform [PTW] which offers the ability to provide tactical anti-jam communication utilizing existing space and user terminal assets. The 2016 budget request includes funding for the development of new terminal modems, but the Committee is concerned

that the mission management system and PTW ground station hub electronics and software are not being co-developed, which could lead to a multi-year delay in the fielding of the system and the potential for non-optimal system design. Therefore, the Committee recommends an additional $25,000,000 for the AEHF Protected Tactical Waveform mission management system and ground station hub electronics and software development to enable protected communications utilizing existing military and commercial space assets.

Global Positioning System III Operational Control Segment.—The budget request for fiscal year 2016 includes $350,232,000 for the GPS III Operational Control Segment [OCX]. This ground system promises to provide improved accuracy, security, and anti-jamming protection and allow the new GPS III satellites to be integrated into the legacy GPS constellation. Development of the system is so delayed, however, that it will not be available until approximately 4 years after the Air Force begins launching GPS III satellites in fiscal year 2016. This has prompted the Air Force to investigate buying a temporary ground capability to ensure that the first GPS satellite can be integrated into the existing constellation. The Committee notes that such a temporary fix would not enable implementation of the technology improvements promised with OCX, including the improved anti-jamming capability of M-code. In light of these problems and delays, the Committee questions the Air Force's plan to accelerate the launches of several GPS III satellites, reversing a decision in the 2015 budget request. Therefore, the Committee directs the Cost Assessment and Program Evaluation [CAPE] and Joint Requirements Oversight Council [JROC] to review the cost of and validate the requirements for accelerating GPS III launches ahead of the plan laid out in the fiscal year 2015 budget submission.

Global Positioning System III.—The Committee supports the decision of the Air Force to compete future GPS space vehicles after SV–10 to make the program more affordable while sustaining and enhancing GPS capabilities. The Committee believes that more advanced technologies, such as a modern digital payload, will alleviate production problems while providing enhanced mission capability and affordability. Therefore, the Committee directs the Secretary of the Air Force to allocate $80,000,000 of the GPS III Space Modernization Imitative budget toward technology maturation efforts for a digital navigation payload and satellite vehicle development for the GPS III SV11+ production competition.

Daytime Space Situational Awareness.—The Committee recognizes the criticality of Space Situational Awareness [SSA] and is concerned about long-duration gaps in actionable satellite data during daytime hours. Therefore, the Committee encourages the Air Force to invest in ground-based optical/infrared capabilities to address daytime gaps in SSA.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE

Appropriations, 2015	$17,225,889,000
Budget estimate, 2016	18,329,861,000
Committee recommendation	18,926,433,000

The Committee recommends an appropriation of $18,926,433,000. This is $596,572,000 above the budget estimate.

COMMITTEE RECOMMENDED PROGRAM

The following table summarizes the budget estimate for this appropriation, the Committee recommendation, and the Committee recommended adjustments to the budget estimate:

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	RESEARCH, DEVELOPMENT, TEST & EVAL, DEFENSE-WIDE			
	BASIC RESEARCH			
1	DTRA UNIVERSITY STRATEGIC PARTNERSHIP BASIC RESEARCH ..	38,436	38,436	....
2	DEFENSE RESEARCH SCIENCES	333,119	333,119	....
3	BASIC RESEARCH INITIATIVES	42,022	72,022	+30,000
4	BASIC OPERATIONAL MEDICAL RESEARCH SCIENCE	56,544	56,544	....
5	NATIONAL DEFENSE EDUCATION PROGRAM	49,453	54,453	+5,000
6	HISTORICALLY BLACK COLLEGES & UNIV (HBCU)	25,834	34,334	+8,500
7	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	46,261	46,261	....
	TOTAL, BASIC RESEARCH	591,669	635,169	+43,500
	APPLIED RESEARCH			
8	JOINT MUNITIONS TECHNOLOGY	19,352	19,352	....
9	BIOMEDICAL TECHNOLOGY	114,262	111,462	−2,800
10	LINCOLN LABORATORY RESEARCH PROGRAM	51,026	51,026	....
11	APPLIED RESEARCH FOR ADVANCEMENT S&T PRIORITIES	48,226	48,226	....
12	INFORMATION AND COMMUNICATIONS TECHNOLOGY	356,358	338,433	−17,925
14	BIOLOGICAL WARFARE DEFENSE	29,265	29,265	....
15	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	208,111	202,611	−5,500
16	CYBER SECURITY RESEARCH	13,727	13,727	....
18	TACTICAL TECHNOLOGY	314,582	302,582	−12,000
19	MATERIALS AND BIOLOGICAL TECHNOLOGY	220,115	201,721	−18,394
20	ELECTRONICS TECHNOLOGY	174,798	163,798	−11,000
21	WEAPONS OF MASS DESTRUCTION DEFEAT TECHNOLOGIES	155,415	150,415	−5,000
22	SOFTWARE ENGINEERING INSTITUTE	8,824	8,824	....
23	SPECIAL OPERATIONS TECHNOLOGY DEVELOPMENT	37,517	37,517	....
	TOTAL, APPLIED RESEARCH	1,751,578	1,678,959	−72,619
	ADVANCED TECHNOLOGY DEVELOPMENT			
24	JOINT MUNITIONS ADVANCED TECH INSENSITIVE MUNITIONS AD	25,915	25,915	....
26	COMBATING TERRORISM TECHNOLOGY SUPPORT	71,171	111,171	+40,000
27	FOREIGN COMPARATIVE TESTING	21,782	21,782	....
28	COUNTERPROLIFERATION INITIATIVES—PROLIF PREV & DEFEAT	290,654	280,654	−10,000
30	ADVANCED CONCEPTS AND PERFORMANCE ASSESSMENT	12,139	12,139	....
31	DISCRIMINATION SENSOR TECHNOLOGY	28,200	33,200	+5,000
32	WEAPONS TECHNOLOGY	45,389	65,389	+20,000
33	ADVANCED C4ISR	9,876	9,876	....
34	ADVANCED RESEARCH	17,364	17,364	....
35	JOINT DOD–DOE MUNITIONS TECHNOLOGY DEVELOPMENT	18,802	18,802	....
36	AGILE TRANSPO FOR THE 21ST CENTURY [AT21]—THEATER CA	2,679	1,706	−973
37	SPECIAL PROGRAM—MDA TECHNOLOGY	64,708	13,908	−50,800
38	ADVANCED AEROSPACE SYSTEMS	185,043	175,025	−10,018
39	SPACE PROGRAMS AND TECHNOLOGY	126,692	126,692	....
40	ANALYTIC ASSESSMENTS	14,645	14,645	....
41	ADVANCED INNOVATIVE ANALYSIS AND CONCEPTS	59,830	50,030	−9,800
42	COMMON KILL VEHICLE TECHNOLOGY	46,753	66,753	+20,000
43	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM—ADVANCED DEV	140,094	140,094	....
44	RETRACT LARCH	118,666	118,666	....
45	JOINT ELECTRONIC ADVANCED TECHNOLOGY	43,966	23,966	−20,000
46	JOINT CAPABILITY TECHNOLOGY DEMONSTRATIONS	141,540	126,540	−15,000
47	NETWORKED COMMUNICATIONS CAPABILITIES	6,980	5,000	−1,980

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
50	DEFENSE–WIDE MANUFACTURING SCIENCE AND TECHNOLOGY PROG	157,056	157,056	.... +4,000
51	EMERGING CAPABILITIES TECHNOLOGY DEVELOPMENT	33,515	37,515	+4,000
52	GENERIC LOGISTICS R&D TECHNOLOGY DEMONSTRATIONS	16,543	14,543	−2,000
53	DEPLOYMENT AND DISTRIBUTION ENTERPRISE TECHNOLOGY	29,888	25,270	−4,618
54	STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM	65,836	65,836	....
55	MICROELECTRONIC TECHNOLOGY DEVELOPMENT AND SUPPORT	79,037	89,037	+10,000
56	JOINT WARFIGHTING PROGRAM	9,626	5,000	−4,626
57	ADVANCED ELECTRONICS TECHNOLOGIES	79,021	75,985	−3,036
58	COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS	201,335	201,335	....
59	NETWORK–CENTRIC WARFARE TECHNOLOGY	452,861	432,861	−20,000
60	SENSOR TECHNOLOGY	257,127	245,127	−12,000
61	DISTRIBUTED LEARNING ADVANCED TECHNOLOGY DEVELOPMENT	10,771	10,771	....
62	SOFTWARE ENGINEERING INSTITUTE	15,202	15,202	....
63	QUICK REACTION SPECIAL PROJECTS	90,500	65,500	−25,000
66	ENGINEERING SCIENCE AND TECHNOLOGY	18,377	8,377	−10,000
67	TEST & EVALUATION SCIENCE & TECHNOLOGY	82,589	94,589	+12,000
68	OPERATIONAL ENERGY CAPABILITY IMPROVEMENT	37,420	42,420	+5,000
69	CWMD SYSTEMS	42,488	42,488	....
70	SPECIAL OPERATIONS ADVANCED TECHNOLOGY DEVELOPMENT ..	57,741	59,741	+2,000
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	3,229,821	3,147,970	−81,851
	DEMONSTRATION & VALIDATION			
71	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT	31,710	31,710	....
73	WALKOFF	90,567	90,567	....
74	ADVANCE SENSOR APPLICATIONS PROGRAM	15,900	15,900	....
75	ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PRO-GRAM	52,758	52,758	....
76	BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT	228,021	205,621	−22,400
77	BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT ...	1,284,891	1,284,891	....
78	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	172,754	170,354	−2,400
79	BALLISTIC MISSILE DEFENSE SENSORS	233,588	233,588	....
80	BALLISTIC MISSILE DEFENSE ENABLING PROGRAMS	409,088	409,088	....
81	SPECIAL PROGRAMS—MDA	400,387	400,387	....
82	AEGIS BMD	843,355	843,355	....
83	SPACE SURVEILLANCE & TRACKING SYSTEM	31,632	31,632	....
84	BALLISTIC MISSILE DEFENSE SYSTEM SPACE PROGRAMS	23,289	23,289	....
85	BALLISTIC MISSILE DEFENSE COMMAND AND CONTROL, BATTLE MANAGEMENT	450,085	437,785	−12,300
86	BALLISTIC MISSILE DEFENSE JOINT WARFIGHTER SUPPORT	49,570	49,570	....
87	BALLISTIC MISSILE DEFENSE INTERGRATION AND OPERATIONS CENTER (MDIOC)	49,211	49,211	....
88	REGARDING TRENCH	9,583	9,583	....
89	SEA BASED X–BAND RADAR [SBX]	72,866	72,866	....
90	ISRAELI COOPERATIVE PROGRAMS	102,795	267,595	+164,800
91	BALLISTIC MISSILE DEFENSE TEST	274,323	287,804	+13,481
92	BALLISTIC MISSILE DEFENSE TARGETS	513,256	527,994	+14,738
93	HUMANITARIAN DEMINING	10,129	10,129	....
94	COALITION WARFARE	10,350	10,350	....
95	DEPARTMENT OF DEFENSE CORROSION PROGRAM	1,518	11,518	+10,000
96	TECHNOLOGY MATURATION INITIATIVES	96,300	4,271	−92,029
97	ADVANCED INNOVATIVE TECHNOLOGIES	469,798	469,798	....
98	DOD UNMANNED AIRCRAFT SYSTEM (UAS) COMMON DEVELOP-MENT	3,129	7,791	+4,662
101	DEFENSE RAPID INNOVATION PROGRAM	....	400,000	+400,000
103	JOINT C5 CAPABILITY DEVELOPMENT, INTEGRATION AND INTER-OPERABILITY	25,200	21,700	−3,500
105	LONG RANGE DISCRIMINATION RADAR	137,564	137,564	....
106	IMPROVED HOMELAND DEFENSE INTERCEPTORS	278,944	298,944	+20,000
107	BMD TERMINAL DEFENSE SEGMENT TEST	26,225	26,225	....
108	AEGIS BMD TEST	55,148	82,468	+27,320
109	BALLISTIC MISSILE DEFENSE SENSOR TEST	86,764	86,764	....
110	LAND–BASED SM–3 [LBSM3]	34,970	34,970	....

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
111	AEGIS SM–3 BLOCK IIA CO–DEVELOPMENT	172,645	172,645	....
112	BMD MIDCOURSE DEFENSE SEGMENT TEST	64,618	64,618	....
114	JOINT ELECTROMAGNETIC TECHNOLOGY [JET] PROGRAM	2,660	2,660	....
115	CYBER SECURITY INITIATIVE	963	963	....
	TOTAL, DEMONSTRATION & VALIDATION	6,816,554	7,338,926	+ 522,372
	ENGINEERING & MANUFACTURING DEVELOPMENT			
116	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT	8,800	8,800	....
117	PROMPT GLOBAL STRIKE CAPABILITY DEVELOPMENT	78,817	88,817	+ 10,000
118	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	303,647	282,147	− 21,500
119	ADVANCED IT SERVICES JOINT PROGRAM OFFICE [AITS–JPO]	23,424	18,424	− 5,000
120	JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM [JTIDS]	14,285	14,285	....
121	WEAPONS OF MASS DESTRUCTION DEFEAT CAPABILITIES	7,156	7,156	....
122	INFORMATION TECHNOLOGY DEVELOPMENT	12,542	12,042	− 500
123	HOMELAND PERSONNEL SECURITY INITIATIVE	191	....	− 191
124	DEFENSE EXPORTABILITY PROGRAM	3,273	3,273	....
125	OUSD(C) IT DEVELOPMENT INITIATIVES	5,962	2,962	− 3,000
126	DOD ENTERPRISE SYSTEMS DEVELOPMENT AND DEMONSTRA-TION	13,412	11,912	− 1,500
127	DCMO POLICY AND INTEGRATION	2,223	2,223	....
128	DEFENSE AGENCY INITIATIVES FINANCIAL SYSTEM	31,660	31,660	....
129	DEFENSE RETIRED AND ANNUITANT PAY SYSTEM (DRAS)	13,085	10,135	− 2,950
130	DEFENSE–WIDE ELECTRONIC PROCUREMENT CAPABILITY	7,209	7,209	....
131	GLOBAL COMBAT SUPPORT SYSTEM	15,158	13,794	− 1,364
132	DOD ENTERPRISE ENERGY INFORMATION MANAGEMENT (EEIM)	4,414	3,614	− 800
	TOTAL, ENGINEERING & MANUFACTURING DEVELOP-MENT	545,258	518,453	− 26,805
	RDT&E MANAGEMENT SUPPORT			
133	DEFENSE READINESS REPORTING SYSTEM [DRRS]	5,581	5,581	....
134	JOINT SYSTEMS ARCHITECTURE DEVELOPMENT	3,081	3,081	....
135	CENTRAL TEST AND EVALUATION INVESTMENT DEVELOPMENT	229,125	214,125	− 15,000
136	ASSESSMENTS AND EVALUATIONS	28,674	28,674	....
138	JOINT MISSION ENVIRONMENT TEST CAPABILITY [JMETC]	45,235	40,235	− 5,000
139	TECHNICAL STUDIES, SUPPORT AND ANALYSIS	24,936	24,936	....
141	JOINT INTEGRATED AIR AND MISSILE DEFENSE ORGANIZATION ...	35,471	32,009	− 3,462
142	CLASSIFIED PROGRAM USD(P)	....	111,241	+ 111,241
144	SYSTEMS ENGINEERING	37,655	41,655	+ 4,000
145	STUDIES AND ANALYSIS SUPPORT	3,015	2,715	− 300
146	NUCLEAR MATTERS—PHYSICAL SECURITY	5,287	5,287	....
147	SUPPORT TO NETWORKS AND INFORMATION INTEGRATION	5,289	5,289	....
148	GENERAL SUPPORT TO USD (INTELLIGENCE)	2,120	1,689	− 431
149	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	102,264	102,264	....
158	SMALL BUSINESS INNOVATION RESEARCH/TECHNOLOGY TRANS-FER	2,169	2,169	....
159	DEFENSE TECHNOLOGY ANALYSIS	13,960	216,960	+ 203,000
160	DEFENSE TECHNICAL INFORMATION CENTER [DTIC]	51,775	56,775	+ 5,000
161	R&D IN SUPPORT OF DOD ENLISTMENT, TESTING & EVALUATION	9,533	7,937	− 1,596
162	DEVELOPMENT TEST AND EVALUATION	17,371	17,371	....
163	MANAGEMENT HEADQUARTERS (RESEARCH & DEVELOPMENT) ...	71,571	71,571	....
164	BUDGET AND PROGRAM ASSESSMENTS	4,123	4,123	....
165	OPERATIONS SECURITY [OPSEC]	1,946	1,946	....
166	JOINT STAFF ANALYTICAL SUPPORT	7,673	5,000	− 2,673
169	SUPPORT TO INFORMATION OPERATIONS [IO] CAPABILITIES	10,413	10,413	....
170	DEFENSE MILITARY DECEPTION PROGRAM OFFICE	971	971	....
171	CYBER INTELLIGENCE	6,579	6,579	....
173	COCOM EXERCISE ENGAGEMENT AND TRAINING TRANS-FORMATION	43,811	42,766	− 1,045
174	MANAGEMENT HEADQUARTERS—MDA	35,871	35,871	....
175	MANAGEMENT HEADQUARTERS—WHS	1,072	1,072	....
9999	CLASSIFIED PROGRAMS	49,500	49,500	....
	TOTAL, RDT&E MANAGEMENT SUPPORT	856,071	1,149,805	+ 293,734

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	OPERATIONAL SYSTEMS DEVELOPMENT			
178	ENTERPRISE SECURITY SYSTEM (ESS)	7,929	4,229	−3,700
179	REGIONAL INTERNATIONAL OUTREACH & PARTNERSHIP FOR PEAC	1,750	1,750	....
180	OVERSEAS HUMANITARIAN ASSISTANCE SHARED INFORMATION SY	294	294	....
181	INDUSTRIAL BASE ANALYSIS AND SUSTAINMENT SUPPORT	22,576	22,576	....
182	OPERATIONAL SYSTEMS DEVELOPMENT	1,901	1,901	....
183	GLOBAL THEATER SECURITY COOPERATION MANAGEMENT	8,474	8,474	....
184	CHEMICAL AND BIOLOGICAL DEFENSE (OPERATIONAL SYSTEMS D	33,561	33,561	....
186	PLANNING AND DECISION AID SYSTEM	3,061	1,842	−1,219
187	C4I INTEROPERABILITY	64,921	63,341	−1,580
189	JOINT/ALLIED COALITION INFORMATION SHARING	3,645	1,845	−1,800
193	NATIONAL MILITARY COMMAND SYSTEM–WIDE SUPPORT	963	963	....
194	DEFENSE INFO INFRASTRUCTURE ENGINEERING & INTEGRATION	10,186	10,186	....
195	LONG HAUL COMMUNICATIONS [DCS]	36,883	32,383	−4,500
196	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK	13,735	13,735	....
197	PUBLIC KEY INFRASTRUCTURE [PKI]	6,101	6,101	....
198	KEY MANAGEMENT INFRASTRUCTURE [KMI]	43,867	43,867	....
199	INFORMATION SYSTEMS SECURITY PROGRAM	8,957	8,957	....
200	INFORMATION SYSTEMS SECURITY PROGRAM	146,890	156,890	+10,000
201	GLOBAL COMMAND AND CONTROL SYSTEM	21,503	21,503	....
202	JOINT SPECTRUM CENTER (DEFENSE SPECTRUM ORGANIZATION)	20,342	20,342	....
203	NET–CENTRIC ENTERPRISE SERVICES [NCES]	444	444	....
205	JOINT MILITARY DECEPTION INITIATIVE	1,736	1,736	....
206	TELEPORT PROGRAM	65,060	65,060	....
210	SPECIAL APPLICATIONS FOR CONTINGENCIES	2,976	2,976	....
215	POLICY R&D PROGRAMS	4,182	4,182	....
216	NET CENTRICITY	18,130	18,130	....
218	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	5,302	5,302	....
221	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	3,239	3,239	....
225	INSIDER THREAT	11,733	2,533	−9,200
226	HOMELAND DEFENSE TECHNOLOGY TRANSFER PROGRAM	2,119	2,119	....
234	INDUSTRIAL PREPAREDNESS	24,605	22,605	−2,000
235	LOGISTICS SUPPORT ACTIVITIES	1,770	1,770	....
236	MANAGEMENT HEADQUARTERS (JCS)	2,978	2,978	....
237	MQ–9 UAV	18,151	23,151	+5,000
238	RQ–11 UAV	758	758	....
240	SPECIAL OPERATIONS AVIATION SYSTEMS ADVANCED DEV	173,934	189,134	+15,200
241	SPECIAL OPERATIONS INTELLIGENCE SYSTEMS DEVELOPMENT ...	6,866	6,866	....
242	SOF OPERATIONAL ENHANCEMENTS	63,008	63,008	....
243	WARRIOR SYSTEMS	25,342	33,842	+8,500
244	SPECIAL PROGRAMS	3,401	3,401	....
245	SOF TACTICAL VEHICLES	3,212	3,212	....
246	SOF MARITIME SYSTEMS	63,597	53,137	−10,460
247	SOF GLOBAL VIDEO SURVEILLANCE ACTIVITIES	3,933	3,933	....
248	SOF OPERATIONAL ENHANCEMENTS INTELLIGENCE	10,623	10,623	....
	TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	974,638	978,879	+4,241
999	CLASSIFIED PROGRAMS	3,564,272	3,478,272	−86,000
	TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, DEF-WIDE	18,329,861	18,926,433	+596,572

COMMITTEE RECOMMENDED ADJUSTMENTS

The following table details the adjustments recommended by the Committee:

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
3	Basic Research Initiatives	42,022	72,022	+30,000
	Basic research program increase			+30,000
5	National Defense Education Program	49,453	54,453	+5,000
	Authorization adjustment: Basic research program increase			+5,000
6	Historically Black Colleges and Universities/Minority Institutions	25,834	34,334	+8,500
	Basic research program increase			+8,500
9	Biomedical Technology	114,262	111,462	−2,800
	Improving funds management: Prior year carryover			−2,800
12	Information & Communications Technology	356,358	338,433	−17,925
	Improving funds management: Prior year carryover and documentation disparity			−17,925
15	Chemical and Biological Defense Program	208,111	202,611	−5,500
	Improving funds management: Forward financing			−5,500
18	Tactical Technology	314,582	302,582	−12,000
	Maintain program affordability: Program growth and new starts			−12,000
19	Materials and Biological Technology	220,115	201,721	−18,394
	Improving funds management: Prior year carryover			−18,394
20	Electronics Technology	174,798	163,798	−11,000
	Improving funds management: Prior year carryover and new starts			−11,000
21	Weapons of Mass Destruction Defeat Technologies	155,415	150,415	−5,000
	Improving funds management: Prior year carryover			−5,000
26	Combating Terrorism Technology Support	71,171	111,171	+40,000
	Program increase			+40,000
28	Counter proliferation Initiatives—Proliferation Prevention and Defeat	290,654	280,654	−10,000
	Budget documentation disparity: Poor justification materials and prior year carryover			−10,000
31	Discrimination Sensor Technology	28,200	33,200	+5,000
	Transfer from line 96 for discrimination sensor technology maturation			+5,000
32	Weapons Technology	45,389	65,389	+20,000
	Transfer from line 96 for laser technology maturation			+10,000
	Authorization adjustment: Divert attitude control systems technology to support Multi-Object Kill Vehicle			+10,000
36	Agile Transportation for the 21st Century [AT21]—Theater Capability	2,679	1,706	−973
	Improving funds management: Prior year carryover			−973
37	Special Program—MDA Technology	64,708	13,908	−50,800
	Program adjustment			−50,800
38	Advanced Aerospace Systems	185,043	175,025	−10,018
	Improving funds management: Prior year carryover			−10,018
41	Advanced Innovative Analysis and Concepts	59,830	50,030	−9,800
	Improving funds management: Prior year carryover and minimize growth			−9,800
42	Common Kill Vehicle Technology	46,753	66,753	+20,000
	Authorization adjustment: Increase for Multi-Object Kill Vehicle			+20,000
45	Joint Electronic Advanced Technology	43,966	23,966	−20,000
	Improving funds management: Prior year carryover and minimize growth			−20,000
46	Joint Capability Technology Demonstrations	141,540	126,540	−15,000
	Improving funds management: Prior year carryover and minimize growth			−25,000
	Program increase: Cybersecurity technology demonstrations			+10,000
47	Networked Communications Capabilities	6,980	5,000	−1,980
	Improving funds management: Prior year carryover			−1,980
51	Emerging Capabilities Technology Development	33,515	37,515	+4,000
	Program increase			+4,000
52	Generic Logistics R&D Technology Demonstrations	16,543	14,543	−2,000

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	Maintain program affordability: Program growth and new starts	....	....	−2,000
53	Deployment and Distribution Enterprise Technology	29,888	25,270	−4,618
	Improving funds management: Prior year carryover	....	....	−4,618
55	Microelectronics Technology Development and Support	79,037	89,037	+10,000
	Program increase	....	....	+10,000
56	Joint Warfighting Program	9,626	5,000	−4,626
	Improving funds management: Prior year carryover	....	....	−4,626
57	Advanced Electronics Technologies	79,021	75,985	−3,036
	Improving funds management: Prior year carryover	....	....	−3,036
59	Network-Centric Warfare Technology	452,861	432,861	−20,000
	Authorization adjustment: Program growth	....	....	−20,000
60	Sensor Technology	257,127	245,127	−12,000
	Improving funds management: Prior year carryover	....	....	−12,000
63	Quick Reaction Special Projects	90,500	65,500	−25,000
	Budget documentation disparity: Poor justification materials	....	....	−25,000
66	Engineering Science & Technology	18,377	8,377	−10,000
	Restoring acquisition accountability: Unjustified request for engineered resilient systems	....	....	−10,000
67	Test & Evaluation Science & Technology	82,589	94,589	+12,000
	Program increase	....	....	+12,000
68	Operational Energy Capability Improvement	37,420	42,420	+5,000
	Program increase	....	....	+5,000
70	SOF Advanced Technology Development	57,741	59,741	+2,000
	Program increase	....	....	+2,000
76	Ballistic Missile Defense Terminal Defense Segment	228,021	205,621	−22,400
	Maintain program affordability: Software Build 4.0 excess growth at program initiation	....	....	−22,400
78	Chemical and Biological Defense Program—Dem/Val	172,754	170,354	−2,400
	Restoring acquisition accountability: Unjustified request for CBRN	....	....	−2,400
85	Ballistic Missile Defense Command and Control, Battle Management and Communication	450,085	437,785	−12,300
	Restoring acquisition accountability: Future Spirals concurrency with multiple ongoing efforts and excess growth	....	....	−12,300
90	Israeli Cooperative Programs	102,795	267,595	+164,800
	Israeli Upper tier	....	....	+19,500
	Israeli Arrow program	....	....	+45,500
	Short range ballistic missile defense	....	....	+99,800
91	Ballistic Missile Defense Test	274,323	287,804	+13,481
	Transfer test from line 96	....	....	+13,481
92	Ballistic Missile Defense Targets	513,256	527,994	+14,738
	Transfer target procurement from line 96	....	....	+14,738
95	Department of Defense Corrosion Program	1,518	11,518	+10,000
	Authorization adjustment: Program increase	....	....	+10,000
96	Technology Maturation Initiatives	96,300	4,271	−92,029
	Restoring acquisition accountability: Advanced Sensor Prototype Development	....	....	−43,810
	Restoring acquisition accountability: Directed Energy Prototype Development	....	....	−20,000
	Transfer test to line 91	....	....	−13,481
	Transfer target procurement to line 92	....	....	−14,738
98	Department of Defense (DOD) Unmanned Aircraft System [UAS] Common Development	3,129	7,791	+4,662
	Program Increase	....	....	+4,662
101	Defense Rapid Innovation Program	....	400,000	+400,000
	Authorization adjustment: Technology Offset Initiative	....	....	+400,000
103	Joint C5 Capability Development, Integration and Interoperability Assessments	25,200	21,700	−3,500
	Budget documentation disparity: Incomplete justification materials and execution issues	....	....	−3,500
106	Improved Homeland Defense Interceptors	278,944	298,944	+20,000

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	Authorization adjustment: Redesigned kill vehicle development	....	....	+ 20,000
108	Aegis BMD Test	55,148	82,468	+ 27,320
	Transfer additional SM–3 Block IB flight tests: MDA requested from PDW Line #25	....	....	+ 27,320
117	Prompt Global Strike Capability Development	78,817	88,817	+ 10,000
	Authorization adjustment: Conventional Prompt Global Strike development and flight test	....	....	+ 10,000
118	Chemical and Biological Defense Program—EMD	303,647	282,147	− 21,500
	Restoring acquisition accountability: Milestone B delay for Common Analytical Laboratory system	....	....	− 10,000
	Restoring acquisition accountability: Milestone B delay for Joint Biological Aircraft Decontamination System	....	....	− 1,500
	Improving funds management: Prior year carryover	....	....	− 10,000
119	Advanced IT Services Joint Program Office [AITS–JPO]	23,424	18,424	− 5,000
	Maintain program affordability: Excess program management	....	....	− 5,000
122	Information Technology Development	12,542	12,042	− 500
	Budget documentation disparity: TBD's in justification books	....	....	− 500
123	Homeland Personnel Security Initiative	191	....	− 191
	Improving funds management: Prior year carryover	....	....	− 191
125	OUSD(C) IT Development Initiatives	5,962	2,962	− 3,000
	Improving funds management: Forward financing and late contract awards	....	....	− 3,000
126	DOD Enterprise Systems Development and Demonstration	13,412	11,912	− 1,500
	Improving funds management: Forward financing and late contract awards	....	....	− 1,500
129	Defense Retired and Annuitant Pay System [DRAS]	13,085	10,135	− 2,950
	Restoring acquisition accountability: Delayed new start contract award	....	....	− 2,950
131	Global Combat Support System	15,158	13,794	− 1,364
	Maintain program affordability: Unjustified growth	....	....	− 1,364
132	DoD Enterprise Energy Information Management [EEIM]	4,414	3,614	− 800
	Improving funds management: Prior year carryover	....	....	− 800
135	Central Test and Evaluation Investment Development [CTEIP] ...	229,125	214,125	− 15,000
	Improving funds management: Prior year carryover	....	....	− 15,000
138	Joint Mission Environment Test Capability [JMETC]	45,235	40,235	− 5,000
	Improving funds management: Prior year carryover and minimize growth	....	....	− 5,000
141	Joint Integrated Air and Missile Defense Organization [JIAMDO]	35,471	32,009	− 3,462
	Improving funds management: Prior year carryover	....	....	− 3,462
142	Classified Program USD(P)	....	111,241	+ 111,241
	Classified program adjustment	....	....	+ 111,241
144	Systems Engineering	37,655	41,655	+ 4,000
	Program increase	....	....	+ 4,000
145	Studies and Analysis Support—OSD	3,015	2,715	− 300
	Improving funds management: Prior year carryover	....	....	− 300
148	General Support to USD (Intelligence)	2,120	1,689	− 431
	Improving funds management: Prior year carryover	....	....	− 431
159	Defense Technology Analysis	13,960	216,960	+ 203,000
	Program increase	....	....	+ 3,000
	Authorization adjustment: Assessment of major weapon system cyber vulnerabilities	....	....	+ 200,000
160	Defense Technical Information Center [DTIC]	51,775	56,775	+ 5,000
	Program increase: National security technology accelerator technology knowledge exchange	....	....	+ 5,000
161	R&D in Support of DOD Enlistment, Testing and Evaluation	9,533	7,937	− 1,596
	Improving funds management: Prior year carryover and minimize growth	....	....	− 1,596
166	Joint Staff Analytical Support	7,673	5,000	− 2,673
	Restoring acquisition accountability: Delayed new start contract award	....	....	− 2,673

[In thousands of dollars]

Line	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
173	COCOM Exercise Engagement and Training Transformation [CE2T2]—MHA	43,811	42,766	−1,045
	Improving funds management: Prior year carryover	....	....	−1,045
178	Enterprise Security System [ESS]	7,929	4,229	−3,700
	Restoring acquisition accountability: Contract award delay	....	....	−3,700
186	Planning and Decision Aid System [PDAS]	3,061	1,842	−1,219
	Budget documentation disparity: Poor justification material	....	....	−1,219
187	C4I Interoperability	64,921	63,341	−1,580
	Maintain program affordability: Major Range and Test Facility Base [MRTFB] infrastructure growth	....	....	−1,580
189	Joint/Allied Coalition Information Sharing	3,645	1,845	−1,800
	Improving funds management: Prior year carryover	....	....	−1,800
195	Long-Haul Communications—DCS	36,883	32,383	−4,500
	Improving funds management: Forward financing	....	....	−4,500
200	Information Systems Security Program	146,890	156,890	+10,000
	Authorization adjustment: Sharkseer enterprise email initiative increase	....	....	+10,000
225	Insider Threat	11,733	2,533	−9,200
	Transfer Insider Threat/Continuous Evaluation: DSS-requested to OMDW	....	....	−9,200
234	Industrial Preparedness	24,605	22,605	−2,000
	Restoring acquisition accountability: Contract award delay	....	....	−2,000
237	MQ–9 UAV	18,151	23,151	+5,000
	Authorization adjustment: MQ–9 capability enhancements	....	....	+5,000
240	Aviation Systems	173,934	189,134	+15,200
	Transfer C–130 TF/TA: SOCOM requested from PDW Line #54 C–130 Modifications	....	....	+7,500
	Authorization adjustment: C–130 TF/TA program adjustment	....	....	+7,700
243	Warrior Systems	25,342	33,842	+8,500
	Improving funds management: Prior year carryover	....	....	−2,000
	Program increase	....	....	+10,500
246	Maritime Systems	63,597	53,137	−10,460
	Maintain program affordability: Test and evaluation delayed due to FY2015 NDAA	....	....	−10,460
	Classified Programs	3,564,272	3,478,272	−86,000
	Classified program adjustment	....	....	−86,000

Multi-Azimuth Defense Fast Intercept Round Engagement System [MAD–FIRES].—The Committee is aware of a number of Defense Advanced Research Projects Agency [DARPA] development projects that are designed to provide in-flight guidance to small and medium caliber munitions. These projects, such as the Extreme Accuracy Tasked Ordnance [EXACTO] and MAD–FIRES, have the potential to increase direct fire accuracy and lethality while reducing associated logistical support costs. The Committee encourages the military services to leverage this maturing technology in weapon programs designed to counter multiple target sets and platforms with limited ammunition carrying capacity.

Anti-Submarine Warfare Continuous Trail Unmanned Vessel.— The fiscal year 2016 President's budget request contains funding for the Defense Advanced Research Projects Agency [DARPA] to continue work on the Anti-Submarine Warfare [ASW] Continuous-Trail Unmanned Vessel [ACTUV]. The Committee is aware of and encouraged by recent at-sea tests demonstrating the success of the autonomous command and control software aboard a surrogate test vessel. The Committee encourages the Director of DARPA and the Secretary of the Navy to complete additional testing of the auton-

omy design to ensure the successful transition of this demonstrated program.

Microelectronics Technology Development and Support.—The Committee is concerned about maintaining supply chain assurance against counterfeit microelectronic parts. Therefore, the Committee encourages the Secretary of Defense to provide quarterly updates to the Committee on its efforts to maintain a robust Trusted Foundry capacity in the United States.

Polyurethane Protective Tape on Aircraft.—In order to minimize rotary and fixed wing aircraft sustainment costs and enhance platform availability, the Department of Defense is encouraged to use polyurethane protective tapes on composite and aluminum exterior surfaces susceptible to erosion from the high speed impact of rain, sand or dust. This includes applications on both existing aircraft and new platform designs as appropriate.

Lithium-ion Battery Safety.—The Committee is aware of the need to increase research and development on materials aimed at improving lithium-ion battery safety and performance. The development of new, non-flammable electrolytes could lead to the development of lithium-ion batteries that are safer and more energy efficient. Accordingly, the Department of Defense is encouraged to develop lithium-ion battery technologies that protect soldiers and improve mission performance.

Small Business Research Initiatives.—The Committee recognizes the importance of the Small Business Innovation Research [SBIR] program and its success in commercialization from federally funded research and development projects. The SBIR program encourages domestic small business to engage in Federal research and development and creates jobs, supporting rapid growth in the smallest firms. The Committee encourages the Department of Defense to continue placing an increased focus on firms new to the SBIR program by providing resources to assist these firms, especially with government contracting and accounting.

Advanced Green Laser Ballistic Eye Protection.—The Committee understands that the Army desires laser eye protection to protect the warfighter from green laser. The Committee therefore encourages the Secretary of the Army to develop lightweight protective eyewear that provides night vision capabilities to improve soldier protection from this widespread threat.

Heat Exchange Rate Research.—The Committee encourages the Director of Defense Advanced Research Projects Agency to support research and technology development in surface design and manufacturing to increase heat exchange rates by 10 times in power generation; to alleviate icing formation on aircraft wings; to inhibit the accumulation of unwanted living organism on ships; and to inhibit bacteria growth in biomedical systems and devices. Such surfaces should be computationally designed and robustly manufactured and maintained over a wide range of engineering materials to enable super-efficient and cost-effective engineered systems.

Trusted Foundry.—The Committee is concerned with efforts of a foreign based company to acquire a U.S.-based foundry that supplies trusted microprocessors for the Department of Defense and the Intelligence Community. The Committee has been informed by the Department that near-term and long-term plans are being de-

veloped to address access to microprocessors from trusted sources. Therefore, not later than 90 days after enactment of this act, the Committee directs the Secretary of Defense to provide a report on the near-term and long-term plan to address U.S. access to trusted microprocessors.

Department of Defense Acquisition and Innovation.—The Committee is aware of the Department of Defense release of the third iteration of Better Buying Power initiative and commends the Department for its continued efforts to increase efficiency throughout the research, development, acquisition and production process. Increasing the use of prototyping and removing barriers to increase the utilization of commercial technology should reduce costs and increase technology transition to our warfighters. The Committee notes the Department's recent request for information concerning research and development projects that promote innovation in military and dual-use technologies that could support military needs and advance the capabilities of the industrial base. The Committee encourages the Department to engage in more of this type of activity and directs the Department to provide periodic updates to the congressional defense committees on progress made within these initiatives.

Mobile Applications for Military Use.—The Committee notes the increased importance of providing United States servicemembers with advancements in technology and supports Department of Defense efforts to build mobile applications and other specialized equipment. The Committee directs the Director of the Defense Information Systems Agency [DISA] to review its mobile strategy, in particular the process for delivering mobile applications that address the needs of the wide array of servicemember specializations, and submit a report to the congressional defense committees, not later than 180 days after enactment of this act. Further, the Committee recognizes the importance of small businesses in providing mobile applications for military uses and encourages DISA to engage small businesses to find these specialized solutions.

Cyber Warfare Planning Capabilities.—The Committee is concerned that current and future adversaries of the United States are working to develop technical capabilities which will utilize the entire spectrum of denial technologies, from traditional kinetic weapons to cyber and electromagnetic weapons, which could enable adversarial forces to leverage new weapons and tactics against U.S. forces. U.S. forces must be prepared to fight a full spectrum conflict, which includes cyber-attacks and electromagnetic attacks in the battlespace. The Committee encourages the Secretary of Defense to develop a cyber-kinetic training capability for special operations forces as a pilot program for incorporating cyber kinetic training into the overall training cycle. The Department, in planning and developing this training, testing, evaluation, and assessment capability, is encouraged to use existing facilities where live-fire kinetic and cyber-attacks can be conducted against live and simulated cyber infrastructure, in order to enhance warfighting capabilities and prepare service members for future threats. The Committee also recommends that the Department consult with National Nuclear Security Agency, the National Security Agency, and other US intelligence agencies, as appropriate, to develop this capa-

bility. The Department of Defense shall submit a report on its plan to develop and incorporate such training not later than 180 days after enactment of this act.

Research, Development, Test and Evaluation [RDT&E], Defense-Wide Justification Material.—The Committee is concerned with the level of detail provided by the Department of Defense to justify the fiscal year 2016 President's budget request in the RDT&E, Defense-Wide account. The Financial Management Regulations requires that programs within budget activity 4 through budget activity 7 be required to provide additional justification material beyond the basic R–1. Having additional justification material presented with the budget submission provides for more effective oversight of the funding requested in the account. To that end, the Committee directs the Secretary of Defense and the leadership of the agencies and organizations whose funding is contained in the RDT&E, Defense-Wide account provide R–3 and R–4 data for all programs within budget activity 3. This information should be provided as part of the annual budget submission.

Anti-Tunnel Capabilities.—The Committee understands that the United States and Israel face a growing threat to their borders from tunnels, and that these tunnels could be used for criminal or terrorist purposes. Therefore, the Committee believes that the United States and Israel could potentially benefit from developing technologies to detect and counter tunnels. However, the Committee notes that the Department of Defense has not identified to the Committee a requirement for developing such a capability, nor has the Secretary of Defense established a memorandum of agreement with the Government of Israel regarding the establishment of anti-tunnel capabilities. Therefore, the Committee directs the Under Secretary of Defense for Acquisition, Technology and Logistics to provide in the near-term to the congressional defense committees an update on current anti-tunnel capabilities, including a roadmap for future capabilities.

MISSILE DEFENSE AGENCY

Missile Defense Agency [MDA] Science and Technology Initiatives.—The fiscal year 2016 budget request includes $320,729,000 for missile defense science and technology initiatives, an increase of $125,641,000 over amounts appropriated in fiscal year 2015. The Committee supports investment in technologies addressing future needs in a cost-effective manner; however, the Committee is concerned with MDA's proposed plans. The Committee notes a significant increase for prototyping of systems based on immature technology, as well as significant concurrency between efforts. Further, the Committee remains concerned by the absence of defined requirements, cost targets, and realistic operational concepts. Therefore, the Committee recommends full funding for advanced technology development, but does not recommend funding for prototyping these technologies. Instead, the Committee recommends a $15,000,000 increase for continued technology development and maturation.

Divert and Attitude Control Systems [DACS] Strategy.—The fiscal year 2016 budget request includes $11,842,000 for the competitive development of next generation DACS technology, a reduction

of $8,633,000, or 42 percent, from fiscal year 2015. The Committee notes that MDA has not planned any funds for the continued development of next generation DACS technology in the following fiscal years, despite that fact that according to MDA, "the DACS component is critical to making precise trajectory adjustments to position the kill vehicle for a target intercept". The Committee notes the limited U.S. DACS industrial base, as well as significant cost savings and technology advances MDA has repeatedly garnered from having access to a competitive DACS industrial base during previous program development and acquisitions. Therefore, the Committee is concerned that MDA's strategy to support the DACS industrial base omits investing in new DACS technologies to support future weapons programs.

In particular, the fiscal year 2016 budget request initiates the Multi-Object Kill Vehicle [MOKV] that will likely require next generation DACS technology. The Committee notes that MDA intends to award prototype concept contracts for the amount of $25,628,000 in fiscal year 2016. The Committee directs that not more than $6,332,000 may be obligated or expended for MOKV prototype concept contracts until the Director, MDA certifies to the congressional defense committees that MDA's "Plan to Sustain Competitive Divert Attitude Control System Industrial Base" is appropriately resourced in MDA's Future Year Defense Program to meet MDA's stated objective. The Committee recommends an additional $10,000,000 for DACS technology to mitigate the funding shortfall in fiscal year 2016.

SM–3 Block IIA Interceptor.—The fiscal year 2016 budget request includes $172,645,000 for continued development and the first flight test of the SM–3 Block IIA interceptor, which supports the European Phased Adaptive Approach. The Committee recommends full funding of this request. In addition, the budget requests $136,217,000 to continue incrementally funding 17 SM–3 Block IIA flight test rounds. The Committee notes that this quantity considerably exceeds the number of rounds required for flight testing and initial fielding. The Committee further notes that these test rounds are expected to cost $515,300,000 through fiscal year 2020. Finally, the Committee is concerned by contractual agreements MDA has committed to for these flight rounds well in advance of them being ground or flight tested. MDA has informed the Committee that renegotiating contracts for these test rounds would add costs to the program and result in a fielding delay of the European Phased Adaptive Approach Phase III. The Committee does not support such a delay and therefore does not object to the funding request in this fiscal year. However, the Committee notes that an initial production decision for the SM–3 Block IIA interceptor is scheduled for fiscal year 2017. The Committee expects to receive insight into MDA's acquisition, contracting and budgeting strategy for initial production rounds prior to MDA entering into agreements with industry or foreign partners.

Further, the Committee directs the Under Secretary of Defense for Acquisition, Technology and Logistics to submit with the fiscal year 2017 budget request a report detailing by service and program all ongoing Department of Defense development programs with international partners, U.S. contributions by fiscal year since their

respective initiation, and status of contracts through the fiscal year 2017 Future Years Defense Program.

MDA Integrated Master Test Plan [IMTP].—The Committee understands that MDA has revised the process by which it develops its annual Integrated Master Test Plan to—amongst other goals—align more closely with the budget development and enactment process. The Committee welcomes this approach, but remains concerned with MDA's inability to retain a stable test program and repeated in-year plan adjustments due to target failures, test failures, re-tests, and new test requirements. The Committee notes that since fiscal year 2012, MDA has executed less than 50 percent of its planned annual test program. While the Committee recognizes the need for execution year adjustments to some degree, the Committee is concerned that these constant adjustments reduce the overall quality of MDA's test program. Further, the Committee notes that MDA has yet to submit its Integrated Master Test Plan for the upcoming year. The Committee expects the Director, MDA to continue to improve planning and execution of the MDA test program.

Sharing of Classified United States Ballistic Missile Defense Information With the Russian Federation.—The Committee remains concerned with the potential security risks associated with sharing sensitive U.S. missile defense data and technology with the Russian Federation. The Committee recognizes that existing law restricts the sharing of sensitive and classified ballistic missile defense information with the Russian Federation, as established in the National Defense Authorization Act for Fiscal Year 2015. The Committee expects the administration to continue to adhere to current law until superseded by an act authorizing appropriations for fiscal year 2016.

OPERATIONAL TEST AND EVALUATION, DEFENSE

Appropriations, 2015	$209,378,000
Budget estimate, 2016	170,558,000
Committee recommendation	190,558,000

The Committee recommends an appropriation of $190,558,000. This is $20,000,000 above the budget estimate.

COMMITTEE RECOMMENDED PROGRAM

The following table summarizes the budget estimate for this appropriation, the Committee recommendation, and the Committee recommended adjustments to the budget estimate:

[In thousands of dollars]

	Item	2016 budget estimate	Committee recommendation	Change from budget estimate
	RDT&E Management Support			
1	Operational Test and Evaluation	76,838	76,838	....
2	Live Fire Test and Evaluation	46,882	46,882	....
3	Operational Test Activities and Analyses	46,838	66,838	+20,000
	Program increase: Threat resource analysis	....	....	+9,000
	Program increase: Joint test and evaluation	....	....	+11,000
	Total, Operational Test and Evaluation, Defense	170,558	190,558	+20,000