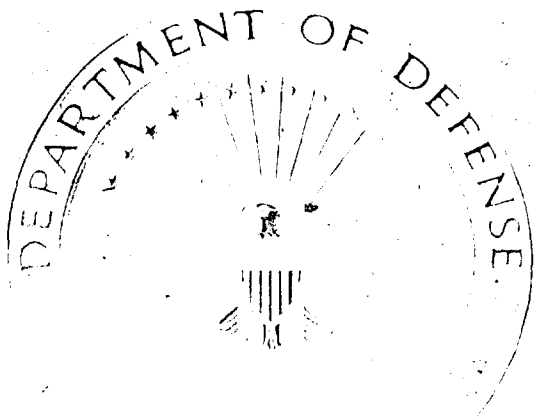
DEPARTMENT OF DEFENSE IN-HOUSE RDT&E ACTIVITIES



Management Analysis Report for Fiscal Year 1992

Department of the Army

Department of the Navy

Department of the Air Force

Defense Nuclear Agency

DEPARTMENT OF DEFENSE IN-HOUSE RDT&E ACTIVITIES REPORT

for

Fiscal Year 1992

Prepared for:

The Office of the Secretary of Defense
Director, Defense
Research and Engineering
The Pentagon
Washington, DC 20301

FOREWORD

JAN 25, 1994

The Department of Defense (DoD) In-House Research, Development, Test and Evaluation (RDT&E) Activities Report for FY92 was prepared by the Office of the Secretary of Defense, and is a continuation of the series of reports initiated in 1966.

On July 13, 1993 the Deputy Director of Defense Research and Engineering established a Steering Group which is responsible for the preparation and oversight of the report and its underlying database. The Steering Group is composed of representatives from the offices of the Director of Defense Research and Engineering, the Deputy Assistant Secretary of the Army for Research and Technology, the Chief of Naval Research, the Deputy Assistant Secretary of the Air Force (Research and Engineering), the Director of the Defense Nuclear Agency and the Assistant Secretary of Defense (Comptroller).

An organizational entity is considered to be a "DoD RDT&E Activity" when it is owned and operated by the Government, and a minimum of 25% of its total effort is devoted to research, exploratory or advanced development, engineering development, systems or operational support, or some combination thereof. Examples are a research laboratory, RD&E center, test activity, or multi-functional entity such as a "warfare center". An "In-House" RDT&E Activity is an organization where a minimum of 25% of the in-house manpower and/or 25% of the obligational authority used is devoted to in-house research, exploratory or advanced development, engineering development, etc.

Each In-House RDT&E Activity of the DoD is described in a standard multi-page format in this year's edition of the report. A partial organization chart, entitled "Abbreviated Functional Chart - Technical Organizations", appears for each Activity to provide an overview of its technical operations. Activities are listed alphabetically within their respective military departments. Selected data are summarized in tables in the first section of the report. Sections then follow which cover the Army, Navy, Air Force and the Defense Nuclear Agency.

Organizational changes for FY92 appear in Appendix A, including the new structures of the Naval Warfare Centers. Appendix B contains definitions of the report data elements displayed in this report and contained in the database. Appendix C defines selected abbreviations and acronyms. All zero-filled report data fields reflect a zero amount reported.

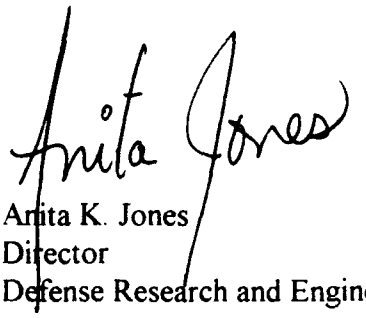
Every effort has been made to provide accurate information. Each submission was reviewed and approved by the head of the Activity. All numbers and statements submitted by each Activity were then thoroughly examined by the members and staff of the Steering Group. Please note though, that this report does not reflect the total DoD RDT&E program. It is also not an accounting document, but rather a "snapshot" of the operation of individual Activities. All funding data reflect total obligational authority received in FY92.

In preparing for annual publication, more data has been accumulated in a computerized

database than is published in the report. All of the data is used by numerous organizations, including DoD, Office of Technology Assessment, DoD Audit Agency, various committees of the Congress, and the General Accounting Office. This report and its underlying database provide easily accessible, comprehensive and accurate information without frequent querying of field Activities.

This publication should be given widespread distribution in the DoD Laboratories, both as an internal management document at the Director and Commanding Officer level, and as a catalog of general activity at the bench level. It provides laboratory staff an opportunity to familiarize themselves with the functional capabilities of other DoD Laboratories, thereby encouraging scientists and engineers to communicate with their counterparts at other labs on problems of common interest.

In addition, this publication should be helpful to those in the private sector interested in exploring the potential for technology cooperation with DoD Laboratories.



Anita K. Jones
Director
Defense Research and Engineering

Note: For additional copies of this report, contact:

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	FUNDING DATA (MILLIONS $)				PERSONNEL DATA					
INSTALLATION	TOTAL	TOTALS IN-HOUSE	TOTALS RDT&E	IN-HOUSE RDT&E	TOTAL MIL	TOTAL CIV	PHD MIL	PHD CIV	ENG MIL	ENG CIV
Aeromedical Research Laboratory	17.138	10.918	13.807	7.587	67	79	17	14	20	11
Armament Research, Develop. & Eng. Center	519.822	153.948	235.130	96.715	73	4,972	1	102	54	2,187
Army Research Laboratory	715.463	322.402	365.840	211.433	149	3,507	11	354	34	1,390
Aviation Research, Develop. & Eng. Center	82.039	36.540	74.174	32.935	12	543	1	35	8	236
Aviation Technical Test Center	21.642	21.642	15.796	15.796	98	170	0	0	40	47
Belvoir Research, Develop. & Eng. Center	170.661	65.960	114.096	41.521	22	874	0	19	7	409
CECOM Research, Develop. & Eng. Center	911.414	156.512	405.815	93.710	182	2,230	1	77	19	1,294
Chemical Research, Develop. & Eng. Center	344.780	121.238	198.140	80.115	72	1,539	1	75	12	660
Cold Regions Research & Engineering Lab	29.807	24.184	18.441	13.886	3	267	0	36	1	67
Cold Regions Test Center	10.920	10.920	6.555	6.555	81	36	1	0	5	9
Combat Systems Test Activity	136.125	86.230	84.953	51.532	196	1,190	0	8	12	319
Construction Engineering Research Labs	79.345	27.636	31.657	16.141	4	369	0	48	4	197
Dugway Proving Ground	92.438	92.438	76.634	76.634	60	710	1	21	7	68
Electronic Proving Ground	61.483	28.587	37.043	12.348	368	206	1	2	28	94
Engineer Waterways Experiment Station	215.710	115.609	86.910	43.996	6	1,578	2	160	4	548
Institute of Surgical Research	13.539	13.039	7.325	6.825	157	65	16	2	42	22
Materiel Systems Analysis Activity	51.452	31.032	33.500	23.253	18	463	0	12	14	348
Medical Research Inst. of Chemical Defense	28.844	22.579	24.288	18.023	66	193	26	44	5	51
Medical Research Inst. of Infectious Disease	51.448	35.971	39.927	24.450	275	261	33	48	51	81
Missile Research, Develop. & Eng. Center	439.558	161.384	303.759	89.495	33	2,247	1	59	8	1,352
Natick Research, Develop. & Eng. Center	130.432	54.132	91.405	39.776	69	1,024	0	61	4	366
OPTEC Test and Evaluation Command	116.045	116.045	64.251	64.251	978	582	0	4	0	0
Research Inst. for Behavioral & Social Sciences	49.162	25.366	47.984	24.403	9	275	1	129	8	31
Research Institute of Environmental Medicine	15.103	12.989	10.632	8.518	83	95	27	30	29	36
Tank Automotive Research, Dev. & Eng. Cntr	303.055	77.050	80.573	24.268	22	1,210	1	21	18	573
Topographic Engineering Center	62.471	32.021	50.367	20.673	12	416	0	16	0	253
Walter Reed Army Institute of Research	138.644	88.779	102.456	52.591	343	388	151	92	77	204
White Sands Missile Range	188.769	105.740	109.094	66.179	436	2,203	0	21	0	591
Yuma Proving Ground	125.002	76.135	83.972	44.609	170	823	0	2	8	222

TABLE 2. ARMY RDT&E ACTIVITIES, FACILITY DATA, FY 1992

INSTALLATION	LOCATION	SPACE AND PROPERTY						
			SPACE (THOUSANDS OF SQUARE FEET)				COST (MILLIONS $)	
		ACRES	LAB	ADMIN	OTHER	TOTAL	REAL PROP	EQUIP
Aeromedical Research Laboratory	Fort Rucker, AL	53	107.286	25.520	39.652	172.458	54.922	40.581
Armament Research, Develop. & Eng. Center	Picatinny Arsenal, NJ	5,853	452.617	1,150.733	2,438.110	4,041.460	1.617	17.862
Army Research Laboratory	Adelphi, MD	5,774	1,777.160	405.350	504.470	2,686.980	1,264.800	494.778
Aviation Research, Develop. & Eng. Center	St. Louis, MO	127	62.428	56.551	18.802	137.781	3.020	23.420
Aviation Technical Test Center	Ft. Rucker, AL	0	0.000	93.000	229.000	322.000	3.027	175.419
Belvoir Research, Develop. & Eng. Center	Ft. Belvoir, VA	240	332.949	67.117	260.390	660.456	14.041	8.174
CECOM Research, Develop. & Eng. Center	Ft. Monmouth, NJ	24	192.807	348.851	0.000	541.658	65.652	117.814
Chemical Research, Develop. & Eng. Center	Aberdeen PG, MD	3,471	927.000	405.000	424.000	1,756.000	80.000	125.000
Cold Regions Research & Engineering Lab	Hanover, NH	30	80.115	66.795	151.845	298.755	27.811	20.228
Cold Regions Test Center	Ft. Greely, AK	670	1.400	18.200	198.400	218.000	11.450	18.332
Combat Systems Test Activity	Aberdeen PG, MD	56,707	155.466	166.016	910.538	1,232.020	28.991	203.565
Construction Engineering Research Labs	Champaign, IL	33	103.850	27.513	134.523	265.886	9.150	17.000
Dugway Proving Ground	Dugway, UT	798,855	129.190	167.000	2,169.340	2,465.530	131.000	4.891
Electronic Proving Ground	Ft. Huachuca, AZ	29,139	247.909	18.500	14.480	280.889	21.485	38.000
Engineer Waterways Experiment Station	Vicksburg, MS	4,192	2,075.366	404.292	215.422	2,695.080	451.262	160.241
Institute of Surgical Research	Ft. Sam Houston, TX	1	53.408	3.000	0.000	56.408	10.553	7.799
Materiel Systems Analysis Activity	Aberdeen PG, MD	4	1.600	126.350	6.050	134.000	3.596	7.964
Medical Research Inst. of Chemical Defense	Aberdeen PG, MD	31	40.502	36.488	115.745	192.735	23.100	24.400
Medical Research Inst. of Infectious Disease	Ft. Detrick, MD	4	121.016	39.718	223.241	383.975	60.131	30.995
Missile Research, Develop. & Eng. Center	Redstone Arsenal, AL	4,000	420.495	181.597	20.000	622.092	216.000	0.210
Natick Research, Develop. & Eng. Center	Natick, MA	174	416.251	114.463	285.577	816.291	36.353	33.741
OPTEC Test and Evaluation Command	Ft. Hood, TX	22	19.900	41.000	0.000	60.900	6.300	3.000
Research Inst. for Behavioral & Social Science	Alexandria, VA	0	53.355	14.000	6.200	73.555	0.120	3.417
Research Institute of Environmental Medicine	Natick, MA	1	38.754	6.560	33.750	79.064	25.505	6.082
Tank Automotive Research, Dev. & Eng. Cnt	Warren, MI	102	393.770	178.246	0.000	572.016	78.100	192.500
Topographic Engineering Center	Ft. Belvoir, VA	0	121.772	9.749	36.998	168.519	22.400	2.200
Walter Reed Army Institute of Research	Washington, DC	37	222.457	92.634	162.488	477.579	45.836	2.998
White Sands Missile Range	White Sands, NM	2,281,659	66.385	966.270	4,318.473	5,351.128	383.700	375.042
Yuma Proving Ground	Yuma, AZ	1,009,376	22.175	161.300	1,709.159	1,892.634	93.072	304.418

TABLE 3. NAVY RDT&E ACTIVITIES, PROGRAM AND PERSONNEL DATA, FY 1992

	FUNDING DATA (MILLIONS $)				PERSONNEL DATA					
INSTALLATION	TOTAL	TOTALS IN-HOUSE	TOTALS RDT&E	IN-HOUSE RDT&E	TOTAL MIL	TOTAL CIV	PHD MIL	PHD CIV	ENG MIL	ENG CIV
Aerospace Medical Research Laboratory	4.433	4.433	4.433	4.433	41	50	8	11	2	3
Air Warfare Center	3,515.837	1,877.517	1,274.996	750.875	3,582	20,641	9	266	547	7,341
Biodynamics Laboratory	3.383	3.165	3.383	3.165	33	37	3	3	2	6
Civil Engineering Laboratory	58.362	42.444	37.444	27.191	15	385	0	24	7	173
Clothing and Textile Research Facility	3.459	3.309	1.374	1.224	1	54	0	1	0	30
Command, Control & Ocean Surveillance Center	1,659.286	745.088	402.058	203.162	525	5,706	3	203	33	2,502
Dental Research Institute	1.549	1.549	1.549	1.549	22	15	6	3	0	0
Explosive Ordnance Disposal Technology Center	83.739	27.733	51.577	17.251	65	267	0	1	9	64
Health Research Center	7.594	5.080	7.594	5.080	25	62	7	11	6	11
Medical Research Institute	36.504	22.762	36.475	22.733	261	165	58	30	14	88
Medical Research Unit #2	3.562	3.562	2.736	2.736	13	92	4	3	2	17
Medical Research Unit #3	6.531	6.382	6.320	6.171	30	213	8	29	1	8
Naval Research Laboratory	727.676	359.244	455.583	253.588	176	3,876	4	872	20	1,048
Personnel Research and Development Center	27.074	16.747	14.885	9.516	19	229	0	55	6	110
Submarine Medical Research Laboratory	4.280	4.031	4.069	3.820	31	41	5	10	3	3
Surface Warfare Center	3,109.365	1,874.656	968.659	499.769	649	22,221	1	1,574	222	6,866
Undersea Warfare Center	1,287.701	759.907	388.043	203.878	374	7,636	0	137	50	3,184

TABLE 5. AIR FORCE RDT&E ACTIVITIES, PROGRAM AND PERSONNEL DATA, FY 1992

INSTALLATION	FUNDING DATA (MILLIONS $)				PERSONNEL DATA					
	TOTAL	TOTALS IN-HOUSE	TOTALS RDT&E	IN-HOUSE RDT&E	TOTAL MIL	TOTAL CIV	FHD MIL	FHD CIV	ENG MIL	ENG CIV
Armstrong Laboratory	193.100	35.390	132.600	18.090	454	558	94	138	193	230
Arnold Engineering Development Center (AFMC)	377.247	273.833	286.847	183.433	116	193	0	3	63	62
Development Test Center	218.659	156.624	213.838	151.803	2,196	2,441	13	22	985	1,387
Flight Test Center	551.577	393.608	380.544	232.073	3,679	2,588	43	6	0	518
Phillips Laboratory	764.497	147.361	629.540	111.376	740	1,444	38	217	399	478
Rome Laboratory	308.058	44.394	251.315	40.848	139	926	8	63	85	511
Wright Laboratory	906.500	133.570	868.700	131.589	452	2,378	35	197	320	1,313
4950th Test Wing	137.000	111.024	87.962	79.325	816	579	0	0	37	78
6585th Test Group	25.682	14.150	25.682	14.150	194	295	1	1	93	159

TABLE 6. AIR FORCE RDT&E ACTIVITIES, FACILITY DATA, FY 1992								
		SPACE AND PROPERTY						
			SPACE (THOUSANDS OF SQUARE FEET)				COST (MILLIONS $)	
INSTALLATION	LOCATION	ACRES	LAB	ADMIN	OTHER	TOTAL	REAL PROP	EQUIP
Armstrong Laboratory	Brooks AFB, TX	156	884.116	67.000	52.000	1,003.116	155.100	2.030
Arnold Engineering Development Center (AFMC)	Arnold AFB, TN	39,080	1,069.488	328.284	1,259.689	2,657.461	1,062.823	14.161
Development Test Center	Eglin AFB, FL	455,187	89.852	654.200	9,453.400	10,197.452	478.200	545.374
Flight Test Center	Edwards AFB, CA	297,449	2,496.830	2,976.560	8,504.489	13,977.879	580.238	257.082
Phillips Laboratory	Kirtland AFB, NM	55	1,595.674	750.100	193.527	2,539.301	662.400	83.150
Rome Laboratory	Griffiss AFB, NY	1,551	836.417	89.415	85.290	1,011.122	245.000	165.060
Wright Laboratory	Wright-Patterson AFB,	831	1,500.195	700.944	876.457	3,077.596	1,126.400	2,047.790
4950th Test Wing	Wright-Patterson AFB,	400	22.012	129.973	852.006	1,003.991	27.070	49.992
6585th Test Group	Holloman AFB, NM	7,052	407.068	39.081	93.979	540.128	230.489	151.966

TABLE 4. NAVY RDT&E ACTIVITIES, FACILITY DATA, FY 1992

INSTALLATION	LOCATION	SPACE AND PROPERTY						
			SPACE (THOUSANDS OF SQUARE FEET)				COST (MILLIONS $)	
		ACRES	LAB	ADMIN	OTHER	TOTAL	REAL PROP	EQUIP
Aerospace Medical Research Laboratory	Pensacola, FL	1	54.222	5.700	59.900	119.822	11.400	10.300
Air Warfare Center	Arlington, VA	1,158,127	7,886.728	1,573.821	10,134.417	19,594.966	1,153.310	1,124.301
Biodynamics Laboratory	New Orleans, LA	1	25.845	23.149	1.267	50.261	2.183	4.172
Civil Engineering Laboratory	Port Hueneme, CA	33	95.592	77.741	51.429	224.762	7.326	10.125
Clothing and Textile Research Facility	Natick, MA	0	12.660	16.209	5.630	34.499	1.708	1.950
Command, Control & Ocean Surveillance Center	San Diego, CA	3,301	2,155.701	841.543	1,857.546	4,854.790	398.916	286.000
Dental Research Institute	Great Lakes, IL	1	21.264	6.001	9.318	36.583	0.000	1.736
Explosive Ordnance Disposal Technology Center	Indian Head, MD	272	119.280	35.588	118.653	273.521	19.655	7.822
Health Research Center	San Diego, CA	2	32.330	10.650	2.200	45.180	4.792	2.473
Medical Research Institute	Bethesda, MD	7	133.564	45.604	45.259	224.427	44.275	28.821
Medical Research Unit #2	Jakarta, Indonesia,	0	16.900	10.990	4.400	32.290	0.700	2.191
Medical Research Unit #3	Cairo, Egypt,	3	68.244	9.058	71.330	148.632	11.850	4.931
Naval Research Laboratory	Washington, DC	621	2,995.841	230.615	522.279	3,748.735	167.081	218.572
Personnel Research and Development Center	San Diego, CA	3	73.320	18.417	0.000	91.737	1.900	12.057
Submarine Medical Research Laboratory	Groton, CT	1	40.514	14.099	0.000	54.613	0.000	4.345
Surface Warfare Center	Arlington, VA	72,360	6,309.101	1,670.522	15,286.049	23,265.672	933.636	910.941
Undersea Warfare Center	Newport, RI	5,884	2,518.281	413.521	2,205.143	5,136.945	322.220	369.196

TABLE 7. DEFENSE NUCLEAR AGENCY RDT&E ACTIVITIES, PROGRAM AND PERSONNEL DATA, FY 1992

INSTALLATION	FUNDING DATA (MILLIONS $)					PERSONNEL DATA					
	TOTAL	TOTALS IN-HOUSE	TOTALS RDT&E	IN-HOUSE RDT&E	TOTAL MIL	TOTAL CIV	FED MIL	FED CIV	FED SCI	FED ENG
Armed Forces Radiobiology Research Institute	18.101	18.101	17.944	17.944	77	169	18	38	15	21

TABLE 6. DEFENSE NUCLEAR AGENCY RDT&E ACTIVITIES, FACILITY DATA, FY 1992

INSTALLATION	LOCATION	SPACE AND PROPERTY						
		ACRES	SPACE (THOUSANDS OF SQUARE FEET)				COST (MILLIONS $)	
			LAB	ADMIN	OTHER	TOTAL	REAL PROP	EQUIP
Armed Forces Radiobiology Research Institute	Bethesda, MD	10	61.750	34.257	23.908	119.915	0.000	14.000

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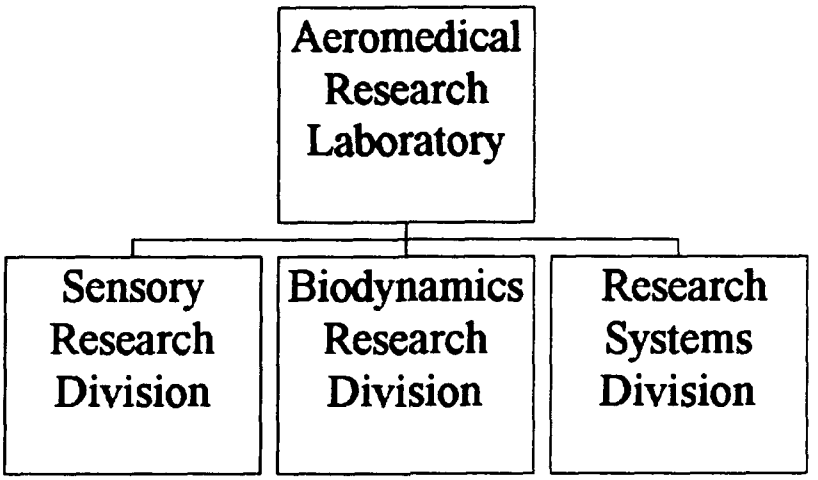
DEPARTMENT OF THE ARMY

DEPARTMENT OF THE ARMY

The Army's twenty nine (29) In-House RDT&E Activities are:

Aeromedical Research Laboratory

Abbreviated Functional Chart - Technical Organizations



Aeromedical Research Laboratory
Fort Rucker, AL 36362-5292
(205) 255-6900

Commander: COL David H. Karney
Deputy Cmdr.: COL Dennis F. Shanahan

MISSION

Conduct medical research into military aviation, vehicles, and weapons systems environments and their effects on crew members' health and performance. Conduct research on medical defense against chemical agents, impact of continuous operations on crew performance and health hazards analysis of emerging military material systems.

CURRENT IMPORTANT PROGRAMS

Aviator performance effect of chemical agent/antidote therapies.
Bio-mechanical impact and soldier tolerance.
Aeromedical (MANPRINT) support for RAH-66 Comanche development.
Blast over-pressure (impulse noise) tolerance.
Contact lenses in military environments.

EQUIPMENT/FACILITIES

Single and multi-axis ride simulation system. Helmet drop test tower and impact facility. Variable center of gravity helmet device. Cardiopulmonary lab. Biochemistry lab. UH-60 aeromedical research flight simulator. Helicopter in-flight monitoring system. Modified aircraft for in-flight medical research. Data acquisition and biotelemetry system (in-house/mobile). On-board oxygen generating system. Vivarium. High intensity impulse noise generator (shock tube). Mobile acoustics lab. Anechoic and reverberation chambers. Bio-optical testing lab. Optical fabrication lab. Electro-optical testing lab. Mobile visual displays lab. Visual neurophysiology lab. Scientific and medical research information center. MEDEVAC equipment testing facility. Aviation epidemiology data register.

Aeromedical Research Laboratory
Fort Rucker, AL 36362-5292
(205) 255-6900

Commander: COL David H. Karney
Deputy Cmdr.: COL Dennis F. Shanahan

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.051	NA	0.051
6.1 Other	0.433	-0.114	0.319
6.2 IED (Navy)	NA	NA	NA
6.2 Other	6.535	1.669	8.204
6.3 A	0.000	0.538	0.538
Subtotal (S&T)	**7.019**	**2.093**	**9.112**
6.3 B	0.568	4.127	4.695
6.4	0.000	0.000	0.000
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**7.587**	**6.220**	**13.807**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.041	0.000	0.041
Other	3.290	0.000	3.290
TOTAL FUNDING	**10.918**	**6.220**	**17.138**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	67	17	20	30
CIVILIAN	79	14	11	54
TOTAL	**146**	**31**	**31**	**84**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	107.286	**REAL PROPERTY**	54.922
ADMIN	25.520	* NEW CAPITAL EQUIPMENT	43.634
OTHER	39.652	**EQUIPMENT**	40.581
TOTAL	**172.458**	* NEW SCIENTIFIC & ENG. EQUIP.	1.239
ACRES	**53**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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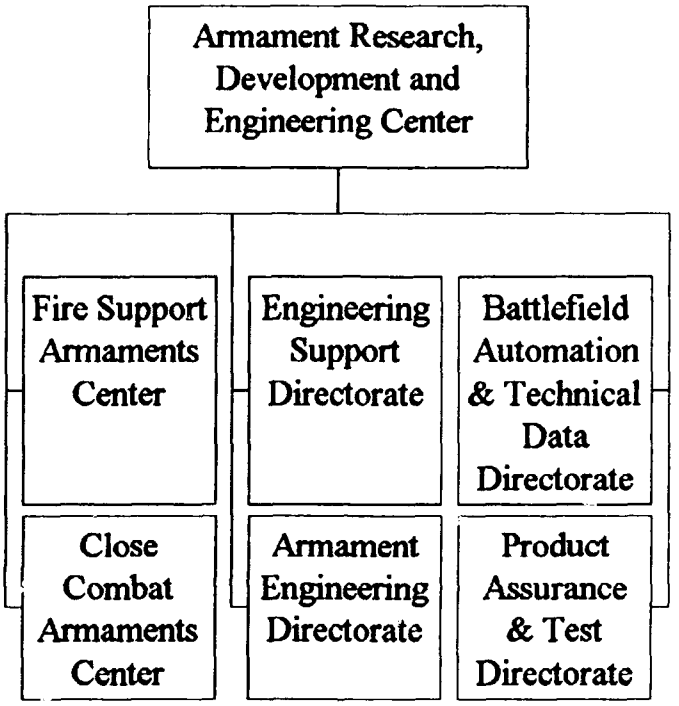
Armament Research, Development and Engineering Center

Abbreviated Functional Chart - Technical Organizations



Armament Research, Development and Engineering Center
Picatinny Arsenal, NJ 07806-5000 Commander: BG Harvey E. Brown
(201) 724-6000 Tech. Director: Dr. Thomas E. Davidson

MISSION

Maintain a strong technology base for weaponry. Conduct systems developments/product improvements (both directly for Department of the Army and as operative for PEOs and PMs). Support production and fielding. Provide life cycle engineering support. Weaponry includes all aspects of armaments: gun mechanisms, ammunition (including warheads), fire control and ancillary equipment, for both conventional and nuclear systems. Engineering and management services are provided for other services and allies, as well as the Army, to assure that armaments are designed for maximum effectiveness and producibility.

CURRENT IMPORTANT PROGRAMS

Smart munitions (including intelligent mines).
Indirect fire (artillery and mortars).
Advanced gun propulsion (including electric gun).
Fuzing and lethal mechanisms (including anti-armor).
Individual soldier and individual crew served weapons.
Direct fire weapons (cannon-caliber guns and ammo).
Munitions pollution prevention R&D.
Insensitive munitions.
Weapon fire control.
Tank guns and ammo.

Nineteen patents were awarded and applications for an additional 49 patents were submitted in FY92.

EQUIPMENT/FACILITIES

Electric Armaments Research Center (EARC): This new launch facility, featuring the world's highest energy capacitor-based electric gun laboratory power supply, was dedicated in FY92. EARC uses 52 megajoules (MJ) of capacitor storage to drive large caliber EM and ETC guns at energy levels exceeding current tank main armaments. For example, a large caliber (120mm) ETC gun incorporating a modified M256 tank cannon has already completed a test series; advanced composite railguns (90mm) and the Army/SDI D2 guided projectile are scheduled for testing here in FY93.

Armament Research, Development and Engineering Center
Picatinny Arsenal, NJ 07806-5000 Commander: BG Harvey E. Brown
(201) 724-6000 Tech. Director: Dr. Thomas E. Davidson

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.657	NA	0.657
6.1 Other	4.798	4.322	9.120
6.2 IED (Navy)	NA	NA	NA
6.2 Other	22.925	21.591	44.516
6.3 A	16.108	52.354	68.462
Subtotal (S&T)	**44.488**	**78.267**	**122.755**
6.3 B	0.000	0.000	0.000
6.4	2.306	8.784	11.090
6.5	49.921	51.364	101.285
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**96.715**	**138.415**	**235.130**
Procurement	5.258	200.677	205.935
Operations & Maintenance	51.855	25.902	77.757
Other	0.120	0.880	1.000
TOTAL FUNDING	**153.948**	**365.874**	**519.822**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	73	1	54	18
CIVILIAN	4,972	102	2,187	2,683
TOTAL	**5,045**	**103**	**2,241**	**2,701**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	452.617	**REAL PROPERTY**	1.617
ADMIN	1,150.733	* NEW CAPITAL EQUIPMENT	0.049
OTHER	2,438.110	**EQUIPMENT**	17.862
TOTAL	**4,041.460**	* NEW SCIENTIFIC & ENG. EQUIP.	3.394
ACRES	**5,853**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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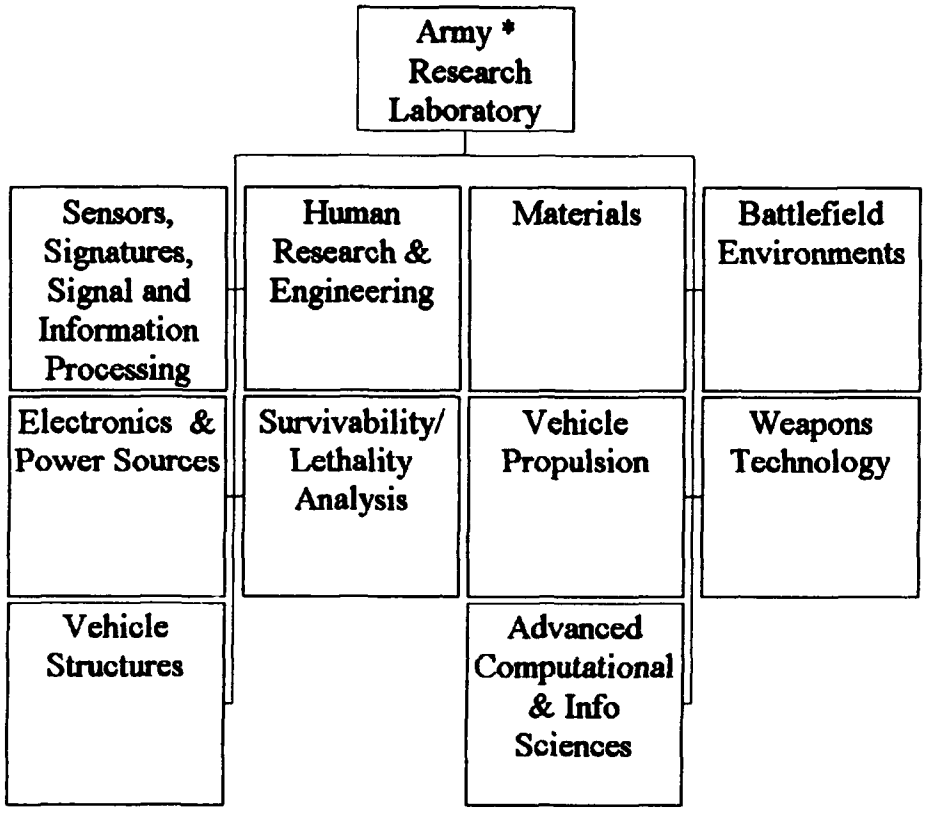
Army Research Laboratory

Abbreviated Functional Chart - Technical Organizations



* The Army Research Laboratory (ARL) was provisionally established on 1 July 92 and officially established on 16 November 1992. Prior to 1 July 92, ARL was known as the Army Laboratory Command (LABCOM). A detailed history of the ARL creation is in Appendix A.

Army Research Laboratory
Adelphi, MD 20783-1145
(301) 394-3590

Acting Director: Richard Vitali

MISSION

Manage the Army Materiel Command technology base to ensure responsiveness to present and future Army materiel needs. Focus and integrate technology within mission areas or across mission lines, as appropriate, and within Major Subordinate Commands. Promote the transition of technology from the technology base to systems.

CURRENT IMPORTANT PROGRAMS

Systems analysis. Model for optical turbulence effects on beam wave behavior. Integrated vertical atmospheric profiles. Combined Obscuration Model for Battle-Induced Contaminants (COMBICS). Full-color Thin-Film Electroluminescent (TFEL) one million pixel display. Obsolete parts replacement in AN/PRC-77 radio system. Two-Megajoule (MJ) pulser for ETC gun application. Knowledge-Based Logistics Planning Shell (KBLPS). Mathematical ear model. Single-Channel Ground and Airborne Radio System (SINCGARS) faceplate and user interface redesign. Evaluation of personal sighting station. Future Armor Rearm System (FARS). Composite hull for armored vehicles. Tandem ceramic armor. Advanced materials for gear and bearing applications. Ceramic phase-shifter materials. Survivability/Lethality Analyses (SLAs). Patriot missile system SLA. Modular UNIX-based Vulnerability Estimation Suite (MUVES). Stochastic vulnerability predictions for Paladin. Test Range for Advanced Aerospace Vulnerability (TRAVV). Tank gun accuracy. Hybrid In-bore Ram (HIRAM) propulsion. Kinetic Energy (KE) penetrator materials. High power microwave program.

EQUIPMENT/FACILITIES

ATMOSPHERIC SCIENCES DIRECTORATE: Single particle aerosol fluorescence lab, instrumented division-sized area of operations, Long Path Absorption and Spectroscopy Lab, Dusty Infrared Test Site, Aerosol/Laser Energy Interaction Lab, Countermeasure Aerosol characterization Lab, Mobile Imaging Spectroscopy Lab, Research Visible Infrared Transmissometer, Transportable Atmospheric Characterization System, Multispectral Imagery data Analysis System, Atmospheric Transmittence Large-Area Analysis System, Electro-Optics Systems, Atmospheric Effects Library; Atmospheric profiler Research Facility, Atmospheric Turbulence Measurement and Observation System, Directed Energy Data Base System, Technology Exploitation Weather Test Bed, Mobile Profiler System.

EQUIPMENT/FACILITIES (cont.)

BALLISTICS RESEARCH DIRECTORATE: US Army's first two supercomputers. Full-scale ranges for testing of novel armors and anti-munitions. Full-scale ranges for flight dynamics tests. Shaped charges test facility. Explosives lab. Shock tube facilities for nuclear blast simulation. Electro-optical test range for target signature studies. Anechoic chamber for testing of radar and other equipment. Full-scale projectile soft recovery system. Behind armor debris data collection and analysis range. High altitude blast chamber. Hot melt facility for experimental fabrication of explosives. Vulnerability/lethality models for description and analysis of military material. CAD/CAM/CAE equipment interfacing with CNC lathes experimental fabrication penetrators and sabots.

ELECTRONICS TECHNOLOGY DEVICES DIRECTORATE: Pulse power center provides a secure facility for RDT&E of extremely high energy pulse power conditioning components that are necessary to achieve 2-3 orders of magnitude increase in energy delivered by pulse power conditioning components and subsystems for directed weapons, electromagnetic and electrothermal guns, and electric drive vehicles. The state-of-the-art class 10-100 microfabrication center serves the broad spectrum of DoD/Army electronic needs such as: Application Specific integrated Circuits (ASIC), Surface Acoustic Wave (SAW) devices, Microwave/millimeter-wave Monolithic Integrated Circuits (MIMIC), display devices and many IR&D material/processes programs.

HUMAN ENGINEERING DIRECTORATE: Robotics, indoor and outdoor research courses, fire control research facility, ACE computer facility, command post exercise facility, human factors howitzer test bed, GAT 2M helicopter simulator, acoustical and anechoic chamber reverberant room, helfast logistics testing facilities, mobility/portability course, small arms test firing range, oculometer/eye movement facility, wood and metal working test support capability.

HARRY DIAMOND DIRECTORATE: Nuclear facilities: gamma ray simulator (AURORA), High Intensity Flash X-ray (HIFX), electromagnetic pulse simulators. Electromagnetic design facilities: thick hybrid circuits facility, microelectronic design facility. Microwave anechoic chambers, fuze test facilities, artillery simulators, environmental testing. Blossom Point Test Area.

MATERIAL TECHNOLOGY DIRECTORATE: In-house expertise and facilities are available for synthesis of new and improved materials and designs and the prototyping and manufacture of components for Army weapon systems. Equipment to perform metal processing: casting, forging, rolling, heat treating, joining, plating, isostatic pressing, vacuum arc melting, machining. Equipment to perform ceramics processing: injection molding, laminating, tape lay-up vacuum forming, film forming, filament winding, pultrusion, foam processing, pilot polymer production. Quality control and NDT capability, ultrasonics, X-ray, neutron radiography, spectroscopy, holography, chemical analysis, metallography and optics. Uranium and beryllium machining, ballistics ranges, power characterization and processing.

Army Research Laboratory
Adelphi, MD 20783-1145
(301) 394-3590

Acting Director: Richard Vitali

EQUIPMENT/FACILITIES (cont.)

VULNERABILITY ASSESSMENT DIRECTORATE: The electro-optical countermeasures simulation facility performs real time hardware-in-the-loop missile flight simulations for evaluating missile performance in a countermeasure environment. The Army Airborne Electric Warfare laboratory consists of a USAF NKC-135A aircraft with on board jammers/chaff/flares used to create a countermeasures environment for vulnerability assessment of DoD systems. The signature measurement and data reduction facility conducts infrared spectral and ultraviolet/infrared imaging measurements in support of electronic warfare programs. The spectral electromagnetic interface facility assesses the effects of electromagnetic interface on military systems. The dynamic analysis laboratory uses hardware-in-the-loop to assess effects of countermeasures on laser guided and infrared smart munitions.

Army Research Laboratory
Adelphi, MD 20783-1145
(301) 394-3590

Acting Director: Richard Vitali

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	3.300	NA	3.300
6.1 Other	31.369	51.813	83.182
6.2 IED (Navy)	NA	NA	NA
6.2 Other	71.052	44.954	116.006
6.3 A	5.619	21.292	26.911
Subtotal (S&T)	**111.340**	**118.059**	**229.399**
6.3 B	2.422	1.140	3.562
6.4	0.000	0.000	0.000
6.5	96.370	33.781	130.151
6.6/6.7	1.301	1.427	2.728
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**211.433**	**154.407**	**365.840**
Procurement	1.112	0.000	1.112
Operations & Maintenance	8.741	0.446	9.187
Other	101.116	238.208	339.324
TOTAL FUNDING	**322.402**	**393.061**	**715.463**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	149	11	34	104
CIVILIAN	3,507	354	1,390	1,763
TOTAL	**3,656**	**365**	**1,424**	**1,867**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	1,777.160	**REAL PROPERTY**	1,264.800
ADMIN	405.350	* NEW CAPITAL EQUIPMENT	0.000
OTHER	504.470	**EQUIPMENT**	494.778
TOTAL	**2,686.980**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**5,774**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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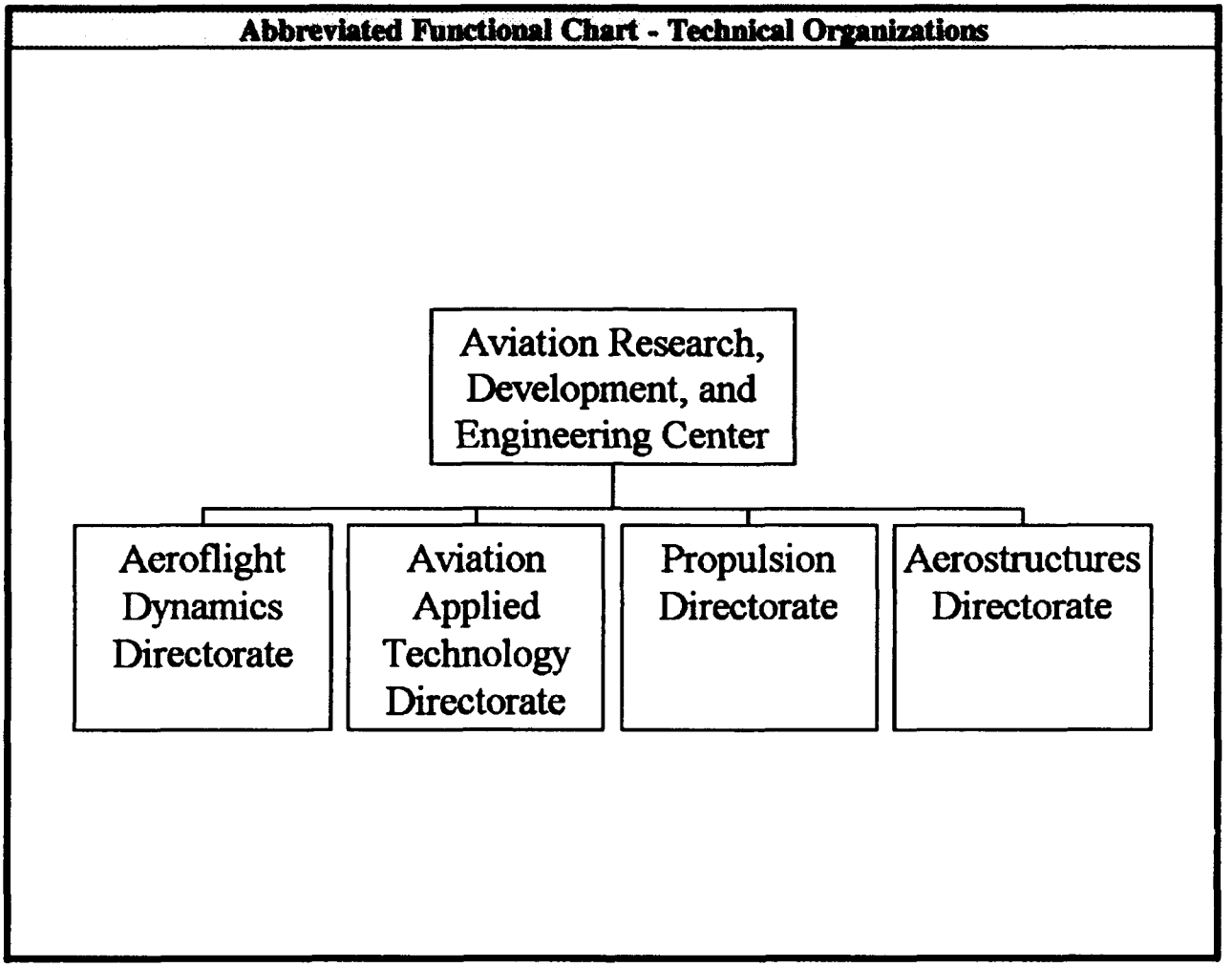
Aviation Research, Development and Engineering Center



Aviation Research, Development and Engineering Center
St. Louis, MO 63120-1798 Commander: MG Donald R. Williamson
(314) 263-1412 Tech. Director: Thomas L. House

MISSION

Conduct research and advanced technology R&D for future army aviation systems. Broad range of technologies include aerodynamics, flight controls, structures, propulsion, man-machine integration, survivability, and weaponization. Provide technology support to fielded aircraft fleet and program managers.

CURRENT IMPORTANT PROGRAMS

Rotorcraft pilot's associate.
Joint turbine advanced gas generator and integrated high performance turbine engine technology.
Advanced rotorcraft transmission demonstration.
Day/night adverse weather pilotage system.
Air-to-air mission equipment package/weapons demonstration.
Aircraft and aircrew integration.

EQUIPMENT/FACILITIES

Infrared countermeasures test facility (infrared/electro-optical measurement system for ground and flight infrared measurement). Ballistic test range aircraft components survivability. Crew station research and development facility (2-seat tandem helicopter cockpit with fiber optic helmet mounted display, multi-axis hand controller and color CRT display). Collocation of AVRDEC resources with NASA (Ames, Langley, and Lewis) maximizes leveraging of skills and facilities. NASA LRC impact dynamics research facility (gantry for full scale swing/crash tests). NASA LRC transonic dynamics tunnel (16'x 16' test section wind tunnel), 14'x 22' wind tunnel (2-component laser velocimeter system). NASA Ames 40'x 80'/80'x 120' wind tunnel national full-scale aerodynamics complex. NASA Ames flight simulator complex (vertical motion simulator and interchangeable cab development station). NASA Ames automation sciences research facility. NASA Ames hover test facility (anechoic hover chamber).

Aviation Research, Development and Engineering Center
St. Louis, MO 63120-1798
(314) 263-1412
Commander: MG Donald R. Williamson
Tech. Director: Thomas L. House

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.278	NA	0.278
6.1 Other	4.956	1.330	6.286
6.2 IED (Navy)	NA	NA	NA
6.2 Other	22.704	16.870	39.574
6.3 A	3.392	19.020	22.412
Subtotal (S&T)	**31.330**	**37.220**	**68.550**
6.3 B	1.214	2.719	3.933
6.4	0.244	0.001	0.245
6.5	0.005	1.280	1.285
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.142	0.019	0.161
TOTAL RDT&E	**32.935**	**41.239**	**74.174**
Procurement	0.370	0.032	0.402
Operations & Maintenance	1.144	0.021	1.165
Other	2.091	4.207	6.298
TOTAL FUNDING	**36.540**	**45.499**	**82.039**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	12	1	8	3
CIVILIAN	543	35	236	272
TOTAL	**555**	**36**	**244**	**275**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	62.428	**REAL PROPERTY**	3.020
ADMIN	56.551	* NEW CAPITAL EQUIPMENT	0.000
OTHER	18.802	**EQUIPMENT**	23.420
TOTAL	**137.781**	* NEW SCIENTIFIC & ENG. EQUIP.	1.422
ACRES	**127**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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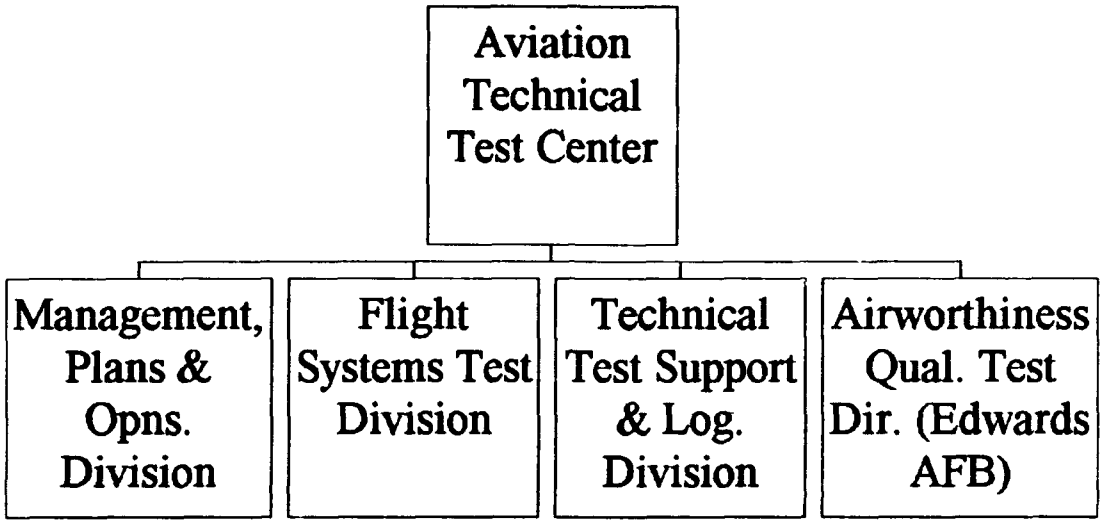
Aviation Technical Test Center

Abbreviated Functional Chart - Technical Organizations



Aviation Technical Test Center
Fort Rucker, AL 36362-5276
(205) 255-8000

Commander: COL Joseph L. Bergantz
Tech. Director: Flucher J. McCrory, Jr.

MISSION

Plan, conduct, analyze and report the results of developmental tests and studies, to include airworthiness flight testing, of Army aviation systems and associated materiel/systems. Provide test, test support, development support and evaluations of aviation materiel/systems. Provide other aviation support for authorized customers as directed by the U.S. Army Test and Evaluation Command.

CURRENT IMPORTANT PROGRAMS

Lead-the-Fleet Program.
OH-58D Logistics Evaluation Program.
RAH-66 Comanche Program.
MH-60 Aerial Refueling.
AH-64/W 701C Engine Limited Airworthiness and Flight Certification.
HAVOC-X.

EQUIPMENT/FACILITIES

Sixty-three rotary and fixed-wing aircraft are assigned (3 AH-1F, 7 AH-64, 2 C-23, 9 CH-3E, 2 CH-47D, 13 HH-3E, 6 OH-58A/C/D, 3 T-34C, 3 U-21, 10 UH-1H, 5 UH-60A/L) as test beds. Helicopter Icing Spray System (HISS): a CH-47D with an integrated 1800 gallon water tank and spray apparatus combined with a highly instrumented U-21A to provide cloud physics documentation, conducts in-flight icing evaluations under both artificial and natural conditions. A portable modular engine test system provides accurate measurements of turbine engine performance for aircraft engines up to 5000 hp and weight up to 2000 lbs. Analog and digital aircraft data can be recorded and/or telemetered to the ground. On-site data processing and display; real-time and post mission. Capability to collect and process video, still and high speed pictures.

Aviation Technical Test Center
Fort Rucker, AL 36362-5276
(205) 255-8000

Commander: COL Joseph L. Bergantz
Tech. Director: Flucher J. McCrory, Jr.

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	15.796	0.000	15.796
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**15.796**	**0.000**	**15.796**
Procurement	0.859	0.000	0.859
Operations & Maintenance	0.000	0.000	0.000
Other	4.987	0.000	4.987
TOTAL FUNDING	**21.642**	**0.000**	**21.642**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	98	0	40	58
CIVILIAN	170	0	47	123
TOTAL	**268**	**0**	**87**	**181**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	0.000	**REAL PROPERTY**	3.027
ADMIN	93.000	* NEW CAPITAL EQUIPMENT	0.000
OTHER	229.000	**EQUIPMENT**	175.419
TOTAL	**322.000**	* NEW SCIENTIFIC & ENG. EQUIP.	0.098
ACRES	**0**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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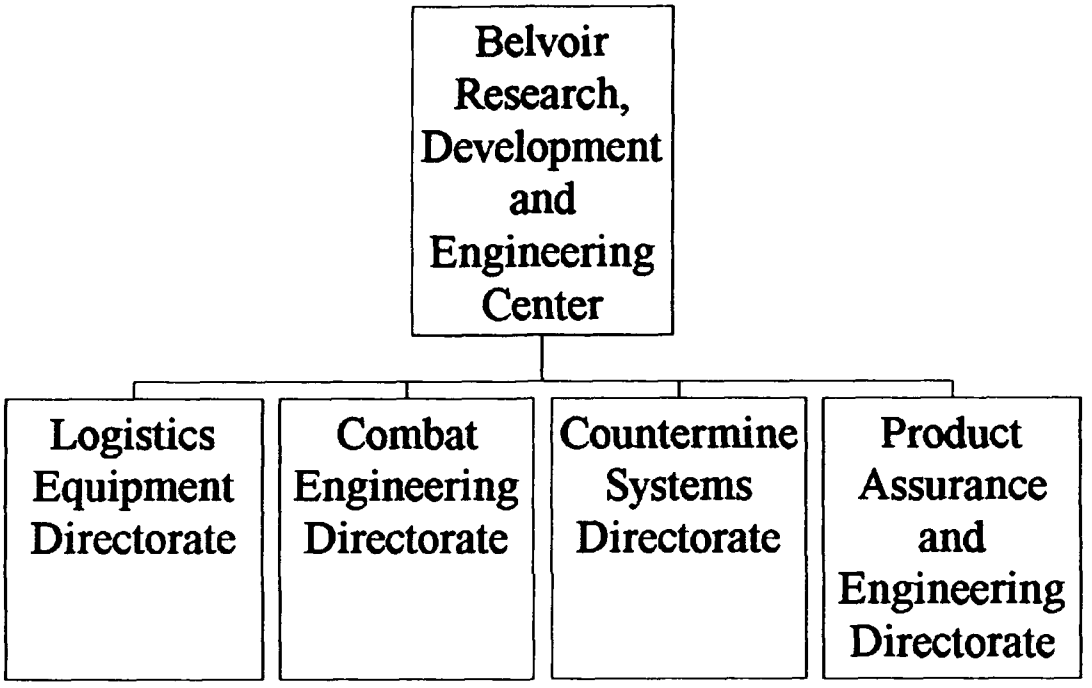
Belvoir Research, Development and Engineering Center

Abbreviated Functional Chart - Technical Organizations



Belvoir Research, Development and Engineering Center
Fort Belvoir, VA 22060-5606 Commander: COL Dennis C. Cochrane
(704) 703-2238 Tech. Director: Morris Zusman

MISSION

Responsible for achieving materiel and technical capability in combat support/combat service support through program areas of mobility/countermobility, survivability, energy and logistics which satisfy approved requirements to provide the United States with a superior combat and deterrent force in assigned mission areas.

CURRENT IMPORTANT PROGRAMS

Tactical Logistics Systems.
Countermine/Counterobstacle Equipment.
Tactical Electric Power Systems.
Bridging Systems.
Water Supply and Fuel Handling Equipment.
Camouflage/Concealment/Deception Equipment.

EQUIPMENT/FACILITIES

Facilities: R&D test laboratories. Bridge test hangar. Mobile stress analysis van. Rail impact. Truck stability tilt table. Radio frequency anechoic chamber. Vehicle test tracks. Shock/vibration dynamics and environmental simulators. Mine lanes for sensor test and evaluation. Automated camouflage pattern generation. Motion picture/visual pictorial support. Model fabrication shop. Laboratory capabilities include performance of tests and evaluations such as explosive, acoustic, environmental endurance, and electrical/electronic, along with device/system design and engineering.

Belvoir Research, Development and Engineering Center
Fort Belvoir, VA 22060-5606 Commander: COL Dennis C. Cochrane
(704) 703-2238 Tech. Director: Morris Zusman

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.184	NA	0.184
6.1 Other	0.811	0.308	1.119
6.2 IED (Navy)	NA	NA	NA
6.2 Other	8.763	12.254	21.017
6.3 A	5.115	17.212	22.327
Subtotal (S&T)	**14.873**	**29.774**	**44.647**
6.3 B	5.592	5.500	11.092
6.4	8.371	16.779	25.150
6.5	11.831	12.327	24.158
6.6/6.7	0.060	0.354	0.414
Non-DOD	0.794	7.841	8.635
TOTAL RDT&E	**41.521**	**72.575**	**114.096**
Procurement	0.909	5.938	6.847
Operations & Maintenance	22.262	24.306	46.568
Other	1.268	1.882	3.150
TOTAL FUNDING	**65.960**	**104.701**	**170.661**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	22	0	7	15
CIVILIAN	874	19	409	446
TOTAL	**896**	**19**	**416**	**461**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	332.949	**REAL PROPERTY**	14.041
ADMIN	67.117	* NEW CAPITAL EQUIPMENT	0.000
OTHER	260.390	**EQUIPMENT**	8.174
TOTAL	**660.456**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**240**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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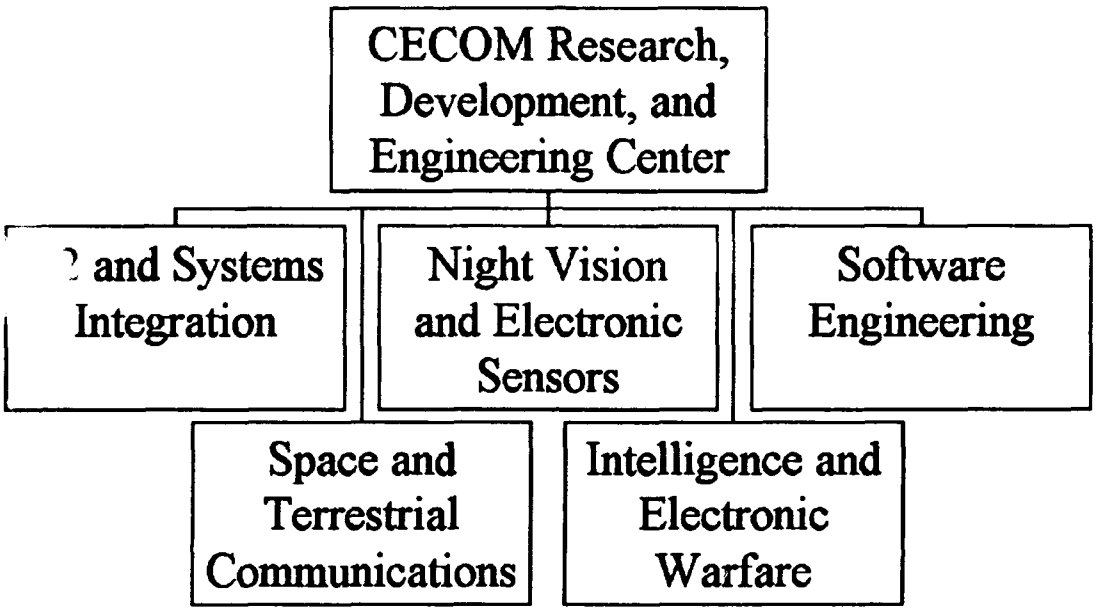
CECOM Research, Development and Engineering Center

Abbreviated Functional Chart - Technical Organizations



CECOM Research, Development and Engineering Center
Ft. Monmouth, NJ 07703-5000 Director: Robert F. Giordano
(908) 544-2686 Deputy Director: Feliciano Giordano

MISSION

The CERDEC is the Army's center of excellence for Command, Control and Communications, Intelligence and Electronic Warfare (C3IEW), night vision and electro-optics, and avionics. The CERDEC's mission is four-fold: to provide research, development and acquisition support to Program Executive Offices/Program Managers (PEOs/PMs); to manage technology base programs by defining, developing and acquiring superior technologies; to develop, acquire, test and evaluate non-major systems and equipment; and to sustain and enhance a trained and ready Army.

CURRENT IMPORTANT PROGRAMS

MULTISENSOR AIDED TARGETING-AIR: Cross sensor cueing and multi-spectral fusion of 2nd generation forward looking infrared and millimeter wave radar for aircraft applications. This system provides faster, more accurate target acquisition while providing greater air crew survivability.

AIR-LAND BATTLE MANAGEMENT: Artificial Intelligence (AI) and expert system decision aids to assist in combat planning.

SURVIVABLE ADAPTIVE SYSTEMS: Fiber optic and wireless networks to disperse the command post for enhanced survivability and faster displacement and improve the battlefield commander's control while operating on the move.

BATTLEFIELD COMBAT IDENTIFICATION: Thermal Identification Device (TID) was designed, fabricated, field evaluated and transitioned to the PM for initial production in less than 1 year. TID is a quick-fix solution to prevent fratricide such as encountered in Desert Storm.

AIDED PILOTAGE: In a joint program with NASA, CERDEC demonstrated the feasibility of aided pilotage using flight path guidance algorithms to provide a terrain following/terrain avoidance capability.

Patents issued: 22 Patents pending: 69

EQUIPMENT/FACILITIES

TACTICAL SPACE SYSTEMS RESEARCH FACILITY: Has worldwide unique capabilities exist within the facility for satellite system development and engineering evaluation. Equipment includes: AN/TSC-85B and AN/TSC-93B, Tactical SHF satellite terminals, a variety of UHF Manpack radios and MILSTAR (EHF), test-beds for Navy, Army (terminals) and engineering models satellite simulators, certified Manpack radios for UHF satellite operations.

FIBER OPTIC TEST FACILITY: Is a world unique facility that provides for the actual evaluation of optical fiber, cable and other optical components and systems simulating tactical field environment as well as verifying product performance. Supports new electro-optic device development. Detail device characterization capabilities are available to support projects as directed by communication, network, robotics systems and Foreign S&T assignments.

COMMUNICATIONS SYSTEMS DESIGN CENTER: Is a worldwide unique lab because it houses high-speed modeling and simulation system, a prototype development center, and a Mobile Subscriber Equipment (MSE) network which provides a wide area communications hub to each of the other directorate labs. Equipment includes: support facility with MSE shelters, general test equipment, model shop with equipment for prototyping.

HF CHANNEL SIMULATOR: Is a world unique system that simulates the ionosphere which is used to evaluate the performance of radios and modems for industry, Army and other Government Agencies. It is unique because the simulator is not only capable of performing all of its functions in a fixed frequency mode, but also in a frequency hopping mode, at instantaneous bandwidths up to 12 KHz and with simulated jamming. Equipment includes: SINCGARS and IHFR radios, anechoic chamber, audio reverberant chamber.

MODELING AND SIMULATION SYSTEMS: VAX Station 3100 and VAX Station 4000. Micro-VAX equipment and 486s for MSE model and IRIS 3D work stations (silicone graphics).

FIBER OPTIC TEST FACILITY: Automated optical fiber analysis system. Photon kinetics lightwave signal analyzer (to characterize optical transmitters/receivers (220)). Test equipment to establish mechanical and environmental characteristics of optical cable assemblies and optical fibers. Radio frequency spectral analysis equipment. Radio frequency power measurement equipment. Radio frequency noise characterization equipment. Radio network topology simulation equipment. Fiber optic system analysis/testing systems. Fiber/cable fault location and repair equipment.

CECOM Research, Development and Engineering Center
Ft. Monmouth, NJ 07703-5000
(908) 544-2686

Director: Robert F. Giordano
Deputy Director: Feliciano Giordano

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	2.944	NA	2.944
6.1 Other	3.730	4.724	8.454
6.2 IED (Navy)	NA	NA	NA
6.2 Other	32.176	75.141	107.317
6.3 A	13.066	66.860	79.926
Subtotal (S&T)	**51.916**	**146.725**	**198.641**
6.3 B	6.185	29.541	35.726
6.4	18.632	88.923	107.555
6.5	8.745	17.749	26.494
6.6/6.7	8.232	29.167	37.399
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**93.710**	**312.105**	**405.815**
Procurement	27.792	327.241	355.033
Operations & Maintenance	35.010	115.556	150.566
Other	0.000	0.000	0.000
TOTAL FUNDING	**156.512**	**754.902**	**911.414**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

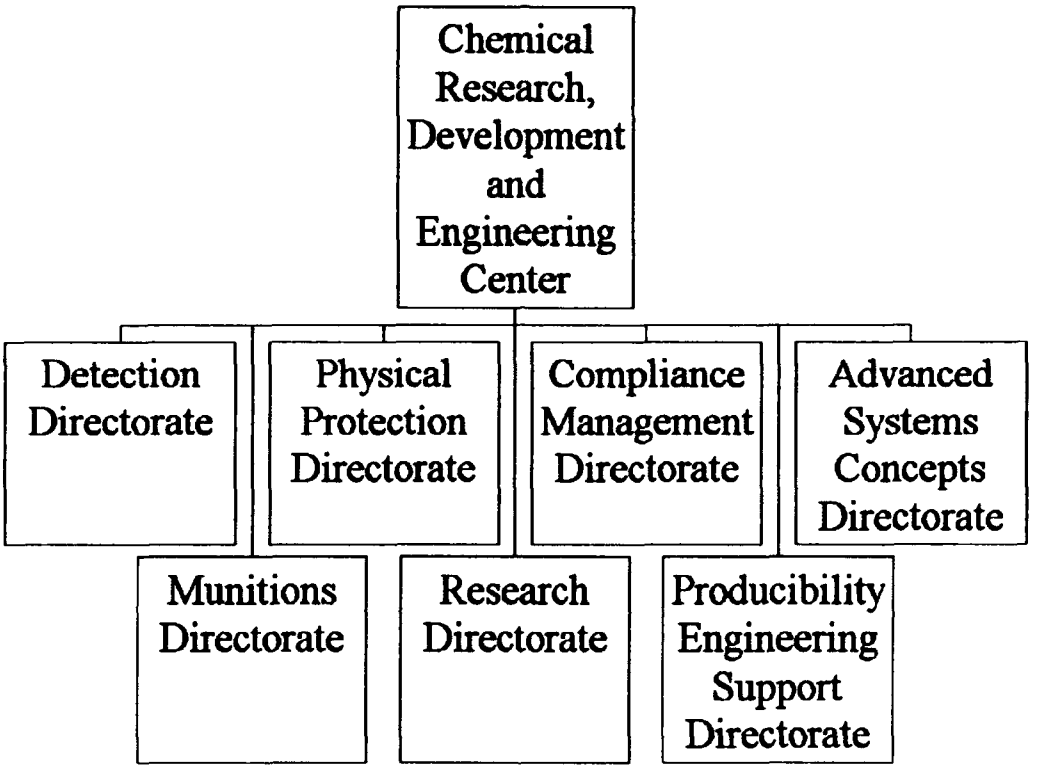
PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	182	1	19	162
CIVILIAN	2,230	77	1,294	859
TOTAL	**2,412**	**78**	**1,313**	**1,021**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	192.807	**REAL PROPERTY**	65.652
ADMIN	348.851	* NEW CAPITAL EQUIPMENT	0.988
OTHER	0.000	**EQUIPMENT**	117.814
TOTAL	**541.658**	* NEW SCIENTIFIC & ENG. EQUIP.	34.000
ACRES	**24**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

Chemical Research, Development and Engineering Center

Abbreviated Functional Chart - Technical Organizations



Chemical Research, Development and Engineering Center

Aberdeen PG, MD 21010-5423
(410) 671-3838
Commander: BG George E. Friel
Exec. Director: Michael A. Parker

MISSION

A research, development and engineering agency for executing the chemical and biological defense programs for the Army and Joint Services (JS). Provide central management for the Chemical Treaty Compliance and Verification and TEU (Technical Escort Unit) support for worldwide chemical agent/munitions handling. Provide research, development and acquisitions as well as life cycle engineering support for chemical/biological defense and smoke/obscurant equipment and under DODD 5160.5 act as DoD lead lab for the JS chemical/biological/smoke technology base.

CURRENT IMPORTANT PROGRAMS

Nuclear, Biological and Chemical (NBC) Reconnaissance, Detection and Identification.
Individual and Collective Protection.
NBC Decontamination.
Smoke Obscurants and Target Defeating Materials.
Chemical Treaty Verification and Compliance.

EQUIPMENT/FACILITIES

Major equipment is contained in a complex of R&D engineering/laboratory areas and includes: Process engineering facility. Production and facility design chamber for studies of respiratory protection design drivers. Simulant agent challenge test chamber. Rubber/elastomer mold facility. Specialized chemical agent labs. Pyrotechnic mixing, loading, handling facility. Subsonic, supersonic, transonic wind tunnel. Complete analytical chemistry (tract analysis/tandem mass spectrometry). Obscurant test chambers for transmission measurements. Laser spectroscopy lab. Robotic toxic agent lab. CAD/CAE/CAM network.

Chemical Research Development and Engineering Center
Aberdeen PG, MD 21010-5423 Commander: BG George E. Friel
(410) 671-3838 Exec. Director: Michael A. Parker

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.527	NA	0.527
6.1 Other	2.983	1.660	4.643
6.2 IED (Navy)	NA	NA	NA
6.2 Other	30.180	18.205	48.385
6.3 A	0.920	4.128	5.048
Subtotal (S&T)	**34.610**	**23.993**	**58.603**
6.3 [illegible]	24.019	36.990	61.009
[illegible]	12.627	49.777	62.404
[illegible]	8.757	7.265	16.022
6.6/6.7	0.102	0.000	0.102
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**80.115**	**118.025**	**198.140**
Procurement	18.269	93.731	112.000
Operations & Maintenance	22.722	11.786	34.508
Other	0.132	0.000	0.132
TOTAL FUNDING	**121.238**	**223.542**	**344.780**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.041

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	72	1	12	59
CIVILIAN	1,539	75	660	804
TOTAL	**1,611**	**76**	**672**	**863**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	927.000	**REAL PROPERTY**	80.000
ADMIN	405.000	* NEW CAPITAL EQUIPMENT	5.000
OTHER	424.000	**EQUIPMENT**	125.000
TOTAL	**1,756.000**	* NEW SCIENTIFIC & ENG. EQUIP.	5.000
ACRES	**3,471**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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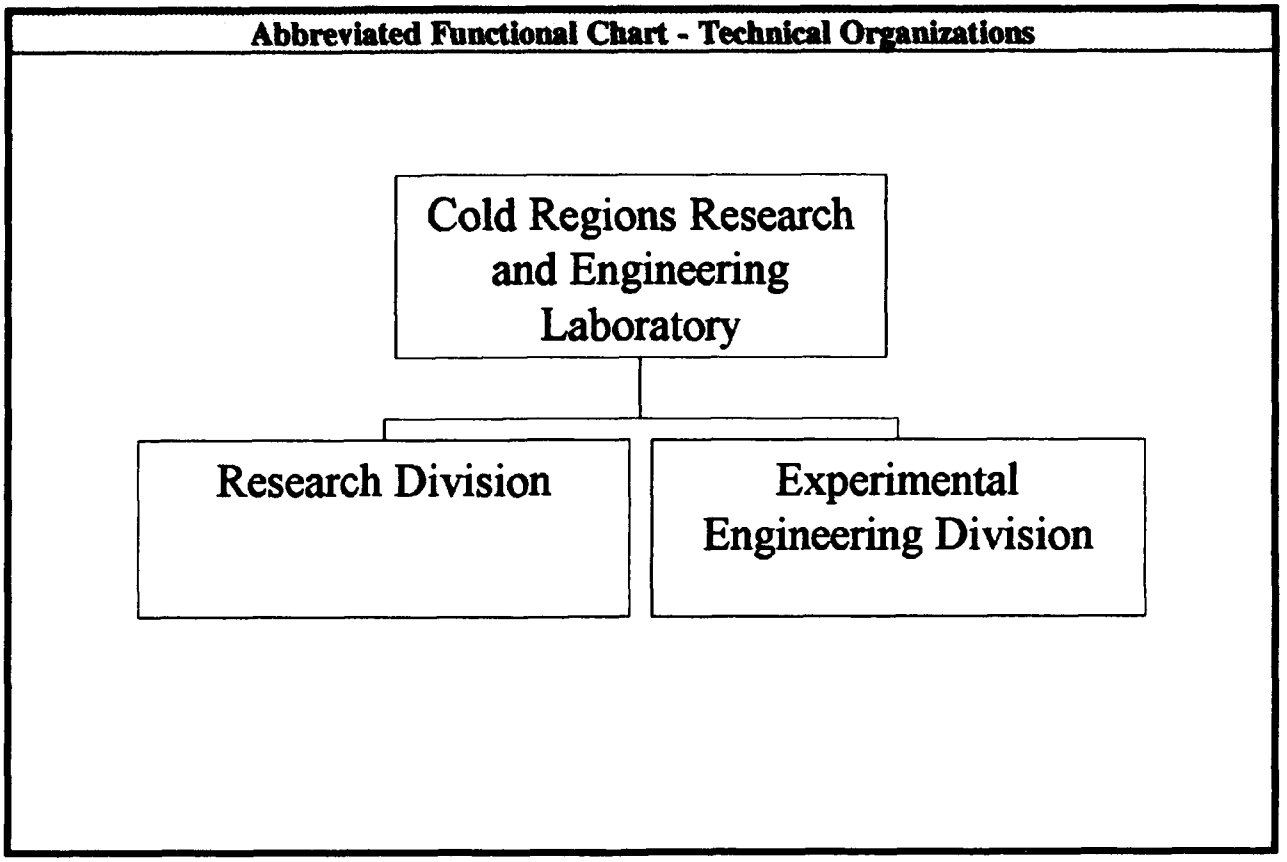
Cold Regions Research and Engineering Laboratory



Cold Regions Research and Engineering Laboratory
Hanover, NH 03755-1290
(603) 646-4100

Director: Dr. L.E. Link, Jr.
Commander: COL Palmer Bailey

MISSION

As the Army's comprehensive expert on cold regions problems the Cold Regions Research and Engineering Laboratory (CRREL) investigates the nature of and the effects of cold and winter on military activities where winter and cold represents a severe problem. Maintain the DoD Cold Regions Technical Information Analysis Center.

CURRENT IMPORTANT PROGRAMS

Program Manager for the DoD Joint Test and Evaluation Smart Weapons Operability Enhancement Program developing simulation methods for impact of environment on smart weapons systems. Special technology development to allow restoration of contaminated sites in cold climates and winter conditions, non-materiel solutions to critical materiel low temperature operability problems. Infrastructure technologies to dramatically reduce life cycle cost of military installations in cold climates.

EQUIPMENT/FACILITIES

ICE ENGINEERING FACILITY: This 71,000 sq. ft. building is one of the largest refrigerated hydraulics laboratories in the world. Within this facility are: an 80' x 160' research area that can be maintained at -10° Fahrenheit for large scale refrigerated hydraulic models, a 2' x 3' x 120' refrigerated flume with variable tilting capability, a 30' x 8' x 120' refrigerated towing tank for modeling ships and hydraulic structures in a natural ice environment, and a wind tunnel for simulating drifting snow.

FROST EFFECTS RESEARCH FACILITY: The largest, most comprehensive facility of its kind in the world, this 29,000 sq. ft. refrigerated soils laboratory contains: a 182' x 75' testing area that can be maintained below 30° Fahrenheit, twelve (12) large test basins where soils can be frozen from the top down with refrigerated panels to simulate natural freezing (temperature rage from -35°F to 120°F). Tests cold temperatures on pavements, base and sub-base courses and buried utilities. A water table can be established and maintained in any test section. Performs 6 to 8 natural freeze-thaw cycles per year.

EQUIPMENT/FACILITIES (cont.)

ALASKA FIELD STATION: 135 acres of ice-rich permafrost soils. Tests response of pilings and foundations to permafrost creep and frost jacking.

PERMAFROST TUNNEL: Located at the Alaska Field Station is a 360 ft. horizontal shaft in permanently frozen ground, it is maintained jointly with the University of Alaska, and is the only facility of its kind outside of Russia.

SMALL LASER FACILITY: Contains the following: a general purpose optics lab, an HeNe (Helium Neon) laser, a NoYAG (Neodymium YAG) laser, and is equipped for both CW and pulsed holography.

COLD ROOMS: 26 Units which can go as low as -50°F. The cold rooms are used to store frozen soil and ice core specimens.

ANALYTICAL CHEMISTRY LABORATORIES: Consists of a chromatography lab, a wet chemistry lab, a sample preparation lab and four (4) clean rooms. Equipment includes: a gas chromatograph/mass spectrometer, three (3) gas chromatographs, three (3) high performance liquid chromatographs, an ion chromatograph, two (2) atomic absorption spectrometers, a scanning electron microscope and a scanning calorimeter.

GEOPHYSICAL RESEARCH FACILITY: Salt water freezes naturally to study sea ice.

INSTRUMENTED MOBILITY TEST VEHICLE: Allows the measurement of traction for each wheel. This is used to develop mobility models.

Additional equipment at CRREL includes: Dual Energy Gamma Non-Destructive Test Apparatus, which measures density and moisture contents in soils and other materials. Hopkinson Bar Test Apparatus, for compressive strain rate tests at low temperatures (to -100°F), providing rapid and low cost testing. Cold Weather Concrete Testing Apparatus, for performing low temperature ASTM standard test C666, A and B for rapid freeze/thaw testing of concrete.

Cold Regions Research and Engineering Laboratory
Hanover, NH 03755-1290
(603) 646-4100

Director: Dr. L.E. Link, Jr.
Commander: COL Palmer Bailey

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.257	NA	0.257
6.1 Other	1.567	0.146	1.713
6.2 IED (Navy)	NA	NA	NA
6.2 Other	6.855	0.518	7.373
6.3 A	0.271	0.064	0.335
Subtotal (S&T)	**8.950**	**0.728**	**9.678**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	4.631	1.607	6.238
6.6/6.7	0.305	2.220	2.525
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**13.886**	**4.555**	**18.441**
Procurement	0.000	0.000	0.000
Operations & Maintenance	2.597	0.462	3.059
Other	7.701	0.606	8.307
TOTAL FUNDING	**24.184**	**5.623**	**29.807**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

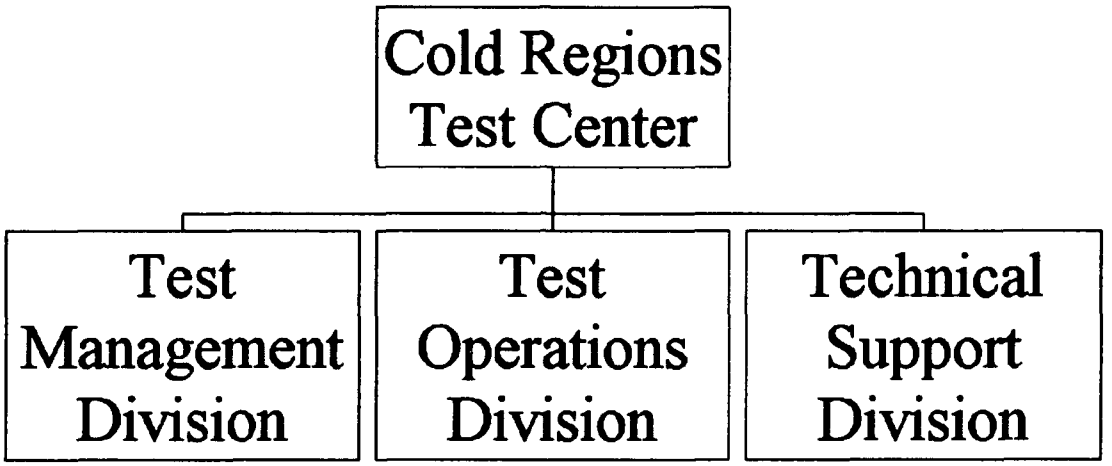
PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	3	0	1	2
CIVILIAN	267	36	67	164
TOTAL	**270**	**36**	**68**	**166**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	80.115	**REAL PROPERTY**	27.811
ADMIN	66.795	* NEW CAPITAL EQUIPMENT	1.388
OTHER	151.845	**EQUIPMENT**	20.228
TOTAL	**298.755**	* NEW SCIENTIFIC & ENG. EQUIP.	0.860
ACRES	**30**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

Cold Regions Test Center

Abbreviated Functional Chart - Technical Organizations



Cold Regions Test Center
Fort Greely, AK 96508-7850
(907) 873-4215

Commander: LTC Dean R. Ertwine
Tech. Director: Jerold G. Barger

MISSION

Plan, conduct and report the results of cold regions, mountain and northern environmental phases of developmental and other tests. Review plans and monitor developmental testing planned or conducted by proponent materiel developers, producers and contractors IAW integrated testing cycle policies.

CURRENT IMPORTANT PROGRAMS

M1070 truck, tractor, heavy equipment transport system.
M1A1 cold weather product improvements.
Bradley Fighting Vehicle system product improvements.
Palletized Loading System.
Chemical/biological protection shelter - HMMWV.

EQUIPMENT/FACILITIES

Test area 630,000 acres. 500,000 acre isolated impact area. 50 kilometer unobserved range. Large restricted air space/unrestricted firing to 10,000 ft. ordinate. Coordination with FAA can effect unrestricted ordinate. Third order survey points. Good secondary roads. Vehicle test courses and extensive cross country terrain ranges avail. Photo lab and limited maintenance capability and engineering support/calibration and meteorological support available. Instrumentation available for most items. Statistical/maintenance evaluation, human factor capability and computer support available. Ambient temperatures to -50° Fahrenheit occasionally, below 0° Fahrenheit from November until March.

Cold Regions Test Center
Fort Greely, AK 96508-7850
(907) 873-4215

Commander: LTC Dean R. Ertwine
Tech. Director: Jerold G. Barger

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	4.765	0.000	4.765
6.6/6.7	0.000	0.000	0.000
Non-DOD	1.790	0.000	1.790
TOTAL RDT&E	**6.555**	**0.000**	**6.555**
Procurement	0.305	0.000	0.305
Operations & Maintenance	0.000	0.000	0.000
Other	4.060	0.000	4.060
TOTAL FUNDING	**10.920**	**0.000**	**10.920**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	81	1	5	75
CIVILIAN	36	0	9	27
TOTAL	**117**	**1**	**14**	**102**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	1.400	**REAL PROPERTY**	11.450
ADMIN	18.200	* NEW CAPITAL EQUIPMENT	0.000
OTHER	198.400	**EQUIPMENT**	18.332
TOTAL	**218.000**	* NEW SCIENTIFIC & ENG. EQUIP.	1.600
ACRES	**670**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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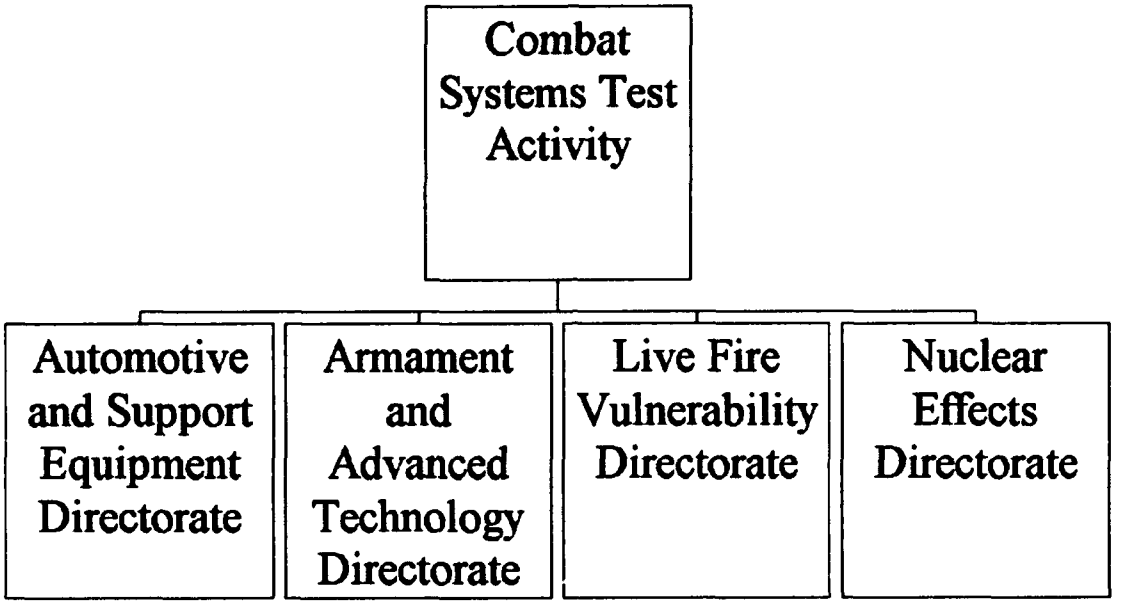
Combat Systems Test Activity

Abbreviated Functional Chart - Technical Organizations



Combat Systems Test Activity
Aberdeen PG, MD 21005-5059
(410) 278-3402

Commander: COL Roy E. Fouch
Tech. Director: James C. Kelton

MISSION

Plan and conduct RDT&E, design, engineering, production and surveillance tests for DoD agencies and contractors for military systems and equipment. Develop state-of-the-art test procedures, methods and instrumentation to meet the needs of advancing military technologies. Maintain and modernize test facilities, ranges, courses and instrumentation to effectively test military materiel and equipment from development through deployment.

CURRENT IMPORTANT PROGRAMS

Paladin Full-up Live Fire Vunlnerability Test, Phase II
Tactical Quiet Generator Sets, 5-60 kW
General Test Support
Heavy Equipment Transporter Truck Tractor, MI070
Abrams Block II Tank System for PPT

Number of patents applied for: 5

EQUIPMENT/FACILITIES

World-renowned automotive test/obstacle courses. Numerous interior and exterior firing ranges. Environmental simulation capabilities including rough-handling and vibration. Electromagnetic interference and environmental conditioning capabilities. Full transportability test capability to include rail, roadability, MIL-STD 209 pull and tie-down, internal and external air transport. UNDEX test pond for underwater explosives testing. Depleted Uranium Containment Fixture (Superbox) for live fire vulnerability and lethality testing. Sophisticated non-destructive test facilities. Robotics test facility. Pulse radiation state-of-the-art industrial complex which includes maintenance and experimental fabrication capabilities.

Combat Systems Test Activity
Aberdeen PG, MD 21005-5059
(410) 278-3402

Commander: COL Roy E. Fouch
Tech. Director: James C. Kelton

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	2.567	1.203	3.770
6.3 A	5.601	2.626	8.227
Subtotal (S&T)	**8.168**	**3.829**	**11.997**
6.3 B	0.000	0.000	0.000
6.4	4.201	1.969	6.170
6.5	34.262	25.325	59.587
6.6/6.7	0.000	0.000	0.000
Non-DOD	4.901	2.298	7.199
TOTAL RDT&E	**51.532**	**33.421**	**84.953**
Procurement	23.686	10.587	34.273
Operations & Maintenance	2.690	1.816	4.506
Other	8.322	4.071	12.393
TOTAL FUNDING	**86.230**	**49.895**	**136.125**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	196	0	12	184
CIVILIAN	1,190	8	319	863
TOTAL	**1,386**	**8**	**331**	**1,047**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	155.466	**REAL PROPERTY**	28.991
ADMIN	166.016	* NEW CAPITAL EQUIPMENT	2.785
OTHER	910.538	**EQUIPMENT**	203.565
TOTAL	**1,232.020**	* NEW SCIENTIFIC & ENG. EQUIP.	5.389
ACRES	**56,707**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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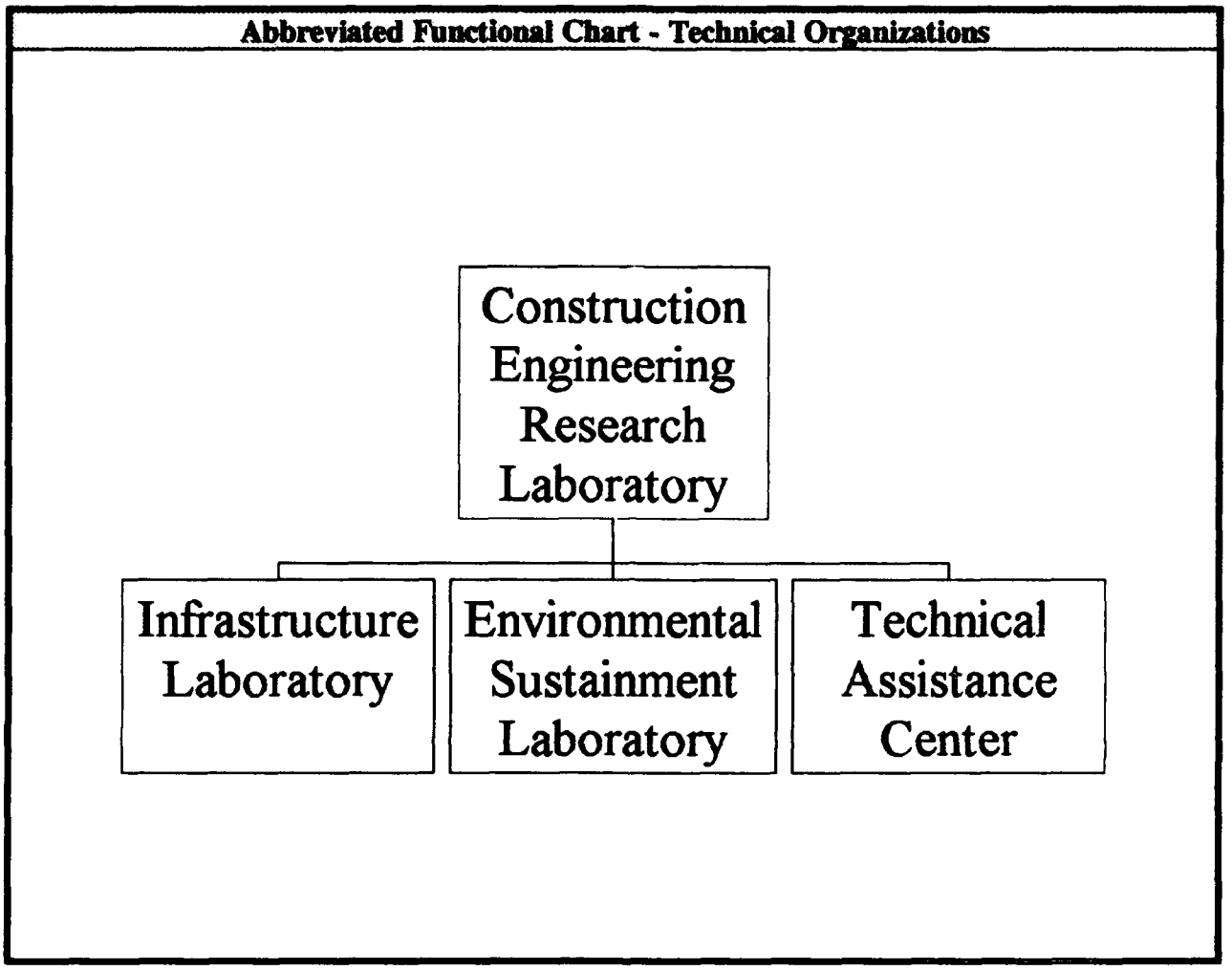
Construction Engineering Research Laboratories



Construction Engineering Research Laboratories
Champaign, IL 61826-9005
(217) 373-7201

Director: Louis R. Shaffer
Cmdr./Dep. Dir.: David J. Rehbein

MISSION

The USACERL Infrastructure Laboratory plans and executes basic and applied research and engineering studies in support of the Army's program of construction, revitalization, operation, maintenance and repair of conventional military facilities world wide. The USACERL Environmental Sustainment Laboratory performs basic and applied research in: Army installation environmental management; environmental and spatial modeling; resource modeling and simulation; design and construction of pollution control facilities; development of environmental planning systems to support the Army in training, readiness and mobilization missions. The USACERL Technology Assistance Center provides technical assistance to USACERL proponents in implementing technology developed by the Environmental and Infrastructure Laboratories.

CURRENT IMPORTANT PROGRAMS

Concurrent Engineering (life cycle of facilities)
Public Works Maintenance Management
Fort Hood Model Installation Energy Project
Training Land Carrying Capacity
Threatened and Endangered Species Management

EQUIPMENT/FACILITIES

Sputter/evaporator system for environmentally safe thin-film coatings. Automated shielding effectiveness testing equipment. Controlled environment chambers. Ion plating unit. 1,000,000 lb. closed-loop material system. Scanning electron microscope. Semi-automatic welding equipment. Biaxial shock test machine. Non-Destructive Test (NDT) facility. Vacuum induction furnace. Metallographic sample preparation. X-ray diffraction and vacuum spectroscopy system. Dynamic tension analysis system. Digital recording analysis equipment. Heating, Ventilation and Air Conditioning (HVAC) test capabilities including systems building methods and techniques.

Construction Engineering Research Laboratories
Champaign, IL 61826-9005
(217) 373-7201

Director: Louis R. Shaffer
Cmdr./Dep. Dir.: David J. Rehbein

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.097	NA	0.097
6.1 Other	0.580	0.595	1.175
6.2 IED (Navy)	NA	NA	NA
6.2 Other	12.416	12.171	24.587
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**13.093**	**12.766**	**25.859**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	3.048	2.750	5.798
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**16.141**	**15.516**	**31.657**
Procurement	0.000	0.000	0.000
Operations & Maintenance	9.775	28.244	38.019
Other	1.720	7.949	9.669
TOTAL FUNDING	**27.636**	**51.709**	**79.345**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	4	0	4	0
CIVILIAN	369	48	197	124
TOTAL	**373**	**48**	**201**	**124**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	103.850	**REAL PROPERTY**	9.150
ADMIN	27.513	* NEW CAPITAL EQUIPMENT	0.162
OTHER	134.523	**EQUIPMENT**	17.000
TOTAL	**265.886**	* NEW SCIENTIFIC & ENG. EQUIP.	1.500
ACRES	**33**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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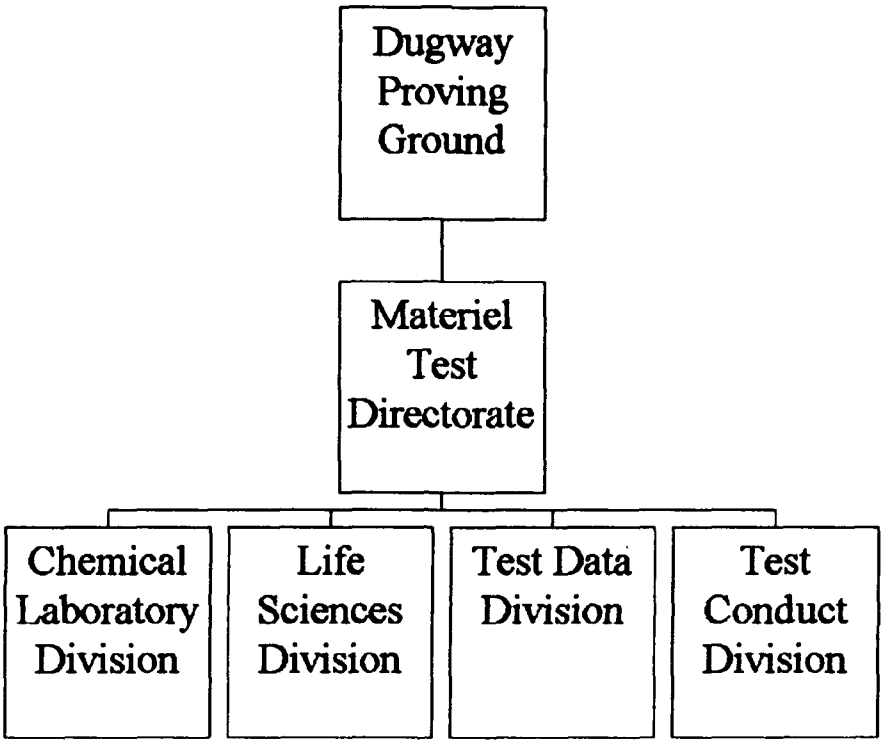
Dugway Proving Ground

Abbreviated Functional Chart - Technical Organizations



Dugway Proving Ground
Dugway, UT 84022-5000
(801) 831-3314

Commander: COL James R. King
Tech. Director: William J. Haslem

MISSION

Plan, conduct, analyze and report the results of exploratory, developmental, and production tests and delivery systems, and incendiary devices. Operate the proving ground as a DoD Major Range and Test Facility Base (MRTFB) and to operate the Tropic Test Site in the Republic of Panama to test a wide range of equipment in a natural tropic environment. DPG is the DoD-designated Chemical Warfare/Chemical Biological Defense Test and Evaluation Reliance test site.

Test conventional and illuminating artillery, mortars and rockets, as well as land and air vehicles. Perform tests of all material commodities to assess chemical/biological hardness and contamination/decontamination survivability. Test procedures and by-products of chemical and conventional weapons demilitarization and perform tests and develops procedures for on-site verification inspections for chemical weapons treaties. Dugway provides the base of operation for the Joint Services Project, Chemical/Biological (C/B) Joint Contact Point and Test, which provides C/B defense information and operationally oriented tests and analysis to the Services and CINCS.

CURRENT IMPORTANT PROGRAMS

Research, development and laboratory investigations. Joint-operations chemical and chemical biological defense tests and studies for CINCS and Services. Munitions development/acceptance and production testing. Environmental studies to support DPG and Army programs.

EQUIPMENT/FACILITIES

Instrumented grids for chemical, chemical-biological and smoke/obscurant systems. Artillery range for conventional and chemical metal parts. Ballistics and dissemination tests with field sample, sample mass analysis, meteorological (auto data acquisition and MESOMET network) system. Physical and environmental test facility (MIL SPEC 810) chambers for total agent containment. Operations supported by meteorological research on behavior of clouds. Chemical, life science technology, ecological survival of DPS. Capability for planning analysis, evaluation of tests and operations research. Labs equipped for wide range of chemical, microbiological, toxicological, immunological and pollution studies. Technical and mass array of fluorescent air tracers. External-communication and range safety system. Outstanding features are: large land area, restricted air space, long and flat artillery ranges, projectile recovery, sonic and electromagnetic sterility and diverse technical and scientific skills.

Dugway Proving Ground
Dugway, UT 84022-5000
(801) 831-3314

Commander: COL James R. King
Tech. Director: William J. Haslem

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	0.000	0.000	0.000
6.6/6.7	76.634	0.000	76.634
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**76.634**	**0.000**	**76.634**
Procurement	0.641	0.000	0.641
Operations & Maintenance	1.116	0.000	1.116
Other	14.047	0.000	14.047
TOTAL FUNDING	**92.438**	**0.000**	**92.438**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	4.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	60	1	7	52
CIVILIAN	710	21	68	621
TOTAL	**770**	**22**	**75**	**673**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	129.190	**REAL PROPERTY**	131.000
ADMIN	167.000	* NEW CAPITAL EQUIPMENT	0.000
OTHER	2,169.340	**EQUIPMENT**	4.891
TOTAL	**2,465.530**	* NEW SCIENTIFIC & ENG. EQUIP.	3.332
ACRES	**798,855**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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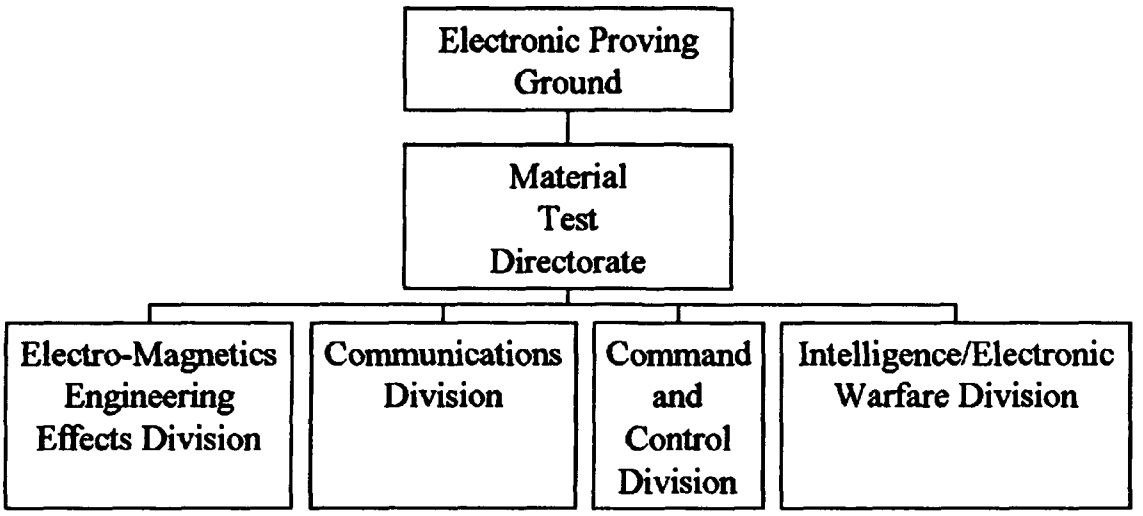
Electronic Proving Ground

Abbreviated Functional Chart - Technical Organizations



Electronic Proving Ground
Fort Huachuca, AZ 85613-7110
(602) 538-6389

Commander: COL Alexander W. Cameron
Tech. Director: Grady H. Banister

MISSION

Plan, conduct, evaluate and report on the development testing of C3I, optical, Electro-Optical (EO), Electronic Warfare (EW), avionics and tactical intelligence systems. Heavily involved in supporting operational testing. Maintain modern test facility, instrumentation and methodology capability. Test for Army, other Services, DoD and non-DoD agencies.

CURRENT IMPORTANT PROGRAMS

Army Tactical Command and Control System (ATCCS).
Enhanced Position Location Reporting System (EPLRS).
Global Positioning System (GPS).
All Sources Analysis System (ASAS).
Single Channel Ground and Airborne Radio Systems (SINCGARS).

EQUIPMENT/FACILITIES

Conducts integrated system testing. Operates electromagnetic environment test facility using computer modeling/simulation, hardware-in-the-loop and controlled field test environment. Facilities include: Instrumented test range. System interoperability computer software test facility. Realistic battlefield FM environment facility. Antenna test measurement. Outdoor compact range. EMI/EMC TEMPEST. Transverse electromagnetic/reverberation chamber. Test item simulators. Auto instrumentation and instrumented test range. Computer aided drafting. Optical/electro-optical facility. Radiological test facility. Environmental test facility using latest MIL-STD-461D RAM supportability and manprint design qualifications. Access to extensive real estate.

Electronic Proving Ground
Fort Huachuca, AZ 85613-7110
(602) 538-6389

Commander: COL Alexander W. Cameron
Tech. Director: Grady H. Banister

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	IN-HOUSE	OUT-OF-HOUSE	TOTAL
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.061	0.123	0.184
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.061**	**0.123**	**0.184**
6.3 B	0.771	1.541	2.312
6.4	0.000	0.000	0.000
6.5	0.000	0.000	0.000
6.6/6.7	11.516	23.031	34.547
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**12.348**	**24.695**	**37.043**
Procurement	1.501	3.003	4.504
Operations & Maintenance	1.568	3.137	4.705
Other	13.170	2.061	15.231
TOTAL FUNDING	**28.587**	**32.896**	**61.483**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	368	1	28	339
CIVILIAN	206	2	94	110
TOTAL	**574**	**3**	**122**	**449**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		PROPERTY ACQUISITION COST (MILLIONS $)	
LAB	247.909	REAL PROPERTY	21.485
ADMIN	18.500	* NEW CAPITAL EQUIPMENT	0.000
OTHER	14.480	EQUIPMENT	38.000
TOTAL	**280.889**	* NEW SCIENTIFIC & ENG. EQUIP.	3.000
ACRES	**29,139**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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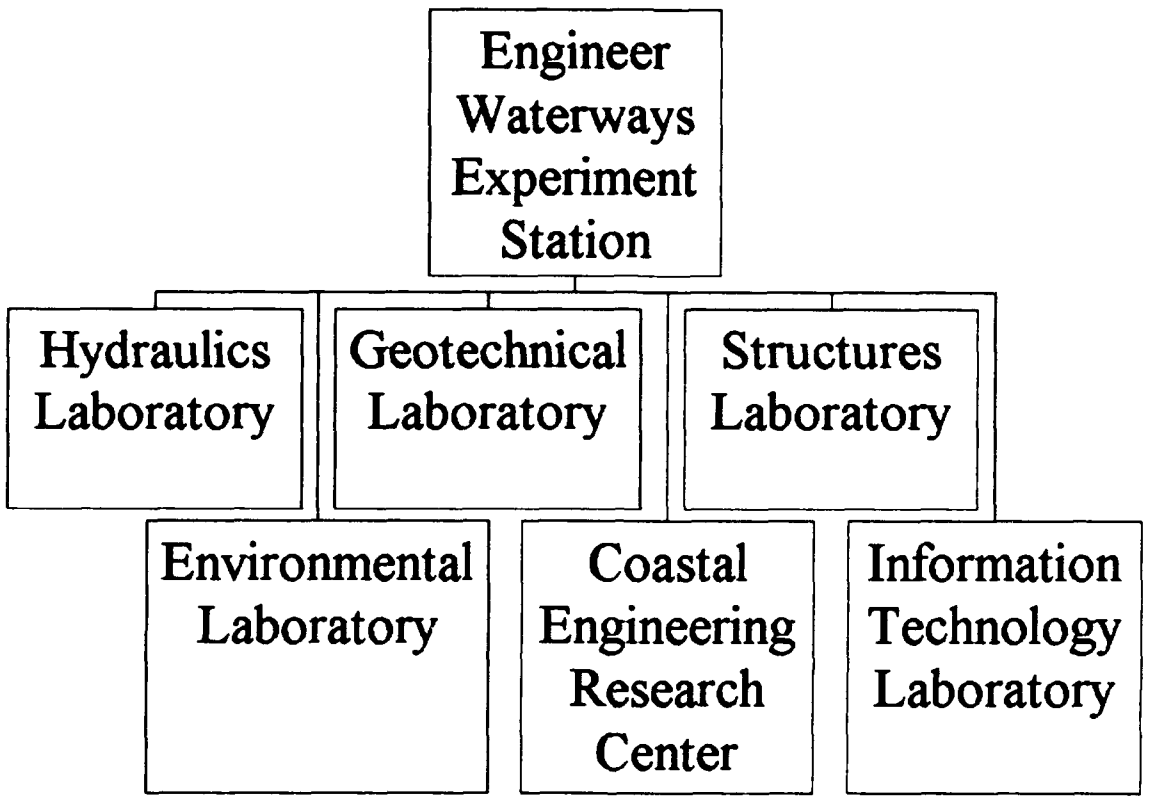
Engineer Waterways Experiment Station

Abbreviated Functional Chart - Technical Organizations



Engineer Waterways Experiment Station
Vicksburg, MS 39180-6199
(601) 634-3111

Director: Dr. Robert W. Whalin
Commander: COL Bruce K. Howard

MISSION

DoD's lead lab per Project Reliance in civil engineering for airfields, pavements, survivability, protective structures, sustainment engineering and in environmental quality for installation restoration. Army's principal lab for civil works R&D. Primary R&D missions: weapons effects; fighting positions; terrorist threat protection; obstacle creation and reduction; fixed facility camouflage, concealment and deception; vehicle/terrain interaction; lines of communications; hydraulics; coastal engineering; structural engineering; concrete technology; soil and rock mechanics; earthquake engineering; engineering geology and geophysics; dredging technology; environmental engineering; geotechnical engineering; water quality; hazardous/toxic waste. WES Operates: DoD's first High Performance Computing Resource Center; the Tri-Service CADD/GIS Technology Center; and five DoD Information Analysis Centers.

CURRENT IMPORTANT PROGRAMS

Construction materials and methods for rapid establishment of in-theater transportation network required for force projection. Designs, materials and construction practices for battlefield, fixed facility and forward base survivability against advanced conventional and terrorist weapons. Design of underground ammunition storage. Techniques for rapid obstacle creation. Obstacle planning software for battle labs. Accurate and reliable PC-based mobility models for battlefield commanders, war games and materiel developers. Methods for predicting coastal effects on logistics-over-the-shore operations. Futuristic, innovative, efficient pavement designs for roads and airfields. Cost-effective remediation of sites contaminated with explosives, organics and heavy metals. Investigating, characterizing, monitoring potential hazardous waste sites. Predicting subsurface transport of contaminants. Effective chemical analysis techniques for accurate identification of suspected contaminants at DoD sites. Execution of DoD Joint Test and Evaluation for camouflage, concealment and deception. National wetlands, zebra mussel, threatened and endangered species R&D programs.

WES applied for 5 patents during FY92.

EQUIPMENT/FACILITIES

In-house high tech experimental, numerical and prototype equipment and facilities. Two (2) high-speed supercomputers (Cray Y-MP and Cray C916), largest in DoD. Hazardous/Toxic Waste Research Center. Futuristic Scientific Visualization Center. Projectile Penetration Facility. Forensic R&D lab for cement based systems. Contaminant Fate and Effects R&D Center. Ecosystems/Water Quality R&D Center. World's largest hydraulic and coastal engineering labs, Largest scale soil testing facility in US. High capacity structural test floor. Largest large-scale polyaxial load frame in US. Cement and pozzolan test lab. High-tech machine shops. Plastic and mechanical model fabrication facilities. Instrumentation development labs. Technical library. Coastal Field Research Facility at Duck, NC for full-scale coastal research. Resident extensions of Mississippi State University, Louisiana State University and Texas A&M University (13 graduate degree programs).

Engineer Waterways Experiment Station
Vicksburg, MS 39180-6199
(601) 634-3111

Director: Dr. Robert W. Whalin
Commander: COL Bruce K. Howard

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.268	NA	0.268
6.1 Other	1.557	0.771	2.328
6.2 IED (Navy)	NA	NA	NA
6.2 Other	33.456	11.822	45.278
6.3 A	0.963	25.367	26.330
Subtotal (S&T)	**36.244**	**37.960**	**74.204**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	4.325	3.925	8.250
6.6/6.7	0.000	0.000	0.000
Non-DOD	3.427	1.029	4.456
TOTAL RDT&E	**43.996**	**42.914**	**86.910**
Procurement	0.000	0.000	0.000
Operations & Maintenance	16.936	5.105	22.041
Other	54.677	52.082	106.759
TOTAL FUNDING	**115.609**	**100.101**	**215.710**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	2.397

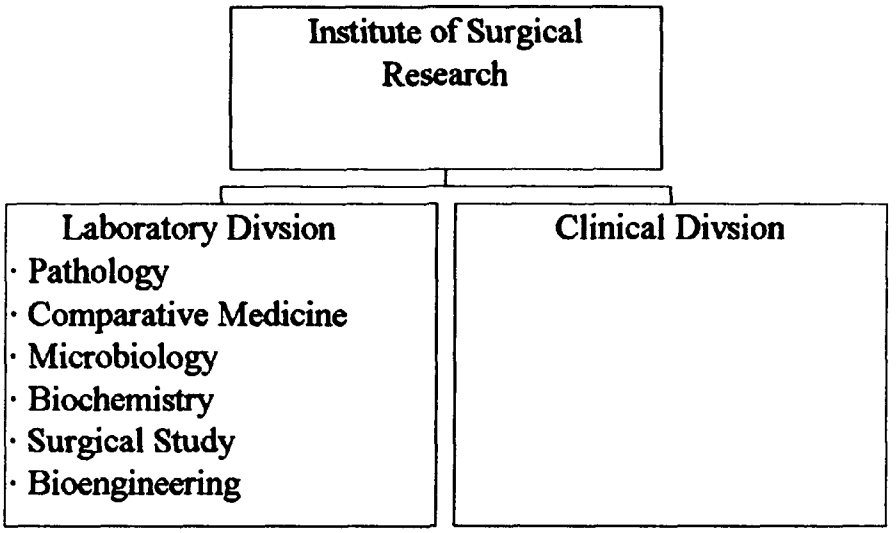
PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	6	2	4	0
CIVILIAN	1,578	160	548	870
TOTAL	**1,584**	**162**	**552**	**870**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	2,075.366	**REAL PROPERTY**	451.262
ADMIN	404.292	* NEW CAPITAL EQUIPMENT	1.262
OTHER	215.422	**EQUIPMENT**	160.241
TOTAL	**2,695.080**	* NEW SCIENTIFIC & ENG. EQUIP.	2.241
ACRES	**4,192**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

Institute of Surgical Research

Abbreviated Functional Chart - Technical Organizations



Institute of Surgical Research
Fort Sam Houston, TX 78234-5012
(210) 221-2720

Commander: COL Basil A. Pruitt
Chief, Lab Div.: Dr. Arthur D. Mason, Jr.

MISSION

Investigate problems of mechanical and thermal injuries with their complications, care for patients with such injuries, teach and train other personnel in the management of such patients and conduct investigative studies at both the basic and clinical levels.

CURRENT IMPORTANT PROGRAMS

Clinical management of severely burned patients. Study of lymphocyte response to burn injury. Study the effects of weak direct current on wound healing. Study post resuscitation homodynamic changes in burn patients. Study intestinal permeability changes in burn patients. Investigate problems of mechanical and thermal injuries with complications. Care for patients with mechanical and thermal injuries.

EQUIPMENT/FACILITIES

Operate forty-bed tertiary care burn unit. Clinical laboratory support and research capabilities in fields of surgical burn care, microbiology biochemistry, endocrinology. Maintain animal colony for basic and applied research. Aeromedical burn teams for the stabilization and transfer of seriously burned patients. Clinical laboratory and pathology facilities for the support of the burn unit. Computer facilities to support the research, clinical and administrative functions of the institute. Bioengineering machine shop for support of research and clinical operations. Provision of physical and occupational therapy for burn patients. Epidemiological surveillance of burn patients. Operation of a thermal injury oriented medical library. Audio-visual support of research and clinical operations. Electronmicroscopy support of research operations.

Institute of Surgical Research
Fort Sam Houston, TX 78234-5012
(210) 221-2720

Commander: COL Basil A. Pruitt
Chief, Lab Div.: Dr. Arthur D. Mason, Jr.

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.075	NA	0.075
6.1 Other	0.976	0.138	1.114
6.2 IED (Navy)	NA	NA	NA
6.2 Other	5.234	0.362	5.596
6.3 A	0.540	0.000	0.540
Subtotal (S&T)	**6.825**	**0.500**	**7.325**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**6.825**	**0.500**	**7.325**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	6.214	0.000	6.214
TOTAL FUNDING	**13.039**	**0.500**	**13.539**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	157	16	42	99
CIVILIAN	65	2	22	41
TOTAL	222	18	64	140

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		PROPERTY ACQUISITION COST (MILLIONS $)	
LAB	53.408	REAL PROPERTY	10.553
ADMIN	3.000	* NEW CAPITAL EQUIPMENT	9.536
OTHER	0.000	EQUIPMENT	7.799
TOTAL	56.408	* NEW SCIENTIFIC & ENG. EQUIP.	0.304
ACRES	1	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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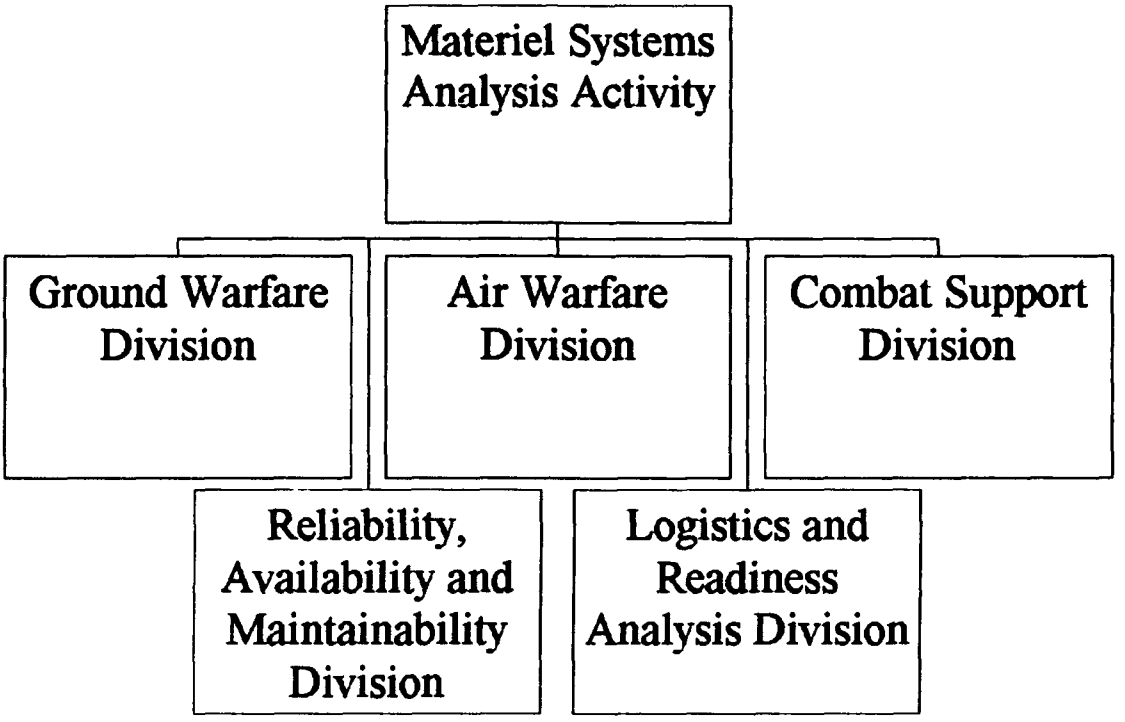
Materiel Systems Analysis Activity

Abbreviated Functional Chart - Technical Organizations



Materiel Systems Analysis Activity
Aberdeen PG, MD 21005-5071
(410) 278-6614

Director: Keith A. Myers
Deputy Director: COL David C. Fountain

MISSION

Develop for the Army a basis of information and understanding, primarily concerning system performance, effectiveness, reliability, support and integration in terms of capabilities and limitations leading to decisions which provide the Army with the proper materiel.

CURRENT IMPORTANT PROGRAMS

Test design, independent evaluation and supporting analyses for systems such as: M1A2 Abrams; PAC-3; Comanche; Mobile Subscriber Equipment; Theater High Altitude; Improved Recovery Vehicle; Air Defense System; Guardrail; Armored Gun System; Special Operations Aircraft; Joint Tactical Information Distribution System.

EQUIPMENT/FACILITIES

Tactical simulation facility for processing classified material. Wargaming facility used for greening civilian analysts. Simulation laboratory used for experimental development of models and simulations. Additional equipment for use in: materiel systems analysis; item level performance analysis; weapon system effective estimates for cost and operational effectiveness analysis; technical and live fire test design; independent technical evaluation of major and designated non-major systems; methodology and computer simulation development; system life cycle surveillance and overview; primary source of technical data for major Army studies; general systems analysis for development of decision information; independent integrated logistical support evaluations for determination of Army staff positions; field exercise and sample data collection; inventory modeling; general logistics, provisions, support and readiness analysis; and coordination of joint munitions effectiveness methodology and data (joint technical coordinating group).

Materiel Systems Analysis Activity
Aberdeen PG, MD 21005-5071
(410) 278-6614

Director: Keith A. Myers
Deputy Director: COL David C. Fountain

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	23.253	10.247	33.500
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**23.253**	**10.247**	**33.500**
Procurement	0.000	0.000	0.000
Operations & Maintenance	6.839	2.100	8.939
Other	0.940	8.073	9.013
TOTAL FUNDING	**31.032**	**20.420**	**51.452**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	18	0	14	4
CIVILIAN	463	12	348	103
TOTAL	**481**	**12**	**362**	**107**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	1.600	**REAL PROPERTY**	3.596
ADMIN	126.350	* NEW CAPITAL EQUIPMENT	0.000
OTHER	6.050	**EQUIPMENT**	7.964
TOTAL	**134.000**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	4	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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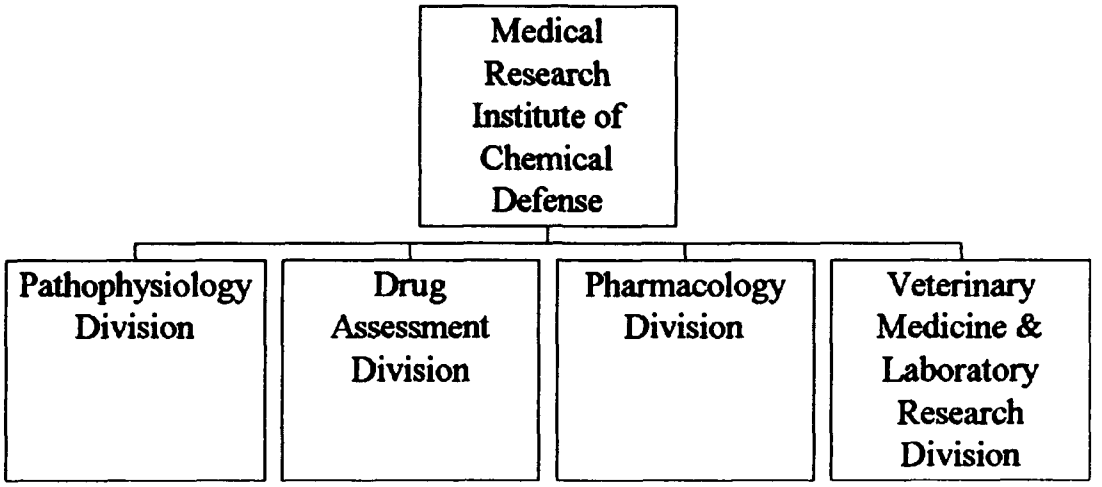
Medical Research Institute of Chemical Defense

Abbreviated Functional Chart - Technical Organizations



Medical Research Institute of Chemical Defense
Aberdeen PG, MD 21010-5425 Commander: COL Charles G. Hurst
(410) 671-3276

MISSION

Perform fundamental research on mechanisms of action: Chemical Warfare Agents (CWA), antidotes and pretreatment. Develop pretreatment and antidotes for CWA. Develop and evaluate prevention, resuscitation, treatment and management methods for chemical casualties and assist in their implementation.

CURRENT IMPORTANT PROGRAMS

Basic research on: Chemical Warfare (CW) and neurotoxin agents and medical countermeasures. Biomedical effects of CW agents and candidate medical countermeasures. Safety and efficacy of candidate preventive countermeasures. Analytical technology for medical countermeasures. Advanced studies of casualty care technology.

EQUIPMENT/FACILITIES

Technical library with 6,000 books, 1,000 journal titles, many databases. Video facility, computer facility and 7,000 sq. ft. animal facility. Equipment and facilities to perform: chemical casualty care; physiology; drug assessment; pathophysiology; pharmacology; analytical chemistry; neurotoxicology; veterinary surgery; chemical safety/surety; medical maintenance; information and resource management; supply and quality assurance; radioisotope chemical antidote and biochemical analysis; histochemistry behavioral testing; drug screening; pharmacokinetics; molecular modeling; liquid, gas, column and affinity chromatography; quantitative image enhancement/analysis; electrophoresis; spectroscopy; fluorometry and spectropolarimetry; GC mass spectrometry; electron spin resonance and peptide synthesis/sequencing; amino acid analysis; monoclonal hapten antibodies; electron, scanning and X-ray microscopy; cell cloning; receptor analysis.

Medical Research Institute of Chemical Defense
Aberdeen PG, MD 21010-5425 Commander: COL Charles G. Hurst
(410) 671-3276

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.050	NA	0.050
6.1 Other	3.885	4.280	8.165
6.2 IED (Navy)	NA	NA	NA
6.2 Other	12.505	1.873	14.378
6.3 A	1.276	0.000	1.276
Subtotal (S&T)	**17.716**	**6.153**	**23.869**
6.3 B	0.312	0.000	0.312
6.4	-0.005	0.112	0.107
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**18.023**	**6.265**	**24.288**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.097	0.000	0.097
Other	4.459	0.000	4.459
TOTAL FUNDING	**22.579**	**6.265**	**28.844**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	66	26	5	35
CIVILIAN	193	44	51	98
TOTAL	**259**	**70**	**56**	**133**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	40.502	**REAL PROPERTY**	23.100
ADMIN	36.488	* NEW CAPITAL EQUIPMENT	4.000
OTHER	115.745	**EQUIPMENT**	24.400
TOTAL	**192.735**	* NEW SCIENTIFIC & ENG. EQUIP.	19.000
ACRES	31	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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Medical Research Institute of Infectious Diseases

Abbreviated Functional Chart - Technical Organizations

Medical Research Institute of Infectious Diseases
Fort Detrick, MD 21702-5011
(301) 619-2833

Commander: COL Ernest T. Takafuji
Scientific Dir.: COL David R. Franz

MISSION

To conduct research to develop strategies, products, information and training for medical defense against biological warfare threats and naturally occurring infectious agents of military importance that require special containment.

CURRENT IMPORTANT PROGRAMS

Recombinant anthrax vaccine which is less reactogenic and less expensive to produce than the current killed vaccine. Developed a promising candidate vaccine for ricin, a potent toxin derived from plants, which has demonstrated efficacy in protection from aerosol challenge of the toxin in model systems. Accomplished the synthesis of key components of genes from botulinum toxin that are critical to the development of a new generation of genetically engineered vaccines for protection against botulinum toxin. Developed a new, genetically engineered candidate vaccine for Venezuelan equine encephalitis that incorporates three independent mutations that assure non-virulence while at the same time preserving the expression of proteins important for the host immune response. Demonstrated the potential of micro-encapsulation in enhancing the immune response to vaccines as well as reducing the need for multiple immunizations using both viral and toxin vaccine candidates. Identified and characterized a new hemorrhagic fever-causing virus from Venezuela, and demonstrated that it is distinct from other viruses by the lack of protection with the live, attenuated vaccine for Argentine hemorrhagic fever.

EQUIPMENT/FACILITIES

Medical research conducted in three buildings providing 344,000 sq. ft. with approximately 15% of the laboratory space capable of operations at biosafety level 3 and approximately 3% capable of operations at biosafety level 4 (maximum containment). Containment laboratories are a unique international resource for the safe study of high hazard disease agents. Remaining laboratories provide appropriate facilities and equipment suitable for the study of toxins and lower hazard disease agents. Other unique facilities/capabilities include: a 16-bed experimental ward for clinical research studies; high containment patient care facility; clinical laboratory and transportation system; a large animal research facility; contained laboratory aerosol exposure systems; cell culture and hybridoma laboratory, electron microscopy and mass spectrometry facilities; laboratories and equipment necessary to prepare experimental vaccines and toxoids.

Medical Research Institute of Infectious Diseases
Fort Detrick, MD 21702-5011
(301) 619-2833

Commander: COL Ernest T. Takafuji
Scientific Dir.: COL David R. Franz

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.802	NA	0.802
6.1 Other	5.424	3.997	9.421
6.2 IED (Navy)	NA	NA	NA
6.2 Other	12.495	1.740	14.235
6.3 A	4.342	4.478	8.820
Subtotal (S&T)	**23.063**	**10.215**	**33.278**
6.3 B	1.083	5.018	6.101
6.4	0.304	0.244	0.548
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**24.450**	**15.477**	**39.927**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.676	0.000	0.676
Other	10.845	0.000	10.845
TOTAL FUNDING	**35.971**	**15.477**	**51.448**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	275	33	51	191
CIVILIAN	261	48	81	132
TOTAL	**536**	**81**	**132**	**323**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	121.016	**REAL PROPERTY**	60.131
ADMIN	39.718	* NEW CAPITAL EQUIPMENT	36.331
OTHER	22. '41	**EQUIPMENT**	30.995
TOTAL	**383.975**	* NEW SCIENTIFIC & ENG. EQUIP.	3.800
ACRES	**4**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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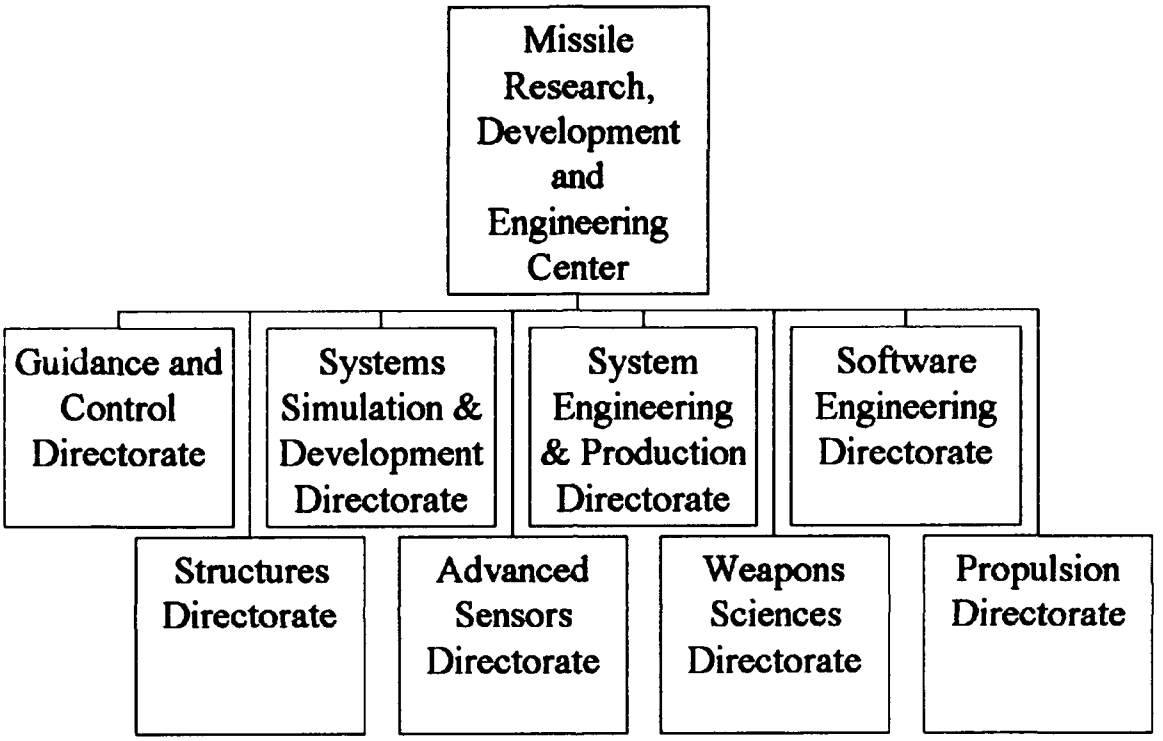
Missile Research, Development & Engineering Center

Abbreviated Functional Chart - Technical Organizations



Missile Research, Development & Engineering Center
Redstone Arsenal, AL 35898-5241
(205) 876-3322

Tech. Director: Dr. William C. McCorkle
Deputy Director: COL Donald H. Watt, Jr.

MISSION

Provide support for project-managed systems. Manage and conduct research, exploratory and advanced development for missiles, rockets, directed energy weapons and unmanned aerial vehicles. Provide technical solutions to Army's close combat, fire support and air defense system needs and develop technology for future systems.

CURRENT IMPORTANT PROGRAMS

Advanced Kinetic Energy Missile (ADKEM)
LONGFOG Insensitive Munitions for Missile Propulsion (IM)
Multi-Role Survivable Radar (MRSR)
Rapid Force Projection Initiative (RFPI)
The Army Combined Arms Weapon System (TACAWS).

EQUIPMENT/FACILITIES

The Missile RD&E Center is equipped to study problems in propulsion, aerodynamics, guidance and control, structures, advanced sensors, and missile system simulation. The major facility is McMorrow Laboratory which houses the majority of the center. Some unique facilities are: advanced simulation center; a computer complex surrounded peripherally by three (3) environmental effects simulators; missile computer software/hardware center; lighting test facility; Army missile optical range. The center performs as Army lead center in guidance and control/terminal homing technology. In addition the center manages the Rapid Force Projection Initiative for DoD Thrust Area Five, Advanced Land Combat. The Systems Engineering Laboratory Addition (SELA) providing enhanced engineering capabilities will be opened in October 1993.

Missile Research, Development & Engineering Center
Redstone Arsenal, AL 35898-5241 Tech. Director: Dr. William C. McCorkle
(205) 876-3322 Deputy Director: COL Donald H. Watt, Jr.

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	4.721	NA	4.721
6.1 Other	0.000	0.525	0.525
6.2 IED (Navy)	NA	NA	NA
6.2 Other	14.748	46.220	60.968
6.3 A	11.179	68.634	79.813
Subtotal (S&T)	**30.648**	**115.379**	**146.027**
6.3 B	17.887	24.887	42.774
6.4	23.826	23.539	47.365
6.5	4.242	32.794	37.036
6.6/6.7	11.467	12.129	23.596
Non-DOD	1.425	5.536	6.961
TOTAL RDT&E	**89.495**	**214.264**	**303.759**
Procurement	44.826	25.263	70.089
Operations & Maintenance	22.700	24.897	47.597
Other	4.363	13.750	18.113
TOTAL FUNDING	**161.384**	**278.174**	**439.558**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	33	1	8	24
CIVILIAN	2,247	59	1,352	836
TOTAL	**2,280**	**60**	**1,360**	**860**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	420.495	**REAL PROPERTY**	216.000
ADMIN	181.597	* NEW CAPITAL EQUIPMENT	0.040
OTHER	20.000	**EQUIPMENT**	0.210
TOTAL	**622.092**	* NEW SCIENTIFIC & ENG. EQUIP.	0.050
ACRES	**4,000**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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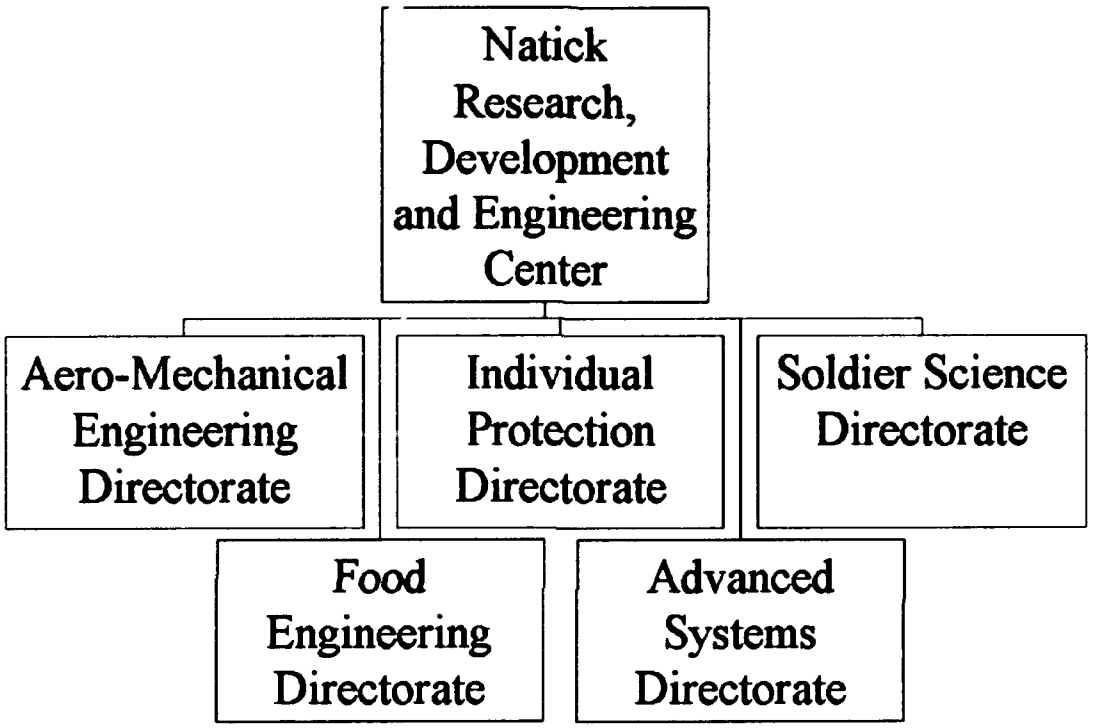
Natick Research, Development & Engineering Center

Abbreviated Functional Chart - Technical Organizations



Natick Research, Development & Engineering Center
Natick, MA 01760-5000
(508) 651-4109
Commander: COL David H. Wayne
Tech. Director: Dr. Robert W. Lewis

MISSION

Satisfy the customer's needs. Maximize the individual soldier's survivability, sustainability, mobility and combat effectiveness. Treat the soldier as a system.

CURRENT IMPORTANT PROGRAMS

- Improve the warrior's survivability with integrated, individual protection from flame, chemical, ballistic, environmental, surveillance and directed energy threats.
- Soldier System and improved land warrior performance in the twenty-first century.
- Sustain the soldier through the Force Provider Program including combat field feeding, food equipment systems, hardened shelters, CB protected tentage, field organizational systems, and solar protective systems.
- Family of performance enhancing, self-heating combat rations and modularized, rapidly deployable field feeding equipment systems.
- Enhanced mobility through advanced personnel and cargo airdrop systems.

Eight (8) patents applied for.

EQUIPMENT/FACILITIES

Aircraft and airdrop load conveyor, static, and drop test facilities. Ultralight aircraft. EMI test facility. Chromatographers. Spectrophotometers. CCD camera imaging system. Robotic system for handling toxic chemicals. Complete laser laboratory. Oligonudeotide and peptide synthesizers. Peptide sequencer. Thermal analysis equipment. Chambers simulating artificial light. Rain simulation apparatus. Terrain analysis system. Dyeing and finishing fabrics lab. Seams lab. Stitchless fabric welding equipment. Ballistics high speed impact test equipment, Instron. Food packaging, processing, and systems equipment labs. Microbiology lab. Bacteriology lab equipment. Climatic chambers. Computer video-analysis systems. Microscopy lab with optical, electron and atomic force microscopes. Taste test lab.

New equipment aquired in FY92: Alexandrite (variable frequency) laser. Fermentation facilities. Biotechnology lab with automated respirator. Three-dimensional head scanner. Instrumented mannequins. Computerized pattern generating and grading system.

Natick Research, Development & Engineering Center
Natick, MA 01760-5000
(508) 651-4109

Commander: COL David H. Wayne
Tech. Director: Dr. Robert W. Lewis

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.158	NA	0.158
6.1 Other	2.525	0.716	3.241
6.2 IED (Navy)	NA	NA	NA
6.2 Other	16.000	15.616	31.616
6.3 A	1.936	4.868	6.804
Subtotal (S&T)	**20.619**	**21.200**	**41.819**
6.3 B	4.980	15.245	20.225
6.4	12.584	12.915	25.499
6.5	1.593	2.269	3.862
6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**39.776**	**51.629**	**91.405**
Procurement	0.000	14.990	14.990
Operations & Maintenance	11.990	3.282	15.272
Other	2.366	6.399	8.765
TOTAL FUNDING	**54.132**	**76.300**	**130.432**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	69	0	4	65
CIVILIAN	1,024	61	366	597
TOTAL	**1,093**	**61**	**370**	**662**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	416.251	**REAL PROPERTY**	36.353
ADMIN	114.463	* NEW CAPITAL EQUIPMENT	0.183
OTHER	285.577	**EQUIPMENT**	33.741
TOTAL	**816.291**	* NEW SCIENTIFIC & ENG. EQUIP.	1.423
ACRES	**174**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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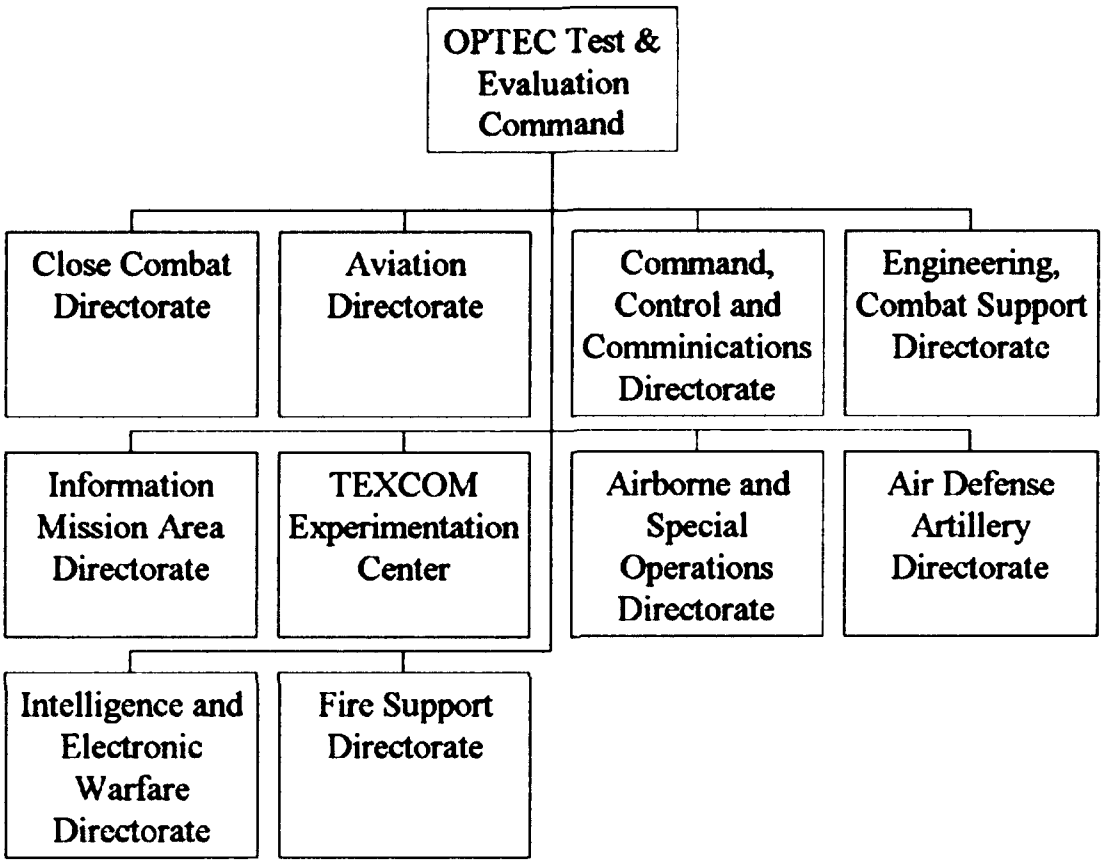
OPTEC Test and Evaluation Command

Abbreviated Functional Chart - Technical Organizations



OPTEC Test and Evaluation Command
Fort Hood, TX 76544-5065
(817) 288-9114

Commander: Anthony C. Trifiletti
Tech. Director: Marion Bryson

MISSION

Support the Army materiel acquisition and force development processes by managing the User Testing Program and conducting operational testing to support force development.

CURRENT IMPORTANT PROGRAMS

M1A2 Main Battle Tank.
JAVELIN Advanced anti-tank weapons system.
FMTV - Family of Medium Tactical Vehicles.
ATCCS - Army Tactical Command & Control System
C17 Transport aircraft.
AFATDS - Advanced Field Artillery Tactical Data System

EQUIPMENT/FACILITIES

Position location, high angle modular integrated target, video, data acquisition and reduction, thermal imaging, fiber optics and video multiplexer/demultiplexer, range timing, microwave, environmental measurement and survey.

OPTEC Test and Evaluation Command
Fort Hood, TX 76544-5065
(817) 288-9114

Commander: Anthony C. Trifiletti
Tech. Director: Marion Bryson

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	0.000	0.000	0.000
6.6/6.7	64.251	0.000	64.251
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**64.251**	**0.000**	**64.251**
Procurement	0.000	0.000	0.000
Operations & Maintenance	51.794	0.000	51.794
Other	0.000	0.000	0.000
TOTAL FUNDING	**116.045**	**0.000**	**116.045**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	978	0	0	978
CIVILIAN	582	4	0	578
TOTAL	**1,560**	**4**	**0**	**1,556**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	19.900	**REAL PROPERTY**	6.300
ADMIN	41.000	* NEW CAPITAL EQUIPMENT	0.000
OTHER	0.000	**EQUIPMENT**	3.000
TOTAL	**60.900**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**22**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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Research Institute for the Behavioral & Social Sciences

Abbreviated Functional Chart - Technical Organizations

Research Institute for the Behavioral & Social Sciences
Alexandria, VA 22333-5600
(703) 274-8840
Director: Edgar M. Johnson
Deputy Director: COL Larry J. Wagstaff

MISSION

Maximize combat effectiveness through timely research in the selection, classification, training, effective utilization and retention of soldiers. Support decision making by Army leaders through personnel performance and training RDT&E programs.

CURRENT IMPORTANT PROGRAMS

Human resources development: leader development, organizational performance, career development and retention. General-purpose and special-focus selection/classification techniques. Unit collective training techniques: synthetic training environments and unit training strategies. Land warfare and rotary wing training: simulator fidelity, intelligent tutors and safety training.

EQUIPMENT/FACILITIES

The principal Army science and technology organization for soldier-oriented research and development, consisting of two divisions and a research and advanced concepts office. Field units and scientific coordination offices are located throughout CONUS and USAREUR. In-house experimental facilities include laboratory and computer facilities for real-time, man-in-the-loop experimentation. Other facilities include: the Army's National Training Center (NTC) Data and Analysis Center. A modular, reconfigurable flight simulator for helicopter pilot research. Simulators for UH-IFS, AH-64A and UH-60A helicopters. Research access to SIMNET, virtual reality co-located with STRICOM and NTS, and TOPGUN - combat arms simulators. A C2 Experimental Design, Demonstration and Integration center (EDDIC).

Research Institute for the Behavioral & Social Sciences
Alexandria, VA 22333-5600
(703) 274-8840
Director: Edgar M. Johnson
Deputy Director: COL Larry J. Wagstaff

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.086	NA	0.086
6.1 Other	0.653	2.716	3.369
6.2 IED (Navy)	NA	NA	NA
6.2 Other	8.373	8.049	16.422
6.3 A	6.958	9.030	15.988
Subtotal (S&T)	**16.070**	**19.795**	**35.865**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	8.314	3.786	12.100
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.019	0.000	0.019
TOTAL RDT&E	**24.403**	**23.581**	**47.984**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.213	0.215	0.428
Other	0.750	0.000	0.750
TOTAL FUNDING	**25.366**	**23.796**	**49.162**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	9	1	8	0
CIVILIAN	275	129	31	115
TOTAL	**284**	**130**	**39**	**115**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	53.355	**REAL PROPERTY**	0.720
ADMIN	14.000	* NEW CAPITAL EQUIPMENT	0.000
OTHER	6.200	**EQUIPMENT**	3.417
TOTAL	**73.555**	* NEW SCIENTIFIC & ENG. EQUIP.	0.071
ACRES	**0**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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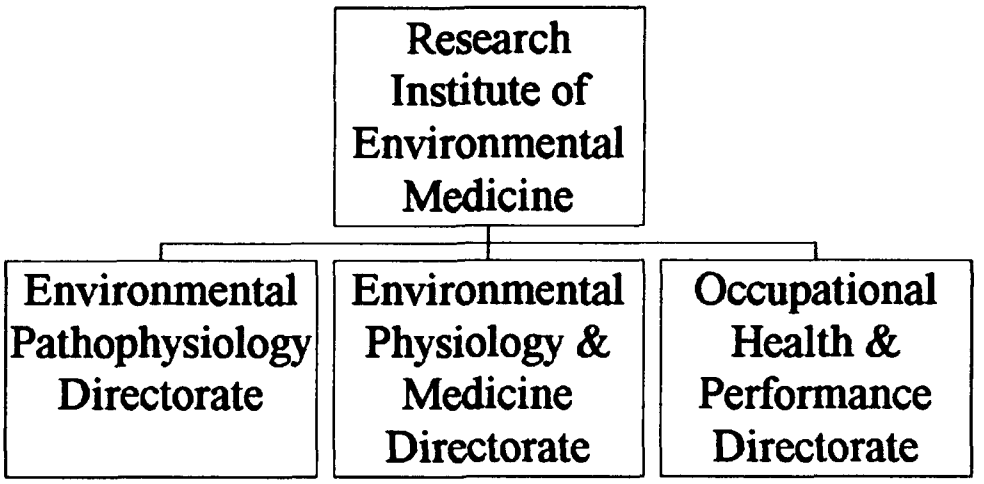
Research Institute of Environmental Medicine

Abbreviated Functional Chart - Technical Organizations



Research Institute of Environmental Medicine
Natick, MA 01760-5007
(508) 651-4811

Cmdr./S&T Dir.: COL Gerald P. Krueger

MISSION

Conduct research to determine the effects of heat, cold, high terrestrial altitude, nutrition and work upon the soldiers life process, performance and health. Defense interaction of environmental stresses.

CURRENT IMPORTANT PROGRAMS

Completed an energy expenditure and stressor evaluation experienced in the eight weeks U.S. Army Ranger Training Course. Developed an injury prevention sock system. Evaluated efficacy of treating dehydration accompanying heat stroke, with or without electrolyte loss, using hypertonic saline-dextran in heat stressed rats. Identified non-vascular aspects of freeze-thaw injury to human skin cells using artificial human skin or Living Skin Equivalent (LSE). Examined the effects of hypoxia on regional skin blood flow responses in men exercising at a moderate intensity in a control (sea level) and a hypoxic hypobaric (10,000 ft.) experiment. Examined the physiological mechanisms responsible for adverse thermoregulatory responses in dehydrated soldiers.

EQUIPMENT/FACILITIES

The major equipment and facility capabilities of the laboratory include, but are not limited to: two (2) large altitude chambers, fourteen (14) small climatic chambers, AAALAC (American Association for the Accreditation of Laboratory Animal Care) accredited animal care facilities, electron microscope, underwater research pool, copper mannequins, and diverse pharmacological and psychological measuring equipment. The institute maintains a field facility on the summit of Pikes Peak, CO.

Research Institute of Environmental Medicine
Natick, MA 01760-5007 Cmdr./S&T Dir.: COL Gerald P. Krueger
(508) 651-4811

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.046	NA	0.046
6.1 Other	1.784	0.627	2.411
6.2 IED (Navy)	NA	NA	NA
6.2 Other	5.078	0.325	5.403
6.3 A	1.353	1.054	2.407
Subtotal (S&T)	**8.261**	**2.006**	**10.267**
6.3 B	0.137	0.108	0.245
6.4	0.120	0.000	0.120
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**8.518**	**2.114**	**10.632**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.221	0.000	0.221
Other	4.250	0.000	4.250
TOTAL FUNDING	**12.989**	**2.114**	**15.103**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	83	27	29	27
CIVILIAN	95	30	36	29
TOTAL	**178**	**57**	**65**	**56**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	38.754	**REAL PROPERTY**	25.505
ADMIN	6.560	* NEW CAPITAL EQUIPMENT	21.421
OTHER	33.750	**EQUIPMENT**	6.082
TOTAL	**79.064**	* NEW SCIENTIFIC & ENG. EQUIP.	0.336
ACRES	1	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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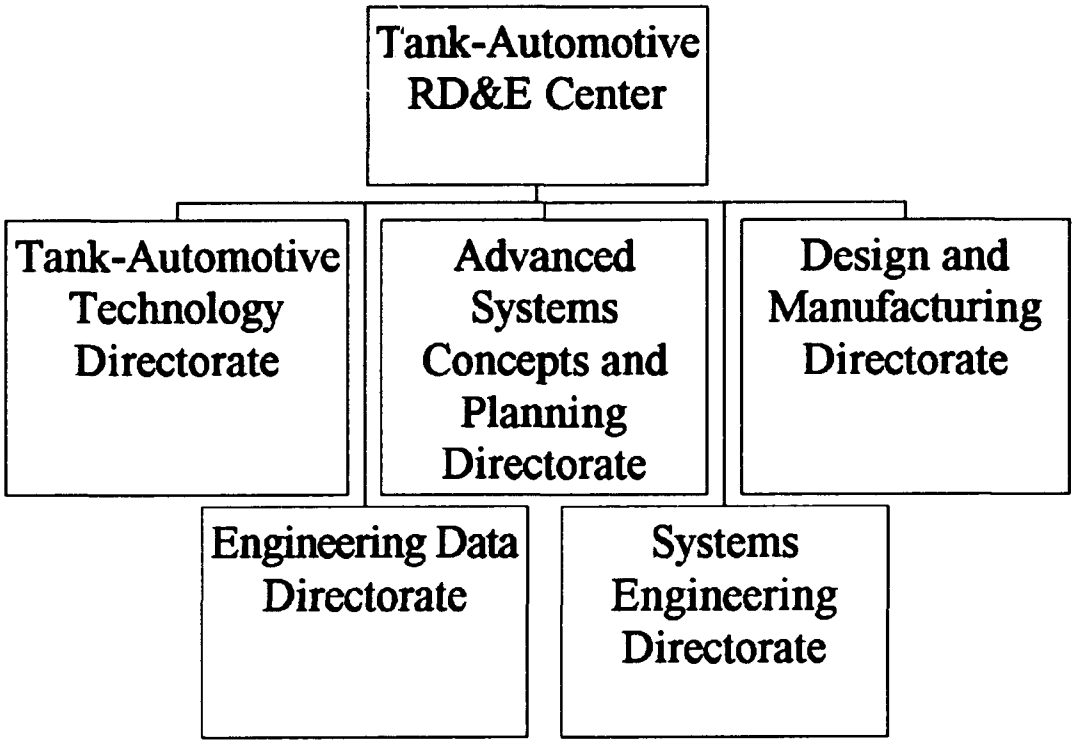
Tank-Automotive Research, Development and Engineering Center

Abbreviated Functional Chart - Technical Organizations



Tank-Automotive Research, Development and Engineering Center
Warren, MI 48397-5000 Director: Dr. Kenneth J. Oscar
(313) 574-6144 Tech. Director: Wayne K. Wheelock

MISSION

Plan, manage and conduct research, exploratorydevelopment, advanced development and overall systems integration for ground vehicles. Provide engineering support for fielded systems and for procurement of new equipment. Manage configuration and technical data for tank-automotive equipment. Provide scientific and engineering support to TACOM, PEO/PM's and AMC/DoD elements.

CURRENT IMPORTANT PROGRAMS

Track and suspension. Composite Armored Vehicle (CAV). Vehicle electronics. Robotics. Simulation. Advanced Integration Propulsion Systems (AIPS). Component Advanced Technology Test Bed (CATTB). Common chassis advanced technology transmission demonstrator. Survivability and armor development integration. Unmanned ground vehicle control technology. CAD. Computer armor design. Support to PEO, CS and PEO, ASM.

Eighteen (18) patents applied for.

EQUIPMENT/FACILITIES

SIMULATION FACILITY: The Crew Station and the Turret Motion Base Simulator are unique pieces of equipment used in the simulation facility.

FABRICATION FACILITY: The Rapid Prototype Process is unique to the fabrication facility. It involves the use of special software to fabricate a vehicle through a series of steps performed by the computer. It allows for a vehicle to be fabricated to specifications prior to actually buiiding the prototype vehicle.

VIRTUAL PROTOTYPE FACILITY: The Crew Station and Turret Motion Base Simulator are also used in the Virtual Prototype Process. In addition, the virtual prototype facility also has the Vetronic Systems Architecture Demonstrator which is used for electronic testing.

Tank-Automotive Research, Development & Engr Center
Warren, MI 48397-5000
(313) 574-6144
Director: Dr. Kenneth J. Oscar
Tech. Director: Wayne K. Wheelock

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.158	NA	0.158
6.1 Other	0.730	0.201	0.931
6.2 IED (Navy)	NA	NA	NA
6.2 Other	15.926	24.700	40.626
6.3 A	2.252	16.006	18.258
Subtotal (S&T)	**19.066**	**40.907**	**59.973**
6.3 B	0.000	2.219	2.219
6.4	0.000	0.783	0.783
6.5	5.097	7.238	12.335
6.6/6.7	0.105	5.158	5.263
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**24.268**	**56.305**	**80.573**
Procurement	9.524	116.000	125.524
Operations & Maintenance	37.375	32.400	69.775
Other	5.883	21.300	27.183
TOTAL FUNDING	**77.050**	**226.005**	**303.055**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	22	1	18	3
CIVILIAN	1,210	21	573	616
TOTAL	**1,232**	**22**	**591**	**619**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	393.770	**REAL PROPERTY**	78.100
ADMIN	178.246	* NEW CAPITAL EQUIPMENT	2.000
OTHER	0.000	**EQUIPMENT**	192.500
TOTAL	**572.016**	* NEW SCIENTIFIC & ENG. EQUIP.	3.000
ACRES	**102**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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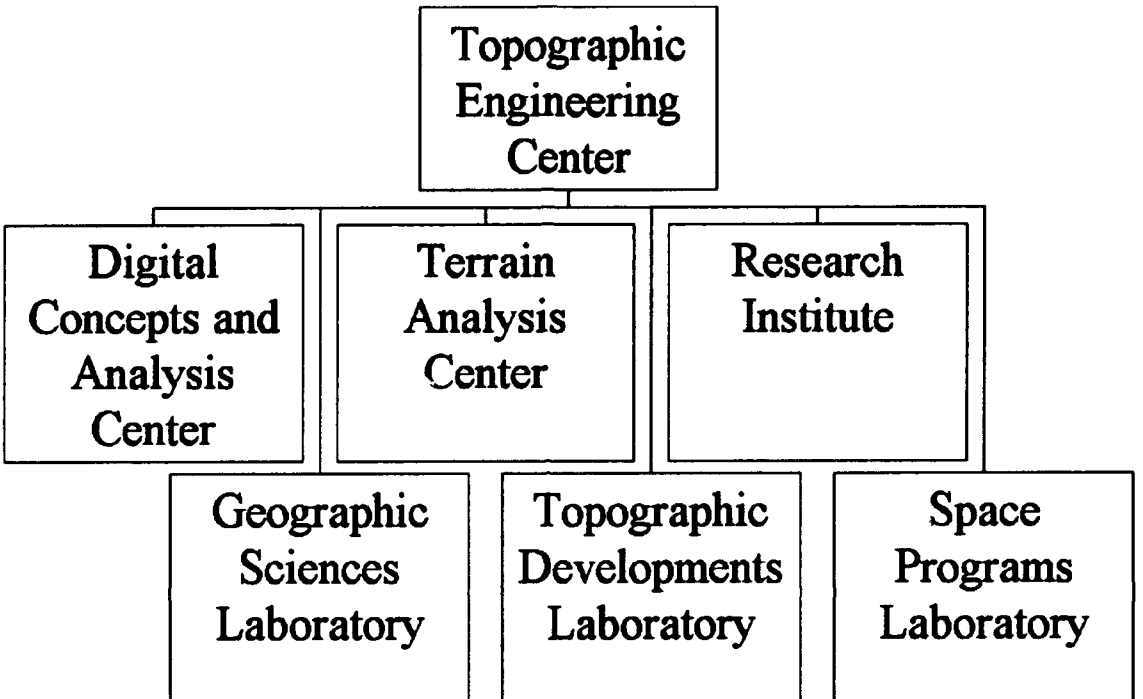
Topographic Engineering Center

Abbreviated Functional Chart - Technical Organizations



Topographic Engineering Center
Fort Belvoir, VA 22060-5546
(703) 355-2640

Director: Walter E. Boge
Cmdr./Dep. Dir.: Louis R. Desenzo

MISSION

R&D in topographic sciences (rapid terrain data generation, terrain analysis and visualization, modeling and simulation, point positioning, remote sensing and digital image exploitation), and scientific advisory services in environmental effects data, image interpretation and operational terrain analysis.

CURRENT IMPORTANT PROGRAMS

Development in the S&T base of capabilities to exploit hyperspectral data derived from remote sensing platforms (data libraries and exploitation hardware). Stereo image exploitation for mapping information to support mission planning, rehearsal and target development. Terrain visualization supporting rapid, world wide deployment of contingency forces. S&T support to ARPA in image exploitation, autonomous navigation and computer vision, hyperspectral analysis, terrain visualization for simulation and war-fighting systems and the Counter-Narcotics Program. Developmental support to PM, Joint Precision Strike, Army Space Program Office and the PEO-Command and Control Systems for the Combat Terrain Information System, as well as the US Geological Survey and Central Intelligence Agency for stereo image exploitation.

EQUIPMENT/FACILITIES

Facilities include: A computer image generation facility to study and demonstrate computer techniques for 3-D perspective display of topographic information for mission planning, rehearsal and command and control. A digital image processing facility with advanced displays and digital image analysis capabilities. An advanced computer vision testbed for generation image understanding methodology for locating enemy formations from imagery. An artificial intelligence test bed for developing automated image analysis and feature extraction techniques. Special measurement equipment permitting the gathering of hyperspectral data elements for advanced imaging systems development. Major computer systems include DECVAX models 780/785, MILVAX II, Connection Machines II and V, Ardent/Stardent, and Silicon Graphics Power Vision and Indigo.

Topographic Engineering Center
Fort Belvoir, VA 22060-5546
(703) 355-2640

Director: Walter E. Boge
Cmdr./Dep. Dir.: Louis R. Desenzo

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.211	NA	0.211
6.1 Other	2.414	0.291	2.705
6.2 IED (Navy)	NA	NA	NA
6.2 Other	7.500	11.232	18.732
6.3 A	3.361	15.613	18.974
Subtotal (S&T)	**13.486**	**27.136**	**40.622**
6.3 B	0.000	0.000	0.000
6.4	2.697	0.000	2.697
6.5	4.490	2.558	7.048
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**20.673**	**29.694**	**50.367**
Procurement	1.119	0.000	1.119
Operations & Maintenance	7.680	0.628	8.308
Other	2.549	0.128	2.677
TOTAL FUNDING	**32.021**	**30.450**	**62.471**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	12	0	0	12
CIVILIAN	416	16	253	147
TOTAL	**428**	**16**	**253**	**159**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	121.772	**REAL PROPERTY**	22.400
ADMIN	9.749	* NEW CAPITAL EQUIPMENT	0.000
OTHER	36.998	**EQUIPMENT**	2.200
TOTAL	**168.519**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**0**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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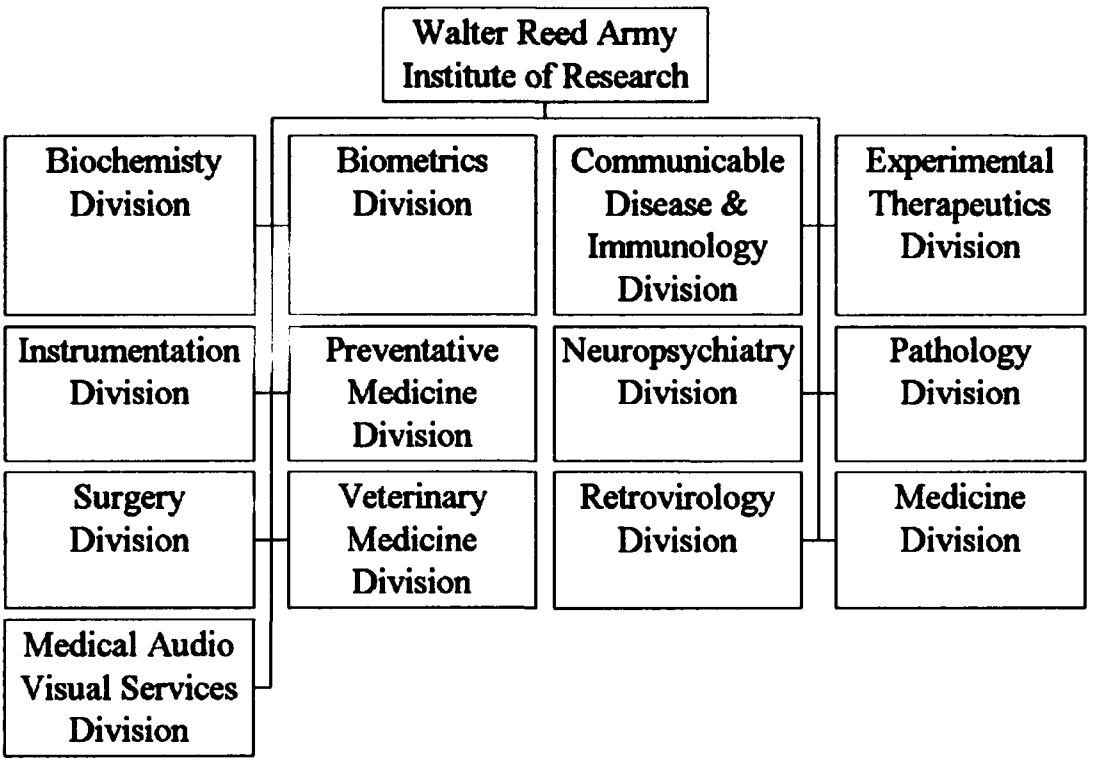
Walter Reed Army Institute of Research

Abbreviated Functional Chart - Technical Organizations



Walter Reed Army Institute of Research
Washington, DC 20307-5100
(202) 576-3551

Director: COL August J. Salvado
Deputy Director: COL John W. Boslego

MISSION

Perform research into the medical prevention of soldier disability and death and the rapid treatment and return to duty of soldiers who do become casualties by developing medical materiel interventional approaches and doctrine to protect against threats from the natural environment, military weapons and technology and operational stress.

CURRENT IMPORTANT PROGRAMS

Development of drugs and vaccines to protect against infectious diseases to deployed soldiers. Development of means for the prevention of operational stress in the combat environment. Development of combat casualty care strategies for the prevention of injuries from blast and directed energy and prevention of sepsis and shock following traumatic wounds or thermal injury. Development of medical strategies for protecting soldiers from chemical and biological warfare threats. Evaluation of military health hazards of Army weapon systems and manpower programs, in coordination with AMC, TRADOC and ODCSPER (Office of the Chief of Staff for Personnel).

EQUIPMENT/FACILITIES

Equipment and facilities to support complete analytical chemistry capabilities including: Gas chromatography and mass spectrometry. Drug development from computer-aided drug design and synthesis to field testing for efficacy and safety. Vaccine development from basic research and computer assisted recognition of relevant vaccine candidates to animal model development and production, testing and production, testing and licensing. Complete infectious disease diagnosis to include isolation and culture of causative agents and serological diagnosis. Performance of comprehensive human behavioral research studies both in the laboratory setting and in the field. Evaluation of health hazards from blast, toxic, gas and laser energy as well as materiel and approaches to combat casualties from these same sources. Performance of complete epidemiology on military medical threats and accidents from infectious diseases and toxins. Thorough pathological evaluation to include histopathological diagnosis and transmission and scanning electron microscopy studies. Basic research studies into the pathophysiology of disease utilizing modern cell physiology and hematological techniques. Testing of drugs, vaccines and medical doctrine in overseas files locations in Korea, Brazil, Germany, Thailand and Kenya.

Walter Reed Army Institute of Research
Washington, DC 20307-5100
(202) 576-3551

Director: COL August J. Salvado
Deputy Director: COL John W. Boslego

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	1.137	NA	1.137
6.1 Other	11.729	6.581	18.310
6.2 IED (Navy)	NA	NA	NA
6.2 Other	26.965	12.251	39.216
6.3 A	7.969	26.676	34.645
Subtotal (S&T)	**47.800**	**45.508**	**93.308**
6.3 B	2.668	2.902	5.570
6.4	2.123	1.455	3.578
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**52.591**	**49.865**	**102.456**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.031	0.000	0.031
Other	36.157	0.000	36.157
TOTAL FUNDING	**88.779**	**49.865**	**138.644**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	343	151	77	115
CIVILIAN	388	92	204	92
TOTAL	**731**	**243**	**281**	**207**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	222.457	**REAL PROPERTY**	45.836
ADMIN	92.634	* NEW CAPITAL EQUIPMENT	8.200
OTHER	162.488	**EQUIPMENT**	2.998
TOTAL	**477.579**	* NEW SCIENTIFIC & ENG. EQUIP.	2.998
ACRES	**37**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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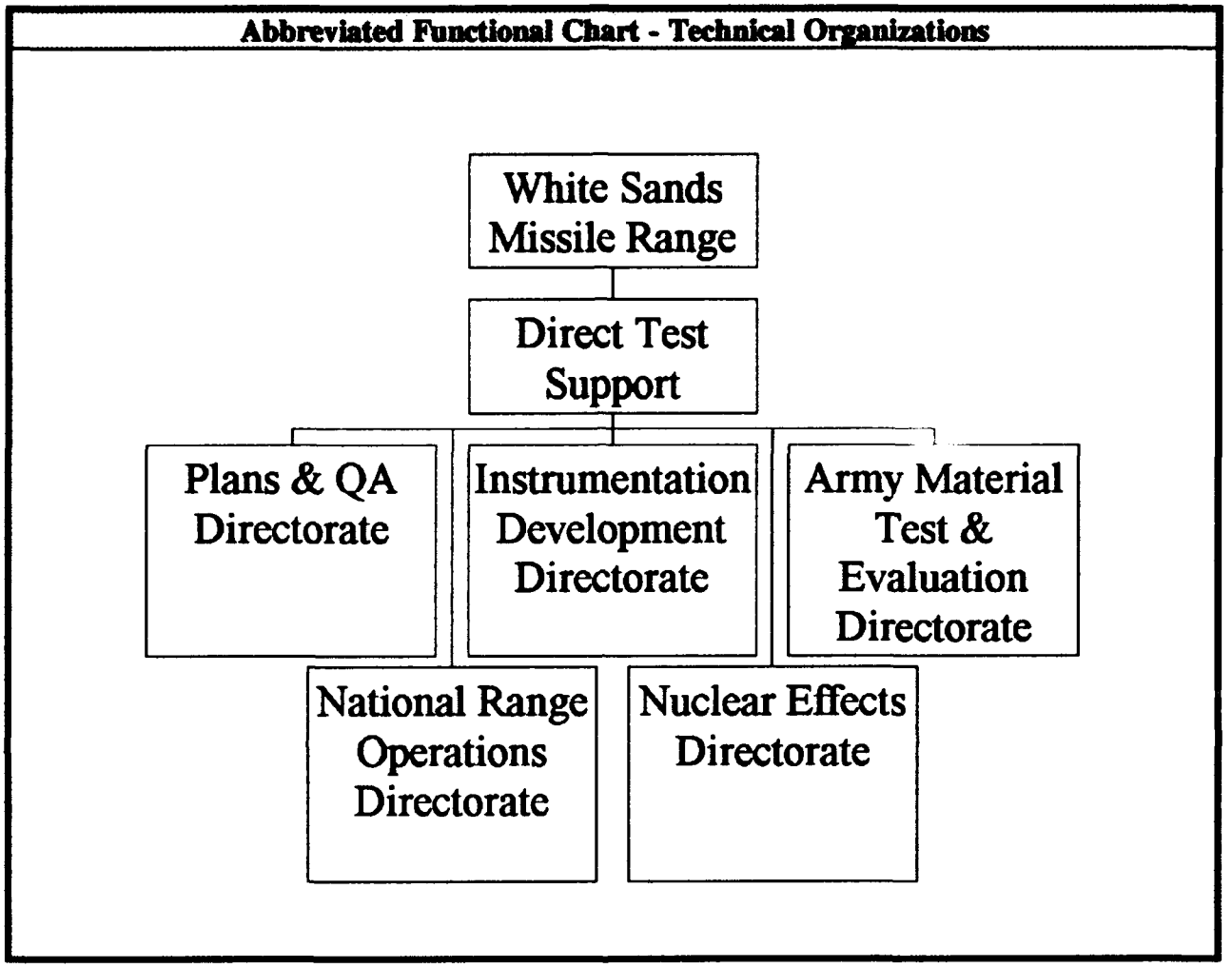
White Sands Missile Range



White Sands Missile Range
White Sands, NM 88002-5014
(505) 678-2121

Commander: BG Richard W. Wharton
Chief Scientist: George A. Orlicki

MISSION

To provide and operate a tri-service national range, test and evaluate DoD systems, and provide installation support.

CURRENT IMPORTANT PROGRAMS

Army-Patriot.
Army Tactical Missile System (ATACMS).
High Endoatmospheric Defense Interceptor-Kinetic Interceptor Technology Experiment (HEDI-KITE).
Advanced Medium Range Air-to-Air Missile (AMRAAM).
Standard Missile (SM).

EQUIPMENT/FACILITIES

LARGEST INLAND AIR AND LANDSPACE RANGE

FULL-TIME RESTRICTED AIRSPACE

VARIED TERRIAN FEATURES

RANGE INSTRUMENTATION (including the Multiple Object Tracking Radar (MOTR), Remote Control Optical Tracking Mounts, and Telemetry and Radar Instrumentation)

REAL TIME DATA COLLECTION, PROCESSING AND DISPLAY

COMPLETE ENVIRONMENTAL AND SCIENTIFIC LABORATORY SUITE (including a microbiological test chamber, large environmental test chamber, chemistry lab, metallurgy lab, and dynamics lab)

EQUIPMENT/FACILITIES
OFF-RANGE LAUNCH FACILITIES
SUBSCALE TARGET AND LAUNCH FACILITIES
DRONE FORMATION CONTROL SYSTEM (to control tanks, and fixed and rotor aircraft)
WHITE SANDS SPACE HARBOR (a high speed test track also used for Shuttle landings)
TARGET MOTION RESOLUTION FACILITY
BURRIS WELL TACTICAL LASER TEST AREA
300 FT TOWER AND 30 FT DIAMETER TURNTABLE FOR SIGNATURE MEASUREMENTS
ELECTRO-OPTICAL FACILITY
HAZARDOUS TEST FACILITIES (including Warheads Test Area)
SECURE TELEMETRY AND RADAR
In addition to the above, WSMR is the only installation in the US where all facilities used to simulate the environments resulting from a nuclear weapon detonation exist in one location (fast burst reactor, linear electron accelerator, electromagnetic pulse, solar furnace).

White Sands Missile Range
White Sands, NM 88002-5014
(505) 678-2121

Commander: BG Richard W. Wharton
Chief Scientist: George A. Orlicki

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	IN-HOUSE	OUT-OF-HOUSE	TOTAL
RDT&E:			
6.1 ILIR	0.001	NA	0.001
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.208	0.170	0.378
6.3 A	1.681	1.540	3.221
Subtotal (S&T)	**1.890**	**1.710**	**3.600**
6.3 B	0.000	0.000	0.000
6.4	4.062	4.073	8.135
6.5	58.737	36.888	95.625
6.6/6.7	0.073	0.000	0.073
Non-DOD	1.417	0.244	1.661
TOTAL RDT&E	**66.179**	**42.915**	**109.094**
Procurement	10.757	9.912	20.669
Operations & Maintenance	5.303	4.431	9.734
Other	23.501	25.771	49.272
TOTAL FUNDING	**105.740**	**83.029**	**188.769**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

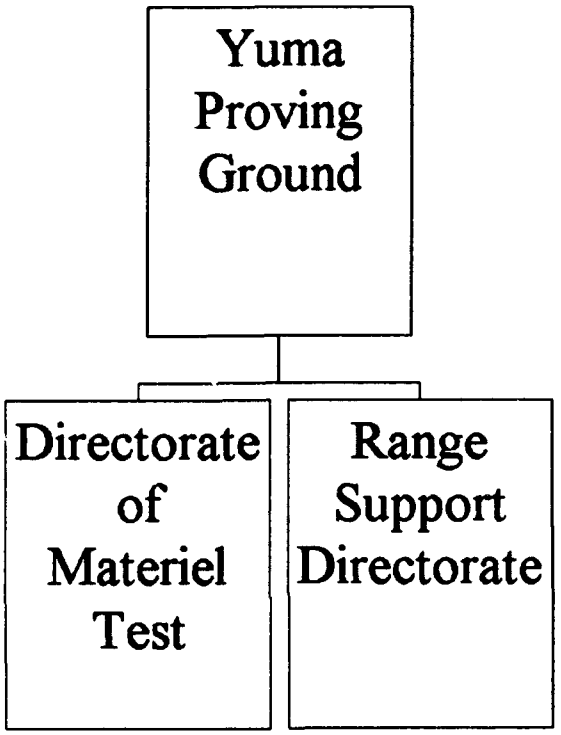
PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	436	0	0	436
CIVILIAN	2,203	21	591	1,591
TOTAL	**2,639**	**21**	**591**	**2,027**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		PROPERTY ACQUISITION COST (MILLIONS $)	
LAB	66.385	REAL PROPERTY	383.700
ADMIN	966.270	* NEW CAPITAL EQUIPMENT	1.215
OTHER	4,318.473	EQUIPMENT	375.042
TOTAL	**5,351.128**	* NEW SCIENTIFIC & ENG. EQUIP.	7.089
ACRES	**2,281,659**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

Yuma Proving Ground

Abbreviated Functional Chart - Technical Organizations



Yuma Proving Ground
Yuma, AZ 85365-9102
(602) 328-2163

Commander: Richard R. Walker
Tech. Director: William T. Vomocil

MISSION

Plan, execute, support and report tests of aircraft weapons, long-range artillery, armored vehicles, tank weapons, munitions and aerial delivery systems through use of a multi-purpose test range. Conduct tests of military equipment in natural desert environment.

CURRENT IMPORTANT PROGRAMS

M1-A1 Abrams Tank.
M-2 Bradley IFV.
Palletized Load System (PLS).
Search and Destroy Armor (SADARM).
Tank Main Armament System (TMAS).
Liquid Propellant Gun.
C-17.
Low Altitude Retrorocket Recovery System (LARRS).
OH-580 Kiowa Warrior.
Unmanned Aerial Vehicle Close Range (UAV-CR).
RAH-66 Comanche Target Acquisition Systems.

EQUIPMENT/FACILITIES

WEAPONS FIRING CHAMBER: Capable of testing full-sized combat/tactical vehicles and helicopter, artillery and direct fire systems from -65 degrees Fahrenheit to 160 degrees Fahrenheit with humidity from 5% to 95%.

WEAPONS ACCURACY RANGE: The artillery range is sufficiently large to fire all artillery to maximum range and is fully instrumented with radar, multi-camera tracking mounts, telemetry and microwave systems, specially developed instrumented impact fields and communication systems. The aircraft weapons range is specially developed for helicopter armament and instrumented with multiple laser trackers, radars, telemetry video, multi-camera tracking mounts, remote control moving targets, GPS-based moving target tracking system and integrated real-time mission control and data processing center. The aircraft range includes specialty sites for ground mounted tests of aircraft weapons. All range areas are under restricted airspace to a minimum of 80,000 ft.

AUTOMOTIVE TEST COURSES: Paved, unpaved, hilly, Middle East, gravel, dust, fording basin, vehicle swimming, dynomometer capability for all Army systems. Complete shop and overhaul capability for Army vehicles and weapons systems.

AIR CARGO TEST FACILITY: Army airfield, two (2) runways to 6000 ft., two (2) hangars, Air Cargo Complex for test of airdrop systems and airdrop qualification of military systems and ammunition.

TEST ENVIRONMENT: Complete environmental test capability including 30,000 lb. vibration tables, rain, humidity, dust and other chambers. Laboratory facilities including X-ray, chemical and materials labs.

Yuma Proving Ground
Yuma, AZ 85365-9102
(602) 328-2163

Commander: Richard R. Walker
Tech. Director: William T. Vomocil

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	1.471	1.204	2.675
6.3 A	2.896	2.370	5.266
Subtotal (S&T)	**4.367**	**3.574**	**7.941**
6.3 B	0.000	0.000	0.000
6.4	3.800	3.109	6.909
6.5	33.832	30.544	64.376
6.6/6.7	0.000	0.000	0.000
Non-DOD	2.610	2.136	4.746
TOTAL RDT&E	**44.609**	**39.363**	**83.972**
Procurement	17.120	8.023	25.143
Operations & Maintenance	3.973	1.481	5.454
Other	10.433	0.000	10.433
TOTAL FUNDING	**76.135**	**48.867**	**125.002**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	2.700

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	170	0	8	162
CIVILIAN	823	2	222	599
TOTAL	**993**	**2**	**230**	**761**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	22.175	**REAL PROPERTY**	93.072
ADMIN	161.300	* NEW CAPITAL EQUIPMENT	0.000
OTHER	1,709.159	**EQUIPMENT**	304.418
TOTAL	**1,892.634**	* NEW SCIENTIFIC & ENG. EQUIP.	0.153
ACRES	**1,009,376**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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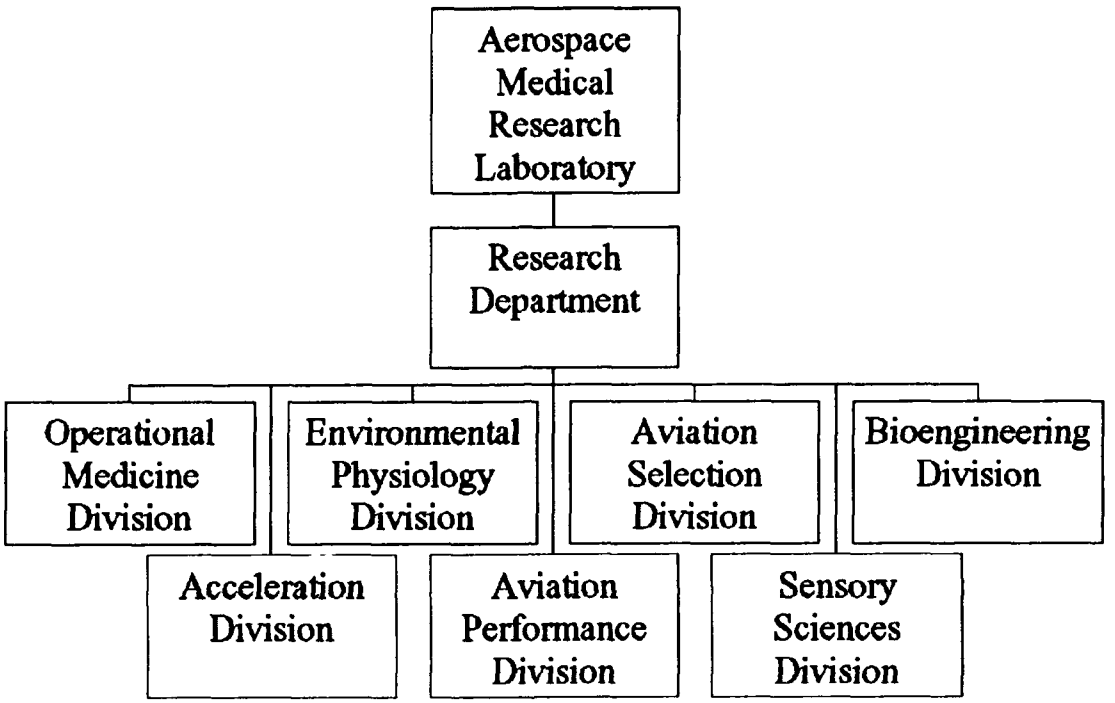
DEPARTMENT OF THE NAVY

DEPARTMENT OF THE NAVY

The Navy's seventeen (17) In-House RDT&E Activities are:

Aerospace Medical Research Laboratory

Abbreviated Functional Chart - Technical Organizations



Aerospace Medical Research Laboratory
Pensacola, FL 32508-1046
(904) 352-8078

CO: CAPT A.J. Mateczun
Chief Scientist: Dr. J.D. Grissett

MISSION

Conduct RDT&E in aviation medicine and allied sciences to enhance health, safety and readiness of aviation personnel. Conduct RDT&E to assess and improve health and physical tolerances of aviation personnel.

CURRENT IMPORTANT PROGRAMS

ts of biomedical countermeasure on sustained operations. Vestibular transduction, motion ption and motion sickness. Electromagnetic energy to rewarm hypothermic casualties. Performance based medical standards for Naval aviation. Vision standards. Contact lens usage and evaluation. Night Vision Devices (NVDs). Laser glare effects. Development of hearing protection devices. Auditory standards. Continuous and sustained operations.

EQUIPMENT/FACILITIES

Slow rotation room. Coriolis acceleration platform. Human disorientatic device. Still Werner chair. Off-vertical rotating chair. Anechoic reverberant chambers. Automated pulmonary function. Treadmill. Vector echocardiogram. Thermographic imaging system. Four (4) mobile and fixed labs equipped to collect biomedical and cognitive performance data. Standard Linear Energy Doubler (SLED) device for increasing power for microwave pulses. Psychological test facility. Laser facility. Portable cabinets for measuring deposited microwave energy in man-size models. Dye and ion lasers. Pupil/corneal reflection tracking system. Emulator work station. Three lens color projection system. Synthesized radio-frequency signal generator. Portable multi-channel telemetry monitor. Real-ear attenuation test facility. Auditory and psycho-acoustic test facility. High-noise test chamber. Radio communications monitoring station. Speed intelligibility recording and test facility. Automated vision test battery (mobile and fixed). High intensity RF sources.

Aerospace Medical Research Laboratory
Pensacola, FL 32508-1046
(904) 352-8078

CO: CAPT A.J. Mateczun
Chief Scientist: Dr. J.D. Grissett

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.458	0.000	0.458
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	0.533	0.000	0.533
6.3 A	1.979	0.000	1.979
Subtotal (S&T)	**2.970**	**0.000**	**2.970**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	0.456	0.000	0.456
6.6/6.7	0.000	0.000	0.000
Non-DOD	1.007	0.000	1.007
TOTAL RDT&E	**4.433**	**0.000**	**4.433**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	0.000	0.000	0.000
TOTAL FUNDING	**4.433**	**0.000**	**4.433**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	41	8	2	31
CIVILIAN	50	11	3	36
TOTAL	**91**	**19**	**5**	**67**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	54.222	**REAL PROPERTY**	11.400
ADMIN	5.700	* NEW CAPITAL EQUIPMENT	0.000
OTHER	59.900	**EQUIPMENT**	10.300
TOTAL	**119.822**	* NEW SCIENTIFIC & ENG. EQUIP.	0.300
ACRES	1	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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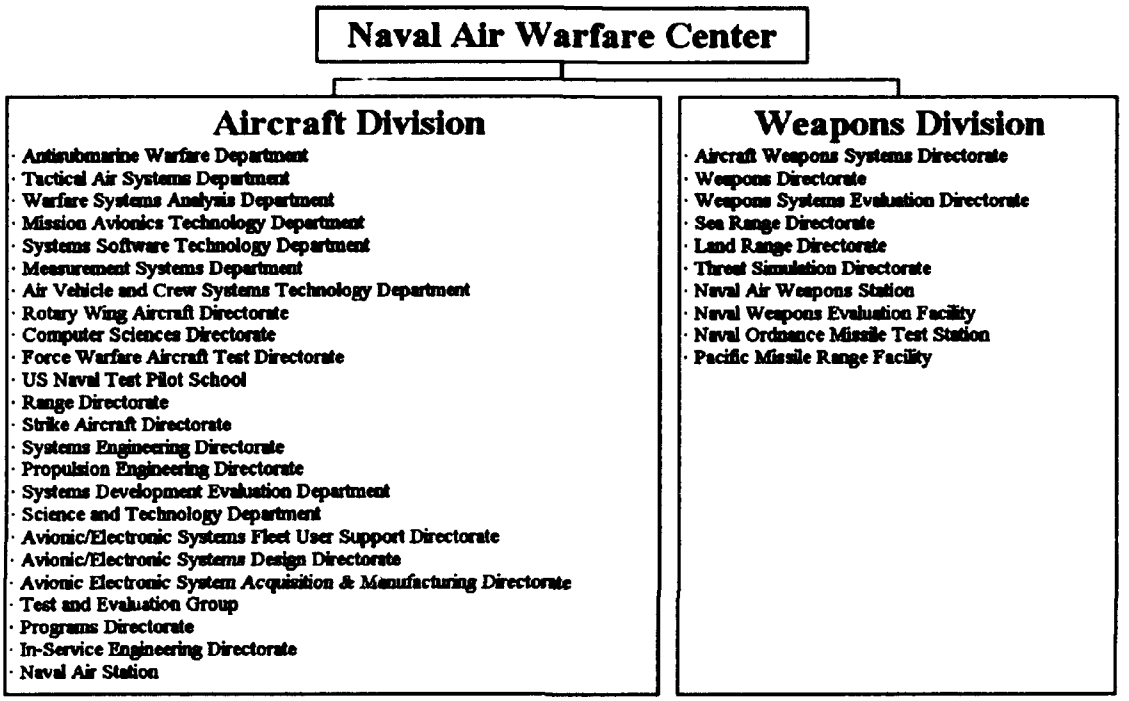
Air Warfare Center

Abbreviated Functional Chart - Technical Organizations



MISSION

The Naval Air Warfare Center (NAWC) is a full spectrum RDT&E and in-service engineering center for weapons systems associated with air warfare, missiles and missile subsystems, aircraft weapons integration, airborne electronic warfare systems, and the Navy's principal RDT&E engineering, and fleet support center for naval aircraft, engines, avionics, and aircraft support systems. The NAWC also maintains and operates air, land, and sea range complexes.

Air Warfare Center
Arlington, VA 22243-600
(703) 746-7730

Commander: RADM G. Strohsahl
Technical Dir.: Lew Lundberg

CURRENT IMPORTANT PROGRAMS

ANTI-AIR MISSILES:
Sidewinder, Sparrow, Phoenix, AMRAAM, Standard Missile.

ANTI-SURFACE WEAPONS:
High Speed Anti-Radar (HARM) Missile, Tomahawk, Skipper, Harpoon/SLAM, Joint Standoff Weapon (JSOW), Advance Rocket System (ARS), Joint Direct Attack Munitions (JDAM).

ELECTRONIC WARFARE:
Low Cost Seeker (LCS), Electronic Radiation Source Elimination (ERASE), Echo Range.

AIRCRAFT SYSTEMS & TACTICAL AIRCRAFT SYSTEMS:
A-6, EA-6B, AV-8, AV-8B, F/A-18, F/A-18EF, F-14, AH-1, H-60, V-22, EC-2, T-45, P-3C Update IV, T800 (LNX) Engine Qualification Program, Unmanned Air Vehicle, aircraft materials and crew systems, Joint Tactical Information Distribution System (JTIDS), Airborne ASW Surveillance.

TECHNOLOGY BASE:
Sensors/seekers (AIR, EO, RF) propulsion, warheads, guidance, fuzing, materials technology for weapons system development, Integrated High Performance Thermal Engine Technology (IHPTET) Program Management.

Other:
Vessel Tracking System, propulsion/materials exploratory and advanced development product support.

EQUIPMENT/FACILITIES

China Lake, CA:
ENCOUNTER SIMULATION LABORATORY (ESL): The ESL is used by the Navy, Air Force, and Army for realistic fuze-target encounter simulations with scale models and full-scale targets using actual or model sensor hardware.

EXPLOSIVES & PROPULSION LABORATORIES: A complex of laboratories provides facilities for research in the fundamentals of propellant and explosives technology.

EQUIPMENT/FACILITIES (cont.)

China Lake, CA (cont.):
FULL-SCALE SURVIVABILITY & VULNERABILITY FACILITY: This facility provides the capability to test and evaluate the vulnerability and lethality of air systems through full-scale live-fire testing and computer simulations.

INFORMATION & ELECTRONIC WARFARE (I&EW) SYSTEMS LABORATORIES: The various NAWCWPNS I&EW systems laboratories provide life-cycle support for airborne EW systems, including warning receiver, jammer, EO/IR, missile-warning, countermeasures, and support systems; software support for the EA-6B aircraft as well as for prime multiplatform EW systems; and system engineering support, including system design and integration, development of information systems, and fleet system software upgrades for warning, jamming, and decoy systems.

SIMULATIONS: Extensive simulation capabilities supporting weapons design and development include six-degree-of-freedom hardware-in-the-loop (HWIL) facilities.

Other facilities include Michelson Laboratory, Lauritsen Laboratory, EW Threat Environment Simulation Facility (EWTES), solid-state laboratory, microelectronics facility, explosives R&D facility, military targets range, Armitage Field, parachute test facilities, supersonic test tracks, microwave anechoic facilities, RF and IR/EO hardware-in-the-loop simulations.

Point Mugu, CA:
AIR WARFARE EVALUATION FACILITY: A 121,000 square-foot missile systems evaluation laboratory which can perform secure missile-in-the-loop seeker-performance testing under simulated operational conditions and against high-fidelity target presentations.

MISSILE & AIRCRAFT SOFTWARE VALIDATION & TESTING LABORATORIES: Laboratories are available to support independent software verification and validation and performance testing.

RELIABILTY & PRODUCT ASSURANCE TEST LABORATORIES: Operates and maintains the full spectrum of combined environmental and reliability test facilities. These facilities support tactical aircraft weapon systems, inert and all-upround missiles, target and unmanned air vehicle systems, rocket motors, and electronic systems and components.

WEAPON SYSTEM INSTRUMENTATION & DATA ANALYSIS: These facilities support weapons-testing instrumentation requirements related to tactical missiles, aircraft, and other product areas. The data analysis laboratories provide near-real-time data extraction and evaluation for timely assessment of aircraft/weapon integration and missile system performance.

Other facilities include ground and air ranges, weapons and tactics analysis center, aircraft weapons survival laboratory, aircraft integration/simulation facilities, strategic systems T&E facility, and radar cross-section facility.

Air Warfare Center
Arlington, VA 22243-600
(703) 746-7730

Commander: RADM G. Strohsahl
Technical Dir.: Lew Lundberg

EQUIPMENT/FACILITIES (cont.)

Patuxent River Station, MD:
Facilities include: RDT&E hangars, aircraft maintenance facilities, catapult launch system, landing systems test facility, automatic carrier landing system, marine air traffic control, Chesapeake Test Range, range EW and flight radar cross-section facility, aircraft electrical and environmental evaluation facility, antenna and avionics test facility, ship ground station helo-ship data link evaluation facility, Air Combat Environmental T&E facility (ACETEF), manned flight simulator, EW integrated systems test lab, anechoic chamber, electromagnetic environmental effects facility, EW closed loop facility, target support facility.

Trenton, NJ:
Facilities include: large and small engine altitude test area, large engine sea level test cells, rotor spin fac[illegible], fuel and lubricants facility, helicopter transmission test facility.

Warminster, PA:
Facilities include: VP/VS and Lamps Facilities, carrier ASW module lab, ASW engineering lab, vertical flight lab, air common acoustic processor lab, ASW mission planning lab, TACAIR combat training systems facility, TACAIR mission planning and systems development facilities, systems integration lab, sonar development simulation facility, dynamic flight simulator, vertical decelerator, ejection seat tower, environmental physiology lab, Navy standard signal processor lab.

Lakehurst, NJ:
Facilities include: C-13 steam catapult; MK-7 arresting gear; elevated fixed platform with installed Recovery, Assist, Secure and Traverse (RAST) system; three (3) active jet car test tracks; jet blast deflector; dedicated 12,000 ft catapult test runway; ground support equipment test course; jet blast site; Universal Lighting Pad (UPL); Ship Weapons Evaluation Facility (SWEF).

Indianapolis, IN:
Computer Aided Design (CAD) equipment, Computer Aided Manufacturing (CAM) equipment, digital avionics simulation laboratory, mobile navigation/communication lab, mission planning center, integrated avionics lab, ASW lab, microwave integrated circuits lab, EP-3/ES-3 integrated test facility, meteorological satellite recovery systems lab, microwave test range, design/development environmental test equipment, engineering design lab, materials lab, stereo lithography equipment, failure analysis equipment, scanning electron microscopes, model analysis equipment.

Air Warfare Center
Arlington, VA 22243-600
(703) 746-7730

Commander: RADM G. Strohsahl
Technical Dir.: Lew Lundberg

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	3.768	NA	3.768
6.1 Other	4.504	0.540	5.044
6.2 IED (Navy)	6.656	8.401	15.057
6.2 Other	50.451	36.327	86.778
6.3 A	54.333	62.642	116.975
Subtotal (S&T)	**119.712**	**107.910**	**227.622**
6.3 B	120.101	76.698	196.799
6.4	177.782	126.460	304.242
6.5	224.351	115.771	340.122
6.6/6.7	84.474	71.726	156.200
Non-DOD	24.455	25.556	50.011
TOTAL RDT&E	**750.875**	**524.121**	**1,274.996**
Procurement	482.855	766.700	1,249.555
Operations & Maintenance	362.916	173.056	535.972
Other	280.871	174.443	455.314
TOTAL FUNDING	**1,877.517**	**1,638.320**	**3,515.837**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	9.660

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	3,582	9	547	3,026
CIVILIAN	20,641	266	7,341	13,034
TOTAL	**24,223**	**275**	**7,888**	**16,060**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	7,886.728	**REAL PROPERTY**	1,153.310
ADMIN	1,573.821	* NEW CAPITAL EQUIPMENT	27.922
OTHER	10,134.417	**EQUIPMENT**	1,124.301
TOTAL	**19,594.966**	* NEW SCIENTIFIC & ENG. EQUIP.	47.432
ACRES	**1,158,127**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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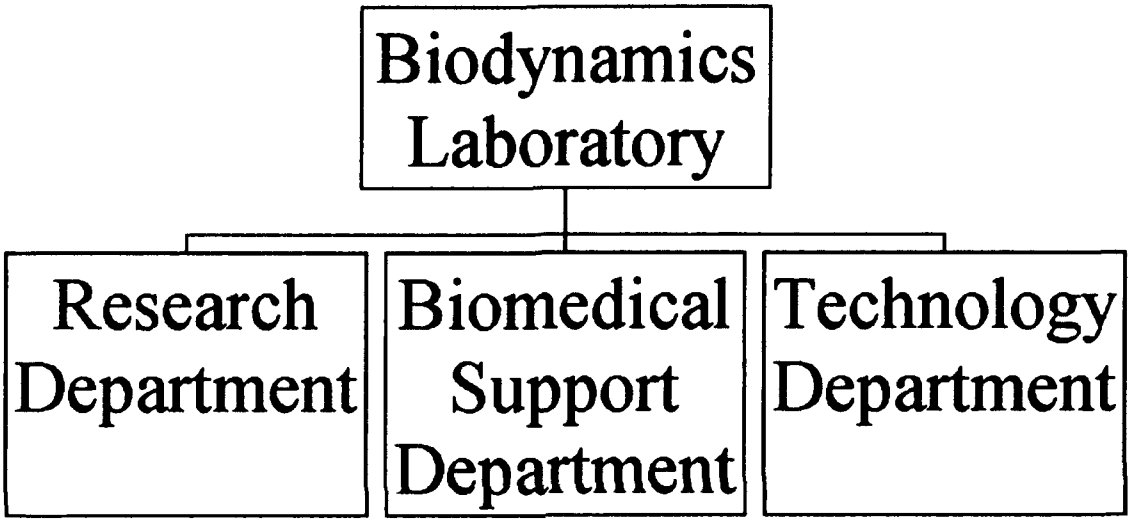
Biodynamics Laboratory

Abbreviated Functional Chart - Technical Organizations



Biodynamics Laboratory
New Orleans, LA 70129-0407
(504) 257-3919

CO: CAPT R.W. Rendin
Chief Scientist: Dr. Marc Weiss

MISSION

Conduct biomedical research on the effects of mechanical forces encountered by crew members in Navy aircraft and ships, establish human tolerance limits to these forces, and develop approaches to minimize their adverse effects.

CURRENT IMPORTANT PROGRAMS

Determination of human dynamic, injury, and performance response to impact acceleration and development of validated manikin components. Protection of Naval personnel from motion sickness and other adverse motion effects.

EQUIPMENT/FACILITIES

Horizontal accelerator. Vertical accelerator. Tri-axis tilt rotation chair. Electro-hydraulic shaker. Ship motion simulator. Machine shop. Clinical laboratory. Clinical radiographic facility. Neurophysiology laboratory. Fiberglass shop. Woodworking shop.

Biodynamics Laboratory
New Orleans, LA 70129-0407
(504) 257-3919

CO: CAPT R.W. Rendin
Chief Scientist: Dr. Marc Weiss

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	0.000	0.000	0.000
6.3 A	2.618	0.025	2.643
Subtotal (S&T)	**2.618**	**0.025**	**2.643**
6.3 B	0.345	0.000	0.345
6.4	0.000	0.000	0.000
6.5	0.202	0.093	0.295
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.100	0.100
TOTAL RDT&E	**3.165**	**0.218**	**3.383**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	0.000	0.000	0.000
TOTAL FUNDING	**3.165**	**0.218**	**3.383**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	33	3	2	28
CIVILIAN	37	3	6	28
TOTAL	**70**	**6**	**8**	**56**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	25.845	**REAL PROPERTY**	2.183
ADMIN	23.149	* NEW CAPITAL EQUIPMENT	0.000
OTHER	1.267	**EQUIPMENT**	4.172
TOTAL	**50.261**	* NEW SCIENTIFIC & ENG. EQUIP.	0.187
ACRES	**1**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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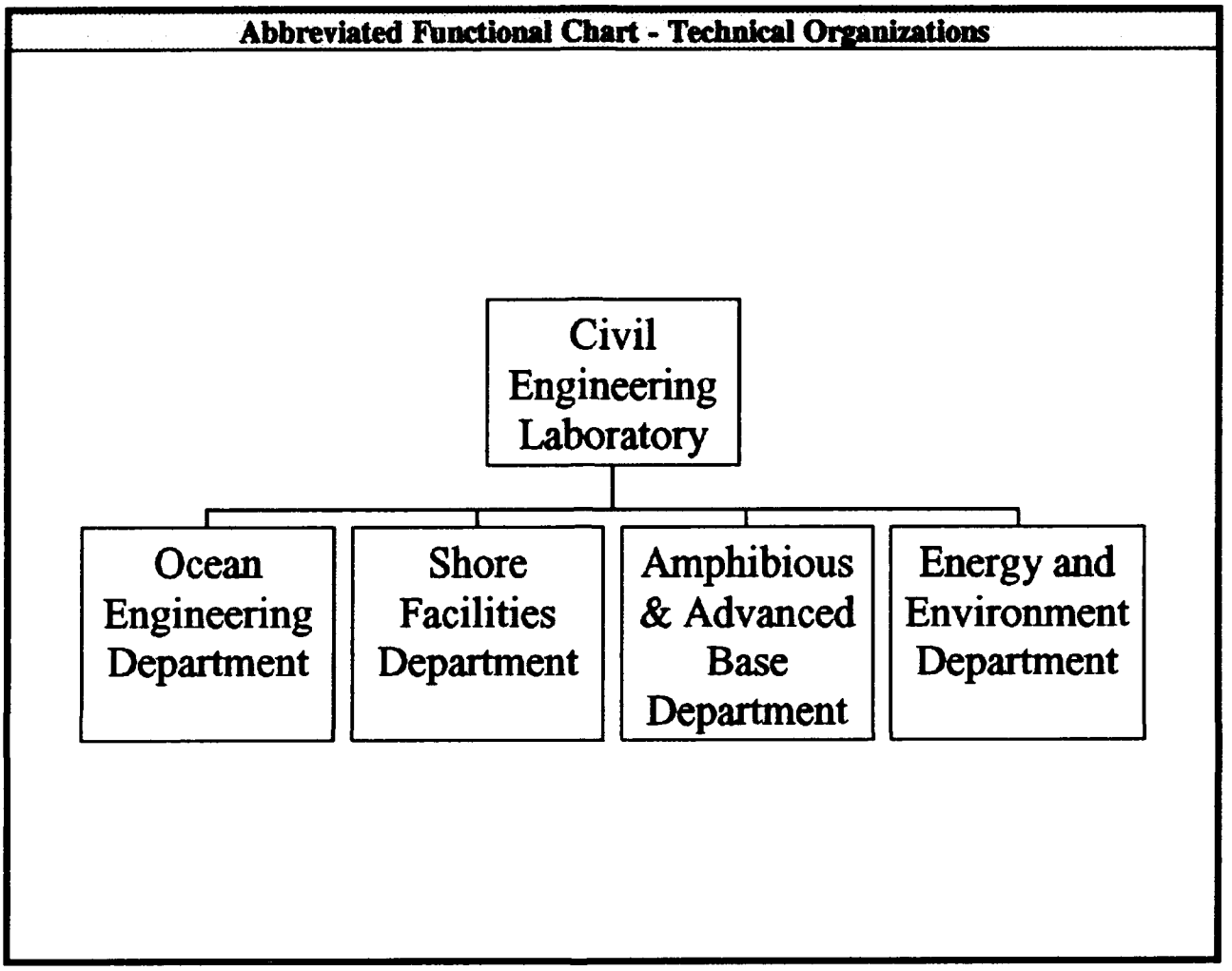
Civil Engineering Laboratory



Civil Engineering Laboratory
Port Hueneme, CA 93043-4328
(805) 982-4980

CO: CAPT J.C. Penell
Technical Dir.: Dr. Robert N. Storer

MISSION

To be the principal Navy RDT&E center for shore and fixed surface and subsurface ocean facilities and for the Navy and Marine Corps construction forces.

CURRENT IMPORTANT PROGRAMS

Defense environmental restoration program. Pollution prevention. Navy shore facilities improvement. Deep ocean technology in support of ASW. Marine Corp amphibious logistics. Navy construction forces systems. Ocean test ranges. Underwater construction force systems. Explosive safety. Physical security systems. Independent exploratory development. Independent research. Army. Air Force.

EQUIPMENT/FACILITIES

Deep ocean simulation laboratory. Shallow water dive tank. Research motor vessel independence. Ballistic test facility for testing security products. Metallurgical material laboratory. Chemistry laboratory. Water purification laboratory. Steamboiler laboratory. Electromagnetic Pulse (EMP) test facility. Environmental protection laboratory. Physical security test facility. Soils laboratory. Heavy equipment test facility. Helo lift test site. High temperature pavements stand. Fiber optics laboratory. Research support vessel.

Civil Engineering Laboratory
Port Hueneme, CA 93043-4328
(805) 982-4980

CO: CAPT J.C. Penell
Technical Dir.: Dr. Robert N. Storer

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.221	NA	0.221
6.1 Other	0.528	0.344	0.872
6.2 IED (Navy)	0.135	0.001	0.136
6.2 Other	5.699	1.149	6.848
6.3 A	5.804	3.251	9.055
Subtotal (S&T)	**12.387**	**4.745**	**17.132**
6.3 B	10.248	3.279	13.527
6.4	2.088	1.021	3.109
6.5	0.176	0.100	0.276
6.6/6.7	2.292	1.108	3.400
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**27.191**	**10.253**	**37.444**
Procurement	0.662	1.374	2.036
Operations & Maintenance	6.746	1.509	8.255
Other	7.845	2.782	10.627
TOTAL FUNDING	**42.444**	**15.918**	**58.362**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.617

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	15	0	7	8
CIVILIAN	385	24	173	188
TOTAL	**400**	**24**	**180**	**196**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	95.592	**REAL PROPERTY**	7.326
ADMIN	77.741	* NEW CAPITAL EQUIPMENT	0.319
OTHER	51.429	**EQUIPMENT**	10.125
TOTAL	**224.762**	* NEW SCIENTIFIC & ENG. EQUIP.	0.587
ACRES	**33**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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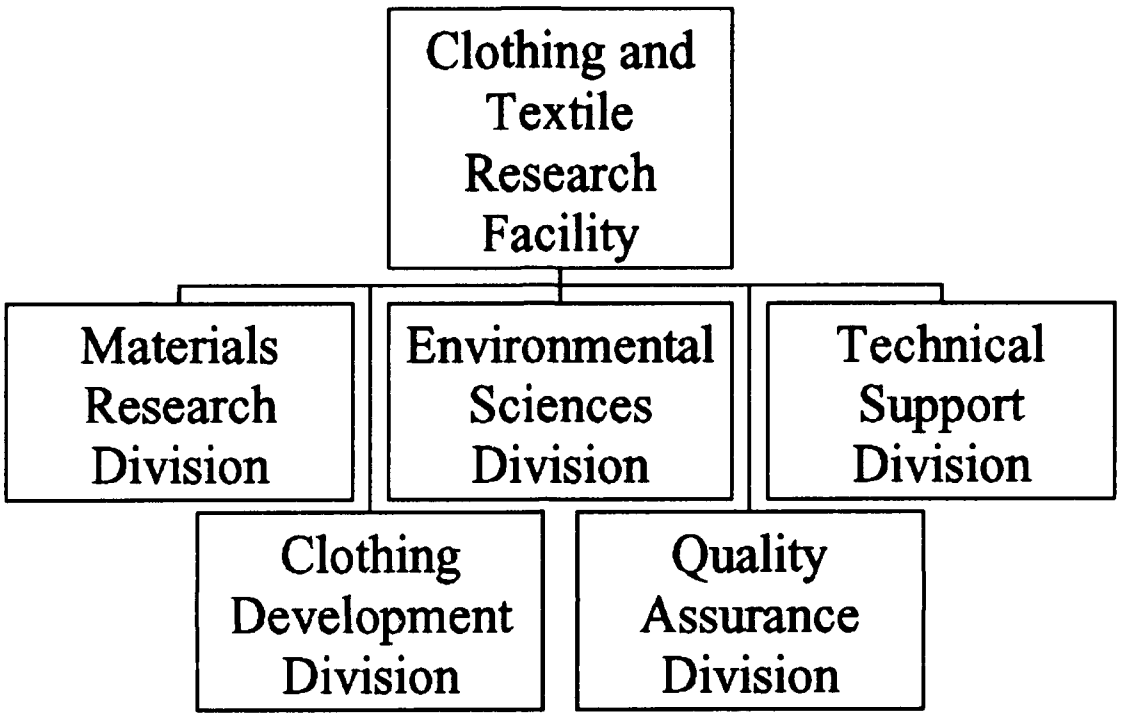
Clothing and Textile Research Facility

Abbreviated Functional Chart - Technical Organizations



Clothing and Textile Research Facility
Natick, MA 01760-0001
(508) 651-4172

CO: William E. Johnson
Tech. Director: Barbara A. Avellini

MISSION

Conduct RDT&E and provide engineering support in clothing, textiles, and related fields associated with service clothing and environmental protective clothing.

CURRENT IMPORTANT PROGRAMS

Development of FR flight deck jerseys. FR flight deck identification vest. Multipurpose chemical protective glove. Intermediate cold weather safety boot. Water vapor permeable buoyant insulation. Hazardous chemical protection suit for firefighters. Vapor permeable wet weather clothing. Cooling Systems. Modification of PHEL curves.

EQUIPMENT/FACILITIES

Hydro-environmental simulator laboratory. Environmental test chamber laboratory. Thermal manikin. Thermal flammability laboratory. Laundry laboratory. Clothing design and development laboratory. Chemical test laboratory. Physical test laboratory.

Clothing and Textile Research Facility
Natick, MA 01760-0001
(508) 651-4172

Prgm & Mgt Anal: Joan E. Lunney
Budget Officer: Zander Krowitz

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	0.651	0.040	0.691
6.3 A	0.030	0.000	0.030
Subtotal (S&T)	**0.681**	**0.040**	**0.721**
6.3 B	0.488	0.110	0.598
6.4	0.055	0.000	0.055
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**1.224**	**0.150**	**1.374**
Procurement	0.000	0.000	0.000
Operations & Maintenance	2.085	0.000	2.085
Other	0.000	0.000	0.000
TOTAL FUNDING	**3.309**	**0.150**	**3.459**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	1	0	0	1
CIVILIAN	54	1	30	23
TOTAL	**55**	**1**	**30**	**24**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	12.660	**REAL PROPERTY**	1.708
ADMIN	16.209	* NEW CAPITAL EQUIPMENT	0.000
OTHER	5.630	**EQUIPMENT**	1.950
TOTAL	**34.499**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**0**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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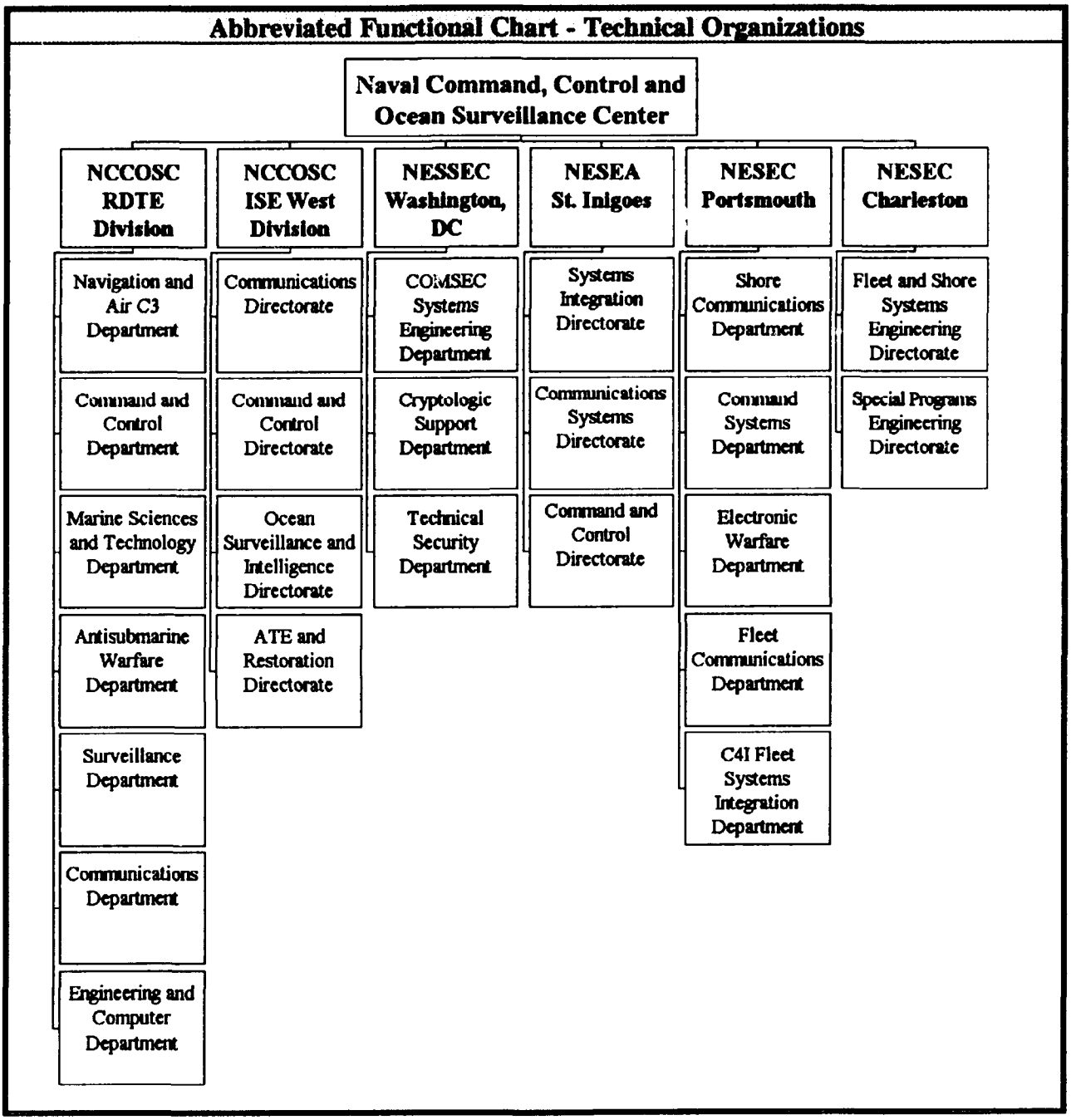
Command, Control and Ocean Surveillance Center



Command, Control and Ocean Surveillance Center

San Diego, CA 92147-5088
(619) 553-9740

Commander: RADM J.J. Donegan
Tech. Director: Paul Wessel

MISSION

To be the Navy's full spectrum research, development, test and evaluation, engineering and fleet support center for command, control and communications systems and ocean surveillance and the integration of those systems which overarch multiplatforms. Leadership areas: Command, Control and Communication Systems; Command, Control and Communication Systems Countermeasures; Ocean Surveillance Systems; Command, Control and Communication Modeling and Analysis; Ocean Engineering; Navigation Support; Marine Mammals; Integration of Space Communication and Surveillance Systems.

CURRENT IMPORTANT PROGRAMS

Navy Tactical Command System - Afloat (NTCS-A). Joint Tactical Information Distribution System (JTIDS). Global Positioning System (GPS). SHF/EHF/UHF Satellite Communications. Tactical Receive Equipment (TRE)/TRE Related Applications (TRAP). Integrated Undersea Surveillance System (IUSS). AdvancEd Marine Biological Systems. Air Traffic Control. Consolidated Cryptologic Program. Relocatable Over-the-Horizon Radar. Navy Ada. Depot Operations. Communication Support System (CSS). Navy Command and Control Systems Ashore (NCCS Ashore). Submarine Electronic Support Measures (ESM). Enhanced VERDIN. Multifunctional Information Distribution System (MIDS). Operations Support Systems (OSS). Advanced Combat Direction System Block 0 and Block 1. Advanced Deployable System (ADS). Surveillance Towed Array Sensor System (SURTASS)/LFA System. Advanced Tethered Vehicle (ATV). Next Generation Weather Radar (NEXRAD). CLASSIC TRUMP Counter-Narcotics. Navy Shore Electromagnetic Environmental Effects (E3). Naval Space Surveillance Center Transmitter Antenna. Radiation, Detection, Indication and Computation (RADIAC). Physical Security Systems. Satellite Anti-Jam Tactical Users Reconfigurable Network (SATURN). Repair, Align, and Calibrate Program for AN/SLQ-32(V) systems. Naval Computer Incident Response Team (NAVCIRT). TEMPEST Field Testing. Advance Based Functional Component C3A Van Program. Fleet Mobile Operational Command Center Production. Air Defense Communications Platform. E-2C Airborne Tactical Data System. Shipboard Interior Communications. Multimission Advanced Tactical Terminal/Prototype Information Correlation Exploitation System (MATT/PICES).

EQUIPMENT/FACILITIES

The Naval Command, Control and Ocean Surveillance Center (NCCOSC) maintains over 120 major facilities in support of the warfare center mission. Special purpose test beds, simulators, laboratories, calibration facilities and repair shops support development, engineering, prototyping, integration, installation, test, and life cycle support of the command, control, communication and surveillance systems for which NCCOSC is responsible. Some of the unique or special interest facilities are listed below by location.

EQUIPMENT/FACILITIES (cont.)

RDT&E Division, San Diego, CA:
High Performance Computing Laboratory providing a wide range of advanced computer systems for the scientific investigation of next-generation architecture. Microelectronics laboratory and production line for products unavailable commercially. Research, Evaluation and Systems Analysis (RESA) facility, a large-scale computer-based simulation/wargaming system used to support a variety of applications, including C3I architecture assessment, concept of operations development, advanced technology evaluation, joint exercises, and test and evaluation of advanced systems.

RDT&E Division Detachment, Warminster, PA:
High-accuracy navigation sensor laboratory, housed in a specially constructed 155-ft-diameter building that provides the capability to conduct extremely high-stability long-term R&D investigations of new technology sensors including ring laser, fiber-optic, and superconducting gyros. Simulated Ships Motion Facility (SCORSBY), a 4,000 sq.ft. facility housing three large ship motion simulators that have the capacity to accommodate navigation systems weighing up to 3,000 lbs, designed to apply controlled roll, pitch, and heading motions to new technology navigation systems, and incorporate the capability for high-accuracy dynamic readouts for strategic and tactical applications.

NISE (NCCOSC In-Service Engineering) West, San Diego, CA:
Radioactive Detection Indication and Calibration (RADIAC) lab repairs and calibrates approximately 5,000 pieces of major equipment each year. Cryptographic repair shop is the west coast service repair depot for classified electronic equipment, processing approximately 6,000 pieces each year.

NESEA (Naval Electronic Systems Engineering Activity), St. Inigoes, MD:
Electromagnetic Interference/Electromagnetic Environmental Effects/TEMPEST Facility, a fully instrumented facility providing for the development and testing of MIL-STD-460 series test procedures and applications. Communication, Integration, and Test Laboratory supports the integration, installation and test of Radio Communication Systems (RCSs) for the AEGIS CG 47 and DDG 51 class shipbuilding programs. Shipboard Communications Integration Facility used for on-the-job training of ships' crews on the AEGIS RCSs, the Single Audio System, and other fleet training projects. AEGIS Satellite Production Test Center houses seven test beds for the AEGIS RCS production and has RCS mockups for the CG 47 and DDG 51 class shipbuilding programs.

NESEC (Naval Electronic Systems Engineering Center), Portsmouth, VA:
Command Systems Test Facility containing state-of-the-art equipment used to evaluate, test and provide direct fleet support for C4 systems, and includes complete NTCS-A and NCCS-Ashore system suites, communication interfaces, and on-line secure tactical communications capabilities (TADIXS/OTCIXS). Surveillance Engineering Center housing systems and equipment test beds in support of Submarine and Surface Electronic Warfare, Surveillance, and Shipboard Cover and Deception (SCADS) programs.

NESEC, Charleston, SC:
AN/GPN-27 Radar Site, an Air Traffic Control ASR-8 Radar that is an operational Airport Surveillance Radar providing for modification, PITCO, and standardization testing. Simulator and Software Support Facility for equipment necessary to provide lifecycle support for strategic submarine comm. systems, housing four unique and diverse security systems representing equipment deployed at naval shore sites.

Command, Control and Ocean Surveillance Center
San Diego, CA 92147-5088
(619) 553-9740

Commander: RADM J.J. Donegan
Tech. Director: Paul Wessel

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	1.745	NA	1.745
6.1 Other	6.648	1.719	8.367
6.2 IED (Navy)	0.740	0.068	0.808
6.2 Other	37.335	36.497	73.832
6.3 A	12.690	28.120	40.810
Subtotal (S&T)	**59.158**	**66.404**	**125.562**
6.3 B	54.672	37.718	92.390
6.4	40.865	41.233	82.098
6.5	8.168	7.826	15.994
6.6/6.7	39.559	44.555	84.114
Non-DOD	0.740	1.160	1.900
TOTAL RDT&E	**203.162**	**198.896**	**402.058**
Procurement	252.876	365.210	618.086
Operations & Maintenance	203.518	244.399	447.917
Other	85.532	105.693	191.225
TOTAL FUNDING	**745.088**	**914.198**	**1,659.286**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.122

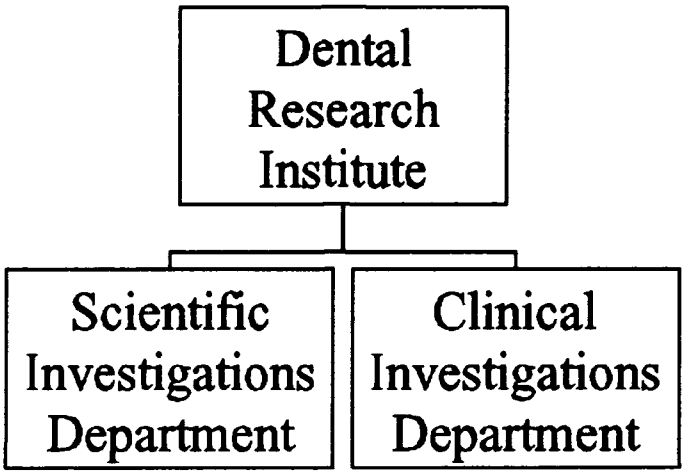
PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	525	3	33	489
CIVILIAN	5,706	203	2,502	3,001
TOTAL	**6,231**	**206**	**2,535**	**3,490**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	2,155.701	**REAL PROPERTY**	398.916
ADMIN	841.543	* NEW CAPITAL EQUIPMENT	2.765
OTHER	1,857.546	**EQUIPMENT**	286.000
TOTAL	**4,854.790**	* NEW SCIENTIFIC & ENG. EQUIP.	11.297
ACRES	**3,301**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

Dental Research Institute

Abbreviated Functional Chart - Technical Organizations



Dental Research Institute
Great Lakes, IL 60088-5259
(708) 688-5647

CO: CAPT S.A. Ralls
Chief Scientist: Dr. L.G. Simonson

MISSION

To conduct RDT&E in dental and allied sciences with particular emphasis on problems of dental and oral health in Navy and Marine Corps populations and on problems of fleet and field dentistry.

CURRENT IMPORTANT PROGRAMS

Evaluation of new methods to prevent and treat dental emergencies in Navy and Marine Corps personnel. Development and evaluation of methods to prevent or intercept acute dental conditions. Host response to periodontopathic microorganisms in Navy and Marine Corps personnel. Development of an animal model to study periodontal disease. Evaluation of the influence of superantigens and polyclonal B-cell activators in periodontal diseases.

EQUIPMENT/FACILITIES

Gas chromatographic microbial identification system. Dental vision system. Exakt machine. Iris computer. Digital radiography system. Ultracentrifuge. Liquid scintillation counter. Photomicroscope. Electron microscope. DNA sequencer. High Performing Liquid Chromatography (HPLC). Fast Performing Liquid Chromatography (FPLC). Fluorescence concentration analyzer. Spectrophotometers. Centrifuges. Luminometer. Microbalances. PHAST system. Computers. Microplate readers. Ultramicrotome. Anaerobic chambers.

Dental Research Institute
Great Lakes, IL 60088-5259
(708) 688-5647

CO: CAPT S.A. Ralls
Chief Scientist: Dr. L.G. Simonson

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.036	NA	0.036
6.1 Other	0.158	0.000	0.158
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	0.000	0.000	0.000
6.3 A	0.350	0.000	0.350
Subtotal (S&T)	**0.544**	**0.000**	**0.544**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	0.550	0.000	0.550
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.455	0.000	0.455
TOTAL RDT&E	**1.549**	**0.000**	**1.549**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	0.000	0.000	0.000
TOTAL FUNDING	**1.549**	**0.000**	**1.549**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	22	6	0	16
CIVILIAN	15	3	0	12
TOTAL	**37**	**9**	**0**	**28**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	21.264	**REAL PROPERTY**	0.000
ADMIN	6.001	* NEW CAPITAL EQUIPMENT	0.000
OTHER	9.318	**EQUIPMENT**	1.736
TOTAL	**36.583**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**1**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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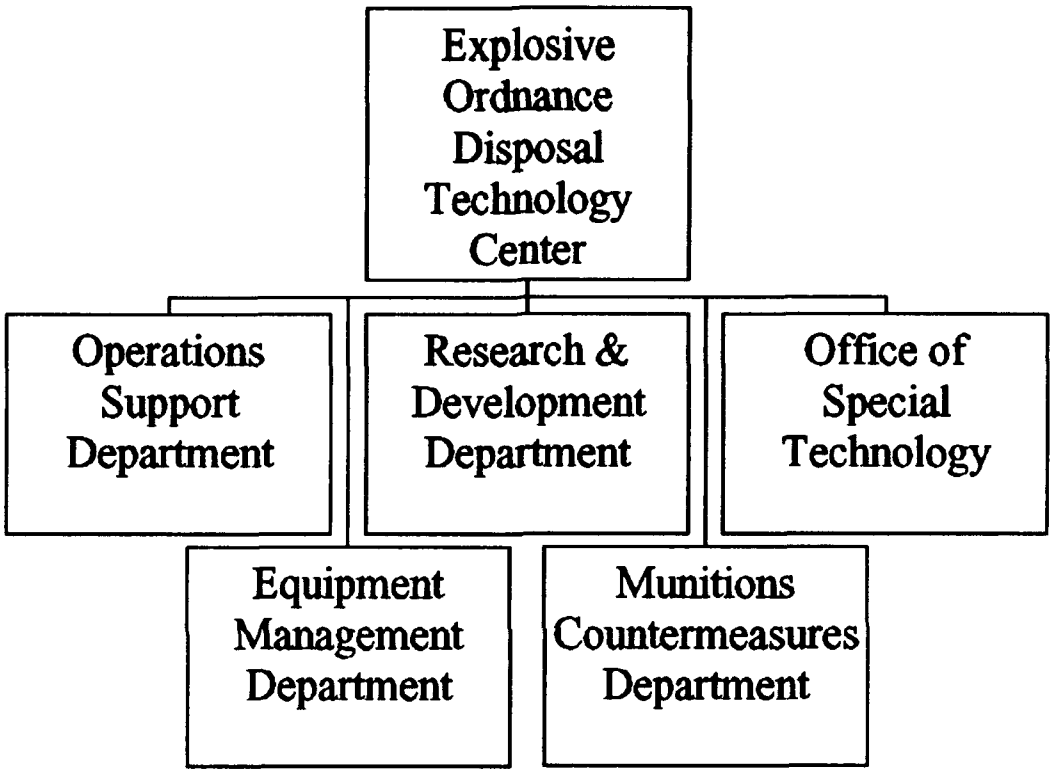
Explosive Ordnance Disposal Technology Center

Abbreviated Functional Chart - Technical Organizations



Explosive Ordnance Disposal Technology Center
Indian Head, MD 20640-5070
(301) 743-6803

CO: J.H. Cocowitch
Tech. Director: E.W. Rice

MISSION

Provide explosive ordnance disposal technology and logistics management for the joint services. Develop war essential elements of intelligence, equipment, and procedures to counter munitions, both U.S. and foreign, as required, in order to support DoD components and the peacetime security needs of other government agencies as assigned by commander, NAVSEASYSCOM.

CURRENT IMPORTANT PROGRAMS

Navy single service management of joint service technology support. Joint service exploratory development. Joint service advanced development (acquisition program). Joint service engineering development (EOD publications). Joint service logistics support (in-service engineering and depot level maintenance). Intelligence and foreign ordnance acquisition. Joint service advanced technology demonstration. Special operations special technology. Area clearance technology demonstration.

EQUIPMENT/FACILITIES

Ordnance countermeasures lab. Munitions disassembly complex. Hyperbaric chamber with pressure and temperature control. Hypervelocity test facility for explosive testing. Explosive test range. Technical library with extensive ordnance coverage. Non-magnetic test facility. Oxygen cleaning facility. Classified ordnance storage magazine. Special compartmented information facility. Explosive proof metal working equipment. Steam-out system for removal of explosive compositions. Closed-circuit TV and communication systems for monitoring and recording explosive exploration in remote sites. Coordinate measurement machine. Chromatograph. The following are new equipment/facilities for this year: HVAC, overhead crane, automated EOD publications system, solvent/hazardous materials storage facility, range surveillance camera.

Explosive Ordnance Disposal Technology Center
Indian Head, MD 20640-5070
(301) 743-6803

CO: J.H. Cocowitch
Tech. Director: E.W. Rice

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	1.568	2.282	3.850
6.3 A	1.349	5.351	6.700
Subtotal (S&T)	**2.917**	**7.633**	**10.550**
6.3 B	2.364	3.164	5.528
6.4	4.237	1.428	5.665
6.5	0.262	0.388	0.650
6.6/6.7	0.000	0.000	0.000
Non-DOD	7.471	21.713	29.184
TOTAL RDT&E	**17.251**	**34.326**	**51.577**
Procurement	3.185	9.478	12.663
Operations & Maintenance	5.569	4.988	10.557
Other	1.728	7.214	8.942
TOTAL FUNDING	**27.733**	**56.006**	**83.739**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	65	0	9	56
CIVILIAN	267	1	64	202
TOTAL	**332**	**1**	**73**	**258**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	119.280	**REAL PROPERTY**	19.655
ADMIN	35.588	* NEW CAPITAL EQUIPMENT	0.193
OTHER	118.653	**EQUIPMENT**	7.822
TOTAL	**273.521**	* NEW SCIENTIFIC & ENG. EQUIP.	0.482
ACRES	**272**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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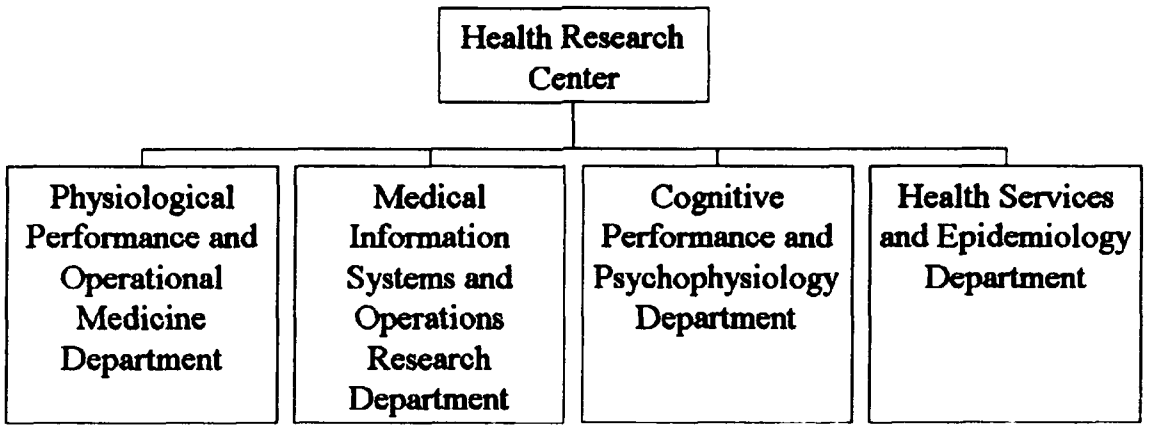
Health Research Center

Abbreviated Functional Chart - Technical Organizations



Health Research Center
San Diego, CA 92186-5122
(619) 553-8400

CO: CAPT T.N. Jones
Scientific Dir.: Dr. J. Silva

MISSION

To support fleet operational readiness through RDT&E on the biomedical and psychological aspects of Navy and Marine Corps personnel health and performance. To perform such other functions or tasks as may be directed by higher authority.

CURRENT IMPORTANT PROGRAMS

The R&D program addresses four functional areas: Health Sciences; Medical Information Systems; Physiological Performance and Operational Medicine; Cognitive Performance and Psychophysiology. Within these functional areas are program areas, each comprised of one or more research efforts: environmental extremes, work physiology, special operations, modeling of human performance, biological rhythms, cognitive electrophysiology, psychological stress, occupational health, disease surveillance, epidemiology, musculoskeletal injury, HIV studies and registry, infectious disease studies, alcohol rehabilitation, alertness management system, health care policy, health promotion, model and forecasting, expert systems, medical information.

EQUIPMENT/FACILITIES

Sleep laboratory. Exercise physiology laboratory. Experimental laboratory.

Health Research Center
San Diego, CA 92186-5122
(619) 553-8400

CO: CAPT T.N. Jones
Scientific Dir.: Dr. J. Silva

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.136	NA	0.136
6.1 Other	0.206	0.069	0.275
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	0.820	0.458	1.278
6.3 A	1.684	1.089	2.773
Subtotal (S&T)	**2.846**	**1.616**	**4.462**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	0.254	0.232	0.486
6.6/6.7	0.000	0.000	0.000
Non-DOD	1.980	0.666	2.646
TOTAL RDT&E	**5.080**	**2.514**	**7.594**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	0.000	0.000	0.000
TOTAL FUNDING	**5.080**	**2.514**	**7.594**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	25	7	6	12
CIVILIAN	62	11	11	40
TOTAL	**87**	**18**	**17**	**52**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	32.330	**REAL PROPERTY**	0.000
ADMIN	10.650	* NEW CAPITAL EQUIPMENT	0.000
OTHER	2.200	**EQUIPMENT**	2.473
TOTAL	**45.180**	* NEW SCIENTIFIC & ENG. EQUIP.	0.198
ACRES	**2**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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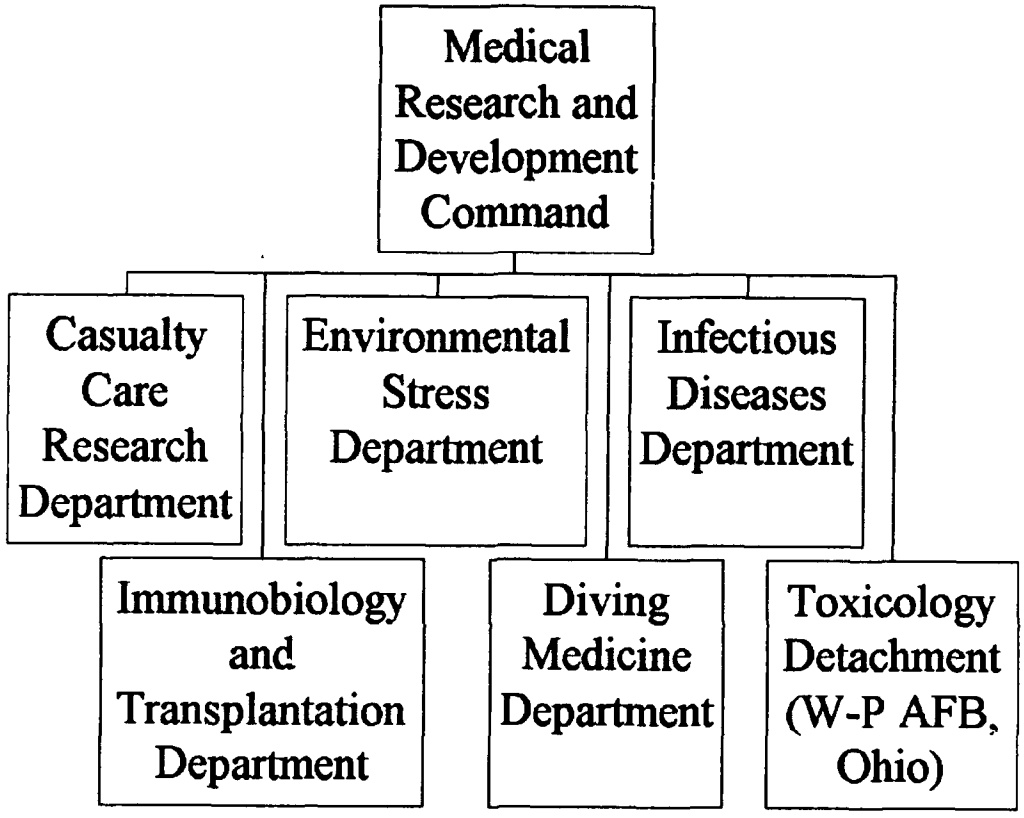
Medical Research Institute

Abbreviated Functional Chart - Technical Organizations



Medical Research Institute
Bethesda, MD 20889-5607
(301) 295-0021

CO: CAPT R.G. Walter
Tech. Director: CAPT R.W. Gaugler

MISSION

To conduct RDT&E to enhance the health, safety and readiness of Navy and Marine Corps personnel in the effective performance of peacetime and contingency missions, and to perform such other functions or tasks as may be directed by higher authority.

CURRENT IMPORTANT PROGRAMS

Combat casualty care efforts in immunology, wound healing, septic shock (9 patents applied for). Infectious disease vaccine development, rapid diagnostic methods and epidemiology (6 patents applied for). Diving medicine: physiology, safety and treatment (4 patents applied for). Environmental (thermal, chemical, toxic) stress. Bone Marrow transplantation and immunology: stem cell technology, growth and immune system modulation factors (3 patents applied for).

EQUIPMENT/FACILITIES

Hyperbaric research facility with man-rated hyperbaric chambers. Heat and cold physiology facilities. Human tissue preservation and storage faclities. Biohazardous materials handling lab facilities. Toxicology evaluation facilities. Transmission and scanning electron microscopes. Flourescent activated cell sorter and computers. Animal facilities and operating rooms. Lab equipment and facilities for basic applied biomedical, microbiological, psychological and immunological studies.

Medical Research Institute
Bethesda, MD 20889-5607
(301) 295-0021

CO: CAPT R.G. Walter
Tech. Director: CAPT R.W. Gaugler

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.468	NA	0.468
6.1 Other	2.351	0.721	3.072
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	1.838	0.562	2.400
6.3 A	15.470	12.459	27.929
Subtotal (S&T)	**20.127**	**13.742**	**33.869**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	2.606	0.000	2.606
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**22.733**	**13.742**	**36.475**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.029	0.000	0.029
Other	0.000	0.000	0.000
TOTAL FUNDING	**22.762**	**13.742**	**36.504**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	261	58	14	189
CIVILIAN	165	30	28	107
TOTAL	**426**	**88**	**42**	**296**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	133.564	**REAL PROPERTY**	44.275
ADMIN	45.604	* NEW CAPITAL EQUIPMENT	0.557
OTHER	45.259	**EQUIPMENT**	28.821
TOTAL	**224.427**	* NEW SCIENTIFIC & ENG. EQUIP.	1.601
ACRES	7	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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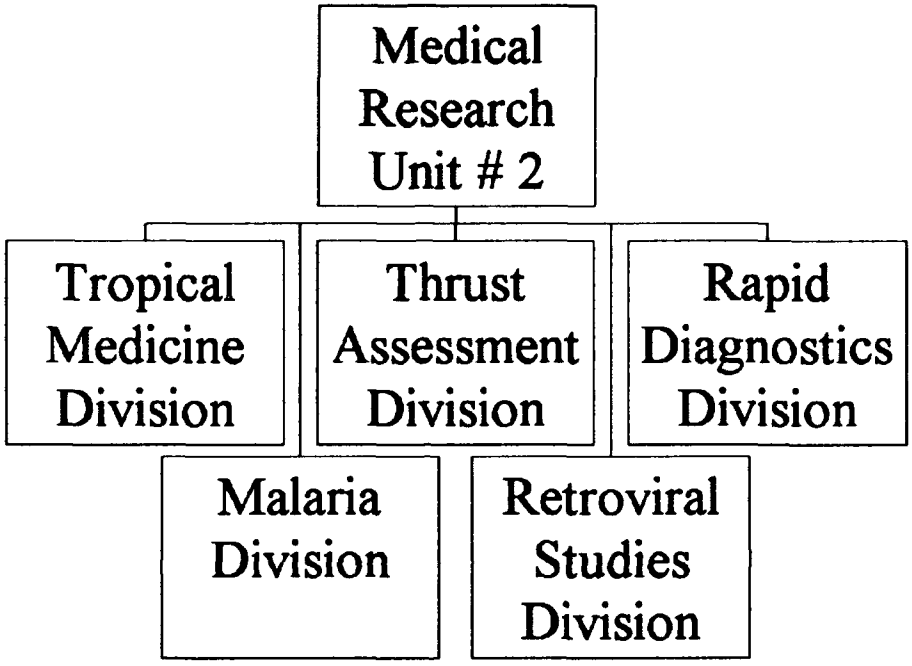
Medical Research Unit #2

Abbreviated Functional Chart - Technical Organizations



Medical Research Unit #2
Jakarta, Indonesia 96520-8132
(62) 421-4454

CO: CAPT Stephen F. Wignall
Exec. Officer: CAPT Raymond P. Olafson

MISSION

Conduct RDT&E in tropical medicine and infectious disease to enhance the health, safety, and readiness of Navy and Marine Corps personnel in the performance of peacetime and contingency missions in Southeast Asia and other tropical and subtropical regions.

CURRENT IMPORTANT PROGRAMS

Develop and evaluate methods for rapid diagnosis of infectious diseases. Test new ways to prevent, control, and treat infectious diseases. Reduce disease threat by understanding and controlling insect vectors. Maintain technical base for military relevant regional threat assessment. Assess rates of HIV infection in the Philippines and Indonesia.

EQUIPMENT/FACILITIES

Mosquito breeding colony for parasite vector transmission and suspectability studies with malaria and filariasis. Animal colony used in mosquito breeding, parasite studies, and for production of antigens and antibodies. Virology department has capability of culturing and identifying strains pathogenic to humans. Microbiology department has sophisticated material and equipment required for detecting minute amounts of genetic material and biochemical interactions at the molecular level. Parasitology department has developed the first procedure for the growth of filarid worms in vitro. Tropical medicine department uses a double laser flow cytometer for identification of specific white cell types by detecting antigen-antibody binding sites. All departments work closely with Indonesian medical officials and scientists.

Medical Research Unit #2
Jakarta, Indonesia, 96520-8132
(62) 421-4454

CO: CAPT Stephen F. Wignall
Exec. Officer: CAPT Raymond P. Olafson

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.402	0.000	0.402
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	0.468	0.000	0.468
6.3 A	0.400	0.000	0.400
Subtotal (S&T)	**1.270**	**0.000**	**1.270**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	1.466	0.000	1.466
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**2.736**	**0.000**	**2.736**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	0.826	0.000	0.826
TOTAL FUNDING	**3.562**	**0.000**	**3.562**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	13	4	2	7
CIVILIAN	92	3	17	72
TOTAL	**105**	**7**	**19**	**79**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	16.900	**REAL PROPERTY**	0.700
ADMIN	10.990	* NEW CAPITAL EQUIPMENT	0.000
OTHER	4.400	**EQUIPMENT**	2.191
TOTAL	**32.290**	* NEW SCIENTIFIC & ENG. EQUIP.	0.150
ACRES	**0**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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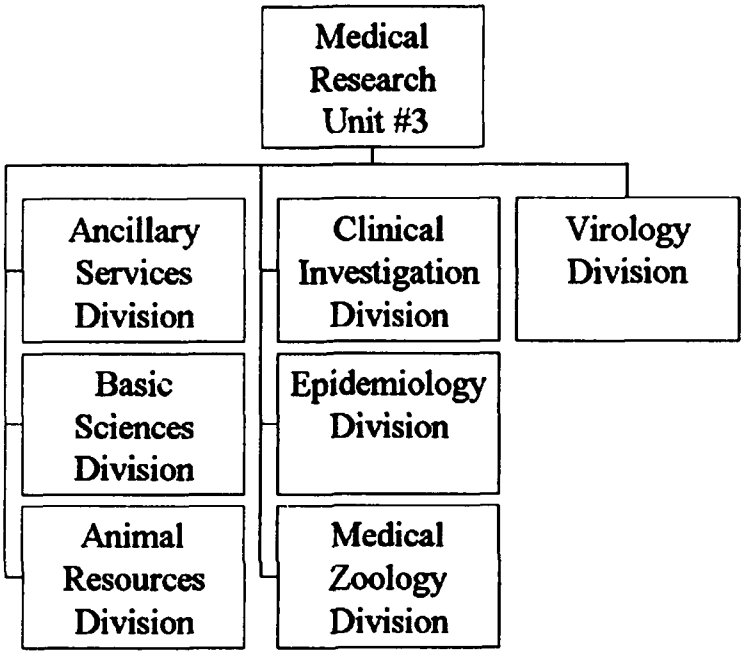
Medical Research Unit #3

Abbreviated Functional Chart - Technical Organizations



Medical Research Unit #3
Cairo, Egypt
(202) 284-1381

CO: CAPT R.G. Hibbs

MISSION

Conduct RDT&E to enhance the health, safety, and readiness of Navy and Fleet Marine personnel assigned to Southwest Asia and Africa in the performance of peacetime and contingency missions, and to perform other such functions as may be directed by higher authority.

CURRENT IMPORTANT PROGRAMS

Development of technology for the rapid diagnosis of infectious diseases of military importance including leishmaniasis, arboviral fevers, schistosomiasis, and bacterial meningitis. Clinical investigations of new intervention strategies for such diseases as typhoid fever, meningitis, bacterial diarrhea, and hepatitis. Epidemiology and community-based longitudinal surveillance of HIV, hepatitis, and acute respiratory, diarrheal, arboviral, and rickettsial diseases. Vaccine development and efficacy testing for schistosomiasis, diarrhea, and hepatitis. Studies on the biology and ecology of the vectors of various diseases endemic to the region. Basic studies on the immunology, biochemistry, molecular biology of enteric, arboviral, and parasitic diseases, HIV, and hepatitis.

EQUIPMENT/FACILITIES

Complete breeding and animal care facilities. Advanced capabilities in serology, hybridoma, and hybridization of DNA along with production of DNA probes. Amino acid analysis. Fluorescent microscopy. Computer-linked ELISA reader. Cytofluorgraf. HPLC. Gas liquid chromatography. Spectrophotometer. Beta-scintillation counter. GAMR-counter. Gaumn call 40. Centrifuges and cytopreservation capabilities. P-3/P-4 biocontainment facilities.

Medical Research Unit #3
Cairo, Egypt,
(202) 284-1381

CO: CAPT R.G. Hibbs

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.876	0.000	0.876
6.2 IED (Navy)	1.120	0.149	1.269
6.2 Other	0.000	0.000	0.000
6.3 A	0.500	0.000	0.500
Subtotal (S&T)	**2.496**	**0.149**	**2.645**
6.3 B	0.000	0.000	0.000
6.4	0.505	0.000	0.505
6.5	2.504	0.000	2.504
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.666	0.000	0.666
TOTAL RDT&E	**6.171**	**0.149**	**6.320**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.135	0.000	0.135
Other	0.076	0.000	0.076
TOTAL FUNDING	**6.382**	**0.149**	**6.531**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	30	8	1	21
CIVILIAN	213	29	8	176
TOTAL	**243**	**37**	**9**	**197**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		PROPERTY ACQUISITION COST (MILLIONS $)	
LAB	68.244	REAL PROPERTY	11.850
ADMIN	9.058	* NEW CAPITAL EQUIPMENT	0.000
OTHER	71.330	EQUIPMENT	4.931
TOTAL	**148.632**	* NEW SCIENTIFIC & ENG. EQUIP.	0.068
ACRES	3	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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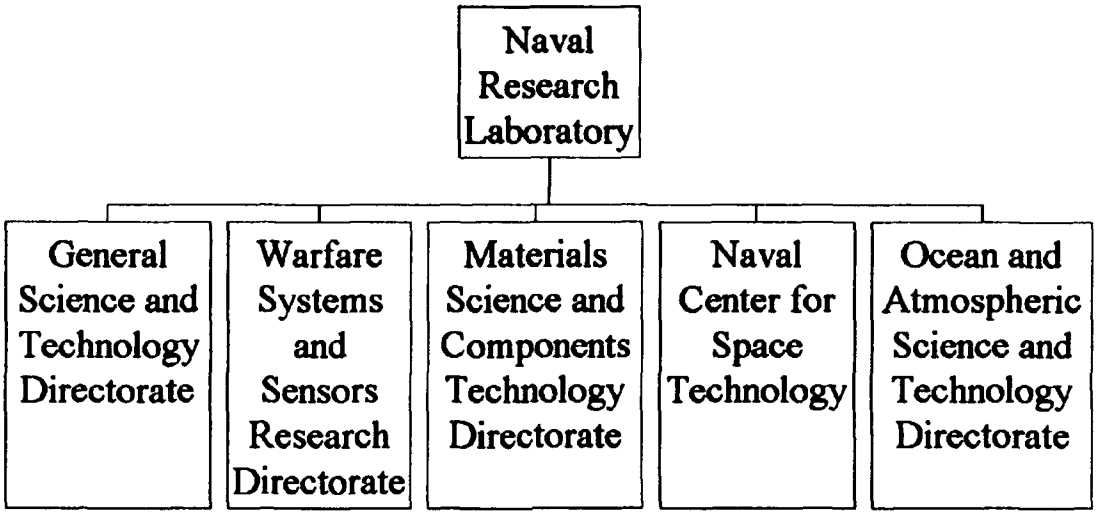
Naval Research Laboratory

Abbreviated Functional Chart - Technical Organizations



Naval Research Laboratory
Washington, DC 20375-5000
(202) 767-3404

CO: CAPT Paul G. Gaffney, II
Dir. Research: Dr. Timothy Coffey

MISSION

To conduct a broadly based multi-disciplinary program of scientific research and advanced technological development directed toward maritime applications of new and improved materials, equipment, techniques, systems and ocean, atmospheric, and space sciences, and related technologies. Specific leadership responsibilities and expertise are maintained in the following areas: (1) Primary in-house research for the physical, engineering, space, and environmental sciences; (2) Broadly based exploratory and advanced development program in response to identified and anticipated Navy needs; (3) Broad multi-disciplinary support of the Naval Warfare Centers; and (4) Space and space systems technology, development and support.

CURRENT IMPORTANT PROGRAMS

Advanced ECM and decoys for Navy EW systems. Radars for countering the low-cross-section sea skimmer threat (3 patents applied for). Ballistic missile defense (7 patents applied for). Fiber optic technology Electronic materials and devices (30 patents applied for). Bio-molecular technology (16 patents applied for). Remote sensing (11 patents applied for). Ocean acoustics. Marine geophysics. Marine meteorology. Upper atmosphere and space physics. Oceanography. High Temperature Superconductivity Space Experiment (HTSSE). Multisensor space surveillance. NAVSPPSUR modernization. Low power Atmospheric Compensation Experiment (LACE). Tactical Receive Equipment (TRE). Improved Data Modem (IDM). Hercules. Composite materials applications. Deep space Program Science Experiment (DPSE)/CLEMENTINE. Global Positioning System (GPS) clock technology.

EQUIPMENT/FACILITIES

Washington, DC:
ELECTRONIC WARFARE CENTRAL TARGET SIMULATOR (CTS): The CTS consists of a large (114 ft x 127 ft x 38 ft) anechoic chamber, housing a 256 antenna array, which is suitable for hardware-in-the-loop simulation in the 2-4 and 8-18 GHz frequency ranges. The large size and spherical geometry of the chamber allow accurate simulation of tactical missile engagements over a 78.5 by 18.75 degree field of view in relative azimuth and elevation.

COMPACT RANGE (16 ft x 16 ft x 30 ft): For far-field radio frequency measurements of antennas and radar cross section measurements of objects. This new facility has a frequency test limit above 100 GHz, greatly extending NRL's test capabilities.

NRL EPICENTER FOR ADVANCED MATERIAL GROWTH AND CHARACTERIZATION: A one-of-a kind molecular-beam epitaxy facility has been developed at NRL. This facility features four distinct high vacuum environments linked by high vacuum transfer lines. Two of these chambers are dedicated to the structural and electronic characterization of the epitaxial films. These capabilities provide a unique method for determining interfacial properties in quantum wells, quantum wires and quantum dots.

NRL CHEMICAL VAPOR PROCESSING FACILITY: Provides a unique resource to develop new materials, structures, processes and diagnostics. The facility is designed with 500 kW electrical and 80 ton cooling capacities with flexible floor space and the capability to safely handle toxic, corrosive and/or flammable gases.

MILLIMETER-WAVE ATMOSPHERIC SOUNDER (MAS): A shuttle-based radiometer designed to measure important constituents of the middle atmosphere (15-100 km) by limb-scanning millimeter-wave spectroscopy.

Orlando, FL:
ACOUSTIC CALIBRATION FACILITIES: NRL maintains a unique set of calibration-quality underwater acoustic facilities that support the mission of the Underwater Sound Reference Detachment in Orlando, Fl, which functions as the nation's standardizing activity for underwater acoustics.

Naval Research Laboratory
Washington, DC 20375-5000
(202) 767-3404

CO: CAPT Paul G. Gaffney, II
Dir. Research: Dr. Timothy Coffey

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.028	NA	0.028
6.1 Other	92.711	8.062	100.773
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	68.665	71.468	140.133
6.3 A	51.731	53.843	105.574
Subtotal (S&T)	**213.135**	**133.373**	**346.508**
6.3 B	14.712	22.068	36.780
6.4	20.444	30.665	51.109
6.5	1.560	4.679	6.239
6.6/6.7	3.737	11.210	14.947
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**253.588**	**201.995**	**455.583**
Procurement	4.415	39.731	44.146
Operations & Maintenance	17.816	7.636	25.452
Other	83.425	119.070	202.495
TOTAL FUNDING	**359.244**	**368.432**	**727.676**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

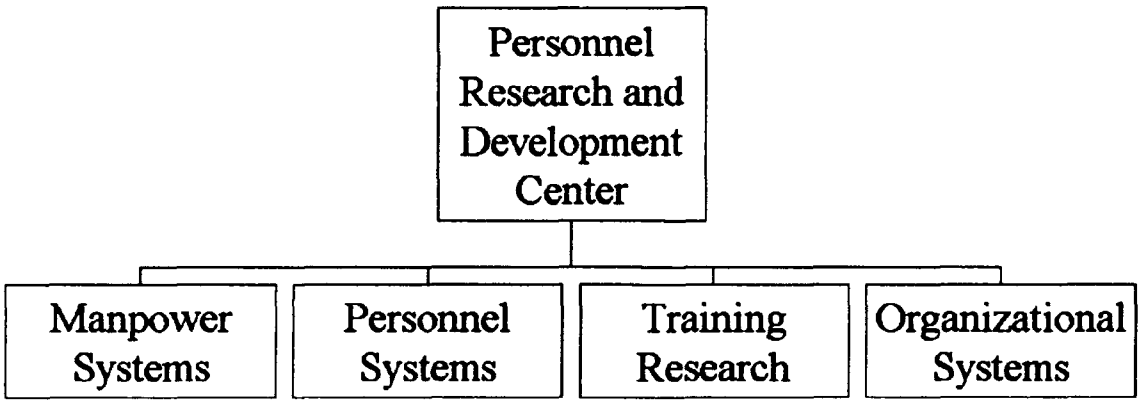
PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	176	4	20	152
CIVILIAN	3,876	872	1,048	1,956
TOTAL	**4,052**	**876**	**1,068**	**2,108**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	2,995.841	**REAL PROPERTY**	167.081
ADMIN	230.615	* NEW CAPITAL EQUIPMENT	0.073
OTHER	522.279	**EQUIPMENT**	218.572
TOTAL	**3,748.735**	* NEW SCIENTIFIC & ENG. EQUIP.	20.530
ACRES	**621**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

Personnel Research and Development Center

Abbreviated Functional Chart - Technical Organizations



Personnel Research and Development Center
San Diego, CA 92152-7250
(619) 553-7812

CO: CAPT J.D. McAfee
Tech. Director: Dr. R.C. Sorenson

MISSION

Conduct research and development to improve the performance of individuals, teams and organizations within the Navy and Marine Corps. Provide products and services specifically directed at improving Department of the Navy personnel planning, acquisition, selection, classification, training, utilization, motivation, organization, management and other contemporary issues.

CURRENT IMPORTANT PROGRAMS

Manpower management. Education and training. Personnel administration. Organizational systems. Computerized Adaptive Testing (CAT), and Total Quality Leadership (TQL) implementation.

EQUIPMENT/FACILITIES

An IBM 4381/23 and three UNIX minicomputer systems provide general purpose ADPE services, electronic mail and access to the Defense Data Network (DDN) for center research and administrative operations. System supplemented by a large inventory of microcomputers supporting specific research projects. Neurosciences Laboratory including unique data acquisition and analysis equipment and instrumentation for neuromagnetic data collection and analysis.

Personnel Research and Development Center
San Diego, CA 92152-7250
(619) 553-7812

CO: CAPT J.D. McAfee
Tech. Director: Dr. R.C. Sorenson

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.190	NA	0.190
6.1 Other	0.047	0.000	0.047
6.2 IED (Navy)	0.261	0.015	0.276
6.2 Other	2.926	0.863	3.789
6.3 A	3.688	2.500	6.188
Subtotal (S&T)	**7.112**	**3.378**	**10.490**
6.3 B	0.000	0.000	0.000
6.4	1.116	0.750	1.866
6.5	1.267	0.762	2.029
6.6/6.7	0.021	0.479	0.500
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**9.516**	**5.369**	**14.885**
Procurement	0.202	0.907	1.109
Operations & Maintenance	7.029	4.051	11.080
Other	0.000	0.000	0.000
TOTAL FUNDING	**16.747**	**10.327**	**27.074**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	19	0	6	13
CIVILIAN	229	55	110	64
TOTAL	**248**	**55**	**116**	**77**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	73.320	**REAL PROPERTY**	1.900
ADMIN	18.417	* NEW CAPITAL EQUIPMENT	0.388
OTHER	0.000	**EQUIPMENT**	12.057
TOTAL	**91.737**	* NEW SCIENTIFIC & ENG. EQUIP.	0.986
ACRES	**3**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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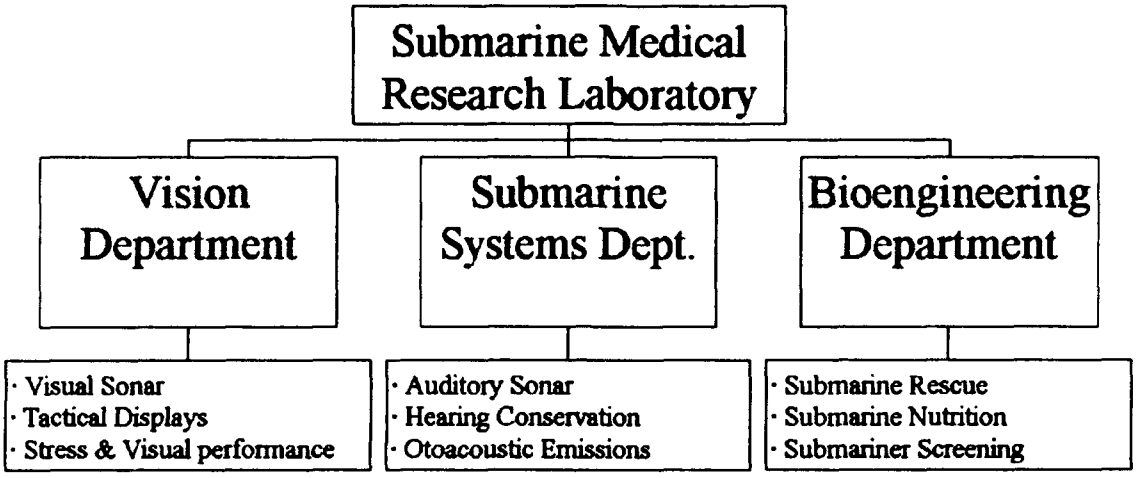
Submarine Medical Research Laboratory

Abbreviated Functional Chart - Technical Organizations



Submarine Medical Research Laboratory
Groton, CT 06349-5900
(203) 449-3263

CO: CAPT P.K. Weathersby
Exec. Officer: CDR M.D. Curley

MISSION

To conduct quality RDT&E in submarine, shipboard, and diving medicine to enhance the health, safety, and readiness of Navy and Marine Corps personnel in the performance of peacetime and contingency missions, and to perform such other functions or tasks as directed by higher authority.

CURRENT IMPORTANT PROGRAMS

Medical problems associated with pressurized submarine rescue. Reduction of attrition rates for submariners by better screening. Improved performance on auditory, digital, and visual sonars. Physiological performance effects of altered submarine atmospheres. Hearing conservation. Nutrition aboard submarines. Evoked otoacoustic emissions. Tactical displays.

EQUIPMENT/FACILITIES

Facilities include: Two-man rated 300 and 150 PSGI hyperbaric chambers. Complete exercise physiology lab. Instrumentation shop. Computer application center. Technical library. Graphic arts and photography shop. Anechoic chambers. Psychoacoustical lab. Operational sonar simulation labs. Mass spectrometers. Gas chromatography.

Submarine Medical Research Laboratory
Groton, CT 06349-5900
(203) 449-3263

CO: CAPT P.K. Weathersby
Exec. Officer: CDR M.D. Curley

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.176	0.000	0.176
6.2 IED (Navy)	0.000	0.000	0.000
6.2 Other	0.097	0.000	0.097
6.3 A	0.877	0.039	0.916
Subtotal (S&T)	**1.150**	**0.039**	**1.189**
6.3 B	1.069	0.000	1.069
6.4	0.417	0.000	0.417
6.5	1.184	0.210	1.394
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**3.820**	**0.249**	**4.069**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.032	0.000	0.032
Other	0.179	0.000	0.179
TOTAL FUNDING	**4.031**	**0.249**	**4.280**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	31	5	3	23
CIVILIAN	41	10	3	28
TOTAL	**72**	**15**	**6**	**51**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	40.514	**REAL PROPERTY**	0.000
ADMIN	14.099	* NEW CAPITAL EQUIPMENT	0.000
OTHER	0.000	**EQUIPMENT**	4.345
TOTAL	**54.613**	* NEW SCIENTIFIC & ENG. EQUIP.	0.157
ACRES	1	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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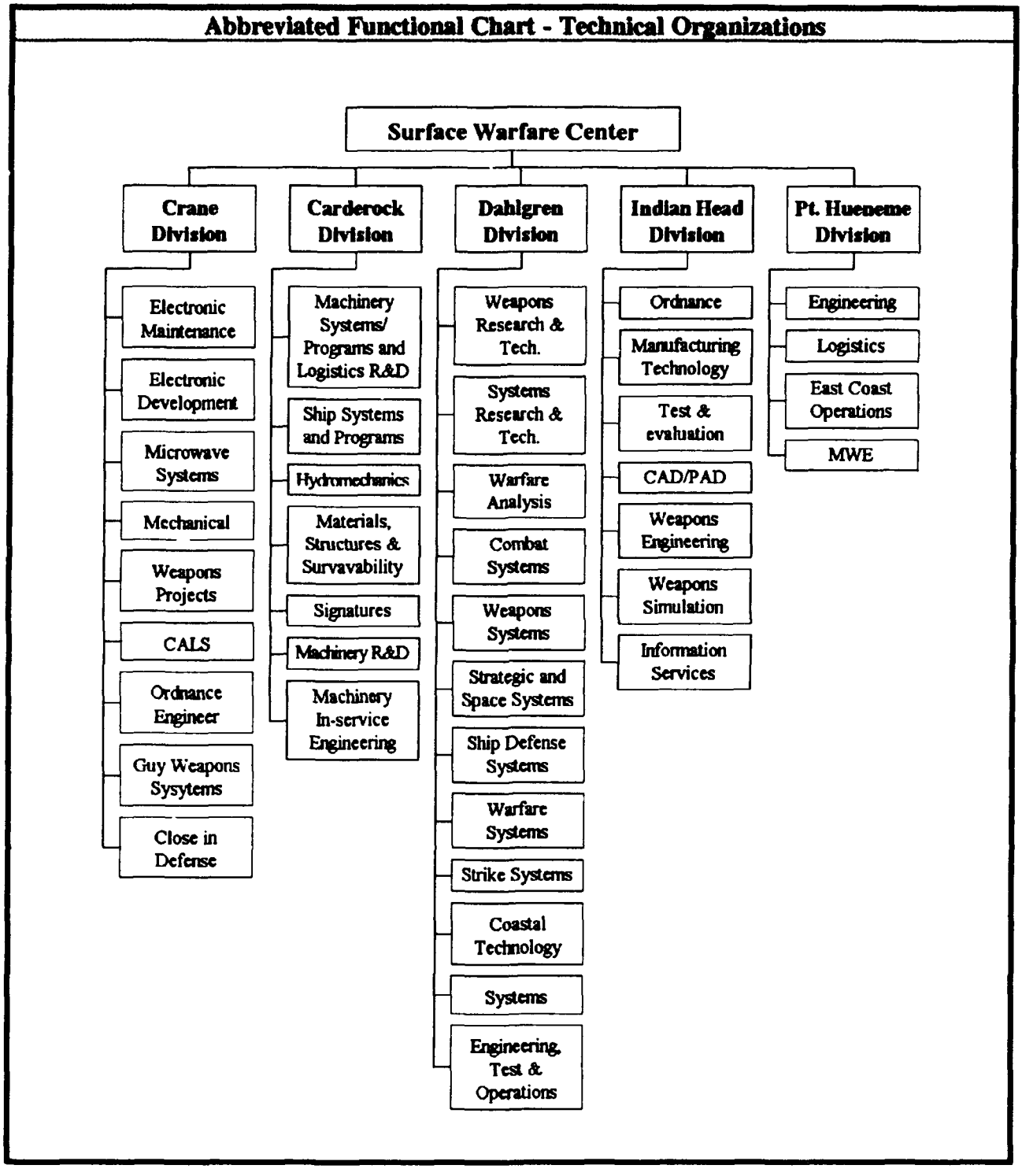
Surface Warfare Center



Surface Warfare Center
Arlington, VA 22242-5160
(703) 602-0632

CO: RADM E.S. McGinley, II
Tech. Director: Dr. Ira Blatstein

MISSION

Operate the Navy's full spectrum RDT&E, engineering and fleet support center for ship hull, mechanical and electrical systems, surface ship combat systems, coastal warfare systems, and other offensive and defensive systems associated with surface warfare.

CURRENT IMPORTANT PROGRAMS

Propulsion machinery systems and components test, evaluation and in-service engineering. Hull, mechanical and electrical (HM&E) auxiliary machinery systems and components test and evaluation and in-service engineering. HM&E electrical machinery systems and components test and evaluation and in-service engineering. Hull and deck machinery systems components test and evaluation and in-service engineering. Surface warfare modeling and analysis. Ship vulnerability and survivability. Surface and undersea vehicle hull machinery, propulsors and equipment. Platform systems integration AEGIS combat system. Ship self defense - including the self defense test ship. Cruise weapon systems - Tomahawk and Harpoon. Gun weapon systems. Standard missile. Continuous processing of composite propellants (an international cooperative R&D agreement to develop processing). Ordnance environmental R&D of energetics processing technologies. Gun propulsion R&D for the Navy's Electrothermal Chemical (ET-C) gun and Range Enhancement Near-Term (RENT) programs. Tri-service RDT&E, engineering, manufacturing, and fleet support for cartridges, cartridge and propellant actuated devices, and aircrew escape propulsion systems. RDT&E for Navy and Marine Corps Mine Countermeasures (MCM) including: distributed explosives technology, demonstrative/advanced countermeasure system, surf zone MCM, and shallow water MCM. Gun weapon system replacement program. MK 15 Phalanx close-in weapon system overhaul project. MK 45 gun engineering project. 76mm MK 75 program and life cycle support. SLQ-32 electronic countermeasures systems. Miniature/microminiature electronic repair. Precise integrated navigation systems (PINS) ISEA/ILS/DOP. AN/SYQ-13 navigation systems. Trident. Submarine Launched Ballistic Missile (SLBM) targeting. Unmanned Aerial Vehicle (UAV). Ship-self defense systems. Vertical Launch System (VLS). Gun ammunition. Mines. Warheads. ASW systems. EW systems. AEGIS radar, search and track. EM effects. Magnetic silencing. Chemical and biological defense. Torpedo and sonar CM. Ship/airborne mine CM combat system integration. Diving and life support. Special warfare. Amphibious warfare.

EQUIPMENT/FACILITIES

Dahlgren Site:
Wind tunnel complex with capability to MACH 18. 25 mile Potomac River range for testing guns, ammunition, and integrated shipboard sensors. Disk pack facility for SLBM fire control systems and targeting. SLBM retargeting facility. Product assurance and simulation facilities for surface ship combat systems. AEGIS computer facility. Magnetic silencing facility. Ocean and harbor ranges. 1.75 million gallon hydroballistic tank. Mine tank and sensor facilities for testing mines and underwater systems, explosives and warheads. Materials research facilities. Chemical/biological defense laboratory. Nuclear effects facility. General purpose laboratories. Compartmented laboratory.

Dahlgren Coastal Systems Station:
Facilities for ocean simulation to 2,250' depth. Systems engineering integration hyperbaric testing. Advanced technology computation. Vehicle technology and non-magnetics. Laboratories for CM evaluation in real-time simulation. Underwater weapons systems. Underwater equipment. Unmanned underwater vehicles. Transducer devices. Materials R&D acoustic testing. Sonar processing. Active/passive sonar modeling. Meteorology instrumentation. Oceanography. Hyperbaric research and gas analysis. Gulf test range. Magnetic target detection and classification range. Industrial shops. Underwater CM fabrication. Pier space. Boats, heliport complex with equipment. Video teleconferencing. Fleet diving support complex. Applied instruction buildings.

Crane:
Overwater radio frequency (RF) test range. Surveillance radar overhaul facility. Special equipment and computers for microelectronics technology. Electron linear accelerator. Materials analysis instrumentation. State-of-the-art CAD/CAE modeling and simulation tools and automated test equipment which accommodate any range of circuit card technology. Thick film circuit card manufacturing laboratory.

Carderock Philadelphia Site:
Full-scale IPMP (SSN-21) steam propulsion land based test site. Full-scale LSD-41 diesel propulsion land based test site. Full-scale DDG-51 gas turbine land based test site. Full-scale electric drive/machinery module land based test site. Full-scale gear meteorology and calibration lab. Full-scale air compressor test site. Full-scale submarine life support test site. Full-scale submarine generator test site. Full-scale submarine ship service generator test site. Fire, pollution, marine equipment lab. Full-scale conveyor and elevator test complex. Full-scale submarine mast bending test facility. Full-scale submarine periscope/antenna test sites. Full scale submarine buoy communication test site. Chemistry and metallurgy lab. Full-scale gravimetric flow calibration lab. Test operations. Analysis and control center. Full-scale steam propulsion testing complex.

Carderock Division - Patuxent River MD: Special trials unit; surface effects test ship.

Carderock Division - Memphis TN: Large Cavitation Channel (LCC).

Surface Warfare Center

EQUIPMENT/FACILITIES (cont.)

Carderock Bethesda Site:
Simulation, planning and analysis research Center. Explosives test pond. Data and image processing systems. David Taylor model basin complex. Maneuvering and seakeeping basin. Rotating arm basin. Radio Controlled model facility. Circulating water channel. 24-inch and 36-inch cavitation channels. Dynamic control system simulator. 140-foot towing basin. Hydrodynamic/hydroacoustic technical center. Deep submergence pressure tanks. Structural evaluation lab. Wind tunnels.

Carderock Annapolis Site:
Fire research and air contamination facility. Machinery systems silencing lab. Acoustics materials lab. Magnetic fields lab. Low observable materials lab. Advanced electrical machining. Technology and development facility. Submarine fluid dynamics facility. Electric power tech lab. Metallic materials and processing facility. Marine composites lab. Marine coatings and corrosion control facility. Marine tribology lab. Deep ocean pressure simulation facility. Shipboard environmental protection facility.

Carderock Division - Portsmouth VA site: Shock trials instrumentation.

Carderock Division - Bayview ID site: Acoustic research detachment.

Carderock Division - Santa Cruz CA site: Acoustic range facility, radar imaging facility.

Carderock Division - Bremerton WA site: Carr inlet test facility.

Carderock Division - Ketchikan AK site: Southeast Alaska facility.

Carderock Division - Panama City FL: Lauren & Athena research vessels/ship systems.

Carderock Division - Cape Canaveral FL: Research Vessel Hayes.

Carderock Division - Norfolk VA: Combatant craft engineering detachment.

Indian Head:
Continuous processing facility. Composite case/component overbraiding facility. Synthesis and scale-up facilities for all types of energetic materials. Test facilities. Surface warfare engineering facility. Electrostatic Discharge (ESD) facility.

Port Hueneme Division, Port Hueneme, CA: Surface Warfare Engineering Facility.

Port Hueneme Division, San Diego, CA: Integrated Combat Systems Test Facility (ICSTF).

Port Hueneme Division, Dam Neck, VA: Software program generation and life-cycle maintenance laboratories.

Surface Warfare Center
Arlington, VA 22242-5160
(703) 602-0632

CO: RADM E.S. McGinley, II
Tech. Director: Dr. Ira Blatstein

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	5.031	NA	5.031
6.1 Other	12.815	4.715	17.530
6.2 IED (Navy)	3.023	0.356	3.379
6.2 Other	94.007	87.793	181.800
6.3 A	47.710	27.898	75.608
Subtotal (S&T)	**162.586**	**120.762**	**283.348**
6.3 B	144.857	200.796	345.653
6.4	89.365	77.755	167.120
6.5	11.782	19.875	31.657
6.6/6.7	66.556	40.289	106.845
Non-DOD	24.623	9.413	34.036
TOTAL RDT&E	**499.769**	**468.890**	**968.659**
Procurement	496.748	450.778	947.526
Operations & Maintenance	532.168	222.326	754.494
Other	345.971	92.715	438.686
TOTAL FUNDING	**1,874.656**	**1,234.709**	**3,109.365**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	12.650

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	649	1	222	426
CIVILIAN	22,221	1,574	6,866	13,781
TOTAL	**22,870**	**1,575**	**7,088**	**14,207**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	6,309.101	**REAL PROPERTY**	933.636
ADMIN	1,670.522	* NEW CAPITAL EQUIPMENT	17.929
OTHER	15,286.049	**EQUIPMENT**	0.941
TOTAL	**23,265.672**	* NEW SCIENTIFIC & ENG. EQUIP.	104.701
ACRES	**72,360**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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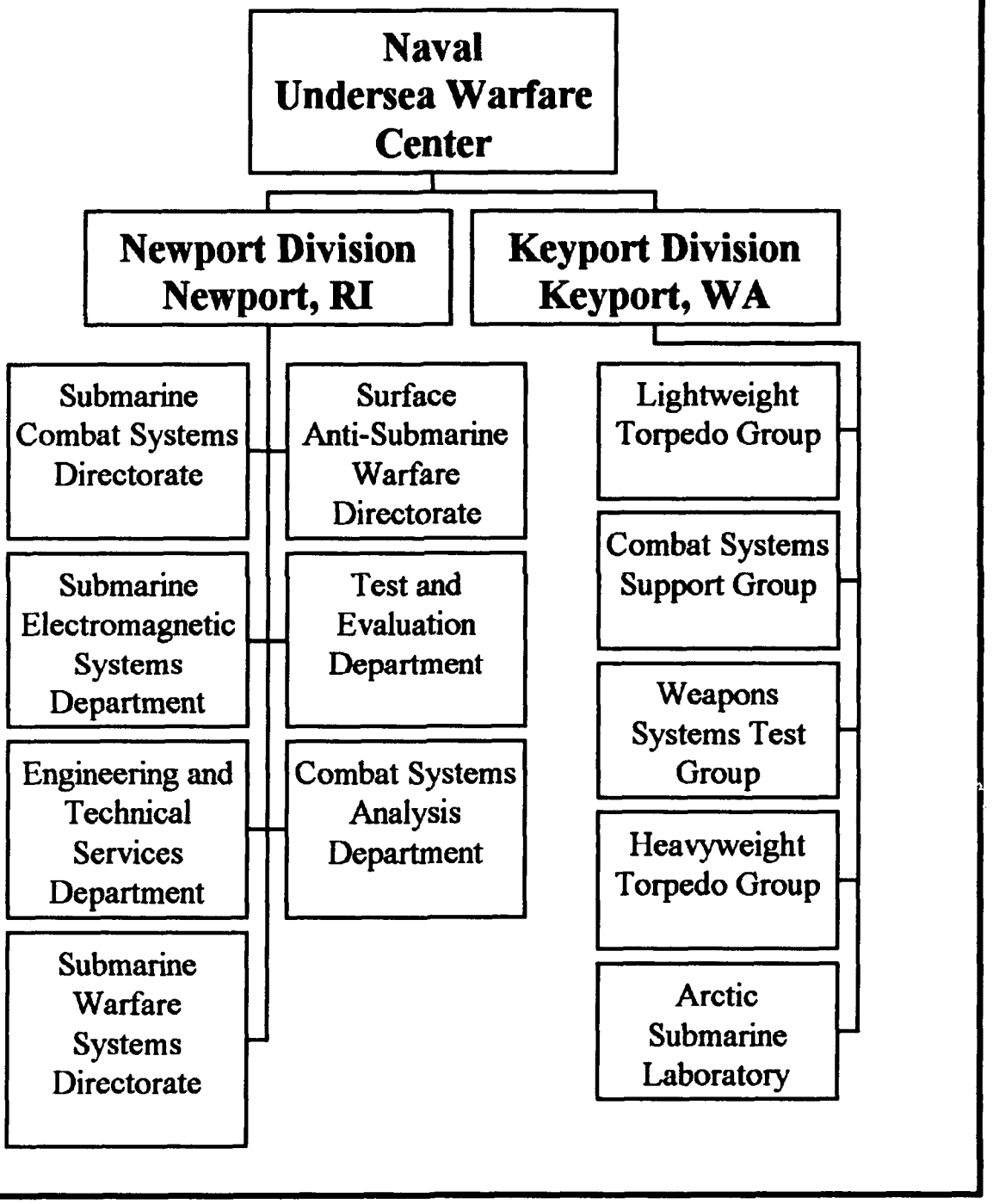
Undersea Warfare Center

Abbreviated Functional Chart - Technical Organizations



Undersea Warfare Center
Newport, RI 02841-1708
(401) 841-6769

Commander: RADM Scott L. Sears
Tech. Director: Earle L. Messere

MISSION

Operate the Navy's full-spectrum RDT&E, engineering, and fleet support center for submarines, autonomous underwater systems, and offensive and defensive weapon systems associated with undersea warfare.

CURRENT IMPORTANT PROGRAMS

Submarine combat systems. Surface ship combat systems. AN/BSY-2/BQG-5 submarine combat system. AN/SQQ-89. Atlantic Undersea Test and Evaluation Center (AUTEC). BARSTUR upgrade. AN/BSY-1 combat control. Torpedo MK48 ADCAP. Submarine antennas and antenna systems. Training and trainers. Trident mission support. AN/BQQ-5 submarine sonar. Sonar advanced development. Tomahawk cruise missile submarine launched. Mobile ASW target MK30. Submarine weapon storage and launch. Periscopes. Submarine electronic warfare systems. Navy EHF satellite communications program. Surface ship torpedo defense. CCS MK 1 and MK 2 ISEA and depot. AN/BSY-1 ISEA and depot. Trident DWS/CS ISEA. MK 117 ISEA and depot. Weapons Systems Accuracy Trials (WSAT). Combat System Ship Qualification Trials (CSSQT). AN/SQQ-89 basic module repair depot. AN/BQQ-5 ISEA and depot. ISEA, DA, and TDA for AN/BQR-15, AN/BQR-19, AN/BQR-21, and AN/BQR-T4. CVASEM (AN/SQQ-34(V)) ISEA and DA. Towed arrays ISEA. Sonar trainers. Post-operational Analysis Critique and Exercise Review (PACER). Shipboard Electronic Systems Evaluation Facility (SESEF). Submarine-Launched Mobile Mine (SLMM) production and depot support. Unmanned undersea vehicle range tests and support depot. Targets MK 27, MK 28, Mk 30 IMAs (3), depot, ISEA, and T&E support. IMA, depot, and support for torpedo MK 48, torpedo MK 48 ADCAP, torpedo MK 46, and torpedo MK 50. MK 57 MOSS depot and ISEA. Surface ship torpedo defense depot and IMA.

EQUIPMENT/FACILITIES

NUWC Division Newport, RI:
Acoustic Test Facility; Advanced Scientific and Engineering Computational Center; Advanced Submarine Launcher Facility; Advanced Underwater Vehicle Quiet Propulsion Research and Development Facility; Advanced Underwater Vehicles Laboratory; Combat Systems Technology Laboratory; Integrated Warfare Analysis Laboratory; Missile Simulation, Development, and Test Facility; Propulsion Test Facility; SSN 688 Vertical Launch System Missile Tube Test Facility; Superconducting Electromagnetic Thruster and Seawater Magnetohydrodynamics Test Facility; Transient Flow Loop Facility; Weapons Analysis Facility.

EQUIPMENT/FACILITIES (cont.)

NUWC Detachment New London, CT:
Acoustic Display Research Facility; Hybrid Microcircuit Design and Fabrication Facility; Integrated Transducer Design Facility; Land-Based Integrated Test Site; Man-Machine Sonar Test Bed; Periscope Research and Development Test Facility; Quiet Water Tunnel Experimental Facility; Submarine Antenna Over-Water Arch Facility; Towed Array Complex.

NUWC Detachment Dodge Pond, CT:
Dodge Pond Acoustic Measurement Facility.

NUWC Detachment Andros Islands, Bahamas:
Atlantic Undersea Test and Evaluation Center (AUTEC); R/V NUWC Ranger.

NUWC Detachment Seneca Lake, NY:
Seneca Lake Acoustic Measurement Facility; Submarine Antenna Test Range (Fisher's Island, NY); Submersible Sensor Test Platform (Fisher's Island, NY).

NUWC Division Keyport, WA:
Acoustic Test Facility; Range Display and Information Center; Transducer Automated Test Facility (TATF); Environmental Test Facilities; Underwater Weapons Evaluation Facility; Combat Systems Electronic Module Maintenance Engineering and Repair Facility; CV-ASW Module Laboratory; Integrated Drawing Management System (EDMICS); Pinger Intermediate Maintenance Activity; Test Vehicles Intermediate Maintenance Activity; Torpedo MK 46 IMA and Depot Facility; Undersea Weapons Support Facilities; Electrical Fabrication Facility; MK 48 and MK 48/ADCAP Depot; Various Range Support Craft Including YTT's, TRB's Sound Boats, etc.

NUWC Detachment Hawaii:
Hawaiian Island Underwater Range; Postoperational Analysis Critique and Exercise Review (PACER) Facility; CV-ASW Module Laboratory; Target Intermediate Maintenance Activity.

NUWC Detachment San Diego, CA:
Arctic Environment Test Facility; Cape Prince of Wales Arctic Test Site; Target Intermediate Maintenance Activity.

NUWC Detachment Bangor, WA:
Combat Systems ISE Laboratory (Deployed Systems Support Facility); Combat Systems ISE Laboratory (Surface ASW Fire Control Facility); POSEIDON Combat Systems Facility. Eniz Hook: Shipboard Electronic Systems Evaluation Facilities (SESEF).

Additional Sites include: NUWC Northwest Ranges: Nanoose, Dabob, and Quinalt Sites. Langley Field, VA: Langley Seawater Tow Tank. San Clemente Island Underwater Range.

Undersea Warfare Center
Newport, RI 02841-1708
(401) 841-6769

Commander: RADM Scott L. Sears
Tech. Director: Earle L. Messere

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	2.877	NA	2.877
6.1 Other	1.357	0.152	1.509
6.2 IED (Navy)	0.887	0.731	1.618
6.2 Other	27.626	22.762	50.388
6.3 A	5.399	10.423	15.822
Subtotal (S&T)	**38.146**	**34.068**	**72.214**
6.3 B	67.105	66.143	133.248
6.4	74.227	44.733	118.960
6.5	12.793	30.720	43.513
6.6/6.7	11.497	8.361	19.858
Non-DOD	0.110	0.140	0.250
TOTAL RDT&E	**203.878**	**184.165**	**388.043**
Procurement	309.436	253.645	563.081
Operations & Maintenance	179.641	77.527	257.168
Other	66.952	12.457	79.409
TOTAL FUNDING	**759.907**	**527.794**	**1,287.701**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	374	0	50	324
CIVILIAN	7,636	137	3,184	4,315
TOTAL	**8,010**	**137**	**3,234**	**4,639**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	2,518.281	**REAL PROPERTY**	322.220
ADMIN	413.521	* NEW CAPITAL EQUIPMENT	11.870
OTHER	2,205.143	**EQUIPMENT**	369.196
TOTAL	**5,136.945**	* NEW SCIENTIFIC & ENG. EQUIP.	85.241
ACRES	**5,884**	* Included in category on line above it. Also see Equip./Facilities	

NA = Not Applicable

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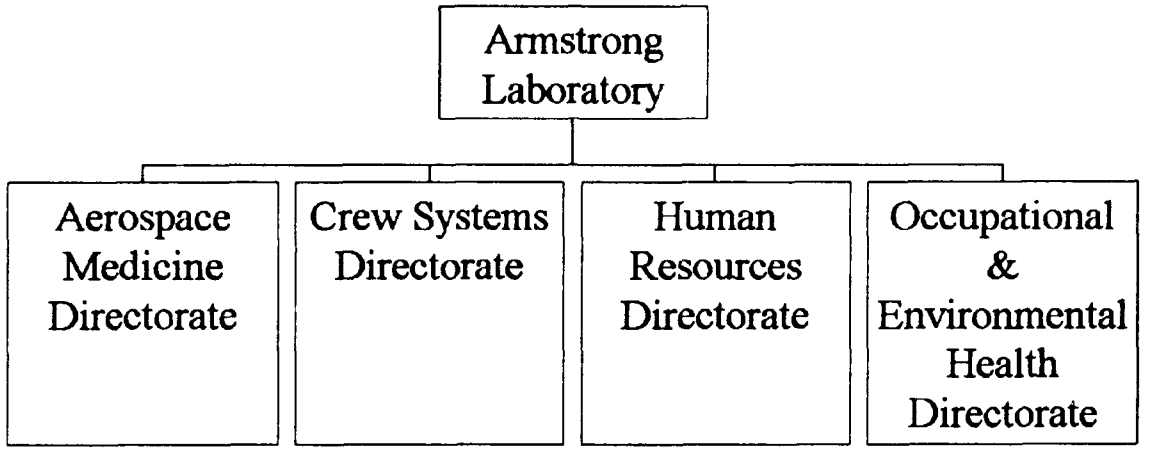
DEPARMENT OF THE AIR FORCE

DEPARTMENT OF THE AIR FORCE

The Air Force's nine (9) In-House RDT&E Activities are:

Armstrong Laboratory

Abbreviated Functional Chart - Technical Organizations



Armstrong Laboratory
Brooks AFB, TX 78235-5000
(512) 536-3116

Director: Dr. Billy Welch
Chief Scientist: Dr. George Mohr

MISSION

Advance and apply technology to provide the Air Force with superior capabilities in the areas of human resources, crew systems, aerospace medicine and occupational/environmental health through integration execution of research, development and operational support. Provide continuous product and process improvement to enhance: crew protection and performance; training and logistics; force management, health and safety.

CURRENT IMPORTANT PROGRAMS

The resources of the Armstrong Laboratory are organized into five integrated "thrusts" which bridge specific research programs and projects. Technical thrust areas are: crew systems integration, force readiness-human resources, force readiness-aerospace medicine, crew protection and environmental protection. The Armstrong Laboratory is also host to "Tri-Service Research Centers" in toxicology and directed energy, created in accordance with the Project Reliance initiative for DoD laboratory consolidation.

EQUIPMENT/FACILITIES

The Armstrong Laboratory conducts RDT&E at Wright-Patterson AFB OH, Brooks AFB TX, Lackland AFB TX, and Williams AFB AZ, but most of the equipment and facilities are located at Wright-Patterson and Brooks Air Force bases. Equipment and facilities include: Two-human centrifuges for acceleration and spatial disorientation research. Cardiac catheterization suite for cardiology research and aeromedical evaluations. Anechoic chambers for study of sound and noise. "Virtual worlds" for systems and training research. Inhalation toxicology chambers. Directed energy facility for research of bioeffects of lasers and RF radiation. Facility for controlled study of group dynamics and teamwork in simulated air operations. TEMPEST secure facility with simulators for EW research and training. Facility for using recruits as test subjects in RDT&E of computer automated training and force management tools.

Armstrong Laboratory
Brooks AFB, TX 78235-5000
(512) 536-3116

Director: Dr. Billy Welch
Chief Scientist: Dr. George Mohr

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.900	NA	0.900
6.1 Other	3.040	0.760	3.800
6.2 IED (Navy)	NA	NA	NA
6.2 Other	13.029	64.071	77.100
6.3 A	1.121	37.579	38.700
Subtotal (S&T)	**18.090**	**102.410**	**120.500**
6.3 B	0.000	6.800	6.800
6.4	0.000	0.400	0.400
6.5	0.000	4.900	4.900
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**18.090**	**114.510**	**132.600**
Procurement	0.000	0.000	0.000
Operations & Maintenance	17.300	1.700	19.000
Other	0.000	41.500	41.500
TOTAL FUNDING	**35.390**	**157.710**	**193.100**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	454	94	193	167
CIVILIAN	558	138	230	190
TOTAL	**1,012**	**232**	**423**	**357**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	884.116	**REAL PROPERTY**	155.100
ADMIN	67.000	* NEW CAPITAL EQUIPMENT	1.050
OTHER	52.000	**EQUIPMENT**	2.030
TOTAL	**1,003.116**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**156**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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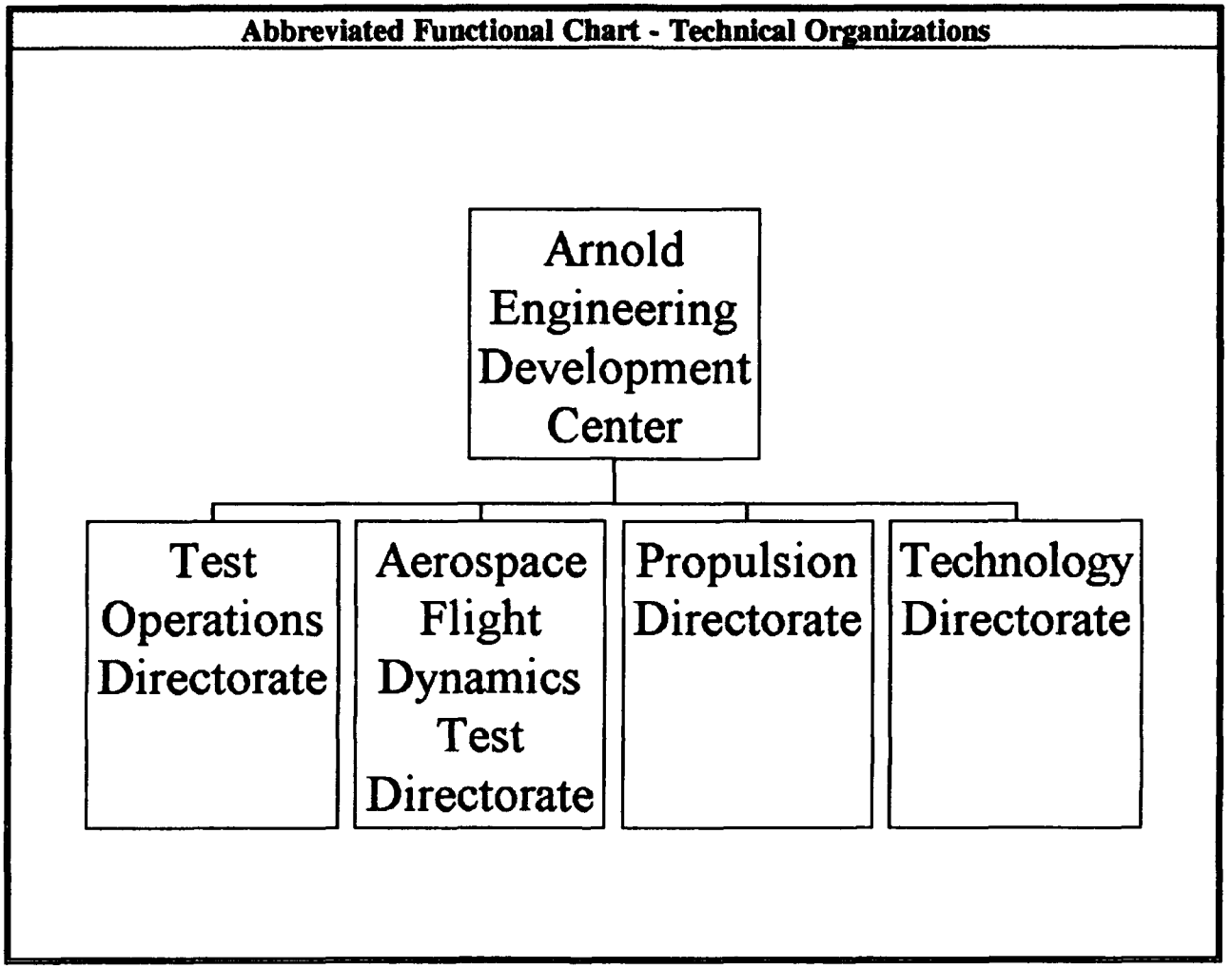
Arnold Engineering Development Center (AFMC)



Arnold Engineering Development Center (AFMC)
Arnold AFB, TN 37389-1314
(615) 454-4232

Commander: COL William Rutley
Chief Scientist: Dr. Donald C. Daniel

MISSION

Test aircraft, missile and space systems and subsystems at the flight conditions they will experience during a mission. Conduct a research and technology program to develop advanced testing techniques and instrumentation, and to support the development of new test facilities. Support DoD, other government agencies, private sector companies and foreign military sales.

CURRENT IMPORTANT PROGRAMS

Advanced tactical fighter (F-119) engine. Ballistic Missile Defense organization plume signature testing. National Aero-Space Plane (NASP). F110-GE-129, F100-PW-229 FSE altitude.

EQUIPMENT/FACILITIES

Wind tunnels with sections to 16 feet and speeds from subsonic to mach 20. Turbine engine test cells which provide simulation to mach 3. Rocket test cells, the largest rated at 500,000 lbs. thrust at altitude. Space chambers to 42 ft. in diameter and 82 ft. high. Hyperballistic ranges. Dust and snow erosion facility. Bird impact facility. Two (2) captive trajectory systems.

These facilities have supported development and qualification testing of most major aeronautical, missile, and space systems since 1954. This testing complements expensive and often hazardous testing, and assures that system deficiencies are found early, saving time resources in the overall development, acquisition, and deployment process.

Arnold Engineering Development Center (AFMC)
Arnold AFB, TN 37389-1314
(615) 454-4232
Commander: COL William Rutley
Chief Scientist: Dr. Donald C. Daniel

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.230	0.230
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.704	0.704
6.3 A	0.000	15.650	15.650
Subtotal (S&T)	**0.000**	**16.584**	**16.584**
6.3 B	0.000	0.000	0.000
6.4	7.962	38.550	46.512
6.5	175.471	18.128	193.599
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	30.152	30.152
TOTAL RDT&E	**183.433**	**103.414**	**286.847**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	90.400	0.000	90.400
TOTAL FUNDING	**273.833**	**103.414**	**377.247**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	90.400

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	116	0	63	53
CIVILIAN	193	3	62	128
TOTAL	**309**	**3**	**125**	**181**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	1,069.488	**REAL PROPERTY**	1,062.823
ADMIN	328.284	* NEW CAPITAL EQUIPMENT	28.259
OTHER	1,259.689	**EQUIPMENT**	14.161
TOTAL	**2,657.461**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**39,080**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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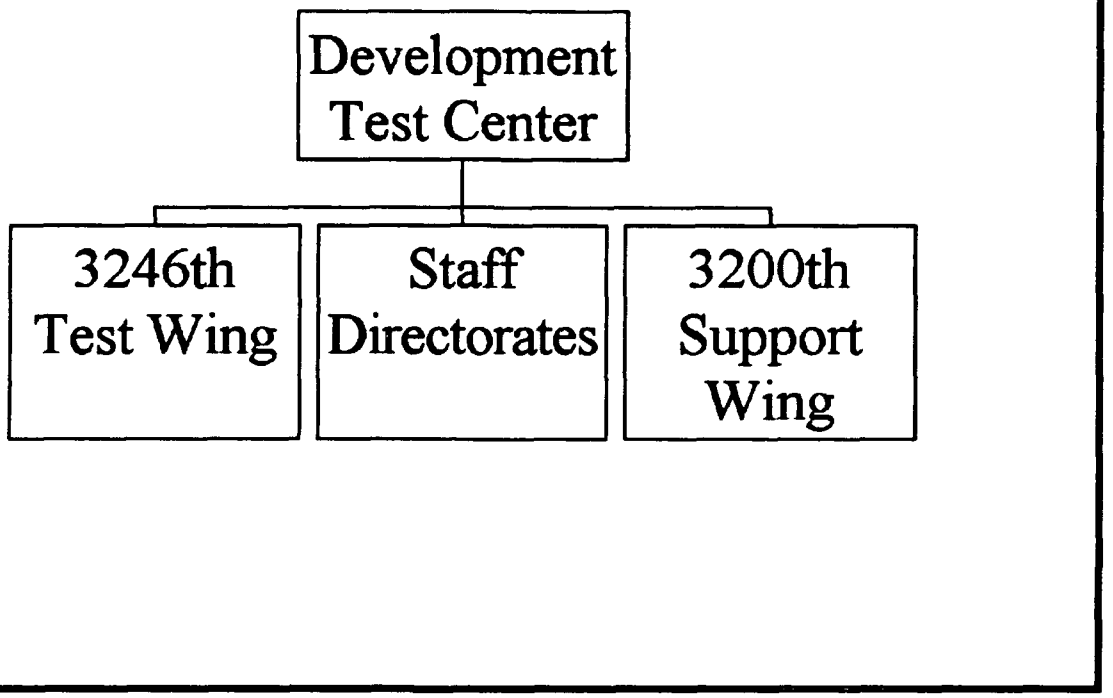
Development Test Center

Abbreviated Functional Chart - Technical Organizations



Development Test Center
Eglin AFB, FL 32542-6861
(904) 882-5422

Commander: MG Michael Butchko, Jr.
Exec. to Cmdr.: Dr. J.D. Stewart

MISSION

Perform integration, test and evaluation of armament and electronic combat systems, and provide host base support.

CURRENT IMPORTANT PROGRAMS

Electronic combat, conventional munitions testing, preflight integration of munitions and electronic systems, climatic testing, base installation security systems. GPS, CREST, F-22, B-2, Kinetic Energy missile, ACES II, Peacekeeper, AGT, F-16, Advanced Kinetic Energy missile and IRCM systems.

EQUIPMENT/FACILITIES

Climatic testing facility. Simulation facilities. Gun test facility. Security systems test facility. Damage potential sled track. Time-space-position instrumentation facilities. Telemetry systems facilities. Data handling facilities. Marine operations facilities. Photographic laboratory. Weather characterization facilities. Land test ranges. Gulf water test areas. Laser ranging/tracking facilities. Frequency control and analysis facilities. Electro-optical systems facilities (ground and airborne). Aircraft maintenance (test associated) facilities.

Development Test Center
Eglin AFB, FL 32542-6861
(904) 882-5422

Commander: MG Michael Butchko, Jr.
Exec. to Cmdr.: Dr. J.D. Stewart

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	43.100	20.048	63.148
6.5	108.703	41.987	150.690
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**151.803**	**62.035**	**213.838**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	4.821	0.000	4.821
TOTAL FUNDING	**156.624**	**62.035**	**218.659**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	2,196	13	985	1,198
CIVILIAN	2,441	22	1,387	1,032
TOTAL	**4,637**	**35**	**2,372**	**2,230**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	89.852	**REAL PROPERTY**	478.200
ADMIN	654.200	* NEW CAPITAL EQUIPMENT	4.250
OTHER	9,453.400	**EQUIPMENT**	545.374
TOTAL	**10,197.452**	* NEW SCIENTIFIC & ENG. EQUIP.	14.537
ACRES	**455,187**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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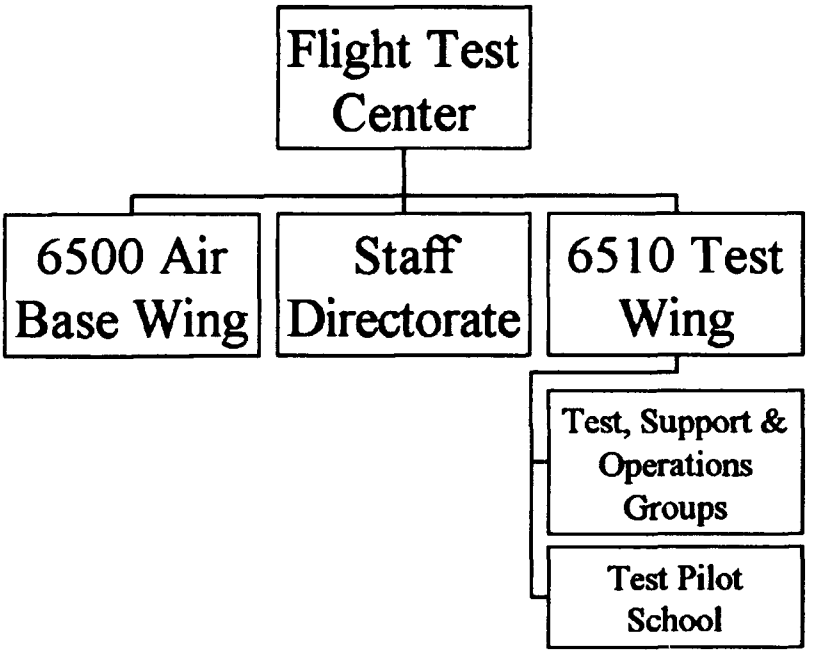
Flight Test Center

Abbreviated Functional Chart - Technical Organizations



Flight Test Center
Edwards AFB, CA 93524-5000
(805) 277-2140

Commander: BG Roy D. Bridges
Tech. Director: Richard R. Hildebrand

MISSION

Perform aerodynamic testing of manned and unmanned aerospace vehicles and aircraft subsystems. Operate the USAF test pilot school, Edwards range and the Utah test and training range.

CURRENT IMPORTANT PROGRAMS

Strategic bombers:
B-1B and B-2A DT&E/IOT&E.

Tactical systems upgrades:
F-15E, F-16 BLK 40/Lantirn, YA-7F and F-111 DFCS.

Strategic Systems upgrades:
Advanced cruise missile.

Cargo aircraft:
C-17 DT&E/IOT&E, AC-130 Gunship, MC-130 Gunship, MC-130 Combat Talon II.

Technology:
Space shuttle, X-29, AFTI F-16, AFTI F-111.

EQUIPMENT/FACILITIES

Major unique facilities and equipment include: Integrated Facility for Avionics System Test (IFAST). Benefield anechoic facility. Real time mission control facility. Precision impact range area used for bombing/gunnery/infrared systems integration. Personnel and cargo parachute drop zones. Hydrant refueling system for heavy aircraft. Aircraft weight and balance facility. Largest aircraft landing area in the free world. Integrated missile maintenance facility complex. R-2508 restricted airspace. Photo/video lab for airborne and ground testing. Intermediate aircraft maintenance support capability. Pacer Comet jet engine test facility. Horizontal aircraft thrust stand. Photo resolution range. Instrumented low level terrain following course. Aircraft gun system harmonization range (GUN BUTT).

Flight Test Center
Edwards AFB, CA 93524-5000
(805) 277-2140

Commander: BG Roy D. Bridges
Tech. Director: Richard R. Hildebrand

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
5.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	19.753	0.000	19.753
6.5	212.320	148.471	360.791
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**232.073**	**148.471**	**380.544**
Procurement	0.000	0.000	0.000
Operations & Maintenance	12.940	9.498	22.438
Other	148.595	0.000	148.595
TOTAL FUNDING	**393.608**	**157.969**	**551.577**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	3,679	43	0	3,636
CIVILIAN	2,588	6	518	2,064
TOTAL	**6,267**	**49**	**518**	**5,700**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	2,496.830	**REAL PROPERTY**	580.238
ADMIN	2,976.560	* NEW CAPITAL EQUIPMENT	6.184
OTHER	8,504.489	**EQUIPMENT**	257.082
TOTAL	**13,977.879**	* NEW SCIENTIFIC & ENG. EQUIP.	4.091
ACRES	**297,449**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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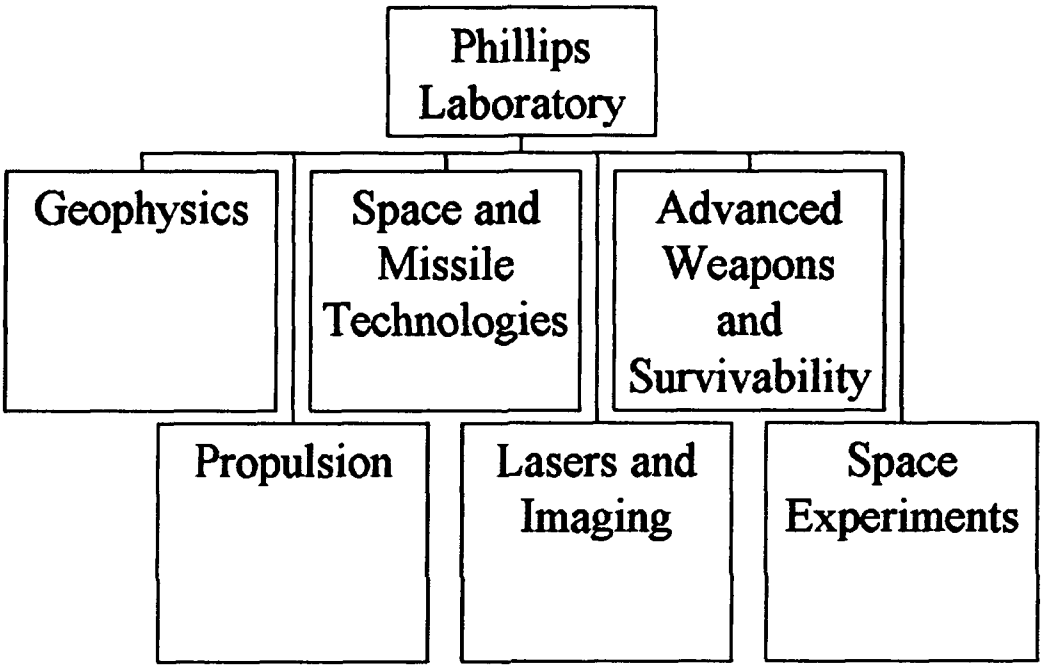
Phillips Laboratory

Abbreviated Functional Chart - Technical Organizations



Phillips Laboratory
Kirtland AFB, NM 87117-6008
(505) 846-0860

Commander: COL Peter J. Marchiano
Chief Scientist: Joseph F. Janni

MISSION

Advance science and technology to provide the developments and improvements needed to continue the accomplishment of the Air Force mission. Primarily charged with planning, organizing directing executing and controlling USAF research and development in the following areas: space and missile technology, space experiments, directed energy weapons and weapons effects, survivability, geophysics technical developments and geophysics effects on systems.

CURRENT IMPORTANT PROGRAMS

Eagle Dancer. Aircraft based laser. Technology for Autonomous Operational Survivability (TAOS). Lightweight Exo-Atmospheric Projectile (LEAP). High Powered Microwaves (HPM).

EQUIPMENT/FACILITIES

Software lab. Component development lab. Starfire optical range. Developmental optics facility. Malabar test facility. Air Force Maui optical station. Argus aircraft. Chemical laser facility. Semiconductor and diode laser facilities. Payload integration facility. RF spectrum analyzer. Balloon launch facility. Area 53-classified Sun computer network. Two (2) electrical discharge coaxial lasers. Cryogenic hydrogen supply system. High energy microwave lab. High frequency research facility. Fixed and portable PC-controlled data acquisition systems. Sleet database for EM data archive and manipulation. High power narrowband and ultra-wideband sources and antennas. Portable low power ultra-wideband system. Shiva Star capacitor bank. Space simulation chambers. Two (2) KC-135 aircraft for optical, upper atmospheric studies.

Phillips Laboratory
Kirtland AFB, NM 87117-6008
(505) 846-0860

Commander: COL Richard Davis
Chief Scientist: Joseph F. Janni

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	IN-HOUSE	OUT-OF-HOUSE	TOTAL
RDT&E:			
6.1 ILIR	1.963	NA	1.963
6.1 Other	12.437	8.461	20.898
6.2 IED (Navy)	NA	NA	NA
6.2 Other	34.053	82.161	116.214
6.3 A	60.939	370.864	431.803
Subtotal (S&T)	**109.392**	**461.486**	**570.878**
6.3 B	0.000	0.000	0.000
6.4	1.984	11.642	13.626
6.5	0.000	17.233	17.233
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	27.803	27.803
TOTAL RDT&E	**111.376**	**518.164**	**629.540**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	1.563	1.563
Other	35.985	97.409	133.394
TOTAL FUNDING	**147.361**	**617.136**	**764.497**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	END STRENGTH	PHD'S	OTHER	& OTHER PERSONNEL
MILITARY	740	38	399	303
CIVILIAN	1,444	217	478	749
TOTAL	**2,184**	**255**	**877**	**1,052**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		PROPERTY ACQUISITION COST (MILLIONS $)	
LAB	1,595.674	REAL PROPERTY	662.400
ADMIN	750.100	* NEW CAPITAL EQUIPMENT	7.163
OTHER	193.527	EQUIPMENT	83.150
TOTAL	**2,539.301**	* NEW SCIENTIFIC & ENG. EQUIP.	2.810
ACRES	55	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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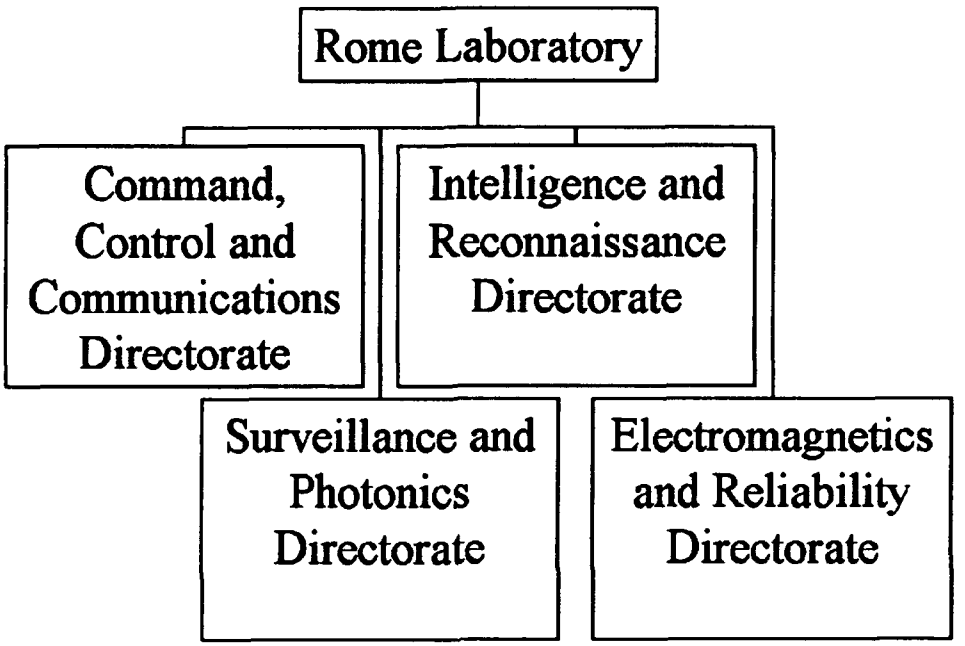
Rome Laboratory

Abbreviated Functional Chart - Technical Organizations



Rome Laboratory
Griffiss AFB, NY 13441-4514
(315) 330-701

Commander: COL Paul Nielsen
Deputy Director: Dr. Fred I. Diamond

MISSION

Air Force center of expertise for advancing the state-of-the-art in command, control, communications and intelligence (C3I) by planning and executing research, development, test and selected acquisition programs. Designated Air Force corporate responsibility to advance eletromagnetics, computational sciences, signal processing, reliability science and photonics technology. Provides technical and engineering support within areas of expertise to Air Force Material Command product centers and other users.

CURRENT IMPORTANT PROGRAMS

Low observable surveillance. Secure survivable communications. Battle information management and decision aids. Non-cooperative target identification. Signal processing. Artificial intelligence. Photonics. Intelligence processing. Reliability assessment.

EQUIPMENT/FACILITIES

Primary operating locations at: Hascom AFB, MA and Griffiss AFB, NY. In-house facilities include: Reconnaissance exploitation facility. Photonics facility. Electronic Intelligence (ELINT) development facility. Electronic Counter-Countermeasures (ECCM) and signal processing facility. Solid state device failure analysis facility. Command and control technology center. Electro-magnetic vulnerability facility. Surveillance facility. Materials synthesis and development facility. Intelligence Information Processing Facility (IIPF). Experimental device fabrication facility.

Rome Laboratory
Griffiss AFB, NY 13441-4514
(315) 330-701

Commander: COL Paul Nielsen
Deputy Director: Dr. Fred I. Diamond

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	3.807	NA	3.807
6.1 Other	4.309	3.141	7.450
6.2 IED (Navy)	NA	NA	NA
6.2 Other	16.590	88.920	105.510
6.3 A	2.871	45.619	48.490
Subtotal (S&T)	**27.577**	**137.680**	**165.257**
6.3 B	8.526	23.870	32.396
6.4	2.723	5.740	8.463
6.5	0.016	5.061	5.077
6.6/6.7	0.000	0.000	0.000
Non-DOD	2.006	38.116	40.122
TOTAL RDT&E	**40.848**	**210.467**	**251.315**
Procurement	0.040	1.091	1.131
Operations & Maintenance	3.506	52.106	55.612
Other	0.000	0.000	0.000
TOTAL FUNDING	**44.394**	**263.664**	**308.058**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	139	8	85	46
CIVILIAN	926	63	511	352
TOTAL	**1,065**	**71**	**596**	**398**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	836.417	**REAL PROPERTY**	245.000
ADMIN	89.415	* NEW CAPITAL EQUIPMENT	1.258
OTHER	85.290	**EQUIPMENT**	165.060
TOTAL	**1,011.122**	* NEW SCIENTIFIC & ENG. EQUIP.	4.110
ACRES	**1,551**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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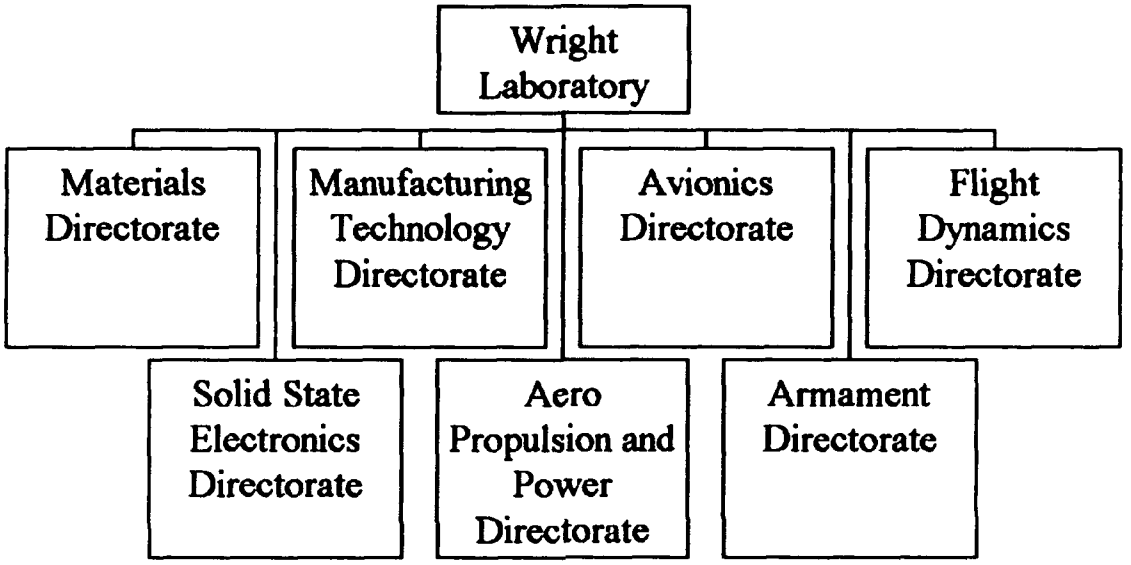
Wright Laboratory

Abbreviated Functional Chart - Technical Organizations



Wright Laboratory
Wright-Patterson AFB, OH 45433-6523
(513) 255-4119

Commander: COL David A. Herrelko
Chief Scientist: Dr. G. Keith Richey

MISSION

To lead and focus the Air Force's aeronautical technology investment by performing in-house research and establishing contractual partnerships with universities and contractors.

CURRENT IMPORTANT PROGRAMS

Avionics and solid state electronics technology. Flight dynamics technology. Materials technology. Conventional armament technology. Aeropropulsion and power technology.

EQUIPMENT/FACILITIES

Sensor evaluation facility. Targeting systems characterization facility. Electro-optics research facilities. Large amplitude motion simulator. Structure testing facility. DoD landing gear development facility. Aircraft survivability research facility. Laser hardened material evaluation lab. Ramjet combustion research facility. Combustion research facilities. Compressor test facility. High explosive R&D facility. Hypervelocity launcher experiment facility. Aeroballistics research facility.

Wright Laboratory
Wright-Patterson AFB, OH 45433-6523
(513) 255-4119

Commander: COL David A. Herrelko
Chief Scientist: Dr. G. Keith Richey

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	2.400	NA	2.400
6.1 Other	18.275	11.425	29.700
6.2 IED (Navy)	NA	NA	NA
6.2 Other	78.720	262.380	341.100
6.3 A	23.674	309.226	332.900
Subtotal (S&T)	**123.069**	**583.031**	**706.100**
6.3 B	1.079	19.521	20.600
6.4	1.216	21.984	23.200
6.5	1.603	28.997	30.600
6.6/6.7	0.000	0.000	0.000
Non-DOD	4.622	83.578	88.200
TOTAL RDT&E	**131.589**	**737.111**	**868.700**
Procurement	0.079	1.421	1.500
Operations & Maintenance	0.896	16.204	17.100
Other	1.006	18.194	19.200
TOTAL FUNDING	**133.570**	**772.930**	**906.500**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	452	35	320	97
CIVILIAN	2,378	197	1,313	868
TOTAL	**2,830**	**232**	**1,633**	**965**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	1,500.195	**REAL PROPERTY**	1,126.400
ADMIN	700.944	* NEW CAPITAL EQUIPMENT	4.863
OTHER	876.457	**EQUIPMENT**	2,047.790
TOTAL	**3,077.596**	* NEW SCIENTIFIC & ENG. EQUIP.	8.160
ACRES	**831**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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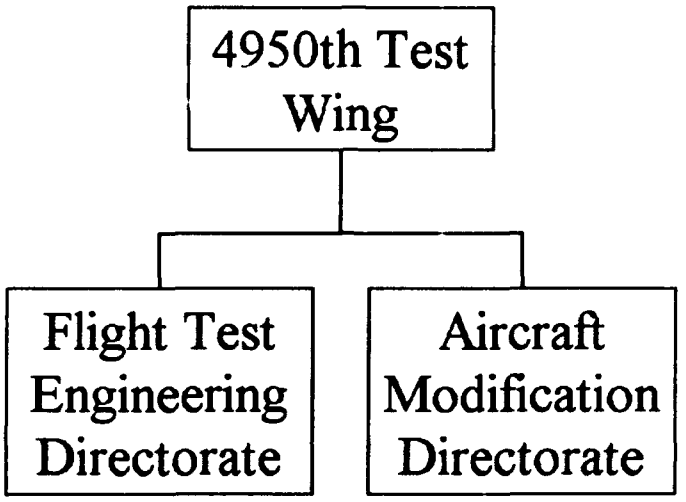
4950th Test Wing

Abbreviated Functional Chart - Technical Organizations



4950th Test Wing
Wright-Patterson AFB, OH 45433-5000 Commander: COL David M. Phillips
(513) 257-6593

MISSION

Conduct flight tests of avionics systems in C-18, C-135, C-141 and T-39 testbed aircraft. Perform worldwide airborne research and telemetry acquisition in EC-135 and EC-18 Advanced Range Instrumentation Aircraft (ARIA). Test commercial aircraft for possible military applications. Design, fabricate and install temporary aircraft modifications. Manufacture aerospace hardware.

CURRENT IMPORTANT PROGRAMS

SATCOM. Electronic Counter Countermeasure Advanced Radar Test Bed (ECCM/ARTB). ARGUS II. Central Inertial Guidance Test Facility (CIGTF). Big Crow. Airborne imagery transfer. Silent attack warning system. ARGUS upgrades. C-141 wing spar repair. PACER WING II. Advanced range instrumentation aircraft Titan IV. B-1B cable set Milstar demodification.

EQUIPMENT/FACILITIES

Precision Measurement Equipment Laboratory (PMEL). Specialized and quick response fabrication/modification equipment facility. Computer Aided Design/Manufacturing (CAD/CAM) capability. Advanced Range Instrumentation Aircraft (ARIA). ARIA scoring systems. Advanced Cruise Missile Mission Control Aircraft (CMMCA). Integrated Data Facility (IDF). Logistics Material Control Activity (LMCA). Temporary/prototype aircraft modification facility. DEC VAX computer system. 2000 square mile restricted test area in southwest Ohio.

4950th Test Wing
Wright-Patterson AFB, OH 45433-5000 Commander: COL David M. Phillips
(513) 257-6593

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	4.671	0.000	4.671
6.5	74.654	8.637	83.291
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**79.325**	**8.637**	**87.962**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	31.699	17.339	49.038
TOTAL FUNDING	**111.024**	**25.976**	**137.000**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	816	0	37	779
CIVILIAN	579	0	78	501
TOTAL	**1,395**	**0**	**115**	**1,280**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	22.012	**REAL PROPERTY**	27.070
ADMIN	129.973	* NEW CAPITAL EQUIPMENT	0.000
OTHER	852.006	**EQUIPMENT**	49.992
TOTAL	**1,003.991**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**400**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

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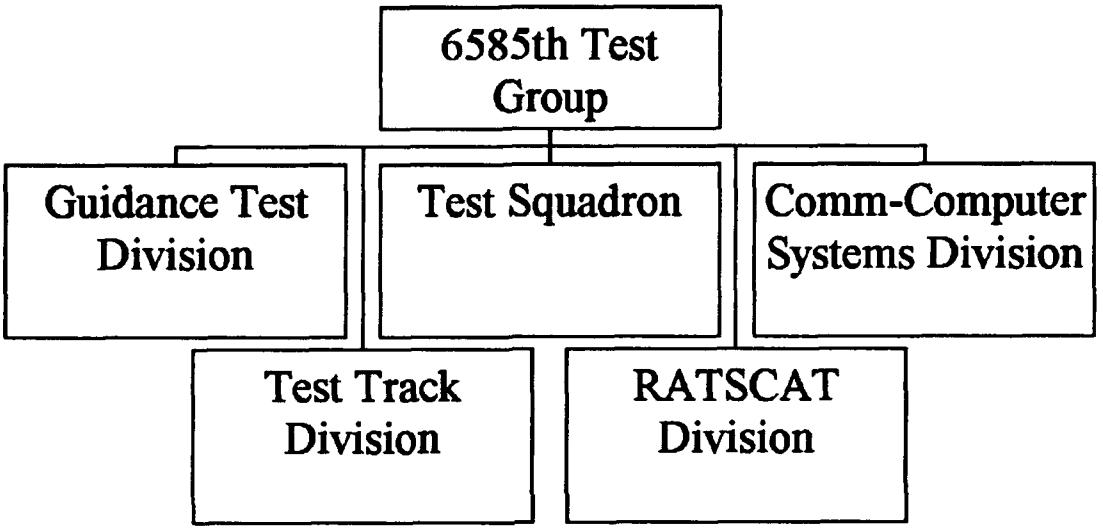
6585th Test Group

Abbreviated Functional Chart - Technical Organizations



6585th Test Group
Holloman AFB, NM 88330-5000
(505) 479-1368

Commander: COL Carl V. Lyday
Tech. Director: Dr. Dave Berrie

MISSION

DoD focal point for flight, laboratory, and sled testing and evaluation of inertial guidance systems. High speed testing for seat ejection, impact guidance systems. Radar cross section and antenna measurement of space vehicles, RVS and aircraft support of in-house and transients.

CURRENT IMPORTANT PROGRAMS

B-1B avionics. Global Positioning System (GPS) test and evaluation. Tactical aircraft navigation. Strategic missile guidance system. TMD. F-111.

EQUIPMENT/FACILITIES

260-inch, 120-inch, and 100-inch precision centrifuges. Precision reference/data collection (electronic and photographic). Environmental chambers (temperature and altitude). Inertial navigation vans. Scientific ADPE. 50,799 ft. dual-rail test track. Five blockhouses. 9,000 ft. rainfield. 2,000 ft. ballistic rainfield. 150 MHz to 95 GHz RCS measurement. Antenna pattern measurement. R&D machine/fabrication shop, model making.

6585th Test Group
Holloman AFB, NM 88330-5000
(505) 479-1368

Commander: COL Carl V. Lyday
Tech. Director: Dr. Dave Berrie

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	0.000	0.000	0.000
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**0.000**	**0.000**	**0.000**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	14.150	11.532	25.682
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**14.150**	**11.532**	**25.682**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	0.000	0.000	0.000
TOTAL FUNDING	**14.150**	**11.532**	**25.682**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		TECHNICAL SUPPORT
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	194	1	93	100
CIVILIAN	295	1	159	135
TOTAL	**489**	**2**	**252**	**235**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	407.068	**REAL PROPERTY**	230.489
ADMIN	39.081	* NEW CAPITAL EQUIPMENT	1.029
OTHER	93.979	**EQUIPMENT**	151.966
TOTAL	**540.128**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**7,052**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

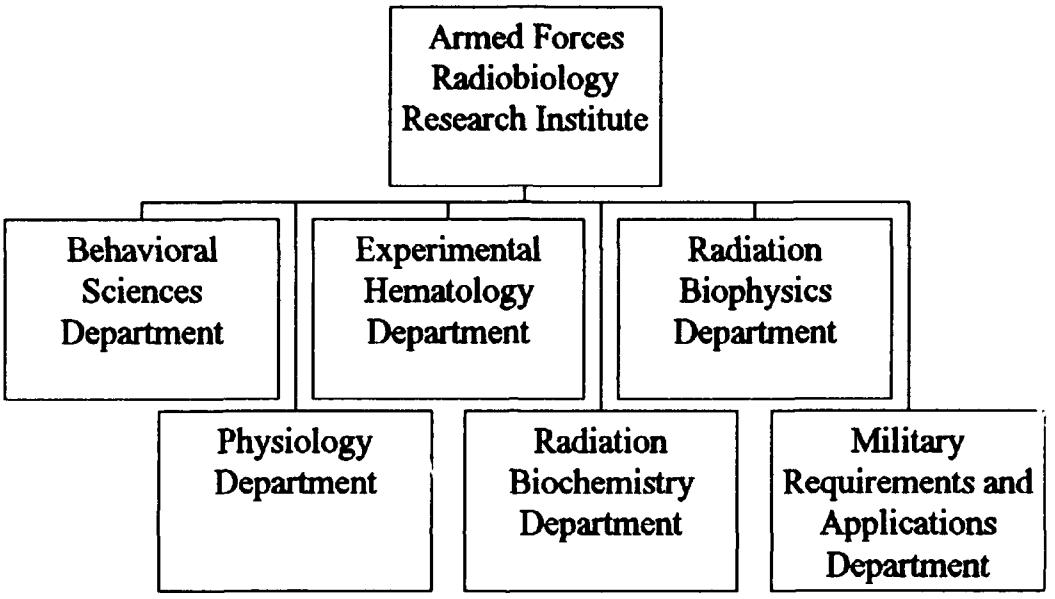
DEFENSE NUCLEAR AGENCY

DEFENSE NUCLEAR AGENCY

The only In-House RDT&E Activity within DNA is the Armed Forces Radiobiology Research Institute (AFRRI).

Armed Forces Radiobiology Research Institute

Abbreviated Functional Chart - Technical Organizations



Armed Forces Radiobiology Research Institute
Bethesda, MD 20889-5603
(301) 295-1210

Director: CAPT Robert L. Bumgarner
Science Dir.: Dr. E. John Ainsworth

MISSION

The mission of Armed Forces Radiobiology Research Institute shall be to conduct research in the field of radiobiology and related matters essential to the operational and medical support of the Department of Defense and military services. The biomedical research program is directed toward acquiring the quantitative and qualitative data necessary for assessing the effects of radiation on man.

CURRENT IMPORTANT PROGRAMS

Optimize combinations of protective agents to promote survival and combat effectiveness in radiation environments. Measure radiation effects on molecules, genes and cells. Determines space radiation effects on cancer induction. Evaluate protective mechanisms to preserve brain function. Evaluate the biological effects of different types of radiation on the battlefield. Model risks of acute and chronic bioeffects following irradiation.

EQUIPMENT/FACILITIES

Functions: operate facilities for conducting radiobiology research and disseminating results. Conduct advanced training: provide analysis consultation on bioeffects of radiation and perform other such research functions as required. Major equipment includes: pulse and steady state nuclear reactor 300,000-Curie Cobalt-60 irradiator, electron linear accelerator, X-ray, theratron exposure capability and electron microscope. Support services include: measurement of radiation fields, provision and care of laboratory animals, equipment design and fabrication assistance, real-time data acquisition system, television and film documentation of experiments, personnel and environmental monitoring, editorial assistance in report preparation, and a large technical library.

Armed Forces Radiobiology Research Institute
Bethesda, MD 20889-5603
(301) 295-1210

Director: CAPT Robert L. Bumgarner
Science Dir.: Dr. E. John Ainsworth

FY 92 FUNDING DATA (MILLIONS $)			
APPROPRIATION	**IN-HOUSE**	**OUT-OF-HOUSE**	**TOTAL**
RDT&E:			
6.1 ILIR	0.000	NA	0.000
6.1 Other	0.000	0.000	0.000
6.2 IED (Navy)	NA	NA	NA
6.2 Other	17.944	0.000	17.944
6.3 A	0.000	0.000	0.000
Subtotal (S&T)	**17.944**	**0.000**	**17.944**
6.3 B	0.000	0.000	0.000
6.4	0.000	0.000	0.000
6.5	0.000	0.000	0.000
6.6/6.7	0.000	0.000	0.000
Non-DOD	0.000	0.000	0.000
TOTAL RDT&E	**17.944**	**0.000**	**17.944**
Procurement	0.000	0.000	0.000
Operations & Maintenance	0.000	0.000	0.000
Other	0.157	0.000	0.157
TOTAL FUNDING	**18.101**	**0.000**	**18.101**

MILITARY CONSTRUCTION (MILLIONS $)	
Military Construction (MILCON)	0.000

PERSONNEL DATA (END OF FISCAL YEAR 1992)				
		SCIENTISTS & ENGINEERS		**TECHNICAL SUPPORT**
TYPE	**END STRENGTH**	**PHD'S**	**OTHER**	**& OTHER PERSONNEL**
MILITARY	77	18	15	44
CIVILIAN	169	38	21	110
TOTAL	**246**	**56**	**36**	**154**

SPACE AND PROPERTY			
SPACE (THOUSANDS OF SQ FT)		**PROPERTY ACQUISITION COST (MILLIONS $)**	
LAB	61.750	**REAL PROPERTY**	0.000
ADMIN	34.257	* NEW CAPITAL EQUIPMENT	0.000
OTHER	23.908	**EQUIPMENT**	14.000
TOTAL	**119.915**	* NEW SCIENTIFIC & ENG. EQUIP.	0.000
ACRES	**10**	* Subset of previous category. See Equip./Facilities Narrative.	

NA = Not Applicable

APPENDIX A
DISESTABLISHMENT, ESTABLISHMENT, OR CHANGES IN ORGANIZATION NAME

APPENDIX A

DISESTABLISHMENT, ESTABLISHMENT, OR CHANGES IN ORGANIZATION NAME BETWEEN FY91 AND FY92

DEPARTMENT OF THE ARMY

On November 5, 1990, President Bush signed Public Law 101-510, Title XXIX (the Defense Base Closure and Realignment Act of 1990), establishing the Defense Base Closure and Realignment Commission (BRAC). The Army included the Army Research Laboratory (ARL) in its BRAC submission to the Office of the Secretary of Defense (OSD). OSD submitted its recommendations, including ARL, to the Commission on April 15, 1991. On July 10, 1991, the President approved and forwarded the Commission's report to Congress. Those recommendations became law on Oct. 2, 1991.

In February 1989 President Bush directed the Secretary of Defense to develop a plan to accomplish full implementation of the recommendations of the Packard Commission and to realize substantial improvements in defense management. Subsequent Defense and Army management reviews were initiated in reaction to that presidential guidance and, as a result, the Vice Chief of Staff and the Under Secretary of the Army chartered a LAB-21 Study to consolidate and streamline the Army's laboratory system.

The LAB-21 Study, conducted during the period November 1989 - February 1990, was led by Mr. Walter Hollis, Deputy Under Secretary of the Army (Operations Research), LTG Ellis D. Parker, Director of the Army Staff, and a General Officer Steering Group. The LAB-21 Study was approved by the Army Materiel Command, the DA Staff, the Secretary of the Army and the Chief of Staff of the Army.

The Military Deputy to the Assistant Secretary of the Army for Research, Development and Acquisition (ASA(RDA)), on December 3, 1991, requested that the Army Materiel Command Submit an Implementation Plan for the BRAC-approved Army Research Laboratory. ARL Implementation Plans were submitted to the ASA(RDA) on December 16, 1991 and subsequently approved on March 13, 1992.

The original concept was to create an centralized (single site) "flagship" research laboratory under the Army Materiel Command. However, economic consequences caused modification to the LAB-21 concept ideal. A second study, the Laboratory Consolidation Study, submitted to the Under Secretary of Defense (Acquisition) on July 12, 1990, provided the Army's planned actions to satisfy Defense Management Review Decision (DMRD) 922 and resource LAB-21 recommendations. Many alternatives were considered, using factors such as long range R&D, multi-disciplinary teaming, consortia opportunities, academic proximity, customer coupling, technology adaptation, local workforce, quality of life, local infrastructure, environmental impact, real estate and costs. These were matrixed with BRAC 91 criteria for military value, return on investment, community and environmental impact, and the ability of both the existing and potential receiving communities' infrastructure to support forces, mission and personnel. The decision, after comprehensive review and analysis, was to create ARL and locate it at two major sites (Adelphi, MD and Aberdeen Proving Ground, MD) plus large scale experiments and outdoor assessment at White Sands Missile Range, NM, and small elements for structures and propulsion collocated at the NASA Langley facility in Hampton, VA and the NASA Lewis Facility in Cleveland, OH, respectively.

A major factor for ARL submission in BRAC 91 was legislative change to BRAC 1 (88) affecting the **Materials Technology Laboratory** (MTL). It was envisioned that both the BRAC 88 relocation and

APPENDIX A

DISESTABLISHMENT, ESTABLISHMENT, OR CHANGES IN ORGANIZATION NAME BETWEEN FY91 AND FY92

closing for MTL would change in accordance with BRAC 91. The BRAC 91 Report directed that MTL go to a different location than directed in BRAC 88. However, omission of specific wording in the report to change the closing schedule from FY95 (BRAC88) to FY97 (BRAC 91) has been interpreted as adhering to the FY95 schedule. In accordance with the direction from the Assistant Secretary of the Army for Installations, Logistics and Environment, the plan and approach has been accelerated. This ARL Implementation Plan documents the FY95 closing of MTL and the associated costs of fast track, accelerated design and construction for relocation of personnel in accordance with that schedule.

In addition, the Under Secretary of the Army ordered that the proposed closure of Harry Diamond Laboratory Research Facility at Woodbridge, VA be accelerated from FY97 to FY94. In compliance with those orders, this Plan accommodates closure of the Woodbridge, VA facility in FY94.

The ARL is to be a world class Army applied research laboratory with strong technology, MANPRINT, survivability and battlefield environment analysis capabilities. These features will provide the Army a strong cadre of in-house scientists, engineers and analysts to provide "smart buyer" services which complement other elements of the Army's acquisition system.

The ARL will have a series of basic core competencies or functions which it will apply across a set of business areas. These functions and business areas have been carefully selected in consonance with the Army Research, Development and Engineering Centers' missions and functions.

The ARL major business areas will be:

- Advanced Computing Software
- Battlefield Environmental Effects
- Electronics & Power Sources
- Human Research & Engineering
- Materials
- Structures
- Sensors, Signatures, Signal & Information Processing
- Vehicle Propulsion
- Survivability/Lethality Analysis
- Weapon Technology

Activities appearing in this appendix in **bold typeface** were reported in the FY91 edition of this report as separate Activities.

The Army Research Laboratory includes the following elements of the former Army Laboratory Command:

Atmospheric Sciences Laboratory
Ballistic Research laboratory
Electronic Technology and Devices Laboratory
Harry Diamond Laboratory
Human Engineering Laboratory

APPENDIX A

DISESTABLISHMENT, ESTABLISHMENT, OR CHANGES IN ORGANIZATION NAME BETWEEN FY91 AND FY92

Materials Technology Laboratory
Vulnerability Assessment Laboratory

In addition to the above laboratories the Army Research Laboratory includes some program elements which had previously belonged to the following:

Army Research Institute
Belvoir R&D Center (remaining elements are reported under this name)
Center for Night Vision & Electro-Optics (see below)
Tank Automotive Command
Aviation Systems Command (remaining elements are reported under Aviation RDEC and Aviation Technical Test Center)
Chemical RD&E Center (remaining elements are reported under this name)
Army Institute for Research in Management Information, Communications and Computer Sciences

Missions, functions and personnel will be consolidated at two major sites: Adelphi, MD and Aberdeen, MD with adjunct locations at White Sands Missile Range, NM; NASA Langley Research Center, Hampton, VA; and NASA Lewis Research Center, Cleveland, OH.

Additional changes in the Army are as follows:

The Communications-Electronics Research, Development and Engineering Center was established in FY92 to consolidate the following::

CECOM Center for Command, Control & Communications Systems
Center for Electronic Warfare/RSTA
Center for Night Vision & Electro-optics
CECOM Center for Signals Warfare

The **Army Institute of Dental Research** was disestablished.

The **Army Avionics Research & Development Activity** was disestablished.

The **Army Biomedical Research & Development Laboratory** was disestablished.

The **Letterman Army Institute of Research** was disestablished.

The **Army Medical Material Development Activity** was disestablished.

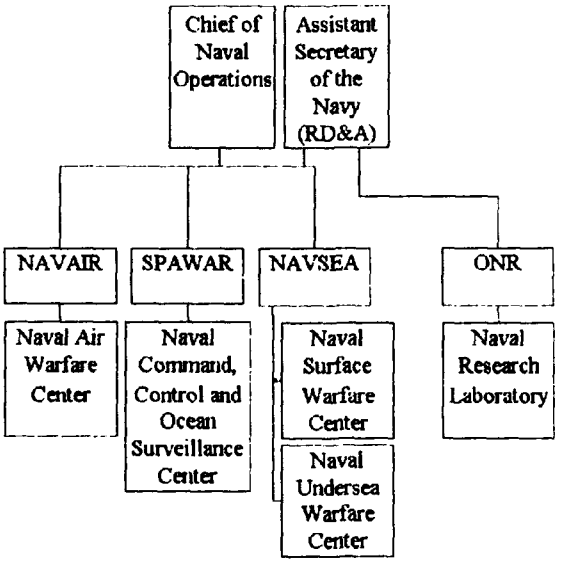
APPENDIX A

DISESTABLISHMENT, ESTABLISHMENT, OR CHANGES IN ORGANIZATION NAME BETWEEN FY91 AND FY92

DEPARTMENT OF THE NAVY

On January 2, 1992, the most significant realignment since 1966 of Navy field activities engaged in research, development and systems acquisition became effective. In 1989 guidance to Secretary of Defense Cheney, the President asked that a plan be developed to accomplish full implementation of the Packard Commission Report and the Goldwater-Nichols DoD Reorganization Act of 1986. The result was the Defense Management Report (DMR), which was implemented in part by Defense Management Report Decisions (DMRDs) issued by the DoD Comptroller. DMRD 922 proposed savings in the FY91-FY95 budgets by consolidating R&D and T&E activities to reduce overhead, streamline operations, and centralize professional staff associated with specific warfare areas.

Under the guidance of the Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN(RD&A)), a concept was developed which would organizationally combine 36 Navy field activities, including laboratories, R&D centers, T&E activities, and in-service engineering centers to form four Warfare Centers and a strengthened corporate laboratory. The missions of the Centers address air, sea and undersea warfare, while the fourth is focused on command, control and ocean surveillance. The Centers are aligned by mission under the Systems Commands. The Naval Air Warfare Center (NAWC) reports to the Naval Air Systems Command (NAVAIR), the Naval Command, Control and Ocean Surveillance Center (NCCOSC) reports to the Space and Naval Warfare Systems Command (SPAWAR), and the Surface Warfare Center (NSWC) and Naval Undersea Warfare Center (NUWC) report to the Naval Sea Systems Command (NAVSEA). Department of the Navy's corporate laboratory, the Naval Research Laboratory (NRL), has been realigned and continues to report to the Office of Naval Research (ONR). The position of Director of Navy Laboratories, which formerly provided oversight to R&D centers and Navy-funded university laboratories was disestablished.



APPENDIX A

DISESTABLISHMENT, ESTABLISHMENT, OR CHANGES IN ORGANIZATION NAME BETWEEN FY91 AND FY92

Initial establishment of the Warfare Centers and implementation of the realignments associated with the Naval Research Laboratory were effective on January 2, 1992. Final implementation of the Warfare Center realignment plan is scheduled to be completed by the close of FY97. A central objective of this reorganization is to realign workload consistent with the missions and leadership areas of the new Warfare Centers. Realization of this objective requires a redistribution of some work assignments and supporting resources among the Centers and the closure of some activities and downsizing of others. This effort is ongoing on a high priority basis. When these major alterations to the Navy's RDT&E and engineering field infrastructure are finally in place, the objectives of the DMR in this area will have been achieved. The Navy will have a more sharply focused research, development and acquisition support in-house capability, one that will be structured to accommodate fluctuations in the Navy's budget in a more efficient and graceful manner.

The Activities which were consolidated into the Warfare Centers and into the realigned Naval Research Laboratory in January, 1992, are identified below by the names in effect before the consolidation. All Activities in **bold typeface** were reported in the FY91 edition of this report as separate Activities.

Naval Air Warfare Center:

Naval Air Test Center, Patuxent River, MD
Naval Air Development Center, Warminster, PA
Naval Ordnance Missile Test Station, White Sands, NM
Pacific Missile Test Center, Point Mugu, CA
Naval Weapons Center, China Lake, CA
Naval Weapons Evaluation Facility, Albuquerque, NM
Naval Air Engineering Center, Lakehurst, NJ
Naval Avionics Center, Indianapolis, IN
Naval Air Propulsion Center, Trenton, NJ

Naval Command, Control and Ocean Surveillance Center:

Naval Ocean Systems Center, San Diego, CA
Naval Electronic Systems Engineering Center, Charleston, SC
Naval Electronic Systems Engineering Center, Vallejo, CA
Naval Electronic Systems Engineering Center, San Diego, CA
Naval Electronic Systems Engineering Center, Portsmouth, VA
Naval Electronic Systems Engineering Activity, St. Inigoes, MD
Naval Electronic Systems Security Engineering Center, Washington, DC
Naval Electronics Engineering Activity, Pacific, Pearl Harbor, HI
Fleet Combat Direction Software Support Activity, San Diego, CA
Naval Space Systems Activity, Los Angeles, CA

Naval Surface Warfare Center:

Naval Surface Warfare Center, Dahlgren, VA
Naval Coastal Systems Center, Panama City, FL

APPENDIX A

DISESTABLISHMENT, ESTABLISHMENT, OR CHANGES IN ORGANIZATION NAME BETWEEN FY91 AND FY92

David Taylor Research Center, Carderock, MD
Fleet Combat Direction Systems Support Activity, Dam Neck, VA
Naval Ship Weapons Systems Engineering Station, Pt. Hueneme, CA
Naval Ship Systems Engineering Station, Philadelphia, PA
Naval Weapons Support Center, Crane, IN
Naval Ordnance Station, Indian Head, MD
Integrated Combat Systems Test Facility, San Diego, CA
Naval Mine Warfare Engineering Activity, Yorktown, VA
Naval Ordnance Station, Louisville, KY

Naval Undersea Warfare Center:

Naval Underwater Systems Center, Newport, RI
Naval Undersea Warfare Engineering Station, Keyport, WA
Naval Sea Combat Systems Engineering Station, Norfolk, VA
Trident Command & Control Systems Maintenance Activity, Newport, RI

Naval Research Laboratory:

Naval Research Laboratory, Washington, DC
Naval Oceanographic & Atmospheric Research Lab, Bay St. Louis, MS

DEPARTMENT OF THE AIR FORCE

The Activities appearing below in **bold typeface** were reported as separate Activities in the FY91 edition of this report.

The **Civil Engineering Laboratory** was disestablished and its work divided between **Armstrong and Wright Laboratories.**

The **Frank J. Seiler Laboratory** now falls under the Air Force Office of Scientific Research (AFOSR). AFOSR's in-house programs are reported under the four "super" labs (i.e., **Armstrong, Phillips, Rome and Wright Laboratories**).

Note: The major Air Force BRAC/DMRD 922 consolidations took place during FY91, and were reported in that edition of this report.

DEPARTMENT OF DEFENSE AGENCIES

No changes

APPENDIX B
DEFINITIONS OF REPORT ELEMENTS

APPENDIX B
DEFINITIONS OF REPORT ELEMENTS

6.1 ILIR - This is the total obligational authority for research 6.1 (Navy PE=0601152N) In-Laboratory (In-House) Independent Research program elements.

6.1 Other In-House/Out-of-House - This is the total obligational authority for research 6.1 program elements conducted In-House (excluding ILIR) or Out-of-House

6.2 IED In-House/Out-of-House (for Navy only) - This is the total obligational authority for Innovative Exploratory Development 6.2 (Navy PE=0602936N) program elements conducted In-House/Out-of-House.

6.2 Other In-House/Out-of-House - This is the total obligational authority for exploratory development 6.2 program elements conducted In-House (excluding IED)/Out-of-House (excluding IED).

6.3A In-House/Out-of-House - This is the total obligational authority for advanced development 6.3A program elements conducted In-House/Out-of-House.

6.3B In-House/Out-of-House - This is the total obligational authority for advanced development 6.3B program elements conducted In-House/Out-of-House.

6.4 In-House/Out-of-House - This is the total obligational authority for engineering development 6.4 program elements conducted In-House/Out-of-House.

6.5 In-House/Out-of-House -This is the total obligational authority for management support 6.5 program elements conducted In-House/Out-of-House.

6.6/6.7 In-House/Out-of-House - This is the total obligational authority for all operational systems support 6.6/6.7 with RDT&E funds conducted In-House/Out-of-House. This item is interpreted in its broadest sense to include operational developments outside the systems areas, and not included in any of the above categories.

Acres - This is the total number of acres fee-owned and/or acres leased from other than DoD activities. Included is land which is public domain. In cases involving tenants who are also R&D Activities, the tenants will have indicated only the acreage occupied solely by them. The owning Activity will account for the remainder including any acreage occupied by non-R&D tenants. This amount excludes all easements and permits, and is rounded to the nearest acre.

End Strength, Military/Civilian - This is the total year end strength, for both officer and enlisted military personnel and civilians (including foreign nationals). Summer hires, co-ops, students, and patients are excluded.

Equipment - Property Acquisition Cost - This is the total acquisition cost of all "personal property" equipment, which includes the cost of installed equipment directly related to mission execution, such as lab test equipment. This total includes the acquisition cost of new scientific and engineering equ[illegible]nt. Each reporting Activity is responsible for reporting this information for those facilities assigned t[illegible]cupied and utilized by it. An R&D owner does not report this information for the facilities assigned [illegible] occupied

APPENDIX B
DEFINITIONS OF REPORT ELEMENTS

by its R&D tenants, as tenants report this information separately. Installed equipment reported under **Real Property - Property Acquisition Cost** is not included here.

In-House Obligations - Obligations reported under this category are for activities performed, or to be performed, by the organizational entity. The work is carried on directly by their own personnel. In addition to personnel costs, also included under In-House are the costs of supplies and equipment essentially of an off-the-shelf nature that are procured for use in In-House research and development, plus such things as travel, publications, and other types of services in support of In-House functions. (Excluded from the In-House entity total are personnel expenses for planning and administering contracts and grants for Out-of-House work.)

In-House RDT&E Activities - These Activities are organizational entities which perform at least 25% of their work in any or all of the categories of research, development, test and evaluation (RDT&E). In addition, at least 25% of an Activity's In-House manpower and/or 25% of the obligational authority used In-House is devoted to one or more of the categories of RDT&E.

MILCON - This is the total obligational authority for Military Construction appropriations.

New Capital Equipment - Property Acquisition Cost - This is the total acquisition cost for new capital equipment (i.e., installed physical plant equipment such as HVAC) acquired in FY92. This amount is also included in the total entry for **Equipment - Property Acquisition Cost**.

New Scientific & Engineering Equipment - Property Acquisition Cost - This is the total acquisition cost for new scientific and engineering equipment acquired in FY92, including the cost of newly installed equipment directly related to mission execution, such as lab test equipment. This amount is also included in the total entry for **Real Property - Property Acquisition Cost**.

Non-DoD In-House/Out-of-House - This is total oblig. authority for all RDTE In-House/Out-of-House not reported under 6.1-6.7, as defined above, including non-Defense funds for work which is conducted In-house/Out-of-House.

Obligational Authority - Authority for the financial resources available for obligation in the specific year being reported. This includes unobligated authority carried forward from the prior year and all obligational authority received or made available for obligation in the year being reported, including the unobligated authority which will be carried forward into the following year.

O&M/Operations & Maintenance In-House/Out-of-House - This is the total obligational authority for Operations and Maintenance appropriations In-House/Out-of-House, regardless of source.

Other In-House/Out-of-House - This is the total obligational authority for all "other" (i.e., not reported elsewhere) appropriations In-House/Out-of-House, regardless of source.

Out-Of-House Obligations - Obligations reported under this category are for activities performed, or to be performed, by other than the organizational entity. Out-of-House performers may include other

APPENDIX B
DEFINITIONS OF REPORT ELEMENTS

departmental or DoD organizational entities, industrial firms, educational institutions, not-for-profit institutions, and private individuals. Included as Out-of-House work are all expenses paid the Out-of-House performers, as well as the expenses incurred in planning and administering these programs by personnel of the organizational entity. This would also include travel and other supporting services.

Procurement In-House/Out-of-House - This is the total obligational authority for procurement appropriations In-House/Out-of-House regardless of source.

RDT&E - The sum of the total obligational authority, regardless of source, for both In-House and Out-of-House funding for the following categories:

Research 6.1
Exploratory Development 6.2
Advanced Development 6.3A
Advanced Development 6.3B
Engineering Development 6.4
Management Support 6.5
Operational Systems Support 6.6/6.7
Non-DoD

Real Property - Property Acquisition Cost - This is the total acquisition cost of all land, buildings and capital equipment, including the cost of installed physical plant equipment such as HVAC (in excess of $200) and improvements. This total includes the acquisition cost of new capital equipment. Each reporting Activity is responsible for reporting this information for those facilities assigned to, or leased or occupied by it. An R&D owner will not report this information for the facilities assigned to or occupied by its R&D tenants, as they must report this information separately. This total does not include acreage or real property in buildings rented from private owners.

Scientists and Engineers - This generally includes full-time professional government scientific and engineering civilian personnel actively engaged in RDT&E activities. It also includes military professionals, both officer and enlisted, actively engaged in RDT&E activities. Lawyers, accountants, chaplains, social workers, and educators should be excluded.

PhD's, Military/Civilian - This is the total number of military (officer and enlisted) and civilian **scientists and engineers** whose most advanced degree is a doctorate. Degrees must be earned from an accredited college or university. Honorary degrees are excluded.

Other, Military/Civilian - This is the total number of military (officer and enlisted) and civilian **scientists and engineers** who do not hold a doctorate degree, but who are considered professionals. Professionals include full-time Government scientific and engineering personnel actively engaged in RDTE activities. Lawyers, accountants, chaplains, social workers and educators are excluded.

Space, Admin - This is the total number of square feet of building space determined to be administrative space (usually that portion occupied by the headquarters staff and excludes scientists', or engineer's offices

APPENDIX B
DEFINITIONS OF REPORT ELEMENTS

in a laboratory). Each reporting Activity is responsible for reporting this information for those facilities assigned to, or leased, or occupied by it.

Space, Lab - This is the total number of square feet of building space determined to be laboratory space. Each reporting Activity is responsible for reporting this information for those facilities assigned to, or leased, or occupied by it.

Space, Other - This is the total number of square feet of all remaining building space. Each reporting Activity is responsible for reporting this information for those facilities assigned to, or leased, or occupied by it.

Technical Support and Other Personnel - This generally includes non-professionals working on an RDT&E project or program in support of a professional. In the case of civilians, it includes, but is not limited to, those holding positions that fall into the Civil Service Occupational Groups and Series of Classes, General Schedule. This grouping also includes professional, administrative and clerical personnel in General Schedule and Federal Wage System positions who provide support services in such areas as computers, personnel, technical library, logistics, and facilities.

Total Funding - The sum of Total RDT&E, Procurement, Operations & Maintenance and Other.

APPENDIX C
SELECTED STANDARD ABBREVIATIONS AND ACRONYMS

APPENDIX C
SELECTED STANDARD ABBREVIATIONS AND ACRONYMS

AAM - Air-to-Air Missile
AAW - Antiair Warfare
ADKEM - Advanced Kinetic Energy Missile
ADPE - Automatic Data-Processing Equipment
AFDTC - Air Force Development Test Center
AGS - Armored Gun Systems
AI - Artificial Intelligence
AMC - US Army Materiel Command
APG - Aberdeen Proving Ground
ARDEC - Armament Research, Development and Engineering Center
ARIA - Advanced Range Instrumentation Aircraft
ASAS - All Source Analysis System
ASW - Antisubmarine Warfare
ATCCS - Army Tactical Command and Control System
ATRJ - Advanced Technology Radar Jammer
BFVS - Bradley Fighting Vehicle Systems
BW - Biological Warfare
C3 - Command, Control and Communications
C3I - Command, Control, Communications and Intelligence
CAD - Computer Aided Design
CAE - Computer Aided Engineering
CAM - Computer Aided Manufacturing
CB - Chemical Biological
CBR - Chemical, Biological Radiological
CE - Chief of Engineers Army
CECOM - Communications and Electronics Command
CG - Commanding General
CIGTF - Central Inertial Guidance Test Facility
CM - Countermeasures
CMMCA - Cruise Missile Mission Control Aircraft
CNO - Chief of Naval Operations
CRREL - Cold Regions Research and Engineering Laboratory
CW - Chemical Warfare
CWA - Chemical Warfare Agents
DA - Department of the Army
DARPA - Defense Advance Research Projects Agency
DART - Demonstration of Advanced Radar Technology
DDN - Defense Data Network
DIRCM - Directional Infrared Countermeasures
DoD - Department of Defense
DPG - Dugway Proving Ground
DZ - Drop Zone
ECCM - Electronic Counter-Countermeasures
ECCM/ARTB - Electronic Counter-Countermeasures Advanced Radar Test Bed

APPENDIX C
SELECTED STANDARD ABBREVIATIONS AND ACRONYMS

ECM - Electronic Countermeasures
ECWCS - Extended Cold Weather Clothing System
EDDIC - Experimental Design, Demonstration and Integration Center
ELINT - Electronic Intelligence
EMI - Electromagnetic Interference
EMP - Electromagnetic Propagation
EMW - Electromagnetic Warfare
EO - Electro-Optical
EO-IR - Electro-Optics/Infrared
EOD - Explosive Ordnance Disposal
EPLRS - Enhanced Position Location Reporting System
ET - Engineering Artillery
ETDL - Electronics Technology and Devices Laboratory
EW - Electronic Warfare
EWTES - Electronic Warfare Threat Environment Simulation
EWVA - Electronic Warfare Vulnerability Assessments
FA - Field Artillery
FAADS - Forward Area Air Defense Systems
GCA - Ground-Controlled Approach
GPS - Global Positioning System
HF - High-Frequency
HFE - Human Factors Engineering
HIFX - High Intensity Flash X-ray
HPM - High Powered Microwaves
IDF - Integrated Data Facility
IED - Innovative Exploratory Development
IEW - Intelligence Electronic Warfare
IFAST - Integration Facility for Avionics System Test
IFF - Identification, Friend or Foe
IIPF - Intelligence Information Processing Facility
ILIR - In-Lab Innovative Research
IM - Insensitive Munitions
IR - Infrared
IRCM - Infrared Countermeasures
JDAM - Joint Direct Attack Munitions
JSOW - Joint Standoff Weapon
JTIDS - Joint Tactical Information Distribution System
LEAP - Lightweight Exo-Atmospheric Projectile
LMCA - Logistics Material Control Activity
MIRCL - Mid-Infrared Chemical Laser
MPT - Military Potential Test
MRSR - Multi-Role Survivable Radar
MSMS - Molten Salt Melt Structure
NASC - Naval Air Systems Command

APPENDIX C
SELECTED STANDARD ABBREVIATIONS AND ACRONYMS

NASP - National Aerospace Plane
NAVAIR - Naval Air Systems Command
NAVSEA - Naval Sea Systems Command
NBC - Nuclear, Biological and Chemical
NCAC - National Center for Advanced Computing
NDT - Non-Destructive Testing
NEMP - Nuclear Electromagnetic Propagation
NTC - National Training Center
NVD - Night Vision Devices
OPTEC - Operational, Test and Evaluation Command
PEO - Program Executive Officer
PI - Product Improvement
PLS - Palletized Load System
PM - Program Manager
PMEL - Precision Measurement Equipment Laboratory
POL - Petroleum, Oil, Lubricants
QA - Quality Assurance
QMDO - Qualitative Material Development
R&D - Research and Development
RDT&E - Research, Development, Test and Evaluation
RESA - Research Evaluation and Systems Analysis
RF - Radio Frequency
RFPI - Rapid Force Projection Initiative
SADARM - Search and Destroy Armor
SDI - Strategic Defense Initiative
SLED - Standard Linear Energy Doubler
STAR - Systems Test bed for Avionics Research
T&E - Test and Evaluation
TACOM - Tank Automotive Command
TAOS - Technology for Autonomous Operational Survivability
TASS - Tactical Avionics Simulator
TECOM - Test and Evaluation Command
TMAS - Tank Main Armament System
TRADOC - Training and Indoctrination Command
UDT - Underwater Demolition Team
USW - Undersea Warfare
UV - Ultraviolet
V/STOL - Vertical/Short Takeoff and Landing
VHF - Very High Frequency

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