

*National Aeronautics
and Space Administration*



BUDGET ESTIMATES

FISCAL YEAR 1966
Volume IV

ADMINISTRATIVE OPERATIONS

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1966 ESTIMATES

ADMINISTRATIVE OPERATIONS

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ADMINISTRATIVE OPERATIONS

GENERAL STATEMENT

The Administrative Operations appropriation provides for personnel, travel, and other supporting expenses of NASA installations including Headquarters engaged in the conduct of Research and Development programs. These installations are institutionally administered by the Associate Administrator who has prime responsibility for the R&D programs conducted at each installation. The Associate Administrator for Manned Space Flight is responsible for the Kennedy Space Center, Manned Spacecraft Center, and the Marshall Space Flight Center. Goddard Space Flight Center, the Pacific Launch Operations Office, and Wallops Station are under the institutional cognizance of the Associate Administrator for Space Science and Applications. The Associate Administrator for Advanced Research and Technology is institutionally responsible for the Ames Research Center, the Electronics Research Center, the Flight Research Center, Langley Research Center, the Lewis Research Center, and the Space Nuclear Propulsion Office. Headquarters reports directly to the Associate Administrator, and the Western Operations Office reports to the Deputy Associate Administrator for Industry Affairs. Installation descriptions and funding requirements are grouped in this volume in accordance with the prime missions of the installations.

Manpower

With the exception of an increase of 300 positions for the Electronics Research Center, there is no planned increase in manpower at other NASA installations during FY 1966. The following tabulations indicate the distribution of NASA personnel by program and the numbers of personnel by center:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Gemini.....	1,141	1,402	1,385
Apollo.....	8,266	8,835	8,857
Advanced missions.....	343	343	343
	<u>9,750</u>	<u>10,580</u>	<u>10,585</u>
<u>Space Science and Applications</u>			
Physics and astronomy.....	1,234	1,292	1,297
Lunar and planetary exploration.	296	388	382
Sustaining university program..	68	73	73

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Space Science and Applications (cont'd)</u>			
Launch vehicle development.....	340	317	314
Launch vehicle procurement.....	324	346	334
Bioscience.....	240	236	239
Meteorological satellites.....	297	312	306
Communication satellites.....	127	76	65
Applications technology satellites...	56	103	113
	<u>2,982</u>	<u>3,143</u>	<u>3,123</u>
<u>Advanced Research and Technology</u>			
Basic research.....	1,268	1,259	1,266
Space vehicle systems	1,389	1,366	1,324
Electronics systems.....	906	1,040	1,325
Human factor systems.....	214	211	219
Nuclear-electric systems.....	529	490	489
Nuclear rockets.....	530	524	524
Chemical propulsion.....	425	409	309
Solar and chemical power.....	275	318	319
Aeronautics.....	1,394	1,467	1,600
	<u>6,930</u>	<u>7,084</u>	<u>7,375</u>
<u>Tracking and Data Acquisition</u>	<u>851</u>	<u>802</u>	<u>800</u>
<u>Technology Utilization</u>	<u>50</u>	<u>50</u>	<u>50</u>
Sub-total, direct positions.....	<u>20,563</u>	<u>21,659</u>	<u>21,933</u>
<u>Support Personnel</u>			
Director and staff.....	472	537	540
Administration.....	4,411	4,432	4,439
Research and development support.....	5,499	5,521	5,533
NASA-wide support.....	1,039	1,051	1,055
Sub-total, support positions.....	<u>11,421</u>	<u>11,541</u>	<u>11,567</u>
Total, permanent positions.....	31,984	33,200	33,500
Sub-total, other positions.....	<u>515</u>	<u>600</u>	<u>600</u>
Total, all positions.....	<u>32,499</u>	<u>33,800</u>	<u>34,100</u>

Personnel Requirements

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Manned Space Flight</u>			
Kennedy Space Center.....	1,592	2,045	2,045
Manned Spacecraft Center.....	4,171	4,686	4,686
Marshall Space Flight Center....	<u>7,502</u>	<u>7,489</u>	<u>7,489</u>
	<u>13,265</u>	<u>14,220</u>	<u>14,220</u>
<u>Space Science and Applications</u>			
Goddard Space Flight Center.....	3,610	3,677	3,677
Pacific Launch Operations Office	22	19	19
Wallops Station.....	<u>516</u>	<u>518</u>	<u>518</u>
	<u>4,148</u>	<u>4,214</u>	<u>4,214</u>
<u>Advanced Research and Technology</u>			
Ames Research Center.....	2,201	2,185	2,185
Electronics Research Center.....	25	250	550
Flight Research Center.....	605	605	605
Langley Research Center.....	4,279	4,238	4,238
Lewis Research Center.....	4,851	4,815	4,815
Space Nuclear Propulsion Office.	<u>112</u>	<u>116</u>	<u>116</u>
	<u>12,073</u>	<u>12,209</u>	<u>12,509</u>
<u>Supporting Activities</u>			
Headquarters, NASA.....	2,091	2,156	2,156
North Eastern Operations Office.	32	- 0 -	- 0 -
Western Operations Office.....	<u>375</u>	<u>401</u>	<u>401</u>
	<u>2,498</u>	<u>2,557</u>	<u>2,557</u>
Permanent positions.....	31,984	33,200	33,500
Positions, other than permanent.....	<u>515</u>	<u>600</u>	<u>600</u>
TOTAL.....	<u>32,499</u>	<u>33,800</u>	<u>34,100</u>

Funding

The FY 1966 funding request for Administrative Operations is \$36.3 million less than the FY 1965 estimate. This decrease is primarily due to the initial procurement of major automatic data processing equipment in FY 1965, where the procurement of such equipment was more economical than continued rental. The estimate in FY 1966 for the procurement of additional equipment is sharply reduced from FY 1965. The object classification description of resources requested is tabulated below:

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION

	(Thousands of Dollars)		
	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel compensation.....	288,081	336,696	345,207
12. Personnel benefits.....	20,241	23,490	24,193
21. Travel and transportation of persons	18,536	21,000	21,000
22. Transportation of things.....	5,400	5,675	5,049
23. Rents, communications and utilities.	47,230	53,191	49,556
24. Printing and reproduction.....	4,387	4,683	4,869
25. Other services.....	70,952	93,037	108,023
26. Supplies and materials.....	24,203	22,968	23,140
31. Equipment.....	22,236	79,152	23,109
32. Lands and structures.....	10,339	5,811	5,235
40. Insurance claims and indemnities...	5	18	19
	<u>511,610</u>	<u>645,721</u>	<u>609,400</u>
Total.....	<u>511,610</u>	<u>645,721</u>	<u>609,400</u>

Of the \$645.7 million shown for FY 1965, \$22.5 million is included as the comparative cost of items formerly provided from the Research and Development appropriation and which are being budgeted as part of the Administrative Operations request for the first time in FY 1966. In FY 1966, \$24.8 million is requested for these items which are: housekeeping support of the Merritt Island Launch Area at the Kennedy Space Center, NASA, and at the White Sands Missile Range; the cost at the Jet Propulsion Laboratory of the lease of administrative aircraft and certain contract administration costs.

Personnel Compensation and Benefits

The cost of providing for personnel compensation and benefits is estimated to be \$9.2 million more in FY 1966 than in FY 1965. This increased cost is directly related to the increase of 704 manyears of employment, in FY 1966 over FY 1965. Of this increase, 544 manyears are due to the cost of the full year for the 1,300 increase in NASA's strength in FY 1965. The

balance, or 160 manyears, is the manyears derived from the 300 additional positions planned for the Electronics Research Center in FY 1966.

Other Costs

The FY 1966 request for travel and other supporting expenses shows a net reduction of \$45.5 million from the FY 1965 estimate. This net reduction includes a decrease of approximately \$56 million in the procurement of ADP equipment, which is only partially offset by increases in utilities, other services, and supplies and materials. In general, these increases are the result of additional facilities being completed and becoming operational, a higher level of average employment, and the partial restoration in FY 1966 of items which were deferred in FY 1965 when NASA absorbed the cost of the "Government Employees Salary Reform Act of 1964", approved in August 1964 (PL 88-426). The specific increases as they relate to each installation are explained in the installation presentations contained in this volume.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1966 ESTIMATES

ADMINISTRATIVE OPERATIONS

SUMMARY OF OBLIGATIONS BY INSTALLATION

	<u>Fiscal Year 1964</u>	<u>Fiscal Year 1965</u>	<u>Fiscal Year 1966</u>
<u>MANNED SPACE FLIGHT</u>			
John F. Kennedy Space Center, NASA.....	\$34,959,000	\$61,616,000	\$62,697,000
Manned Spacecraft Center.....	68,634,000	91,201,000	89,658,000
Marshall Space Flight Center..	124,443,000	140,458,000	137,387,000
<u>SPACE SCIENCE AND APPLICATIONS</u>			
Goddard Space Flight Center...	62,466,000	85,923,000	69,591,000
Pacific Launch Operations Office.....	1,037,000	835,000	804,000
Wallops Station.....	9,715,000	11,442,000	9,800,000
<u>ADVANCED RESEARCH AND TECHNOLOGY</u>			
Ames Research Center.....	29,886,000	31,698,000	32,300,000
Electronics Research Center...	730,000	3,600,000	7,622,000
Flight Research Center.....	9,514,000	9,750,000	9,600,000
Langley Research Center.....	52,642,000	57,258,000	61,783,000
Lewis Research Center.....	61,694,000	70,971,000	63,880,000
Space Nuclear Propulsion Office.....	1,472,000	1,725,000	1,838,000
<u>SUPPORTING ACTIVITIES</u>			
Northeastern Office.....	379,000	---	---
Western Operations Office.....	4,924,000	5,989,000	6,337,000
NASA Headquarters.....	49,115,000	73,255,000	56,103,000
TOTAL.....	<u>\$511,610,000</u>	<u>\$645,721,000</u>	<u>\$609,400,000</u>

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ADMINISTRATIVE OPERATIONS

NUMBER OF POSITIONS BY LOCATION

	<u>Fiscal Year</u> 1964	<u>Fiscal Year</u> 1965	<u>Fiscal Year</u> 1966
<u>MANNED SPACE FLIGHT</u>			
John F. Kennedy Space Center, NASA.....	1,625	2,082	2,082
Manned Spacecraft Center.....	4,277	4,811	4,811
Marshall Space Flight Center....	7,679	7,658	7,658
<u>SPACE SCIENCE AND APPLICATIONS</u>			
Goddard Space Flight Center.....	3,675	3,725	3,725
Pacific Launch Operations Office	22	22	22
Wallops Station.....	530	530	530
<u>ADVANCED RESEARCH AND TECHNOLOGY</u>			
Ames Research Center.....	2,204	2,205	2,205
Electronics Research Center.....	25	250	550
Flight Research Center.....	619	619	619
Langley Research Center.....	4,330	4,308	4,308
Lewis Research Center.....	4,859	4,847	4,847
Space Nuclear Propulsion Office.	112	116	116
<u>SUPPORTING OPERATIONS</u>			
North Eastern Office.....	33	---	---
Western Operations Office.....	376	406	406
NASA Headquarters.....	<u>2,133</u>	<u>2,221</u>	<u>2,221</u>
TOTAL.....	<u>32,499</u>	<u>33,800</u>	<u>34,100</u>

SUM 2

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1966 ESTIMATES

ADMINISTRATIVE OPERATIONS

DISTRIBUTION OF BUDGET PLAN BY OBJECT CLASSIFICATION BY INSTALLATION

(In dollars)

Object Classification	Total	J.F. Kennedy Space Center, NASA	Hammond Spaceport Center	Marshall Space Flight Center	Goddard Space Flight Center	Pacific Launch Operations Office	Wallops Station	Ames Research Center	Electronics Research Center	Flight Research Center	Langley Research Center	Lewis Research Center	Space Nuclear Propulsion Office	North-eastern Office	Western Operations Office	Headquarters
FISCAL YEAR 1964																
Personnel compensation	288,081,000	13,365,000	34,497,000	72,921,000	32,481,000	193,000	3,806,000	19,042,000	137,000	5,659,000	35,926,000	42,969,000	1,125,000	280,000	3,378,000	22,302,000
Personnel benefits	20,241,000	868,000	2,294,000	4,926,000	2,287,000	12,000	268,000	1,389,000	10,000	410,000	2,654,000	3,112,000	32,000	20,000	231,000	1,678,000
Travel & transp of pers	18,536,000	2,181,000	2,876,000	3,337,000	3,700,000	29,000	100,000	508,000	15,000	221,000	1,200,000	1,401,000	171,000	27,000	243,000	2,807,000
Transportation of things	5,400,000	350,000	1,289,000	583,000	1,458,000	7,000	65,000	50,000	---	31,000	450,000	527,000	11,000	1,000	13,000	426,000
Rents, communications, and utilities	47,230,000	2,575,000	5,114,000	11,780,000	10,790,000	111,000	485,000	4,605,000	---	362,000	4,718,000	4,378,000	---	28,000	315,000	1,969,000
Printing and reproduction	4,387,000	818,000	366,000	1,033,000	622,000	6,000	---	37,000	---	6,000	191,000	58,000	---	4,000	13,000	1,233,000
Other services	54,343,000	4,672,000	9,523,000	13,999,000	5,802,000	70,000	915,000	1,644,000	486,000	1,029,000	2,540,000	2,300,000	---	3,000	456,000	10,906,000
Services of other agencies	16,607,000	4,303,000	1,080,000	2,808,000	438,000	94,000	17,000	112,000	37,000	74,000	533,000	7,000	83,000	3,000	171,000	6,841,000
Supplies and materials	24,204,000	3,286,000	3,427,000	3,911,000	2,228,000	14,000	1,344,000	1,055,000	13,000	600,000	2,718,000	2,063,000	---	10,000	31,000	366,000
Equipment	22,736,000	1,753,000	6,442,000	3,814,000	3,356,000	55,000	1,017,000	414,000	29,000	1,007,000	998,000	2,542,000	---	3,000	31,000	555,000
Lands and structures	10,339,000	790,000	727,000	3,330,000	595,000	310,000	1,658,000	831,000	---	98,000	626,000	1,373,000	---	---	---	1,000
Insurance claims and indemnities	5,000	---	1,000	1,000	---	---	---	---	---	---	---	2,000	---	---	---	1,000
Totals	511,610,000	36,959,000	68,636,000	124,443,000	62,466,000	1,037,000	9,713,000	29,886,000	230,000	9,514,000	52,642,000	61,694,000	1,472,000	374,000	4,924,000	46,115,000
FISCAL YEAR 1965																
Personnel compensation	336,696,000	20,417,000	47,685,000	81,344,000	38,391,000	231,000	4,361,000	20,700,000	1,470,000	6,218,000	38,826,000	45,610,000	1,391,000	---	4,155,000	25,897,000
Personnel benefits	23,490,000	1,364,000	3,164,000	5,475,000	2,707,000	16,000	313,000	1,500,000	110,000	432,000	2,861,000	3,314,000	109,000	---	291,000	1,834,000
Travel & transp of pers	21,000,000	2,113,000	4,908,000	3,759,000	2,730,000	50,000	160,000	610,000	240,000	260,000	1,380,000	1,660,000	200,000	---	296,000	2,634,000
Transportation of things	5,675,000	872,000	1,160,000	550,000	1,195,000	12,000	83,000	58,000	121,000	40,000	440,000	650,000	10,000	---	24,000	460,000
Rents, communications, and utilities	53,191,000	3,973,000	7,967,000	13,231,000	9,936,000	90,000	626,000	4,725,000	389,000	337,000	5,424,000	3,987,000	---	---	448,000	2,058,000
Printing and reproduction	4,683,000	851,000	390,000	1,100,000	317,000	8,000	15,000	35,000	35,000	10,000	200,000	65,000	---	---	17,000	1,640,000
Other Services	80,807,000	19,912,000	12,072,000	20,052,000	4,850,000	166,000	1,233,000	1,355,000	394,000	985,000	2,517,000	2,563,000	15,000	---	567,000	14,126,000
Services of other agencies	12,230,000	5,148,000	665,000	2,918,000	334,000	74,000	50,000	105,000	110,000	---	90,000	45,000	---	---	50,000	2,641,000
Supplies and materials	22,968,000	1,700,000	3,889,000	6,100,000	1,796,000	85,000	1,234,000	1,234,000	154,000	540,000	2,600,000	3,150,000	---	---	65,000	421,000
Equipment	79,152,000	4,333,000	8,453,000	4,928,000	23,201,000	46,000	2,546,000	1,076,000	453,000	762,000	2,419,000	9,325,000	---	---	76,000	21,534,000
Lands and structures	5,811,000	932,000	847,000	1,000,000	466,000	57,000	820,000	300,000	124,000	165,000	500,000	600,000	---	---	---	---
Insurance claims and indemnities	18,000	1,000	1,000	1,000	---	---	1,000	---	---	1,000	1,000	2,000	---	---	---	10,000
Totals	643,721,000	61,616,000	91,201,000	140,458,000	85,923,000	835,000	11,442,000	31,698,000	3,600,000	9,750,000	57,258,000	70,971,000	1,725,000	---	5,949,000	73,255,000
FISCAL YEAR 1966																
Personnel compensation	345,207,000	21,879,000	49,997,000	81,673,000	38,544,000	234,000	4,361,000	20,729,000	4,368,000	6,253,000	38,890,000	45,635,000	1,424,000	---	4,378,000	26,822,000
Personnel benefits	24,193,000	1,465,000	3,328,000	5,531,000	2,716,000	16,000	313,000	1,503,000	332,000	435,000	2,899,000	3,338,000	111,000	---	300,000	1,912,000
Travel & transp of pers	21,000,000	1,538,000	5,417,000	3,825,000	2,740,000	40,000	160,000	600,000	270,000	260,000	1,370,000	1,650,000	200,000	---	303,000	2,627,000
Transportation of things	5,069,000	722,000	944,000	550,000	1,107,000	10,000	83,000	58,000	141,000	40,000	440,000	650,000	10,000	---	20,000	481,000
Rents, communications, and utilities	49,556,000	4,385,000	7,143,000	11,786,000	9,745,000	90,000	645,000	5,205,000	784,000	331,000	4,110,000	2,225,000	---	---	440,000	2,018,000
Printing and reproduction	4,869,000	871,000	390,000	1,150,000	342,000	8,000	15,000	35,000	65,000	10,000	200,000	65,000	---	---	17,000	1,701,000
Other services	96,054,000	23,937,000	15,034,000	21,435,000	6,923,000	160,000	1,633,000	1,488,000	762,000	1,044,000	2,866,000	2,869,000	100,000	---	622,000	14,151,000
Services of other agencies	11,969,000	4,620,000	665,000	2,944,000	443,000	80,000	50,000	112,000	153,000	---	90,000	50,000	---	---	38,000	2,724,000
Supplies and materials	23,140,000	1,579,000	3,889,000	6,100,000	1,974,000	85,000	1,234,000	1,234,000	276,000	540,000	2,600,000	3,050,000	---	---	65,000	414,000
Equipment	23,109,000	1,000,000	2,110,000	1,390,000	4,532,000	46,000	760,000	1,036,000	261,000	524,000	7,821,000	3,315,000	---	---	71,000	243,000
Lands and structures	5,235,000	700,000	740,000	1,000,000	525,000	35,000	725,000	300,000	110,000	150,000	500,000	450,000	---	---	---	---
Insurance claims and indemnities	19,000	1,000	1,000	1,000	---	---	1,000	---	---	1,000	1,000	3,000	---	---	---	10,000
Totals	609,400,000	62,697,000	89,658,000	137,387,000	69,591,000	804,000	9,800,000	32,300,000	7,622,000	9,600,000	61,783,000	63,880,000	1,838,000	---	6,337,000	56,103,000

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
FISCAL YEAR 1966 ESTIMATES
COMPUTATION OF PERSONNEL COSTS BY INSTALLATION AND FISCAL YEAR
(In thousands of dollars)

FISCAL YEAR 1964 ACTUAL	TOTAL NASA	J. F. KENNEDY SPACE CENTER, NASA	MANNED SPACECRAFT CENTER	MARSHALL SPACE FLIGHT CENTER	GODDARD SPACE FLIGHT CENTER	PACIFIC LAUNCH OPERATIONS OFFICE	Wallops STATION	AMES RESEARCH CENTER	ELECTRONICS RESEARCH CENTER	FLIGHT RESEARCH CENTER	LANGLEY RESEARCH CENTER	LEWIS RESEARCH CENTER	SPACE NUCLEAR PROPULSION OFFICE	HEADQUARTERS	NORTHEASTERN OPERATIONS OFFICE	WESTERN OPERATIONS OFFICE
Personnel Compensation:																
Permanent positions	\$289,440	\$14,468	\$37,237	\$68,967	\$33,986	\$194	\$3,586	\$19,528	\$277	\$5,320	\$35,966	\$42,557	\$1,249	\$22,249	\$305	\$3,551
Pay above the stated annual rate	2,334	113	269	576	270	2	28	164	2	42	305	361	9	160	2	31
Lapses (deduct)	-25,316	-2,904	-7,116	-4,919	-3,059	-13	-235	-1,045	-143	-205	-1,606	-1,950	-136	-1,448	-39	-498
Net cost of permanent positions	\$266,458	\$11,677	\$30,390	\$64,624	\$31,197	\$183	\$3,379	\$18,647	\$136	\$5,157	\$34,665	\$40,968	\$1,122	\$20,961	\$268	\$3,084
Other personnel compensation	22,102	1,688	4,107	8,302	1,758	10	427	395	1	502	1,261	2,001	3	1,341	12	294
Total personnel compensation	\$288,560	\$13,365	\$34,497	\$72,926	\$32,955	\$193	\$3,806	\$19,042	\$137	\$5,659	\$35,926	\$42,969	\$1,125	\$22,302	\$280	\$3,378
Reimbursable	479	---	---	5	474	---	---	---	---	---	---	---	---	---	---	---
NASA funded	288,081	13,365	34,497	72,921	32,481	193	3,806	19,042	137	5,659	35,926	42,969	1,125	22,302	280	3,378
Total personnel benefits	\$20,262	\$868	\$2,294	\$4,926	\$2,308	\$12	\$268	\$1,389	\$10	\$410	\$2,654	\$3,112	\$82	\$1,678	\$20	\$231
Reimbursable	21	---	---	---	21	---	---	---	---	---	---	---	---	---	---	---
NASA funded	20,241	868	2,294	4,926	2,287	12	268	1,389	10	410	2,654	3,112	82	1,678	20	231
Total Personnel Costs	\$308,822	\$14,233	\$36,791	\$77,852	\$35,263	\$205	\$4,074	\$20,431	\$147	\$6,069	\$38,580	\$46,081	\$1,207	\$23,980	\$300	\$3,609
Reimbursable	500	---	---	5	495	---	---	---	---	---	---	---	---	---	---	---
NASA funded	308,322	14,233	36,791	77,847	34,768	205	4,074	20,431	147	6,069	38,580	46,081	1,207	23,980	300	3,609
FISCAL YEAR 1965 ESTIMATED																
Personnel Compensation:																
Permanent positions	\$320,264	\$19,652	\$44,456	\$74,262	\$36,939	\$208	\$3,904	\$20,220	\$2,799	\$5,671	\$37,424	\$43,611	\$1,389	\$25,652	---	\$4,077
Pay above the stated annual rate	1,260	70	163	298	134	1	15	78	10	22	175	173	6	99	---	16
Lapses (deduct)	-9,592	-1,556	-2,488	-1,565	-376	-6	-81	-39	-1,411	-122	-216	-219	-10	-1,272	---	-231
Net cost of permanent positions	\$311,932	\$18,166	\$42,131	\$72,995	\$36,697	\$203	\$3,838	\$20,259	\$1,398	\$5,571	\$37,383	\$43,565	\$1,385	\$24,479	---	\$3,862
Other personnel compensation	25,277	2,251	5,554	8,352	2,204	28	523	441	72	647	1,443	2,045	6	1,418	---	293
Total personnel compensation	\$337,209	\$20,417	\$47,685	\$81,347	\$38,901	\$231	\$4,361	\$20,700	\$1,470	\$6,218	\$38,826	\$45,610	\$1,391	\$25,897	---	\$4,155
Reimbursable	513	---	---	3	510	---	---	---	---	---	---	---	---	---	---	---
NASA funded	336,696	20,417	47,685	81,344	38,391	231	4,361	20,700	1,470	6,218	38,826	45,610	1,391	25,897	---	4,155
Total personnel benefits	\$23,533	\$1,364	\$3,164	\$5,475	\$2,750	\$16	\$313	\$1,500	\$110	\$432	\$2,861	\$3,314	\$109	\$1,834	---	\$291
Reimbursable	43	---	---	---	43	---	---	---	---	---	---	---	---	---	---	---
NASA funded	23,490	1,364	3,164	5,475	2,707	16	313	1,500	110	432	2,861	3,314	109	1,834	---	291
Total Personnel Costs	\$360,742	\$21,781	\$50,849	\$86,822	\$41,651	\$247	\$4,674	\$22,200	\$1,580	\$6,650	\$41,687	\$48,924	\$1,500	\$27,731	---	\$4,446
Reimbursable	556	---	---	3	553	---	---	---	---	---	---	---	---	---	---	---
NASA funded	360,186	21,781	50,849	86,819	41,098	247	4,674	22,200	1,580	6,650	41,687	48,924	1,500	27,731	---	4,446
FISCAL YEAR 1966 ESTIMATED																
Personnel Compensation:																
Permanent positions	\$323,702	\$19,767	\$44,674	\$74,358	\$36,936	\$211	\$3,904	\$20,220	\$5,716	\$5,744	\$37,424	\$43,610	\$1,415	\$25,645	---	\$4,078
Pay above the stated annual rate	1,284	75	208	258	137	1	15	78	22	22	175	173	6	99	---	15
Lapses (deduct)	-4,058	-300	-511	-863	-192	-1	-81	-10	-1,527	-44	-80	-90	-3	-355	---	-1
Net cost of permanent positions	\$320,928	\$19,542	\$44,371	\$73,753	\$36,881	\$211	\$3,838	\$20,288	\$4,211	\$5,722	\$37,519	\$43,693	\$1,418	\$25,389	---	\$4,092
Other personnel compensation	24,995	2,337	5,626	7,925	2,376	23	523	441	157	543	1,377	1,942	6	1,433	---	286
Total personnel compensation	\$345,923	\$21,879	\$49,997	\$81,678	\$39,257	\$234	\$4,361	\$20,729	\$4,368	\$6,265	\$38,896	\$45,635	\$1,424	\$26,822	---	\$4,378
Reimbursable	716	---	---	3	713	---	---	---	---	---	---	---	---	---	---	---
NASA funded	345,207	21,879	49,997	81,675	38,544	234	4,361	20,729	4,368	6,265	38,896	45,635	1,424	26,822	---	4,378
Total personnel benefits	\$24,243	\$1,465	\$3,328	\$5,531	\$2,766	\$16	\$313	\$1,503	\$332	\$435	\$2,889	\$3,338	\$111	\$1,912	---	\$304
Reimbursable	50	---	---	---	50	---	---	---	---	---	---	---	---	---	---	---
NASA funded	24,193	1,465	3,328	5,531	2,716	16	313	1,503	332	435	2,889	3,338	111	1,912	---	304
Total Personnel Costs	\$370,166	\$23,344	\$53,325	\$87,209	\$42,023	\$250	\$4,674	\$22,232	\$4,700	\$6,700	\$41,785	\$48,973	\$1,535	\$28,734	---	\$4,682
Reimbursable	766	---	---	3	763	---	---	---	---	---	---	---	---	---	---	---
NASA funded	369,400	23,344	53,325	87,206	41,260	250	4,674	22,232	4,700	6,700	41,785	48,973	1,535	28,734	---	4,682

SUM 4

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 FISCAL YEAR 1966 ESTIMATES
 DISTRIBUTION OF PERSONNEL POSITIONS BY INSTALLATION AND FISCAL YEAR

FISCAL YEAR ESTIMATE	TOTAL NASA	J. F. KENNEDY SPACE CENTER, NASA	Wallops Flight Center	Wallops Flight Center	Wallops Flight Center	PACIFIC LAUNCH CENTER OFFICE	Wallops Flight Center	AMES RESEARCH CENTER	ELECTRONICS RESEARCH CENTER	FLIGHT RESEARCH CENTER	LANGLEY RESEARCH CENTER	LEWIS RESEARCH CENTER	SPACE FLIGHT CENTER OFFICE	RESEARCH CENTER	OPERATIONS OFFICE	WESTERN OFFICE
TOTAL EXCEPTED POSITIONS ^{a/}	415	14	35	56	40	-	1	29	-	6	36	35	3	138	2	3
General Schedule Positions:																
GS-16	5	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
GS-15	1,619	61	191	351	190	-	5	112	5	15	137	155	20	365	3	10
GS-14	2,463	102	314	658	347	4	8	166	5	25	219	294	20	271	5	41
GS-13	7,677	242	596	942	535	1	19	193	3	41	304	536	23	180	2	59
GS-12	3,663	302	560	996	480	3	25	153	2	58	357	512	7	123	2	93
GS-11	3,179	206	485	875	467	3	27	139	-	52	411	398	3	70	1	42
GS-10	23	1	-	1	-	-	3	2	-	-	-	12	-	4	-	-
GS-9	2,463	99	396	422	391	-	22	180	1	50	468	372	2	70	3	7
GS-8	51	3	-	4	8	-	-	-	-	2	2	9	-	22	-	1
GS-7	1,693	83	341	288	223	-	41	119	1	27	215	200	2	146	2	5
GS-6	670	44	54	72	79	2	4	35	1	11	69	58	4	223	-	14
GS-5	1,816	106	296	379	250	1	40	121	3	21	179	127	14	214	2	63
GS-4	1,971	150	371	507	226	5	32	119	1	25	153	206	11	122	8	25
GS-3	1,290	94	210	402	103	1	15	59	1	5	155	149	3	73	2	9
GS-2	155	3	5	68	5	1	12	7	-	-	22	16	-	11	-	1
TOTAL GENERAL SCHEDULE POSITIONS	26,710	1,437	3,828	5,969	3,304	22	234	1,184	25	316	2,672	3,044	109	1,894	20	372
TOTAL WAGE BOARD POSITIONS	6,839	91	308	1,477	266	-	261	791	-	263	1,521	1,748	-	19	-	-
TOTAL PERMANENT POSITIONS	31,984	1,592	4,171	7,502	3,610	22	516	2,201	25	605	4,279	4,851	112	2,091	32	375
OTHER TEMPORARY POSITIONS	513	33	106	127	65	-	14	65	-	14	70	32	-	65	-	5
GRAND TOTAL POSITIONS - FY 1964	32,499	1,625	4,277	7,679	3,675	22	530	2,204	25	619	4,330	4,859	112	2,133	33	376
FISCAL YEAR 1965 ESTIMATE	439	15	35	56	40	-	1	29	10	6	38	35	3	170	-	3
General Schedule Positions:																
GS-16	183	9	15	41	21	-	1	17	-	3	16	17	3	39	-	1
GS-15	1,694	62	222	390	190	1	4	97	16	13	129	155	16	384	-	15
GS-14	2,707	108	398	663	383	4	8	150	50	31	222	319	20	302	-	49
GS-13	4,217	382	736	1,040	554	3	27	219	50	49	318	537	33	207	-	62
GS-12	4,024	369	664	1,052	568	5	42	169	20	54	372	490	5	132	-	82
GS-11	3,454	269	594	899	502	1	31	151	14	56	421	398	3	71	-	44
GS-10	31	1	-	1	-	-	2	5	-	-	-	12	-	10	-	-
GS-9	2,495	131	479	412	380	-	21	165	4	40	443	358	-	74	-	8
GS-8	59	3	1	4	9	-	-	-	-	-	2	11	-	28	-	1
GS-7	1,591	116	332	279	155	-	21	105	1	20	191	212	4	149	-	6
GS-6	726	47	63	75	103	1	9	34	11	16	69	58	4	223	-	13
GS-5	1,833	141	311	391	170	3	49	110	38	22	175	129	16	213	-	65
GS-4	1,889	193	339	516	180	1	26	106	34	24	152	180	8	91	-	39
GS-3	999	91	174	223	112	-	8	52	2	8	135	146	1	35	-	12
GS-2	149	7	1	69	38	-	-	6	-	-	8	10	-	9	-	1
TOTAL GENERAL SCHEDULE POSITIONS	26,051	1,929	4,329	6,055	3,365	19	249	1,366	240	336	2,653	3,032	113	1,967	-	398
TOTAL WAGE BOARD POSITIONS	6,710	101	322	1,380	272	-	268	790	-	263	1,547	1,748	-	19	-	-
TOTAL PERMANENT POSITIONS	32,200	2,045	4,686	7,489	3,677	19	518	2,185	250	605	4,238	4,815	116	2,156	-	401
OTHER TEMPORARY POSITIONS	600	37	125	169	48	3	12	20	-	14	70	32	-	65	-	5
GRAND TOTAL POSITIONS - FY 1965	33,800	2,082	4,811	7,658	3,725	22	530	2,205	250	619	4,308	4,847	116	2,221	-	406
FISCAL YEAR 1966 ESTIMATE	439	15	35	56	40	-	1	29	11	6	38	35	3	169	-	3
General Schedule Positions:																
GS-16	183	9	15	41	21	-	1	17	-	3	16	17	3	39	-	1
GS-15	1,794	62	222	390	190	1	4	97	16	13	129	155	16	384	-	15
GS-14	2,767	108	398	663	383	4	8	150	50	31	222	319	20	302	-	49
GS-13	4,299	382	736	1,066	554	3	27	210	50	49	318	537	33	208	-	62
GS-12	4,101	369	664	1,081	568	5	42	182	20	54	372	490	5	132	-	82
GS-11	3,475	269	594	909	502	1	31	151	14	56	421	398	3	71	-	44
GS-10	31	1	-	1	-	-	2	5	-	-	-	12	-	10	-	-
GS-9	2,541	131	479	433	380	-	21	165	4	40	443	358	-	74	-	8
GS-8	59	3	1	4	9	-	-	-	-	-	2	11	-	28	-	1
GS-7	1,578	116	332	279	155	-	21	105	1	20	191	212	4	149	-	6
GS-6	738	47	63	76	103	1	9	33	11	16	69	58	4	223	-	13
GS-5	1,865	141	311	391	170	3	49	110	38	22	175	129	16	213	-	65
GS-4	1,932	193	339	528	180	1	26	106	34	24	152	180	8	91	-	39
GS-3	1,008	91	174	226	112	-	8	46	2	8	135	146	1	35	-	12
GS-2	150	7	1	69	38	-	-	6	-	-	8	10	-	9	-	1
TOTAL GENERAL SCHEDULE POSITIONS	26,424	1,937	4,327	6,055	3,365	19	249	1,366	240	336	2,653	3,032	113	1,968	-	398
TOTAL WAGE BOARD POSITIONS	6,610	101	322	1,280	272	-	268	790	-	263	1,547	1,748	-	19	-	-
TOTAL PERMANENT POSITIONS	33,500	2,045	4,686	7,489	3,677	19	518	2,185	250	605	4,238	4,815	116	2,156	-	401
OTHER TEMPORARY POSITIONS	600	37	125	169	48	3	12	20	-	14	70	32	-	65	-	5
GRAND TOTAL POSITIONS - FY 1966	36,100	2,082	4,811	7,658	3,725	22	530	2,205	250	619	4,308	4,847	116	2,221	-	406

^{a/}Total Excepted Positions include two (2) Special Ungraded and twelve (12) P.L. 513 positions.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1966 ESTIMATES

ADMINISTRATIVE OPERATIONS

ANALYSIS OF REQUIREMENTS FOR PASSENGER-CARRYING MOTOR VEHICLES

The appropriation language provides for the purchase of 30 passenger motor vehicles, of which 6 are for augmentation to the fiscal year 1965 ending inventory and 24 are for replacement. All vehicles scheduled for replacement meet, or will meet, the criteria established by the General Services Administration for replacement of vehicles due either to age, mileage, annual maintenance costs, or a combination of these factors.

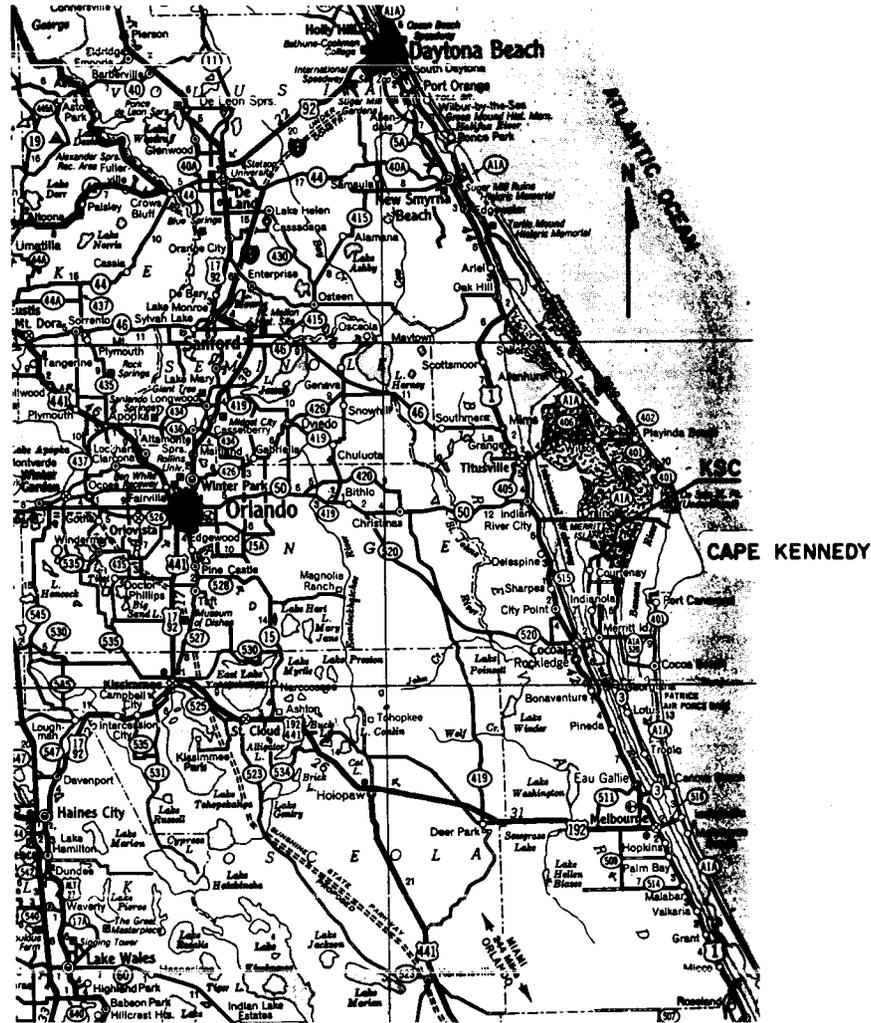
A summary analysis and planned procurement by class of vehicle in fiscal year 1966 is as follows:

	<u>Total</u>	<u>Medium Sedans</u>	<u>Sedans</u>	<u>Station Wagons</u>	<u>Ambulances</u>	<u>Buses</u>
On hand July 1, 1965..	183	1	47	113	11	11
Total to be procured:	30	-	7	15	-	8
(For replacement)...	(24)	-	(4)	(15)	(-)	(5)
(Disposed - not replaced).....	<u>(3)</u>	-	<u>(2)</u>	<u>(1)</u>	<u>(-)</u>	<u>(-)</u>
On hand June 30, 1966.	186	1	48	112	11	14

JOHN F. KENNEDY SPACE CENTER, NASA

FISCAL YEAR 1966 ESTIMATES

VICINITY MAP



KEY PLAN

AO 1-1

SCALE OF MILES - ONE INCH EQUALS APPROXIMATELY 10 MILES

JOHN F. KENNEDY SPACE CENTER

FISCAL YEAR 1966 ESTIMATES

LOCATION PLAN

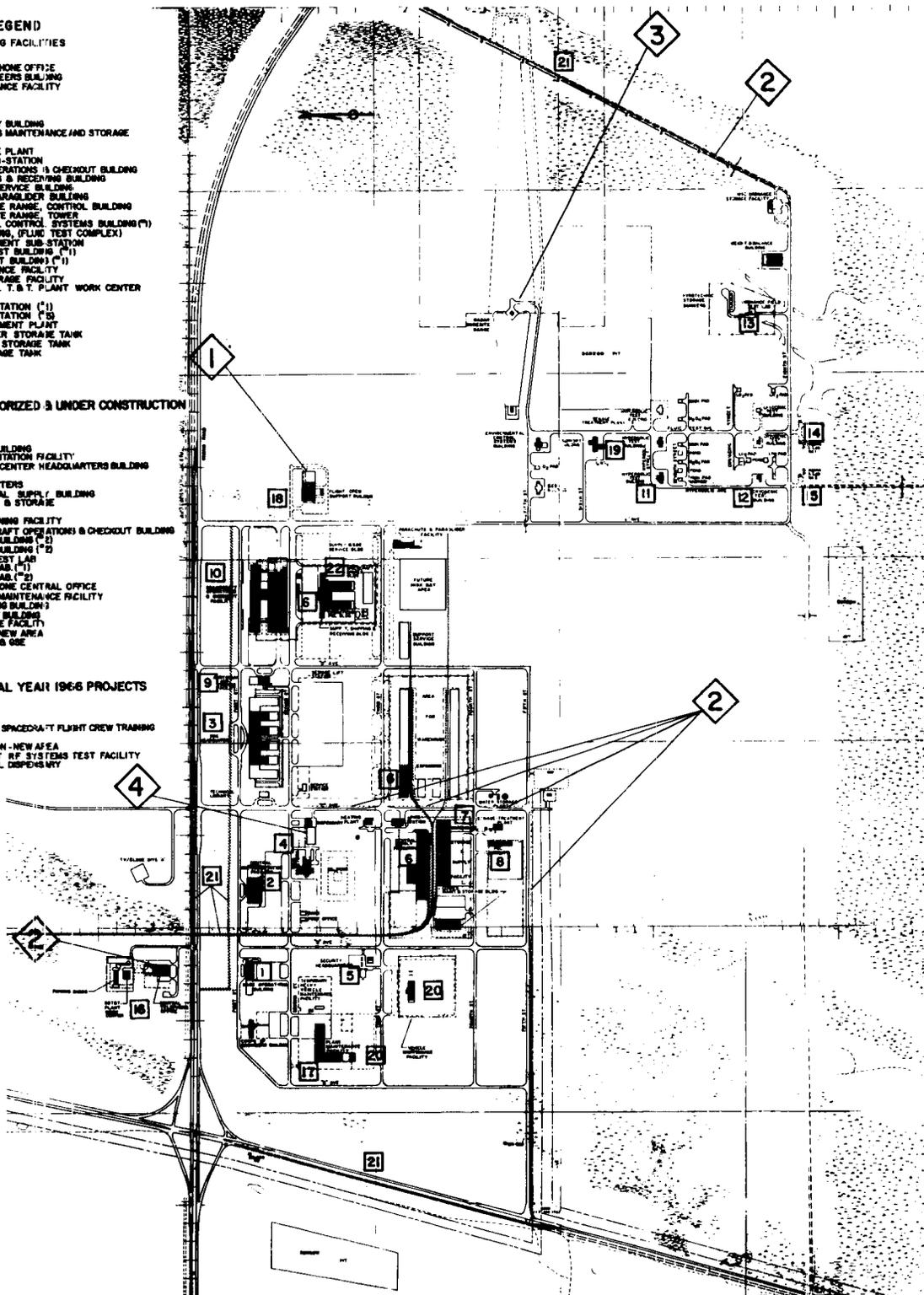
- LEGEND**
EXISTING FACILITIES
- MS-138 CENTRAL TELEPHONE OFFICE
 - MS-336 CORPS OF ENGINEERS BUILDING
 - MS-488 PLANT MAINTENANCE FACILITY
 - MS-895 DISPENSARY
 - MS-896 HEATING PLANT
 - MS-895 FIRE STATION
 - MS-744 CENTRAL SUPPLY BUILDING
 - MS-791 COMMUNICATIONS MAINTENANCE AND STORAGE
 - MS-895 SEWAGE PLANT
 - MS-898 WATER STORAGE PLANT
 - MS-898 ELECTRICAL SUB-STATION
 - MS-355 SPACECRAFT OPERATIONS & CHECKOUT BUILDING
 - MS-504 SUPPLY SHIPPING & RECEIVING BUILDING
 - MS-7-500 SUPPLY & GSE SERVICE BUILDING
 - MS-887 PARACHUTE & PARAGLIDER BUILDING
 - MS-883 RADAR BORE-SITE RANGE CONTROL BUILDING
 - MS-961 RADAR BORE-SITE RANGE TOWER
 - MS-961 ENVIRONMENTAL CONTROL SYSTEMS BUILDING (*)
 - MS-1081 SUPPORT BUILDING (FLUID TEST COMPLEX)
 - MS-1162 SEWAGE TREATMENT SUB-STATION
 - MS-212 HYPERBOLIC TEST BUILDING (*)
 - MS-1412 CRYOGENIC TEST BUILDING (*)
 - MS-4468 WEIGHT & BALANCE FACILITY
 - MS-1472 ORDNANCE STORAGE FACILITY
 - MS-38 SOUTHERN BELL T. & T. PLANT WORK CENTER
 - MS-38 SHED PARKING
 - MS-451 SEWAGE LIFT STATION (*)
 - MS-885A SEWAGE LIFT STATION (*)
 - MS-898B SEWAGE TREATMENT PLANT
 - MS-886A ELEVATED WATER STORAGE TANK
 - MS-886B GROUND WATER STORAGE TANK
 - MS-886A FUEL OIL STORAGE TANK

FACILITIES AUTHORIZED & UNDER CONSTRUCTION

- 1. BASE OPERATIONS BUILDING
- 2. CENTRAL INSTRUMENTATION FACILITY
- 3. LAUNCH OPERATION CENTER HEADQUARTERS BUILDING
- 4. CAFETERIA
- 5. SECURITY HEADQUARTERS
- 6. ADDITION TO CENTRAL SUPPLY BUILDING
- 7. WAREHOUSE, SUPPLY & STORAGE
- 8. POL FACILITY
- 9. AUDITORIUM & TRAINING FACILITY
- 10. ADDITION TO SPACECRAFT OPERATIONS & CHECKOUT BUILDING
- 11. HYPERBOLIC TEST BUILDING (*)
- 12. CRYOGENIC TEST BUILDING (*)
- 13. ORDNANCE FIELD TEST LAB
- 14. CRYOGENIC TEST LAB (*)
- 15. CRYOGENIC TEST LAB (*)
- 16. ADDITION TO TELEPHONE CENTRAL OFFICE
- 17. ADDITION TO PLANT MAINTENANCE FACILITY
- 18. FLIGHT CREW TRAINING BUILDING
- 19. ADDITION TO SUPPORT BUILDING
- 20. VEHICLE MAINTENANCE FACILITY
- 21. UTILITY ADDITIONS—NEW AREA
- 22. ADDITION TO SUPPLY & GSE

PROPOSED FISCAL YEAR 1966 PROJECTS

- 1. ADDITION TO MANNED SPACECRAFT FLIGHT CREW TRAINING BUILDING
- 2. UTILITY INSTALLATION—NEW AREA
- 3. MANNED SPACECRAFT RF SYSTEMS TEST FACILITY
- 4. ADDITION TO CENTRAL DISPENSARY



JOHN F. KENNEDY SPACE CENTER, NASA



AO 1-3

Industrial Area

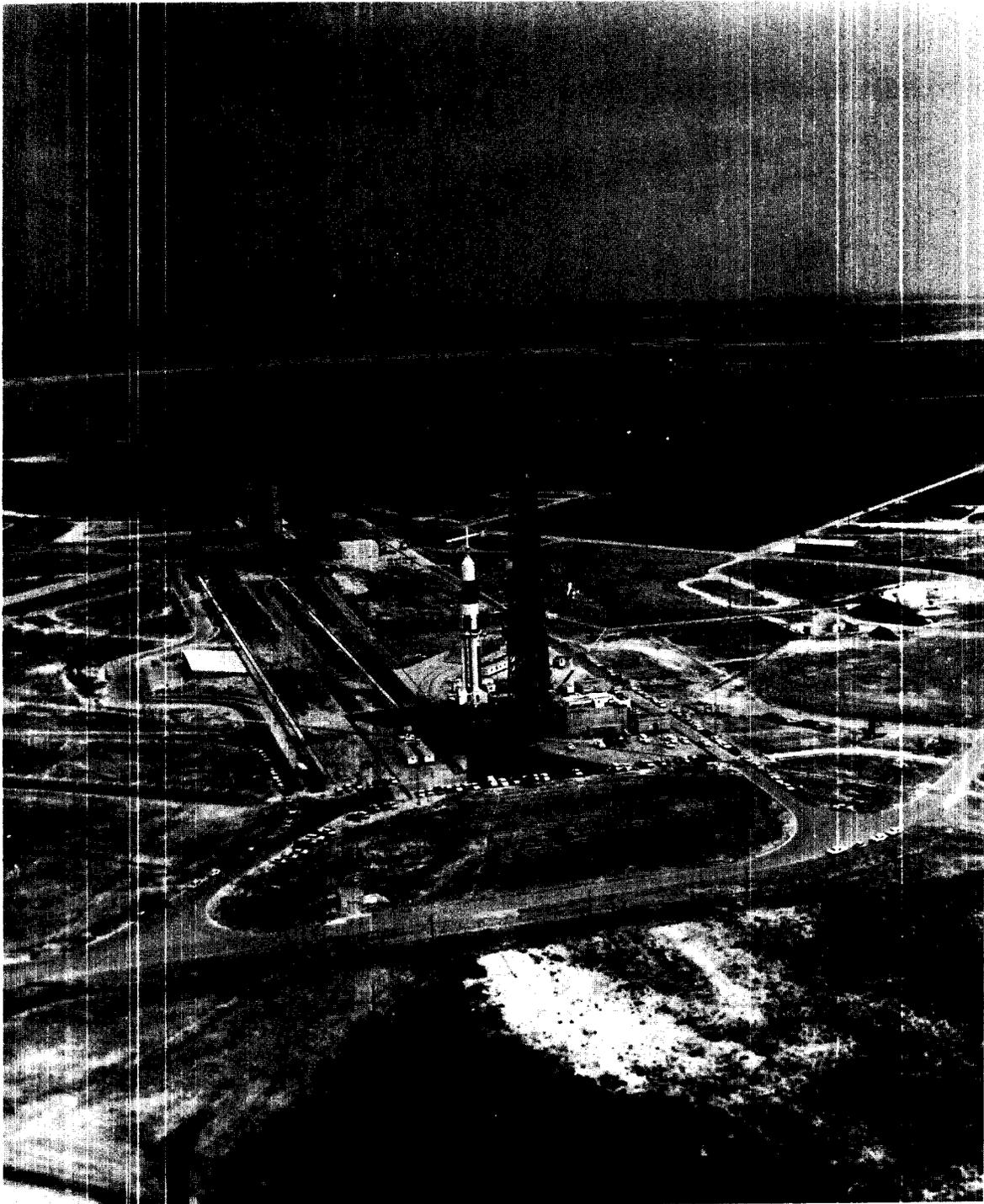
JOHN F. KENNEDY SPACE CENTER, NASA



AO 1-4

Launch Complex 34

JOHN F. KENNEDY SPACE CENTER, NASA



Launch Complex 37

A0 1-5

JOHN F. KENNEDY SPACE CENTER, NASA

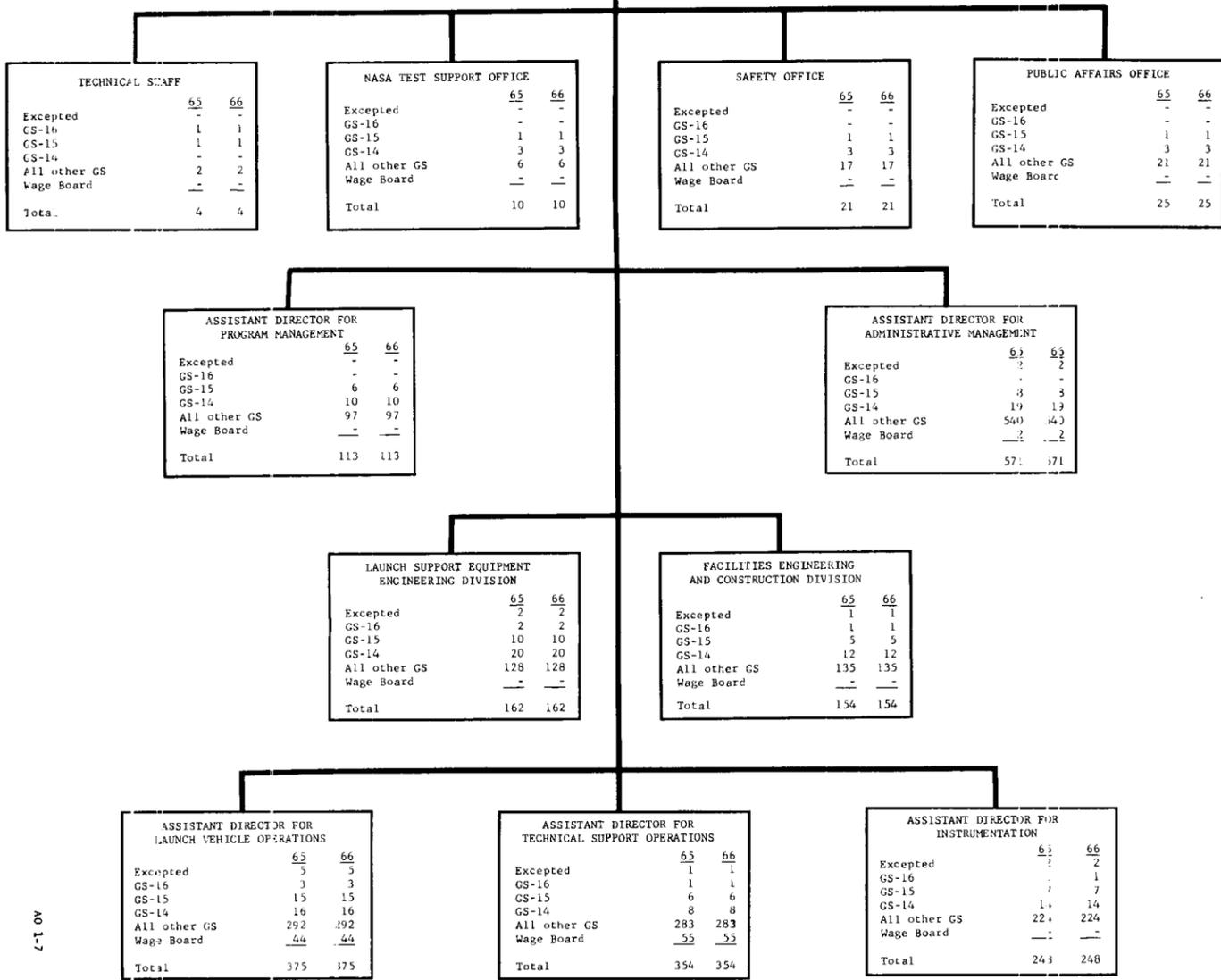


Launch Complex 39

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 JOHN F. KENNEDY SPACE CENTER, NASA

STAFFING SUMMARY		
	65	66
Excepted	15	15
GS-16	9	9
GS-15	62	62
GS-14	108	108
All other GS	1,750	1,750
Wage Board	101	101
Total Permanent	2,045	2,045
Temporary	37	37
Total Positions	2,082	2,082

OFFICE OF DIRECTOR		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	5	5
Wage Board	-	-
Total	8	8



AO 1-7

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

JOHN F. KENNEDY SPACE CENTER, NASA

MISSION AND CAPABILITIES:

The John F. Kennedy Space Center, formerly the Launch Operations Directorate of the Marshall Space Flight Center, was organized as a separate center on July 1, 1962. The Center's primary responsibilities are:

1. Planning and supervision of the launch preparation and launch of assigned NASA space vehicle systems at the Merritt Island Launch Area and the Air Force Eastern Test Range.
2. Design and construction of NASA facilities at the Kennedy Space Center to meet users' functional requirements.
3. Physical integration of NASA ground support equipment at the launch sites for various space vehicle systems.
4. Programming, integrating, and fulfilling user requirements for general purpose facilities such as offices, warehouses, maintenance buildings, utilities, and roads.
5. Administrative and technical support services (public relations, visitor control services, community and industrial relations, legal, security, purchasing and contracting, transportation, and financial management) for all NASA elements located in the area.
6. Representing NASA in coordinating with the United States Air Force matters pertaining to tracking and data acquisition, and in making arrangements for tracking and data services and support required for operation of all NASA activities at the Air Force Eastern Test Range.

In January 1963, under NASA-DOD agreement, the Kennedy Space Center, NASA was designated as the executive agent and manager of the Merritt Island Launch Area.

The Center provides manpower with skills for testing, checkout, and launching vehicles, research and development of launch instrumentation, and design of launch and related ground support facilities and equipment.

Included in the Center's assigned responsibilities are the launching of Saturn vehicles, managing the Merritt Island Launch Area, and acting as

AO 1-8

the focal point for all NASA activities at the Air Force Eastern Test Range. Missions include design, construction, activation, operation, and maintenance of Launch Complexes 34, 37, and 39 and related supporting industrial areas. The major activity during FY 1966 will be the preparation for launch, and support of the Apollo Saturn IB and Apollo Saturn V programs.

The Center also provides logistic support for all supporting contractors in the Cape Kennedy/Merritt Island Launch Area areas.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year.	1,625	2,082	2,082
Average Number of All Employees .	1,322	1,914	2,056
Administrative Operations.....	\$34,959,000	\$61,616,000	\$62,697,000

INSTALLATION DESCRIPTION:

The Kennedy Space Center is adjacent to the Air Force Eastern Test Range Launch Area. It is situated approximately 50 miles East of Orlando, Florida in northwest Brevard County.

The land purchases for the Center, which began about three years ago, were approximately 92 per cent complete as of July 1964. The total land to be procured is approximately 88,743 acres and has been designated the Merritt Island Launch Area (MILA). In addition to the operation and maintenance of all facilities in the Merritt Island Launch Area, the Center is responsible for certain facilities within the Air Force Eastern Test Range Launch Area. Thirty four of these facilities were transferred from the Air Force to NASA on July 1, 1963. The capital investment as of June 30, 1964 was \$298,069,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$13,365,000	\$20,417,000	\$21,879,000
12. Personnel Benefits.....	<u>868,000</u>	<u>1,364,000</u>	<u>1,465,000</u>
Total, personnel costs...	\$14,233,000	\$21,781,000	\$23,344,000
21. Travel and Transportation of Persons.....	2,181,000	2,113,000	1,538,000
22. Transportation of Things...	350,000	872,000	722,000
23. Rents, Communications, and Utilities.....	2,575,000	3,973,000	4,385,000
24. Printing and Reproduction..	818,000	851,000	871,000

	<u>1964</u>	<u>1965</u>	<u>1966</u>
25. Other Services.....	4,672,000	19,912,000	23,937,000
Services of other agencies	4,303,000	5,148,000	4,520,000
26. Supplies and Materials.....	3,284,000	1,700,000	1,579,000
31. Equipment.....	1,753,000	4,333,000	1,000,000
32. Lands and Structures.....	790,000	932,000	700,000
42. Insurance Claims and Indemnities.....	-	1,000	1,000
Total.....	<u>\$34,959,000</u>	<u>\$61,616,000</u>	<u>\$62,597,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Gemini.....	17	49	38
Apollo.....	753	1,022	1,032
<u>Space Science and Applications</u>			
Launch vehicle development.....	6	7	6
<u>Advanced Research and Technology</u>			
Space vehicle systems.....	<u>3</u>	<u>4</u>	<u>6</u>
Sub-total, direct positions..	779	1,082	1,082
<u>Support personnel</u>			
Director and Staff.....	56	71	71
Administration.....	420	444	444
Research and development support.	<u>337</u>	<u>448</u>	<u>448</u>
Sub-total, support positions...	<u>813</u>	<u>963</u>	<u>963</u>
Total, permanent positions.....	1,592	2,045	2,045

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Other positions:</u>			
Positions under cooperative training agreements.....	32	32	32
Other temporary positions.....	<u>1</u>	<u>5</u>	<u>5</u>
Total, all positions.....	<u>1,625</u>	<u>2,082</u>	<u>2,082</u>

Personnel requirements

The personnel requirements of the Kennedy Space Center are directly related to its assigned mission of launching vehicles, managing the Merritt Island Launch Area and support of all NASA elements in the Cape Kennedy - MILA area.

During FY 1966 support will be required for Saturn/Apollo I and IB launches and for the initial activation and operation of major facilities in the MILA area in support of the Apollo/Saturn V program. Requirements for administrative and logistic support of all NASA elements and associated contractors at Kennedy Space Center will increase with the buildup of pre-launch and launch activity during FY 1966.

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>1,625</u>	<u>2,082</u>	<u>2,082</u>
Permanent.....	1,592	2,045	2,045
Other.....	33	37	37
<u>Personnel Compensation:</u>			
Annual cost of permanent positions.....	\$14,468,000	\$19,652,000	\$19,767,000
Pay above the stated annual rate	113,000	70,000	75,000
Lapses (deduct).....	<u>-2,904,000</u>	<u>-1,556,000</u>	<u>-300,000</u>
Net cost of permanent positions.	11,677,000	18,166,000	19,542,000
Other personnel compensation....	<u>1,688,000</u>	<u>2,251,000</u>	<u>2,337,000</u>
Total compensation.....	<u>13,365,000</u>	<u>20,417,000</u>	<u>21,879,000</u>
NASA funded.....	13,365,000	20,417,000	21,879,000
Reimbursable.....	---	---	---
<u>Personnel benefits</u>	<u>868,000</u>	<u>1,364,000</u>	<u>1,465,000</u>
NASA funded.....	868,000	1,364,000	1,465,000
Reimbursable.....	---	---	---

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total personnel costs</u>	\$14,233,000	\$21,781,000	\$23,344,000
NASA funded.....	14,233,000	21,781,000	23,344,000
Reimbursable.....	---	---	---
 <u>Average Number of All Employees</u> (<u>Man Years</u>).....	1,322	1,914	2,056

Personnel Costs - \$23,344,000

The increase in personnel costs for FY 1966 is primarily attributable to an increase in man-years resulting from augmentation in personnel during FY 1965.

Travel and Transportation of Persons - \$1,538,000

The estimate for travel and transportation of persons for FY 1966 is \$575,000 less than the FY 1965 level. This reduction results primarily from the acquisition of an administrative aircraft to replace an aircraft currently under lease, and a reduction in local transportation costs due to consolidation of operations on Merritt Island.

Transportation of Things - \$722,000

The decrease of \$150,000 results from relocation costs for personnel hired as replacements as vacancies occur, and from lower utilization of GSA truck services due to the consolidation of the Center's activities on Merritt Island by the end of FY 1965.

Rents, Communications, and Utilities - \$4,385,000

There is an increase of \$412,000 in overall FY 1966 fund requirements for rents, communications, and utilities. Increases in communications and utilities required to keep pace with buildup in the Merritt Island Launch Area are partially offset by reductions in leased space and equipment.

Printing and Reproduction - \$871,000

An increase of \$20,000 for printing and reproduction services is projected to support the increased activity in the Merritt Island Launch Area.

Other Services - \$28,557,000

The overall increase of \$3,497,000 for FY 1966 is generated by an increase in workload requirements under both housekeeping services and mission support service contracts, by the addition of photographic services, and by the additional aircraft servicing requirements for the administrative aircraft purchased during FY 1965.

Increased contract man-years are required under both housekeeping services and in computer operations and programming to support first year operations at Merritt Island Launch Area. In addition there are increased requirements for technical documentation support for launch vehicle stage contractors at the Kennedy Space Center. These increases are partially offset by reduction in services provided by the Air Force through the range contractor.

Supplies and Materials - \$1,579,000

The initial outfitting of the new facilities at the Merritt Island Launch Area, scheduled for completion during FY 1965, will allow a net reduction of \$121,000 in the requirement for supplies and materials estimated for FY 1966.

Equipment - \$1,000,000

Equipment requirements in FY 1966 will decrease by \$3,333,000. This reduction is the result of procurement of non-recurring items of equipment during FY 1965. FY 1966 equipment requirements include: replacement of worn-out office machines and shop equipment, procurement of printing and reproduction and micro/documentation equipment to complete the outfit of the Merritt Island Launch Area facilities, photographic systems equipment and miscellaneous replacement equipments items.

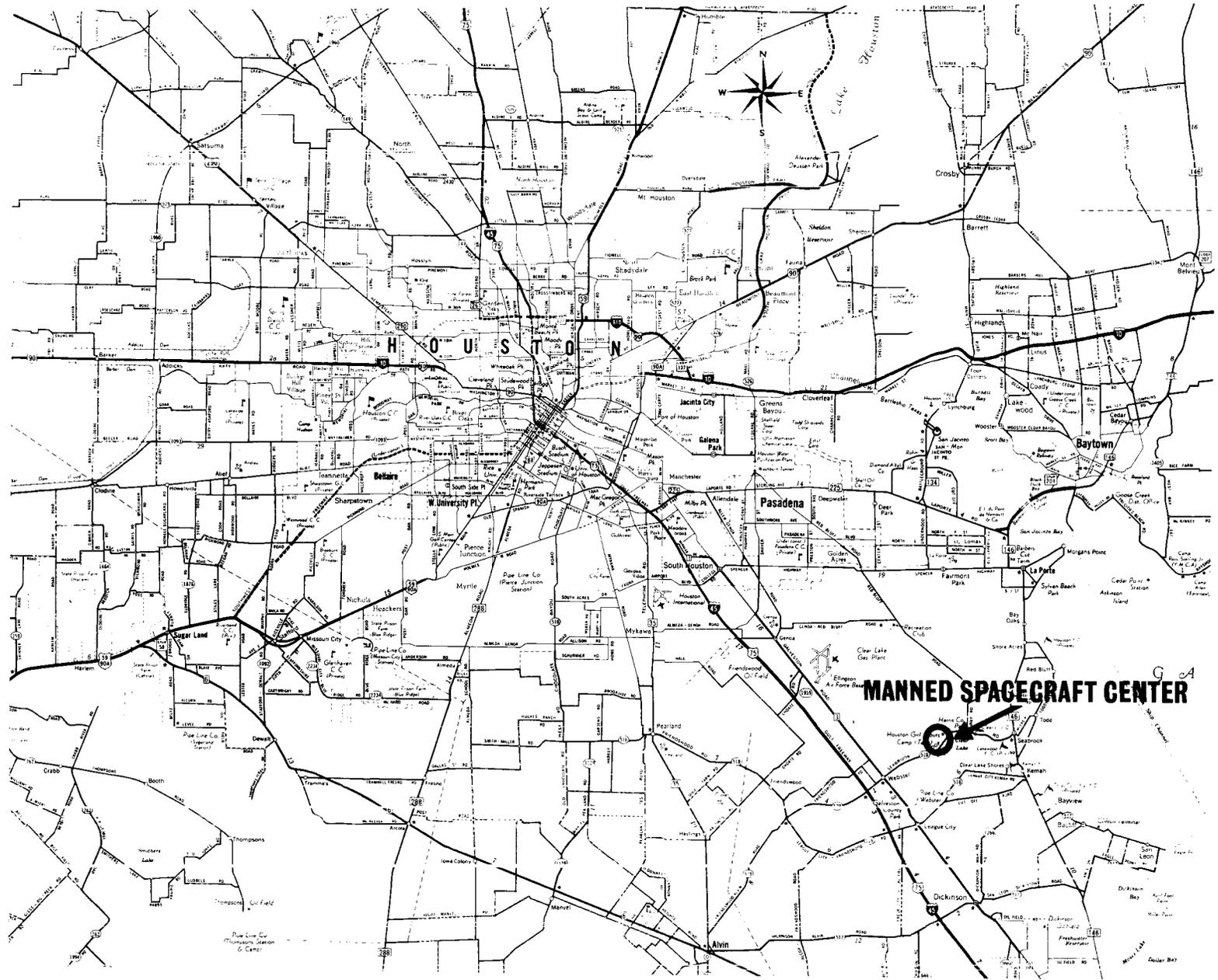
Land and Structures - \$700,000

The estimated requirements for FY 1966 for minor construction projects and modifications will decrease by \$232,000 from the FY 1965 level, based on the initial occupancy of newly constructed facilities on Merritt Island. As improved techniques of checkout and launch evolve, a continuing requirement exists for modification and minor construction of technical and support facilities to permit their effective utilization. Funds requested for this purpose will permit the Center to react promptly to these requirements.

Insurance Claims and Indemnities - \$1,000

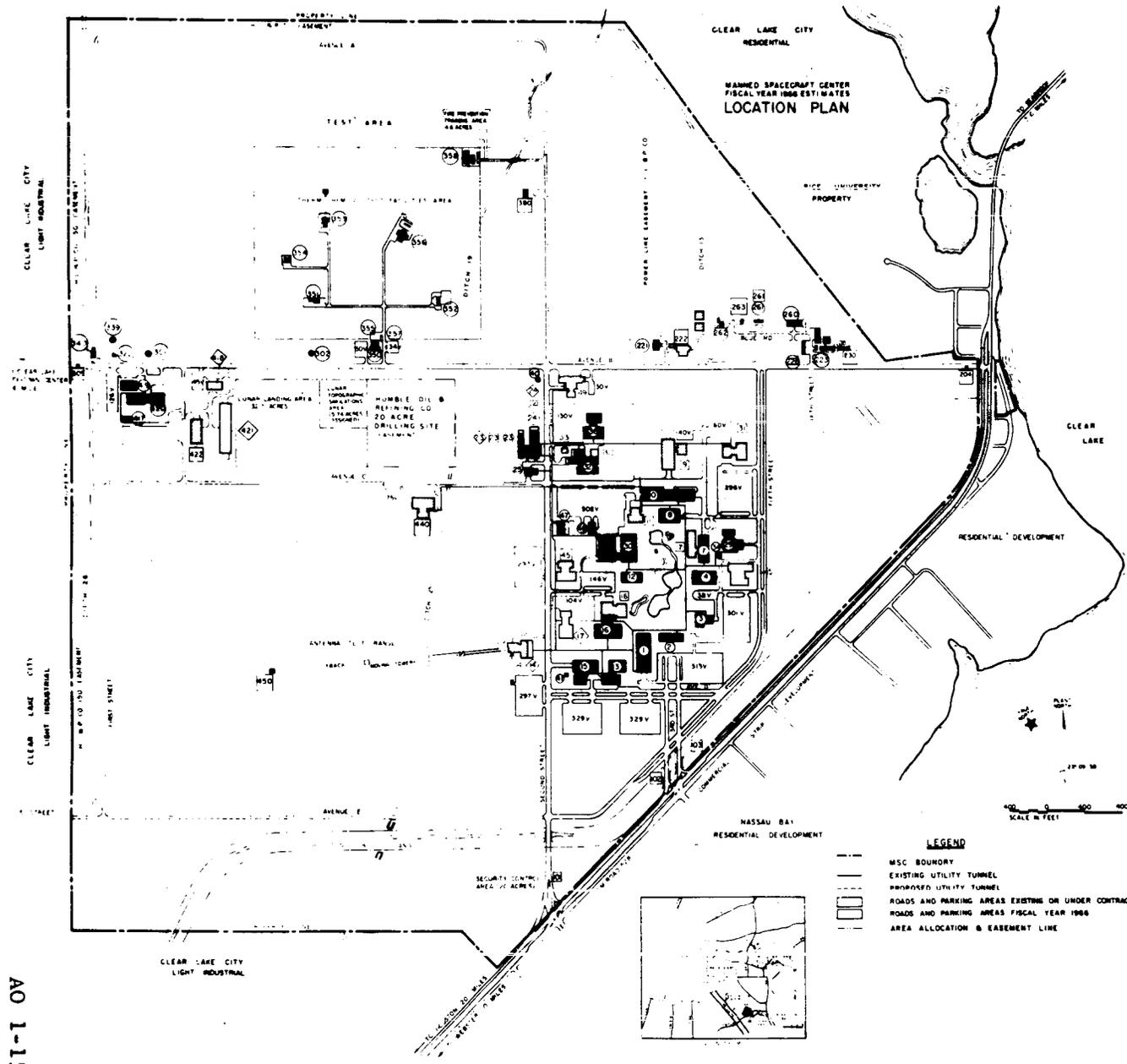
Funds requested are for settlement of insurance claims and indenmities. This requirement is expected to remain at the FY 1965 level.

AO 1-14



MANNED SPACECRAFT CENTER

AO 1-15

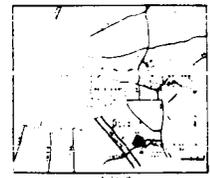


**MANNED SPACECRAFT CENTER
FISCAL YEAR 1966 ESTIMATES
LOCATION PLAN**

- ① EXISTING FACILITIES (FY 62, 63)
- 1 AUDITORIUM FY 62
 - 2 PROJECT MANAGEMENT FY 62
 - 3 CENTRAL CAFETERIA FY 62
 - 4 FLIGHT OPERATIONS OFFICE FY 62
 - 7 LIFE SYSTEMS LABORATORY FY 62
 - 8 TECHNICAL & ENGINEERING SERVICES OFFICE FY 62
 - 10 TECHNICAL SERVICES SHOP FY 62
 - 12 CENTRAL DATA OFFICE FY 62
 - 13 SYSTEMS EVALUATION LABORATORY FY 62
 - 15 INSTRUMENTATION & ELECTRONIC SYSTEMS LAB FY 62
 - 16 SPACECRAFT RESEARCH OFFICE & LABORATORY FY 62
 - 23 CENTRAL H & C COOLING TOWER FY 62, 63
 - 24 CENTRAL HEATING & COOLING PLANT FY 62, 63
 - 25 FIRE STATION FY 62
 - 25 FLIGHT ACCELERATION FACILITY FY 62
 - 30 INTEGRATED MISSION CONTROL FY 63
 - 32 SPACE ENVIRONMENT SIMULATION LABORATORY FY 62
 - 34 FLIGHT ACCELERATION MOTOR-GENERATION BUILDING FY 62
 - 36 ESC CONTRACTOR SUPPORT FACILITY FY 62
 - 40 ELEVATED WATER TANK FY 62
 - 41 GAS STORAGE FY 62
 - 47 SOUTHWESTERN BELL TELEPHONE BUILDING
 - 48 EMERGENCY POWER BUILDING (MECC) FY 63
 - 221 ELECTRICAL SUBSTATION FY 62
 - 223 SEWAGE TREATMENT PLANT FY 62
 - 224 FIELD CONSTRUCTION OFFICE
 - 250 TRANSLATION & DOCKING SIMULATION FACILITY FY 63
 - 261 RADIOLOGICAL FACILITY FY 63
 - 262 ARC JET, RADIANT HEATING & ACOUSTIC TEST FACILITY FY 62
 - 301 WATER WELL FY 62
 - 302 WATER WELL FY 62
 - 322 WATER TREATMENT FY 62
 - 339 GROUND WATER STORAGE TANK FY 62
 - 340 GAS METERING STATION FY 62
 - 350 THERMOCHEMICAL TEST FACILITY FY 63
 - 351 THERMOCHEMICAL SPACE CHAMBER FY 63
 - 352 ELECTRO-EXPLOSIVE DEVICES FY 63
 - 353 REACTION CONTROL TEST FACILITY FY 63
 - 354 SPACE POWER SYSTEMS TEST FACILITY FY 63
 - 355 CHEMICAL STORAGE BUILDING FY 63
 - 356 COMPONENTS TEST FACILITY FY 63
 - 357 THERMOCHEMICAL TEST AREA GATE HOUSE FY 63
 - 358 THERMOCHEMICAL PROPELLANT WASTE TREATMENT FY 63
 - 417 GARAGE FY 62
 - 419 SUPPORT OFFICE FY 62
 - 420 SUPPORT SHOP & WAREHOUSE FY 62
- ② FACILITIES AUTHORIZED OR UNDER CONTRACT
- 5 MISSION SIMULATION & TRAINING FACILITY FY 64
 - 7 LIFE SYSTEMS LABORATORY FY 65
 - 9 TECHNICAL SERVICES FACILITY FY 65
 - 11 BRANCH CAFETERIA FY 65
 - 14 ANECHOIC CHAMBER TEST FACILITY FY 64
 - 16 SPACECRAFT RESEARCH OFFICE & LABORATORY FY 64
 - 23 CENTRAL H & C COOLING TOWER FY 64, 65
 - 24 CENTRAL HEATING & COOLING PLANT FY 64, 65
 - 31 LUNAR MISSION & SPACE EXPLORATION FACILITY FY 65
 - 32 SPACE ENVIRONMENT SIMULATION LABORATORY FY 65
 - 33 ULTRA-HIGH VACUUM CHAMBER FACILITY FY 64
 - 45 PROJECT ENGINEERING FACILITY FY 64
 - 49 VIBRATION & ACOUSTIC TEST FACILITY FY 64
 - 101 GUARDHOUSE FY 64
 - 102 GUARDHOUSE FY 64
 - 103 GUARDHOUSE FY 64
 - 104 GUARDHOUSE FY 64
 - 204 GUARDHOUSE FY 64
 - 222 ATMOS ENTRY SIMULATION FACILITY FY 64
 - 223 SEWAGE TREATMENT PLANT FY 64
 - 230 CREW SYSTEMS BIOLOGICAL FACILITY FY 64
 - 261 RADIOLOGICAL FACILITY FY 64
 - 263 HEALTH PHYSICS LABORATORY FY 64
 - 305 GUARDHOUSE FY 64
 - 380 HAZARDOUS MATERIAL STORAGE FACILITY FY 64
 - 422 LOGISTIC SUPPORT WAREHOUSE FY 65
 - 440 ELECTRONIC SYSTEMS COMPATIBILITY FACILITY FY 65
 - 450 ANTENNA SERVICE BUILDING & TOWER FY 64
- ③ PROPOSED FISCAL YEAR 1966 PROJECTS
- 14 ADDITION TO ANECHOIC CHAMBER TEST FACILITY
 - 17 SPACECRAFT INSTRUMENTATION EVALUATION FACILITY
 - 24 ADDITION TO CENTRAL HEATING & COOLING PLANT
 - 32 UPGRADING SPACE ENVIRONMENT SIMULATION LABORATORY
 - 32-1 ADDITION TO ELECTRICAL SUBSTATION
 - 418 MAINTENANCE OFFICE
 - 421 MISSION SUPPORT WAREHOUSE

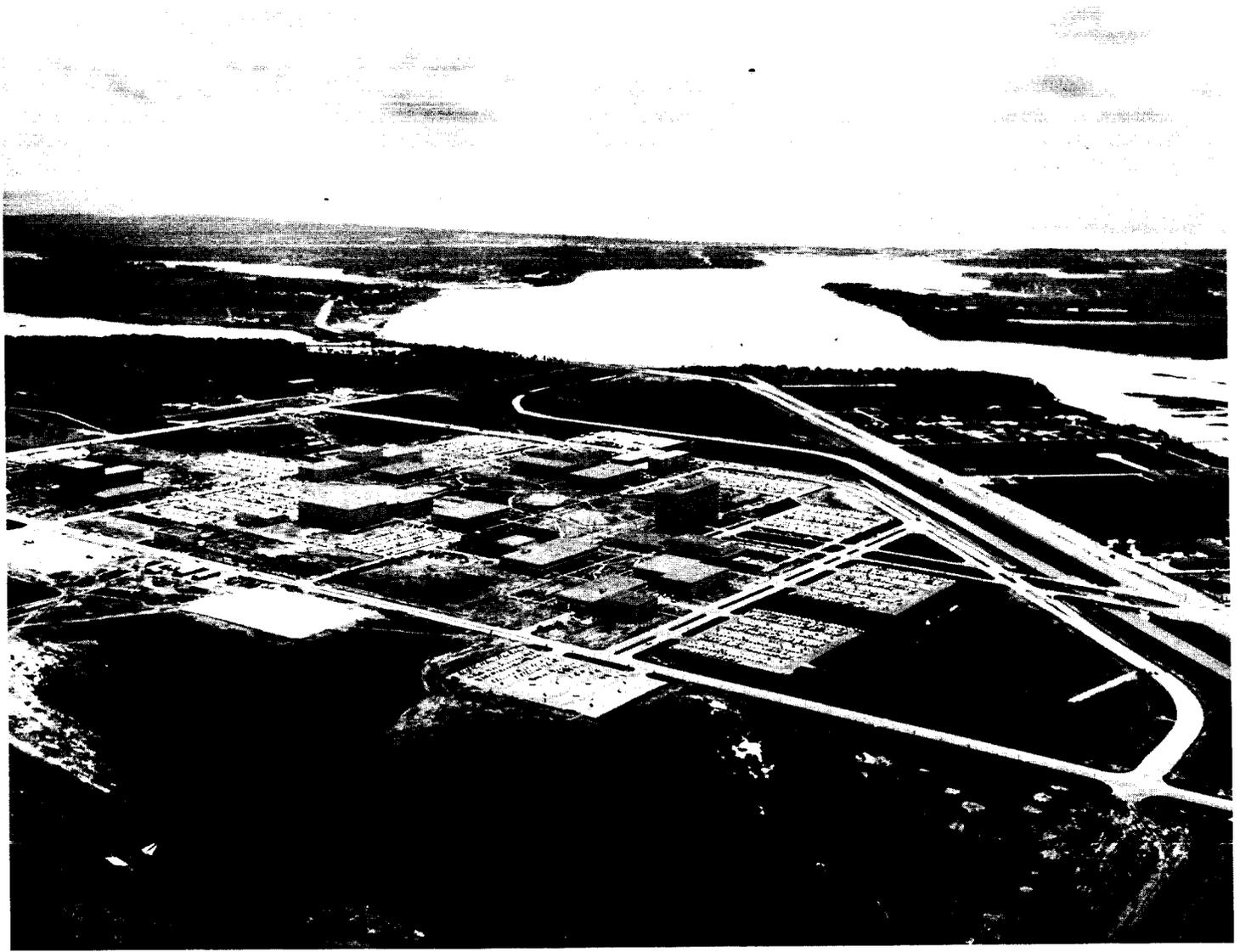
LEGEND

- MSC BOUNDARY
- - - EXISTING UTILITY TUNNEL
- - - PROPOSED UTILITY TUNNEL
- ▭ ROADS AND PARKING AREAS EXISTING OR UNDER CONTRACT
- ▭ ROADS AND PARKING AREAS FISCAL YEAR 1966
- ▭ AREA ALLOCATION & EASEMENT LINE



NASA
S-64-28489

MANNED SPACECRAFT CENTER



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AO 1-13

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 MANNED SPACECRAFT CENTER

STAFFING SUMMARY

	65	66
Excepted	35	35
GS-16	15	15
GS-15	222	222
GS-14	398	398
All other GS	3,694	3,694
Wage Board	322	322
Total Permanent	4,686	4,686
Temporary	122	122
Total Positions	4,811	4,811

OFFICE OF THE DIRECTOR

	65	66
Excepted	4	4
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	11	11
Wage Board	-	-
Total	15	15

CHIEF OF CENTER MEDICAL PROGRAMS

	65	66
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	4	4
Wage Board	-	-
Total	6	6

AUDIT OFFICE

	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	13	13
Wage Board	-	-
Total	16	16

PUBLIC AFFAIRS OFFICE

	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	52	52
Wage Board	1	1
Total	56	56

RELIABILITY AND QUALITY ASSURANCE OFFICE

	65	66
Excepted	1	1
GS-16	-	-
GS-15	9	9
GS-14	3	3
All other GS	23	23
Wage Board	-	-
Total	36	36

CENTER MEDICAL OFFICE

	65	66
Excepted	1	1
GS-16	3	3
GS-15	3	3
GS-14	2	2
All other GS	29	29
Wage Board	-	-
Total	35	35

GEMINI PROGRAM OFFICE

	65	66
Excepted	4	4
GS-16	3	3
GS-15	23	23
GS-14	34	34
All other GS	150	150
Wage Board	-	-
Total	214	214

ASSISTANT DIRECTOR FOR FLIGHT OPERATIONS

	65	66
Excepted	1	1
GS-16	1	1
GS-15	3	3
GS-14	3	3
All other GS	23	23
Wage Board	-	-
Total	31	31

ASSISTANT DIRECTOR FOR ADMINISTRATION

	65	66
Excepted	3	3
GS-16	-	-
GS-15	-	-
GS-14	5	5
All other GS	22	22
Wage Board	-	-
Total	30	30

ASSISTANT DIRECTOR FOR ENGINEERING AND DEVELOPMENT

	65	66
Excepted	3	3
GS-16	-	-
GS-15	5	5
GS-14	2	2
All other GS	14	14
Wage Board	-	-
Total	24	24

FLIGHT SUPPORT DIVISION

	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	58	58
Wage Board	-	-
Total	63	63

MISSION PLANNING AND ANALYSIS DIVISION

	65	66
Excepted	-	-
GS-16	-	-
GS-15	5	5
GS-14	15	15
All other GS	196	196
Wage Board	-	-
Total	216	216

MANAGEMENT ANALYSIS DIVISION

	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	13	13
Wage Board	-	-
Total	16	16

FLIGHT CONTROL DIVISION

	65	66
Excepted	-	-
GS-16	-	-
GS-15	6	6
GS-14	10	10
All other GS	167	167
Wage Board	-	-
Total	183	183

LANDING AND RECOVERY DIVISION

	65	66
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	2	2
All other GS	69	69
Wage Board	1	1
Total	75	75

RESOURCES MANAGEMENT DIVISION

	65	66
Excepted	1	1
GS-16	-	-
GS-15	3	3
GS-14	11	11
All other GS	134	134
Wage Board	-	-
Total	149	149

PROCUREMENT AND CONTRACTS DIVISION

	65	66
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	14	14
All other GS	190	190
Wage Board	1	1
Total	210	210

ADVANCED SPACECRAFT TECHNOLOGY DIVISION

	65	66
Excepted	1	1
GS-16	2	2
GS-15	6	6
GS-14	26	26
All other GS	174	174
Wage Board	-	-
Total	209	209

PERSONNEL DIVISION

	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	3	3
All other GS	86	86
Wage Board	-	-
Total	90	90

SECURITY DIVISION

	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	20	20
Wage Board	-	-
Total	21	21

CREW SYSTEMS DIVISION

	65	66
Excepted	-	-
GS-16	1	1
GS-15	16	16
GS-14	13	13
All other GS	185	185
Wage Board	2	2
Total	217	217

OFFICE OF TECHNICAL AND ENGINEERING SERVICES

	65	66
Excepted	-	-
GS-16	1	1
GS-15	9	9
GS-14	11	11
All other GS	165	165
Wage Board	14	14
Total	340	340

OFFICE OF ADMINISTRATIVE SERVICES

	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	3	3
All other GS	213	213
Wage Board	72	72
Total	289	289

INSTRUMENTATION AND ELECTRONIC SYSTEMS DIVISION

	65	66
Excepted	-	-
GS-16	1	1
GS-15	6	6
GS-14	22	22
All other GS	152	152
Wage Board	2	2
Total	183	183

PROPULSION AND POWER DIVISION

	65	66
Excepted	1	1
GS-16	-	-
GS-15	6	6
GS-14	6	6
All other GS	121	121
Wage Board	-	-
Total	134	134

MSC - WSMR OPERATIONS

	65	66
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	11	11
All other GS	134	134
Wage Board	-	-
Total	150	150

MSC - FLORIDA OPERATIONS

	65	66
Excepted	1	1
GS-16	1	1
GS-15	19	19
GS-14	42	42
All other GS	406	406
Wage Board	81	81
Total	550	550

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 MANNED SPACECRAFT CENTER

OFFICE OF THE DIRECTOR	
Excepted	65 66
GS-16	4 4
GS-15	- -
GS-14	- -
All other GS	11 11
Wage Board	- -
Total	15 15

RELIABILITY AND QUALITY ASSURANCE OFFICE	
Excepted	65 66
GS-16	1 1
GS-15	- -
GS-14	9 9
All other GS	3 3
Wage Board	23 23
Total	36 36

CENTER MEDICAL OFFICE	
Excepted	65 66
GS-16	1 1
GS-15	3 3
GS-14	2 2
All other GS	29 29
Wage Board	- -
Total	35 35

LEGAL OFFICE	
Excepted	65 66
GS-16	- -
GS-15	2 2
GS-14	3 3
All other GS	13 13
Wage Board	- -
Total	18 18

APOLLO SPACECRAFT PROGRAM OFFICE	
Excepted	65 66
GS-16	4 4
GS-15	41 41
GS-14	69 69
All other GS	188 188
Wage Board	- -
Total	302 302

ASSISTANT DIRECTOR FOR ADMINISTRATION	
Excepted	65 66
GS-16	3 3
GS-15	- -
GS-14	5 5
All other GS	22 22
Wage Board	- -
Total	30 30

ASSISTANT DIRECTOR FOR ENGINEERING AND DEVELOPMENT	
Excepted	65 66
GS-16	3 3
GS-15	5 5
GS-14	2 2
All other GS	14 14
Wage Board	- -
Total	24 24

ASSISTANT DIRECTOR FOR FLIGHT CREW OPERATIONS	
Excepted	65 66
GS-16	1 1
GS-15	0 0
GS-14	1 1
All other GS	1 1
Wage Board	- -
Total	4 4

MANAGEMENT ANALYSIS DIVISION	
Excepted	65 66
GS-16	- -
GS-15	1 1
GS-14	2 2
All other GS	13 13
Wage Board	- -
Total	16 16

OFFICE OF LONG RANGE PLANNING	
Excepted	65 66
GS-16	1 1
GS-15	1 1
GS-14	1 1
All other GS	3 3
Wage Board	- -
Total	6 6

ASTRONAUT OFFICE	
Excepted	65 66
GS-16	2 2
GS-15	3 3
GS-14	20 20
All other GS	- -
Wage Board	- -
Total	25 25

AIRCRAFT OPERATIONS OFFICE	
Excepted	65 66
GS-16	- -
GS-15	1 1
GS-14	1 1
All other GS	17 17
Wage Board	6 6
Total	25 25

PROCUREMENT AND CONTRACTS DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	4 4
GS-14	14 14
All other GS	190 190
Wage Board	1 1
Total	210 210

ADVANCED SPACECRAFT TECHNOLOGY DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	2 2
GS-14	6 6
All other GS	26 26
Wage Board	174 174
Total	209 209

INFORMATION SYSTEMS DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	5 5
GS-14	8 8
All other GS	57 57
Wage Board	- -
Total	71 71

FLIGHT CREW SUPPORT DIVISION	
Excepted	65 66
GS-16	2 2
GS-15	3 3
GS-14	10 10
All other GS	150 150
Wage Board	1 1
Total	171 171

SECURITY DIVISION	
Excepted	65 66
GS-16	- -
GS-15	- -
GS-14	1 1
All other GS	20 20
Wage Board	- -
Total	21 21

CREW SYSTEMS DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	16 16
GS-14	13 13
All other GS	185 185
Wage Board	2 2
Total	217 217

COMPUTATION AND ANALYSIS DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	5 5
GS-14	8 8
All other GS	141 141
Wage Board	- -
Total	155 155

OFFICE OF ADMINISTRATIVE SERVICES	
Excepted	65 66
GS-16	- -
GS-15	1 1
GS-14	3 3
All other GS	213 213
Wage Board	72 72
Total	289 289

INSTRUMENTATION AND ELECTRONIC SYSTEMS DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	6 6
GS-14	22 22
All other GS	152 152
Wage Board	2 2
Total	183 183

GUIDANCE AND CONTROL DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	13 13
GS-14	24 24
All other GS	106 106
Wage Board	- -
Total	144 144

PROPULSION AND POWER DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	6 6
GS-14	6 6
All other GS	121 121
Wage Board	- -
Total	134 134

STRUCTURES AND MECHANICS DIVISION	
Excepted	65 66
GS-16	1 1
GS-15	9 9
GS-14	21 21
All other GS	174 174
Wage Board	1 1
Total	207 207

MSC - WSMR OPERATIONS	
Excepted	65 66
GS-16	1 1
GS-15	4 4
GS-14	11 11
All other GS	134 134
Wage Board	- -
Total	150 150

MSC - FLORIDA OPERATIONS	
Excepted	65 66
GS-16	1 1
GS-15	19 19
GS-14	42 42
All other GS	406 406
Wage Board	81 81
Total	550 550

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 MANNED SPACECRAFT CENTER

OFFICE OF THE DIRECTOR	
Exempted	4
GS-16	4
GS-15	-
GS-14	-
All other GS	11
Wage Board	-
Total	15

CENTER MEDICAL	
Exempted	6
GS-16	1
GS-15	1
GS-14	1
All other GS	4
Wage Board	-
Total	6

INS OFFICE	
Exempted	6
GS-16	1
GS-15	1
GS-14	2
All other GS	3
Wage Board	-
Total	13

AIR OFFICE	
Exempted	6
GS-16	4
GS-15	3
GS-14	23
All other GS	34
Wage Board	-
Total	150

ASSISTANT DIRECTOR FOR ADMINISTRATION	
Exempted	6
GS-16	3
GS-15	3
GS-14	11
All other GS	134
Wage Board	-
Total	149

MANAGEMENT DIVISION	
Exempted	6
GS-16	1
GS-15	1
GS-14	3
All other GS	86
Wage Board	-
Total	90

MANAGEMENT DIVISION	
Exempted	6
GS-16	1
GS-15	1
GS-14	3
All other GS	86
Wage Board	-
Total	90

TECHNICAL AND SERVICES DIVISION	
Exempted	6
GS-16	1
GS-15	1
GS-14	11
All other GS	165
Wage Board	-
Total	340

OFFICE OF ADMINISTRATIVE SERVICES	
Exempted	6
GS-16	1
GS-15	1
GS-14	3
All other GS	213
Wage Board	-
Total	289

MSC - WSNR OPERATIONS	
Exempted	6
GS-16	1
GS-15	4
GS-14	11
All other GS	134
Wage Board	-
Total	150

MSC - FLORIDA OPERATIONS	
Exempted	6
GS-16	1
GS-15	19
GS-14	42
All other GS	406
Wage Board	-
Total	550

ASSISTANT DIRECTOR FOR MANAGEMENT ANALYSIS DIVISION	
Exempted	6
GS-16	1
GS-15	1
GS-14	13
All other GS	17
Wage Board	-
Total	16

PRODUCTS AND CONTRACTS DIVISION	
Exempted	6
GS-16	1
GS-15	1
GS-14	2
All other GS	190
Wage Board	-
Total	210

SECURITY DIVISION	
Exempted	6
GS-16	1
GS-15	1
GS-14	1
All other GS	20
Wage Board	-
Total	21

INSTRUMENTATION AND ELECTRONIC SYSTEMS DIVISION	
Exempted	6
GS-16	1
GS-15	6
GS-14	22
All other GS	152
Wage Board	-
Total	183

GUIDANCE AND CONTROL DIVISION	
Exempted	6
GS-16	1
GS-15	13
GS-14	24
All other GS	106
Wage Board	-
Total	144

PROPULSION AND POWER DIVISION	
Exempted	6
GS-16	1
GS-15	6
GS-14	6
All other GS	121
Wage Board	-
Total	134

STRUCTURES AND MECHANICS DIVISION	
Exempted	6
GS-16	1
GS-15	9
GS-14	21
All other GS	174
Wage Board	-
Total	207

ASSISTANT DIRECTOR FOR ENGINEERING AND DEVELOPMENT	
Exempted	6
GS-16	3
GS-15	3
GS-14	14
All other GS	14
Wage Board	-
Total	24

OFFICE OF LONG RANGE PLANNING	
Exempted	6
GS-16	1
GS-15	1
GS-14	1
All other GS	3
Wage Board	-
Total	6

ADVANCED SPACECRAFT TECHNOLOGY DIVISION	
Exempted	6
GS-16	2
GS-15	2
GS-14	6
All other GS	174
Wage Board	-
Total	209

GEM SYSTEMS DIVISION	
Exempted	6
GS-16	1
GS-15	16
GS-14	13
All other GS	185
Wage Board	-
Total	217

COMPUTATION AND ANALYSIS DIVISION	
Exempted	6
GS-16	1
GS-15	5
GS-14	8
All other GS	141
Wage Board	-
Total	155

INFORMATION SYSTEMS DIVISION	
Exempted	6
GS-16	1
GS-15	5
GS-14	8
All other GS	57
Wage Board	-
Total	71

FLIGHT CREW SUPPORT DIVISION	
Exempted	6
GS-16	2
GS-15	8
GS-14	10
All other GS	150
Wage Board	-
Total	171

APOLLO SPACECRAFT PROGRAM OFFICE	
Exempted	6
GS-16	4
GS-15	4
GS-14	41
All other GS	188
Wage Board	-
Total	302

LEGAL OFFICE	
Exempted	6
GS-16	2
GS-15	2
GS-14	3
All other GS	13
Wage Board	-
Total	18

CENTER MEDICAL OFFICE	
Exempted	6
GS-16	1
GS-15	3
GS-14	29
All other GS	29
Wage Board	-
Total	35

ASSURANCE OFFICE	
Exempted	6
GS-16	1
GS-15	9
GS-14	23
All other GS	23
Wage Board	-
Total	36

RELIABILITY AND QUALITY ASSURANCE OFFICE	
Exempted	6
GS-16	1
GS-15	9
GS-14	23
All other GS	23
Wage Board	-
Total	36

CENTER MEDICAL OFFICE	
Exempted	6
GS-16	1
GS-15	3
GS-14	29
All other GS	29
Wage Board	-
Total	35

LEGAL OFFICE	
Exempted	6
GS-16	2
GS-15	2
GS-14	3
All other GS	13
Wage Board	-
Total	18

GEMINI PROGRAM OFFICE		
	65	66
Excepted	4	4
GS-16	3	3
GS-15	23	23
GS-14	34	34
All other GS	150	150
Wage Board	-	-
Total	214	214

APOLLO SPACECRAFT PROGRAM OFFICE		
	65	66
Excepted	4	4
GS-16	-	-
GS-15	41	41
GS-14	69	69
All other GS	188	188
Wage Board	-	-
Total	302	302

ASSISTANT DIRECTOR FOR FLIGHT OPERATIONS		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	3	3
GS-14	3	3
All other GS	23	23
Wage Board	-	-
Total	31	31

ASSISTANT DIRECTOR FOR ADMINISTRATION		
	65	66
Excepted	3	3
GS-16	-	-
GS-15	-	-
GS-14	5	5
All other GS	22	22
Wage Board	-	-
Total	30	30

ASSISTANT DIRECTOR FOR ENGINEERING AND DEVELOPMENT		
	65	66
Excepted	3	3
GS-16	-	-
GS-15	5	5
GS-14	2	2
All other GS	14	14
Wage Board	-	-
Total	24	24

ASSISTANT DIRECTOR FOR FLIGHT CREW OPERATIONS		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	0	0
GS-14	1	1
All other GS	1	1
Wage Board	-	-
Total	4	4

FLIGHT SUPPORT DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	58	58
Wage Board	-	-
Total	63	63

MISSION PLANNING AND ANALYSIS DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	5	5
GS-14	15	15
All other GS	196	196
Wage Board	-	-
Total	216	216

MANAGEMENT ANALYSIS DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	13	13
Wage Board	-	-
Total	16	16

OFFICE OF LONG RANGE PLANNING		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	3	3
Wage Board	-	-
Total	6	6

ASTRONAUT OFFICE		
	65	66
Excepted	-	-
GS-16	2	2
GS-15	-	-
GS-14	3	3
All other GS	20	20
Wage Board	-	-
Total	25	25

AIRCRAFT OPERATIONS OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	17	17
Wage Board	6	6
Total	25	25

FLIGHT CONTROL DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	6	6
GS-14	10	10
All other GS	167	167
Wage Board	-	-
Total	183	183

LANDING AND RECOVERY DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	2	2
All other GS	69	69
Wage Board	1	1
Total	75	75

RESOURCES MANAGEMENT DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	3	3
GS-14	11	11
All other GS	134	134
Wage Board	-	-
Total	149	149

PROCUREMENT AND CONTRACTS DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	14	14
All other GS	190	190
Wage Board	1	1
Total	210	210

ADVANCED SPACECRAFT TECHNOLOGY DIVISION		
	65	66
Excepted	1	1
GS-16	2	2
GS-15	6	6
GS-14	26	26
All other GS	174	174
Wage Board	-	-
Total	209	209

INFORMATION SYSTEMS DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	5	5
GS-14	8	8
All other GS	57	57
Wage Board	-	-
Total	71	71

FLIGHT CREW SUPPORT DIVISION		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	8	8
GS-14	10	10
All other GS	150	150
Wage Board	1	1
Total	171	171

PERSONNEL DIVISION		
	65	66
Excepted	-	-
GS-16	1	1
GS-15	3	3
GS-14	86	86
All other GS	86	86
Wage Board	-	-
Total	90	90

SECURITY DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	16	16
GS-14	1	1
All other GS	20	20
Wage Board	-	-
Total	21	21

CREW SYSTEMS DIVISION		
	65	66
Excepted	-	-
GS-16	1	1
GS-15	16	16
GS-14	13	13
All other GS	185	185
Wage Board	2	2
Total	217	217

COMPUTATION AND ANALYSIS DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	5	5
GS-14	8	8
All other GS	141	141
Wage Board	-	-
Total	155	155

OFFICE OF TECHNICAL AND ENGINEERING SERVICES		
	65	66
Excepted	-	-
GS-16	1	1
GS-15	9	9
GS-14	11	11
All other GS	165	165
Wage Board	154	154
Total	340	340

OFFICE OF ADMINISTRATIVE SERVICES		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	213	213
Wage Board	72	72
Total	289	289

INSTRUMENTATION AND ELECTRONIC SYSTEMS DIVISION		
	65	66
Excepted	-	-
GS-16	1	1
GS-15	6	6
GS-14	22	22
All other GS	152	152
Wage Board	2	2
Total	183	183

GUIDANCE AND CONTROL DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	13	13
GS-14	24	24
All other GS	106	106
Wage Board	-	-
Total	144	144

PROPULSION AND POWER DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	6	6
GS-14	6	6
All other GS	121	121
Wage Board	-	-
Total	134	134

STRUCTURES AND MECHANICS DIVISION		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	9	9
GS-14	3	3
All other GS	174	174
Wage Board	1	1
Total	207	207

NSC - WSMR OPERATIONS		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	11	11
All other GS	134	134
Wage Board	-	-
Total	150	150

MSC - FLORIDA OPERATIONS		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	19	19
GS-14	42	42
All other GS	406	406
Wage Board	81	81
Total	550	550

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

MANNED SPACECRAFT CENTER

MISSION AND CAPABILITIES:

The primary mission of the Manned Spacecraft Center (established in November 1961) is the development of spacecraft and related equipment for manned space flight programs, the selection and training of flight crews, and the conduct of manned flight operations. The Center currently is engaged in two major space research and development efforts:

Gemini - The Gemini program objectives are to develop an operational capability in manned space flight, and through this capability, to conduct specific experiments and tests which support Apollo, Department of Defense experiments and scientific investigations. This program is time-phased between the short-duration earth-orbital Mercury missions (which were completed in May 1963) and the forthcoming long-duration mission of Apollo. Major objectives are:

- (1) To determine man's capability during long-duration space flights,
- (2) To develop techniques and provide crew experience in rendezvous and docking,
- (3) To experiment with orbital flight maneuvering and extra-vehicular crew activity, and
- (4) To conduct scientific experiments.

Apollo Spacecraft - This phase of the presently planned lunar landing program involves utilization of a three-man spacecraft of modular design, capable of extended flights in earth and lunar orbits. The flights will lead to a landing on, and return from, the lunar surface. The actual lunar orbital and lunar landing flights will be preceded by extended earth-orbital flights to:

- (1) Provide experience in handling the three-man spacecraft,
- (2) Develop rendezvous and docking procedures of the spacecraft and lunar excursion module, and
- (3) Conduct scientific experiments.

The Center's mission includes an engineering, development, test and evaluation, and operations capability to support these projects; and to

develop the knowledge required to advance the technology of space and manned spacecraft development. Technology efforts focus on the conception and implementation of a program of applied research and development in the areas of space research, space physics, and life support systems.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year..	4,277	4,811	4,811
Average number of All Employees...	3,509	4,524	4,725
Administrative Operations.....	\$68,634,000	\$91,201,000	\$89,658,000

INSTALLATION DESCRIPTION:

The Manned Spacecraft Center is located on Road 528, two miles East of the town of Webster, Texas. The site is approximately 20 miles southeast of downtown Houston, 25 miles northwest of Galveston, and 20 miles southwest of Baytown. A portion of the site borders on Clear Lake, which provides water access to the Gulf of Mexico through Galveston Bay and the Intra-coastal Canal.

Total NASA-owned land consists of 1,600 acres. This land was acquired by two conveyances, one of 600 acres and the other of 1,000, of which 20 acres are reserved for mineral rights by the Humble Oil Company. The property is subject to easements to the Houston Natural Gas Company, Harris County, and the State of Texas. The capital investment of the Manned Spacecraft Center at the Clear Lake site, as of June 30, 1964, was \$131,045,200. The Center holds an additional 55,952 acres under use agreement at the White Sands Missile Range, with a capital investment of \$14,536,800. Combined capital investment of the Manned Spacecraft Center as of June 30, 1964, was \$145,582,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$34,497,000	\$47,685,000	\$49,997,000
12. Personnel Benefits.....	<u>2,294,000</u>	<u>3,164,000</u>	<u>3,328,000</u>
Total, personnel costs.....	\$36,791,000	\$50,849,000	\$53,325,000
21. Travel and Transportation of Persons.....	3,874,000	4,908,000	5,417,000
22. Transportation of Things.....	1,289,000	1,160,000	944,000
23. Rents, Communications, and Utilities.....	5,114,000	7,967,000	7,143,000
24. Printing and Reproduction....	366,000	390,000	390,000
25. Other Services.....	9,523,000	12,072,000	15,034,000
Services of other agencies.	1,080,000	665,000	665,000
26. Supplies and Materials.....	3,427,000	3,889,000	3,889,000

	<u>1964</u>	<u>1965</u>	<u>1966</u>
31. Equipment.....	\$6,442,000	\$8,453,000	\$2,110,000
32. Land and Structures.....	727,000	847,000	740,000
41. Grants, Subsidies, and Contributions.....	-	-	-
42. Insurance Claims and Indemnities.....	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>
Total.....	<u>\$68,634,000</u>	<u>\$91,201,000</u>	<u>\$89,658,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Gemini.....	1,041	1,240	1,240
Apollo.....	1,690	2,006	2,006
Advanced missions.....	65	65	65
<u>Space Science and Applications</u>			
Lunar and planetary exploration.	3	3	3
<u>Advanced Research and Technology</u>			
Nuclear electric systems.....	1	1	1
Space vehicle systems.....	7	7	7
Electronics systems.....	10	10	10
Human factors.....	25	25	25
Chemical propulsion.....	2	2	2
Basic research.....	2	2	2
Technology Utilization.....	<u>5</u>	<u>5</u>	<u>5</u>
Sub-total, direct positions...	2,851	3,366	3,366
<u>Support personnel</u>			
Director and Staff.....	110	111	111
Administration.....	677	655	655
Research and development support..	<u>533</u>	<u>554</u>	<u>554</u>
Sub-total, support positions....	<u>1,320</u>	<u>1,320</u>	<u>1,320</u>
Total, permanent positions.....	4,171	4,686	4,686

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Other positions:</u>			
Positions under cooperative training agreements.....	98	105	105
Other temporary positions.....	<u>8</u>	<u>20</u>	<u>20</u>
Total, all positions.....	<u>4,277</u>	<u>4,811</u>	<u>4,811</u>

Personnel requirements

The personnel requirements of the Manned Spacecraft Center are in direct support of its primary mission to develop spacecraft for manned space flight programs, selection and training of astronauts, and to conduct manned flight operations. In FY 1966 personnel support is required for the Gemini manned flights in addition to Apollo spacecraft boilerplate and checkout flights scheduled for FY 1966.

The programs assigned to the Center therefore have many facets which must be managed and monitored to assure timely attainment of manned spacecraft program objectives.

The Apollo spacecraft program will reach peak activity during the FY 1967-1968 period. This effort involves development, manufacture, and test of the many critical systems and sub-systems. It is also the period during which maximum integration effort is required. The engineering requirements associated with flight and integrated systems ground test will expand rapidly during this period.

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Total Positions.....	4,277	4,811	4,811
Permanent.....	4,171	4,686	4,686
Other.....	106	125	125

Personnel Compensation:

Annual cost of permanent positions.....	\$37,237,000	\$44,456,000	\$44,674,000
Pay above the stated annual rate.	269,000	163,000	208,000
Lapses (deduct).....	<u>-7,116,000</u>	<u>-2,488,000</u>	<u>-511,000</u>
Net cost of permanent positions..	30,390,000	42,131,000	44,371,000
Other personnel compensation.....	<u>4,107,000</u>	<u>5,554,000</u>	<u>5,626,000</u>
Total compensation.....	<u>34,497,000</u>	<u>47,685,000</u>	<u>49,997,000</u>
NASA funded.....	34,497,000	47,685,000	49,997,000
Reimbursable.....	---	---	---

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total personnel benefits.....</u>	<u>\$2,294,000</u>	<u>\$3,164,000</u>	<u>\$3,328,000</u>
NASA funded.....	2,294,000	3,164,000	3,328,000
Reimbursable.....	---	---	---
<u>Total personnel costs.....</u>	<u>36,791,000</u>	<u>50,849,000</u>	<u>53,325,000</u>
NASA funded.....	36,791,000	50,849,000	53,325,000
Reimbursable.....	---	---	---
<u>Average Number of All Employees</u>			
<u>(Man Years)</u>	3,509	4,524	4,725

Personnel Costs - \$53,325,000

FY 1966 personnel costs increase \$2,476,000 above FY 1965, the result of 201 additional man-years to be realized during FY 1966, and 10 additional military personnel to be assigned to the Center.

Travel and Transportation of Persons - \$5,417,000

The estimate for travel and transportation of persons for FY 1966 represents an increase of \$509,000 from FY 1965. This increase is primarily attributable to the additional manned flights scheduled for FY 1966. Additional travel will be required to implement extensive development of new training techniques, management of contractor efforts on developing hardware for training purposes, and to accomplish final systems and sub-systems check-outs on Gemini spacecraft. Travel requirements for the Apollo program will be higher with the intensification of the ground test program.

Transportation of Things - \$944,000

The FY 1966 estimate is \$216,000 lower than the FY 1965 requirements. Since the personnel plan remains the same as in FY 1965, there will be fewer new employees for whom movement of household goods at Government expense will be required. There will also be a reduction in local movement costs.

Rents, Communications, and Utilities - \$7,143,000

The FY 1966 estimate reflects a reduction of \$824,000 from the FY 1965 estimate. This decrease is due to a reduction in rental costs for automatic data processing equipment in FY 1966 as this type of equipment will be purchased in FY 1965.

Printing and Reproduction - \$390,000

Requirements remain at the FY 1965 level for printing, duplicating, binding and microfilming; therefore no increase in funds is being requested for these purposes.

Other Services - \$15,699,000

The amount requested for FY 1966 represents an increase of \$2,962,000 over fiscal year 1965. of this amount, \$800,000 is attributable to increased costs for support operations at the White Sands Missile Range. The balance of the increase of \$2,162,000 is attributable to several factors. These are maintenance, repair, and custodial services for newly operational buildings and additions; increased motion picture and photographic support services, including production of documentary films, film cataloguing, and film indexing services for tests and research projects to support the manned flights for fiscal year 1966; increased automatic data processing equipment operation and programming support resulting from increased data processing activity to support the manned flights in FY 1966; and the augmentation of technical documentation services which includes technical report writing, the implementation of documentation and data retrieval systems, and microfilming services in support of the increasing flight activity in FY 1966.

Supplies and Materials - \$3,889,000

The requirement for supplies and materials is expected to remain at the FY 1965 level. Therefore, no increase in funding is requested.

Equipment - \$2,110,000

The FY 1966 estimate for equipment requirements is \$6,343,000 lower than the amount available in FY 1965. This decrease is a result of the purchase in FY 1965 of automatic data processing equipment, rather than continued renting of this type of equipment.

Lands and Structures - \$740,000

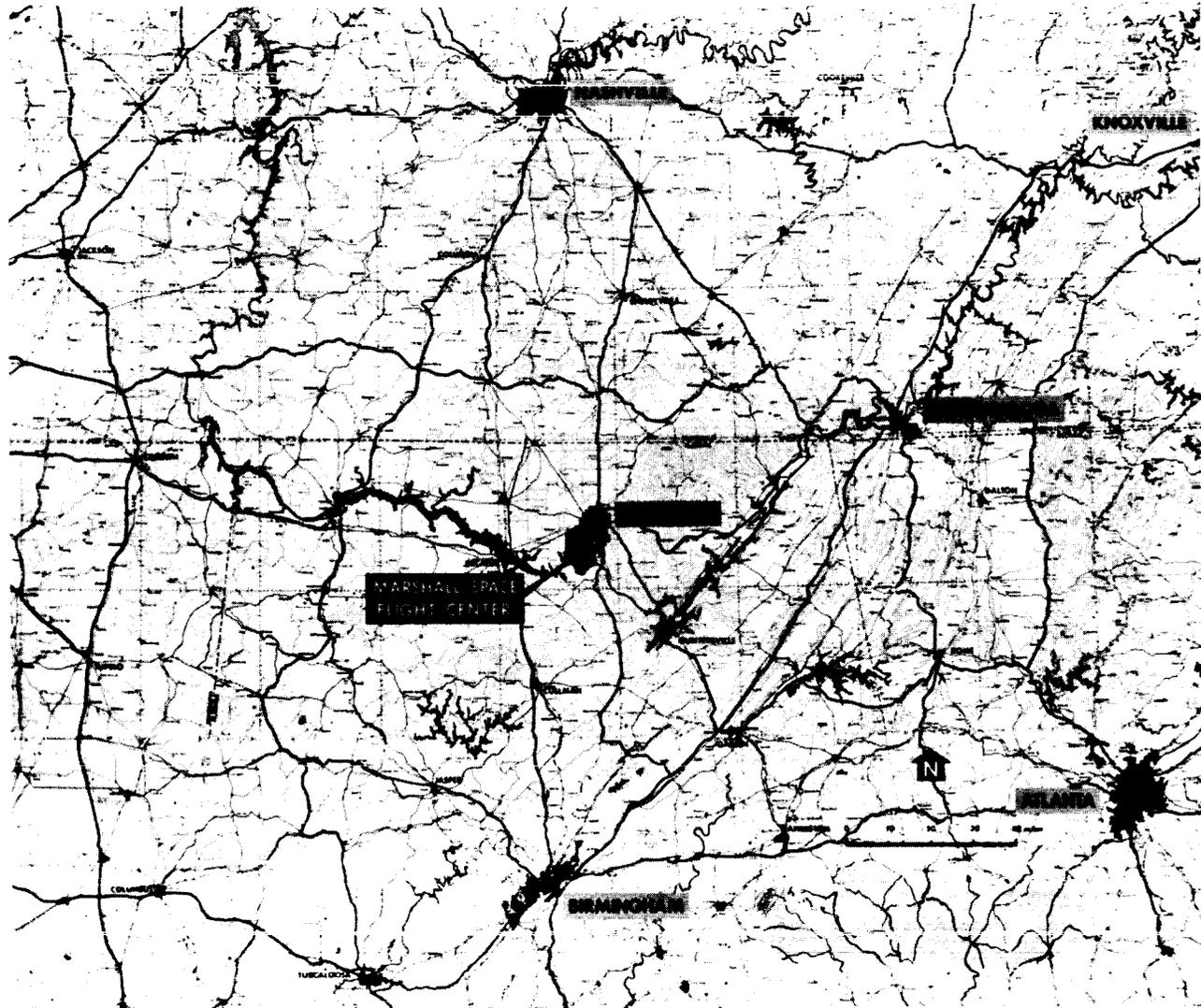
The FY 1966 estimate covers the requirement for minor construction related to improvement of existing facilities, as well as modifications associated with expanding operations. The FY 1966 estimate is \$107,000 less than FY 1965 requirements.

Insurance Claims and Indemnities - \$1,000

Funds requested are for settlement of insurance claims and indemnities. This requirement is estimated to remain at the FY 1965 level.

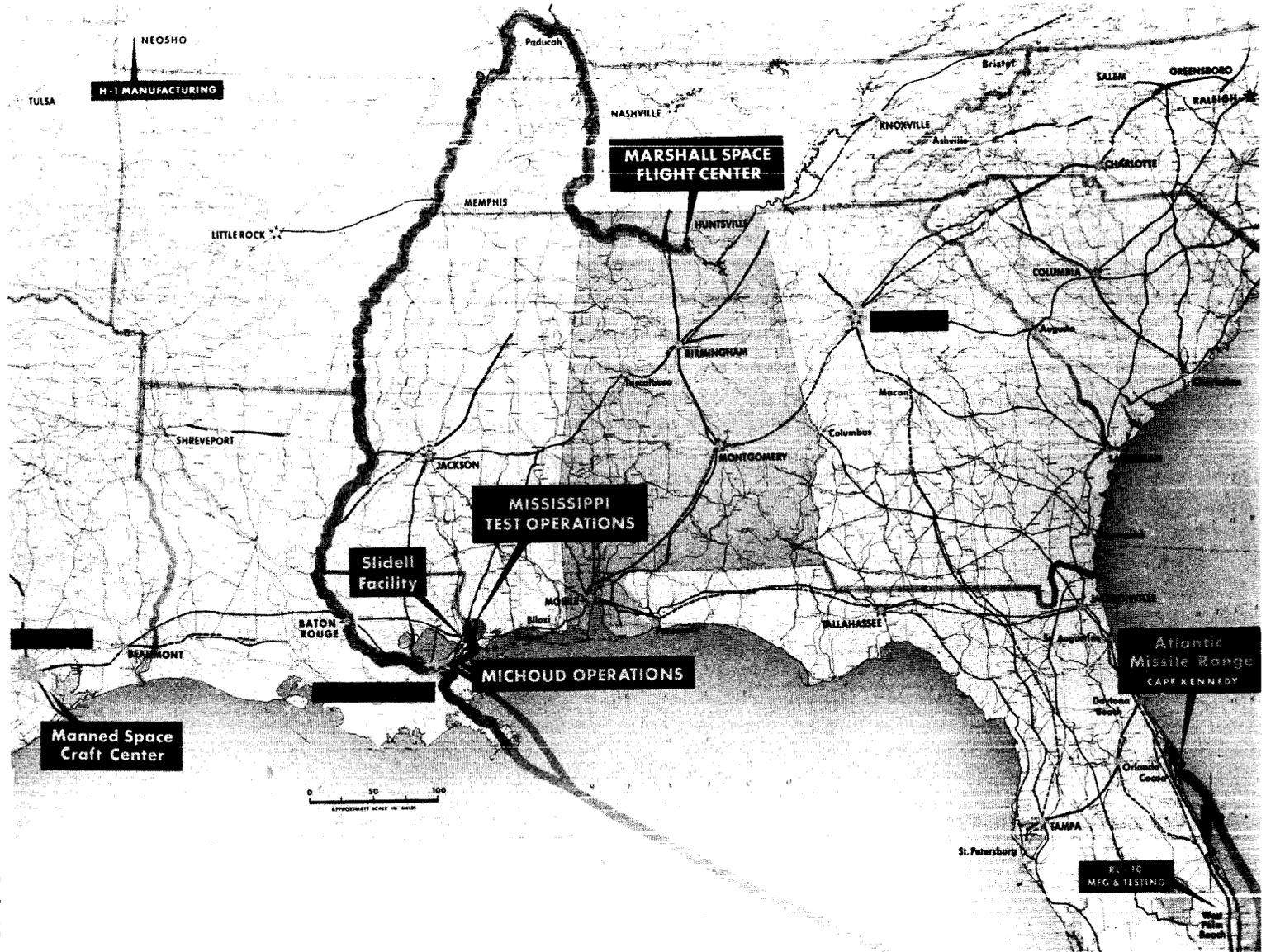
GEORGE C. MARSHALL SPACE FLIGHT CENTER

Huntsville, Alabama



AO 1-24

REGIONAL MAP



MARSHALL SPACE FLIGHT CENTER
FISCAL YEAR 1966 ESTIMATES
LOCATION PLAN



LEBBID
EXISTING FACILITIES:

4200 CENTRAL LAB & OFFICE BLDG.	4587 BRJLER HOUSE
4201 ENGINEERING & ADMINISTRATION BLDG. 3A	4670 BLDGHOUSE
4207 CENTRAL COMMUNICATIONS FACILITY	4672 STATIC TEST TOWER
4244 STORAGE FACILITY	4683 COMPONENTS TEST LAB
4280 MAINTENANCE BLDG.	4686 OIL-GAS TEST STAND
4282 CAFETERIA	4810 PROP. & VEHICLE ENR. LAB
4311 WIND TUNNEL OPERATIONS	4812 ENGINEERING OFFICES
4316 SECURITY GUARD UNIT	4813 COMPRESSION BLDG.
4313 SERVICE SHOPS	4816 EMB OFFICE & SHOP
4321 TEST & DEVELOP SHOP	4818 HYDRAULIC TEST FACILITY
4322 STORAGE FACILITY	4819 TEST UNIT
4380 FUEL TEST STAND	4825 ACCELERATION TEST FACILITY
4331 TECH. INFO. BLDG.	4830 TEST SHOP
4332 NITROGEN WFR. BLDG.	4863 COMPUTATIONS DIVISION LAB
4353 PHOTO LAB	4866 ENGINEERING BUILDINGS
4371 PLANT MAINT.	4874 TEST AREA BLDGHOUSE
4372 PLANT MAINT.	4703 ASSEMBLY SHOP
4373 PLANT MAINT.	4707 STRUCT. FABRIC. SHOP
4424 FIRE STATION	4708 QUALITY ASSURANCE ENR. DPC
4430 MOTOR POOL	4710 LIQUID HYDROGEN TEST STAND
4471 WAREHOUSE	4711 DEVELOPMENT SHOP
4480 ADMIN. & ENG. OFFICES	4712 WFR. ENR. OFFICE BLDG.
4488 VEHICLE MAINT. BLDG.	4723 OFFICE BLDG.
4489 AUTOMOTIVE MAINT. SHOP	4725 STEAM PLANT
4487 FINANCIAL, INSURANCE DPC	4727 SHOP & LAB FACILITY
4487 METROLOGY ENR. BLDG.	4729 RESEARCH & DEVELOP. FACILITY
4488 AUTOMATIC DATA PROCESS CENTER	4732 WIND TUNNEL
4488 ELECTRIC SHOP	4741 REPELLUM FACILITY
4488 MACHINE SHOP	4746 TEST LAB & OFFICES
4488 TECHNICAL DOCUMENTATION	4747 COMPRESSION STATION
4587 DYNAMIC TEST STAND	4748 LIQUID PROPELLANT TEST STAND
4588 CONTROL BLDG.	4750 HIGH ALTITUDE TEST FACILITY
4581 PROPELL. SHOP SUPPORT FACILITY	5-4756 COMP. & SUBASST. ACCEPT. BLDG.
4583 LOW STORAGE	4752 SURFACE TREATMENT FACILITY
4584 ENGINE TEST STAND	4828 LOW TEMPERATURE FACILITY
4588 TEST DIVISION ENR. BLDG.	

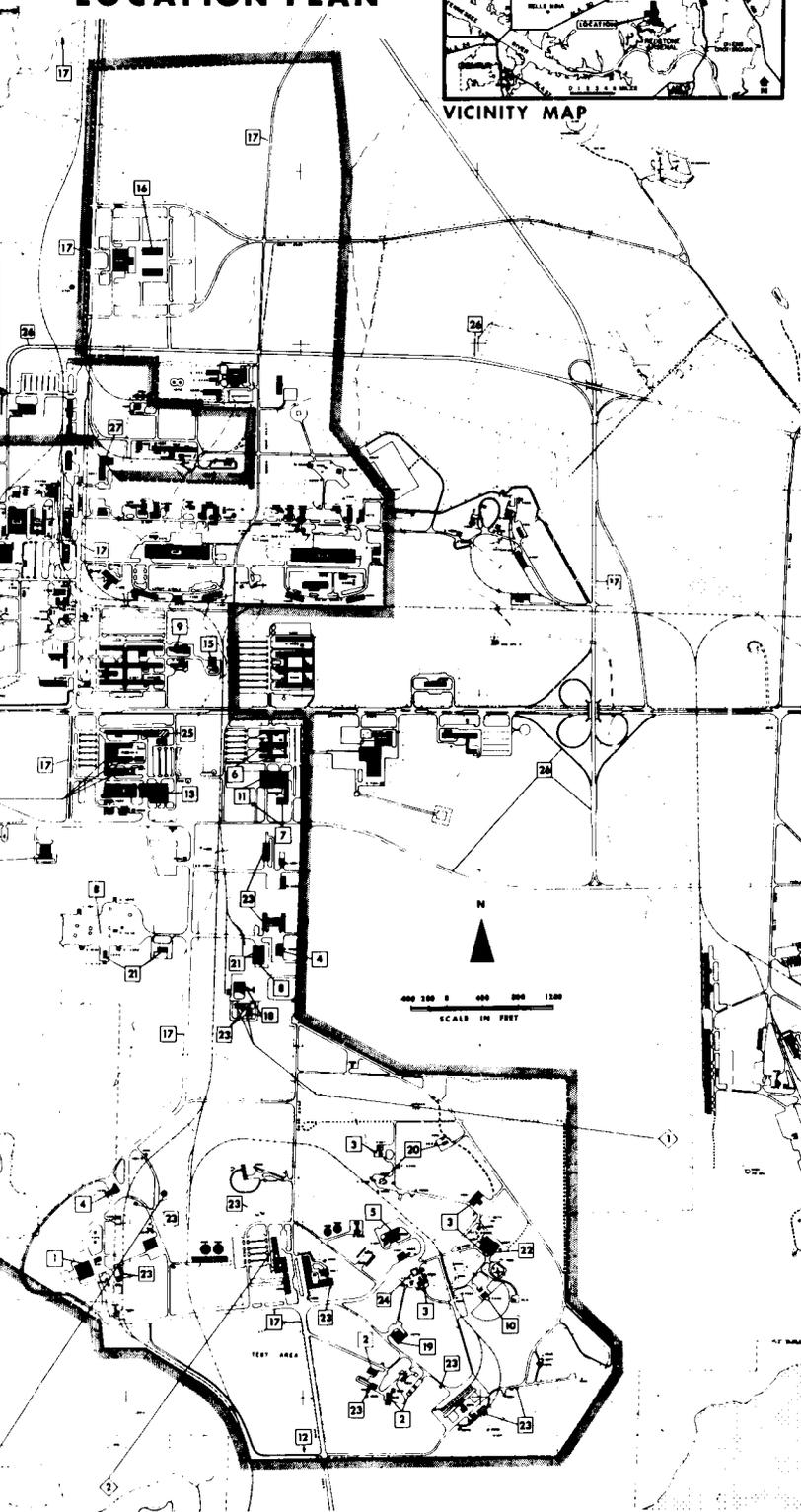
FACILITIES AUTHORIZED & UNDER CONSTRUCTION

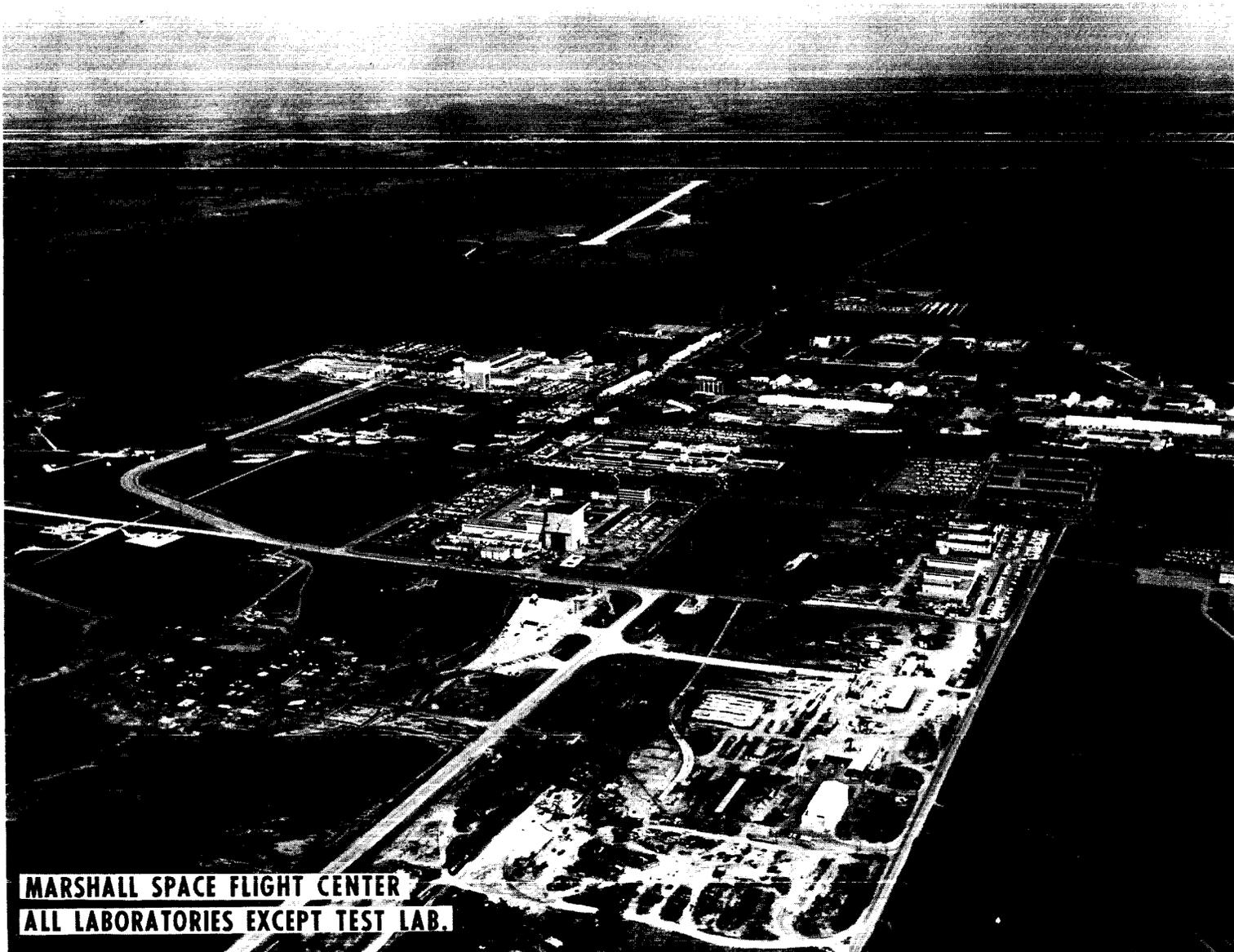
- 1 SATURN STATIC TEST FACILITY
- 2 LIQUID HYDROGEN FACILITY
- 3 COMPONENTS TEST FACILITY
- 4 P-I ENGINE TEST STAND
- 5 DYNAMIC TEST STAND
- 6 ADDITION TO COMPUTATION DIVISION BUILDING INSTRUMENT LABORATORY
- 7 SATURN V GROUND SUPPORT EQUIPMENT TEST FACILITY
- 8 ACCELERATION TEST & CALIBRATION FACILITY
- 9 ACOUSTIC MODEL TEST FACILITY
- 10 ADDITIONS TO THE TEST SUPPORT SHOP
- 11 SHIP DOCK AND LOADING FACILITY
- 12 EXTENSION TO THE LOAD TEST SHED
- 13 HANGAR FOR VEHICLE COMPONENTS
- 14 MEASUREMENT OPERATIONS LABORATORY
- 15 PROJECT ENGINEER OFFICE
- 16 UTILITIES INSTALLATION
- 17 ENRICHMENT & MODERNIZATION OF H-P JAB & PROPELLANT SYSTEM
- 18 MODERNIZATION OF INSTRUMENTATION SYSTEM IN EAST AREA
- 19 ADDITIONS TO COMPONENTS TEST FACILITY
- 20 EXTENSION TO SATURN V GROUND SUPPORT EQUIPMENT TEST FACILITY
- 21 EXTENSION OF COMPONENTS TEST FACILITY INSTRUMENTATION
- 22 SATURN SUPPORT TEST AREA
- 23 COLD FLOW TEST FACILITY
- 24 EXTENSION TO THE PROPELLANT & VEHICLE ENGINEERING LABORATORY
- 25 EXTENSION TO UTILITY SYSTEM
- 26 ADDITIONS TO COMMUNICATIONS BUILDING

PROPOSED FISCAL YEAR 1966 PROJECTS

- 1 EXTENSION TO HIGH PRESSURE GAS IRE ENR
- 2 TEST ENGINEERING BUILDING EXTENSION
- 3 LOW STORAGE FACILITY FOR THE WEST TEST AREA
- 4 NON DESTRUCTIVE TESTING LABORATORY
- 5 ADDITIONS TO MATERIALS LABORATORY

LEGEND
MSFC BOUNDARY





AO 1-27

**MARSHALL SPACE FLIGHT CENTER
ALL LABORATORIES EXCEPT TEST LAB.**



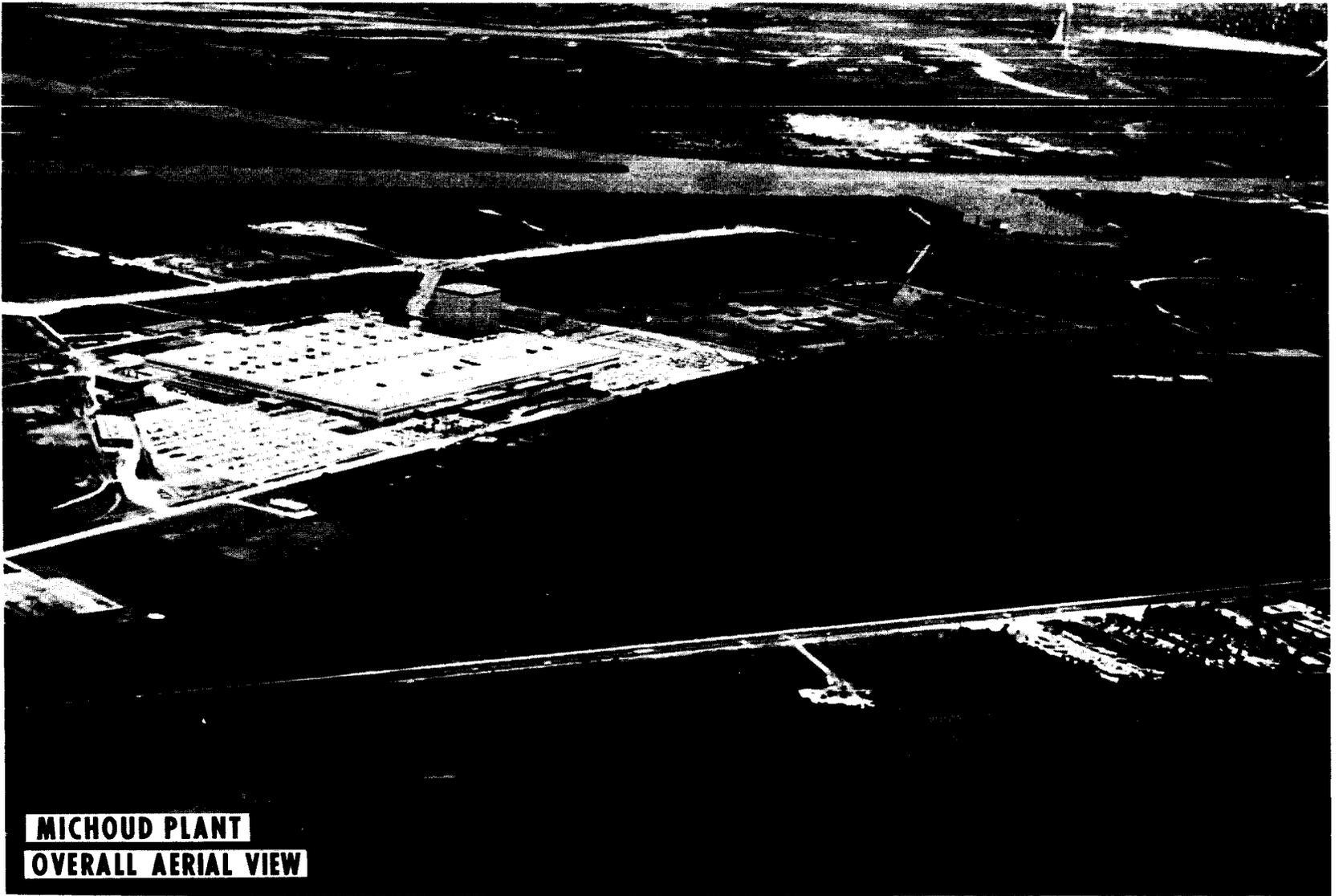
**MARSHALL SPACE FLIGHT CENTER
TEST LABORATORY FACILITIES**

AO 1-28



410 1-29

**MARSHALL SPACE FLIGHT CENTER
TEST COMPLEX FOR SATURN V VEHICLE**



AO 1-30

MICHOUD PLANT
OVERALL AERIAL VIEW



AO 1-31

SLIDELL COMPUTER FACILITY

MISSISSIPPI TEST OPERATIONS
SITE PLAN



AO 1-32



AO 1-33

MISSISSIPPI TEST FACILITY
CRYOGENICS TRANSFER DOCK
TEST AREA COMPLEX IN BACKGROUND



AO 1-34

**MISSISSIPPI TEST FACILITY
INDUSTRIAL COMPLEX**

GS-14	4,961	5,061
All other GS	1,380	1,280
Total Permanent	7,489	7,489
Temporary	169	169
Total Positions	7,658	7,658

GS-15	-	-
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total	6	6

Wage Board	-	-
Total	24	24

Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	26	26
Wage Board	1	1
Total	29	29

Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	6	6
All other GS	15	15
Wage Board	-	-
Total	23	23

Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	1	1
Wage Board	-	-
Total	3	3

EXECUTIVE STAFF		
Excepted	65	66
GS-16	1	1
GS-15	12	12
GS-14	12	12
All other GS	71	71
Wage Board	-	-
Total	96	96

PERSONNEL AND COMMUNITY RELATIONS OFFICE			MANAGEMENT SERVICES OFFICE			TECHNICAL SERVICES OFFICE			PURCHASING OFFICE			FACILITIES AND DESIGN OFFICE			FINANCIAL MANAGEMENT OFFICE			NASA AUDIT OFFICE		
Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66
GS-16	-	-	GS-16	-	-	GS-16	-	-	GS-16	-	-	GS-16	1	1	GS-16	-	-	GS-16	-	-
GS-15	2	2	GS-15	4	4	GS-15	2	2	GS-15	1	1	GS-15	6	6	GS-15	6	6	GS-15	1	1
GS-14	6	6	GS-14	7	7	GS-14	7	7	GS-14	9	9	GS-14	17	17	GS-14	10	10	GS-14	2	2
All other GS	90	90	All other GS	160	160	All other GS	265	265	All other GS	213	213	All other GS	64	64	All other GS	181	181	All other GS	17	17
Wage Board	-	-	Wage Board	39	39	Wage Board	310	310	Wage Board	-	-	Wage Board	-	-	Wage Board	-	-	Wage Board	-	-
Total	98	98	Total	211	211	Total	584	584	Total	223	223	Total	108	108	Total	197	197	Total	20	20

DIRECTOR RESEARCH & DEVELOPMENT OPERATIONS		
Excepted	65	66
GS-16	2	2
GS-15	1	1
GS-14	-	-
All other GS	4	4
Wage Board	-	-
Total	7	7

DIRECTOR INDUSTRIAL OPERATIONS		
Excepted	65	66
GS-16	2	2
GS-15	1	1
GS-14	-	-
All other GS	8	8
Wage Board	-	-
Total	11	11

FUTURE PROJECTS OFFICE			SATURN-APOLLO SYSTEMS OFFICE			RESOURCES MANAGEMENT OFFICE			CONTRACTS OFFICE			FACILITIES PROJECTS OFFICE			PROJECT LOGISTICS OFFICE			RESOURCES MANAGEMENT OFFICE		
Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66
GS-16	1	1	GS-16	2	2	GS-16	-	-	GS-16	1	1	GS-16	-	-	GS-16	-	-	GS-16	-	-
GS-15	8	8	GS-15	6	6	GS-15	3	3	GS-15	4	4	GS-15	1	1	GS-15	2	2	GS-15	1	1
GS-14	6	6	GS-14	10	10	GS-14	6	6	GS-14	12	12	GS-14	11	11	GS-14	6	6	GS-14	6	6
All other GS	17	17	All other GS	22	22	All other GS	41	41	All other GS	129	129	All other GS	33	34	All other GS	5	5	All other GS	23	23
Wage Board	-	-	Wage Board	-	-	Wage Board	-	-	Wage Board	-	-	Wage Board	-	-	Wage Board	-	-	Wage Board	-	-
Total	33	33	Total	40	40	Total	50	50	Total	146	146	Total	45	46	Total	13	13	Total	30	30

AERO-ASTRODYNAMICS LABORATORY			ASTRONOMICS LABORATORY			COMPUTATION LABORATORY			MANUFACTURING ENGINEERING LABORATORY			SATURN I/IB PROJECT OFFICE			SATURN V PROJECT OFFICE			ENGINE PROJECT OFFICE		
Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66
GS-16	4	4	GS-16	4	4	GS-16	4	4	GS-16	3	3	GS-16	1	1	GS-16	4	4	GS-16	6	6
GS-15	40	40	GS-15	65	65	GS-15	11	11	GS-15	15	15	GS-15	13	13	GS-15	15	15	GS-15	11	11
GS-14	37	37	GS-14	96	96	GS-14	23	23	GS-14	32	32	GS-14	22	22	GS-14	38	38	GS-14	17	17
All other GS	265	265	All other GS	572	591	All other GS	134	134	All other GS	394	430	All other GS	124	124	All other GS	198	197	All other GS	83	82
Wage Board	6	6	Wage Board	166	167	Wage Board	-	-	Wage Board	174	338	Wage Board	-	-	Wage Board	-	-	Wage Board	-	-
Total	356	356	Total	931	931	Total	174	174	Total	820	820	Total	164	164	Total	256	255	Total	118	117

PROPULSION AND VEHICLE ENGINEERING LABORATORY			QUALITY AND RELIABILITY ASSURANCE LABORATORY			RESEARCH PROJECTS LABORATORY			TEST LABORATORY			MICHOUX PLANT			MISSISSIPPI TEST FACILITY		
Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66	Excepted	65	66
GS-16	4	4	GS-16	2	2	GS-16	2	2	GS-16	4	4	GS-16	1	1	GS-16	1	1
GS-15	63	63	GS-15	32	32	GS-15	12	12	GS-15	31	31	GS-15	10	10	GS-15	2	2
GS-14	112	112	GS-14	55	55	GS-14	22	22	GS-14	41	41	GS-14	26	26	GS-14	6	6
All other GS	327	336	All other GS	511	513	All other GS	46	46	All other GS	299	333	All other GS	274	273	All other GS	114	116
Wage Board	93	81	Wage Board	19	17	Wage Board	-	-	Wage Board	332	318	Wage Board	-	-	Wage Board	-	-
Total	805	805	Total	621	621	Total	83	83	Total	729	729	Total	312	311	Total	123	123

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 MARSHALL SPACE FLIGHT CENTER

STAFFING SUMMARY

Excepted	63	66
GS-16	41	41
GS-15	196	196
GS-14	663	663
All other GS	4,961	5,061
Wage Board	1,380	1,280
Total Permanent	7,489	7,489
Temporary	169	169
Total Positions	7,658	7,658

ASST. DIR. FOR S&TA
 ASST. DIR. FOR FAC. ENGR.
 ASST. DIR. FOR REC.

Excepted	62	66
GS-16	2	2
GS-15	1	1
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total	6	6

DIRECTOR
 DEPUTY DIRECTOR
 TECH. DEP. DIR. ADMIN.

Excepted	65	66
GS-16	6	6
GS-15	-	-
GS-14	1	1
All other GS	12	12
Wage Board	-	-
Total	24	24

PUBLIC AFFAIRS OFFICE

Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	26	26
Wage Board	1	1
Total	29	29

CHIEF COUNSEL

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	2	2
All other GS	6	6
Wage Board	15	15
Total	22	22

LABOR RELATIONS OFFICE

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	1	1
Wage Board	-	-
Total	3	3

EXECUTIVE STAFF

Excepted	65	66
GS-16	-	-
GS-15	12	12
GS-14	12	12
All other GS	71	71
Wage Board	-	-
Total	96	96

PERSONNEL AND
 COMMUNITY RELATIONS OFFICE

Excepted	65	66
GS-16	-	-
GS-15	2	2
GS-14	6	6
All other GS	90	90
Wage Board	-	-
Total	98	98

MANAGEMENT SERVICES OFFICE

Excepted	65	66
GS-16	-	-
GS-15	4	4
GS-14	7	7
All other GS	160	160
Wage Board	39	39
Total	211	211

TECHNICAL SERVICES OFFICE

Excepted	65	66
GS-16	-	-
GS-15	2	2
GS-14	7	7
All other GS	265	265
Wage Board	310	310
Total	584	584

PURCHASING OFFICE

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	9	9
Wage Board	213	213
Total	223	223

FACILITIES AND DESIGN OFFICE

Excepted	65	66
GS-16	1	1
GS-15	6	6
GS-14	17	17
All other GS	84	84
Wage Board	-	-
Total	108	108

FINANCIAL MANAGEMENT OFFICE

Excepted	65	66
GS-16	-	-
GS-15	6	6
GS-14	10	10
All other GS	181	181
Wage Board	-	-
Total	197	197

NASA AUDIT OFFICE

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	2	2
Wage Board	17	17
Total	20	20

DIRECTOR
 RESEARCH & DEVELOPMENT OPERATIONS

Excepted	65	66
GS-16	2	2
GS-15	-	-
GS-14	1	1
All other GS	4	4
Wage Board	-	-
Total	7	7

DIRECTOR
 INDUSTRIAL OPERATIONS

Excepted	65	66
GS-16	2	2
GS-15	-	-
GS-14	1	1
All other GS	8	8
Wage Board	-	-
Total	11	11

FUTURE PROJECTS OFFICE

Excepted	65	66
GS-16	1	1
GS-15	1	1
GS-14	3	3
All other GS	6	6
Wage Board	17	17
Total	33	33

SATURN-APOLLO SYSTEMS OFFICE

Excepted	65	66
GS-16	2	2
GS-15	-	-
GS-14	6	6
All other GS	10	10
Wage Board	22	22
Total	40	40

RESOURCES MANAGEMENT OFFICE

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	3	3
All other GS	6	6
Wage Board	41	41
Total	50	50

CONTRACTS OFFICE

Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	4	4
All other GS	12	12
Wage Board	129	129
Total	146	146

FACILITIES PROJECTS OFFICE

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	11	11
Wage Board	33	34
Total	45	46

PROJECT LOGISTICS OFFICE

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	2	2
All other GS	6	6
Wage Board	5	5
Total	13	13

RESOURCES MANAGEMENT OFFICE

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	6	6
Wage Board	23	23
Total	30	30

AERO-ASTRODYNAMICS LABORATORY

Excepted	65	66
GS-16	4	4
GS-15	8	8
GS-14	40	40
All other GS	37	37
Wage Board	265	265
Total	356	356

ASTRONAUTICS LABORATORY

Excepted	65	66
GS-16	8	8
GS-15	4	4
GS-14	63	63
All other GS	96	96
Wage Board	572	591
Total	931	931

COMPUTATION LABORATORY

Excepted	65	66
GS-16	4	4
GS-15	2	2
GS-14	11	11
All other GS	23	23
Wage Board	134	134
Total	174	174

MANUFACTURING ENGINEERING
 LABORATORY

Excepted	65	66
GS-16	3	3
GS-15	2	2
GS-14	15	15
All other GS	32	32
Wage Board	394	430
Total	820	820

SATURN I/IB PROJECT OFFICE

Excepted	65	66
GS-16	1	1
GS-15	4	4
GS-14	13	13
All other GS	22	22
Wage Board	124	124
Total	164	164

SATURN V PROJECT OFFICE

Excepted	65	66
GS-16	1	1
GS-15	4	4
GS-14	15	15
All other GS	38	38
Wage Board	198	197
Total	256	255

ENGINE PROJECT OFFICE

Excepted	65	66
GS-16	1	1
GS-15	6	6
GS-14	11	11
All other GS	17	17
Wage Board	83	82
Total	118	117

PROPULSION AND VEHICLE
 ENGINEERING LABORATORY

Excepted	65	66
GS-16	6	6
GS-15	4	4
GS-14	63	63
All other GS	112	112

QUALITY AND RELIABILITY
 ASSURANCE LABORATORY

Excepted	65	66
GS-16	2	2
GS-15	2	2
GS-14	12	12

RESEARCH PROJECTS LABORATORY

Excepted	65	66
GS-16	1	1
GS-15	2	2
GS-14	12	12

TEST LABORATORY

Excepted	65	66
GS-16	4	4
GS-15	2	2
GS-14	1	1

MICHOUD PLANT

Excepted	65	66
GS-16	1	1

MISSISSIPPI TEST FACILITY

Excepted	65	66
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ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

GEORGE C. MARSHALL SPACE FLIGHT CENTER

MISSION AND CAPABILITIES:

The George C. Marshall Space Flight Center, which became part of NASA on July 1, 1960, has a long and distinguished history in the field of rocketry which underlies its technical capabilities in the performance of its basic mission. Extensive technical experience has been accumulated as a result of the research and development work conducted on the Redstone, Jupiter, and Pershing Missiles. The early success of the Saturn program stems directly from the practical know-how gained through the years on these earlier systems.

The primary mission of this Center is to develop and provide launch vehicle and space transportation systems to meet the space program requirements. This responsibility extends through all phases of design, fabrication, testing, and production, to integration and coordination of launching of the vehicle and includes studies and research in astronautics. Major emphasis is on contract management, technical guidance, supervision of industrial contractors and overall systems engineering, and systems integration for launch vehicle or space transportation system projects.

Other activities include basic research, product improvement, advancement of launch vehicle technology, particularly in the areas of multi-engine vehicles, and nuclear and electrical propulsion.

Major functions currently assigned include:

- a. Project management for developing and producing the following family of large launch vehicles:
 - (1) The Saturn I, which has advanced the large launch vehicle technology, including the clustered engine principle, liquid hydrogen propulsion and guidance and instrumentation technology.
 - (2) The Saturn IB, which advances large booster technology in support of Saturn V, assists in Apollo spacecraft development and qualification, and provides the Nation with a carrier for large scientific satellite payloads (approximately 17 tons in low earth orbit).
 - (3) The Saturn V, which will accomplish manned lunar landing missions, lunar logistics missions, planetary escape missions, and will provide the Nation with a carrier for large scientific satellite payloads of approximately 140 tons in low earth orbit and 47 tons in escape trajectories.

- b. Project management for developing propulsion systems for Saturn and other launch vehicles, including:
 - (1) H-1 engine, 200,000 pound thrust,
 - (2) J-2 engine, 200,000 pound thrust, and
 - (3) F-1 engine, 1,500,000 pound thrust.
- c. Project management for the development of micrometeoroid satellites which will be flown on Saturn I vehicles to obtain data on frequency and penetration of micrometeoroids in low earth orbit.
- d. Advancing the state-of-the-art in large launch vehicles and space systems.

Marshall has an integrated complex of engineering, laboratory, fabrication, and test facilities essential in providing project managers with technical support capability for vehicle systems engineering, and for successful management and technical evaluation of contractors' activities. In addition, Marshall's scientific-engineering personnel perform work in-house on carefully selected projects to maintain a high level of technical proficiency across a wide technological range.

Marshall is responsible for directing operations at the Mississippi Test Facility, the Michoud Plant, and several major contractor plants. The mission of the Mississippi Test Facility is the acceptance test firing and evaluation of large launch vehicle stages. The mission of the Michoud Plant is the manufacture of booster stages for the Saturn family of launch vehicles.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of positions, end of year.	7,679	7,658	7,658
Average number of all Employees..	7,332	7,546	7,576
Administrative Operations.....	\$124,443,000	\$140,458,000	\$137,387,000

INSTALLATION DESCRIPTION:

Operations of the Marshall Space Center are conducted at four primary locations. The main Marshall Space Flight Center is near Huntsville, Alabama on Army property at the Redstone Arsenal. The Center occupies 1,786 acres under a non-revocable use permit from the Army and 64 leased acres. The capital investment as of June 30, 1964 was \$223,843,000. Certain facilities such as the Redstone Arsenal Army Air Field and some utilities are used jointly by NASA and the Army. Within the Center complex, the total area of specialized and support buildings amount to 3,585,116 square feet. Another 619,000 square feet of warehouse facilities belonging to the Army at

Redstone Arsenal are used by the Center. The Huntsville location has deep water access via the Tennessee River, Ohio River, and Mississippi River.

The Mississippi Test Facility is located in southwest Mississippi, approximately 50 miles northeast of New Orleans, Louisiana. The total land area will be 139,095 acres, of which 13,428 acres will make up the actual test area and will be owned by NASA. The remaining 125,667 acres will be held as a buffer zone. In the buffer area, 7,963 acres will be owned in fee, and 117,704 acres will be under restrictive easement. The capital investment for the Mississippi Test Facility as of June 30, 1964 was \$57,103,000. Design of the test and support facilities is complete, and the first and second increments are under contract. All facilities in the third increment will be under contract in the first part of calendar year 1965. Test stands will include a dual-position stand for testing the 7,500,000 pound thrust S-IC booster stage and two stands for testing the 1,000,000 pound thrust S-II stages. The site has deep water access for transporting large boosters via the Pearl River and the intra-Coastal Waterway.

The Michoud Plant is located 15 miles East of the center of New Orleans, Louisiana. The plant occupies 839 improved acres (including 14 acres at Slidell, Louisiana), and 72 acres obtained under a use permit from the Army. The capital investment as of June 30, 1964 was \$100,651,000. Facilities at the plant comprise a total of 3,202,163 gross square feet, including the main assembly plant, which covers an area of 40 acres under one roof. A new engineering building and the vertical assembly building are complete and occupied. The Michoud plant is on the Gulf intra-Coastal Waterway and has deep-water access via the Mississippi River.

The central computer facility supporting the Michoud Plant and the Mississippi Test Facility is located at Slidell, Louisiana, 20 miles north-east of the Michoud Plant. The building is on a 14-acre site and valued at \$3,335,000 as of June 1964. The building has 59,497 square feet housing the computer installation.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation...	\$72,921,000	\$81,344,000	\$81,675,000
12. Personnel Benefits.....	<u>4,926,000</u>	<u>5,475,000</u>	<u>5,531,000</u>
Total, personnel costs.	\$77,847,000	\$86,819,000	\$87,206,000
21. Travel and Transportation of Persons.....	3,337,000	3,759,000	3,825,000
22. Transportation of Things.	583,000	550,000	550,000
23. Rents, Communications, and Utilities.....	11,780,000	13,231,000	11,786,000
24. Printing and Reproduction	1,033,000	1,100,000	1,150,000

25. Other Services.....	\$13,999,000	\$20,052,000	\$21,435,000
Services of other agencies.....	2,808,000	2,918,000	2,944,000
26. Supplies and Materials...	5,911,000	6,100,000	6,100,000
31. Equipment.....	3,814,000	4,928,000	1,390,000
32. Land and Structures.....	3,330,000	1,000,000	1,000,000
42. Insurance Claims and Indemnities.....	1,000	1,000	1,000
Total.....	<u>\$124,443,000</u>	<u>\$140,458,000</u>	<u>\$137,387,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Apollo.....	5,302	5,301	5,336
Advanced missions.....	151	151	151
<u>Space Science and Applications</u>			
Physics and astronomy.....	5	14	14
Lunar and planetary exploration.....	17	15	15
Launch vehicle development.	9	-	-
Meteorological satellites..	-	3	3
<u>Advanced Research and Technology</u>			
Electronics systems.....	56	56	56
Human factor systems.....	2	5	5
Nuclear-electric systems...	2	5	5
Nuclear rockets.....	24	13	13
Chemical propulsion.....	17	17	17
Solar and chemical power...	4	15	15
Space vehicle systems.....	165	170	135
Basic research.....	81	81	81
<u>Tracking and Data Acquisition</u>	9	9	9
<u>Technology Utilization</u>	<u>13</u>	<u>13</u>	<u>13</u>

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Sub-total, direct positions....	5,857	5,868	5,868
<u>Support Personnel</u>			
Director and Staff.....	165	184	184
Administration.....	788	745	745
Research and development support.	<u>692</u>	<u>692</u>	<u>692</u>
Sub-total, support positions...	<u>1,645</u>	<u>1,621</u>	<u>1,621</u>
Total, permanent positions.....	7,502	7,489	7,489
<u>Other positions:</u>			
Positions under cooperative training agreements.....	169	169	169
Other temporary positions.....	<u>8</u>	<u>-</u>	<u>-</u>
Total, all positions.....	<u>7,679</u>	<u>7,658</u>	<u>7,658</u>

Personnel requirements

Marshall Space Flight Center personnel requirements for FY 1965 and FY 1966 will continue at the same level as both the Saturn IB and V programs become more active in systems engineering, testing, and other phases as the initial flight dates approach. Many hardware-related milestones are scheduled during this period. Acceptance testing of the first Saturn IB, fabrication of Saturn V ground test and flight stages, and delivery of F-1 and J-2 engines are planned for FY 1965, in addition to two Saturn I launches. FY 1966 will be a critical year in these programs as Marshall Space Flight Center enters into an active phase of ground and flight testing. Three vehicles, including two Saturn IB's, will be launched in FY 1966, contributing to increased emphasis in instrumentation, flight operation, and flight evaluation, as well as redesign effort resulting from problems revealed in flight evaluation. Throughout this period, increasing contractor activity at the Michoud Plant and at contractor plants will require intensified monitoring and quality and reliability assurance inspection by Marshall Space Flight Center personnel. The Mississippi Test Facility, which will become partially operational in FY 1966, will also create an additional workload for the Marshall Space Flight Center.

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>7,679</u>	<u>7,658</u>	<u>7,658</u>
Permanent.....	7,502	7,489	7,489
Other.....	177	169	169
 <u>Personnel Compensation:</u>			
Annual cost of permanent positions.....	\$68,967,000	\$74,262,000	\$74,358,000
Pay above the stated annual rate.....	576,000	298,000	258,000
Lapses (deduct).....	<u>-4,919,000</u>	<u>-1,565,000</u>	<u>-863,000</u>
Net cost of permanent positions.....	64,624,000	72,995,000	73,753,000
Other personnel compensation.....	<u>8,302,000</u>	<u>8,352,000</u>	<u>7,925,000</u>
<u>Total compensation</u>	<u>72,926,000</u>	<u>81,347,000</u>	<u>81,678,000</u>
NASA funded.....	72,921,000	81,344,000	81,675,000
Reimbursable.....	5,000	3,000	3,000
<u>Personnel benefits</u>	<u>4,926,000</u>	<u>5,475,000</u>	<u>5,531,000</u>
NASA funded.....	4,926,000	5,475,000	5,531,000
Reimbursable.....	---	---	---
<u>Total personnel costs</u>	<u>77,852,000</u>	<u>86,822,000</u>	<u>87,209,000</u>
NASA funded.....	77,847,000	86,819,000	87,206,000
Reimbursable.....	5,000	3,000	3,000
<u>Average Number of All Employees (Man Years)</u>	7,332	7,546	7,576

Personnel Costs - \$87,206,000

The increase of \$387,000 in personnel costs is attributable primarily to an additional 30 man-years to be realized during FY 1966.

Travel and Transportation of Persons - \$3,825,000

Travel and transportation of persons is expected to increase in FY 1966 by \$66,000. The significant reasons for additional travel funds are:

- a. The number of launches scheduled for FY 1966 is greater than in FY 1965, resulting in increased test activity; and
- b. a greater demand for quality control and inspection in the stage, engine, and component development program. These increased activities will require more frequent trips to contractor's plants, test sites, and launch areas.

Transportation of Things - \$550,000

The amount required for FY 1966, estimated at the same level as for FY 1965, provides for transportation of household goods, freight, express, drayage, and parcel post.

Rents, Communications, and Utilities - \$11,786,000

The estimate for rents, communications, and utilities is \$1,445,000 less than FY 1965 requirements. This net reduction results from a decrease in rental of office space, and rental of automatic data processing equipment because of planned procurement. These reductions are partially offset by an increase in utilities.

The requirement for communications is slightly less than the FY 1965 level. Leased lines and long-distance toll costs are expected to be less than in FY 1965, but this reduction will be partially offset by an increase for local telephone and exchange services. The decrease in long-distance toll costs results from the implementation of the "Centrex", which permits personnel located in downtown Huntsville to have access to leased line service. In addition, Federal Telecommunications Service (FTS) is expected to reduce the number of administrative leased lines required.

The FY 1966 requirement for utilities is \$251,000 higher than FY 1965. Utilities at the Marshall Space Flight Center are procured from the Army at Redstone Arsenal. The estimate for FY 1966 is based on current Army prices, and is projected to reflect the increase in the number of buildings that must be serviced during FY 1966. The growth in building area is the result of facilities projects that will be completed during FY 1965 and 1966.

Printing and Reproduction - \$1,150,000

The amount required in FY 1966 is \$50,000 higher than the FY 1965 estimate. This increase is attributable to the increased volume in reproduction of engineering changes, master parts lists, drawing release records, assembly status reports, technical reports, and other technical documentation printing requirements which are in direct support of the Saturn IB, Saturn V, and engine development programs.

Other Services - \$24,379,000

Contractor and other Government agency services to supplement the in-house capabilities are furnished on a continuing, seasonal, intermittent or non-recurring basis. An additional \$1,409,000 will be required in FY 1966 to provide for these services.

An increase of \$447,000 is required for engineering services, technical documentation services, chart and related art work. The major portion of this increase is in the area of technical documentation. This increase is due to implementation of the Apollo Interface Program and the additional effort required to meet demands of the research and development programs. Additional funds required for chart and related art work are attributable to the planned expansion of effort in the Center's PERT and Companion Cost System.

An increase of \$565,000 is requested for maintenance and repair of buildings, grounds, and equipment. Increased costs are related to the increased number of facilities becoming available in FY 1965 and FY 1966 that must be maintained, as well as additional office and shop equipment. The requirement to fund a full year's cost for maintenance of automatic data processing equipment also contributes to the increase.

An additional \$23,000 is requested in FY 1966 for tuition, technical motion picture services, and other miscellaneous services. This represents a net increase and is required primarily for increased photographic support of the Saturn IB program for technical film reports, and the micrometeoroid program.

An increase of \$374,000 is required for chemical cleaning, security guard, janitorial services, refuse handling, laundry, and other miscellaneous custodial services. Security guard, janitorial services, and refuse handling will increase as additional floor space is occupied. Expanded test firing facilities in FY 1966 and the activation of new test areas necessitates the increased chemical cleaning requirement.

Supplies and Materials - \$6,100,000

The requirements for supplies and materials are estimated to remain at the same level as fiscal year 1965. Therefore, no additional funds for this purpose is requested.

Equipment - \$1,390,000

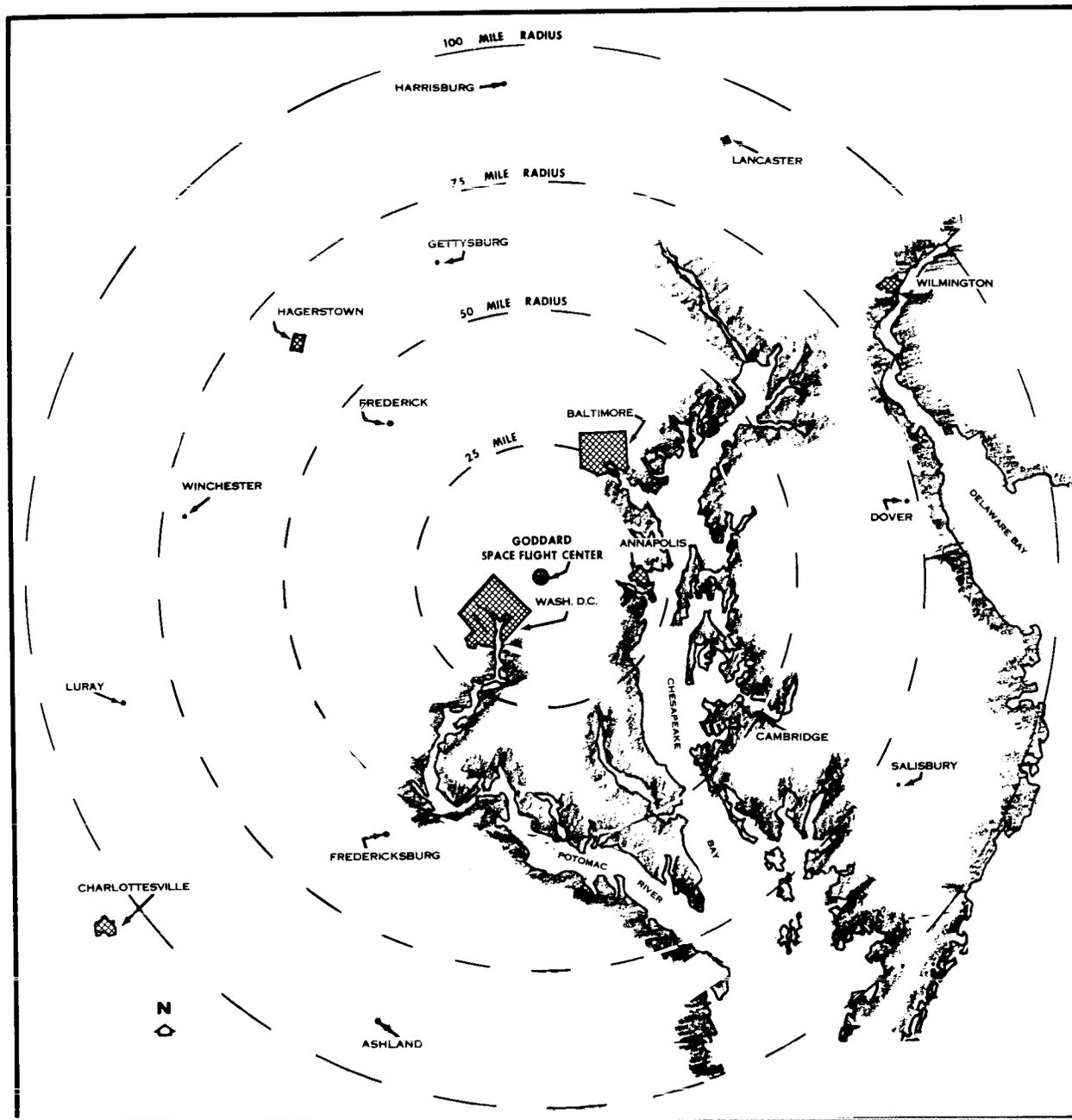
The amount requested is \$3,538,000 less than the amount estimated for FY 1965. This reduction is due to the planned purchase in FY 1965 of automatic data processing equipment in lieu of continued rental.

Land and Structures - \$1,000,000

The FY 1966 requirement for minor construction reflects no increase over FY 1965. As changes in the research and development programs occur, or as new technological approaches are developed, modifications are necessary to provide appropriate facilities. There is also a continuing need for funds under this category for installation support facilities, such as improvements to the electrical distribution system.

Insurance Claims and Indemnities - \$1,000

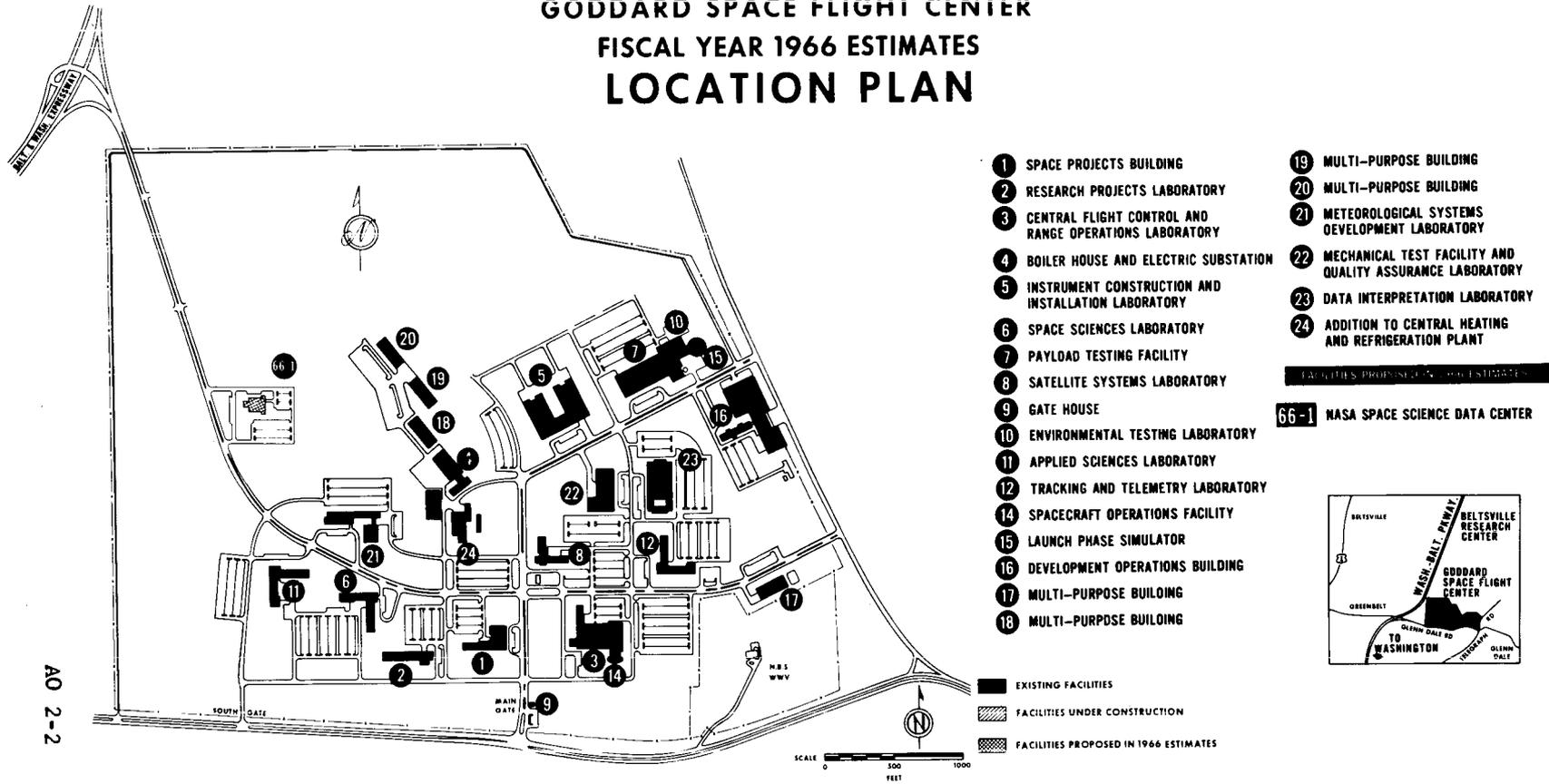
Funds requested are for settlement of insurance claims and indemnities. This requirement is expected to remain at the FY 1965 level.



AO 2-1

GODDARD SPACE FLIGHT CENTER AND VICINITY

GODDARD SPACE FLIGHT CENTER FISCAL YEAR 1966 ESTIMATES LOCATION PLAN



GODDARD SPACE FLIGHT CENTER



AO 2-3

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 GODDARD SPACE FLIGHT CENTER

STAFFING SUMMARY		
	65	66
Excepted	40	40
GS-16	21	21
GS-15	190	190
GS-14	383	383
All other GS	2,771	2,771
Wage Board	272	272
Total Permanent	3,677	3,677
Temporary	48	48
Total Positions	3,725	3,725

OFFICE OF THE DIRECTOR ASSOCIATE DIRECTOR		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	4	4
Wage Board	-	-
Total	6	6

ASSISTANT DIRECTOR FOR ADMINISTRATION		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	3	3
GS-14	8	8
All other GS	44	44
Wage Board	-	-
Total	57	57

CHIEF OF TECHNICAL SERVICES		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	2	2
Wage Board	-	-
Total	3	3

ASSISTANT DIRECTOR TRACKING AND DATA SYSTEMS		
	65	66
Excepted	2	2
GS-16	2	2
GS-15	14	14
GS-14	18	18
All other GS	51	51
Wage Board	-	-
Total	87	87

ASSISTANT DIRECTOR SPACE SCIENCES AND SATELLITE APPLICATIONS		
	65	66
Excepted	3	3
GS-16	-	-
GS-15	2	2
GS-14	2	2
All other GS	11	11
Wage Board	-	-
Total	18	18

INSTITUTE FOR SPACE STUDIES		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	1	1
GS-14	6	6
All other GS	29	29
Wage Board	-	-
Total	38	38

PROGRAM SUPPORT DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	8	8
All other GS	79	79
Wage Board	-	-
Total	88	88

FINANCIAL MANAGEMENT DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	2	2
All other GS	111	111
Wage Board	-	-
Total	115	115

FACILITIES ENGINEERING DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	7	7
All other GS	58	58
Wage Board	-	-
Total	174	174

TEST AND EVALUATION DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	6	6
All other GS	27	27
Wage Board	-	-
Total	261	261

ADVANCED DEVELOPMENT DIVISION		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	12	12
GS-14	17	17
All other GS	96	96
Wage Board	-	-
Total	127	127

DATA SYSTEMS DIVISION		
	65	66
Excepted	3	3
GS-16	1	1
GS-15	11	11
GS-14	22	22
All other GS	243	243
Wage Board	-	-
Total	280	280

SPACECRAFT INTEGRATION AND SOUNDING ROCKET DIVISION		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	14	14
GS-14	25	25
All other GS	174	174
Wage Board	-	-
Total	215	215

SPACE SCIENCES DIVISION		
	65	66
Excepted	6	6
GS-16	2	2
GS-15	10	10
GS-14	22	22
All other GS	143	143
Wage Board	-	-
Total	183	183

ORGANIZATION AND PERSONNEL DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	5	5
All other GS	61	61
Wage Board	-	-
Total	67	67

MANAGEMENT SERVICES AND SUPPLY DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	120	120
Wage Board	17	17
Total	140	140

FABRICATION DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	38	38
Wage Board	126	126
Total	166	166

NETWORK ENGINEERING AND OPERATIONS DIVISION		
	65	66
Excepted	1	1
GS-16	2	2
GS-15	15	15
GS-14	33	33
All other GS	201	201
Wage Board	-	-
Total	252	252

MANNED FLIGHT OPERATIONS DIVISION		
	65	66
Excepted	-	-
GS-16	7	7
GS-15	2	2
GS-14	14	14
All other GS	108	108
Wage Board	-	-
Total	149	149

SPACECRAFT SYSTEMS AND PROJECTS DIVISION		
	65	66
Excepted	7	7
GS-16	2	2
GS-15	29	29
GS-14	66	66
All other GS	240	240
Wage Board	-	-
Total	344	344

SPACECRAFT TECHNOLOGY DIVISION		
	65	66
Excepted	1	1
GS-16	2	2
GS-15	15	15
GS-14	21	21
All other GS	110	110
Wage Board	-	-
Total	149	149

PROCUREMENT DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	15	15
All other GS	269	269
Wage Board	-	-
Total	289	289

TECHNICAL INFORMATION DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	65	65
Wage Board	22	22
Total	88	88

NASA COMMUNICATIONS DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	4	4
All other GS	53	53
Wage Board	-	-
Total	60	60

THEORETICAL DIVISION		
	65	66
Excepted	2	2
GS-16	2	2
GS-15	3	3
GS-14	4	4
All other GS	79	79
Wage Board	-	-
Total	96	96

AERONOMY AND METEOROLOGY DIVISION		
	65	66
Excepted	4	4
GS-16	3	3
GS-15	21	21
GS-14	42	42
All other GS	155	155
Wage Board	-	-
Total	225	225

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

GODDARD SPACE FLIGHT CENTER

MISSION AND CAPABILITIES:

The Goddard Space Flight Center was established on May 1, 1959. It is the first major United States laboratory established for the investigation and peaceful exploration of space.

Goddard personnel number more than 3,700. While the majority are at the Greenbelt site and at various continental United States installations (e.g., the Institute for Space Studies in New York City), other members of the Goddard team are located throughout the world, operating satellite tracking and communication network stations.

This Installation is responsible for: development of sounding rockets for scientific investigations; the management of application satellite projects (e.g., NIMBUS, TIROS, ECHO, SYCOM, RELAY and the Applications Technology Satellite) and scientific satellite projects (e.g., OAO, OGO, OSO, AOSO and Explorers); world-wide NASA tracking and data acquisition operations; pre-flight testing and evaluation of spacecraft under simulated flight conditions; design, development and management of experiments; spacecraft design and construction; project management and launch of NASA's Delta launch vehicle; and launch of Centaur and Atlas-Agena vehicles on behalf of other NASA Centers.

Goddard is one of the few installations in the world capable of conducting a full-range space science experimentation program. This involves carrying a concept from theoretical work to experimental design and engineering to payload fabrication and assembly, to a complete test and evaluation program, to vehicle launch and satellite tracking, data acquisition and data reduction. As an example IMP I was designed, built, tested, and launched by Goddard personnel.

More satellite and sounding rocket launchings than ever before were accomplished in 1964. Some noteworthy achievements of the Goddard flight program were:

Scientific Satellites - The successful orbiting of nine scientific satellites, including the Orbiting Geophysical Observatory (OGO), the nation's largest and most advanced scientific spacecraft, contributed to a better understanding of earth-sun relationships (OGO, ARIEL II), provided new knowledge on the mechanics of the ionosphere (Explorers XX, XXI); and observed in detail the earth's magnetosphere (IMP I).

Sounding Rockets - Additional knowledge was gained from a continued series of sounding rocket flights---small, inexpensive payloads launched into and above the earth's atmosphere to study space science phenomena for short periods of time. For example, one Aerobee sounding rocket obtained ultraviolet spectra on the atmospheres of Venus and Jupiter.

Meteorological Satellites - The second generation weather satellite NIMBUS I, NASA's first satellite whose control system always kept the spacecraft looking at earth, was launched and took very high quality infra-red photographs of the earth's weather conditions in total darkness. The TIROS VII and VIII satellites continued to take cloud cover pictures of the world for use by the Weather Bureau in daily forecasting. These two satellites have taken over 150,000 pictures.

Communication Satellites - The results of the three successful launches of RELAY II, ECHO II and SYNCOM III have moved ahead the timetable for an operational system of intercontinental communication satellites allowing cancellation of further projected launches in the research and development series, and have made it possible to proceed with advanced research in applications technology satellites. RELAY II has been used for demonstrations, such as the political conventions, the national elections and Olympic Games. ECHO I is still functioning as a radiowave reflector after almost four years in space. SYNCOM III was used to bring television transmissions of the Olympic Games from Japan to the United States and Europe.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year..	3,675	3,725	3,725
Average Number of All Employees...	3,477	3,681	3,698
Administrative Operations.....	\$62,466,000	\$85,923,000	\$69,591,000

INSTALLATION DESCRIPTION:

The Goddard Space Flight Center occupies a main site of 530 acres located 15 miles northeast of Washington, D.C., one mile off the Baltimore-Washington Expressway near Greenbelt, Maryland. Four separate areas totaling 652 acres located within two miles of the Center are used for the antenna test range, magnetic test area, the optical and ground plane facility, operation of a STADAN engineering and real-time station and operation of a manned flight network training facility. The total capital investment as of June 30, 1964 was \$118,739,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$32,481,000	\$38,391,000	\$38,544,000
12. Personnel Benefits.....	<u>2,287,000</u>	<u>2,707,000</u>	<u>2,716,000</u>
Total, personnel costs....	\$34,768,000	\$41,098,000	\$41,260,000
21. Travel and Transportation of Persons.....	2,409,000	2,730,000	2,740,000
22. Transportation of Things....	1,458,000	1,195,000	1,107,000
23. Rents, Communications, and Utilities.....	10,790,000	9,936,000	9,745,000
24. Printing and Reproduction...	622,000	317,000	342,000
25. Other Services.....	5,802,000	4,850,000	6,923,000
Services of other agencies	438,000	334,000	443,000
26. Supplies and Materials.....	2,228,000	1,796,000	1,974,000
31. Equipment.....	3,356,000	23,201,000	4,532,000
32. Lands and Structures.....	595,000	466,000	525,000
41. Grants, Subsidies and Contributions.....	---	---	---
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	<u>\$62,466,000</u>	<u>\$85,923,000</u>	<u>\$69,591,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Space Science and Applications</u>			
Physics and astronomy.....	1,025	1,074	1,086
Meteorological satellites.....	236	241	235
Communication satellites.....	91	50	40
Applications technology satellites.....	53	95	104
Lunar and planetary exploration.....	19	29	24
Bioscience.....	3	6	6
Launch vehicle development.....	13	15	15
Launch vehicle procurement.....	81	86	86

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Advanced Research and Technology</u>			
Space vehicle systems.....	40	49	49
Electronics systems.....	58	64	64
Nuclear-electric systems.....	3	5	5
Chemical propulsion.....	7	7	7
Solar and chemical power.....	18	24	24
Basic research.....	17	17	17
<u>Tracking and Data Acquisition</u>	677	632	632
<u>Technology Utilization</u>	<u>3</u>	<u>2</u>	<u>2</u>
Sub-total, direct positions.....	<u>2,344</u>	<u>2,396</u>	<u>2,396</u>
<u>Support personnel</u>			
Director and Staff.....	6	6	6
Administration.....	602	680	680
Research and development support.....	<u>658</u>	<u>595</u>	<u>595</u>
Sub-total, support positions.....	<u>1,266</u>	<u>1,281</u>	<u>1,281</u>
Total, permanent positions.....	3,610	3,677	3,677
<u>Other positions:</u>			
Positions under cooperative training agreements.....	36	36	36
Other temporary positions.....	<u>29</u>	<u>12</u>	<u>12</u>
Total, all positions.....	<u>3,675</u>	<u>3,725</u>	<u>3,725</u>

Personnel requirements

The new generation of satellites with their complex problems and experiments are making peak demands for highly skilled scientific, engineering and administrative support personnel. The changing emphasis in work requires the reassignment of personnel from projects where the workload is declining (e.g., RELAY, ECHO, etc.) to areas where the workload is increasing. The requirements generated by the establishment of manned flight network stations and development of the Applications Technology Satellite will be met as other projects are phased out.

The FY 1966 estimate of personnel compensation is shown on the next page.

Civilian personnel benefits for fiscal years 1965 and 1966 are estimated at 7.4% of the net cost of permanent positions. This represents the actual percentage experienced in FY 1964.

<u>Personnel Costs</u>			
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>3,675</u>	<u>3,725</u>	<u>3,725</u>
Permanent.....	3,610	3,677	3,677
Other.....	65	48	48
 <u>Personnel Compensation:</u>			
Annual cost of permanent positions.....	\$33,986,000	\$36,939,000	\$36,936,000
Pay above the stated annual rate.....	270,000	134,000	137,000
Lapses (deduct).....	<u>-3,059,000</u>	<u>-376,000</u>	<u>-192,000</u>
Net cost of permanent positions.....	\$31,197,000	\$36,697,000	36,881,000
Other personnel compensation....	<u>1,758,000</u>	<u>2,204,000</u>	<u>2,376,000</u>
 <u>Total compensation</u>	<u>32,955,000</u>	<u>38,901,000</u>	<u>39,257,000</u>
NASA funded.....	32,481,000	38,391,000	38,544,000
Reimbursable.....	474,000	510,000	713,000
 <u>Personnel benefits</u>	<u>2,308,000</u>	<u>2,750,000</u>	<u>2,766,000</u>
NASA funded.....	2,287,000	2,707,000	2,716,000
Reimbursable.....	21,000	43,000	50,000
 <u>Total personnel costs</u>	<u>35,263,000</u>	<u>41,651,000</u>	<u>42,023,000</u>
NASA funded.....	34,768,000	41,098,000	41,260,000
Reimbursable.....	495,000	553,000	763,000
 <u>Average Number of All Employees</u>			
(Man Years).....	3,477	3,681	3,698

The estimates for Goddard Space Flight Center for FY 1966 are \$16,332,000, less than in FY 1965. Exclusive of the FY 1965 computer purchase program of approximately \$22 million, the FY 1966 estimates reflect an overall increase of \$5,477,000.

This increase includes \$162,000 for personnel costs related to the additional 17 man-years of civil service employment, and \$1,935,000 for increased contractor services related to the maintenance and operation of additional facilities coming into initial operation in FY 1966, and the full year costs of facilities placed in operation during FY 1965.

The balance of the increase, \$3,380,000, is for non-recurring costs associated with the purchase of additional computer equipment where studies have indicated that it is more economical to purchase this equipment than it is to acquire the items by lease.

LAUNCH COMPLEX 75-1



AO 2-11

MISSILE ASSEMBLY BUILDING



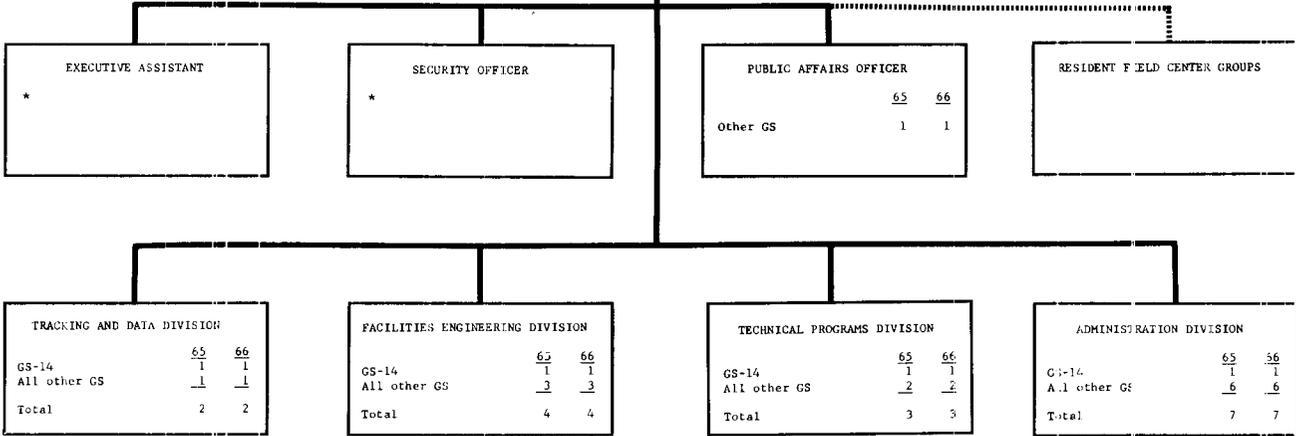
AO 2-12

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 PACIFIC LAUNCH OPERATIONS OFFICE

STAFFING SUMMARY		
GS-15	65	66
GS-14	1	1
All other GS	4	4
Total Permanent	<u>14</u>	<u>14</u>
Temporary	19	19
Total Positions	<u>3</u>	<u>3</u>
	22	22

DIRECTOR		
GS-15	65	66
All other GS	1	1
Total	<u>1</u>	<u>1</u>
	2	2

* RESPONSIBILITIES ASSUMED AS COLLATERAL DUTY FROM PERSONNEL ASSIGNED TO THE ADMINISTRATION DIVISION.



ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

PACIFIC LAUNCH OPERATIONS OFFICE

MISSION AND CAPABILITIES:

The mission of the Pacific Launch Operations Office covers the following areas:

1. Representing NASA in its west coast relationships with the Department of Defense range management agencies.
2. Negotiating for and coordinating the use of range services and facilities.
3. Providing administrative, logistic and technical support for NASA programs and projects at the DOD west coast ranges.
4. Providing central coordination of matters pertaining to support requirements developed by field installation groups located at the Pacific launch site.

During past months, NASA activities at the Pacific Missile Range/Western Test Range have included a number of major launches, recording of on-orbit data from Tiros and other spacecraft, metric tracking of Saturn and Centaur, manned space flight network support of the first Gemini launch, and miscellaneous support of several minor projects. On August 25, 1964, the Ionosphere Explorer was launched utilizing a Scout Vehicle; on August 28, 1964, the first Nimbus was launched by a Thor-Agena; and on October 9, 1964, the first successful Beacon Explorer was placed into an almost nominal orbit by a Scout. Educationally, the Pacific Launch Operations Office works closely with Unified School Districts in the three counties located in this area as a member of the Northern California Industry-Education Council providing NASA publications, films, exhibits, and educational material.

Increased launch activity using the Scout, Thor-Agena, and Thrust-Augmented Thor-Agena is planned. In addition, current plans include extending the Delta Program to the Western Test Range. Spacecraft to be launched include OGO, ISIS-X, Nimbus, Air-Density/INJUN, Pageos, and the French FR-1A. The support of Gemini, Saturn, Centaur, Tiros, and other orbiting spacecraft or vehicles will continue.

Geographically, from no other point within the continental United States can a vehicle be launched southward, into a polar orbit, without passing over populated areas during the hazardous launching and climb out stages, as land mass does not exist between the launch pads and Antarctica. The relatively flat terrain near the ocean, with protective hills inland, is ideal for

launching large boosters, as it provides both security control and minimal danger to adjacent communities. Launch facilities include the following:

1. Existing:

NASA - Thor-Agena, Thrust-Augmented Thor (TAT), Scout, Probes

Air Force (available to NASA) - Atlas-Agena and Thor-Able Star

2. Planned:

NASA - Improved Delta

Air Force (available to NASA) - Titan IIIC

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year.	22	22	22
Average Number of All Employees..	22	22	22
Administrative Operations.....	\$1,037,000	\$835,000	\$804,000

INSTALLATION DESCRIPTION:

The Pacific Launch Operations Office, established in March 1962, is located at Vandenberg Air Force Base, California, approximately 150 miles northwest of Los Angeles. Part of the organization is currently located at Point Mugu, California, a Naval Base approximately 40 miles north of Los Angeles. Because of a transfer of range responsibilities from the Navy to the Air Force during FY 1965, personnel assigned to the Point Mugu office will transfer to VAFB on or about March 1, 1965. The physical plant comprises various facilities, all located on land owned by other government agencies, including: (1) The Spin Test Facility; (2) the NASA/DOD Scout Launch Pad, including the NASA Operation Support Building and the PMR Probe Complex (1800 SF of Block House space assigned to NASA); (3) 1/2 (20,600 SF) of the PMR Missile Assembly Building plus a 7500 SF NASA addition; (4) Component Storage & Supply Building; (5) 10,900 SF of the PMR Range Users Engineering Building assigned to NASA for administrative space. The NASA physical plant value at Vandenberg Air Force Base as of June 30, 1964, was \$1,865,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$193,000	\$231,000	\$234,000
12. Personnel Benefits.....	<u>12,000</u>	<u>16,000</u>	<u>16,000</u>
Total, personnel costs....	\$205,000	\$247,000	\$250,000
21. Travel and Transportation of Persons.....	38,000	50,000	40,000
22. Transportation of Things....	7,000	12,000	10,000
23. Rents, Communications, and Utilities.....	111,000	90,000	90,000
24. Printing and Reproduction...	6,000	8,000	8,000
25. Other Services.....	70,000	166,000	160,000
Services of other agencies	94,000	74,000	80,000
26. Supplies and Materials.....	141,000	85,000	85,000
31. Equipment.....	55,000	46,000	46,000
32. Lands and Structures.....	<u>310,000</u>	<u>57,000</u>	<u>35,000</u>
Total.....	<u>\$1,037,000</u>	<u>\$835,000</u>	<u>\$804,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>	---	---	---
<u>Support Personnel</u>			
Director and Staff.....	3	3	3
Administration.....	10	7	7
Research and development support.	<u>9</u>	<u>9</u>	<u>9</u>
Sub-total, support positions...	<u>22</u>	<u>19</u>	<u>19</u>
Total, permanent positions.....	22	19	19
<u>Other Positions:</u>			
Positions under cooperative training agreements.....	---	---	---
Other temporary positions.....	<u>---</u>	<u>3</u>	<u>3</u>
Total, all positions.....	<u>22</u>	<u>22</u>	<u>22</u>

Personnel requirements

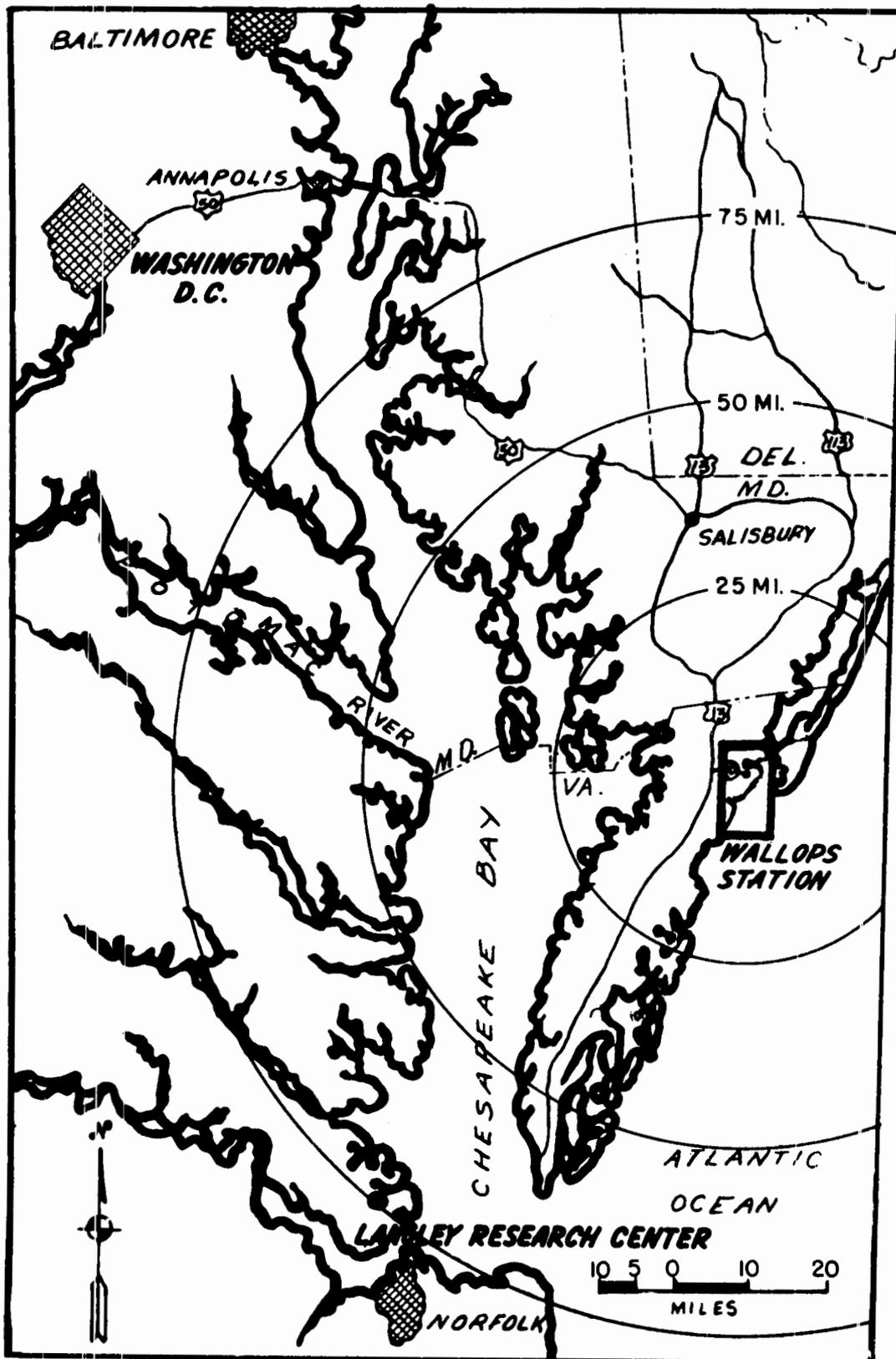
The mission of the Pacific Launch Operations Office is to administratively support the NASA missions launched from the Western Test Range. Requirements for personnel remain constant although three personnel shown as permanent in FY 1964 are reflected as temporary in FY 1965 and FY 1966.

	<u>Personnel Costs</u>		
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>22</u>	<u>22</u>	<u>22</u>
Permanent.....	22	19	19
Other.....	--	3	3
 <u>Personnel Compensation:</u>			
Annual cost of permanent positions.....	\$194,000	\$208,000	\$211,000
Pay above the stated annual rate.....	2,000	1,000	1,000
Lapses (deduct).....	<u>-13,000</u>	<u>-6,000</u>	<u>-1,000</u>
Net cost of permanent positions.....	183,000	203,000	211,000
Other personnel compensation....	<u>10,000</u>	<u>28,000</u>	<u>23,000</u>
<u>Total compensation</u>	<u>193,000</u>	<u>231,000</u>	<u>234,000</u>
NASA funded.....	193,000	231,000	234,000
Reimbursable.....	---	---	---
 <u>Personnel benefits</u>	<u>12,000</u>	<u>16,000</u>	<u>16,000</u>
NASA funded.....	12,000	16,000	16,000
Reimbursable.....	---	---	---
 <u>Total personnel costs</u>	<u>205,000</u>	<u>247,000</u>	<u>250,000</u>
NASA funded.....	205,000	247,000	250,000
Reimbursable.....	---	---	---
 <u>Average Number of All Employees</u>			
<u>(Man Years)</u>	22	22	22

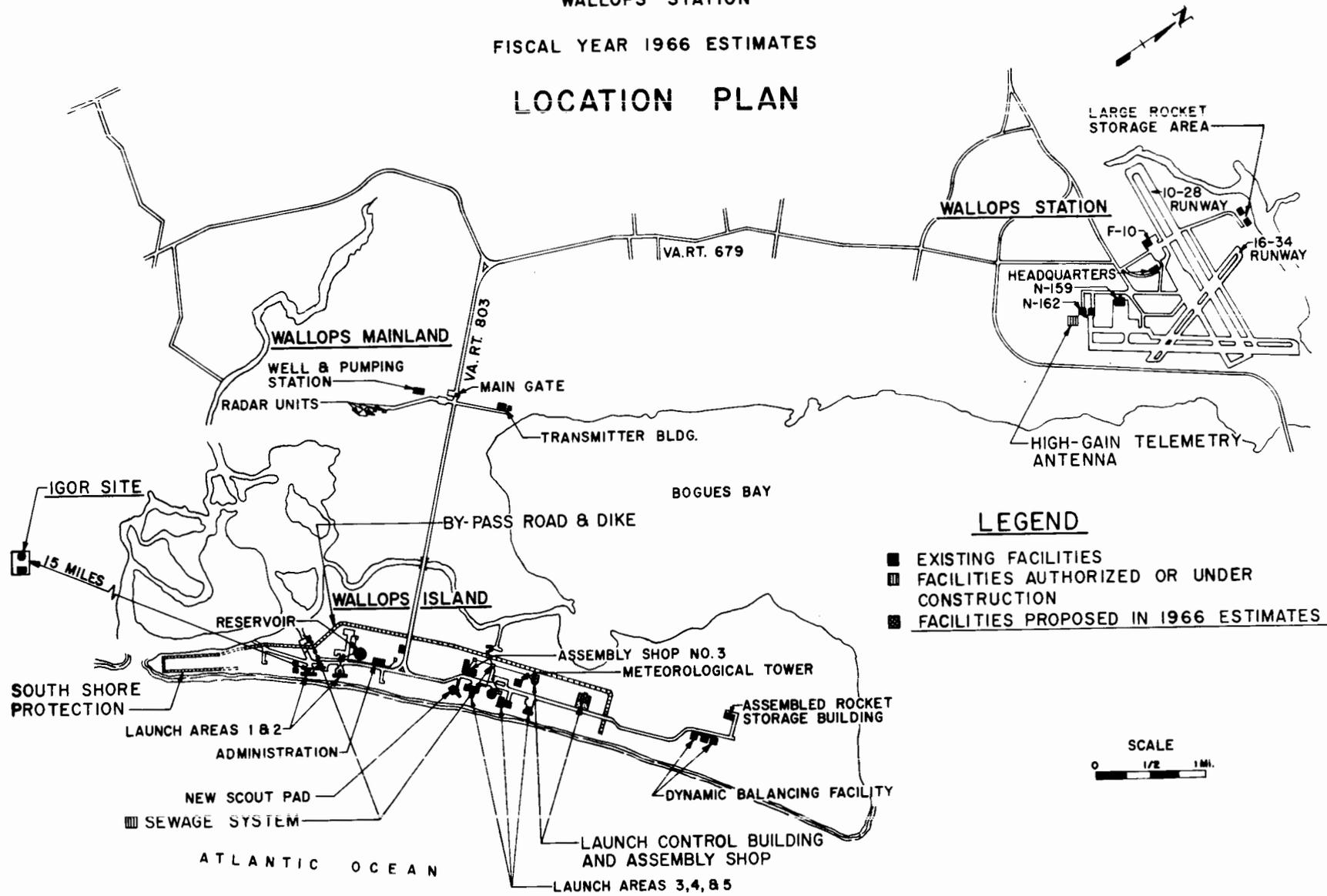
The FY 1966 estimate increase results from within grade salary increases, reduction in lapse since the full complement is expected to be on-board during the entire year, offset by a decrease in compensation for temporary employment and a decrease in overtime requirements.

The other requirements for the Pacific Launch Operations Office in FY 1966 are \$34,000 less than in FY 1965. This is due primarily to a reduction of \$22,000 in lands and structures, brought about by changes in requirements for minor construction. There is also a reduction of \$10,000 in travel and transportation of persons due to reduced travel requirements.

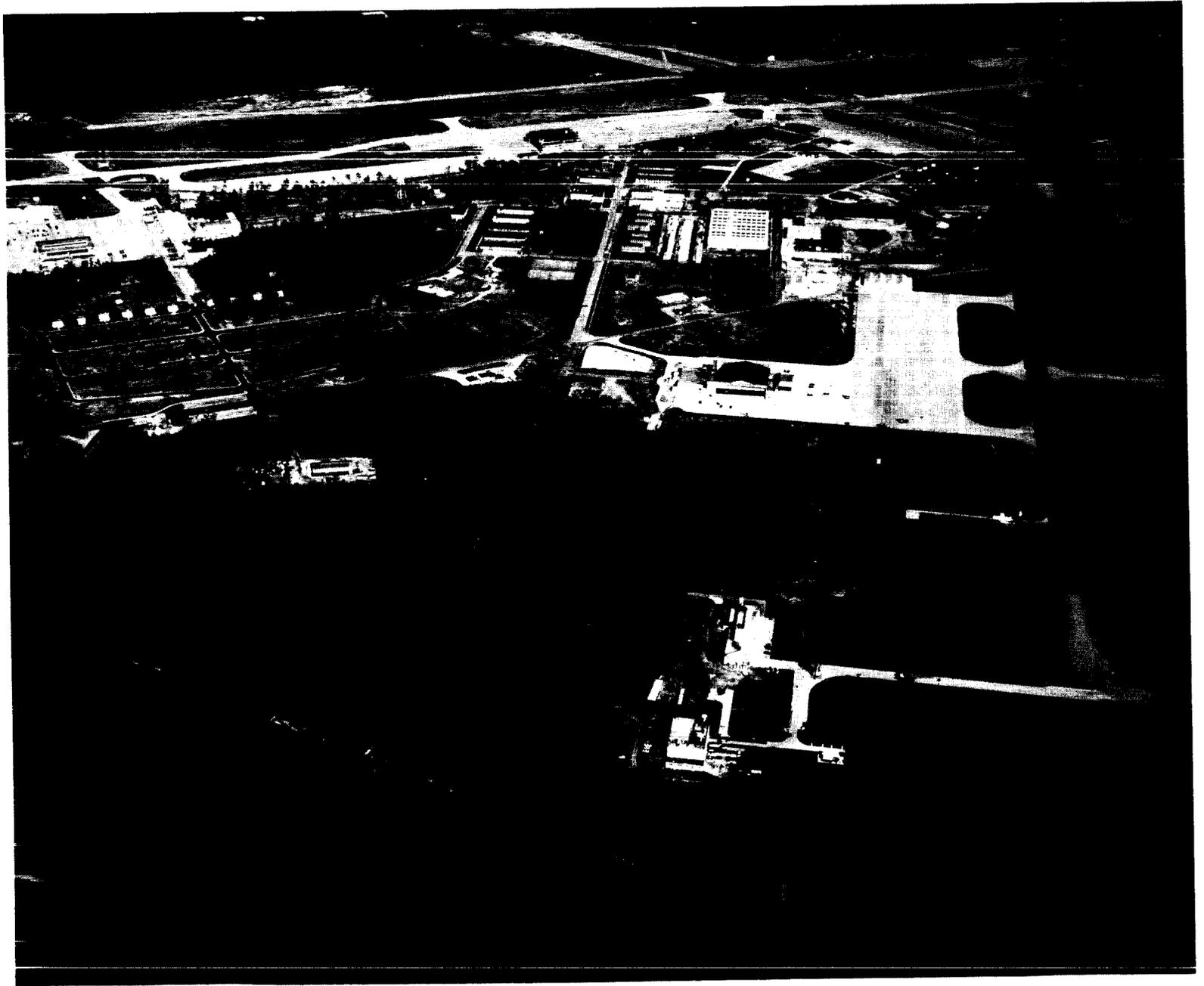
WALLOPS STATION LOCATION



WALLOPS STATION
FISCAL YEAR 1966 ESTIMATES
LOCATION PLAN



AO 2-19



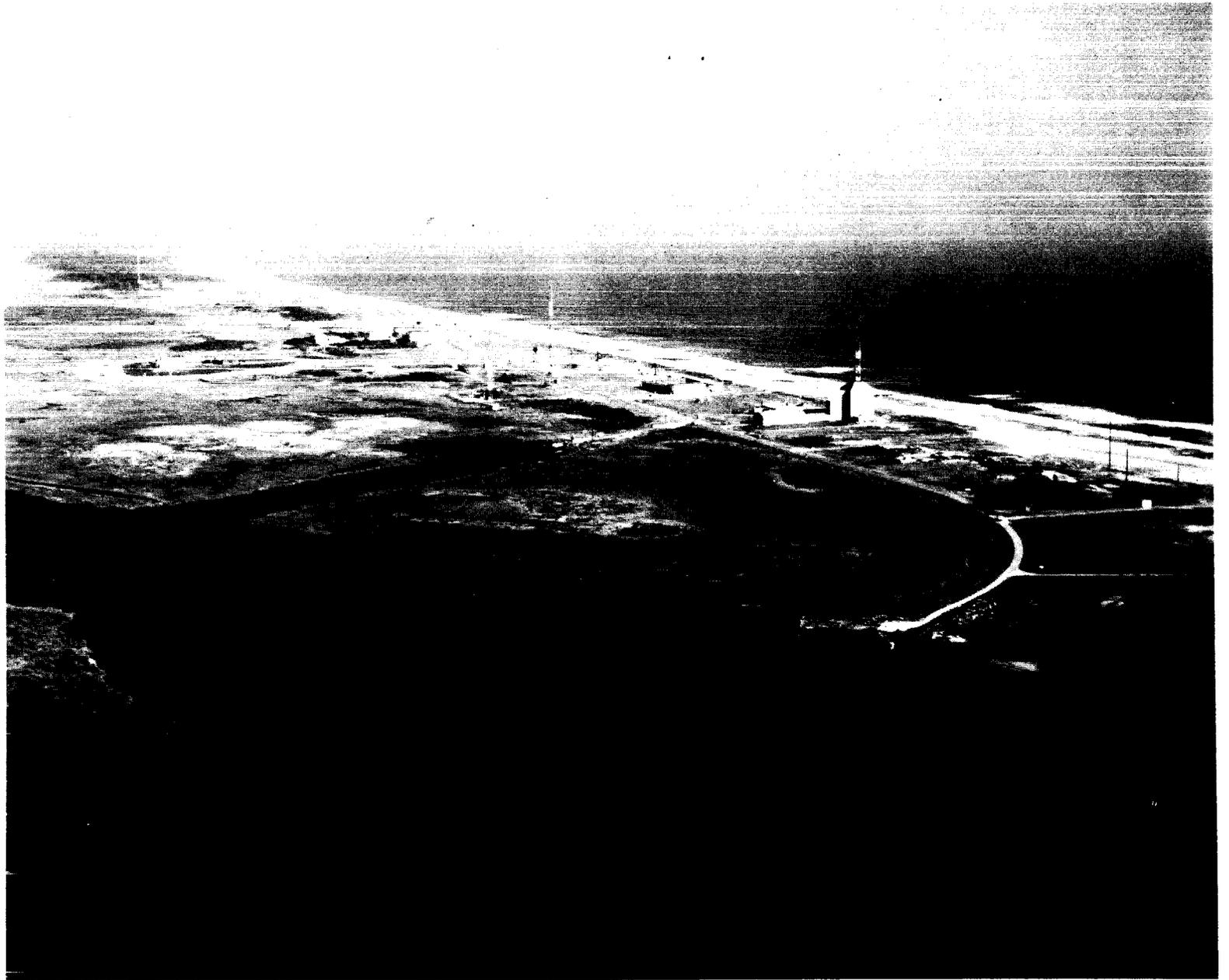
AO 2-20

Aerial View of Wallops Station

AO 2-21



Aerial View of Radars Mainland - Spandar, MIT, FPQ6



AO 2-22

Aerial view of Wallops Island south looking north

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 WALLOPS STATION

STAFFING SUMMARY		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	1	1
GS-15	4	4
GS-14	8	8
All other GS	236	236
Wage Board	<u>268</u>	<u>268</u>
Total Permanent	518	518
Temporary	<u>12</u>	<u>12</u>
Total Positions	530	530

DIRECTOR		
	<u>65</u>	<u>66</u>
Excepted	1	1
All other GS	<u>4</u>	<u>4</u>
Total	5	5

FLIGHT TEST DIVISION		
	<u>65</u>	<u>66</u>
GS-15	2	2
GS-14	3	3
All other GS	41	41
Wage Board	<u>97</u>	<u>97</u>
Total	143	143

RANGE ENGINEERING DIVISION		
	<u>65</u>	<u>66</u>
GS-16	1	1
GS-15	1	1
GS-14	4	4
All other GS	69	69
Wage Board	<u>7</u>	<u>7</u>
Total	82	82

ADMINISTRATIVE MANAGEMENT DIVISION		
	<u>65</u>	<u>66</u>
GS-15	1	1
All other GS	88	88
Wage Board	<u>46</u>	<u>46</u>
Total	135	135

TECHNICAL SERVICES DIVISION		
	<u>65</u>	<u>66</u>
GS-14	1	1
All other GS	34	34
Wage Board	<u>118</u>	<u>118</u>
Total	153	153

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

WALLOPS STATION

MISSION AND CAPABILITIES:

Wallops Island was first established as a launch site in 1945 and designated as the Pilotless Aircraft Research Station of the National Advisory Committee for Aeronautics. Its early mission included wind tunnel and laboratory investigations which explored the aerodynamic problems of flight. The Research Station was redesignated as Wallops Station when the National Aeronautics and Space Administration was established in 1958.

Wallops Station is one of the most active launch sites in the world. There have been, since 1945, more than 5,000 research vehicles launched which provided scientific and technical data ranging from flight characteristics of aircraft, launch vehicles and spacecraft to information on the upper atmosphere and the space environment. The Station has the ability to launch vehicles ranging in size from the small Hasp meteorological rocket to the four stage Scout which has orbital capability. Wallops launches about 300 vehicles a year including re-entry spacecraft, sounding rockets and scientific satellites. Past achievements include successful launches of two scientific satellites in conjunction with the United Kingdom; the orbiting of Explorer XXIII, which is measuring micrometeoroid activity in the environment of outer space; the launching of SERT I, the first U.S. test in space of an electric ion engine; and the launching of San Marco I for the Italian Government.

The basic mission of Wallops Station is to plan and conduct the integration, test, checkout and launch of space probes and to track, acquire, record, reduce and analyze the data which is sought. In addition, Wallops is responsible for conducting recovery operations for sub-orbital launches; assisting and training foreign nationals in launch techniques; assisting in tracking and acquiring data on spacecraft launched from other facilities; providing project management for specific flight projects; and providing necessary administration and management support for carrying out approved programs.

Project management responsibility for several scientific satellites in the University Explorer class will be undertaken by Wallops Station for the first time in the near future. This responsibility will provide Wallops the unique capability of managing a project from initial design to the ultimate launch, tracking and data acquisition phases.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year...	530	530	530
Average Number of All Employees....	508	524	524
Administrative Operations.....	\$9,715,000	\$11,442,000	\$9,800,000

INSTALLATION DESCRIPTION:

Wallops Station consists of three separate areas on the Atlantic Coast of Virginia's eastern shore: The main base (formerly a Naval Air Station), the Wallops Island Launching site and the Wallops mainland. The Administrative Offices, the Range Control Center, support shops and the main telemetry building are located on the main base. Wallops Island is about seven miles southeast of the main base and is connected by a causeway and bridge. The Island is about five miles long and its widest point is only one-half mile. Located on the Island are rocket storage buildings, blockhouses, assembly shops and the launch sites. The Wallops mainland is a one-half mile strip west of the Island and houses the radar and optical tracking sites. Wallops Station, totalling 6,561 acres, consists of 2,313 acres on the main base, 108 acres on the mainland area, 3,000 acres on the island, and 1,140 acres of unusable marsh land. This land is government owned and the total capital investment as of June 30, 1964 was \$42,978,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$3,806,000	\$4,361,000	\$4,361,000
12. Personnel Benefits.....	<u>268,000</u>	<u>313,000</u>	<u>313,000</u>
Total Personnel Costs....	\$4,074,000	\$4,674,000	\$4,674,000
21. Travel and Transportation of Persons.....	140,000	160,000	160,000
22. Transportation of Things...	65,000	83,000	83,000
23. Rents, Communications, and Utilities.....	485,000	626,000	465,000
24. Printing and Reproduction..	-	15,000	15,000
25. Other Services.....	915,000	1,233,000	1,633,000
Services of other agencies	17,000	50,000	50,000
26. Supplies and Materials.....	1,344,000	1,234,000	1,234,000
31. Equipment.....	1,017,000	2,546,000	760,000
32. Lands and Structures.....	1,658,000	820,000	725,000
41. Grants, Subsidies and Contributions.....	-	1,000	1,000
42. Insurance Claims and Indemnities.....	-	-	-
Total.....	<u>\$9,715,000</u>	<u>\$11,442,000</u>	<u>\$9,800,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

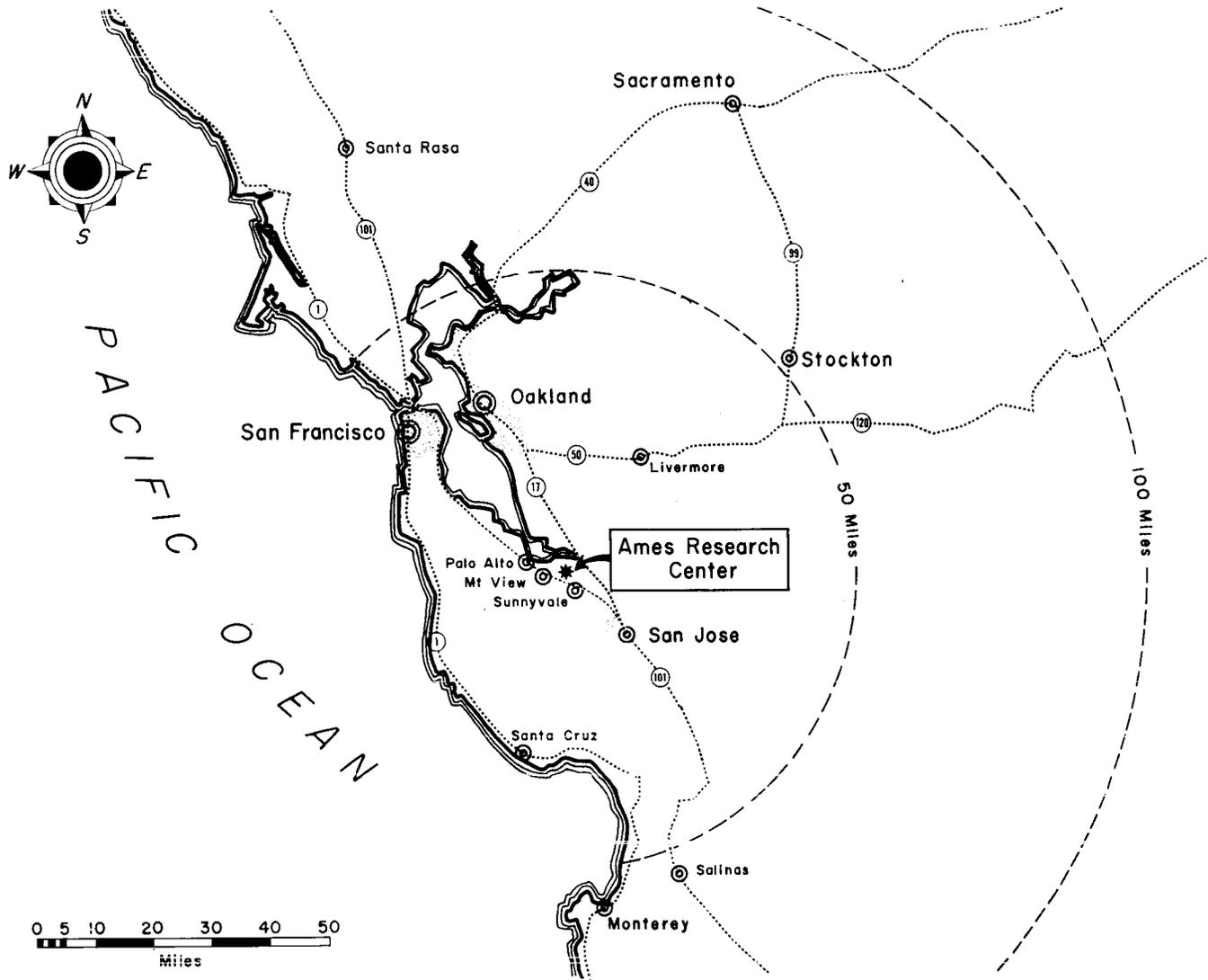
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Space Science and Applications</u>			
Meteorological satellites.....	19	20	20
Physics and astronomy.....	60	66	66
<u>Advanced Research and Technology</u>			
Space vehicle systems.....	19	19	19
Electronics systems.....	8	8	8
Basic research.....	12	12	12
Solar and chemical power.....	16	17	17
Aeronautics.....	17	17	17
<u>Tracking and Data Acquisition.....</u>	<u>43</u>	<u>42</u>	<u>42</u>
Sub-total, direct positions.....	194	201	201
<u>Support Personnel</u>			
Director and staff.....	5	5	5
Administration.....	74	65	65
Research and development support.....	<u>243</u>	<u>247</u>	<u>247</u>
Sub-total, support positions.....	<u>322</u>	<u>317</u>	<u>317</u>
Total, permanent positions.....	516	518	518
<u>Other positions:</u>			
Positions under cooperative training agreements.....	12	12	12
Other temporary positions.....	<u>2</u>	<u>-</u>	<u>-</u>
Total, all positions.....	<u>530</u>	<u>530</u>	<u>530</u>

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>530</u>	<u>530</u>	<u>530</u>
Permanent	516	518	518
Other	14	12	12
 <u>Personnel Compensation:</u>			
Annual cost of permanent positions...	\$3,586,000	\$3,904,000	\$3,904,000
Pay above the stated annual rate.....	28,000	15,000	15,000
Lapses (deduct).....	<u>-235,000</u>	<u>-81,000</u>	<u>-81,000</u>
Net cost of permanent positions.....	3,379,000	3,838,000	3,838,000
Other personnel compensation.....	<u>427,000</u>	<u>523,000</u>	<u>523,000</u>
 <u>Total compensation</u>	 <u>3,806,000</u>	 <u>4,361,000</u>	 <u>4,361,000</u>
NASA funded.....	3,806,000	4,361,000	4,361,000
Reimbursable.....	-	-	-
 <u>Personnel benefits</u>	 <u>268,000</u>	 <u>313,000</u>	 <u>313,000</u>
NASA funded.....	268,000	313,000	313,000
Reimbursable.....	-	-	-
 <u>Total personnel costs</u>	 <u>4,074,000</u>	 <u>4,674,000</u>	 <u>4,674,000</u>
NASA funded.....	4,074,000	4,674,000	4,674,000
Reimbursable.....	-	-	-
 <u>Average Number of All Employees</u>			
<u>(Man Years)</u>	508	524	524

The Wallops Station requirements for FY 1966 are \$1,642,000 less than in FY 1965. This is due primarily to a reduction of \$1,786,000 in equipment and \$161,000 in rents, communications and utilities. Both decreases were the result of the purchase of a general purpose computer during FY 1965. The purchase was funded under equipment in FY 1965 and resulted in a decrease in rental during FY 1966. There is also a decrease of \$95,000 in lands and structures due to a reduction in minor construction requirements in FY 1966. These reductions are offset by an increase of \$400,000 in other services, required for increased maintenance and repair of aging facilities and to cover increased contractual shop support related to the installation and maintenance of special launch equipment.

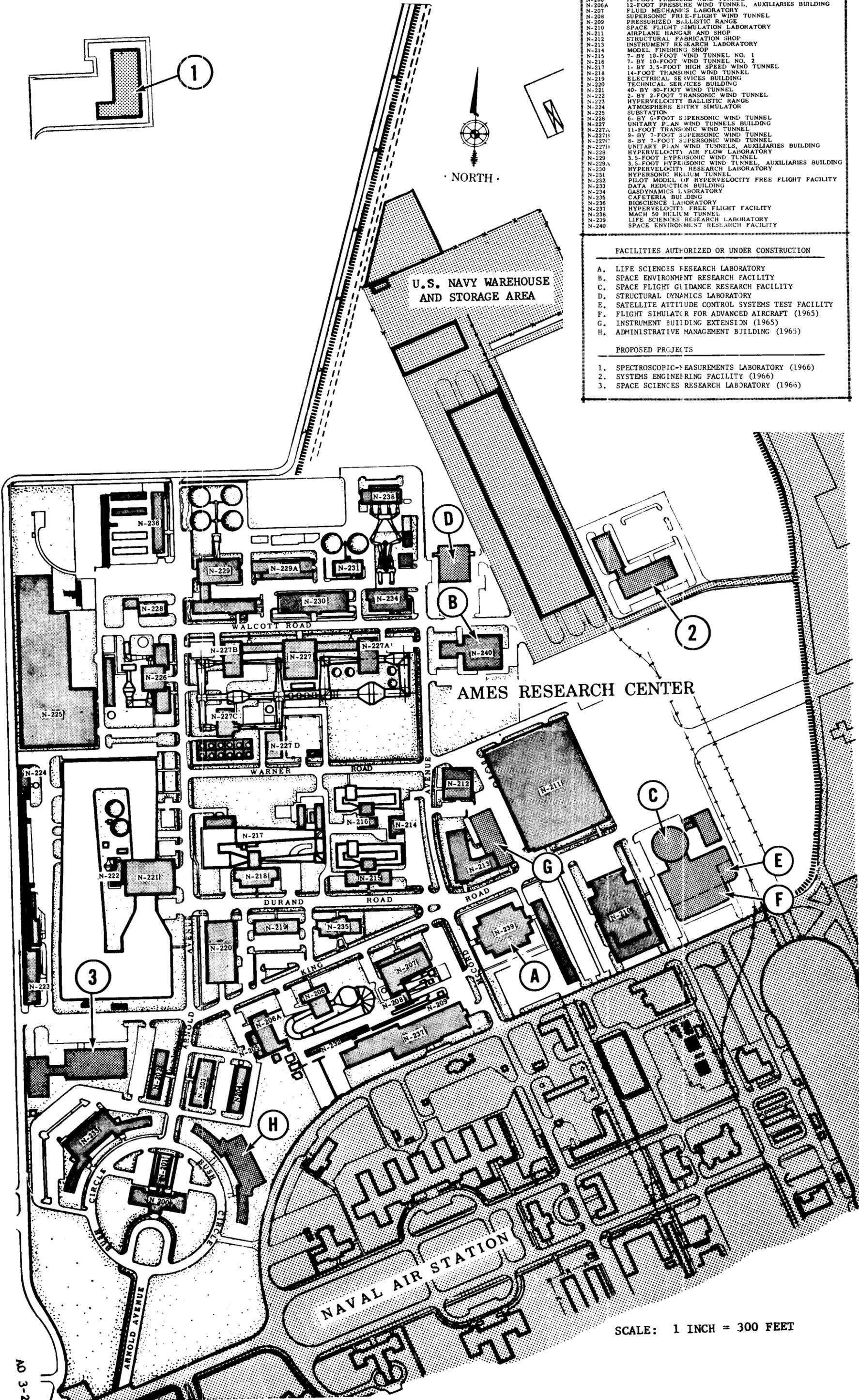
AMES RESEARCH CENTER FISCAL YEAR 1966 ESTIMATES VICINITY MAP



AO 3-1

LOCATION PLAN

- N-201 AUDITORIUM
- N-202 ADMINISTRATION BUILDING ANNEX
- N-203 ENGINEERING SERVICES BUILDING
- N-204 SPACE TECHNOLOGY BUILDING
- N-205 10- BY 14-INCH SUPERSONIC WIND TUNNEL
- N-206 12-FOOT PRESSURE WIND TUNNEL
- N-206A 12-FOOT PRESSURE WIND TUNNEL, AUXILIARIES BUILDING
- N-207 FLUID MECHANICS LABORATORY
- N-208 SUPERSONIC FREE-FLIGHT WIND TUNNEL
- N-209 PRESSURIZED BALLISTIC RANGE
- N-210 SPACE FLIGHT SIMULATION LABORATORY
- N-211 AIRPLANE HANGAR AND SHOP
- N-212 STRUCTURAL FABRICATION SHOP
- N-213 INSTRUMENT RESEARCH LABORATORY
- N-214 MODEL FINISHING SHOP
- N-215 7- BY 10-FOOT WIND TUNNEL NO. 1
- N-216 7- BY 10-FOOT WIND TUNNEL NO. 2
- N-217 1- BY 3.5-FOOT HIGH SPEED WIND TUNNEL
- N-218 14-FOOT TRANSONIC WIND TUNNEL
- N-219 ELECTRICAL SERVICES BUILDING
- N-220 TECHNICAL SERVICES BUILDING
- N-221 40- BY 80-FOOT WIND TUNNEL
- N-222 2- BY 2-FOOT TRANSONIC WIND TUNNEL
- N-223 HYPERVELOCITY BALLISTIC RANGE
- N-224 ATMOSPHERE ENTRY SIMULATOR
- N-225 SUBSTATION
- N-226 6- BY 6-FOOT SUPERSONIC WIND TUNNEL
- N-227 UNITARY PLAN WIND TUNNELS BUILDING
- N-227A 11-FOOT TRANSONIC WIND TUNNEL
- N-227B 9- BY 7-FOOT SUPERSONIC WIND TUNNEL
- N-227C 8- BY 7-FOOT SUPERSONIC WIND TUNNEL
- N-227D UNITARY PLAN WIND TUNNELS, AUXILIARIES BUILDING
- N-228 HYPERVELOCITY AIR FLOW LABORATORY
- N-229 3.5-FOOT SUPERSONIC WIND TUNNEL
- N-229A 3.5-FOOT SUPERSONIC WIND TUNNEL, AUXILIARIES BUILDING
- N-230 HYPERVELOCITY RESEARCH LABORATORY
- N-231 HYPERSONIC HELIUM TUNNEL
- N-232 PILOT MODEL OF HYPERVELOCITY FREE FLIGHT FACILITY
- N-233 DATA REDUCTION BUILDING
- N-234 GASDYNAMICS LABORATORY
- N-235 CAFETERIA BUILDING
- N-236 BIOSCIENCE LABORATORY
- N-237 HYPERVELOCITY FREE FLIGHT FACILITY
- N-238 MACH 50 HELIUM TUNNEL
- N-239 LIFE SCIENCES RESEARCH LABORATORY
- N-240 SPACE ENVIRONMENT RESEARCH FACILITY



FACILITIES AUTHORIZED OR UNDER CONSTRUCTION

- A. LIFE SCIENCES RESEARCH LABORATORY
- B. SPACE ENVIRONMENT RESEARCH FACILITY
- C. SPACE FLIGHT GUIDANCE RESEARCH FACILITY
- D. STRUCTURAL DYNAMICS LABORATORY
- E. SATELLITE ATTITUDE CONTROL SYSTEMS TEST FACILITY
- F. FLIGHT SIMULATOR FOR ADVANCED AIRCRAFT (1965)
- G. INSTRUMENT BUILDING EXTENSION (1965)
- H. ADMINISTRATIVE MANAGEMENT BUILDING (1965)

PROPOSED PROJECTS

- 1. SPECTROSCOPIC MEASUREMENTS LABORATORY (1966)
- 2. SYSTEMS ENGINEERING FACILITY (1966)
- 3. SPACE SCIENCES RESEARCH LABORATORY (1966)

SCALE: 1 INCH = 300 FEET

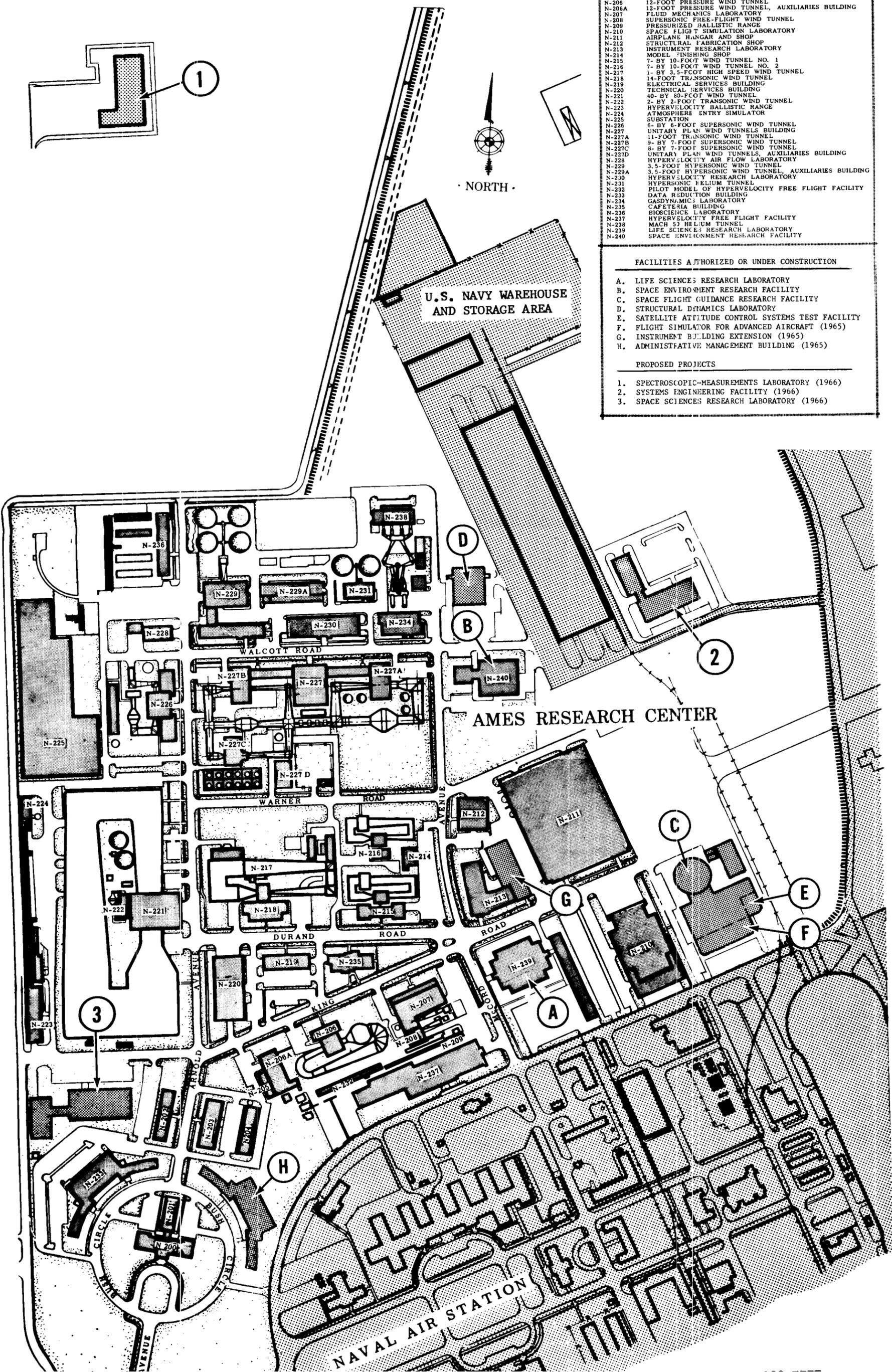
AMES RESEARCH CENTER
FISCAL YEAR 1966 ESTIMATES

LOCATION PLAN

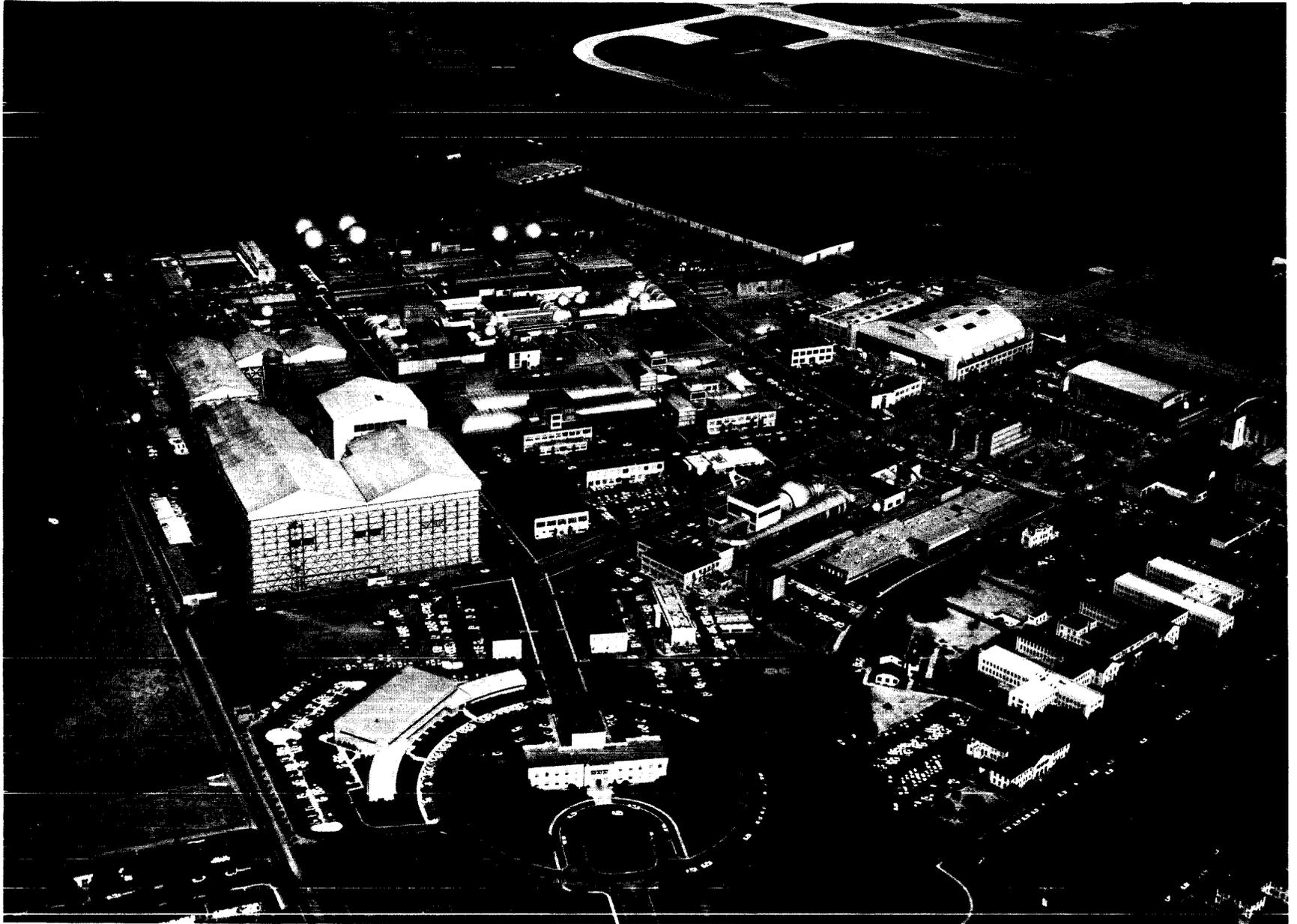
LEGEND	
N-200	ADMINISTRATION BUILDING
N-201	AUDITORIUM
N-202	ADMINISTRATION BUILDING ANNEX
N-203	ENGINEERING SERVICES BUILDING
N-204	SPACE TECHNOLOGY BUILDING
N-205	10- BY 11-INCH SUPERSONIC WIND TUNNEL
N-206	12-FOOT PRESSURE WIND TUNNEL
N-206A	12-FOOT PRESSURE WIND TUNNEL, AUXILIARIES BUILDING
N-207	FLUID MECHANICS LABORATORY
N-208	SUPERSONIC FREE-FLIGHT WIND TUNNEL
N-209	PRESSURIZED BALLISTIC RANGE
N-210	SPACE FLIGHT SIMULATION LABORATORY
N-211	AIRPLANE HANGAR AND SHOP
N-212	STRUCTURAL FABRICATION SHOP
N-213	INSTRUMENT RESEARCH LABORATORY
N-214	MODEL FINISHING SHOP
N-215	7- BY 10-FOOT WIND TUNNEL NO. 1
N-216	7- BY 10-FOOT WIND TUNNEL NO. 2
N-217	1- BY 3.5-FOOT HIGH SPEED WIND TUNNEL
N-218	14-FOOT TRANSONIC WIND TUNNEL
N-219	ELECTRICAL SERVICES BUILDING
N-220	TECHNICAL SERVICES BUILDING
N-221	40- BY 80-FOOT WIND TUNNEL
N-222	2- BY 2-FOOT TRANSONIC WIND TUNNEL
N-223	HYPERVELOCITY BALLISTIC RANGE
N-224	ATMOSPHERE ENTRY SIMULATOR
N-225	SUBSTATION
N-226	6- BY 6-FOOT SUPERSONIC WIND TUNNEL
N-227	UNITARY PLAN WIND TUNNELS BUILDING
N-227A	11-FOOT TRANSONIC WIND TUNNEL
N-227B	8- BY 7-FOOT SUPERSONIC WIND TUNNEL
N-227C	8- BY 7-FOOT SUPERSONIC WIND TUNNEL
N-227D	UNITARY PLAN WIND TUNNELS, AUXILIARIES BUILDING
N-228	HYPERVELOCITY AIR FLOW LABORATORY
N-229	3.5-FOOT HYPERSONIC WIND TUNNEL
N-229A	3.5-FOOT HYPERSONIC WIND TUNNEL, AUXILIARIES BUILDING
N-230	HYPERVELOCITY RESEARCH LABORATORY
N-231	HYPERSONIC HELIUM TUNNEL
N-232	PILOT MODEL OF HYPERVELOCITY FREE FLIGHT FACILITY
N-233	DATA REDUCTION BUILDING
N-234	GASDYNAMIC LABORATORY
N-235	CAFETERIA BUILDING
N-236	BIOSCIENCE LABORATORY
N-237	HYPERVELOCITY FREE FLIGHT FACILITY
N-238	MACH 5 HELIUM TUNNEL
N-239	LIFE SCIENCES RESEARCH LABORATORY
N-240	SPACE ENVIRONMENT RESEARCH FACILITY

FACILITIES AUTHORIZED OR UNDER CONSTRUCTION	
A.	LIFE SCIENCES RESEARCH LABORATORY
B.	SPACE ENVIRONMENT RESEARCH FACILITY
C.	SPACE FLIGHT GUIDANCE RESEARCH FACILITY
D.	STRUCTURAL DYNAMICS LABORATORY
E.	SATELLITE ATTITUDE CONTROL SYSTEMS TEST FACILITY
F.	FLIGHT SIMULATOR FOR ADVANCED AIRCRAFT (1965)
G.	INSTRUMENT BUILDING EXTENSION (1965)
H.	ADMINISTRATIVE MANAGEMENT BUILDING (1965)

PROPOSED PROJECTS	
1.	SPECTROSCOPIC-MEASUREMENTS LABORATORY (1966)
2.	SYSTEMS ENGINEERING FACILITY (1966)
3.	SPACE SCIENCES RESEARCH LABORATORY (1966)



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA



AO 3-3

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 AMES RESEARCH CENTER

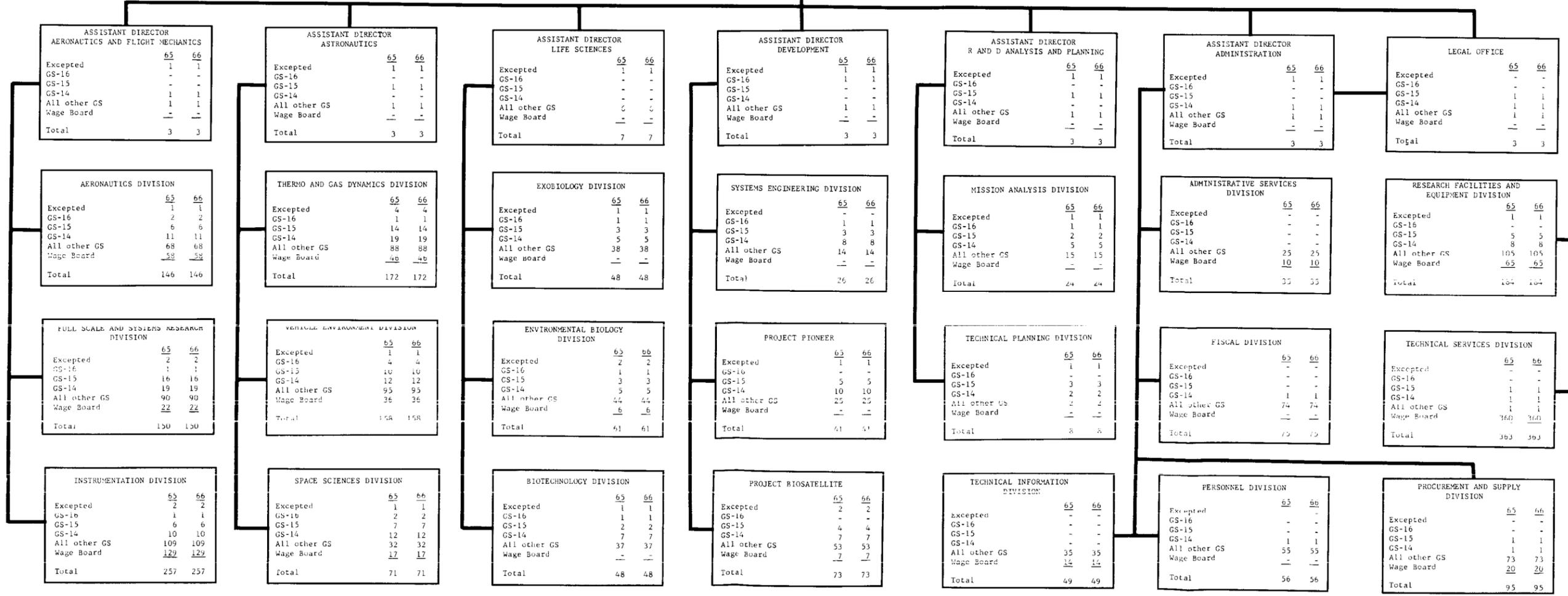
STAFFING SUMMARY		
Excepted	65	66
GS-16	29	29
GS-15	17	17
GS-14	97	97
GS-14	150	150
All other GS	1,102	1,102
Wage Board	700	700
Total Permanent	2,185	2,185
Temporary	20	20
Total Positions	2,205	2,205

DIRECTOR		
Excepted	65	66
GS-16	2	2
GS-15	-	-
GS-14	1	1
GS-14	-	-
All other GS	5	5
Wage Board	-	-
Total	8	8

RESOURCES MANAGEMENT OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	1	1
Wage Board	-	-
Total	3	3

TECHNOLOGY UTILIZATION OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	2	2
Wage Board	-	-
Total	4	4

PUBLIC INFORMATION OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	4	4
Wage Board	-	-
Total	5	5



ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

AMES RESEARCH CENTER

MISSION AND CAPABILITIES:

In addition to the traditional research mission in the physical sciences, the Ames Research Center mission includes research in the life sciences, flight project management, and spacecraft experimentation in the space sciences. The Center has flight-project management responsibility for Pioneer and Biosatellite projects. The Pioneer project will provide scientific observations of phenomena in interplanetary space from an unmanned spacecraft and the Biosatellite project will explore the biological effects of the space environment on primates and other earth organisms.

Physical sciences research includes studies in atmosphere entry and environmental physics, guidance and control systems, and aeronautics. Research in entry and environmental physics includes basic studies of the physics and chemistry of high-temperature gases; the stability, control, and performance of a wide range of spacecraft configurations; and of materials and structures for spacecraft. In the area of gas physics, particular emphasis is placed on problems associated with flight into earth and other planetary atmospheres. Through this effort, significant contributions have been made to the design of the Mercury, Gemini, and Apollo spacecraft, the design of Mars entry vehicles, and the design of ballistic missiles. Research in the environmental physics is directed toward the physics and chemistry of materials exposed to environmental conditions encountered by spacecraft and entry vehicles and includes the effects of micrometeoritic particles and meteoric impact on structures as well as on materials. The work in guidance and control systems is broad in nature and is applicable to manned and unmanned spacecraft, as well as aircraft. Current emphasis in guidance systems is directed mainly at manned vehicles and in particular Apollo and follow-on manned missions. This includes an intensive effort in the area of midcourse navigation and terminal guidance with a smaller effort directed at examining various techniques applicable to satellite attitude stabilization and techniques applicable to vertical and short take-off (V/STOL) aircraft, the supersonic transport, and the Apollo spacecraft. The research program in aeronautics is directed toward studies of problems associated with supersonic aircraft with particular emphasis on the supersonic transport, a wide variety of V/STOL vehicles and with hypersonic research aircraft. This includes studies of piloting problems with numerous fixed-base, moving-base, and flight simulators.

Space sciences research includes studies in the fields of solar physics, planetary environments, and geophysics. This includes ground-based theoretical and experimental research, sounding rocket experimentation, as well

as experimentation requiring specialized instruments aboard satellites and space probes. The work covers studies pertaining to magnetic fields plasma, micrometeoroids in space, and studies to determine the composition and structure of planets and of planetary and stellar atmospheres.

Life sciences research is conducted in three major areas: basic research in the physiological and behavioral sciences concerned with obtaining a basic understanding of the effects of terrestrial and extraterrestrial environments and of space flight stresses upon living organisms; studies in exobiology oriented towards the prediction, detection, and study of extraterrestrial life forms; and research in the human factors aspects of the relationships between man and the machines which will transport him into space and support him during lunar and planetary exploration.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year...	2,204	2,205	2,205
Average Number of All Employees....	2,173	2,195	2,195
Administrative Operations.....	\$29,886,000	\$31,698,000	\$32,300,000

INSTALLATION DESCRIPTION:

The Ames Research Center was established in 1940 and is located at the southern end of San Francisco Bay on land contiguous to the U.S. Naval Air Station, Moffett Field, California. Its physical plant comprises many specialized facilities for aerospace research in the traditional physical sciences as well as the space sciences and life sciences, all of which are included in the mission of the Center. These include conventional wind tunnels, entry-heating simulators, and free-flight ballistic test facilities capable of conducting tests at speeds up to and above earth escape speed as well as laboratories equipped to study solar and geophysical phenomena, life synthesis, life detection, and life environmental factors. The Center occupies about 235 acres of land of which 115 acres are owned by NASA and the remainder is made available through a use permit with the Department of the Navy. Certain other facilities, such as the utilities and airfield runways, are used jointly by NASA and the Navy. The total capital investment as of June 30, 1964, was \$155,427,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$19,042,000	\$20,700,000	\$20,729,000
12. Personnel Benefits.....	1,389,000	1,500,000	1,503,000
Total, personnel costs.....	\$20,431,000	\$22,200,000	\$22,232,000

	<u>1964</u>	<u>1965</u>	<u>1966</u>
21. Travel and Transportation of Persons.....	\$508,000	\$610,000	\$600,000
22. Transportation of Things....	59,000	58,000	58,000
23. Rents, Communications, and Utilities.....	4,605,000	4,725,000	5,205,000
24. Printing and Reproduction...	37,000	35,000	35,000
25. Other Services.....	1,644,000	1,355,000	1,488,000
Services of other agencies	112,000	105,000	112,000
26. Supplies and Materials.....	1,045,000	1,234,000	1,234,000
31. Equipment.....	614,000	1,076,000	1,036,000
32. Lands and Structures.....	831,000	300,000	300,000
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	<u>\$29,886,000</u>	<u>\$31,698,000</u>	<u>\$32,300,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Gemini.....	6	6	-
Apollo.....	13	13	-
<u>Space Science and Applications</u>			
Physics and astronomy.....	40	42	42
Lunar and planetary exploration..	106	118	116
Bioscience.....	214	207	210
<u>Advanced Research and Technology</u>			
Solar and chemical power.....	8	11	12
Space vehicle systems.....	193	204	206
Electronics systems.....	193	196	200
Aeronautics.....	292	285	284
Human factor systems.....	117	102	110
Basic research.....	352	347	344
<u>Technology Utilization.....</u>	<u>4</u>	<u>4</u>	<u>4</u>
Sub-total, direct positions.....	<u>1,538</u>	<u>1,535</u>	<u>1,528</u>

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Support personnel</u>			
Director and Staff.....	48	49	49
Administration.....	304	310	310
Research and development support...	<u>311</u>	<u>291</u>	<u>298</u>
Sub-total, support personnel.....	<u>663</u>	<u>650</u>	<u>657</u>
Total, permanent positions.....	2,201	2,185	2,185
<u>Other positions:</u>			
Positions under cooperative training agreements.....	1	1	1
Other positions.....	<u>2</u>	<u>19</u>	<u>19</u>
Total, all positions.....	<u>2,204</u>	<u>2,205</u>	<u>2,205</u>

Personnel Requirements

Substantial effort in FY 1966 will continue to be devoted to the management of the Biosatellite and Pioneer Projects. Considerable effort will also be expended on research in aeronautics, space vehicles, and life sciences. Fluctuating workload requirements will involve minor re-assignments of personnel between programs as changing program priorities dictate. Support for the FY 1966 personnel program will require a nominal increase to compensate for that portion of specific salary adjustments which cannot be absorbed through personnel turnover.

Personnel Costs

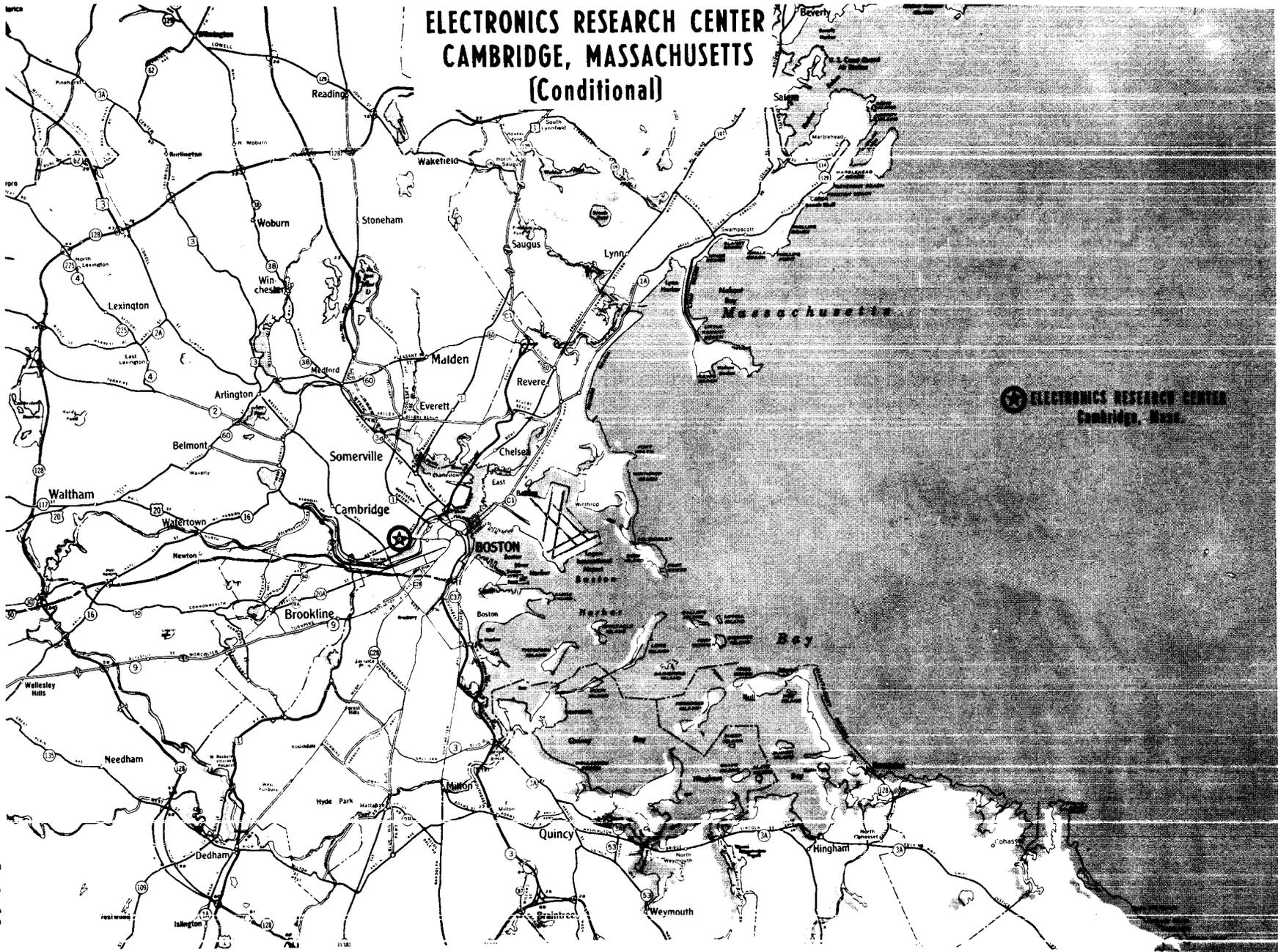
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>2,204</u>	<u>2,205</u>	<u>2,205</u>
Permanent.....	2,201	2,185	2,185
Other.....	3	20	20
<u>Personnel Compensation:</u>			
Annual cost of permanent positions.....	\$19,528,000	\$20,220,000	\$20,220,000
Pay above the stated annual rate.....	164,000	78,000	78,000
Lapses (deduct).....	<u>-1,045,000</u>	<u>-39,000</u>	<u>-10,000</u>
Cost of net permanent positions	18,647,000	20,259,000	20,288,000
Other personnel compensation...	<u>395,000</u>	<u>441,000</u>	<u>441,000</u>
<u>Total compensation</u>	<u>19,042,000</u>	<u>20,700,000</u>	<u>20,729,000</u>
NASA funded	19,042,000	20,700,000	20,729,000
Reimbursable.....	---	---	---

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Personnel benefits</u>	<u>\$1,389,000</u>	<u>\$1,500,000</u>	<u>\$1,503,000</u>
NASA funded.....	1,389,000	1,500,000	1,503,000
Reimbursable.....	---	---	---
 <u>Total personnel costs</u>	 <u>20,431,000</u>	 <u>22,200,000</u>	 <u>22,232,000</u>
NASA funded.....	20,431,000	22,200,000	22,232,000
Reimbursable.....	---	---	---
 Average Number of All Employees (Man Years).....	 2,173	 2,195	 2,195

Requirements for all other objects for FY 1966 reflect an increase of \$570,000 over the amount estimated to be required for FY 1965, essentially in the following areas: (1) rental of electronic computing equipment; (2) electric power requirements; and (3) other contractual services.

The scheduled launchings under the Pioneer Project will necessitate the rental of auxiliary items of computer equipment to facilitate the increased workload resulting from the processing of flight data. This requirement will reflect an increase of \$441,000. An increase in electric power consumption relating to scheduled wind tunnel tests will require additional funding in the amount of approximately \$44,000. These increases are offset by a net decrease of \$5,000 in other requirements for rents, communications and utilities. Other contractual services will require a nominal increase to cover additional maintenance costs for these facilities coming into initial operation in FY 1966.

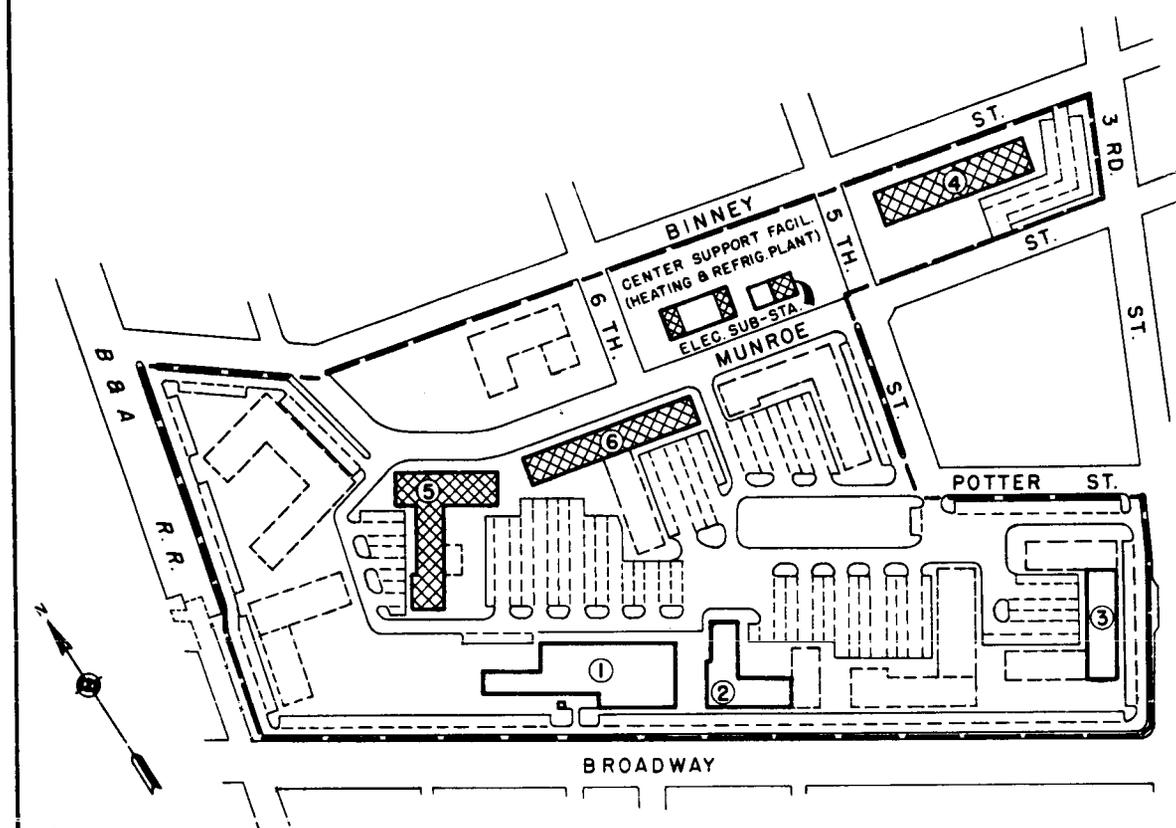
ELECTRONICS RESEARCH CENTER CAMBRIDGE, MASSACHUSETTS (Conditional)



 **ELECTRONICS RESEARCH CENTER**
Cambridge, Mass.

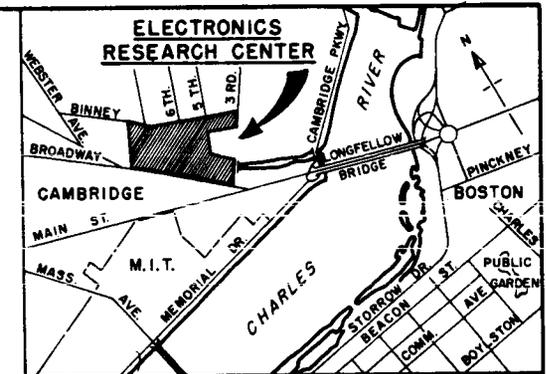
AO 3-10

ELECTRONICS RESEARCH CENTER
 FISCAL YEAR 1966 ESTIMATES
LOCATION PLAN
 CAMBRIDGE, MASS.
 (CONDITIONAL)



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 SCALE IN FEET

AO 3-11



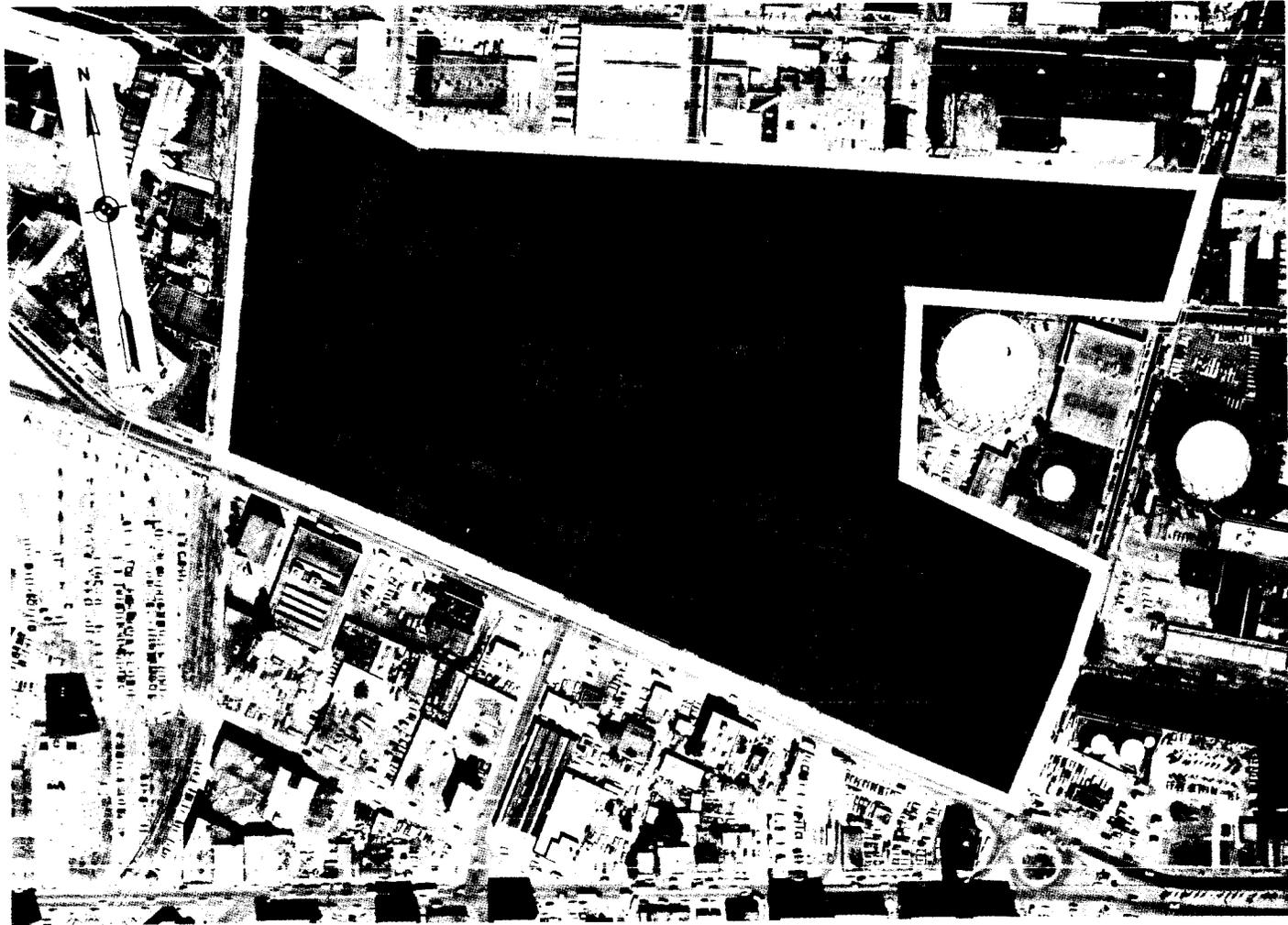
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 SCALE IN MILES

- ① ENGINEERING & ADMINISTRATION BUILDING
- ② ELECTRONIC COMPONENTS LABORATORY
- ③ QUALIFICATIONS & STANDARDS LABORATORY
- ④ MICROWAVE RADIATION LABORATORY
- ⑤ SPACE GUIDANCE LABORATORY
- ⑥ OPTICAL COMMUNICATIONS LABORATORY

LEGEND

- FY-65 FACILITIES
- ▨ FACILITIES PROPOSED IN 1966 ESTIMATES
- FUTURE FACILITIES
- PROJECT BOUNDARY

ELECTRONICS RESEARCH CENTER
CAMBRIDGE, MASS.
(Conditional)



AO 3-12

AERIAL VIEW

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 ELECTRONICS RESEARCH CENTER

OFFICE OF THE DIRECTOR		
	<u>65</u>	<u>66</u>
Excepted	2	3
GS-16	-	-
GS-15	2	4
GS-14	4	8
All other GS	12	10
Wage Board	-	-
Total	20	25

STAFFING SUMMARY		
	<u>65</u>	<u>66</u>
Excepted	10	11
GS-16	-	-
GS-15	16	46
GS-14	50	110
All other GS	174	383
Wage Board	-	-
Total Permanent	250	550
Temporary	-	-
Total Positions	250	550

PROGRAMS AND RESOURCES		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	2	3
GS-14	3	6
All other GS	13	40
Wage Board	-	-
Total	19	50

ADMINISTRATION		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	-	1
GS-14	5	12
All other GS	49	81
Wage Board	-	-
Total	55	95

FACILITIES AND ENGINEERING		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	2	4
GS-14	6	15
All other GS	24	40
Wage Board	-	-
Total	33	60

SYSTEMS RESEARCH		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	2	7
GS-14	5	11
All other GS	8	28
Wage Board	-	-
Total	16	47

ELECTRONIC COMPONENTS RESEARCH		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	2	8
GS-14	8	17
All other GS	27	73
Wage Board	-	-
Total	38	99

GUIDANCE AND CONTROL RESEARCH		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	2	7
GS-14	7	14
All other GS	12	38
Wage Board	-	-
Total	22	60

INSTRUMENTATION AND DATA PROCESSING RESEARCH		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	2	6
GS-14	5	13
All other GS	14	38
Wage Board	-	-
Total	22	58

ELECTRO-MAGNETIC RESEARCH		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	2	6
GS-14	7	14
All other GS	15	35
Wage Board	-	-
Total	25	56

ET-6 OV

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

ELECTRONICS RESEARCH CENTER

MISSION AND CAPABILITIES:

The Electronics Research Center will increase NASA's capability in space electronics by providing the groundwork of knowledge and advanced technology needed to overcome present deficiencies.

The Center will conduct comprehensive programs of basic and applied research in areas of space electronics now inadequately covered. The research will include performance characteristics, test procedures, and specifications for space electronic components, and investigate new concepts for making space electronics equipment more reliable. The Center will investigate techniques and lay the fundamental technological groundwork for space electronics equipment of reduced weight, size, power drain, and complexity, capable of withstanding the harsh conditions found in space. The Center will devise new concepts and techniques and prove their feasibility both analytically and experimentally for space electronic equipment capable of achieving levels of performance beyond those of today.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year.	25	250	550
Average Number of All Employees..	12	119	405
Administrative Operations.....	\$730,000	\$3,600,000	\$7,622,000

INSTALLATION DESCRIPTION:

The Electronics Research Center will be located in Cambridge, Massachusetts. The initial phase of construction, on a 29-acre tract of land will commence in the spring of 1965, with partial occupancy scheduled by the end of 1966. The master planning for the Center contemplates the acquisition of an auxiliary site (presently unselected) for the construction of additional research facilities and the development of field test areas. There was no capital investment as of June 30, 1964.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$137,000	\$1,470,000	\$4,368,000
12. Personnel Benefits.....	<u>10,000</u>	<u>110,000</u>	<u>332,000</u>
Total, personnel costs.....:	\$147,000	\$1,580,000	\$4,700,000
21. Travel and Transportation of Persons.....	18,000	240,000	270,000
22. Transportation of Things.....	---	121,000	141,000
23. Rents, Communications, and Utilities.....	---	389,000	784,000
24. Printing and Reproduction....	---	35,000	65,000
25. Other Services.....	486,000	394,000	762,000
Services of other agencies.	37,000	110,000	153,000
26. Supplies and Materials.....	13,000	154,000	376,000
31. Equipment.....	29,000	453,000	261,000
32. Lands and Structures.....	---	124,000	110,000
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	<u>\$730,000</u>	<u>\$3,600,000</u>	<u>\$7,622,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Advanced Research and Technology</u>			
Electronic systems.....	8	129	410
Technology Utilization.....	-	1	1
<u>Support personnel</u>			
Director and Staff.....	8	36	39
Administration.....	4	39	50
Research and development support.	<u>5</u>	<u>45</u>	<u>50</u>
Sub-total, support positions...	<u>17</u>	<u>120</u>	<u>139</u>
Total, permanent positions.....	25	250	550

Personnel Requirements

The personnel level proposed for FY 1966 includes a request for 300 additional employees. This accession is in conformity with the phased growth originally conceived in the long-range development of the Electronics Research Center. The increase will permit the staffing of those essential technical functions necessary for the effective direction and management of the most important program objectives relating to the electronics endeavor.

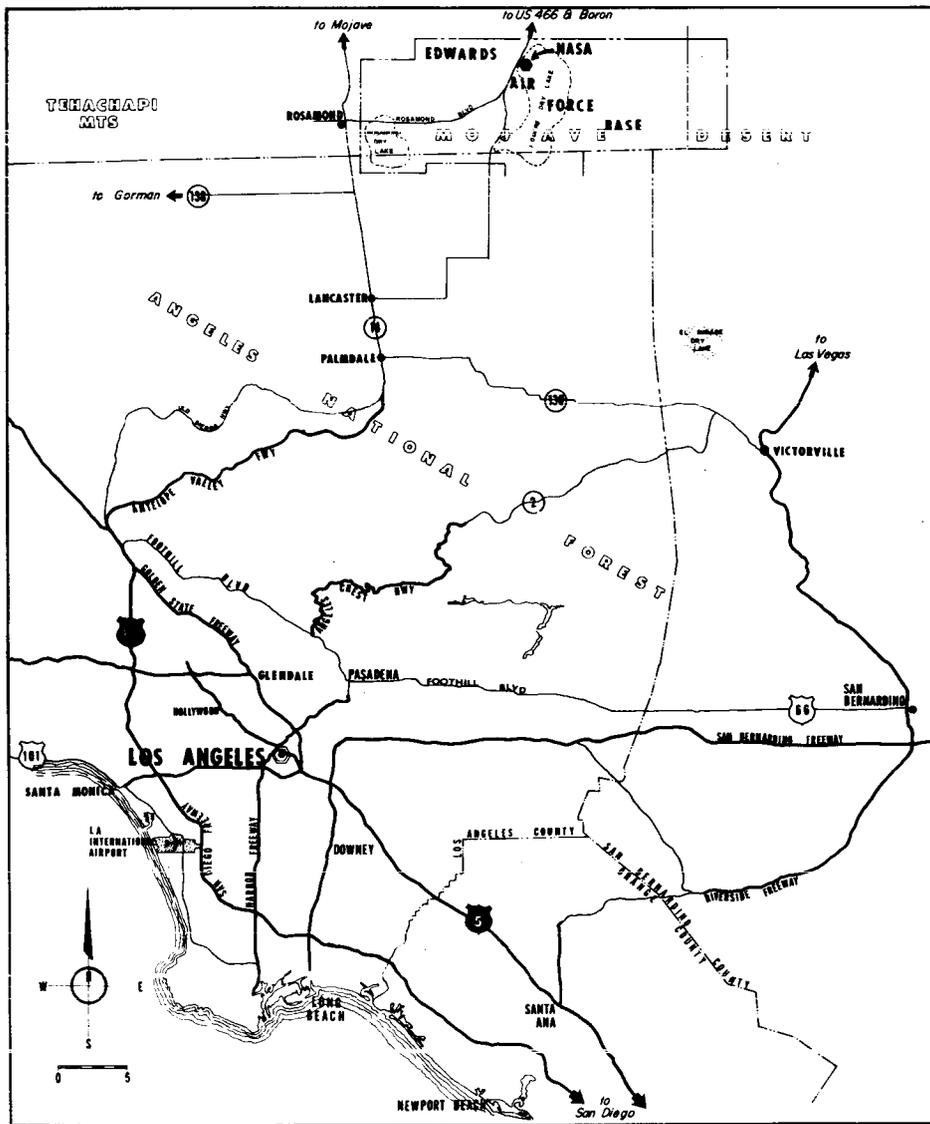
The increase in personnel costs, amounting to \$3,120,000, is required to (1) cover the full year costs of personnel added in FY 1965, and (2) for the cost of the additional staffing requested in FY 1966. The cost of the additional employees has been included in the estimates at a lapsed rate of approximately 47 per cent.

Personnel Costs

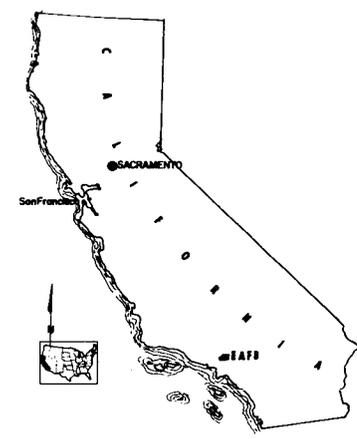
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	25	250	550
Permanent.....	25	250	550
Other.....	--	---	---
<u>Personnel Compensation:</u>			
Annual cost of permanent positions.....	\$277,000	\$2,799,000	\$5,716,000
Pay above the stated annual rate.....	2,000	10,000	22,000
Lapses (deduct).....	-143,000	-1,411,000	-1,527,000
Net cost of permanent positions.....	136,000	1,398,000	4,211,000
Other personnel compensation....	1,000	72,000	157,000
<u>Total compensation</u>	137,000	1,470,000	4,368,000
NASA funded.....	137,000	1,470,000	4,368,000
Reimbursable.....	---	---	---
<u>Personnel benefits</u>	10,000	110,000	332,000
NASA funded.....	10,000	110,000	332,000
Reimbursable.....	---	---	---
<u>Total personnel costs</u>	147,000	1,580,000	4,700,000
NASA funded.....	147,000	1,580,000	4,700,000
Reimbursable.....	---	---	---
<u>Average Number of All Employees</u>			
<u>(Man Years)</u>	12	119	405

Requirements for all other objects reflect an increase of \$902,000 over the amount estimated for FY 1965. To a considerable extent, the increase reflects the continuation of commitments and requirements established in FY 1965 although partly funded during that period.

Included in the increase is the requirement for additional contractual services. This is primarily due to the lack of in-house capability for administrative and housekeeping functions essential to efficient operation. Until such time as the in-house support functions are adequately staffed, the services of outside contractors must be utilized to augment the limited capability of employees already employed as well as those planned for the budget year.



FLIGHT RESEARCH CENTER FISCAL YEAR 1966 ESTIMATES VICINITY MAP



KEY PLAN

AO 3-18

**FLIGHT RESEARCH CENTER
FISCAL YEAR 1966 ESTIMATES**



AO 3-20

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 FLIGHT RESEARCH CENTER

STAFFING SUMMARY		
	<u>65</u>	<u>66</u>
Excepted	6	6
GS-16	3	3
GS-15	13	13
GS-14	31	31
All other GS	289	289
Wage Board	<u>263</u>	<u>263</u>
Total Permanent	<u>605</u>	<u>605</u>
Temporary	<u>14</u>	<u>14</u>
Total Positions	619	619

OFFICE OF THE DIRECTOR		
	<u>65</u>	<u>66</u>
Excepted	3	3
GS-16	1	1
GS-15	1	1
GS-14	1	1
All other GS	6	6
Wage Board	<u>26</u>	<u>26</u>
Total	38	38

RESEARCH DIVISION		
	<u>65</u>	<u>66</u>
Excepted	2	2
GS-16	1	1
GS-15	4	4
GS-14	12	12
All other GS	96	96
Wage Board	<u>1</u>	<u>1</u>
Total	116	116

OPERATIONS DIVISION		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	5	5
GS-14	6	6
All other GS	20	20
Wage Board	<u>130</u>	<u>130</u>
Total	162	162

DATA SYSTEMS DIVISION		
	<u>65</u>	<u>66</u>
Excepted	-	-
GS-16	1	1
GS-15	2	2
GS-14	9	9
All other GS	91	91
Wage Board	<u>79</u>	<u>79</u>
Total	182	182

ADMINISTRATIVE DIVISION		
	<u>65</u>	<u>66</u>
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	3	3
All other GS	76	76
Wage Board	<u>27</u>	<u>27</u>
Total	107	107

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

FLIGHT RESEARCH CENTER

MISSION AND CAPABILITIES:

The Flight Research Center, established in 1947, conducts research and evaluates problems of manned flight, both within and outside the atmosphere. The Center's mission includes effort on problems of takeoff and landing, low-speed flight, supersonic and hypersonic flight, and reentry to verify predicted characteristics and to identify unexpected problems in actual flight.

Projects currently underway or projected include aeronautics projects such as the X-15, B-70, supersonic transport, and hypersonic research; space vehicle systems projects in which the flight behavior of advanced reentry vehicles is studied; and electronic systems projects such as display, guidance and control in advanced flight missions and improvements on systems and sensors used in bio-medical monitoring, tracking, and data acquisition. Research of interest to the manned space flight program concerning projects Gemini and Apollo is provided through paraglider development and lunar landing research.

The major research tools for conducting these programs are the aircraft. They range from lightweight civil aircraft for handling qualities investigations to century series fighters for pilot proficiency and general investigations, and to X-15 rocket aircraft used for hypersonic research and reentry investigations. Special purpose vehicles such as paragliders, lifting bodies, lunar landing research vehicles and variable stability aircraft or airborne simulators are contractor procured or developed in-house. Specialized laboratory facilities are available to complement the flight activities with proper preliminary research and testing. Simulation equipment is used to guide and assist in the performance of productive flight activities. A three-station radar for tracking and data acquisition is operated to support the flight activity.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year..	619	619	619
Average Number of All Employees...	621	622	619
Administrative Operations.....	\$9,514,000	\$9,750,000	\$9,600,000

INSTALLATION DESCRIPTION:

The Flight Research Center, Edwards, California, is approximately 65 miles northeast of Los Angeles. The Center is located along the northern

boundary of Edwards Air Force Base on 171 acres of land leased from the Air Force. The Center is adjacent to Rogers Dry Lake, a 55 square mile area with a complex of runways varying in length from 5 to 11 miles.

The physical plant consists of an office-laboratory building with adjoining shops, a flight maintenance hangar and a calibration hangar. Auxiliary buildings include warehouses, an auxiliary power systems building, and a communications building. The main station of the 3-station radar range operated by the Center is located on the third floor of the office-laboratory building. The total capital investment as of June 30, 1964, was \$27,116,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$5,659,000	\$6,218,000	\$6,265,000
12. Personnel Benefits.....	<u>410,000</u>	<u>432,000</u>	<u>435,000</u>
Total, personnel costs....	\$6,069,000	\$6,650,000	\$6,700,000
21. Travel and Transportation of Persons.....	234,000	260,000	260,000
22. Transportation of Things....	31,000	40,000	40,000
23. Rents, Communications, and Utilities.....	362,000	337,000	331,000
24. Printing and Reproduction...	6,000	10,000	10,000
25. Other Services.....	1,029,000	985,000	1,044,000
Services of other agencies	78,000	---	---
26. Supplies and Materials.....	600,000	540,000	540,000
31. Equipment.....	1,007,000	762,000	524,000
32. Lands and Structures.....	98,000	165,000	150,000
42. Insurance Claims and Indemnities.....	---	<u>1,000</u>	<u>1,000</u>
Total.....	<u>\$9,514,000</u>	<u>\$9,750,000</u>	<u>\$9,600,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Apollo.....	50	39	37
<u>Space Science and Applications</u>			
Physics and astronomy.....	3	3	3

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Advanced Research and Technology</u>			
Space vehicle systems.....	24	26	40
Electronics systems.....	17	17	8
Aeronautics.....	344	351	350
Human factor systems.....	10	10	10
Basic research.....	-	1	1
<u>Tracking and Data Acquisition</u>	39	39	37
<u>Technology Utilization</u>	-	1	1
Sub-total, direct positions.....	<u>487</u>	<u>487</u>	<u>487</u>
<u>Support personnel</u>			
Director and Staff.....	10	11	11
Administration.....	<u>108</u>	<u>107</u>	<u>107</u>
Sub-total, support positions.....	<u>118</u>	<u>118</u>	<u>118</u>
Total, permanent positions.....	605	605	605
<u>Other positions:</u>			
Positions under cooperative training agreements.....	<u>14</u>	<u>14</u>	<u>14</u>
Total, all positions.....	<u><u>619</u></u>	<u><u>619</u></u>	<u><u>619</u></u>
<u>Personnel Requirements</u>			

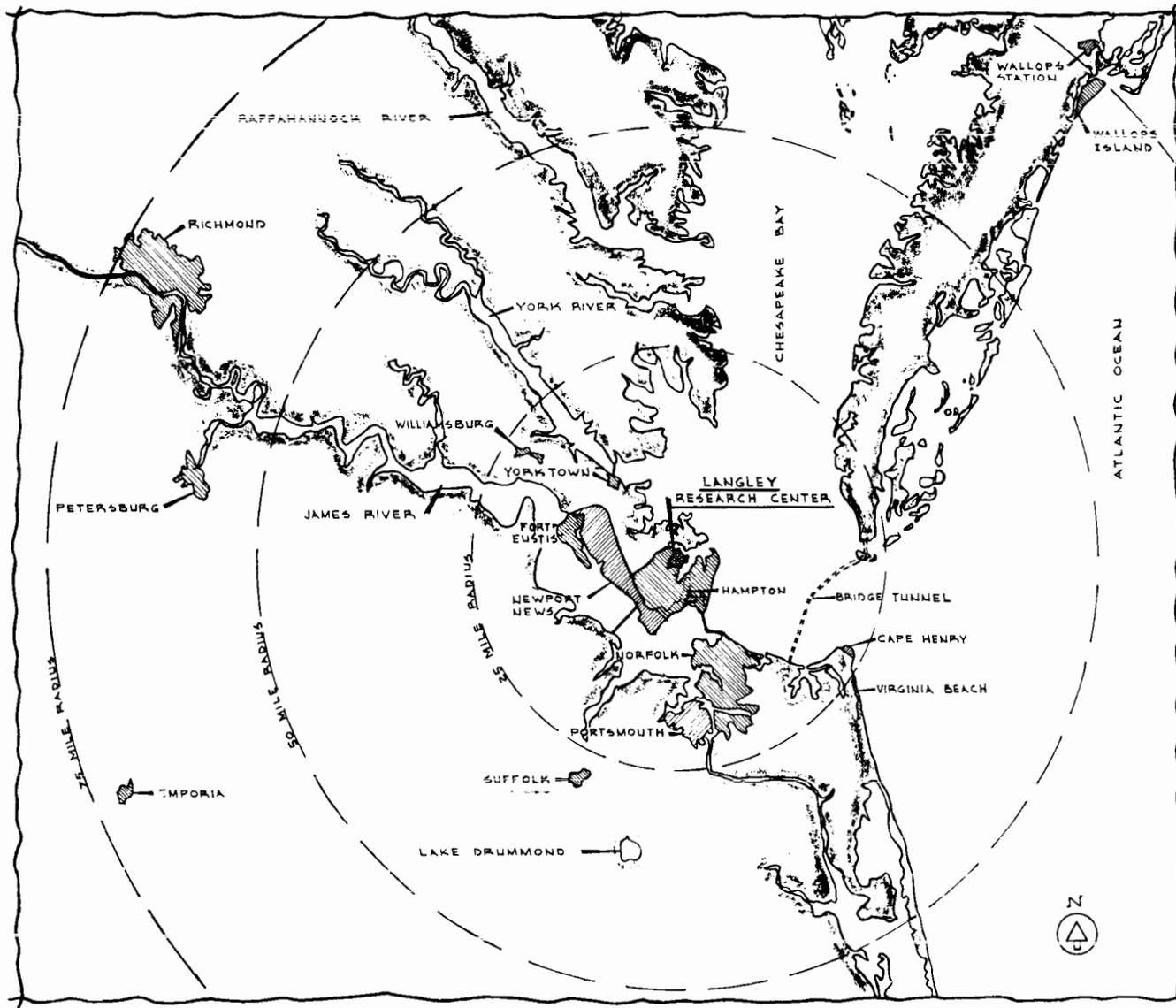
Current and projected research effort will be devoted essentially to the X-15, B-70, the supersonic transport, and the M-2 lifting body reentry vehicle. Except for minor personnel reassignments, the present manpower levels will remain constant in FY 1966.

The nominal increase in personnel costs requested for FY 1966 will compensate for those personnel salary adjustments not absorbed through personnel turnover. The limited staff at the Flight Research Center requires funding for these purposes in order to maintain a constant man-year effort to facilitate the accomplishment of program objectives.

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>619</u>	<u>619</u>	<u>619</u>
Permanent.....	605	605	605
Other.....	14	14	14
 <u>Personnel Compensation:</u>			
Annual cost of permanent positions.	\$5,320,000	\$5,671,000	\$5,744,000
Pay above the stated annual rate...	42,000	22,000	22,000
Lapses (deduct).....	<u>-205,000</u>	<u>-122,000</u>	<u>-44,000</u>
Net cost of permanent positions....	5,157,000	5,571,000	5,722,000
Other personnel compensation.....	<u>502,000</u>	<u>647,000</u>	<u>543,000</u>
 <u>Total compensation</u>	 <u>5,659,000</u>	 <u>6,218,000</u>	 <u>6,265,000</u>
NASA funded.....	5,659,000	6,218,000	6,265,000
Reimbursable.....	---	---	---
 <u>Personnel benefits</u>	 <u>410,000</u>	 <u>432,000</u>	 <u>435,000</u>
NASA funded.....	410,000	432,000	435,000
Reimbursable.....	---	---	---
 <u>Total personnel costs</u>	 <u>\$6,069,000</u>	 <u>\$6,650,000</u>	 <u>\$6,700,000</u>
NASA funded.....	6,069,000	6,650,000	6,700,000
Reimbursable.....	---	---	---
 <u>Average Number of All Employees</u>			
<u>(Man Years)</u>	621	622	619

Offsetting the small increase of \$59,000 requested for contractual services, required essentially for equipment and plant maintenance, lower estimates in other areas effect a decrease of \$150,000 in the overall requirements for FY 1966.

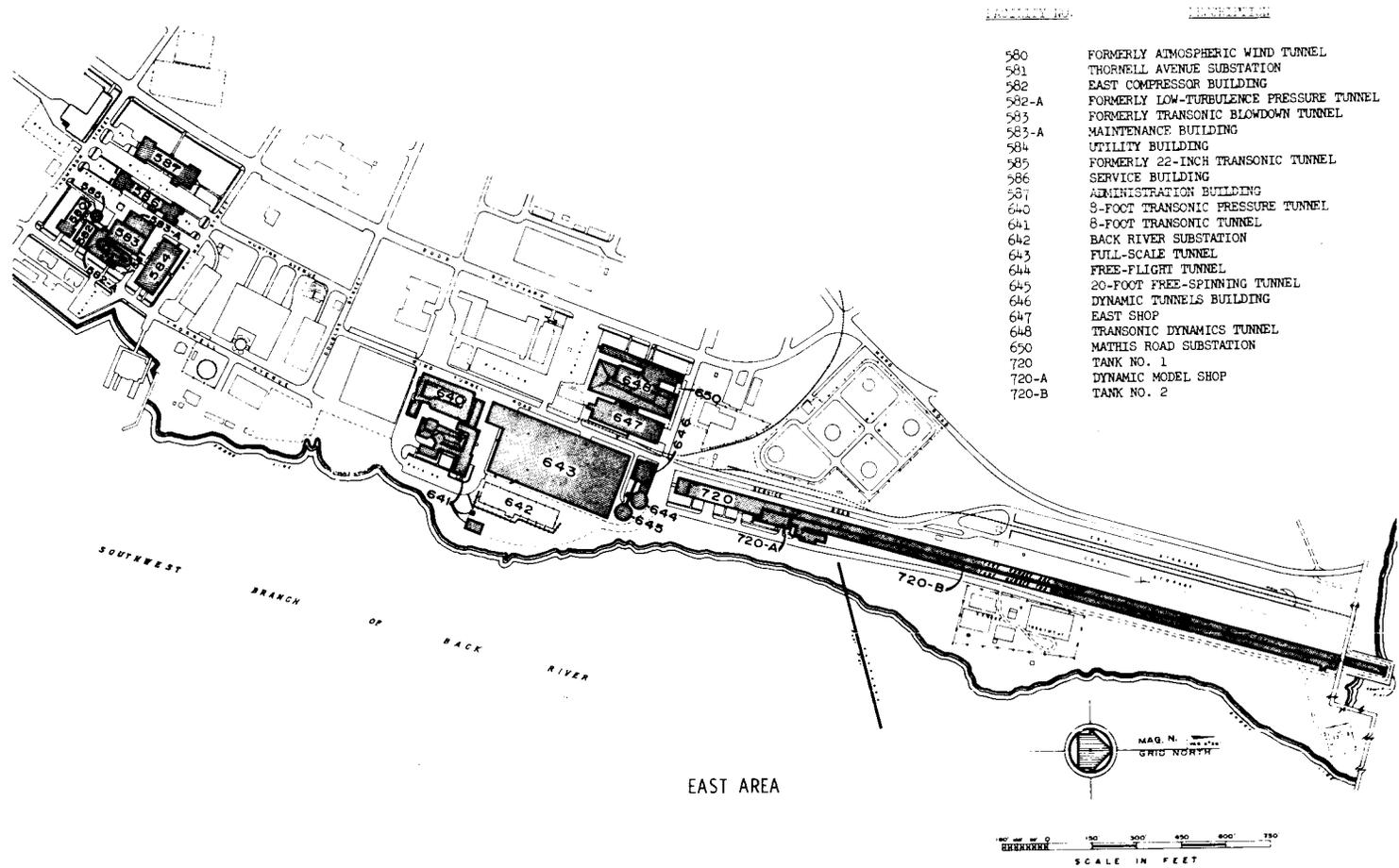


LANGLEY RESEARCH CENTER AND VICINITY

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LANGLEY RESEARCH CENTER FISCAL YEAR 1966 ESTIMATES

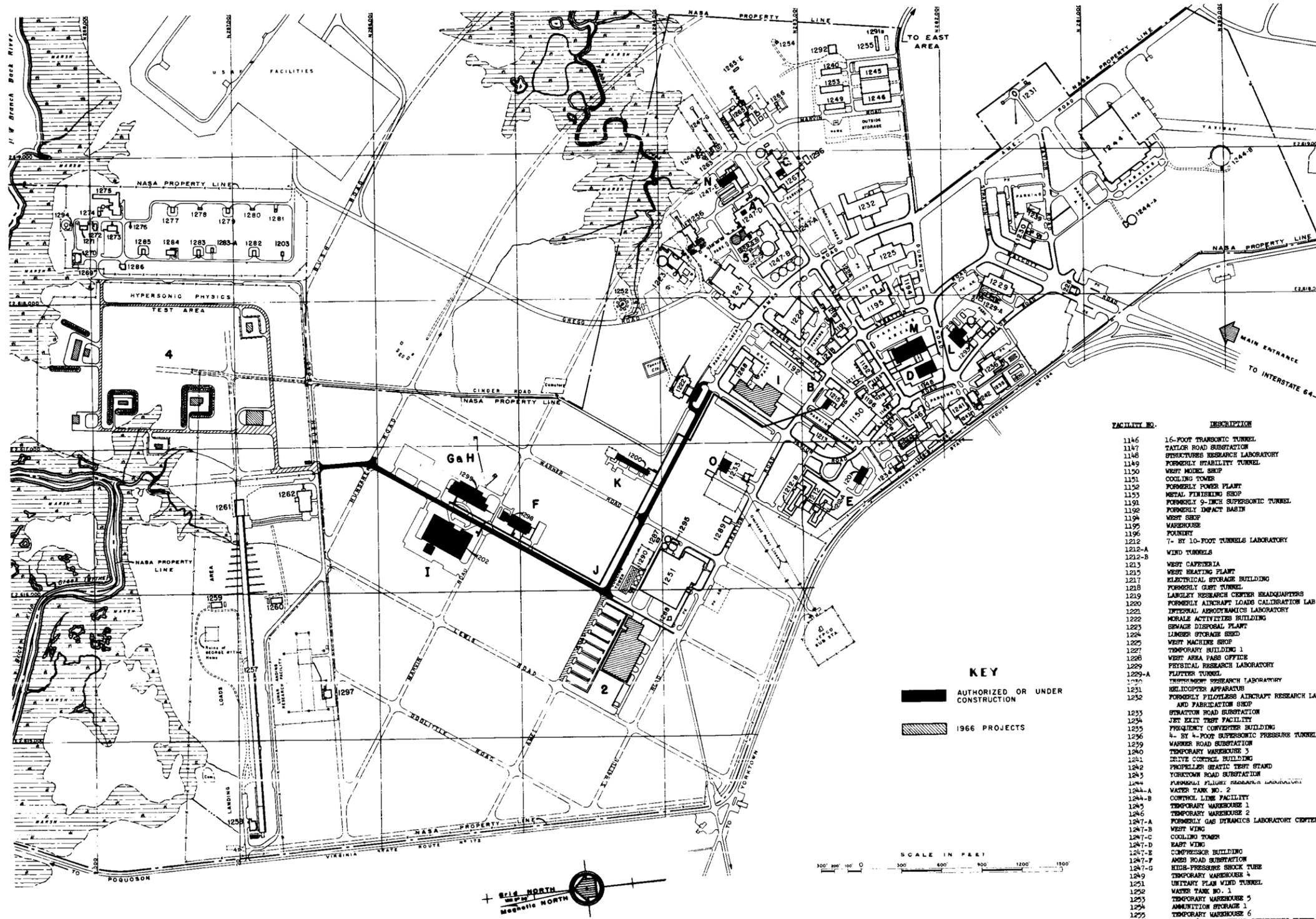
LOCATION PLAN



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LANGLEY RESEARCH CENTER
FISCAL YEAR 1966 ESTIMATES

LOCATION PLAN



PROPOSED FISCAL YEAR 1966 PROJECTS

1. FLIGHT CONTROL RESEARCH FACILITY
2. LIFE SUPPORT TECHNOLOGY LABORATORY
4. MAGAZINE AND TEST AREA FOR HIGHLY REACTIVE CHEMICAL MATERIALS
5. INCREASE RESEARCH CAPABILITY M-6 AND 8.5 TUNNELS

FACILITY NO.	DESCRIPTION
1146	16-FOOT TRANSONIC TUNNEL
1147	TAYLOR ROAD SUBSTATION
1148	STRUCTURES RESEARCH LABORATORY
1149	FORMERLY STABILITY TUNNEL
1150	WEST MODEL SHOP
1151	COOLING TOWER
1152	FORMERLY POWER PLANT
1153	METAL FINISHING SHOP
1191	FORMERLY 9-INCH SUPERSONIC TUNNEL
1192	FORMERLY IMPACT BASIN
1194	WEST SHOP
1195	WAREHOUSE
1196	FOUNDRY
1212	7- BY 10-FOOT TUNNELS LABORATORY
1212-A	WIND TUNNELS
1212-B	WEST CATERPILLAR
1213	WEST HEATING PLANT
1217	ELECTRICAL STORAGE BUILDING
1218	FORMERLY GERT TUNNEL
1219	LANGLEY RESEARCH CENTER HEADQUARTERS
1220	FORMERLY AIRCRAFT LOADS CALIBRATION LAB.
1221	INTERNAL AERODYNAMICS LABORATORY
1222	MORALE ACTIVITIES BUILDING
1223	SPACE DISPOSAL PLANT
1224	LINGER STORAGE SHED
1225	WEST MACHINE SHOP
1227	TEMPORARY BUILDING 1
1228	WEST AREA PASS OFFICE
1229	PHYSICAL RESEARCH LABORATORY
1229-A	FLUTTER TUNNEL
1230	IMPERMABLE RESEARCH LABORATORY
1231	HELICOPTER APPARATUS
1232	FORMERLY FLYING AIRCRAFT RESEARCH LAB. AND FABRICATION SHOP
1233	STRATTON ROAD SUBSTATION
1234	JET EXIT TEST FACILITY
1235	FREQUENCY CONVERTER BUILDING
1236	4- BY 4-FOOT SUPERSONIC PRESSURE TUNNEL
1239	WARREN ROAD SUBSTATION
1240	TEMPORARY WAREHOUSE 3
1241	DRIVE CONTROL BUILDING
1242	PROPELLER STATIC TEST STAND
1243	YORKTOWN ROAD SUBSTATION
1244	PERSONAL FLIGHT RESEARCH LABORATORY
1244-A	WATER TANK NO. 2
1244-B	CONTROL LINE FACILITY
1245	TEMPORARY WAREHOUSE 1
1246	TEMPORARY WAREHOUSE 2
1247	FORMERLY GAS DYNAMICS LABORATORY CENTER
1247-A	WEST WING
1247-B	COOLING TOWER
1247-C	EAST WING
1247-D	COMPRESSOR BUILDING
1247-E	AMES ROAD SUBSTATION
1247-F	HIGH-PRESSURE SHOCK TUBE
1247-G	TEMPORARY WAREHOUSE 4
1249	UNITARY PLAN WIND TUNNEL
1251	WATER TANK NO. 1
1252	TEMPORARY WAREHOUSE 5
1253	AMUNITION STORAGE 1
1254	TEMPORARY WAREHOUSE 6
1255	9- BY 6-FOOT THERMAL STRUCTURES TUNNEL
1257	LANDING LOADS TRACK

FACILITY NO.	DESCRIPTION
1258	LANDING LOADS TRACK COMPRESSOR BUILDING
1259	NORTH ARRESTING GEAR HOUSING
1260	SOUTH ARRESTING GEAR HOUSING
1261	LANDING LOADS TRACK SHOP
1262	HIGH-SPEED HYDRODYNAMICS OFFICE AND SHOP
1263	CERAMIC HEATED JET (PILOT MODEL)
1264	HIGH-TEMPERATURE MACH 7 JET (PILOT MODEL)
1265	8-FOOT HIGH-TEMPERATURE STRUCTURES TUNNEL
1266	MUFFETT ROAD SUBSTATION
1267	HIGH-TEMPERATURE MATERIALS LABORATORY
1268	DATA REDUCTION BUILDING
1269	GATE HOUSE (HYPERSONIC PHYSICS TEST AREA)
1270	ROCKET PROPELLANT TEST UNIT, RPTA
1271	OPEN SHED, RPTA
1272	HEATING PLANT, RPTA
1273	OPERATIONS CENTER, RPTA
1274	CERAMIC HEATED MACH 15 JET, RPTA
1275	IMPACT AND PROJECTILE TEST UNIT, RPTA
1276	IGNITER ASSEMBLY BUILDING, RPTA
1277	STORAGE A
1278	STORAGE B
1279	STORAGE C
1280	STORAGE D
1281	STORAGE E
1282	STORAGE F
1283	STORAGE G
1284	ROCKET PROPELLANT PROCESSING BUILDING, RPTA
1285	STORAGE H
1286	ROCKET ASSEMBLY AND PROPELLANT ALTERNATION BUILDING
1287	TEMPORARY SHED
1288	SOLAR ENERGY COLLECTOR
1289	TEMPORARY STORAGE
1290	SUBSTATION
1291	PUMP STATION
1292	FACILITIES MAINTENANCE BUILDING
1293	DYNAMICS RESEARCH LABORATORY
1294	ROCKET MOTOR TEST APPARATUS
1295	SHOP AND INSTRUMENTATION FOR 60-FOOT SPHERE
1296	SHOP BUILDING
1297	LUNAR LANDING RESEARCH FACILITY

FACILITIES AUTHORIZED AND UNDER CONSTRUCTION

LETTER	DESCRIPTION
A	EQUIPMENT FOR MAGNETOFLUIDDYNAMICS RESEARCH
B	ADDITION TO HEATING PLANT
C	AID. POWER SUPPLY AND IMPROVED ARC CHAMBER FOR 10-MEGAWATT ARC TUNNEL
D	ENVIRONMENTAL RESEARCH FACILITIES FOR SPACECRAFT COMPONENTS AND MATERIALS
E	PARTICLE ACCELERATOR FOR SIMULATION OF MICRO-METEOROID IMPACT
F	STABILIZATION AND CONTROL EQUIPMENT LABORATORY
G&H	VEHICLE ANTENNA TEST FACILITY AND ADDITION TO VEHICLE ANTENNA TEST FACILITY
I	ELECTRONIC INSTRUMENTATION LABORATORY
J	UTILITY INSTALLATIONS
K	HOT GAS RADIATION RESEARCH FACILITY
L	FURNACE CONTROL BUILDING AND BUILDING ADDITION FOR DYNAMICS RESEARCH LABORATORY
M	FATIGUE RESEARCH LABORATORY
N	CENTRAL HIGH-PRESSURE AIR SUPPLY
O	UTILITY IMPROVEMENTS

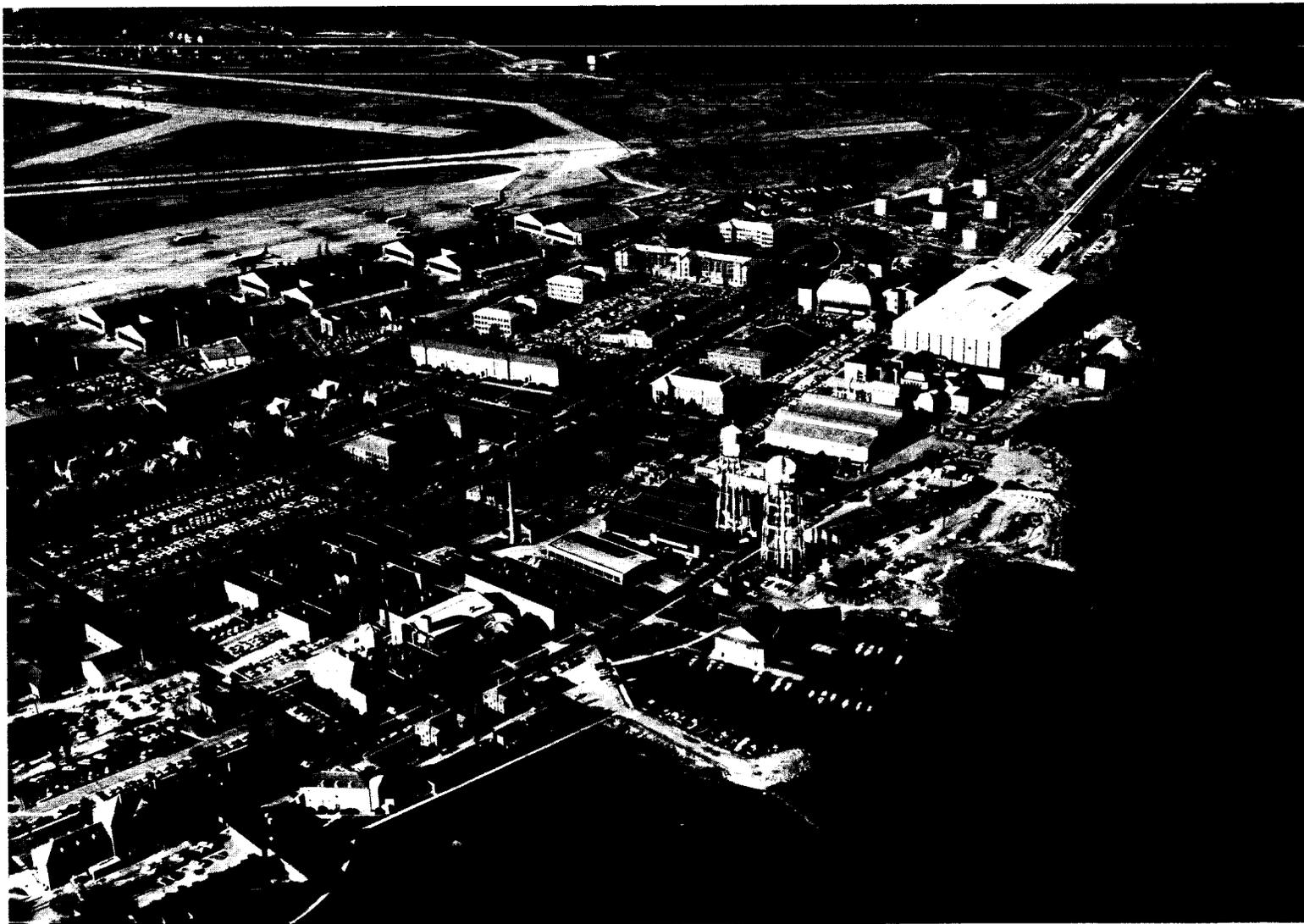
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WEST AREA

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NASA
L-62-422

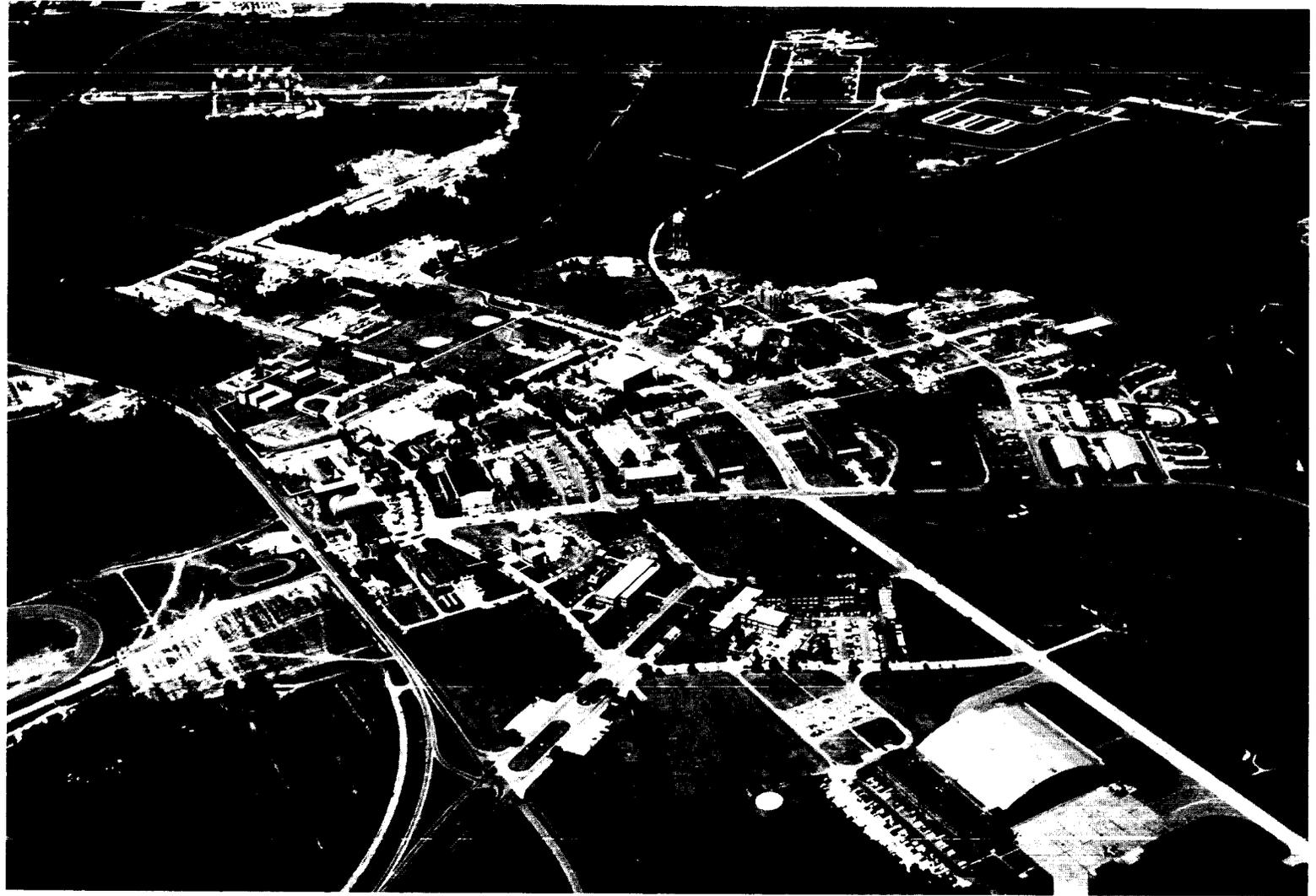
LANGLEY RESEARCH CENTER
Hampton, Virginia



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AERIAL VIEW - East Area

LANGLEY RESEARCH CENTER
Hampton, Virginia



AO 3-30

AERIAL VIEW - West Area

RESEARCH STAFF OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	6	6
Wage Board	-	-
Total	8	8

PROGRAM CONTROL ANALYSIS AND BUDGET OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	6	6
Wage Board	-	-
Total	8	8

TECHNOLOGY UTILIZATION OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	2	2
Wage Board	-	-
Total	3	3

INFORMATION OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	2	2

ADMINISTRATIVE SERVICES DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	52	52
Wage Board	-	-
Total	53	53

OFFICE OF ASSISTANT DIRECTOR (GROUP 1)		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	2	2

OFFICE OF ASSISTANT DIRECTOR (GROUP 2)		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	2

OFFICE OF ASSISTANT DIRECTOR (GROUP 3)		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	2	2

OFFICE OF ASSISTANT DIRECTOR FOR FLIGHT PROJECTS		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	1	1
Wage Board	-	-
Total	4	4

OFFICE OF ASSISTANT DIRECTOR FOR ADMINISTRATION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total	2	2

ANALYSIS AND COMPUTATION DIVISION		
	65	66
Excepted	1	1
GS-16	1	1
GS-15	3	3
GS-14	4	4
All other GS	148	148
Wage Board	12	12
Total	169	169

DYNAMIC LOADS DIVISION		
	65	66
Excepted	2	2
GS-16	4	4
GS-15	6	6
GS-14	20	20
All other GS	106	106
Wage Board	2	2
Total	140	140

AERO-PHYSICS DIVISION		
	65	66
Excepted	3	3
GS-16	2	2
GS-15	12	12
GS-14	15	15
All other GS	146	146
Wage Board	1	1
Total	179	179

FLIGHT REENTRY PROGRAMS OFFICE		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	2	2
GS-14	2	2
All other GS	14	14
Wage Board	-	-
Total	20	20

LRC-TMR FIELD PROJECTS OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	8	8
Wage Board	-	-
Total	9	9

OFFICE OF CHIEF COUNSEL		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	2	2
Wage Board	-	-
Total	5	5

ADMINISTRATIVE SERVICES DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	89	89
Wage Board	12	12
Total	102	102

SAFETY OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total	3	3

INSTRUMENT RESEARCH DIVISION		
	65	66
Excepted	2	2
GS-16	1	1
GS-15	9	9
GS-14	26	26
All other GS	300	300
Wage Board	97	97
Total	435	435

STRUCTURES RESEARCH DIVISION		
	65	66
Excepted	3	3
GS-16	2	2
GS-15	13	13
GS-14	12	12
All other GS	117	117
Wage Board	-	-
Total	147	147

FLIGHT MECHANICS AND TECHNOLOGY DIVISION		
	65	66
Excepted	3	3
GS-16	1	1
GS-15	9	9
GS-14	12	12
All other GS	70	70
Wage Board	34	34
Total	129	129

LUNAR ORBITER OFFICE		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	5	5
GS-14	8	8
All other GS	25	25
Wage Board	-	-
Total	40	40

MORL STUDIES OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	6	6
Wage Board	-	-
Total	9	9

OFFICE OF PATENT COUNSEL		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	4	4
Wage Board	-	-
Total	7	7

FISCAL DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	105	105
Wage Board	-	-
Total	106	106

COST ENGINEERING STAFF		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	7	7
Wage Board	-	-
Total	8	8

SPACE MECHANICS DIVISION		
	65	66
Excepted	1	1
GS-16	3	3
GS-15	9	8
GS-14	8	8
All other GS	70	70
Wage Board	-	-
Total	91	90

FULL-SCALE RESEARCH DIVISION		
	65	66
Excepted	3	3
GS-16	-	-
GS-15	20	20
GS-14	14	14
All other GS	146	146
Wage Board	-	-
Total	183	183

SCOUT PROJECT OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	7	7
All other GS	40	40
Wage Board	-	-
Total	50	50

APPLIED MATERIALS AND PHYSICS DIVISION		
	65	66
Excepted	4	4
GS-16	1	1
GS-15	8	8
GS-14	24	24
All other GS	174	174
Wage Board	15	15
Total	226	226

OFFICE OF PATENT COUNSEL		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	6	6
Wage Board	-	-
Total	9	9

PUBLIC AFFAIRS OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	2	2
All other GS	3	3
Wage Board	-	-
Total	5	5

PERSONNEL DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	3	3
All other GS	51	51
Wage Board	-	-
Total	55	55

PROGRAM SCHEDULES AND ANALYSIS UNIT		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	13	13
Wage Board	-	-
Total	13	13

SECURITY OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	11	11
Wage Board	-	-
Total	12	12

PHOTOGRAPHIC DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	38	38
Wage Board	46	46
Total	84	84

PLANNING CONTROL OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	10	10
Wage Board	-	-
Total	10	10

PROCUREMENT DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	128	128
Wage Board	30	30
Total	163	163

TECHNICAL SERVICE CONTRACT SUPPORT UNIT		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	12	12
Wage Board	-	-
Total	12	12

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
ORGANIZATION AND STAFFING CHART
LANGLEY RESEARCH CENTER

DIRECTOR ASSOCIATE DIRECTOR		
Excepted	65	66
GS-16	2	2
GS-15	3	3
GS-14	1	1
All other GS	5	5
Wage Board	-	-
Total	11	11

SENIOR STAFF SCIENTIST		
Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	1

COOPERATIVE PROJECTS OFFICE		
Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	1

MANNED SPACECRAFT PROJECTS OFFICE		
Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	1

RESEARCH CONTRACTS AND INFORMATION OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	2	2
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	2	2

RESEARCH REPORTS DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	52	52
Wage Board	-	-
Total	53	53

OFFICE OF ASSISTANT DIRECTOR FOR FLIGHT PROJECTS		
Excepted	65	66
GS-16	1	1
GS-15	1	1
GS-14	1	1
All other GS	1	1
Wage Board	-	-
Total	4	4

OFFICE OF ASSISTANT DIRECTOR FOR ADMINISTRATION		
Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total	2	2

OFFICE OF CHIEF, ENGINEERING AND TECHNICAL SERVICES		
Excepted	65	66
GS-16	2	2
GS-15	1	1
GS-14	1	1
All other GS	4	4
Wage Board	-	-
Total	8	8

66	66
2	2
2	2
2	2
14	14
20	20

LRC-PMR FIELD PROJECTS OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	8	8
Wage Board	-	-
Total	9	9

OFFICE OF CHIEF COUNSEL		
Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	2	2
Wage Board	-	-
Total	5	5

ADMINISTRATIVE SERVICES DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	89	89
Wage Board	12	12
Total	102	102

SAFETY OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total	3	3

ELECTRICAL SYSTEMS DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	3	3
GS-14	6	6
All other GS	67	67
Wage Board	209	209
Total	285	285

53	66
2	2
3	5
3	8
23	25
40	40

NORL STUDIES OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	6	6
Wage Board	-	-
Total	9	9

OFFICE OF PATENT COUNSEL		
Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	4	4
Wage Board	-	-
Total	7	7

FISCAL DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	105	105
Wage Board	-	-
Total	106	106

COST ENGINEERING STAFF		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	7	7
Wage Board	-	-
Total	8	8

FLIGHT VEHICLES AND SYSTEMS DIVISION		
Excepted	65	66
GS-16	1	1
GS-15	6	6
GS-14	16	16
All other GS	114	114
Wage Board	-	-
Total	137	137

65	66
-	-
3	3
7	7
40	40
50	50

PUBLIC AFFAIRS OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	2	2
All other GS	3	3
Wage Board	-	-
Total	5	5

PERSONNEL DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	3	3
All other GS	51	51
Wage Board	-	-
Total	55	55

PROGRAM SCHEDULES AND ANALYSIS UNIT		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	13	13
Wage Board	-	-
Total	13	13

MECHANICAL SERVICE DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	2	2
GS-14	5	5
All other GS	25	25
Wage Board	905	905
Total	937	937

APPLIED MATERIALS AND PHYSICS DIVISION		
Excepted	65	66
GS-16	4	4
GS-15	1	1
GS-14	8	8
GS-14	24	24
All other GS	174	174
Wage Board	15	15
Total	226	226

SECURITY OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	11	11
Wage Board	-	-
Total	12	12

PHOTOGRAPHIC DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	38	38
Wage Board	46	46
Total	84	84

PLANNING CONTROL OFFICE		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	10	10
Wage Board	-	-
Total	10	10

PLANT MAINTENANCE DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	5	5
Wage Board	179	179
Total	185	185

PROCUREMENT DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	128	128
Wage Board	30	30
Total	163	163

TECHNICAL SERVICE CONTRACT SUPPORT UNIT		
Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	12	12
Wage Board	-	-
Total	12	12

RESEARCH MODELS AND FACILITIES DIVISION		
Excepted	65	66
GS-16	-	-
GS-15	3	3
GS-14	15	15
All other GS	152	152
Wage Board	5	5
Total	175	175

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
ORGANIZATION AND STAFFING CHART
LANGLEY RESEARCH CENTER

STAFFING SUMMARY		
	65	66
Excepted	38	38
GS-16	16	16
GS-15	129	129
GS-14	222	222
All other GS	2,286	2,286
Wage Board	1,557	1,557
Total Permanent	4,238	4,238
Temporary	70	70
Total Positions	4,308	4,308

DIRECTOR ASSOCIATE DIRECTOR		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	3	3
GS-14	1	1
All other GS	5	5
Wage Board	-	-
Total	11	11

SENIOR STAFF SCIENTIST		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	1

COOPERATIVE PROJECTS OFFICE		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	1

MANNED SPACECRAFT PROJECTS OFFICE		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	1

RESEARCH STAFF OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	6	6
Wage Board	-	-
Total	8	8

PROGRAM CONTROL ANALYSIS AND BUDGET OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	6	6
Wage Board	-	-
Total	8	8

TECHNOLOGY UTILIZATION OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	2	2
Wage Board	-	-
Total	3	3

RESEARCH CONTRACTS AND INFORMATION OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	2	2

RESEARCH REPORTS DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	52	52
Wage Board	-	-
Total	53	53

OFFICE OF ASSISTANT DIRECTOR (GROUP 1)		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	2	2

OFFICE OF ASSISTANT DIRECTOR (GROUP 2)		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	1	2

OFFICE OF ASSISTANT DIRECTOR (GROUP 3)		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	-	-
Wage Board	-	-
Total	2	2

OFFICE OF ASSISTANT DIRECTOR FOR FLIGHT PROJECTS		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	1	1
Wage Board	-	-
Total	4	4

OFFICE OF ASSISTANT DIRECTOR FOR ADMINISTRATION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total	2	2

OFFICE OF CHIEF, ENGINEERING AND TECHNICAL SERVICES		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	4	4
Wage Board	-	-
Total	8	8

COMPUTATION DIVISION		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	3	3
GS-14	4	4
All other GS	148	148
Wage Board	12	12
Total	169	169

DYNAMIC LOADS DIVISION		
	65	66
Excepted	2	2
GS-16	4	4
GS-15	6	6
GS-14	20	20
All other GS	106	106
Wage Board	2	2
Total	140	140

AERO-PHYSICS DIVISION		
	65	66
Excepted	3	3
GS-16	2	2
GS-15	12	12
GS-14	15	15
All other GS	146	146
Wage Board	1	1
Total	179	179

FLIGHT REENTRY PROGRAMS OFFICE		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	2	2
GS-14	2	2
All other GS	14	14
Wage Board	-	-
Total	20	20

LRC-PMR FIELD PROJECTS OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	8	8
Wage Board	-	-
Total	9	9

OFFICE OF CHIEF COUNSEL		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	2	2
Wage Board	-	-
Total	5	5

ADMINISTRATIVE SERVICES DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	89	89
Wage Board	12	12
Total	102	102

SAFETY OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total	3	3

ELECTRICAL SYSTEMS DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	6	6
All other GS	57	57
Wage Board	209	209
Total	285	285

STRUCTURES RESEARCH DIVISION		
	65	66
Excepted	2	2
GS-16	1	1
GS-15	9	9
GS-14	26	26
All other GS	300	300
Wage Board	97	97
Total	435	435

FLIGHT MECHANICS AND TECHNOLOGY DIVISION		
	65	66
Excepted	3	3
GS-16	2	2
GS-15	13	13
GS-14	12	12
All other GS	117	117
Wage Board	-	-
Total	147	147

LUNAR ORBITER OFFICE		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	5	5
GS-14	8	8
All other GS	25	25
Wage Board	-	-
Total	40	40

MORL STUDIES OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	6	6
Wage Board	-	-
Total	9	9

OFFICE OF PATENT COUNSEL		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	4	4
Wage Board	-	-
Total	7	7

FISCAL DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	105	105
Wage Board	-	-
Total	106	106

COST ENGINEERING STAFF		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	7	7
Wage Board	-	-
Total	8	8

FLIGHT VEHICLES AND SYSTEMS DIVISION		
	65	66
Excepted	-	-
GS-16	1	1
GS-15	6	6
GS-14	16	16
All other GS	114	114
Wage Board	-	-
Total	137	137

FULL-SCALE RESEARCH DIVISION		
	65	66
Excepted	3	3
GS-16	-	-
GS-15	20	20
GS-14	14	14
All other GS	146	146
Wage Board	-	-
Total	183	183

SCOUT PROJECT OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	7	7
All other GS	40	40
Wage Board	-	-
Total	50	50

PUBLIC AFFAIRS OFFICE		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	2	2
All other GS	3	3
Wage Board	-	-
Total	5	5

PERSONNEL DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	3	3
All other GS	51	51
Wage Board	-	-
Total	55	55

PROGRAM SCHEDULES AND ANALYSIS UNIT		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	13	13
Wage Board	-	-
Total	13	13

MECHANICAL SERVICE DIVISION		
	65	66
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	5	5
All other GS	25	25
Wage Board	905	905
Total	937	937

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ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

LANGLEY RESEARCH CENTER

MISSION AND CAPABILITIES:

The Langley Research Center directs its research effort toward: new problems that confront future progress in flight; the establishment of the characteristics of the aerospace environment and their interactions with flight systems and personnel; the formulation and refinement of engineering-design concepts and methods, construction technologies, operational techniques for advanced aircraft and space vehicle configurations; systems components and ground support equipment; safe and efficient flight in extended regimes of performance; and the support of the Aerospace Industry and Government services in the development of their advanced flight systems.

The Installation has developed a highly talented and dedicated research team specializing preeminently in aerodynamics, thermodynamics, flight environments, high temperature structures and materials, vehicle structural loads and dynamics, guidance and control systems, flight crew integration and life support, flight mechanics and operations, solid-propellant rocketry and aerospace electronics.

Research on flight problems has pioneered the development and application of a wide range of advanced research techniques, equipment, flight vehicles, and laboratory facilities for investigations in these disciplines. These capabilities are being directed to the evaluation and refinement of aircraft and space vehicle configurations under current development, and to the establishment of rational concepts and design criteria for more advanced flight systems.

A number of flight projects are conducted, many in support of the Apollo program, for advanced flight conditions which cannot be simulated in laboratory facilities. The Installation also is pursuing the development of the Lunar Orbiter Space System and is responsible for the management and operational support of the Scout Launch vehicle.

Broad investigations are underway to identify and resolve critical technological problems confronting the development and operation of manned orbital research laboratories.

A number of unique aerospace simulators are available at the Installation. Complex space flight simulators devised and used by scientists in basic research problems have been effectively utilized in the training of astronauts in preparation of manned flights in the Gemini and Apollo projects.

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SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year.	4,330	4,308	4,308
Average Number of All Employees..	4,260	4,292	4,281
Administrative Operations.....	\$52,642,000	\$57,258,000	\$61,783,000

INSTALLATION DESCRIPTION:

Langley Research Center is located at Hampton, Virginia. The Center is divided into two separate areas adjacent to the runway facilities of Langley Air Force Base and occupies 772 acres of government owned land. Four hundred and thirty acres are owned by NASA and 342 acres are occupied under permit from the United States Air Force. Runways, some utilities, and certain other facilities are used jointly by NASA and the United States Air Force. In addition, there are 110 acres of NASA-owned land located in the city of Newport News, Virginia. The total capital investment as of June 30, 1964 including the acreage located at Newport News, Virginia was \$249,776,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$ 35,926,000	\$38,826,000	\$38,896,000
12. Personnel Benefits.....	<u>2,654,000</u>	<u>2,861,000</u>	<u>2,889,000</u>
Total, personnel costs...	\$ 38,580,000	\$41,687,000	\$41,785,000
21. Travel and Transportation of Perscns.....	1,288,000	1,380,000	1,370,000
22. Transportation of Things...	450,000	440,000	440,000
23. Rents, Communications, and Utilities.....	4,718,000	5,424,000	4,110,000
24. Printing and Reproduction..	191,000	200,000	200,000
25. Other Services.....	2,540,000	2,517,000	2,866,000
Services of other agencies	533,000	90,000	90,000
26. Supplies and Materials.....	2,718,000	2,600,000	2,600,000
31. Equipment.....	998,000	2,419,000	7,821,000
32. Lands and Structures.....	626,000	500,000	500,000
42. Insurance Claims and Indemnities.....	<u>---</u>	<u>1,000</u>	<u>1,000</u>
Total.....	<u>\$ 52,642,000</u>	<u>\$57,258,000</u>	<u>\$61,783,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct personnel by program</u>			
<u>Manned Space Flight</u>			
Gemini.....	3	2	2
Apollo.....	26	8	-
Advanced missions.....	18	18	18
<u>Space Science and Applications</u>			
Physics and Astronomy.....	44	40	34
Lunar and Planetary Exploration.	89	147	148
Launch vehicle development.....	36	24	27
Meteorological Satellites.....	9	13	13
Communication Satellites.....	16	11	11
Launch vehicle procurement.....	65	65	65
<u>Advanced Research and Technology</u>			
Nuclear electric systems.....	-	1	-
Solar and chemical power.....	27	39	39
Space vehicle systems.....	702	665	660
Electronics systems.....	465	473	482
Aeronautics.....	650	674	671
Human factor systems.....	38	45	45
Chemical propulsion.....	66	49	49
Basic research.....	362	364	374
<u>Tracking and Data Acquisition.....</u>	<u>32</u>	<u>20</u>	<u>20</u>
<u>Technology Utilization.....</u>	<u>3</u>	<u>3</u>	<u>3</u>
Sub-total, direct positions...	<u>2,651</u>	<u>2,661</u>	<u>2,661</u>
<u>Support personnel</u>			
Director and staff.....	33	33	33
Administration.....	577	577	577
Research and development support.	<u>1,018</u>	<u>967</u>	<u>967</u>
Sub-total, support positions...	<u>1,628</u>	<u>1,577</u>	<u>1,577</u>
Total, permanent positions.....	4,279	4,238	4,238

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Other positions:</u>			
Positions under cooperative training agreements.....	51	51	51
Other temporary positions.....	<u>0</u>	<u>19</u>	<u>19</u>
Total, all positions.....	<u>4,330</u>	<u>4,308</u>	<u>4,308</u>

Personnel Requirements:

The personnel program proposed for the Langley Research Center will continue to reflect major emphasis on problems relating to vehicle configurations, materials and structures, flight mechanics, and specific investigations associated with reentry, supersonic, and hypersonic flight. Minor reassignments of personnel between programs will be affected in conformity with changing program priorities.

The nominal increase in personnel costs is essentially required to meet the full-year cost of personnel added in FY 1965. It is expected that the FY 1966 man-years of effort will approximate the FY 1965 level.

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>4,330</u>	<u>4,308</u>	<u>4,308</u>
Permanent.....	4,279	4,238	4,238
Other.....	51	70	70

Personnel Compensation:

Annual cost of permanent positions.....	\$35,966,000	\$37,424,000	\$37,424,000
Pay above the stated annual rate	305,000	175,000	175,000
Lapses (deduct).....	<u>-1,606,000</u>	<u>-216,000</u>	<u>-80,000</u>
Net cost of permanent positions.	34,665,000	37,383,000	37,519,000
Other personnel compensation....	<u>1,261,000</u>	<u>1,443,000</u>	<u>1,377,000</u>
<u>Total compensation</u>	<u>35,926,000</u>	<u>38,826,000</u>	<u>38,896,000</u>
NASA funded.....	35,926,000	38,826,000	38,896,000
Reimbursable.....	---	---	---
<u>Personnel benefits</u>	<u>2,654,000</u>	<u>2,861,000</u>	<u>2,889,000</u>
NASA funded.....	2,654,000	2,861,000	2,889,000
Reimbursable.....	---	---	---

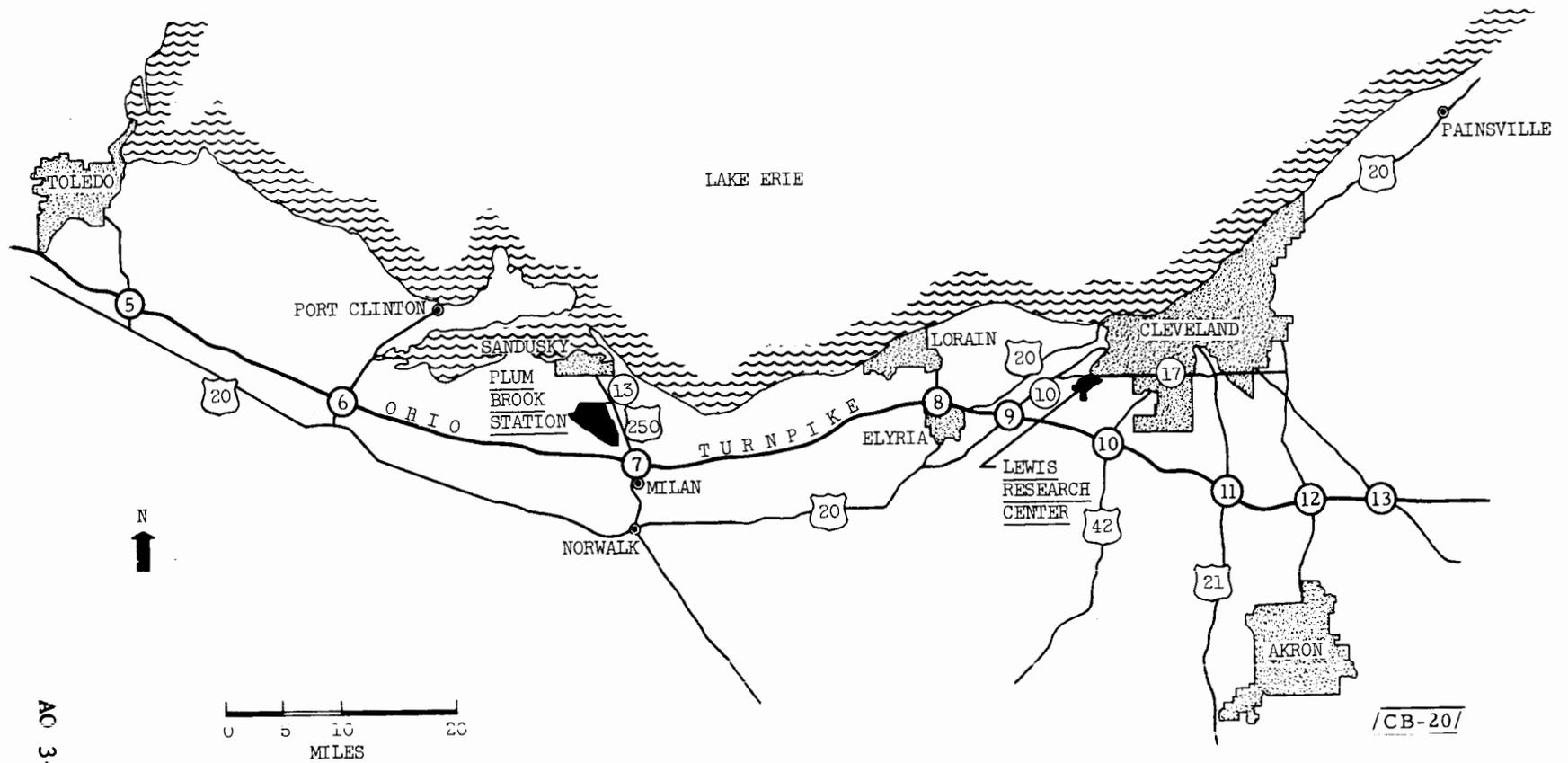
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total personnel costs</u>	38,580,000	41,687,000	41,785,000
NASA funded.....	38,580,000	41,687,000	41,785,000
Reimbursable.....	---	---	---
 <u>Average Number of All Employees</u>			
<u>(Man-Years)</u>	4,260	4,292	4,281

Requirements for all other objects, excluding the proposed computer purchase program, reflects an increase of \$60,000 over the amount estimated to be required for FY 1965. An increase of \$4,367,000 in the overall computer operations at the Langley Research Center will be required for the purpose of procuring selected electronic computing equipment to meet long-range research computing requirements.

Lower requirements in certain object classes are offset by an increase in other contractual services required for increased maintenance and operation costs of new facilities coming into initial operation in FY 1966, as well as the full-year cost for those facilities placed in initial operation in FY 1965.

LEWIS RESEARCH CENTER
FISCAL YEAR 1966 ESTIMATES

LOCATION OF LEWIS RESEARCH CENTER INCLUDING PLUM BROOK STATION



AO 3-37

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LEWIS RESEARCH CENTER
FISCAL YEAR 1966 ESTIMATES

LOCATION PLAN

EXISTING FACILITIES

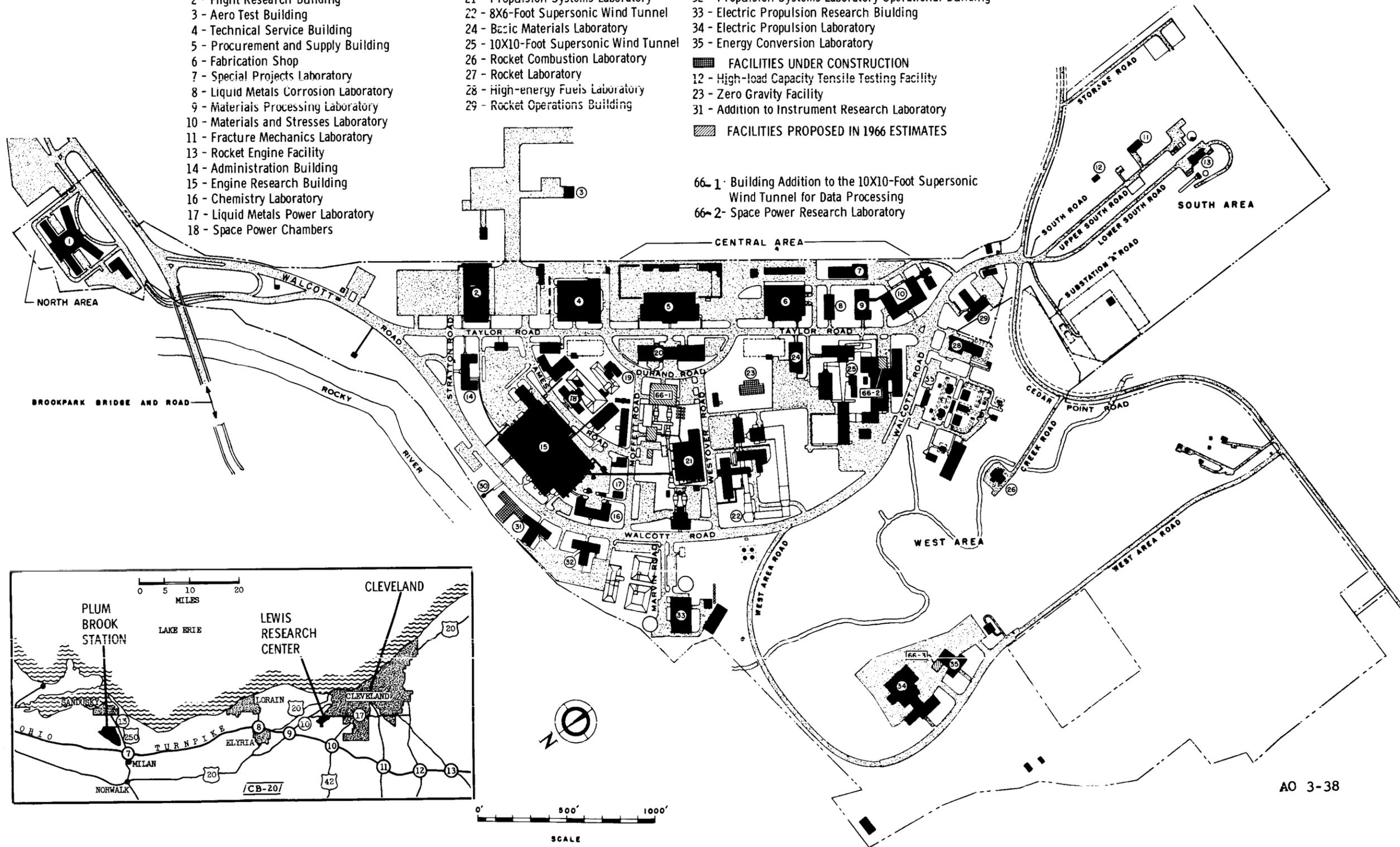
- 1 - Development Engineering Building and Annex
- 2 - Flight Research Building
- 3 - Aero Test Building
- 4 - Technical Service Building
- 5 - Procurement and Supply Building
- 6 - Fabrication Shop
- 7 - Special Projects Laboratory
- 8 - Liquid Metals Corrosion Laboratory
- 9 - Materials Processing Laboratory
- 10 - Materials and Stresses Laboratory
- 11 - Fracture Mechanics Laboratory
- 13 - Rocket Engine Facility
- 14 - Administration Building
- 15 - Engine Research Building
- 16 - Chemistry Laboratory
- 17 - Liquid Metals Power Laboratory
- 18 - Space Power Chambers

- 19 - Icing Research Tunnel
- 20 - Utilities Building
- 21 - Propulsion Systems Laboratory
- 22 - 8X6-Foot Supersonic Wind Tunnel
- 24 - Basic Materials Laboratory
- 25 - 10X10-Foot Supersonic Wind Tunnel
- 26 - Rocket Combustion Laboratory
- 27 - Rocket Laboratory
- 28 - High-energy Fuels Laboratory
- 29 - Rocket Operations Building

- 30 - Drop Tower
- 31 - Instrument Research Laboratory
- 32 - Propulsion Systems Laboratory Operational Building
- 33 - Electric Propulsion Research Building
- 34 - Electric Propulsion Laboratory
- 35 - Energy Conversion Laboratory

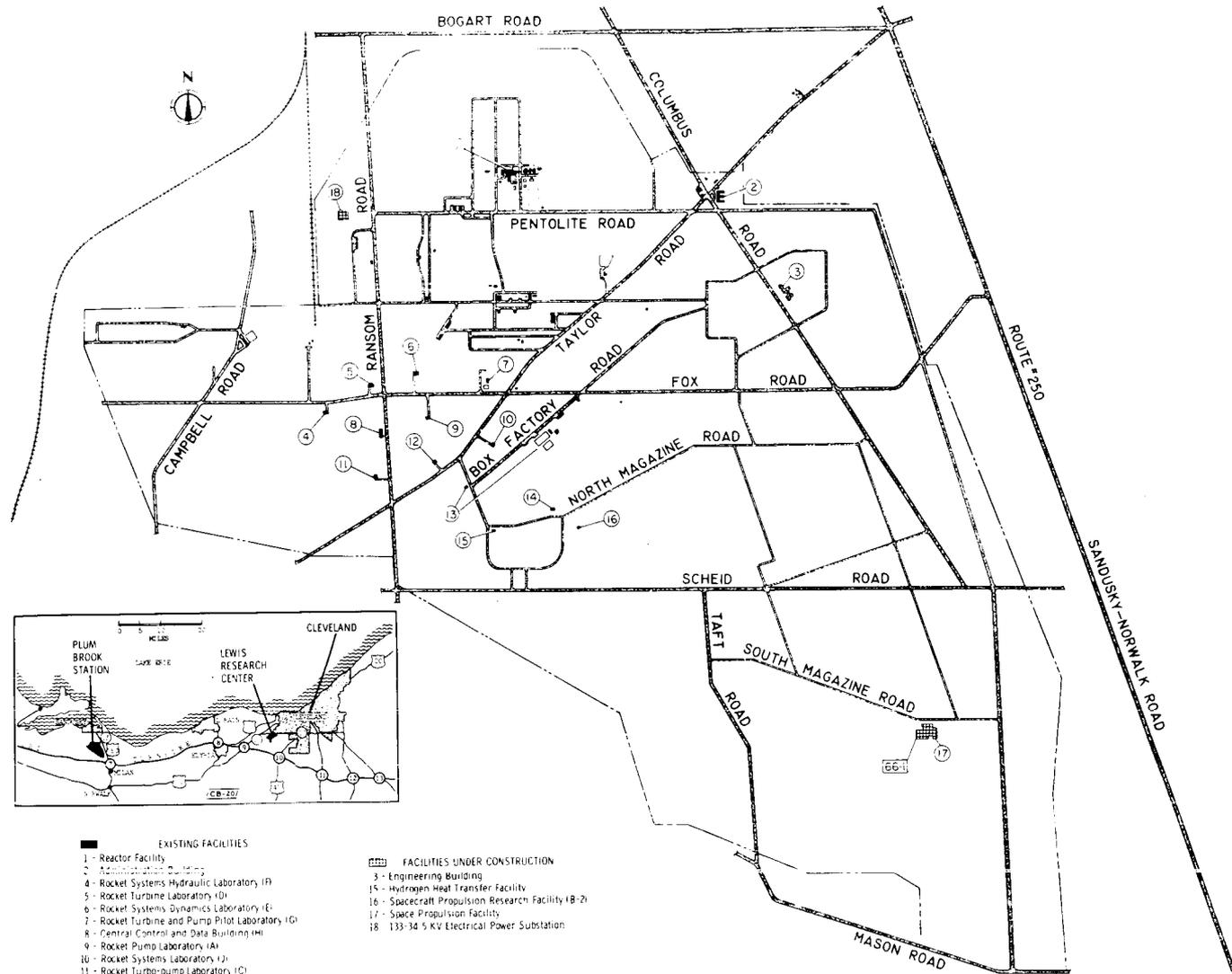
- FACILITIES UNDER CONSTRUCTION
- 12 - High-load Capacity Tensile Testing Facility
 - 23 - Zero Gravity Facility
 - 31 - Addition to Instrument Research Laboratory
- FACILITIES PROPOSED IN 1966 ESTIMATES

- 66-1 - Building Addition to the 10X10-Foot Supersonic Wind Tunnel for Data Processing
- 66-2 - Space Power Research Laboratory



LEWIS RESEARCH CENTER
 PLUM BROOK STATION
 FISCAL YEAR 1966 ESTIMATES

LOCATION PLAN



- EXISTING FACILITIES**
- 1 - Reactor Facility
 - 2 - Administration Building
 - 4 - Rocket Systems Hydraulic Laboratory (I)
 - 5 - Rocket Turbine Laboratory (I)
 - 6 - Rocket Systems Dynamics Laboratory (I)
 - 7 - Rocket Turbine and Pump Pilot Laboratory (I)
 - 8 - Central Control and Data Building (I)
 - 9 - Rocket Pump Laboratory (I)
 - 10 - Rocket Systems Laboratory (I)
 - 11 - Rocket Turbine-pump Laboratory (I)
 - 12 - Turbine Pump Laboratory (I)
 - 13 - Altitude Rocket Test Facility (I)
 - 14 - Altitude Rocket Dynamics and Controls Facility (I)

- FACILITIES UNDER CONSTRUCTION**
- 3 - Engineering Building
 - 15 - Hydrogen Heat Transfer Facility
 - 16 - Spacecraft Propulsion Research Facility (B-2)
 - 17 - Space Propulsion Facility
 - 18 - 133-34 5 KV Electrical Power Substation

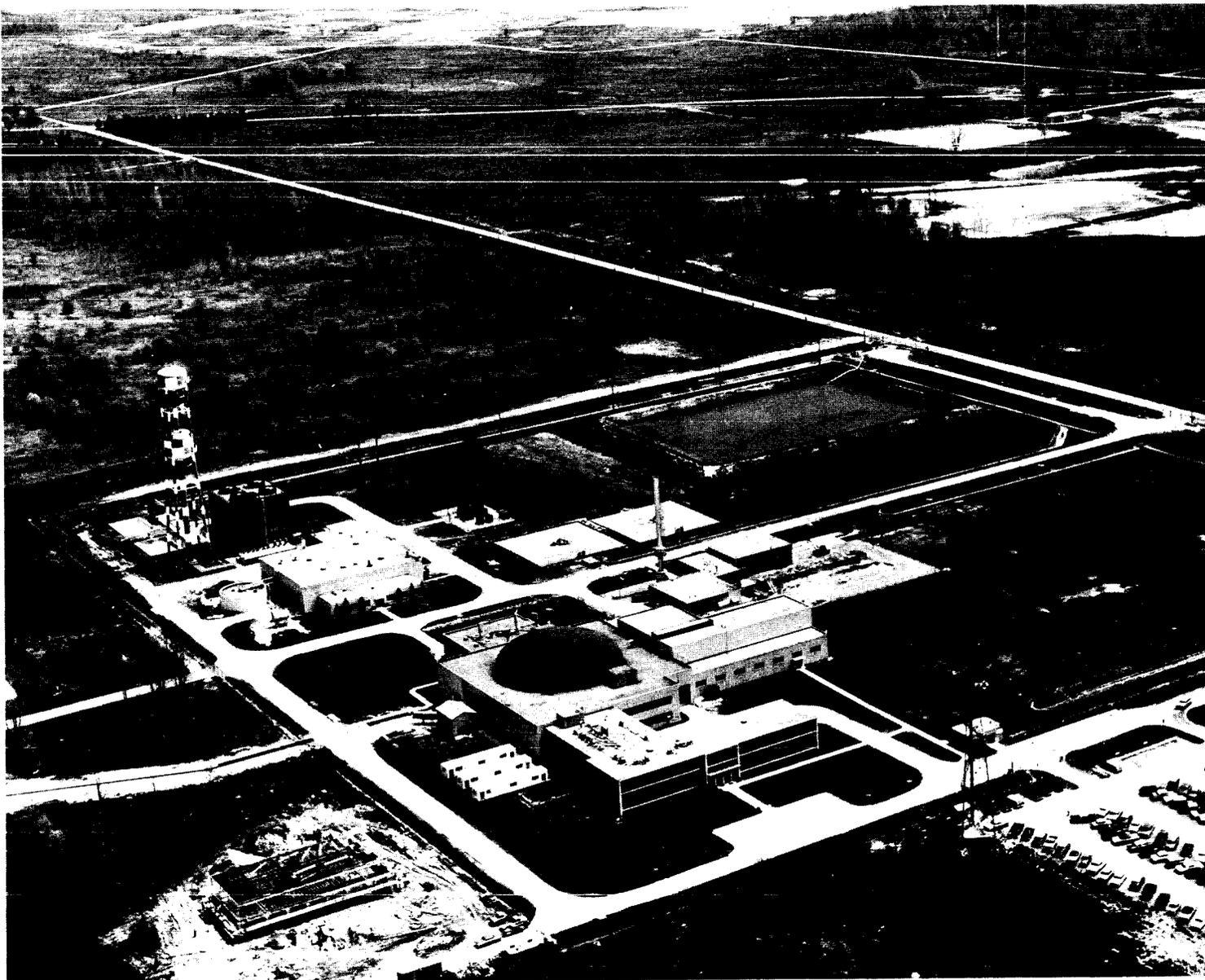
AO 3-39

LEWIS RESEARCH CENTER



AO 3-40

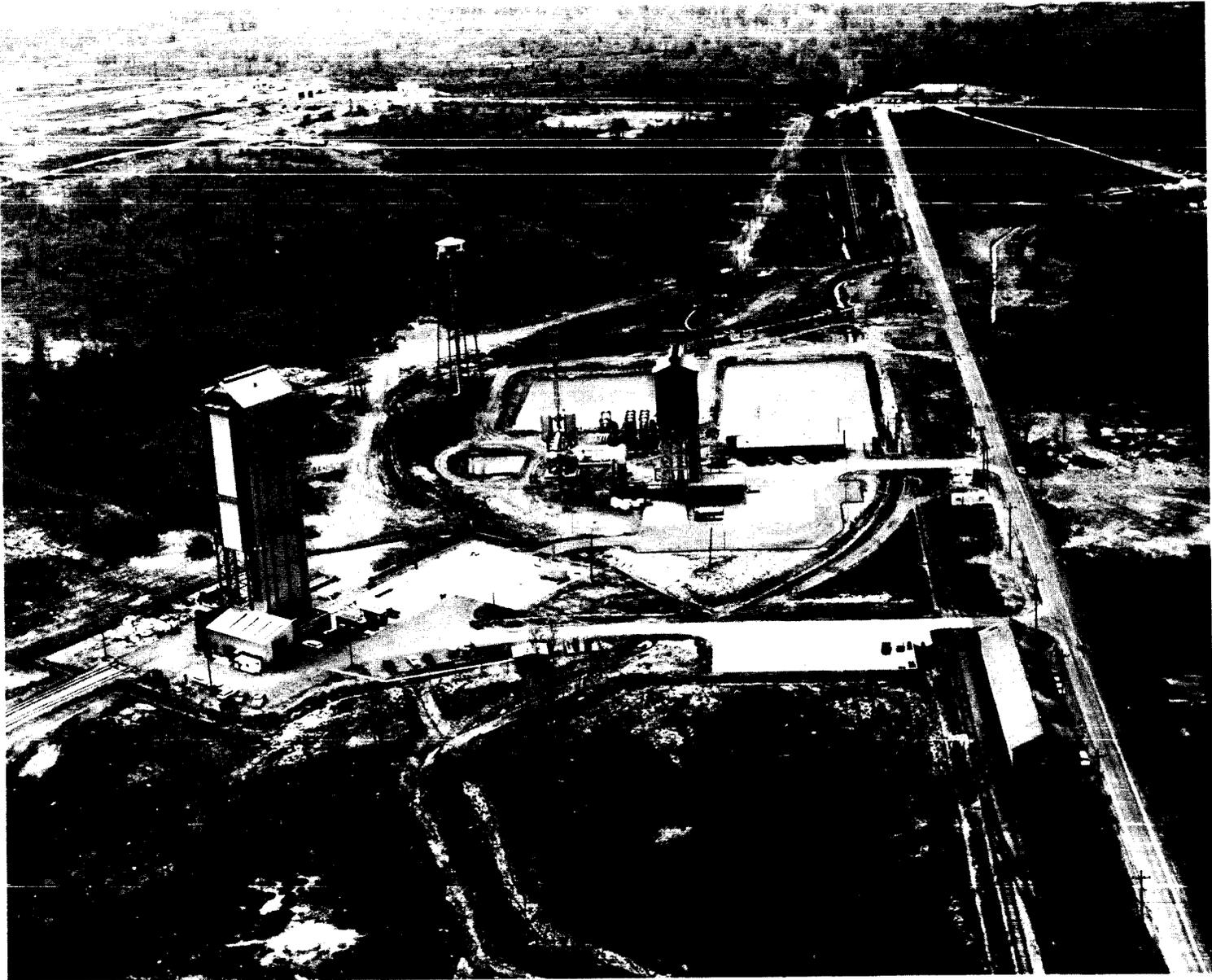
PLUM BROOK STATION - SOUTH AREA



761-811 O - 68 - 15

AO 3-41

PLUM BROOK STATION - WEST AREA



AO 3-42

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 LEWIS RESEARCH CENTER

STAFFING SUMMARY

Excepted	65	66
GS-16	35	35
GS-15	17	17
GS-14	155	155
All other GS	2,541	2,541
Wage Board	1,216	1,216
Total Permanent	4,815	4,815
Temporary	32	32
Total Positions	4,847	4,847

RESOURCES PLANNING OFFICE

Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	2	2
All other GS	9	9
Wage Board	-	-
Total	12	12

OFFICE OF THE DIRECTOR

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total	5	5

OFFICE OF RESEARCH PLANS AND PROGRAMS

Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	2	2
Wage Board	-	-
Total	4	4

OFFICE OF ASSOCIATE DIRECTOR FOR DEVELOPMENT

Excepted	65	66
GS-16	1	1
GS-15	1	1
GS-14	-	-
All other GS	2	2
Wage Board	-	-
Total	4	4

OFFICE OF DEVELOPMENT PLANS AND PROGRAMS

Excepted	65	66
GS-16	1	1
GS-15	1	1
GS-14	4	4
All other GS	8	8
Wage Board	-	-
Total	14	14

PLUM BROOK STATION OFFICE OF DIRECTOR

Excepted	65	66
GS-16	1	1
GS-15	1	1
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total	7	7

STAFF ASSISTANTS

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	3	3
All other GS	44	44
Wage Board	-	-
Total	47	47

OFFICE OF ASSISTANT DIRECTOR FOR ADMINISTRATION

Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	-	-
All other GS	6	6
Wage Board	-	-
Total	7	7

STAFF ASSISTANTS

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	32	32
Wage Board	-	-
Total	33	33

OFFICE OF CHIEF OF TECHNICAL SERVICES

Excepted	65	66
GS-16	1	1
GS-15	1	1
GS-14	1	1
All other GS	3	3
Wage Board	-	-
Total	6	6

OFFICE OF ASSISTANT DIRECTOR FOR PUBLIC AFFAIRS

Excepted	65	66
GS-16	1	1
GS-15	1	1
GS-14	1	1
All other GS	17	17
Wage Board	-	-
Total	20	20

MISSION ANALYSES BRANCH

Excepted	65	66
GS-16	-	-
GS-15	3	3
GS-14	2	2
All other GS	17	17
Wage Board	-	-
Total	22	22

OFFICE OF RELIABILITY AND QUALITY ASSURANCE

Excepted	65	66
GS-16	1	1
GS-15	-	-
GS-14	17	17
All other GS	24	24
Wage Board	-	-
Total	42	42

ROCKET SYSTEMS DIVISION

Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	7	7
All other GS	55	55
Wage Board	-	-
Total	63	63

PERSONNEL DIVISION

Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	71	71
Wage Board	-	-
Total	74	74

PLANT SERVICES DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	35	35
Wage Board	136	136
Total	172	172

SPACE POWER SYSTEM DIVISION

Excepted	65	66
GS-16	2	2
GS-15	6	6
GS-14	28	28
All other GS	123	123
Wage Board	-	-
Total	159	159

REACTOR DIVISION

Excepted	65	66
GS-16	1	1
GS-15	2	2
GS-14	8	8
All other GS	89	89
Wage Board	-	-
Total	100	100

FINANCE DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	67	67
Wage Board	-	-
Total	68	68

TEST INSTALLATIONS DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	5	5
Wage Board	410	410
Total	416	416

CENTAUR PROJECT

Excepted	65	66
GS-16	2	2
GS-15	14	14
GS-14	28	28
All other GS	140	140
Wage Board	1	1
Total	186	186

ENGINEERING DIVISION

Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	6	6
All other GS	41	41
Wage Board	1	1
Total	49	49

ADMINISTRATIVE SERVICES DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	37	37
Wage Board	8	8
Total	46	46

FACILITIES OPERATIONS DIVISION

Excepted	65	66
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	31	31
Wage Board	530	530
Total	563	563

AGENA PROJECT

Excepted	65	66
GS-16	1	1
GS-15	2	2
GS-14	8	8
All other GS	20	20
Wage Board	85	85
Total	116	116

ADMINISTRATION DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	22	22
Wage Board	4	4
Total	26	26

PROCUREMENT AND SUPPLY DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	7	7
Wage Board	186	186
Total	221	221

FABRICATION DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	28	28
Wage Board	220	220
Total	250	250

CHEMICAL ROCKET SYSTEMS DIVISION

Excepted	65	66
GS-16	2	2
GS-15	1	1
GS-14	6	6
All other GS	18	18
Wage Board	103	103
Total	130	130

FACILITIES SERVICE DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	20	20
Wage Board	296	296
Total	317	317

TECHNICAL INFORMATION DIVISION

Excepted	65	66
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	92	92
Wage Board	22	22
Total	115	115

ENGINEERING DESIGN DIVISION

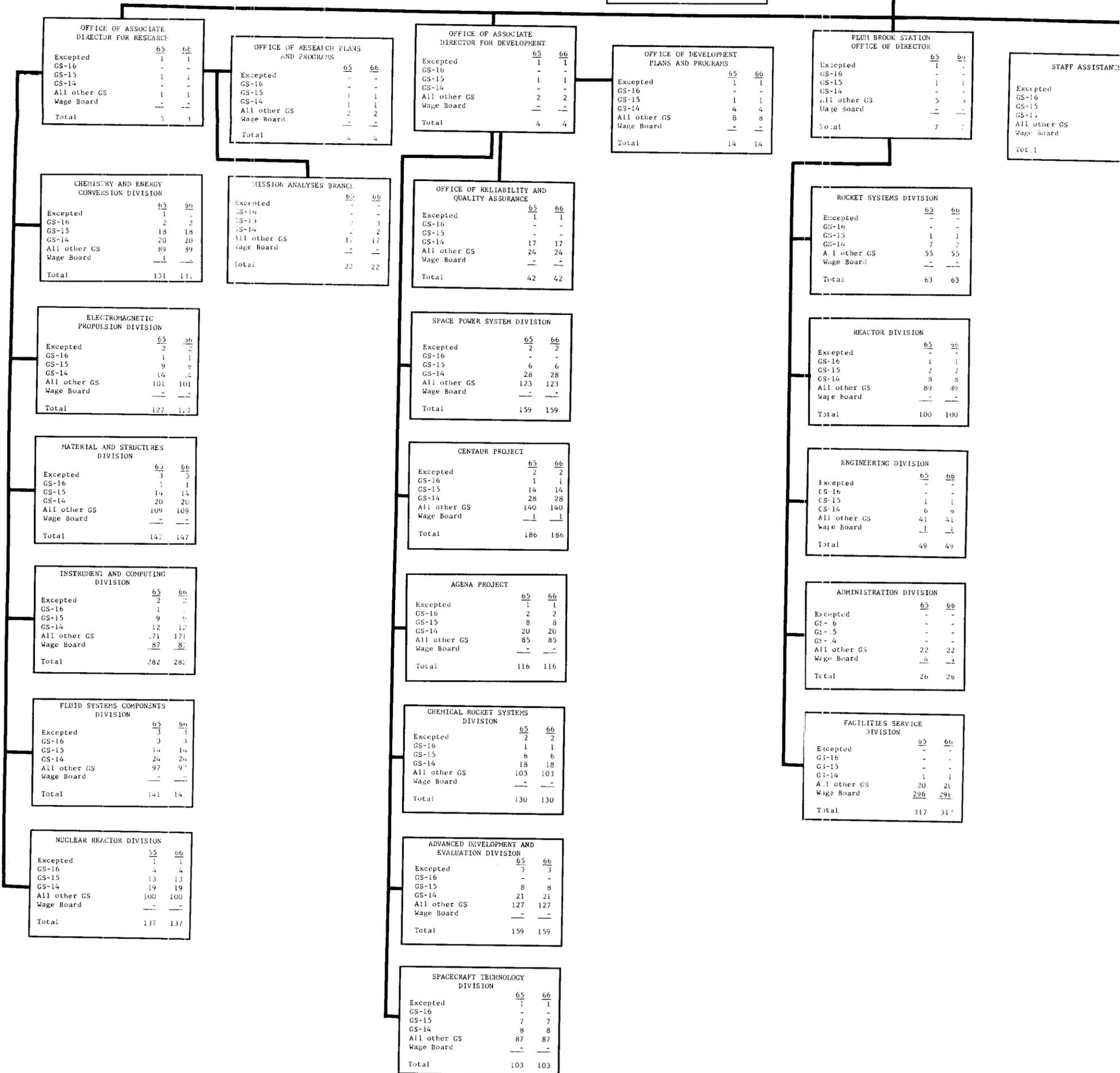
Excepted	65	66
GS-16	-	-
GS-15	3	3
GS-14	8	8
All other GS	159	159
Wage Board	5	5
Total	177	177

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 LEWIS RESEARCH CENTER

STAFFING SUMMARY		
	65	66
Excepted	35	35
GS-16	17	17
GS-15	155	155
GS-14	319	319
All other GS	2,941	2,541
Wage Board	1,248	1,248
Total Permanent	4,815	4,815
Temporary	32	32
Total Positions	4,847	4,847

RESOURCES PLANNING OFFICE		
	65	66
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	2	2
All other GS	9	9
Wage Board	-	-
Total	12	12

OFFICE OF THE DIRECTOR		
	65	66
Excepted	2	2
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total	5	5



ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

LEWIS RESEARCH CENTER

MISSION AND CAPABILITIES:

The Lewis Research Center is primarily engaged in research and development in the areas of advanced propulsion and space power generation. Included in this mission is work on high energy chemical, nuclear, and electric rocket engines along with research on space power systems for converting chemical, nuclear, and solar energy into electricity. Basic and applied research is conducted on materials and metallurgy; cryogenic and liquid-metal heat-transfer fluids; pumps and turbines; combustion processes, propellants, tankage, injectors, chambers, and nozzles; system control dynamics; plasmas and magnetohydrodynamics; space meteoroid damage and zero-gravity effects. In the space power area, a major effort is concentrated on turboelectric, thermo-electrical, and thermionic energy-conversion systems.

Lewis Research Center's in-house research provides technical input and direction to the related development, or contractual, efforts for which the Installation has managerial responsibility. For example, this Installation maintains technical management of NASA contracts on electric propulsion, nuclear and solar turboelectric space power systems, and liquid-hydrogen rocket technology. In addition, Lewis has the development responsibility for the Atlas-Centaur and Atlas-Agena launch vehicles and the 1.5 million-pound-thrust hydrogen-oxygen engine. Plans are now being made to adapt the Atlas to the use of FLOX.

Major research tools and facilities, at the Lewis Research Center and the Plum Brook Station are designed to simulate various flight conditions and range from atmospheric wind tunnels to large space environment facilities. A large 60-megawatt thermal reactor is now available for studying nuclear radiation effects on materials and components, simulating various flux levels associated with spacecraft applications of nuclear energy. Other specialized experimental facilities include vacuum electron-beam furnaces for refinement of tungsten, liquid-metal power loops for component evaluations, zero-gravity drop tower, chemical-rocket static thrust stands, full-scale non-nuclear NERVA stand for the study of engine control dynamics, and various cryogenic component rigs.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year..	4,859	4,847	4,847
Average Number of All Employees...	4,799	4,866	4,827
Administrative Operations.....	\$61,694,000	\$70,971,000	\$63,880,000

INSTALLATION DESCRIPTION:

The Lewis Research Center occupies two sites. The older one is on the southwest edge of Cleveland, Ohio, and consists of over 100 laboratory buildings, shops, wind tunnels, space environment tanks and other special facilities, all built for conducting research on advanced propulsion systems or spacecraft power generating systems. The Cleveland facilities occupy 364 acres. The newer site is located just south of Sandusky, Ohio, on land formerly occupied by the Plum Brook Ordnance Works. Its 6,031 acres were transferred to NASA. The research programs at Plum Brook Station are under the technical direction of personnel located at Cleveland. They are conducted at the larger site because of the need for large separation distances to minimize hazards. A nuclear reactor is used to test components of nuclear powered propulsion systems; large rockets are operated with fluorine, hydrogen and other high-energy fuels; and turbo-pumps are developed for cryogenic propellants. The total capital investment as of June 30, 1964 was \$239,998,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$42,969,000	\$45,610,000	\$45,635,000
12. Personnel Benefits.....	<u>3,112,000</u>	<u>3,314,000</u>	<u>3,338,000</u>
Total, personnel costs.....	\$46,081,000	\$48,924,000	\$48,973,000
21. Travel and Transportation of persons.....	1,461,000	1,660,000	1,650,000
22. Transportation of Things.....	627,000	650,000	650,000
23. Rents, Communications, and Utilities.....	4,378,000	3,987,000	2,825,000
24. Printing and Reproduction....	58,000	65,000	65,000
25. Other Services.....	2,300,000	2,563,000	2,349,000
Services of other agencies.	7,000	45,000	50,000
26. Supplies and Materials.....	2,865,000	3,150,000	3,050,000
31. Equipment.....	2,542,000	9,325,000	3,315,000
32. Lands and Structures.....	1,373,000	600,000	450,000
42. Insurance Claims and Indemnities.....	<u>2,000</u>	<u>2,000</u>	<u>3,000</u>
Total.....	<u>\$61,694,000</u>	<u>\$70,971,000</u>	<u>\$63,880,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Advanced missions.....	45	45	45
<u>Space Science and Applications</u>			
Physics and astronomy.....	1	1	-
Launch vehicle development.....	261	254	249
Launch vehicle procurement.....	160	177	165
<u>Advanced Research and Technology</u>			
Nuclear electric systems.....	519	474	474
Nuclear rockets.....	373	373	373
Solar and chemical power.....	165	170	170
Space vehicle systems.....	189	173	153
Electronics systems.....	56	52	52
Aeronautics.....	69	114	252
Human factor systems.....	-	1	1
Chemical propulsion.....	307	308	208
Basic research.....	416	408	408
<u>Technology Utilization.....</u>	<u>5</u>	<u>5</u>	<u>5</u>
Sub-total, direct positions.....	2,566	2,555	2,555
<u>Support personnel</u>			
Director and staff.....	16	17	17
Administration.....	579	573	573
Research and development support.....	<u>1,690</u>	<u>1,670</u>	<u>1,670</u>
Sub-total, support personnel.....	<u>2,285</u>	<u>2,260</u>	<u>2,260</u>
Total, permanent positions.....	4,851	4,815	4,815
<u>Other positions:</u>			
Positions under cooperative training agreements.....	4	11	11
Other temporary positions.....	<u>4</u>	<u>21</u>	<u>21</u>
Total, all positions.....	<u>4,859</u>	<u>4,847</u>	<u>4,847</u>

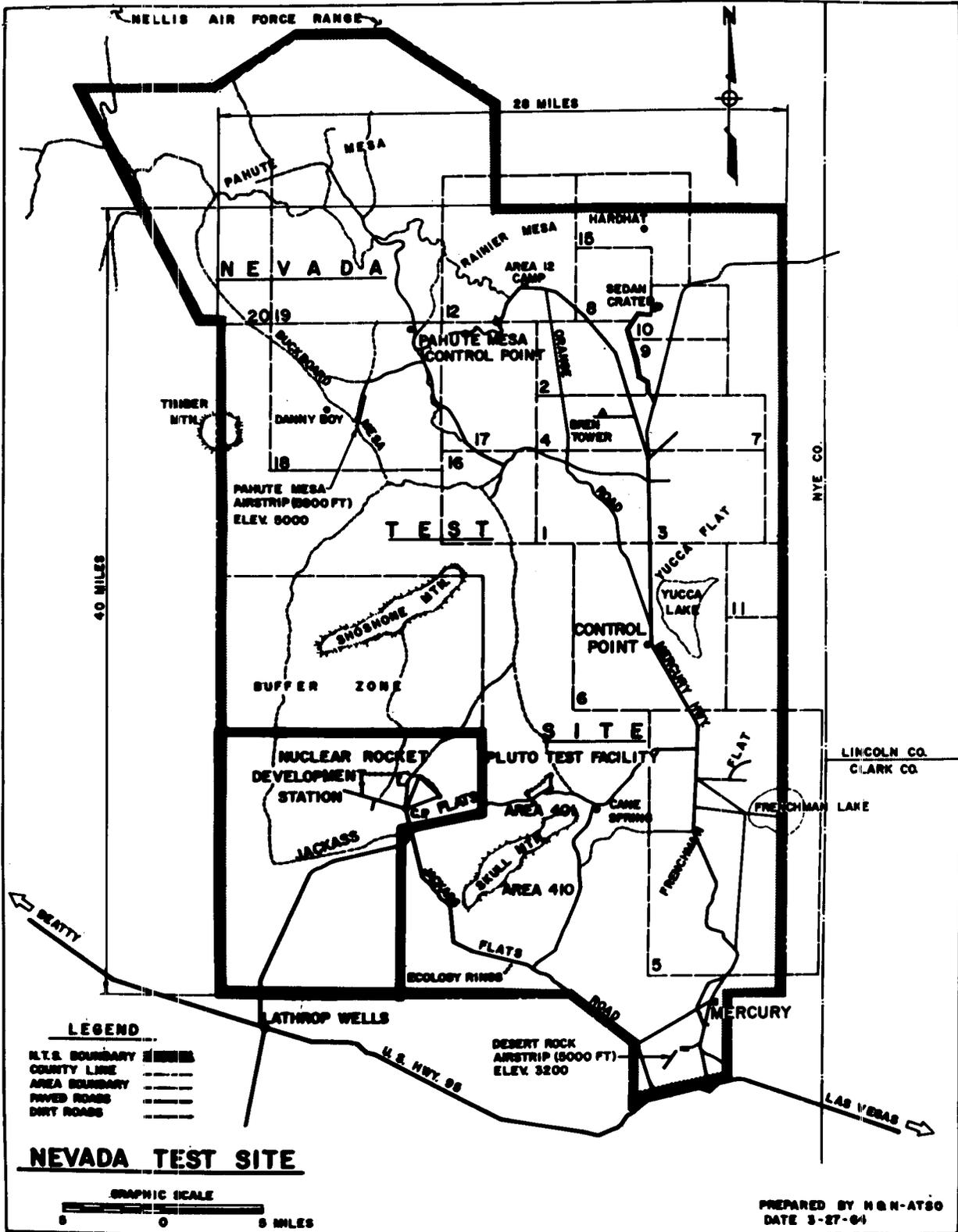
Personnel Requirements

Although major effort will continue to be expended in FY 1966 relating to the technical management, contract monitoring, and evaluation of the launch vehicle development programs, a significant change in program emphasis will entail the reassignment of personnel to provide added support in another area. The suspension of effort under the M-1 engine program and the large solid motor demonstration project will result in the reassignment of 100 employees to support increased activity associated with the aeronautics program. Other minor personnel reassignments will be effected to meet changing program needs.

The personnel cost requested for FY 1966 is reflected below:

	<u>Personnel Costs</u>		
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>4,859</u>	<u>4,847</u>	<u>4,847</u>
Permanent.....	4,851	4,815	4,815
Other.....	8	32	32
 <u>Personnel Compensation:</u>			
Annual cost of permanent positions	\$42,557,000	\$43,611,000	\$43,610,000
Pay above the stated annual rate..	361,000	173,000	173,000
Lapses (deduct).....	<u>-1,950,000</u>	<u>-219,000</u>	<u>-90,000</u>
Net cost of permanent positions...	40,968,000	43,565,000	43,693,000
Other personnel compensation.....	<u>2,001,000</u>	<u>2,045,000</u>	<u>1,942,000</u>
 <u>Total compensation</u>	 <u>42,969,000</u>	 <u>45,610,000</u>	 <u>45,635,000</u>
NASA funded.....	42,969,000	45,610,000	45,635,000
Reimbursable.....	---	---	---
 <u>Personnel benefits</u>	 <u>3,112,000</u>	 <u>3,314,000</u>	 <u>3,338,000</u>
NASA funded.....	3,112,000	3,314,000	3,338,000
Reimbursable.....	---	---	---
 <u>Total personnel costs</u>	 <u>46,081,000</u>	 <u>48,924,000</u>	 <u>48,973,000</u>
NASA funded.....	46,081,000	48,924,000	48,973,000
Reimbursable.....	---	---	---
 <u>Average Number of All Employees</u>			
<u>(Man Years)</u>	4,799	4,866	4,827

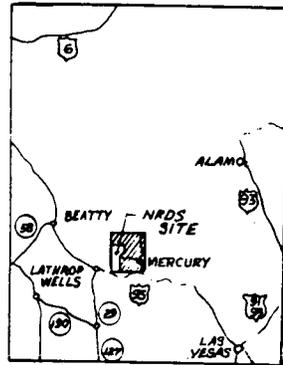
Excluding the FY 1965 computer purchase program, the FY 1966 estimates reflect an increase of \$270,000 over the amount estimated to be required during the current fiscal year. Essentially, the entire increase is required for contractual services relating to the maintenance and repair of scientific and research equipment and for additional maintenance costs connected with the new facilities coming into initial operation in FY 1966, as well as the full-year costs of facilities placed in initial operation in FY 1965.



**NUCLEAR ROCKET DEVELOPMENT STATION
LOCATION PLAN**

**FACILITIES AUTHORIZED AND UNDER
CONSTRUCTION**

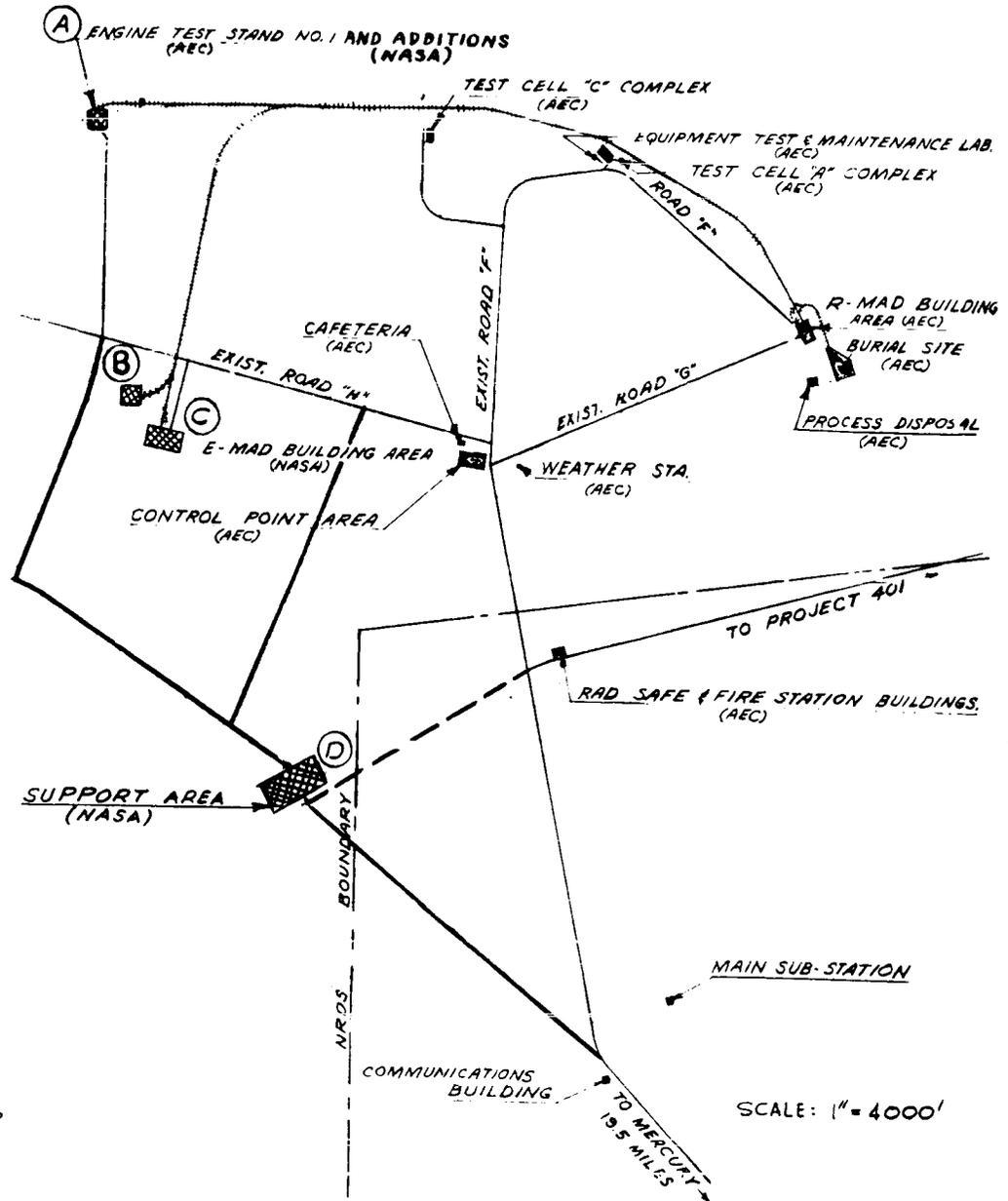
- A. ENGINE TEST STAND NO. 1
- B. RADIOACTIVE MATERIAL HANDLING COMPLEX
- C. E-MAD BUILDING
- D. SUPPORT FACILITIES



KEY MAP
NO SCALE

AO 3-50

- LEGEND**
- EXIST. FACILITY
 - ▨ FAC. AUTHORIZED & UNDER CONSTRUCTION



SCALE: 1" = 4000'

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 SPACE NUCLEAR PROPULSION OFFICE

STAFFING SUMMARY		
	<u>65</u>	<u>66</u>
Excepted	3	3
GS-16	3	3
GS-15	16	16
GS-14	20	20
All other GS	74	74
Wage Board	-	-
Total Permanent	<u>116</u>	<u>116</u>
Temporary	-	-
Total Positions	116	116

OFFICE OF THE MANAGER		
	<u>65</u>	<u>66</u>
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	2	2
Wage Board	-	-
Total	3	3

ALBUQUERQUE EXTENSION		
	<u>65</u>	<u>66</u>
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	-	-
Wage Board	-	-
Total	1	1

NERVA BRANCH		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-16	-	-
GS-15	3	3
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total	5	5

CLEVELAND EXTENSION		
	<u>65</u>	<u>66</u>
Excepted	2	2
GS-16	1	1
GS-15	9	9
GS-14	14	14
All other GS	45	45
Wage Board	-	-
Total	71	71

ADVANCED ENGINE BRANCH		
	<u>65</u>	<u>66</u>
Excepted	-	-
GS-16	1	1
GS-15	1	1
GS-14	-	-
All other GS	-	-
Wage Board	-	-
Total	2	2

NEVADA EXTENSION		
	<u>65</u>	<u>66</u>
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	5	5
All other GS	25	25
Wage Board	-	-
Total	31	31

FACILITIES BRANCH		
	<u>65</u>	<u>66</u>
Excepted	-	-
GS-16	1	1
GS-15	1	1
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total	3	3

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

SPACE NUCLEAR PROPULSION OFFICE

MISSION AND CAPABILITIES:

The Space Nuclear Propulsion Office (SNPO) is a joint office of the National Aeronautics and Space Administration and the Atomic Energy Commission. The primary mission of SNPO is to provide the necessary research, design and engineering data, test hardware, and general technology required to assure that nuclear rocket systems can be developed at the power levels, operating times, restart conditions, and specific impulse values needed in advanced space exploration missions.

SNPO was established to assure the formulation and execution of a well integrated program for nuclear rockets which fulfills the responsibilities of both the Atomic Energy Commission and the National Aeronautics and Space Administration. Implementation of the assigned program entails: basic research on reactors, engine systems, and nuclear vehicle technology; development of practical heat-exchanger-type rocket reactors and engine systems; and ground testing of reactors and engines, and the development of reliability.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year..	112	116	116
Average Number of All Employees...	103	114	116
Administrative Operations.....	\$1,472,000	\$1,725,000	\$1,838,000

INSTALLATION DESCRIPTION:

The Space Nuclear Propulsion Office was established by agreement of August 1960 between the AEC and the NASA. The Installation consists of a headquarters office located at Germantown, Maryland, and three field extensions located in Ohio, New Mexico, and Nevada. By agreement between AEC and NASA of February 1962, the Nuclear Rocket Development Station (NRDS) was established to provide a site for ground static testing of the reactors, engines, and eventually, vehicles associated with nuclear rocket development. The NRDS, a 90,000 acre site carved out of the AEC's Nevada Test Site, is located in Nye County, Nevada, approximately 90 miles northwest of Las Vegas. The total capital investment of NASA funded facilities as of June 30, 1964 was \$8,069,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$1,125,000	\$1,391,000	\$1,424,000
12. Personnel Benefits.....	<u>82,000</u>	<u>109,000</u>	<u>111,000</u>
Total, personnel costs.....	\$1,207,000	\$1,500,000	\$1,535,000
21. Travel and Transportation of Persons.....	171,000	200,000	200,000
22. Transportation of Things.....	11,000	10,000	3,000
23. Rents, Communications, and Utilities.....	---	---	---
24. Printing and Reproduction.....	---	---	---
25. Other Services.....	---	15,000	100,000
Services of other agencies..	83,000	---	---
26. Supplies and Materials.....	---	---	---
31. Equipment.....	---	---	---
32. Lands and Structures.....	---	---	---
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	<u>\$1,472,000</u>	<u>\$1,725,000</u>	<u>\$1,838,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Advanced Research and Technology</u>			
Nuclear rockets.....	106	110	110
Technology Utilization.....	1	1	1
<u>Support personnel</u>			
Director and Staff.....	1	1	1
Administration.....	1	1	1
Research and development support...	<u>3</u>	<u>3</u>	<u>3</u>
Sub-total, support positions.....	<u>5</u>	<u>5</u>	<u>5</u>
Total, permanent positions.....	112	116	116
Other positions:	---	---	---
Total, all positions.....	<u>112</u>	<u>116</u>	<u>116</u>

Personnel Requirements

The manpower required for the effective monitoring and management of the nuclear rocket program will remain constant in FY 1966. The small increase in personnel costs is required to fund expected salary adjustments to become effective in FY 1966. The limited staff and funding flexibility necessitates support for these items in order to maintain a constant man-year effort.

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>112</u>	<u>116</u>	<u>116</u>
Permanent.....	112	116	116
Other.....	---	---	---
 <u>Personnel Compensation:</u>			
Annual cost of permanent positions.....	\$1,249,000	\$1,389,000	\$1,415,000
Pay above the stated annual rate..	9,000	6,000	6,000
Lapses (deduct).....	<u>-136,000</u>	<u>-10,000</u>	<u>-3,000</u>
Net cost of permanent positions...	1,122,000	1,385,000	1,418,000
Other personnel compensation.....	<u>3,000</u>	<u>6,000</u>	<u>6,000</u>
<u>Total compensation</u>	<u>1,125,000</u>	<u>1,391,000</u>	<u>1,424,000</u>
NASA funded.....	1,125,000	1,391,000	1,424,000
Reimbursable.....	---	---	---
 <u>Personnel benefits</u>	<u>82,000</u>	<u>109,000</u>	<u>111,000</u>
NASA funded.....	82,000	109,000	111,000
Reimbursable.....	---	---	---
 Total personnel costs.....	<u>1,207,000</u>	<u>1,500,000</u>	<u>1,535,000</u>
NASA funded.....	1,207,000	1,500,000	1,535,000
Reimbursable.....	---	---	---
 <u>Average Number of All Employees</u>			
<u>(Man Years)</u>	103	114	116

Other requirements reflect an increase of \$78,000 over the amount estimated to be required for FY 1965. All of the increase is required for the periodical updating of the master planning for the Nuclear Rocket Development Station at Nevada. This includes special studies and engineering services designed to minimize future operational costs of the station.

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

NASA HEADQUARTERS

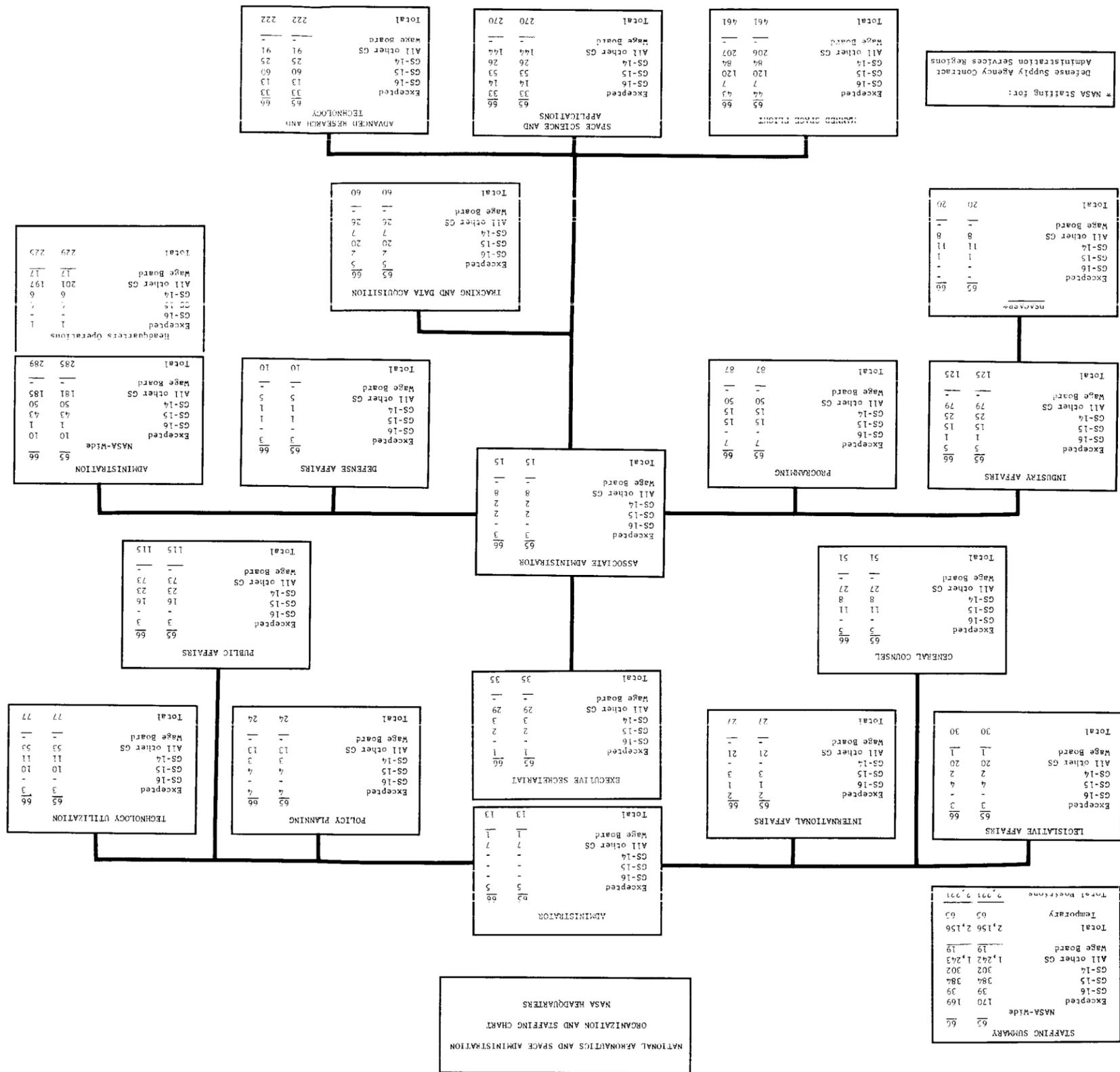
MISSION AND CAPABILITIES:

The mission of the Headquarters of the National Aeronautics and Space Administration is to plan and provide executive direction for the programs authorized by the Congress, and to implement the national objectives stated in the National Aeronautics and Space Act of 1958, as amended. The principal statutory functions are:

1. To conduct research into, and for the solution of, problems of flight within and outside the earth's atmosphere and to develop, construct, test, and operate aeronautical and space vehicles for research purposes.
2. To conduct activities required for the exploration of space with manned and unmanned vehicles.
3. To arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations.
4. To provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.

The following offices at Headquarters assist general management in carrying out the technical aspects of this mission:

The Office of Manned Space Flight - Responsible for all NASA activities directly involving manned space flight missions. Programs include Gemini - to develop an operational capability to fly a two-man spacecraft in near-earth orbit for periods up to fourteen days and to learn new techniques, including rendezvous, docking and extra-vehicular activity; Apollo - to develop a three-man operational capability in near-earth orbit, in lunar environment, including manned landing on the lunar surface, and return to earth; and Advanced Missions - to plan a broad program of exploration which will achieve and maintain a position of space leadership for the United States.



This office also has overall institutional responsibility for the three installations primarily concerned with the manned Space flight programs. These installations are: George C. Marshall Space Flight Center, including Mississippi Test Facility, Michoud Plant, and at Slidell where a computer facility is located; the Manned Spacecraft Center, including NASA activities at the White Sands Missile Range; and the John F. Kennedy Space Center.

The Office of Space Science and Applications - Responsible for all NASA programs for the unmanned scientific investigation of space with sounding rockets, earth satellites, and deep space probes to the moon, planets and interplanetary space and for the scientific experiments to be conducted by man in space; for research and development of useful applications of space flight in the areas of meteorology, communications, navigation, geodesy, and for the support of operational systems using these developments; for the development and procurement of the light and medium class of launch vehicles up to and including the Atlas/Centaur; and for the sustaining university program.

In addition to the foregoing, this Office has overall institutional responsibility for the installations primarily involved in carrying out NASA's space science and applications programs. These installations are: Goddard Space Flight Center, Wallops Station, Pacific Launch Operations Office; and the NASA Resident Office at JPL, which administers the NASA contract with the California Institute of Technology for the operation of the Jet Propulsion Laboratory.

The Office of Advanced Research and Technology - Responsible for the planning, direction, execution, evaluation, documentation, and dissemination of the results of all NASA research and technology programs which are conducted primarily to demonstrate the feasibility of a concept, structure, component, or system which may have specific general application to the Nation's aeronautical and space objectives. This Office is also responsible for coordinating NASA's total program of supporting research and technology, which is related to carrying out the specific flight missions in order to avoid unnecessary duplication and to insure that the agency has an integrated and balanced research program.

In addition, this Office has overall institutional responsibility for the research centers primarily involved in carrying out NASA's advanced research programs. These installations are: Ames Research Center, Electronics Research Center, Flight Research Center, Langley Research Center, Lewis Research Center, and the Space Nuclear Propulsion Office.

The Office of Tracking and Data Acquisition - Responsible for the development, implementation, and operation of tracking, data acquisition, communications, and data processing facilities, systems,

and services required for NASA flight programs. In addition, the Office is responsible for the agency-wide coordination of the management of automatic data processing.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year.	2,133	2,221	2,221
Average Number of All Employees..	1,944	2,070	2,150
 Administrative Operations:			
NASA Headquarters.....	\$49,115,000	\$52,668,000	\$56,103,000
Jet Propulsion Laboratory (purchase of computers).....	<u>---</u>	<u>20,587,000</u>	<u>---</u>
 Total, Administrative Operations.....	 <u>\$49,115,000</u>	 <u>\$73,255,000</u>	 <u>\$56,103,000</u>

INSTALLATION DESCRIPTION:

The NASA Headquarters is located at 400 Maryland Avenue, S.W., Washington, D.C., and also occupies other buildings in the District of Columbia and nearby Virginia. Except for space leased in the Universal North Building and a storage area in Virginia, personnel occupy Government-owned buildings.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$22,302,000	\$25,897,000	\$26,822,000
12. Personnel Benefits.....	<u>1,678,000</u>	<u>1,834,000</u>	<u>1,912,000</u>
 Total, personnel costs....	 \$23,980,000	 \$27,731,000	 \$28,734,000
 21. Travel and Transportation of Persons.....	 2,607,000	 2,634,000	 2,627,000
22. Transportation of Things....	456,000	460,000	281,000
23. Rents, Communications, and Utilities.....	1,969,000	2,058,000	2,218,000
24. Printing and Reproduction...	1,233,000	1,640,000	1,701,000
25. Other Services.....	17,747,000	16,767,000	19,875,000
26. Supplies and Materials.....	566,000	421,000	474,000
31. Equipment.....	555,000	21,534,000 ^{a/}	243,000

^{a/} Includes \$20,587,000 for purchase of ADP equipment for the Jet Propulsion Laboratory, Pasadena, California.

	<u>1964</u>	<u>1965</u>	<u>1966</u>
32. Land and Structures	1,000	---	---
42. Insurance Claims and Indemnities.....	<u>1,000</u>	<u>10,000</u>	<u>10,000</u>
Total.....	<u>\$49,115,000</u>	<u>\$73,255,000</u>	<u>\$56,103,000</u>

The above estimates, other than for personnel compensation and benefits and travel, have been distributed between NASA-wide support functions with all centers benefiting and for operation of Headquarters. The following table shows this comparison by object classification.

Analysis of Funding for NASA-wide
Support and Headquarters Operations

Object Class	FY 1965			FY 1966		
	Total	NASA-wide Hdqrts.		Total	NASA-wide Hdqrts.	
		Support	Operat.		Support	Operat.
(In thousands of dollars)						
22. Transportation of Things.....	\$460	\$400	\$60	\$281	\$221	\$60
23. Rents, Communi- cations and Utilities.....	2,058	882	1,176	2,218	1,116	1,102
24. Printing and Reproduction..	1,640	1,454	186	1,701	1,511	190
25. Other Services..	16,767	15,592	1,175	19,875	18,646	1,229
26. Supplies and Materials.....	421	30	391	414	23	391
31. Equipment.....	21,534	20,699 ^{a/}	835	243	74	169
32. Lands and Struc- tures.....	---	---	---	---	---	---
42. Insurance Claims and Indem- nities.....	<u>10</u>	<u>---</u>	<u>10</u>	<u>10</u>	<u>---</u>	<u>10</u>
Total.....	<u>\$42,890</u>	<u>\$39,057</u>	<u>\$3,833</u>	<u>\$24,742</u>	<u>\$21,591</u>	<u>\$3,151</u>

^{a/} Includes \$20,587,000 for purchase of ADP equipment for the Jet Propulsion Laboratory, Pasadena, California.

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Gemini.....	73	104	104
Apollo.....	286	297	297
Advanced missions.....	60	60	60
<u>Space Science and Applications</u>			
Bioscience.....	23	23	23
Sustaining university program.....	68	73	73
Physics and astronomy.....	56	52	52
Lunar and planetary exploration.....	54	57	57
Communication satellites.....	14	10	9
Launch vehicle development.....	12	13	13
Meteorological satellites.....	20	20	20
Launch vehicle procurement.....	14	14	14
Applications technology satellites.....	3	8	9
<u>Advanced Research and Technology</u>			
Nuclear rockets.....	27	28	28
Nuclear-electric systems.....	4	4	4
Chemical propulsion.....	21	21	21
Space vehicle systems.....	44	46	46
Electronics systems.....	35	35	35
Aeronautics.....	22	26	26
Human factor systems.....	22	23	23
Basic research.....	26	27	27
Solar and chemical power.....	10	12	12
<u>Tracking and Data Acquisition</u>	51	60	60
<u>Technology Utilization</u>	14	13	13
Sub-total, direct positions	959	1,026	1,026

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Support personnel:</u>			
NASA-wide support.....	865	901	905
Administration.....	<u>267</u>	<u>229</u>	<u>225</u>
Sub-total, support positions.....	<u>1,132</u>	<u>1,130</u>	<u>1,130</u>
Total, permanent positions.....	2,091	2,156	2,156
<u>Other positions:</u>			
Positions under cooperative training agreements.....	---	---	---
Other temporary positions.....	<u>42</u>	<u>65</u>	<u>65</u>
Total, all positions.....	<u>2,133</u>	<u>2,221</u>	<u>2,221</u>

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>2,133</u>	<u>2,221</u>	<u>2,221</u>
Permanent.....	2,091	2,156	2,156
Other.....	42	65	65
<u>Personnel Compensation:</u>			
Annual cost of permanent positions	\$22,249,000	\$25,652,000	\$25,645,000
Pay above the stated annual rate.....	160,000	99,000	99,000
Lapses (deduct).....	<u>-1,448,000</u>	<u>-1,272,000</u>	<u>-355,000</u>
Net cost of permanent positions	20,961,000	24,479,000	25,389,000
Other personnel compensation...	<u>1,341,000</u>	<u>1,418,000</u>	<u>1,433,000</u>
<u>Total compensation</u>	<u>22,302,000</u>	<u>25,897,000</u>	<u>26,822,000</u>
NASA funded.....	22,302,000	25,897,000	26,822,000
Reimbursable.....	---	---	---
<u>Personnel benefits</u>	<u>1,678,000</u>	<u>1,834,000</u>	<u>1,912,000</u>
NASA funded.....	1,678,000	1,834,000	1,912,000
Reimbursable.....	---	---	---
<u>Total personnel costs</u>	<u>23,980,000</u>	<u>27,731,000</u>	<u>28,734,000</u>
NASA funded.....	23,980,000	27,731,000	28,734,000
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	1,944	2,070	2,150

Personnel Costs - \$28,734,000

The personnel costs for FY 1966 are estimated to be \$1,003,000 above the requirement for FY 1965, of which \$925,000 is for personnel compensation and \$78,000 for personnel benefits, to cover the cost of 80 man years resulting from full year employment in FY 1966 of personnel hired in FY 1965.

Travel and Transportation of Persons - \$2,627,000

There is a slight decrease below the FY 1965 level for travel and transportation of persons during FY 1966. The estimate includes \$2,322,000 for NASA employee travel, of which, \$2,150,000 will be used for direction and coordination of program and administrative activities; \$107,000 for the contract charter airlift service; \$30,000 for costs relating to initial duty stations, temporary assignments and transfers; and \$35,000 for meetings of NASA technical committees and working panels. The balance of \$305,000 is for non-NASA employee travel of technical and research advisory committees; and for costs of local transportation and rental of passenger motor vehicles.

Transportation of Things - \$281,000

The FY 1966 estimate for transportation of things is projected at \$179,000 below the FY 1965 level primarily as a result of a reduction in the transportation of exhibits and for cargo airlift costs.

The requirement of \$281,000 in FY 1966 under this object class includes \$140,000 for the domestic and overseas shipment of exhibits and spacemobiles; \$42,000 for the "cargo" portion of the charter airlift service; \$56,000 for costs of transportation of household goods and personal effects; and \$43,000 for freight, express, drayage and parcel post costs of shipments to NASA installations, and rental of trucks from GSA.

The distribution of \$281,000 in FY 1966 includes \$221,000 for NASA-wide support and \$60,000 for Headquarters operations.

Rents, Communications, and Utilities - \$2,218,000

The FY 1966 estimate for rents and communications reflects a net increase of \$160,000 over FY 1965 -- \$107,000 for rents and \$53,000 for communications.

The net increase of \$107,000 for rents includes: 1) an increase of \$278,000 for rental of space to house the NASA Scientific and Technical Information Facility on a full year basis in FY 1966. This space will be acquired through the General Services Administration during the latter part of FY 1965. In previous years, the rental of space was included as a part of the contract with Documentation, Inc.; and 2) a decrease of \$171,000 for rental of ADP equipment.

The increase of \$53,000 for communications costs reflects minor increases for local telephone and exchange services, Federal Telecommunications systems lines, telegraph and TWX service and for postage costs.

The request of \$2,218,000 in FY 1966 includes \$1,116,000 for NASA-wide support and \$1,102,000 for Headquarters operations.

The following table reflects changes for this object classification:

	Increase or <u>Decrease</u>
<u>Rents</u>	<u>\$+107,000</u>
Space.....	+278,000
ADP equipment.....	-171,000
Other equipment.....	---
Office equipment.....	---
 <u>Communications</u>	 <u>+53,000</u>
Leased lines.....	-16,000
Local telephone and exchange service.....	+39,000
Long distance tolls.....	-10,000
FTS charges.....	+10,000
Telegraph.....	+10,000
TWX.....	+10,000
Postage.....	+10,000
 Total.....	 <u><u>\$+160,000</u></u>

Printing and Reproduction - \$1,701,000

The FY 1966 estimates reflect an increase of \$61,000 over FY 1965 for these services. About 89 per cent, or \$1,511,000 of the \$1,701,000 requested covers printing costs for NASA-wide support activities associated with the scientific and technical documentation programs; such as printing of scientific and technical aerospace reports covering world-wide interdisciplinary report literature in the aerospace field, special publications on research program developments and integrated reports of orbital, lunar, and planetary flights; and proceedings of symposia and conferences on selected scientific topics; and for printing of educational media concerning the Agency's program results in formats suitable for dissemination to the educational community and to the general public. The remaining 11 per cent, or \$190,000, is required for Headquarters operations for printing and reproduction of forms, regulations and general printing and reproduction services.

About 93 per cent, or \$1,577,000 of the FY 1966 estimate is for printing and allied services which will be performed through Government sources. The remaining 7 per cent, or \$124,000, is for printing and photostating to be done by commercial sources.

Other Services - \$19,875,000

The FY 1966 estimate for other services is \$3,108,000 higher than for FY 1965. The following table shows an analysis of the major increases in this area:

	<u>Increases</u>
NASA scientific and technical information facility.....	\$800,000
Technical documentation program.....	1,000,000
Scientific information systems development.	200,000
Preparation of manuscript material for specialized scientific and technical publications and monographs.....	490,000
Audio visual processing/depository service.	180,000
International graduate fellowship program..	170,000
Various minor adjustments in other Headquarters programs and projects.....	<u>268,000</u>
Total.....	<u>\$3,108,000</u>

Of the net increase of \$3,108,000, about 80 per cent, or \$2,490,000, is requested for the scientific and technical information program. This includes:

1. \$800,000 to provide for the documentation in NASA's contractor-operated Scientific and Technical Information Facility of the greatly increasing volume of scientific and technical data required for direct use in NASA's research and development programs. The FY 1966 workload is expected to be at least 25% greater than the FY 1965 level.
2. \$1,000,000 for documentation of world-wide aerospace journal literature, primarily to align the funding of a contract to a full fiscal year basis in FY 1966. In addition, it would provide a small expansion in the program to process this literature for immediate use in the NASA technical programs. The global output of aerospace literature is increasing at an accelerated rate.

3. \$200,000 for information systems development to increase the effectiveness of the NASA technical information program and to permit the most economical interchange of NASA computerized documentation output with those of Department of Defense, Atomic Energy Commission, and other government agencies.
4. \$490,000 for preparation of manuscript material for specialized scientific and technical publications, handbooks, data compilations, and monographs on aerospace subjects such as radio propagation through re-entry systems, design of meteorological sounding rockets, stabilization standards for interplanetary probes, space probe instrumentation, satellite scientific instrumentation, and launch facilities.

The remaining 20 per cent, or \$618,000, includes an increase of \$170,000 for the International Graduate Fellowship program sponsored by foreign countries and administered by the National Academy of Sciences; \$180,000 for services in connection with the processing, indexing, storage, and distribution of audio visual material including maintenance of control over receipt cataloging and storage of film; and \$268,000 for various items such as, reliability and quality assurance studies of selected assessments of hardware design, security reinvestigation program, toxicity studies relating to the NASA-wide occupational medical program, and procurement programs, policies and procedures studies.

Of the total \$19,875,000 requested for this object classification in FY 1966, about 94 per cent will be used for NASA-wide activities and 6 per cent for Headquarters Operations.

Supplies and Materials - \$414,000

The estimate for FY 1966 for this category is \$7,000 less than in FY 1965. Funds requested are for the purchase of expendable and non-expendable items such as: office supplies and materials, pamphlets and documents for the technical documentation and educational services programs, periodical subscriptions for the law and technical libraries, and photographic and drafting supplies.

Of the \$414,000 about 6 per cent, or \$23,000, is used for NASA-wide activities and 94 per cent, or \$391,000 for Headquarters Operations.

Equipment - \$243,000

The FY 1966 estimate reflects a reduction from FY 1965 requirements. The principal reason is the non-recurring item of \$21,200,000 in FY 1965 for the purchase of ADP equipment (\$20,587,000 for the Jet Propulsion Laboratory and \$613,000 for NASA Headquarters). In addition, a reduction of \$91,000 is estimated for the requirement for the purchase of miscellaneous office and other equipment.

The estimate of \$243,000 for office and other equipment in FY 1966 includes \$74,000 for the procurement of 10 replacements for existing spacemobiles and for the purchase of models and equipment needed in support of spacemobile lecturers. The balance of \$169,000 is required for purchase of office furniture and equipment for Headquarters Operations.

Insurance Claims and Indemnities - \$10,000

The FY 1966 requirement is estimated at the same level as for FY 1965. These funds are to cover payment of claims of \$2,500 or less under the provisions of 28 U.S.C. 2672 for injury or loss of property, personal injury, or death caused by the negligent or wrongful act or omission of any employee of NASA while acting within the scope of the responsibility of his office or employment.

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

NORTH EASTERN OFFICE

MISSION AND CAPABILITIES:

The North Eastern Office was merged with the Electronics Research Center effective September 1, 1964. The fiscal year 1965 and 1966 requirements of this office are included with the estimates for the Electronics Research Center.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year.	33	---	---
Average Number of All Employees..	30	---	---
Administrative Operations.....	\$379,000	---	---

INSTALLATION DESCRIPTION:

The North Eastern Office was located in Cambridge, Massachusetts.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$280,000	---	---
12. Personnel Benefits.....	<u>20,000</u>	---	---
Total, personnel costs....	\$300,000	---	---
21. Travel and Transportation of Persons.....	27,000	---	---
22. Transportation of Things....	1,000	---	---
23. Rents, Communications, and Utilities.....	28,000	---	---
24. Printing and Reproduction...	4,000	---	---
25. Other Services.....	3,000	---	---
Services of other agencies	3,000	---	---
26. Supplies and Materials.....	10,000	---	---
31. Equipment.....	<u>3,000</u>	---	---
Total.....	<u>\$379,000</u>	---	---

JUSTIFICATION BY OBJECT CLASSIFICATION:

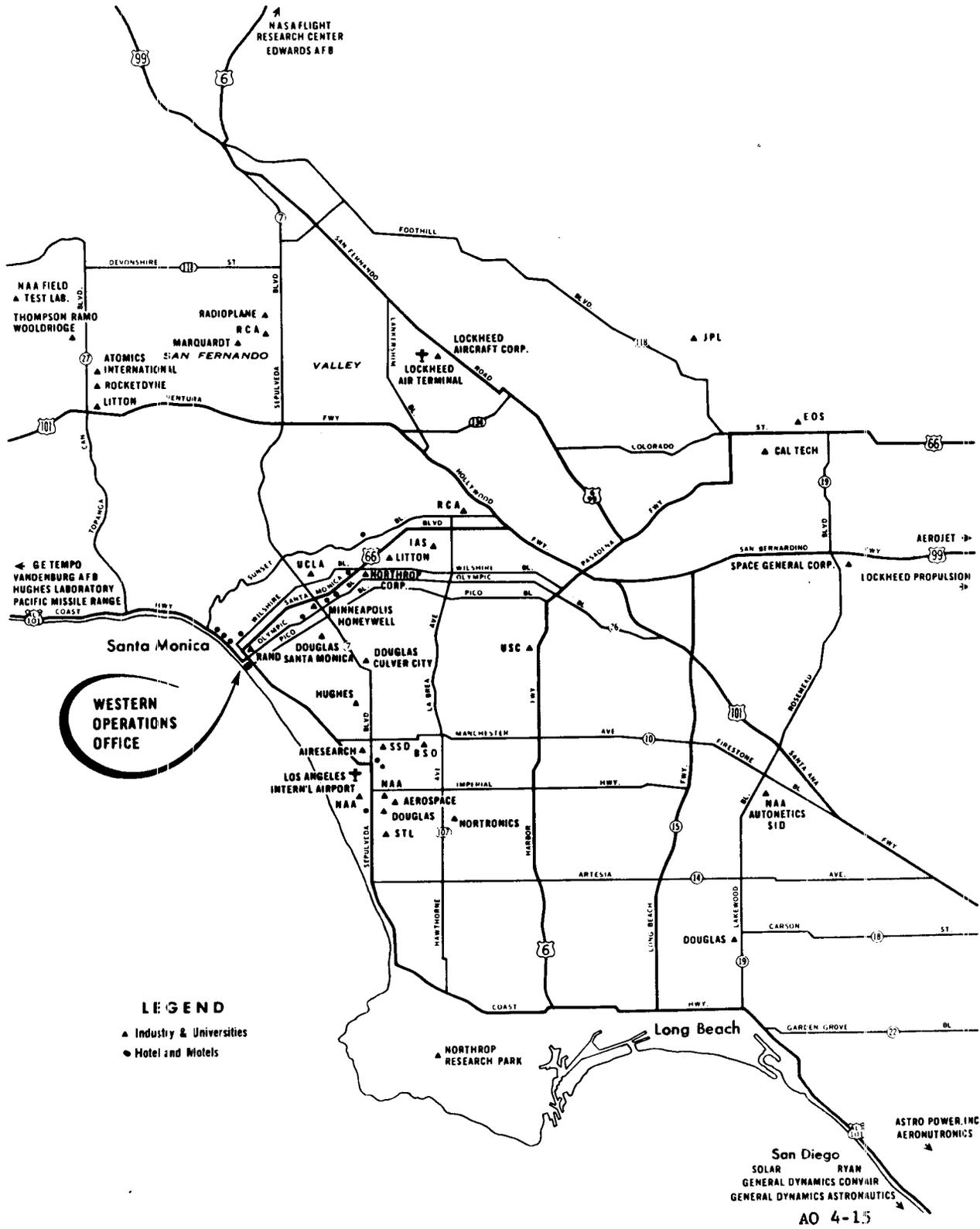
Personnel Distribution

Support personnel

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Director and staff.....	2	---	---
NASA-wide support.....	<u>30</u>	<u>---</u>	<u>---</u>
Sub-total, support positions....	<u>32</u>	<u>---</u>	<u>---</u>
Total, permanent positions.....	32	---	---
<u>Other positions:</u>			
Positions under cooperative training agreements.....	--	---	---
Other temporary positions.....	<u>1</u>	<u>---</u>	<u>---</u>
Total, all positions.....	33	---	---

Personnel Costs

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions</u>	<u>33</u>	<u>---</u>	<u>---</u>
Permanent.....	32	---	---
Other.....	1	---	---
<u>Personnel Compensation:</u>			
Annual cost of permanent positions	\$305,000	---	---
Pay above the stated annual rate..	2,000	---	---
Lapses (deduct).....	<u>-39,000</u>	<u>---</u>	<u>---</u>
Net cost of permanent positions...	268,000	---	---
Other personnel compensation.....	<u>12,000</u>	<u>---</u>	<u>---</u>
Total compensation.....	280,000	---	---
NASA funded.....	280,000	---	---
Reimbursable.....	---	---	---
<u>Personnel benefits</u>	<u>20,000</u>	<u>---</u>	<u>---</u>
NASA funded.....	20,000	---	---
Reimbursable.....	---	---	---
<u>Total personnel costs</u>	<u>300,000</u>	<u>---</u>	<u>---</u>
NASA funded.....	300,000	---	---
Reimbursable.....	---	---	---
<u>Average Number of All Employees</u>			
(Man Years).....	30	---	---



LEGEND
 ▲ Industry & Universities
 ● Hotel and Motels

AO 4-15

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 WESTERN OPERATIONS OFFICE

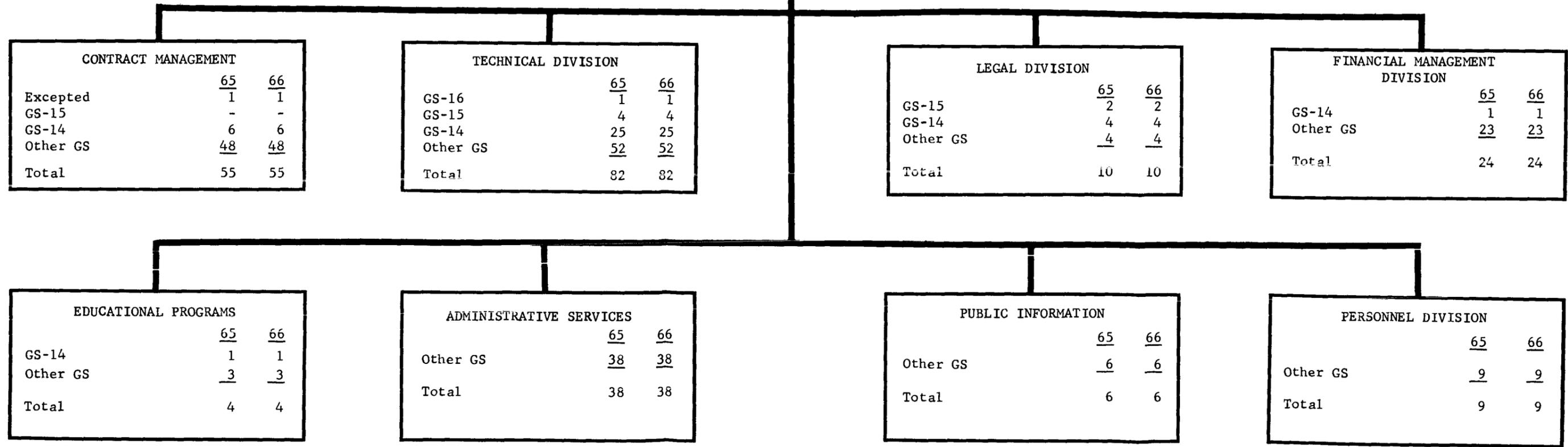
STAFFING SUMMARY		
	<u>65</u>	<u>66</u>
Excepted	3	3
GS-16	1	1
GS-15	15	15
GS-14	49	49
All other GS	333	333
Wage Board	-	-
Total Permanent	<u>401</u>	<u>401</u>
Temporary	<u>5</u>	<u>5</u>
Total	406	406

NASA RESIDENCY OFFICE - JPL		
	<u>65</u>	<u>66</u>
GS-15	7	7
GS-14	6	6
All other GS	<u>14</u>	<u>14</u>
Total	27	27

DIRECTOR		
	<u>65</u>	<u>66</u>
Excepted	2	2
Other GS	<u>5</u>	<u>5</u>
Total	7	7

PROFESSIONAL STAFFING		
	<u>65</u>	<u>66</u>
Other GS	<u>2</u>	<u>2</u>
Total	2	2

NASA-O		
	<u>65</u>	<u>66</u>
GS-15	2	2
GS-14	6	6
Other GS	<u>129</u>	<u>129</u>
Total	137	137



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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 ORGANIZATION AND STAFFING CHART
 WESTERN OPERATIONS OFFICE

STAFFING SUMMARY		
	<u>65</u>	<u>66</u>
Excepted	3	3
GS-16	1	1
GS-15	15	15
GS-14	49	49
All other GS	333	333
Wage Board	-	-
Total Permanent	401	401
Temporary	5	5
Total	406	406

NASA RESIDENCY OFFICE - JPL		
	<u>65</u>	<u>66</u>
GS-15	7	7
GS-14	6	6
All other GS	14	14
Total	27	27

DIRECTOR		
	<u>65</u>	<u>66</u>
Excepted	2	2
Other GS	5	5
Total	7	7

PROFESSIONAL STAFFING		
	<u>65</u>	<u>66</u>
Other GS	2	2
Total	2	2

NASA=O		
	<u>65</u>	<u>66</u>
GS-15	2	2
GS-14	6	6
Other GS	129	129
Total	137	137

CONTRACT MANAGEMENT		
	<u>65</u>	<u>66</u>
Excepted	1	1
GS-15	-	-
GS-14	6	6
Other GS	48	48
Total	55	55

TECHNICAL DIVISION		
	<u>65</u>	<u>66</u>
GS-16	1	1
GS-15	4	4
GS-14	25	25
Other GS	52	52
Total	82	82

LEGAL DIVISION		
	<u>65</u>	<u>66</u>
GS-15	2	2
GS-14	4	4
Other GS	4	4
Total	10	10

FINANCIAL MANAGEMENT DIVISION		
	<u>65</u>	<u>66</u>
GS-14	1	1
Other GS	23	23
Total	24	24

EDUCATIONAL PROGRAMS		
	<u>65</u>	<u>66</u>
GS-14	1	1
Other GS	3	3
Total	4	4

ADMINISTRATIVE SERVICES		
	<u>65</u>	<u>66</u>
Other GS	38	38
Total	38	38

PUBLIC INFORMATION		
	<u>65</u>	<u>66</u>
Other GS	6	6
Total	6	6

PERSONNEL DIVISION		
	<u>65</u>	<u>66</u>
Other GS	9	9
Total	9	9

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

WESTERN OPERATIONS OFFICE

MISSION AND CAPABILITIES:

The primary mission of the Western Operations Office is to provide technical, contractual, and administrative support to NASA field centers and NASA Headquarters for programs and projects located in Southern California and other areas west of Denver. The Western Operations Office functions as a field service in such areas as procurement, technical and contract administration, legal and patent reviews, and personnel, administrative support, and financial management activities in the area west of Denver.

Technical management support as assigned by field centers and NASA project managers includes the technical management and administration of research and development and facilities contracts; monitoring of related quality assurance requirements; quality assurance surveys of industrial plants and organizations; monitoring of advanced technology contracts; negotiation of contracts; procurement of pressurants and propellants for NASA and contractor requirements; and the operation of a contract administration and quality assurance organization for the Apollo and Saturn projects at the North American Aviation, Inc., plant at Downey, California.

The mission of the Western Operations Office also includes administrative support and services for the NASA Resident Office at the Jet Propulsion Laboratory. The Resident Office, physically located at the Jet Propulsion Laboratory in Pasadena, California, has principal contract administration responsibilities for the NASA contract with the California Institute of Technology which operates the Jet Propulsion Laboratory.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year...	376	406	406
Average Number of All Employees....	336	390	405
Administrative Operations.....	\$4,924,000	\$5,989,000	\$6,337,000

INSTALLATION DESCRIPTION:

The main Western Operations Office is located at 150 Pico Boulevard, Santa Monica, California. The Office occupies a group of leased buildings and no Government investment in buildings or acreage is involved at this location. In about two years, the main office will move to a new GSA Federal Office Building to be constructed in nearby West Los Angeles.

Over one-third of the Western Operations Office staff is located in Government-owned facilities at Downey, California, which are currently being utilized by the Space Information Systems Division of North American Aviation, Inc. The Government-owned portion of the North American Aviation Downey complex is located on 166 acres and the land and plant acquisition value is approximately \$44 million as of June 30, 1964. The responsibility for management of property and facilities was transferred from the Air Force to NASA on July 1, 1964. A few additional Western Operations personnel are assigned to other contractor locations within the Los Angeles area where full time project support is required. The map on page AO 4-15 shows the location of the Western Operations Office in the Los Angeles area and the Downey Operations Office is identified therein as NAA Autonetics - SID.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$3,378,000	\$4,155,000	\$4,378,000
12. Personnel Benefits.....	231,000	291,000	304,000
Total, personnel costs....	\$3,609,000	\$4,446,000	\$4,682,000
21. Travel and Transportation of Persons.....	243,000	296,000	303,000
22. Transportation of Things....	13,000	24,000	20,000
23. Rents, Communications and Utilities.....	315,000	448,000	469,000
24. Printing and Reproduction...	13,000	17,000	17,000
25. Other Services.....	456,000	567,000	672,000
Services of other agencies	173,000	50,000	38,000
26. Supplies and Materials.....	51,000	65,000	65,000
31. Equipment.....	51,000	76,000	71,000
32. Lands and Structures.....	-	-	-
42. Insurance Claims and Indemnities.....	-	-	-
Total.....	<u>\$4,924,000</u>	<u>\$5,989,000</u>	<u>\$6,337,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel by Program</u>			
<u>Manned Space Flight</u>			
Gemini.....	1	1	1
Apollo.....	146	149	149
Advanced Manned Missions.....	4	4	4

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Space Science and Applications</u>			
Lunar and planetary exploration.....	8	19	19
Communication satellites.....	6	5	5
Launch vehicle development.....	3	4	4
Launch vehicle procurement.....	4	4	4
Meteorological satellites.....	13	15	15
<u>Advanced Research and Technology</u>			
• Solar and chemical power.....	27	30	30
Chemical propulsion.....	5	5	5
Space vehicle systems.....	3	3	3
<u>Technology Utilization.....</u>	<u>2</u>	<u>2</u>	<u>2</u>
Sub-total, direct positions.....	<u>222</u>	<u>241</u>	<u>241</u>
<u>Support Personnel</u>			
Director and Staff.....	9	10	10
NASA-wide support.....	<u>144</u>	<u>150</u>	<u>150</u>
Sub-total, support positions.....	<u>153</u>	<u>160</u>	<u>160</u>
Total, permanent positions.....	375	401	401
<u>Other positions:</u>			
Positions under cooperative training agreements.....	-	-	-
Other temporary positions.....	<u>1</u>	<u>5</u>	<u>5</u>
Total, all positions.....	<u>376</u>	<u>406</u>	<u>406</u>
<u>Personnel Costs</u>			
	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Total Positions.....</u>	<u>376</u>	<u>406</u>	<u>406</u>
Permanent.....	375	401	401
Other.....	1	5	5

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Personnel Compensation:</u>			
Annual cost of permanent positions..	\$3,551,000	\$4,077,000	\$4,078,000
Pay above the stated annual rate....	31,000	16,000	15,000
Lapses (deduct).....	<u>-498,000</u>	<u>-231,000</u>	<u>-1,000</u>
Net cost of permanent positions.....	3,084,000	3,862,000	4,092,000
Other personnel compensation.....	<u>294,000</u>	<u>293,000</u>	<u>286,000</u>
<u>Total compensation.....</u>	<u>3,378,000</u>	<u>4,155,000</u>	<u>4,378,000</u>
NASA funded.....	3,378,000	4,155,000	4,378,000
Reimbursable.....	---	---	---
<u>Personnel benefits.....</u>	<u>231,000</u>	<u>291,000</u>	<u>304,000</u>
NASA funded.....	231,000	291,000	304,000
Reimbursable.....	---	---	---
<u>Total personnel costs.....</u>	<u>3,609,000</u>	<u>4,446,000</u>	<u>4,682,000</u>
NASA funded.....	3,609,000	4,446,000	4,682,000
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	336	390	405

Personnel Compensation and Benefits - \$4,682,000

Personnel costs in FY 1966 are estimated to be \$236,000 higher than in FY 1965, of which \$223,000 is for personnel compensation and \$13,000 is for personnel benefits. The higher estimate primarily reflects full year employment in FY 1966 for personnel hired during the last half of FY 1965.

Travel and Transportation of Persons - \$303,000

Employee travel requirements are estimated to increase \$7,000 in FY 1966 due to a larger professional staff on-board at the end of FY 1965. The total estimate includes \$256,000 for the travel of staff personnel. This amount is needed for program and administrative direction and coordination, for attendance at NASA technical meetings and working panels; and for costs of temporary assignments and transfers and travel to initial duty stations. The balance of \$47,000 covers expenses of local transportation and toll charges and the rental of passenger motor vehicles from the General Services Administration.

Transportation of Things - \$20,000

The FY 1966 estimate is projected \$4,000 below the FY 1965 requirements primarily for movement of household goods for new employees and for local drayage costs.

The estimate of \$20,000 consists of \$14,000 for movement of household and personal effects; \$4,000 for commercial shipments by land, water, and air; and \$2,000 for local drayage and parcel post.

Rents, Communications and Utilities - \$469,000

The estimate of \$469,000 for this category is \$21,000 higher than for FY 1965. The FY 1966 request includes \$190,000 for the commercial lease of real estate and the term rental of equipment. This is the same funding level as the projected FY 1965 requirement. These rental costs cover the lease of 45,120 square feet of building space for \$170,000 or an average annual cost of \$3.75 a square foot. The balance of the estimate, amounting to \$20,000, is needed for the rental of office and other types of equipment.

The cost of communications services is expected to increase \$21,000 in FY 1966. The increase includes additional funding of \$16,000 for the installation of more leased teletype circuits at the West Coast Communications Center required for effective communication with major project offices located in contractor plants. The remaining \$5,000 of the increase is required for local telephone and exchange services. The major categories of communications services requirements are the following:

	<u>FY 1966</u>
Leased lines.....	\$103,000
Long distance tolls.....	45,000
Local telephone and exchange.....	90,000
All other communications.....	<u>30,000</u>
 Total.....	 <u>\$268,000</u>

The balance of the estimate for FY 1966 is related to the \$11,000 required for utilities.

Printing and Reproduction - \$17,000

Funding of FY 1966 requirements for the printing and reproduction of technical and administrative reports, publications and forms is expected to remain at the FY 1965 level. Approximately 90 per cent of the estimate, or \$15,000, is for commercial printing of technical documents and related materials. The remaining \$2,000 will cover printing of administrative and educational materials by other Government agencies.

Other Services - \$672,000

The estimate for other services in FY 1966 reflects an increase of \$105,000 over FY 1965 requirements, of which \$50,000 is for supplementary technical support in evaluating advanced technological data required for accomplishment of mission operations, \$42,000 is for enlarging the capacity of the reliable electrical connections school to meet the increasing demand

of aerospace contractors for certified instructors to train their production employees for compliance with more stringent quality assurance requirements. The balance of the increase, amounting to \$13,000, will be used to finance the operation of the technical reference library on a full year basis and for various minor contractual services of a non-recurring nature.

The following table shows FY 1966 funding requirements by category of service:

ADP equipment operation.....	\$50,000
Custodial services.....	19,000
Advanced technology support.....	50,000
JPL administrative aircraft lease and operation.....	247,000
Technical reference library.....	65,000
Reliable electrical connections school.....	210,000
Miscellaneous minor services.....	<u>31,000</u>
Total.....	<u>\$672,000</u>

Services of Other Agencies - \$38,000

Reimbursable services provided by other Government agencies are estimated to decrease \$12,000 in FY 1966 to \$33,000 as a result of a projected reduction in the requirement for contract administration services by the NASA resident office at the Jet Propulsion Laboratory. An additional \$5,000 is required to support continuation of consulting engineering services to the resident office by the Army Corps of Engineers.

Supplies and Materials - \$65,000

The FY 1966 requirement for supplies and materials is expected to remain at the FY 1965 level. \$53,000 of the amount requested is for office use; the remaining \$12,000 will be used for procurement of expendable electrical, photographic, maintenance and operating supplies. Purchase of non-expendable items will be necessary only for inventory replacement.

Equipment - \$71,000

The amount of \$71,000 requested is to provide for the purchase of passenger-carrying vehicles, photographic and non-capitalized equipment, and replacement of unserviceable office equipment and furniture. The FY 1966 requirements for these items is \$5,000 less than in FY 1965.

Jet Propulsion Laboratory, Pasadena, California



ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1966 ESTIMATES

JET PROPULSION LABORATORY

The Jet Propulsion Laboratory is a contractor operated facility. Personnel and costs of operating this installation are funded under the Research and Development appropriation, except for the lease of administrative aircraft, the purchase of passenger carrying vehicles, and the FY 1965 ADP purchase program. These costs are included elsewhere in the "Administrative Operations" budget. The "Administrative Operations" type costs for JPL are shown in this volume for information purposes only and are not to be considered a part of the NASA Administrative Operations budget.

MISSION AND CAPABILITIES:

The Jet Propulsion Laboratory (JPL) is engaged in research and development activities associated with the exploration of space. It functions as a part of the California Institute of Technology (CIT) and is operated by the Institute under contractual arrangement for the National Aeronautics and Space Administration (NASA), using facilities primarily owned by the United States Government. The NASA Resident Office - JPL, which is situated at JPL has principal contract administration responsibilities for the contract. Like JPL, the Resident Office is institutionally responsible to the Associate Administrator for Space Science and Applications.

In consonance with the objectives of the National Aeronautics and Space Act, the purpose of the Laboratory is to advance the national interests in the exploration of space, and to increase mankind's knowledge of the constitution and the environment of space.

The primary emphasis of the Laboratory's effort is to carry out lunar, planetary, and deep space unmanned scientific missions. The Ranger and Surveyor programs are directed toward conducting unmanned investigations of the moon. The Mariner and Voyager projects are concerned with the planetary and deep space unmanned scientific missions. The Mariner IV spacecraft is expected to fly by Mars in July 1965. The objectives of the Voyager program, which is in the planning stage, will be to provide information on the existence of extra-terrestrial life on the planet Mars, as well as acquiring scientific data in the vicinity of the planets and on the interplanetary medium.

Other major functions in the JPL program include:

1. Tracking, data acquisition, data reduction and analysis as required by lunar and deep space flights.
2. Advanced spacecraft guidance and control systems.

3. Advanced solid propellant and liquid propellant spacecraft engines.

4. Integration of advanced propulsion systems into spacecraft.

SUMMARY OF RESOURCES REQUIREMENTS:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Number of Positions, end of year..	4,222	4,100	4,000
Average Number of All Employees...	4,131	4,233	4,050
Administrative Type Cost.....	\$61,626,000	\$62,646,000	\$58,735,000

INSTALLATION DESCRIPTION:

The Jet Propulsion Laboratory is located in Pasadena, California, approximately twenty miles from downtown Los Angeles. Subsidiary facilities are located at Goldstone, California; Edwards Air Force Base in Muroc, California; and at Table Mountain, California.

At Pasadena, the Laboratory occupies 145.9 acres. At Goldstone, facilities are located on 50 square miles of land occupied under permit from the Army. At Edwards Air Force Base, facilities are located on 600 acres of land occupied under permit from the Air Force. The Table Mountain facilities of the Laboratory are located on five acres of land occupied under permit from the Forest Service of the Department of Agriculture. The total capital investment as of June 30, 1964 was \$101,100,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	<u>1964</u>	<u>1965</u>	<u>1966</u>
11. Personnel Compensation.....	\$42,030,000	\$44,153,000	\$43,079,000
12. Personnel Benefits.....	<u>2,491,000</u>	<u>2,609,000</u>	<u>2,517,000</u>
Total, personnel costs....	\$44,521,000	\$46,762,000	\$45,596,000
21. Travel and Transportation of Persons.....	2,301,000	2,367,000	2,290,000
22. Transportation of Things....	311,000	371,000	363,000
23. Rents, Communications, and Utilities.....	7,856,000	6,733,000	4,323,000
24. Printing and Reproduction...	104,000	116,000	113,000
25. Other Services.....	2,541,000	2,062,000	1,913,000
26. Supplies and Materials.....	2,514,000	2,638,000	2,591,000
31. Equipment.....	1,064,000	1,120,000	1,071,000
32. Lands and Structures.....	414,000	477,000	475,000
41. Grants, Subsidies and Contributions.....	---	---	---
42. Insurance Claims and Indemnities.....	<u>---</u>	<u>---</u>	<u>---</u>
Total.....	<u>\$61,626,000</u>	<u>\$62,646,000</u>	<u>\$58,735,000</u>

JUSTIFICATION BY OBJECT CLASSIFICATION:

The requirements estimated for FY 1966 reflect a reduction of \$3,911,000. This reduction partially results from the planned decrease in the JPL manpower complement, which in FY 1966 will represent a decline of 183 man-years compared to FY 1965. Significant savings also result from decreased lease costs of automatic data processing equipment, reflecting the impact of the computer purchase program in FY 1965.

Personnel Distribution

	<u>1964</u>	<u>1965</u>	<u>1966</u>
<u>Direct Personnel</u>			
<u>Flight Projects</u>			
Ranger.....	303	83	-
Surveyor.....	184	500	500
Mariner.....	764	145	14
Voyager.....	-	360	564
<u>Deep Space Network</u>			
Deep space instrumentation facility.....	156	204	283
Space flight operations facility.....	-	72	-
Manned space flight.....	26	76	80
<u>Supporting Research and Technology</u>			
Space science and applications.....	151	268	268
Advanced research and technology.....	436	354	279
Tracking and data acquisition	100	102	102
Other	27	40	34
<u>Arms Control</u>	<u>6</u>	<u>6</u>	<u>6</u>
Sub-total, direct positions.....	2,153	2,210	2,130
<u>Support Personnel</u>			
Director and Staff.....	123	119	109
Technical divisions.....	382	366	360
Quality assurance and reliability.....	137	62	58
Personnel and technical division.....	425	395	395
Procurement.....	198	191	191
Financial management.....	129	128	128
Plant engineering.....	301	282	282

	<u>1964</u>	<u>1965</u>	<u>1966</u>
Material services.....	244	227	227
Fabrication services.....	<u>130</u>	<u>120</u>	<u>120</u>
Sub-total, support positions.....	<u>2,069</u>	<u>1,890</u>	<u>1,870</u>
Total, all positions.....	<u>4,222</u>	<u>4,100</u>	<u>4,000</u>