National Aeronautics and Space Administration

BUDGET ESTIMATES

FISCAL YEAR 1967

Volume IV

ADMINISTRATIVE OPERATIONS

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1967 ESTIMATES

ADMINISTRATIVE OPERATIONS

TABLE OF CONTENTS

VOLUME IV

	Page No.
General Statement	AO iii
Summary Tables	
Summary of obligations by installation	SUM 1
Number of positions by installation	SUM 2
Distribution of budget plan by object classification by installation	SUM 3
Computation of personnel costs by installation and fiscal year	SUM 4
Distribution of personnel positions by installation and fiscal year	SUM 5
Analysis of requirements for passenger-carrying motor vehicles	SUM 6
Installation Presentations	
Manned Space Flight Installations	
John F. Kennedy Space Center, NASA	AO 1-1
Manned Spacecraft Center	AO 1-16
Marshall Space Flight Center	AO 1-27
Space Science and Applications Installations	
Goddard Space Flight Center	AO 2-1
Pacific Launch Operations Office	AO 2-13
Wallops Station	AO 2-16

Advanced Research and Technology Installations

Ames Research Center..... AO 3-1
Electronics Research Center..... AO 3-11
Flight Research Center..... AO 3-21
Langley Research Center..... AO 3-31
Lewis Research Center..... AO 3-43
Space Nuclear Propulsion Office..... AO 3-56

Support Installations

NASA Headquarters..... AO 4-1
Western Operations Office..... AO 4-14

Special Analysis for Jet Propulsion Laboratory.... AO 5-1

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. These installations are institutionally administered by the Associate Administrator who has prime responsibility for the Research and Development 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 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, and the Electronics Research Center, the Flight Research Center, the Langley Research Center, the Lewis Research Center, and the Space Nuclear Propulsion Office. Headquarters reports directly to the Deputy Associate Administrator, and the Western Operations Office reports to the Assistant Administrator for Industry Affairs. Installation descriptions and funding requirements are grouped in this volume in accordance with the prime missions of the installations.

Manpower

NASA originally planned for a total of 34,100 civilian personnel positions in FY 1966. However, due to the successful acceleration in the manned space flight program, additional manpower was required to support this program. As a result, an additional 424 positions were assigned to the Manned Spacecraft Center and the Kennedy Space Center bringing the total end of year positions to 34,524. In FY 1967 an additional 450 positions are planned for the Electronics Research Center in accordance with the phased build up for that installation. Post-flight studies of the early Gemini flights showed a strong relationship between spacecraft hours in flight and manhours in flight, and requirements for supporting personnel for launch, mission operations, and tracking. As a result of these workload indicators, in addition to the 424 positions assigned in FY 1966, a further allocation of 365 positions for the Kennedy Space Center and the Goddard Space Flight Center to support the heavy emphasis on launching and tracking of manned space flight missions is planned. These increases are partially offset by a target reduction of 400 positions throughout the agency which will not be filled upon becoming vacant. A total of 34,939 positions is requested for FY 1967.

The number of positions requested and the grade level of the employees is a product of the Human Resources Study conducted by NASA over a six month period. This study included a detailed position-by-position study at all NASA installations with the intent of eliminating organizational entities or

positions not considered necessary for the assigned missions. The study verified that manpower was and is being used effectively and that every effort is being made to provide for new requirements by adjustments within the authorized manpower level. An important part of the study was the development of a computer-assisted technique for assignment of grade and salary levels throughout the agency. The historical study had indicated that the factors which had the greatest impact on grade and salary levels were: (1) promotion practices, (2) rate of separation, (3) level of accessions, and (4) statutory within grade pay increases. The computer program utilized these four forcing factors to evaluate sensitivity of policies relating to promotions, separations, and accessions and provided a method to make long range forecasts of the effect on average grade and salary of differing concepts of personnel management. The estimates for personnel compensation contained in the budget have been established through this technique. In addition to developing a technique for estimating grade and salary requirements, the Human Resources Study includes a follow-up procedure which continuously evaluates the progress of the manpower activity against the projection.

The following tabulations indicate the distribution of NASA personnel by program and the numbers of personnel by center:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Gemini	1,050	1,168	197
Apollo	9,369	9,528	10,356
Advanced missions	250	273	302
Sub-total, MSF	10,669	10,969	10,855
Space Science and Applications			
Physics and astronomy	1,357	1,330	1,295
Lunar and planetary exploration	342	376	387
Sustaining university program	72	71	71
Launch vehicle development	265	241	176
Launch vehicle procurement	317	351	352
Bioscience	260	267	269
Meteorological satellites	275	244	237
Communication and applications technology satellites	154	158	161
Sub-total, SSA	3,042	3,038	2,948

	1965	1966	1967
Advanced Research and Technology			
Basic research.....	1,258	1,284	1,286
Space vehicle systems.....	1,483	1,488	1,485
Electronics systems.....	1,068	1,264	1,629
Human factor systems.....	230	235	245
Space power and electric propulsion systems.....	931	807	800
Nuclear rockets.....	774	607	593
Chemical propulsion.....	505	660	680
Aeronautics.....	1,513	1,679	1,743
Sub-total, ART.....	7,762	8,024	8,461
Tracking and Data Acquisition....	780	831	953
Technology Utilization.....	47	45	45
Sub-total, direct positions..	22,300	22,907	23,262
Support Personnel			
Director and staff.....	1,092	1,096	1,092
Administration.....	4,872	4,940	4,941
Research and development support.	4,936	4,981	5,044
Sub-total, support positions...	10,900	11,017	11,077
Total, permanent positions.....	33,200	33,924	34,339
Total, other positions.....	1,100	600	600
Grand Total, all positions.....	34,300	34,524	34,939

Personnel Requirements

	1965	1966	1967
Manned Space Flight			
Kennedy Space Center.....	2,428	2,620	2,750
Manned Spacecraft Center.....	4,237	4,809	4,747
Marshall Space Flight Center...	7,510	7,317	7,221
Sub-total, MSF.....	14,175	14,746	14,718

	1965	1966	1967
Space Science and Applications			
Goddard Space Flight Center.....	3,704	3,577	3,759
Pacific Launch Operations Office	19	---	---
Wallops Station.....	518	518	518
Sub-total, SSA.....	4,241	4,095	4,277
Advanced Research and Technology			
Ames Research Center.....	2,210	2,220	2,191
Electronics Research Center.....	244	550	1,000
Flight Research Center.....	605	604	596
Langley Research Center.....	4,244	4,234	4,179
Lewis Research Center.....	4,815	4,810	4,747
Space Nuclear Propulsion Office.	117	117	115
Sub-total, ART.....	12,235	12,535	12,828
Supporting Activities			
Headquarters, NASA.....	2,163	2,162	2,135
Western Operations Office.....	386	386	381
Sub-total	2,549	2,548	2,516
Permanent positions.....	33,200	33,924	34,339
Other positions.....	1,100	600	600
Grand total, all positions.....	34,300	34,524	34,939

Funding

The FY 1966 NASA budget included a request for $609,400,000 for Administrative Operations. This was reduced by the Authorization Act to $591,048,850 and further reduced by the Appropriation Act to $584,000,000. A detailed analysis of requirements to be funded under Administrative Operations resulted in the conclusion that the estimate could be reduced by $5,892,000 to a total of $603,508,000. With the peak workload approaching, however, any amount below this level would make it impossible to conduct successfully the planned flight missions. In addition to this requirement, the recent Federal Employees Salary Act of 1965 created a new funding requirement of $8,312,000 for a total of $611,820,000 for the Administrative Operations appropriation. As a result, a total of $27 820,000 has been reprogrammed and transferred from the Research and Development appropriation to increase funding to $611,820,000.

The FY 1967 funding request for Administrative Operations is $663,900,000 an increase of $52,080,000. The major reason for the increase requested is related to the manned lunar landing program with the Cape Kennedy Merritt Island Launch Area approaching its full development and the Manned Spacecraft Center approaching its full operational capability, as well as the support of this program in other centers, particularly the Goddard Space Flight Center. The other major area of increase is related to the build up of the Electronics Research Center. The object classification description of resources requested is tabulated below:

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION

(Thousands of Dollars)

	1965	1966	1967
11. Personnel compensation.....	332,722	355,511	375,354
12. Personnel benefits.....	23,713	25,299	27,090
21. Travel and transportation of persons.....	20,427	20,841	21,279
22. Transportation of things.....	4,543	4,689	5,048
23. Rent, communications and utilities	46,424	49,795	56,417
24. Printing and reproduction.....	4,174	4,615	4,916
25. Other services.....	85,045	107,584	127,538
26. Supplies and materials.....	24,553	21,156	26,122
31. Equipment.....	86,370	16,998	14,696
32. Lands and structures.....	6,539	5,300	5,408
42. Insurance claims and indemnities...	27	32	32
Total.....	634,537 a/	611,820 b/	663,900

The analysis of changes by Object Classification FY 1966 to FY 1967 follows:

	1965	1966	1967	Change in FY 1967
Personnel Compensation and Benefits	$356,435	$380,810	$402,444	+$21,634

In FY 1967 the cost of personnel compensation and benefits will be $21.6 million greater than FY 1966. Of this amount $3.8 million is caused by the full year effect of the Federal Employees Salary Act of 1965, effective in October 1965. The most significant increase reflects the cost of providing for a net increase of 846 manyears for permanent personnel. Actual increases include 621 manyears for new FY 1967 positions at the Kennedy Space Center, the Electronics Research Center, and the Goddard Space Flight Center, and an increase of 425 manyears related to the new positions filled during FY 1966.

a/Includes $14,573,000 comparative transfer from Research and Development.
b/Includes $27,820,000 appropriation transter from Research and Development.

These increases of 1,046 manyears are partially offset by the saving of 200 manyears resulting from not filling 400 vacancies due to the 1965 retirement legislation. The cost of the net additional manyears is estimated at $9.8 million.

Reimbursement to the Department of Defense for military personnel detailed to NASA will increase by $1.1 million in FY 1967 over FY 1966. In FY 1966, 128 trained military personnel, who became available because of the phase-out of the Atlas and Titan I missile systems, were detailed to NASA for the support of Gemini and Apollo flight operations. In FY 1966 the Department of Defense paid the entire cost of these personnel. NASA will assume the funding responsibility for these personnel in FY 1967.

In addition to the increased costs resulting from the salary increase, additional manyears, and reimbursement for military personnel, there is an increase of $9.9 million resulting from the structural changes in the personnel complement. The total increase of $24.6 million is offset by a decrease of $.4 million in temporary employment and $2.6 million in overtime and holiday pay, for a net increase of $21.6 million. The net increase for personnel compensation and benefits consists of $19.8 million for compensation and $1.8 million for benefits.

	1965	1966	1967	Change in FY 1967
Travel and Transportation of Persons	$20,427	$20,841	$21,279	+$438

The estimate for travel and transportation of persons in FY 1967 represents an increase of $525 thousand for Electronics Research Center, Kennedy Space Center, and Manned Spacecraft Center offset by a reduction of $87 thousand in other centers. The increase of $45 thousand for the Electronics Research Center is related to the growth of the Center. The increases of $93 thousand at the Kennedy Space Center and $387 thousand at the Manned Spacecraft Center are directly related to the increased flight activity which includes the last third of the Gemini flights, the first manned Apollo spacecraft launching on the Saturn IB and the first Saturn V launch during this time period.

	1965	1966	1967	Change in FY 1967
Transportation of Things	$4,543	$4,689	$5,048	+$359

The majority of the FY 1967 increase of $359 thousand in this object class results from the expansion of personnel and facilities at the Merritt Island Launch Area and Launch Complex 39 at Cape Kennedy as the Apollo program moves into the flight stage. Other increases are related to additional facilities coming into use at the Goddard Space Flight Center and the phased build up at the Electronics Research Center.

	1965	1966	1967	Change in FY 1967
Rent, Communications and Utilities	$46,424	$49,795	$56,417	+$6,622

The major increases in FY 1967 requirements over FY 1966 include: increased space rental at the Electronics Research Center, increased rental of ADP equipment, increased communications, and increased utilities. In FY 1967 the Electronics Research Center will add 450 positions as part of the approved center build up plan. It is estimated that an additional 100,000 square feet of space will be rented at a cost of $544 thousand to accommodate these personnel.

The estimate for ADP rental cost in FY 1967 is $2.7 million greater than in FY 1966. The majority of the increase will be at the Goddard Space Flight Center where an overlapping of equipment will be required during the phase-out of second generation equipment and the installation of the super-speed complex. The Electronics Research Center will begin installation of ADP equipment. In FY 1967 the initial ADP system will be installed, and the cost will increase from $27 thousand in FY 1966 for EAM equipment to $543 thousand for ADP and EAM equipment in FY 1967. The Langley and Ames Research Centers require an increase in equipment rentals to supplement NASA owned systems as a prerequisite to solving the more complex problems presented by planned research programs. Other Centers' requirements reflect minor reductions as the full effects of FY 1965 and FY 1966 equipment purchases are realized.

There is a net increase in the manned space flight centers in FY 1967 of $.3 million. At the Marshall Space Flight Center third generation equipment will be installed to replace the present second generation equipment. In addition, the new equipment will change the method of operation at this Center by replacing several small systems separately located in each of the laboratories with a large central processor with remote inquiry stations. Because of this change in method of operation, NASA will initially lease this equipment. This will cause overlapping of lease costs in FY 1967 in the amount of $.7 million. Offsetting the increase at the Marshall Space Flight Center, the lease cost at the Manned Spacecraft Center will be $.4 million lower in FY 1967 which represents the first full year effect of the lease savings resulting from the FY 1965 equipment purchase program.

The increase in manned flight activity, and the effect of increased Federal Telecommunications Systems rates and lines for the full year, will result in about about $.6 million more communication costs.

In FY 1967 the number of facilities becoming operational will result in an increase of $2.7 million in utility costs. About one-half of this will be for the activation of the Merritt Island Launch Area and Launch Complex 39 at the Kennedy Space Center, NASA. The increase in costs at other centers is a result of the completion of facilities authorized in prior years.

799-990 O - 66 - 2

In summary, the increase of $6.6 million consists of $.5 million for rental of space, $2.7 million for ADP leases, $.6 million for communications, $2.7 million for utilities, and $.1 million for all other items in this category.

	1965	1966	1967	Change in FY 1967
Printing and Reproduction	$4,174	$4,615	$4,916	+$301

The majority of the increase in this object class is for Headquarters and for the Kennedy Space Center, NASA. The Headquarters increase of $150 thousand results from the growing volume of scientific and technical information being generated by the NASA research and development programs and the statutory requirement to make this information available to the scientific community. Another increase of $122 thousand is at the Kennedy Space Center, NASA, to provide the necessary support for the greater number of personnel manning the completed Merritt Island Launch Area and Launch Complex 39 facilities. There are minor increases also at the Electronics Research Center and the Goddard Space Flight Center related to increased activity at these centers.

	1965	1966	1967	Change in FY 1967
Other Services	$85,045	$107,584	$127,538	+$19,954

The increase in other services represents requirements resulting from program development and the completion of new construction begun in prior years. The largest increases are strictly related to the support of the planned flight schedules. Flight schedules are being met and the indications are that this will continue. As a result of the greater complexity of the missions, considerably more support is required. This is particularly true at the Kennedy Space Center, where the logistic support for all launch vehicle stage contractors will be provided through this account, and where the huge Merritt Island Launch Area and Launch Complex 39 will become fully operational. The completion of additional facilities at nearly all locations will require additional custodial and maintenance services, and the large scale procurement of ADP equipment in prior years will require increases in maintenance costs and programming effort.

The largest increase for other services is to support the expanded activity at the Kennedy Space Center. FY 1967 requirements reflect the full year effect of the FY 1966 base support services build up. During 1966 the majority of the Merritt Island Launch Area and Launch Complex 30 facilities will be completed and will become operational. Accordingly, as each facility is completed, it will be manned by NASA and contractor personnel. To provide base operational support, $5.7 million more will be required in FY 1967 than in FY 1966. In addition, administrative support for the expanded effort will require an increase of $2.8 million, for a total increase of

$8.5 million for contractual services outside the government.

As the NASA manned and unmanned flight activity increases at Cape Kennedy, NASA is assuming the funding responsibility for more facilities from the Air Force. Also, as the overall NASA activity increases, the amount of services provided by the Air Force on a reimbursable basis increases accordingly. This will result in an increase of $1.3 million in FY 1967.

The combination of the rise in Air Force reimbursements coupled with the increase in contractual services outside the government results in a total increase for other services at Kennedy Space Center, NASA of $9.8 million.

Another significant increase in FY 1967 over FY 1966 will be for the technical documentation and scientific and technical information programs. This expanded activity is occasioned by the advancement in the Apollo program from design and development effort to testing, qualification and flight. In addition, as other NASA flight and research programs achieve additional milestones, the necessity for documentation, classification and dissemination of the results obtained increases. It is estimated that the cost of this effort will require an additional $2.4 million in FY 1967.

The requirements for ADP programming, operations support, and maintenance are estimated to increase in FY 1967 by $2.7 million. The cost of maintaining NASA owned ADP equipment will be $.5 million greater than in FY 1966. This increase reflects the effects of the FY 1965 and FY 1966 purchase programs. The estimates for ADP programming and operations support are $2.2 million higher in FY 1967. The largest increases are in support of the Electronics Research Center and the increased complexity of the work conducted by the Goddard Space Flight Center Institute of Space Studies.

In FY 1967 the estimated cost of maintenance and custodial services will be $3.7 million higher than in FY 1966. The increased physical plant for which custodial services are required, coupled with the full year effect of the Service Contract Act of 1965 on NASA service contracts, will raise the cost in this area by $1.5 million. As the NASA capital investment grows larger and facilities become older, the cost of maintenance and repair increases accordingly. In FY 1967 it is estimated that the cost of maintaining the NASA plant, including equipment, will be $2.2 million greater than in FY 1966.

The balance of the increase over FY 1966 is reflected in minor changes in many categories of service. The largest items in this category are the increase in medical services at the Manned Spacecraft Center caused by greater astronaut activity, and an intensive study by Headquarters of the incentive contracting policy and procedure.

	1965	1966	1967	Change in FY 1967
Supplies and Materials	$24,553	$21,156	$26,122	+$4,966

In FY 1967 the requirement for supplies and materials to support the larger number of facilities which will become operational in FY 1966 and FY 1967, and the greater number of personnel, both civil service and contractor, will increase by $4.6 million as the Apollo program moves into the flight mission stage. The balance of the increase, $.4 million, is required to support the build up at the Electronics Research Center and for adjustments at other centers.

	1965	1966	1967	Change in FY 1967
Equipment	$86,370	$16,998	$14,696	-$2,302

The total cost of equipment required in FY 1967 is $2.3 million less than that needed in FY 1966. The reduction is directly attributable to the ADP equipment purchase program which has been reduced from $7.9 million in FY 1966 to $2.8 million in FY 1967. This reduction is partially offset by an increase of $2.1 million to provide equipment to support the build up required for manned flight support operations at the Kennedy Space Center, the Manned Spacecraft Center, and the Goddard Space Flight Center. The other $.7 million increase is required to offset the deferment of equipment purchases in recent years and to allow for modernization of laboratory equipment.

	1965	1966	1967	Change in FY 1967
Lands and Structures	$6,539	$5,300	$5,408	+$108

In FY 1967 the amount requested for lands and structures reflects a net increase in requirements of $108 thousand. The additional resources required to support the expansion of Apollo flight activity are estimated to be slightly in excess of $313 thousand, offset by a reduction at Ames Research Center of $205 thousand.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1967 ESTIMATES

ADMINISTRATIVE OPERATIONS

SUMMARY OF OBLIGATIONS BY INSTALLATION

	Fiscal Year 1965	Fiscal Year 1966	Fiscal Year 1967
MANNED SPACE FLIGHT			
John F. Kennedy Space Center, NASA	$52,416,000	$79,723,000	$98,108,000
Manned Spacecraft Center	91,036,000	87,550,000	98,212,000
Marshall Space Flight Center	137,787,000	128,260,000	131,934,000
SPACE SCIENCE AND APPLICATIONS			
Goddard Space Flight Center	92,570,000	64,040,000	71,687,000
Pacific Launch Operations Office	844,000	---	---
Wallops Station	10,931,000	9,446,000	10,166,000
ADVANCED RESEARCH AND TECHNOLOGY			
Ames Research Center	31,807,000	32,923,000	33,475,000
Electronics Research Center	3,201,000	6,233,000	15,143,000
Flight Research Center	10,523,000	9,335,000	9,641,000
Langley Research Center	58,998,000	63,006,000	62,587,000
Lewis Research Center	68,546,000	67,207,000	66,284,000
Space Nuclear Propulsion Office	1,669,000	1,824,000	1,847,000
SUPPORTING ACTIVITIES			
NASA Headquarters	51,516,000	56,286,000	58,667,000
Western Operations Office	22,693,000	5,987,000	6,149,000
TOTAL	$634,537,000	$611,820,000	$663,900,000

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1967 ESTIMATES

ADMINISTRATIVE OPERATIONS

NUMBER OF POSITIONS BY INSTALLATION

	Fiscal Year 1965	Fiscal Year 1966	Fiscal Year 1967
MANNED SPACE FLIGHT			
John F. Kennedy Space Center, NASA	2,491	2,666	2,796
Manned Spacecraft Center	4,431	4,928	4,866
Marshall Space Flight Center	7,754	7,486	7,390
SPACE SCIENCE AND APPLICATIONS			
Goddard Space Flight Center	3,782	3,625	3,307
Pacific Launch Operations Office	22	-0-	-0-
Wallops Station	555	530	530
ADVANCED RESEARCH AND TECHNOLOGY			
Ames Research Center	2,270	2,240	2,211
Electronics Research Center	250	550	1,000
Flight Research Center	669	618	610
Langley Research Center	4,374	4,304	4,249
Lewis Research Center	4,917	4,842	4,779
Space Nuclear Propulsion Office	117	117	115
SUPPORTING OPERATIONS			
NASA Headquarters	2,263	2,227	2,200
Western Operations Office	405	391	386
TOTAL	34,300	34,524	34,939

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1967 ESTIMATES

ADMINISTRATIVE OPERATIONS

DISTRIBUTION OF BUDGET PLAN BY OBJECT CLASSIFICATION BY INSTALLATION

(In dollars)

Object Classification	Total	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	Western Operations Office	Headquarters
FISCAL YEAR 1965															
Personnel compensation	332,722,000	20,107,000	46,076,000	79,345,000	37,512,000	213,000	4,437,000	21,027,000	1,362,000	6,105,000	39,355,000	46,439,000	1,318,000	4,115,000	25,311,000
Personnel benefits	23,713,000	1,355,000	3,154,000	5,528,000	2,671,000	15,000	305,000	1,549,000	100,000	441,000	2,880,000	3,373,000	94,000	289,000	1,959,000
Travel & transp of pers	20,427,000	2,441,000	4,630,000	3,722,000	2,553,000	38,000	166,000	643,000	118,000	221,000	1,430,000	1,469,000	199,000	247,000	2,550,000
Transportation of things	4,543,000	919,000	864,000	379,000	1,162,000	6,000	113,000	23,000	28,000	20,000	373,000	303,000	4,000	8,000	341,000
Rents, communications, and utilities	46,424,000	3,964,000	7,316,000	10,854,000	7,245,000	41,000	625,000	4,575,000	340,000	393,000	4,984,000	3,839,000	---	349,000	1,899,000
Printing and reproduction	4,174,000	216,000	614,000	1,025,000	398,000	6,000	32,000	27,000	13,000	23,000	175,000	50,000	---	15,000	1,580,000
Other services	74,310,000	14,970,000	11,427,000	18,610,000	5,092,000	42,000	1,001,000	1,011,000	316,000	1,467,000	2,699,000	3,862,000	37,000	522,000	12,654,000
Services of other agencies	10,735,000	3,163,000	743,000	2,542,000	399,000	164,000	77,000	137,000	464,000	37,000	63,000	139,000	17,000	12,000	2,778,000
Supplies and materials	24,553,000	3,534,000	4,282,000	5,820,000	1,927,000	91,000	1,450,000	1,296,000	64,000	422,000	2,681,000	2,435,000	---	51,000	500,000
Equipment	86,370,000	799,000	10,694,000	8,744,000	32,840,000	44,000	2,207,000	608,000	396,000	1,293,000	3,401,000	6,323,000	---	17,085,000	1,936,000
Lands and structures	6,539,000	938,000	1,235,000	1,212,000	771,000	184,000	518,000	311,000	---	101,000	957,000	312,000	---	---	---
Insurance claims and indemnities	27,000	10,000	1,000	6,000	---	---	---	---	---	---	---	2,000	---	---	8,000
Totals	634,537,000	52,416,000	91,036,000	137,787,000	92,570,000	844,000	10,931,000	31,807,000	3,201,000	10,523,000	58,998,000	68,546,000	1,669,000	22,693,000	51,516,000
FISCAL YEAR 1966															
Personnel compensation	355,511,000	28,546,000	49,917,000	80,206,000	38,455,000	---	4,692,000	21,935,000	3,389,000	6,312,000	41,036,000	47,993,000	1,460,000	4,289,000	27,281,000
Personnel benefits	25,299,000	1,930,000	3,368,000	5,558,000	2,737,000	---	333,000	1,584,000	262,000	453,000	2,993,000	3,499,000	106,000	309,000	2,167,000
Travel & transp of pers	20,841,000	2,080,000	4,874,000	3,769,000	2,636,000	---	185,000	676,000	302,000	222,000	1,503,000	1,470,000	200,000	282,000	2,642,000
Transportation of things	4,689,000	862,000	893,000	366,000	1,264,000	---	153,000	25,000	70,000	40,000	370,000	303,000	3,000	45,000	295,000
Rents, communications, and utilities	49,795,000	5,565,000	9,068,000	9,255,000	8,000,000	---	430,000	4,733,000	688,000	317,000	5,607,000	3,389,000	---	402,000	2,341,000
Printing and reproduction	4,615,000	339,000	700,000	1,038,000	240,000	---	35,000	27,000	25,000	20,000	201,000	50,000	---	15,000	1,925,000
Other services	94,231,000	28,315,000	13,199,000	19,106,000	7,102,000	---	1,390,000	1,537,000	610,000	911,000	2,807,000	3,654,000	38,000	514,000	15,048,000
Services of other agencies	13,353,000	6,761,000	612,000	2,632,000	188,000	---	53,000	140,000	258,000	4,000	63,000	139,000	17,000	14,000	2,472,000
Supplies and materials	21,156,000	3,550,000	2,918,000	4,322,000	1,928,000	---	1,250,000	1,148,000	229,000	475,000	2,700,000	2,028,000	---	53,000	555,000
Equipment	16,998,000	818,000	800,000	1,000,000	1,040,000	---	480,000	730,000	400,000	480,000	5,256,000	4,380,000	---	64,000	1,550,000
Lands and structures	5,300,000	947,000	1,200,000	1,000,000	450,000	---	445,000	388,000	---	100,000	470,000	300,000	---	----	---
Insurance claims and indemnities	32,000	10,000	1,000	8,000	---	---	---	---	---	1,000	---	2,000	---	---	10,000
Totals	611,820,000	79,723,000	87,550,000	128,260,000	64,040,000	---	9,446,000	32,923,000	6,233,000	9,335,000	63,006,000	67,207,000	1,824,000	5,987,000	56,286,000
FISCAL YEAR 1967															
Personnel compensation	375,354,000	30,777,000	54,866,000	80,271,000	41,563,000	---	4,865,000	22,572,000	9,012,000	6,510,000	41,999,000	49,064,000	1,483,000	4,426,000	27,946,000
Personnel benefits	27,090,000	2,068,000	3,824,000	5,660,000	2,974,000	---	345,000	1,629,000	687,000	481,000	3,043,000	3,581,000	108,000	317,000	2,373,000
Travel & transp of pers	21,279,000	2,173,000	5,261,000	3,724,000	2,633,000	---	185,000	670,000	347,000	220,000	1,489,000	1,455,000	198,000	282,000	2,642,000
Transportation of things	5,048,000	1,127,000	894,000	366,000	1,325,000	---	124,000	25,000	150,000	40,000	370,000	303,000	3,000	50,000	295,000
Rents, communications, and utilities	56,417,000	7,066,000	9,460,000	10,213,000	9,721,000	---	442,000	5,133,000	1,836,000	270,000	6,035,000	3,449,000	---	402,000	2,390,000
Printing and reproduction	4,916,000	461,000	700,000	1,038,000	250,000	---	35,000	27,000	44,000	20,000	201,000	50,000	---	15,000	2,075,000
Other services	112,317,000	36,756,000	16,804,000	20,429,000	8,360,000	---	1,729,000	1,706,000	1,990,000	989,000	3,319,000	3,656,000	38,000	517,000	16,024,000
Services of other agencies	15,221,000	8,146,000	615,000	2,628,000	170,000	---	65,000	150,000	359,000	4,000	63,000	139,000	17,000	58,000	2,807,000
Supplies and materials	26,122,000	6,594,000	3,350,000	5,397,000	1,929,000	---	1,451,000	1,100,000	412,000	506,000	2,720,000	2,055,000	---	53,000	555,000
Equipment	14,696,000	1,970,000	1,147,000	1,000,000	2,312,000	---	480,000	280,000	320,000	500,000	2,878,000	2,230,000	---	29,000	1,550,000
Land and structures	5,408,000	960,000	1,200,000	1,200,000	450,000	---	445,000	183,000	---	100,000	470,000	300,000	---	--	---
Insurance claims and indemnities	32,000	10,000	1,000	8,000	---	---	---	---	---	1,000	---	2,000	---	---	10,000
Totals	663,900,000	98,108,000	98,212,000	131,934,000	71,687,000	---	10,166,000	33,475,000	15,143,000	9,641,000	62,587,000	66,284,000	1,847,000	6,149,000	58,667,000

799-990 O - 66 (Pts. p. 2) No. 1

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1967 ESTIMATES

COMPUTATION OF PERSONNEL COSTS BY INSTALLATION AND FISCAL YEAR

(In thousands of dollars)

FISCAL YEAR 1965 ACTUAL	Total	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	Western Operations Office
Personnel Compensation:															
Permanent positions	$325,818	$24,069	$41,391	$73,635	$37,965	$204	$3,862	$21,093	$2,593	$5,689	$38,587	$45,017	$1,419	$26,308	$3,985
Pay above the stated annual rate	1,271	92	159	280	146	1	30	80	10	22	148	173	5	101	15
Lapses (deduct)	-16,030	-5,849	-187	-1,283	-2,100	-14	-112	-638	-1,301	-71	-876	-859	-115	-2,464	-170
Net cost of permanent positions	311,050	18,312	41,363	72,632	36,011	191	3,788	20,535	1,302	5,640	37,859	44,331	1,309	23,945	3,830
Other personnel compensation	22,218	1,795	4,713	6,714	2,046	22	649	492	60	465	1,496	2,108	9	1,366	285
Total personnel compensation	$333,268	$20,107	$46,076	$79,346	$38,057	$213	$4,437	$21,027	$1,362	$6,105	$39,355	$46,439	$1,318	$25,311	$4,115
Reimbursable	546	---	---	1	545	---	---	---	---	---	---	---	---	---	---
NASA funded	332,722	20,107	46,076	79,345	37,512	213	4,437	21,027	1,362	6,105	39,355	46,439	1,318	25,311	4,115
Total personnel benefits	$23,758	$1,355	$3,154	$5,528	$2,716	$15	$305	$1,549	$100	$441	$2,880	$3,373	$94	$1,959	$289
Reimbursable	45	---	---	---	45	---	---	---	---	---	---	---	---	---	---
NASA funded	23,713	1,355	3,154	5,528	2,671	15	305	1,549	100	441	2,880	3,373	94	1,959	289
Total personnel costs	$357,026	$21,462	$49,230	$84,874	$40,773	$228	$4,742	$22,576	$1,462	$6,546	$42,235	$49,812	$1,412	$27,270	$4,404
Reimbursable	591	---	---	1	590	---	---	---	---	---	---	---	---	---	---
NASA funded	356,435	21,462	49,230	84,873	40,183	228	4,742	22,576	1,462	6,546	42,235	49,812	1,412	27,270	4,404
FISCAL YEAR 1966 ESTIMATED															
Personnel Compensation:															
Permanent positions	$353,072	$27,808	$50,226	$76,173	$38,559	---	$4,211	$22,299	$5,919	$5,979	$40,491	$47,854	$1,510	$27,849	$4,193
Pay above the stated annual rate	1,355	107	193	293	148	---	16	84	23	23	156	184	5	107	16
Lapses (deduct)	-20,755	-1,909	-5,793	-2,129	-1,408	---	-106	-997	-2,678	-229	-1,148	-1,900	-64	-2,165	-228
Net cost of permanent positions	333,672	26,006	44,626	74,337	37,299	---	4,121	21,386	3,264	5,773	39,499	46,138	1,451	25,791	3,981
Other personnel compensation	22,471	2,540	5,291	5,869	1,788	---	571	549	125	539	1,537	1,855	9	1,490	308
Total personnel compensation	$356,143	$28,546	$49,917	$80,206	$39,087	---	$4,692	$21,935	$3,389	$6,312	$41,036	$47,993	$1,460	$27,281	$4,289
Reimbursable	632	---	---	---	632	---	---	---	---	---	---	---	---	---	---
NASA funded	355,511	28,546	49,917	80,206	38,455	---	4,692	21,935	3,389	6,312	41,036	47,993	1,460	27,281	4,289
Total personnel benefits	$25,346	$1,930	$3,368	$5,558	$2,784	---	$333	$1,584	$262	$453	$2,993	$3,499	$106	$2,167	$309
Reimbursable	47	---	---	---	47	---	---	---	---	---	---	---	---	---	---
NASA funded	25,299	1,930	3,368	5,558	2,737	---	333	1,584	262	453	2,993	3,499	106	2,167	309
Total personnel costs	$381,489	$30,476	$53,285	$85,764	$41,871	---	$5,025	$23,519	$3,651	$6,765	$44,029	$51,492	$1,566	$29,448	$4,598
Reimbursable	679	---	---	---	679	---	---	---	---	---	---	---	---	---	---
NASA funded	380,810	30,476	53,285	85,764	41,192	---	5,025	23,519	3,651	6,765	44,029	51,492	1,566	29,448	4,598
FISCAL YEAR 1967 ESTIMATED															
Personnel Compensation:															
Permanent positions	$364,599	$29,897	$50,790	$76,720	$41,163	---	$4,315	$22,435	$10,604	$6,009	$40,627	$48,371	$1,501	$27,945	$4,221
Pay above the stated annual rate	1,396	108	196	296	158	---	17	86	40	23	156	186	5	107	16
Lapses (deduct)	-10,644	-1,703	-453	-1,747	-1,100	---	-47	-519	-1,835	-24	-133	-1,399	-32	-1,538	-111
Net cost of permanent positions	355,351	28,302	50,533	75,269	40,221	---	4,285	22,002	8,809	6,008	40,650	47,158	1,474	26,514	4,126
Other personnel compensation	20,568	2,475	4,333	5,002	1,907	---	580	570	203	502	1,349	1,906	9	1,432	300
Total personnel compensation	$375,919	$30,777	$54,866	$80,271	$42,128	---	$4,865	$22,572	$9,012	$6,510	$41,999	$49,064	$1,483	$27,946	$4,426
Reimbursable	565	---	---	---	565	---	---	---	---	---	---	---	---	---	---
NASA funded	375,354	30,777	54,866	80,271	41,563	---	4,865	22,572	9,012	6,510	41,999	49,064	1,483	27,946	4,426
Total personnel benefits	$27,132	$2,068	$3,824	$5,660	$3,016	---	$345	$1,629	$687	$481	$3,043	$3,581	$108	$2,373	$317
Reimbursable	42	---	---	---	42	---	---	---	---	---	---	---	---	---	---
NASA funded	27,090	2,068	3,824	5,660	2,974	---	345	1,629	687	481	3,043	3,581	108	2,373	317
Total personnel costs	$403,051	$32,845	$58,690	$85,931	$45,144	---	$5,210	$24,201	$9,699	$6,991	$45,042	$52,645	$1,591	$30,319	$4,743
Reimbursable	607	---	---	---	607	---	---	---	---	---	---	---	---	---	---
NASA funded	402,444	32,845	58,690	85,931	44,537	---	5,210	24,201	9,699	6,991	45,042	52,645	1,591	30,319	4,743

799-990 O - 66 (Fols. p 2) No. 2

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1967 ESTIMATES

DISTRIBUTION OF PERSONNEL POSITIONS BY INSTALLATION AND FISCAL YEAR

FISCAL YEAR 1965 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	Western Operations Office
TOTAL EXCEPTED POSITIONS[a]	439	16	36	49	36	-	2	26	10	6	31	30	2	191	4
General Schedule Positions:															
GS-16	259	14	20	57	29	-	1	20	-	4	25	23	5	60	1
GS-15	1,756	87	211	409	209	1	4	105	27	15	135	146	18	376	13
GS-14	2,824	204	385	692	389	4	10	154	43	27	236	310	24	300	46
GS-13	4,020	340	639	990	566	1	23	205	34	51	327	582	26	178	58
GS-12	4,080	534	635	1,069	512	5	32	169	21	56	363	504	3	91	86
GS-11	3,653	324	600	861	501	3	40	165	10	70	486	461	3	86	43
GS-10	58	1	-	2	-	-	24	6	-	-	-	16	-	8	1
GS-9	2,449	206	381	359	391	-	49	165	14	41	445	308	-	81	9
GS-8	96	3	2	4	11	-	12	-	-	-	2	21	-	40	1
GS-7	1,552	135	304	300	165	-	36	94	13	21	181	138	1	160	4
GS-6	693	56	57	70	80	1	7	35	2	13	73	57	7	221	14
GS-5	1,776	160	263	361	219	1	41	124	14	19	178	139	13	183	61
GS-4	1,677	136	240	458	182	3	30	115	45	19	145	179	7	80	38
GS-3	1,141	95	166	316	124	-	22	55	11	9	112	143	6	75	7
GS-2	195	5	32	83	22	-	9	4	-	2	6	20	2	10	-
GS-1	28	-	25	1	-	-	-	-	-	-	-	-	-	2	-
TOTAL GENERAL SCHEDULE POSITIONS	26,957	2,300	3,960	5,932	3,490	19	340	1,416	234	347	2,714	3,047	115	1,951	382
TOTAL WAGE BOARD POSITIONS	6,504	112	241	1,429	268	-	176	768	-	252	1,499	1,738	-	21	-
TOTAL PERMANENT POSITIONS	33,200	2,428	4,237	7,510	3,704	19	518	2,210	244	605	4,244	4,815	117	2,163	386
OTHER TEMPORARY POSITIONS	1,100	63	194	244	103	3	12	60	6	64	130	102	-	100	19
GRAND TOTAL POSITIONS - FY 1965	34,300	2,491	4,431	7,754	3,807	22	530	2,270	250	669	4,374	4,917	117	2,263	405
FISCAL YEAR 1966 ESTIMATED															
TOTAL EXCEPTED POSITIONS[a]	439	17	36	49	35	-	2	26	10	6	31	30	2	191	4
General Schedule Positions:															
GS-16	293	16	29	61	30	-	1	20	10	3	25	26	6	65	1
GS-15	1,776	85	211	360	205	-	4	120	46	20	156	155	25	377	12
GS-14	2,879	213	404	761	376	-	10	139	73	23	215	301	17	300	47
GS-13	4,567	447	785	1,012	553	-	38	235	79	64	397	672	27	202	56
GS-12	4,370	602	788	1,020	507	-	36	212	44	58	379	513	3	114	94
GS-11	3,925	350	759	806	491	-	44	186	70	65	508	508	1	95	42
GS-10	51	1	-	2	-	-	13	6	-	-	-	21	-	8	-
GS-9	2,391	200	514	340	384	-	51	110	64	39	400	203	-	81	5
GS-8	92	3	2	3	11	-	5	-	-	-	2	23	-	42	1
GS-7	1,382	102	233	275	145	-	36	90	34	25	151	125	2	159	5
GS-6	707	61	60	59	74	-	17	35	4	14	73	64	6	224	16
GS-5	1,824	170	305	355	184	-	55	125	34	16	179	142	13	185	61
GS-4	1,569	132	248	393	169	-	47	108	59	20	139	149	7	59	39
GS-3	1,039	101	168	313	106	-	15	54	23	2	80	133	6	35	3
GS-2	237	15	49	107	39	-	-	1	-	4	-	15	2	5	-
GS-1	44	-	-	42	-	-	-	-	-	-	-	-	-	2	-
TOTAL GENERAL SCHEDULE POSITIONS	27,146	2,498	4,555	5,909	3,274	-	372	1,441	540	353	2,704	3,050	115	1,953	382
TOTAL WAGE BOARD POSITIONS	6,339	105	218	1,359	268	-	144	753	-	245	1,499	1,730	-	18	-
TOTAL PERMANENT POSITIONS	33,924	2,620	4,809	7,317	3,577	-	518	2,220	550	604	4,234	4,810	117	2,162	386
OTHER TEMPORARY POSITIONS	600	46	119	169	48	-	12	20	-	14	70	32	-	65	5
GRAND TOTAL POSITIONS - FY 1966	34,524	2,666	4,928	7,486	3,625	-	530	2,240	550	618	4,304	4,842	117	2,227	391
FISCAL YEAR 1967 ESTIMATED															
TOTAL EXCEPTED POSITIONS[a]	439	17	36	49	35	-	2	26	10	6	31	30	2	191	4
General Schedule Positions:															
GS-16	293	16	29	61	30	-	1	20	10	3	25	26	6	65	1
GS-15	1,932	88	219	373	227	-	6	130	77	21	180	175	25	399	12
GS-14	3,158	225	425	801	417	-	13	190	126	22	234	320	17	321	47
GS-13	4,607	472	785	1,000	577	-	38	230	137	63	397	646	26	182	54
GS-12	4,501	662	800	1,012	543	-	37	183	116	58	381	528	3	84	94
GS-11	3,939	367	754	771	537	-	44	180	97	71	506	497	-	75	40
GS-10	50	1	-	2	-	-	13	5	-	-	-	21	-	8	-
GS-9	2,300	226	474	315	389	-	45	95	88	36	393	153	-	81	5
GS-8	92	3	2	3	11	-	5	-	-	-	2	23	-	42	1
GS-7	1,378	109	179	265	154	-	36	90	97	16	144	122	2	159	5
GS-6	722	67	62	54	70	-	17	33	22	14	73	64	6	224	16
GS-5	1,780	123	310	365	191	-	55	118	61	16	139	144	13	185	60
GS-4	1,548	139	257	328	174	-	47	116	123	20	109	130	7	59	39
GS-3	1,087	105	159	351	108	-	15	53	36	2	77	135	8	35	3
GS-2	233	26	40	99	39	-	-	5	-	4	-	15	-	5	-
GS-1	28	-	-	26	-	-	-	-	-	-	-	-	-	2	-
TOTAL GENERAL SCHEDULE POSITIONS	27,648	2,629	4,495	5,826	3,467	-	372	1,448	990	346	2,660	2,999	113	1,926	377
TOTAL WAGE BOARD POSITIONS	6,252	104	216	1,346	257	-	144	717	-	244	1,488	1,718	-	18	-
TOTAL PERMANENT POSITIONS	34,339	2,750	4,747	7,221	3,759	-	518	2,191	1,000	596	4,179	4,747	115	2,135	381
OTHER TEMPORARY POSITIONS	600	46	119	169	48	-	12	20	-	14	70	32	-	65	5
GRAND TOTAL POSITIONS - FY 1967	34,939	2,796	4,866	7,390	3,807	-	530	2,211	1,000	610	4,249	4,779	115	2,200	386

a/Total Excepted Positions include two (2) Special Ungraded and twelve (12) P. L. 313 positions.

799-990 O - 66 (Fols. p. 2) No. 3

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1967 ESTIMATES

ADMINISTRATIVE OPERATIONS

ANALYSIS OF REQUIREMENTS FOR PASSENGER-CARRYING MOTOR VEHICLES

The appropriation language provides for the acquisition of 31 passenger motor vehicles, of which 15 are for augmentation to the fiscal year 1966 ending inventory and 16 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 of the planned acquisitions by class of vehicle in fiscal year 1967 is as follows:

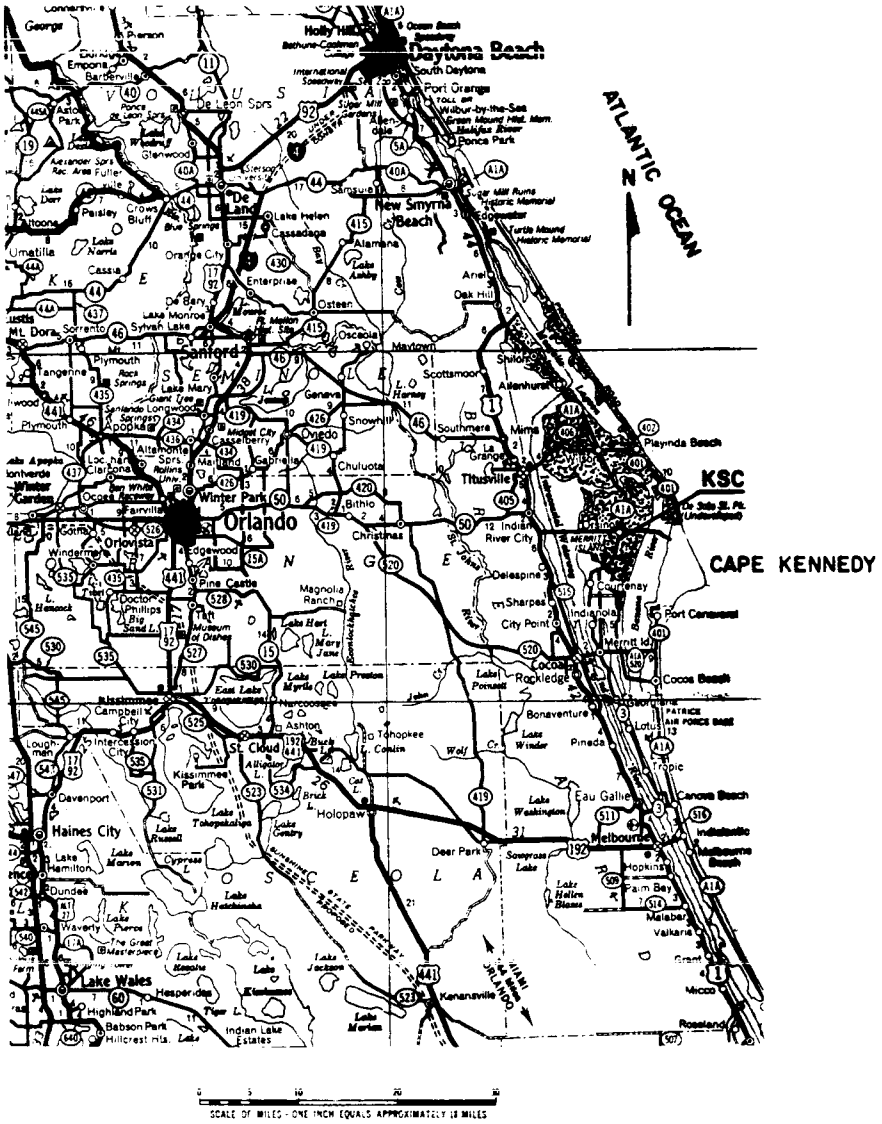
	Total	Medium Sedans	Other Sedans	Station Wagons	Ambulances	Buses
On hand July 1, 1966..	179	1	42	114	11	11
Acquisitions:						
a. By purchase.....	20	-	3	17	-	-
b. By transfer 1/....	11	-	2	4	2	3
Subtotal.....	31	-	5	21	2	3
(For replacement)...	(16)	(-)	(2)	(14)	(-)	(-)
(Disposed - not replaced).....	(-)	(-)	(-)	(-)	(-)	(-)
On hand June 30, 1967.	194	1	45	121	13	14

1/ During fiscal year 1966 the Research Range at Fort Churchill, Canada, was transferred from the Department of Defense to the National Aeronautics and Space Administration because NASA was the principle user of the facility. Involved in this transfer are 11 vehicles which will augment the NASA passenger-carrying motor vehicle fleet.

JOHN F. KENNEDY SPACE CENTER, NASA

FISCAL YEAR 1967 ESTIMATES

VICINITY MAP

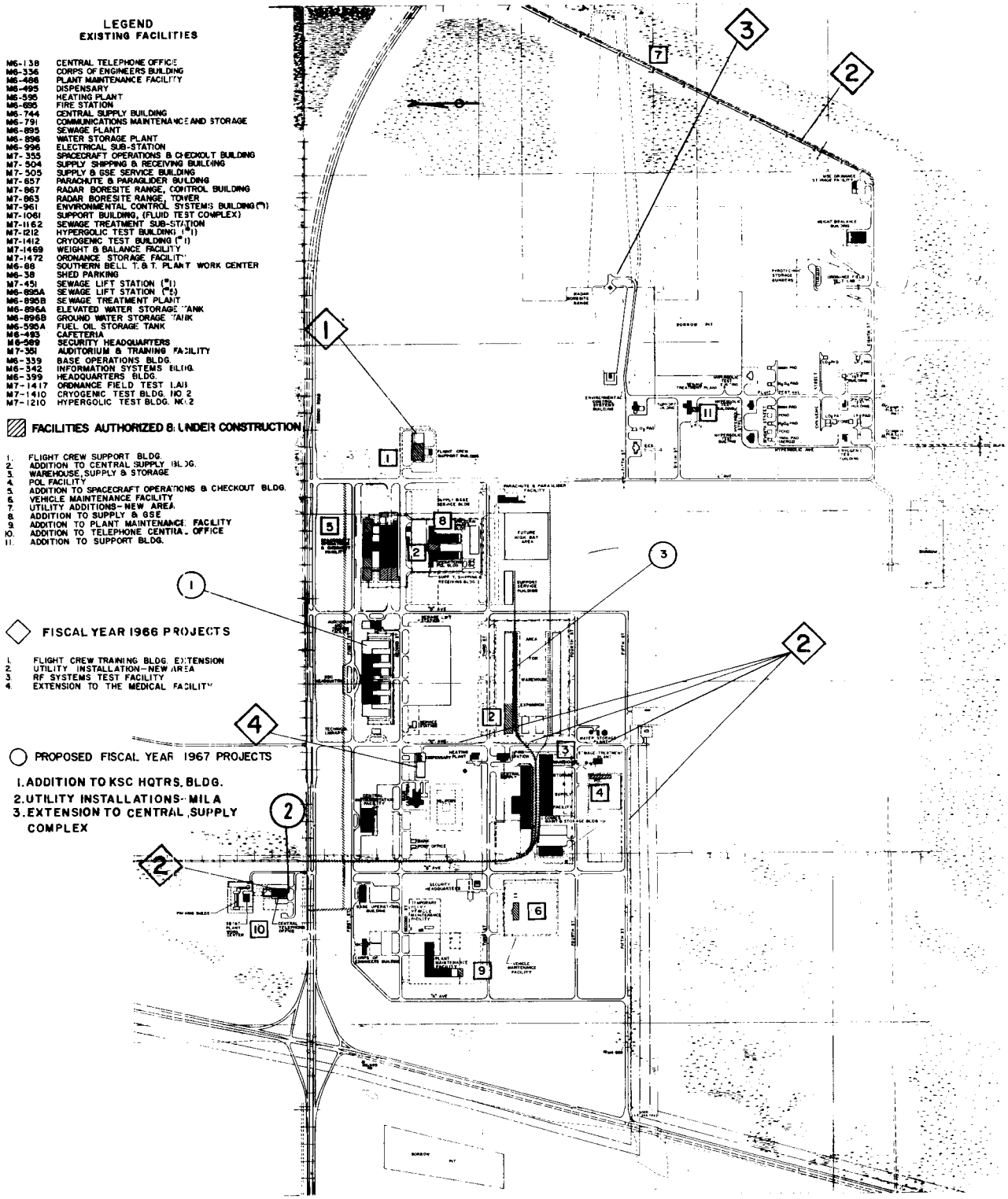


KEY PLAN

JOHN F. KENNEDY SPACE CENTER

FISCAL YEAR 1967 ESTIMATES

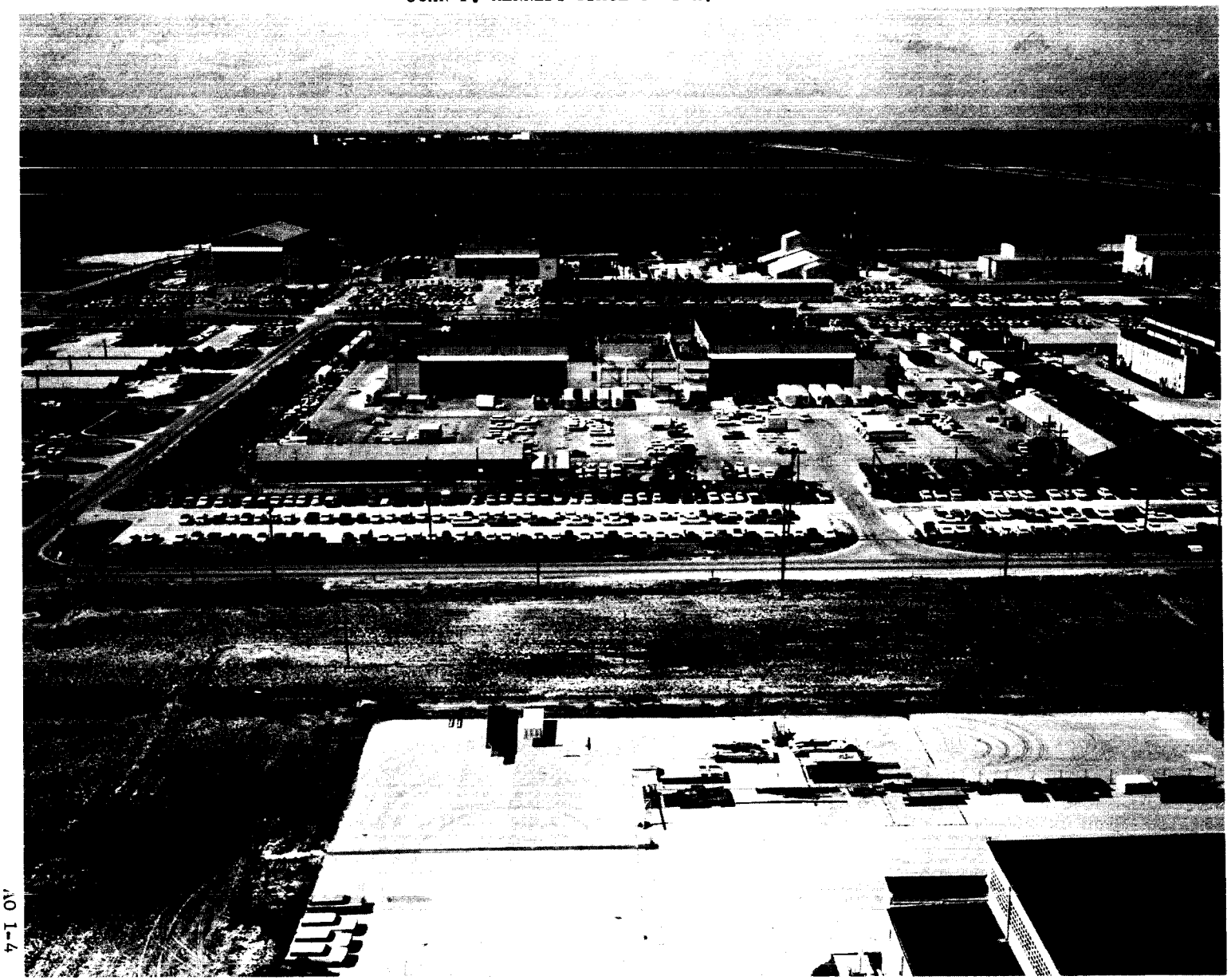
LOCATION PLAN



JOHN F. KENNEDY SPACE CENTER, NASA

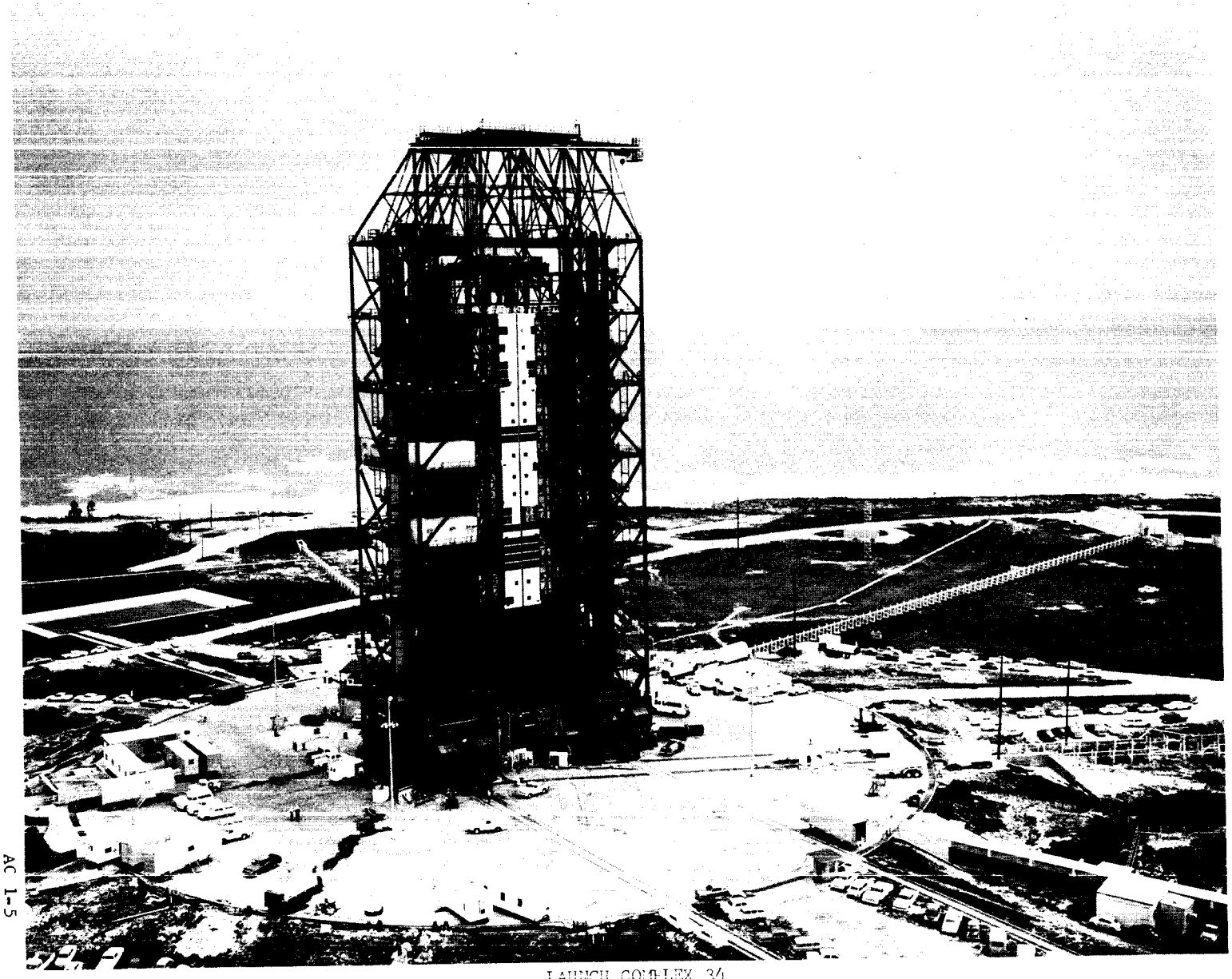
INDUSTRIAL AREA

JOHN F. KENNEDY SPACE CENTER, NASA

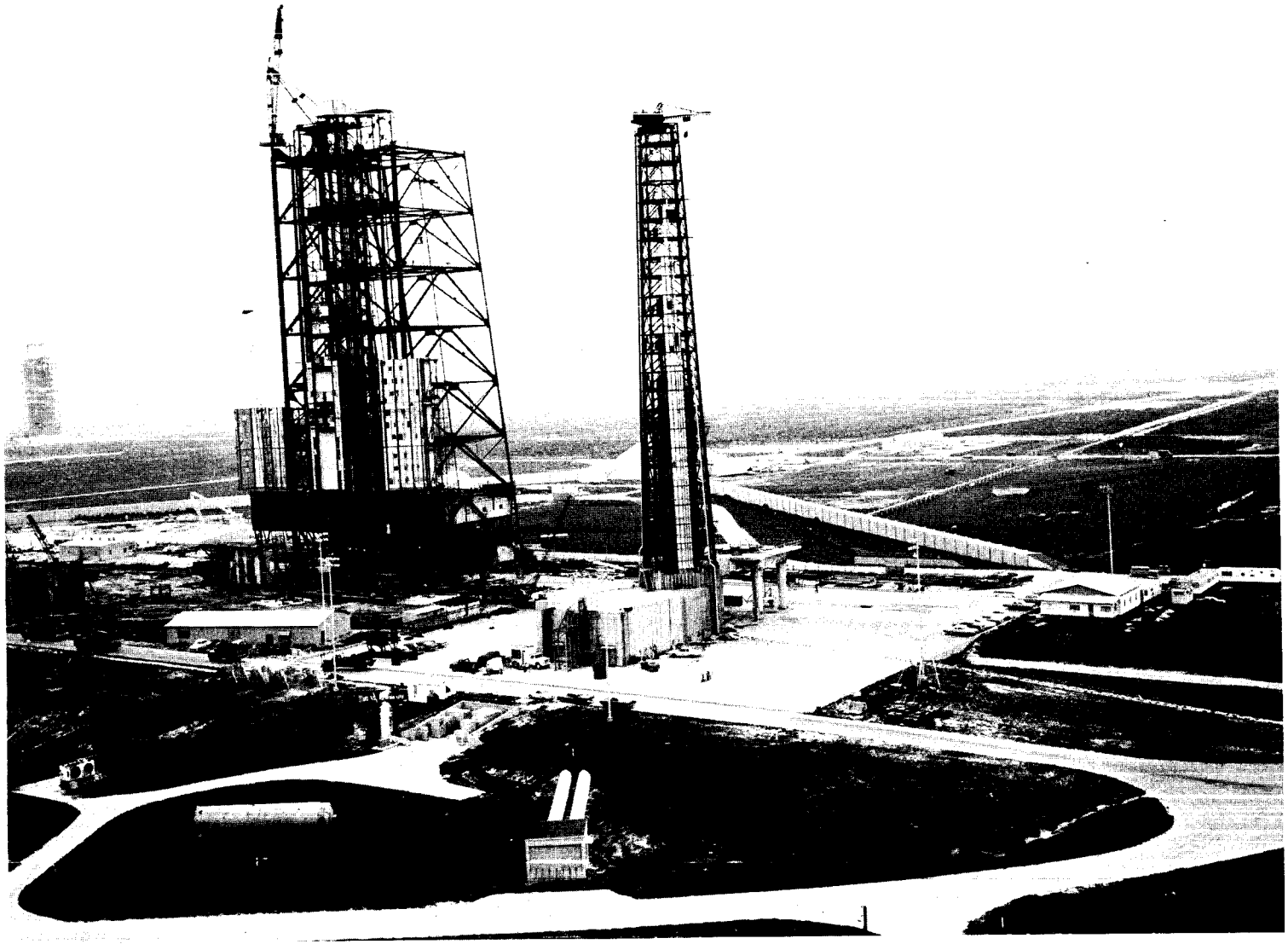


INDUSTRIAL AREA

JOHN F. KENNEDY SPACE CENTER, NASA



LAUNCH COMPLEX 34



LAUNCH COMPLEX 37

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

	66	67
Excepted	17	17
GS-16	16	16
GS-15	85	88
GS-14	213	225
All other GS	2,184	2,300
Wage Board	105	104
Total Permanent	2,620	2,750
Temporary	46	46
Total Positions	2,666	2,796

Note: Includes 34 Permanent Positions assigned to Daytona Beach Operations, not functionally part of Kennedy Space Center.

OFFICE OF THE DIRECTOR

	66	67
Excepted	2	2
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	6	6
Wage Board	-	-
Total Permanent	9	9

PUBLIC AFFAIRS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	22	22
Wage Board	-	-
Total Permanent	27	27

TECHNICAL STAFF

	66	67
Excepted	-	-
GS-16	1	1
GS-15	-	-
GS-14	1	1
All other GS	2	2
Wage Board	-	-
Total Permanent	4	4

DIRECTOR, PLANS, PROGRAMS AND RESOURCES

	66	67
Excepted	2	2
GS-16	1	1
GS-15	11	13
GS-14	21	23
All other GS	120	123
Wage Board	-	-
Total Permanent	155	162

DIRECTOR, QUALITY ASSURANCE & SAFETY

	66	67
Excepted	1	1
GS-16	-	-
GS-15	2	2
GS-14	4	4
All other GS	109	109
Wage Board	-	-
Total Permanent	116	116

DIRECTOR, LAUNCH OPERATIONS

	66	67
Excepted	2	2
GS-16	-	-
GS-15	6	6
GS-14	3	3
All other GS	8	16
Wage Board	-	-
Total Permanent	19	27

ASSISTANT DIRECTOR FOR ADMINISTRATION

	66	67
Excepted	2	2
GS-16	-	-
GS-15	6	6
GS-14	24	25
All other GS	435	439
Wage Board	6	6
Total Permanent	473	478

ASSISTANT DIRECTOR FOR ENGINEERING & DEVELOPMENT

	66	67
Excepted	2	2
GS-16	4	4
GS-15	10	10
GS-14	34	35
All other GS	265	269
Wage Board	-	-
Total Permanent	315	320

ASSISTANT DIRECTOR FOR SUPPORT OPERATIONS

	66	67
Excepted	1	1
GS-16	2	2
GS-15	7	7
GS-14	20	21
All other GS	327	332
Wage Board	61	60
Total Permanent	418	423

ASSISTANT DIRECTOR FOR LAUNCH VEHICLE OPERATIONS

	66	67
Excepted	2	2
GS-16	4	4
GS-15	14	14
GS-14	26	28
All other GS	270	296
Wage Board	38	38
Total Permanent	354	382

ASSISTANT DIRECTOR FOR INFORMATION SYSTEMS

	66	67
Excepted	1	1
GS-16	3	3
GS-15	8	8
GS-14	20	22
All other GS	201	211
Wage Board	-	-
Total Permanent	233	245

ASSISTANT DIRECTOR FOR SPACECRAFT OPERATIONS

	66	67
Excepted	1	1
GS-16	1	1
GS-15	10	11
GS-14	33	35
All other GS	292	349
Wage Board	-	-
Total Permanent	337	397

ASSISTANT DIRECTOR FOR UNMANNED LAUNCH OPERATIONS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	8	8
GS-14	20	21
All other GS	97	96
Wage Board	-	-
Total Permanent	126	126

799- D - 66 (Fols. p. AO 1-7)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

JOHN F. KENNEDY SPACE CENTER, NASA

STAFFING SUMMARY

	66	67
Excepted	17	17
GS-16	16	16
GS-15	85	88
GS-14	213	225
All other GS	2,184	2,300
Wage Board	105	104
Total Permanent	2,620	2,750
Temporary	46	46
Total Positions	2,666	2,796

Note: Includes 34 Permanent Positions assigned to Daytona Beach Operations, not functionally part of Kennedy Space Center.

OFFICE OF THE DIRECTOR

	66	67
Excepted	2	2
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	6	6
Wage Board	-	-
Total Permanent	9	9

PUBLIC AFFAIRS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	22	22
Wage Board	-	-
Total Permanent	27	27

TECHNICAL STAFF

	66	67
Excepted	-	-
GS-16	1	1
GS-15	-	-
GS-14	1	1
All other GS	2	2
Wage Board	-	-
Total Permanent	4	4

DIRECTOR PLANS, PROGRAMS AND RESOURCES

	66	67
Excepted	2	2
GS-16	1	1
GS-15	11	13
GS-14	21	23
All other GS	120	123
Wage Board	-	-
Total Permanent	155	162

DIRECTOR QUALITY ASSURANCE & SAFETY

	66	67
Excepted	1	1
GS-16	-	-
GS-15	2	2
GS-14	4	4
All other GS	109	109
Wage Board	-	-
Total Permanent	116	116

DIRECTOR LAUNCH OPERATIONS

	66	67
Excepted	2	2
GS-16	-	-
GS-15	6	6
GS-14	3	3
All other GS	8	16
Wage Board	-	-
Total Permanent	19	27

ASSISTANT DIRECTOR FOR ADMINISTRATION

	66	67
Excepted	2	2
GS-16	-	-
GS-15	6	6
GS-14	24	25
All other GS	435	439
Wage Board	6	6
Total Permanent	473	478

ASSISTANT DIRECTOR FOR ENGINEERING & DEVELOPMENT

	66	67
Excepted	2	2
GS-16	4	4
GS-15	10	10
GS-14	34	35
All other GS	265	269
Wage Board	-	-
Total Permanent	315	320

ASSISTANT DIRECTOR FOR SUPPORT OPERATIONS

	66	67
Excepted	1	1
GS-16	2	2
GS-15	7	7
GS-14	20	21
All other GS	327	332
Wage Board	61	60
Total Permanent	418	423

ASSISTANT DIRECTOR FOR LAUNCH VEHICLE OPERATIONS

	66	67
Excepted	2	2
GS-16	4	4
GS-15	14	14
GS-14	26	28
All other GS	270	296
Wage Board	38	38
Total Permanent	354	382

ASSISTANT DIRECTOR FOR INFORMATION SYSTEMS

	66	67
Excepted	1	1
GS-16	3	3
GS-15	8	8
GS-14	20	22
All other GS	201	211
Wage Board	-	-
Total Permanent	233	245

ASSISTANT DIRECTOR FOR SPACECRAFT OPERATIONS

	66	67
Excepted	1	1
GS-16	1	1
GS-15	10	11
GS-14	33	35
All other GS	292	349
Wage Board	-	-
Total Permanent	337	397

ASSISTANT DIRECTOR FOR UNMANNED LAUNCH OPERATIONS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	8	8
GS-14	20	21
All other GS	97	96
Wage Board	-	-
Total Permanent	126	126

789- D - 66 (Fols. p. AO 1-7)

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 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 under the Office of Manned Space Flight on July 1, 1962. The center's primary responsibilities are:

1. Planning and supervising the launch preparation, and launch of NASA space vehicle systems at the Kennedy Space Center and the National Eastern and Western Test Ranges.

2. Integrating NASA ground support equipment at the launch site for various space vehicle systems.

3. Designing and constructing NASA facilities at the Kennedy Space Center to meet users functional requirements.

4. Programming, integrating, and fulfilling user requirements for general purpose facilities such as office space, warehouses, maintenance buildings, utilities and roads.

5. Providing administrative services, visitor control services, community and industrial relations, legal, security, purchasing and contracting, transportation, and financial management for all NASA elements located in these areas.

6. Representing NASA in coordinating with the United States Air Force, matters pertaining to launch-phase tracking and data acquisition, and in making arrangements for tracking and data services and support required for operation of all NASA activities at the Eastern and Western Test Ranges.

In January 1963, under NASA-DOD agreement, NASA was designated the executive agent and manager of the Merritt Island Launch Area, which was redesignated by Executive Order, on November 29, 1963, as the John F. Kennedy Space Center.

The consolidation of NASA launch responsibility at the National Eastern and Western Test Ranges, on October 1, 1965, assigned to the Kennedy Space Center launch responsibility for the following unmanned missions: lunar and planetary missions for the Jet Propulsion Laboratory; scientific,

meteorological and communications satellites for Goddard Space Flight Center; Atlas-Centaur and Atlas and Thor-Agena flights for the Lewis Research Center; lunar missions for Langley Research Center; and interplanetary and scientific satellite missions for the Ames Research Center. Launch responsibility for these missions will be under cognizance of the new Unmanned Launch Operations Directorate of Kennedy Space Center.

The Center provides manpower with skills for testing, checkout, and launch of vehicles and associated spacecraft, research and development of launch instrumentation, and design of space vehicle checkout and launch facilities and equipment.

Included in the Center's assigned responsibilities are the launching of Saturn vehicles and Apollo payloads, support of Gemini and Apollo Spacecraft Operations, managing the Kennedy Space Center facilities, and acting as the focal point for all NASA activities at the National Eastern and Western Test Ranges. Responsibilities include design, construction, activation of Launch Complexes 34, 37, and 39, and operation and maintenance of these complexes and Launch Complexes 12, 16, 17, and 36, and related supporting industrial areas. The major activity during FY 1967 will be the pre-launch preparation, launch, and launch support of the Apollo Saturn IB, the Apollo Saturn V, and the Gemini programs, and launch operations at the National Eastern and Western Test Ranges for the Office of Space Science and Applications, and the Office of Advanced Research and Technology.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.	2,491	2,666	2,796
Average Number of All Employees...	1,935	2,531	2,653
Administrative Operations.....	$52,416,000	$79,723,000	$98,108,000

INSTALLATION DESCRIPTION:

The Kennedy Space Center is adjacent to the National Eastern Test Range launch area. It is situated approximately 50 miles East of Orlando, Florida, in northeast Brevard County.

The total land area occupied by the installation is approximately 87,777 acres. The land purchases for the center which began about four years ago were approximately 99 per cent complete as of June 1965. The total land to be procured is approximately 84,305 acres, and has been designated the John F. Kennedy Space Center. An additional 12 leased acres provide for radar tracking sites. One hundred and twenty-one acres of public domain land and 3,339 acres under easement for access causeway purposes make up the balance of the total land area.

In addition to the operation and maintenance of all facilities at the John F. Kennedy Space Center, the center is responsible for certain facilities within the National Eastern Test Range launch area. The capital investment as of June 30, 1965, was $561,762,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	1965	1966	1967
11. Personnel Compensation.....	$20,107,000	$28,546,000	$30,777,000
12. Personnel Benefits.....	1,355,000	1,930,000	2,068,000
Total, Personnel Costs...	$21,462,000	$30,476,000	$32,845,000
21. Travel and Transportation of Persons.....	2,441,000	2,080,000	2,173,000
22. Transportation of Things...	919,000	862,000	1,127,000
23. Rents, Communications, and Utilities.....	3,964,000	5,565,000	7,066,000
24. Printing and Reproduction..	216,000	339,000	461,000
25. Other Services.....	14,970,000	28,315,000	36,756,000
Services of other agencies.....	3,163,000	6,761,000	8,146,000
26. Supplies and Materials.....	3,534,000	3,550,000	6,594,000
31. Equipment.....	799,000	818,000	1,970,000
32. Land and Structures.....	938,000	947,000	960,000
42. Insurance Claims and Indemnities.....	10,000	10,000	10,000
Total.....	$52,416,000	$79,723,000	$98,108,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Gemini.....	208	219	---
Apollo.....	1,205	1,234	1,560
Space Science and Applications			
Launch vehicle procurement....	19	132	132
Sub-total, direct positions.	1,432	1,585	1,692

799-990 O - 66 - 4

	1965	1966	1967
Support personnel			
Director and Staff.....	20	20	20
Administration.....	532	546	551
Research and development support.	444	469	487
Sub-total, support positions...	996	1,035	1,058
Total, permanent positions.....	2,428	2,620	2,750
Other positions:			
Positions under cooperative training agreements.....	38	38	38
Other temporary positions.....	25	8	8
Total, all positions.....	2,491	2,666	2,796

Personnel requirements

FY 1967 planned employment level will be required for the remaining Gemini missions in addition to the Apollo Saturn IB and Saturn V activity, and unmanned missions at the Eastern and Western Test Ranges. This employment level was established after an extensive study of the operational requirements. The increased number of launches scheduled, and the requirement for essentially concurrent preparation and checkout of several launch vehicles and spacecraft will add significantly to the workload. Launch operations engineers who are engaged in the technical direction and monitoring of numerous contractors responsible for the assembly, testing and checkout of launch vehicles and spacecraft will be augmented as the tempo of activity mounts.

Personnel Costs

	1965	1966	1967
Total Positions.....	2,491	2,666	2,796
Permanent.....	2,428	2,620	2,750
Other.....	63	46	46
Personnel Compensation:			
Annual cost of permanent positions.....	$24,069,000	$27,808,000	$29,897,000
Pay above the stated annual rate.....	92,000	107,000	108,000
Lapses (deduct).....	-5,849,000	-1,909,000	-1,703,000

	1965	1966	1967
Net cost of permanent positions	$18,312,000	$26,006,000	$28,302,000
Other personnel compensation	1,795,000	2,540,000	2,475,000
Total compensation	20,107,000	28,546,000	30,777,000
NASA funded	20,107,000	28,546,000	30,777,000
Reimbursable	---	---	---
Personnel benefits	1,355,000	1,930,000	2,068,000
NASA funded	1,355,000	1,930,000	2,068,000
Reimbursable	---	---	---
Total personnel costs	21,462,000	30,476,000	32,845,000
NASA funded	21,462,000	30,476,000	32,845,000
Reimbursable	---	---	---
Average Number of All Employees (Man Years)	1,935	2,531	2,653

Personnel Costs - $32,845,000

The FY 1967 personnel costs increase $2,369,000 above FY 1966. Of this increase, $1,569,000 is due to 73 additional man years to be realized from the full year effect of FY 1966 additional positions, to the costs of within-grade advancements and other position adjustments, and to fund the cost of the Federal Employees Salary Act of 1965 for a full year. The balance of the increase, $800,000 is required to fund an additional 130 positions required for FY 1967.

Travel and Transportation of Persons - $2,173,000

The request for travel and transportation of persons for FY 1967 represents an increase of $93,000 from FY 1966. The bulk of this increase is attributable to the need for more frequent trips to contractor plants and test sites in connection with the development and delivery of ground support and launch equipment for the Apollo Saturn V program. A small increase is anticipated in the costs of local transportation to support the growth in stage and spacecraft contractor population.

Transportation of Things - $1,127,000

The increase of $265,000 for FY 1967 is required for freight costs associated with the movement of the increased supplies, materials, and equipment purchases in FY 1967, and for increased truck motor pool services to support the continued buildup of Apollo Saturn V Launch Complex 39 and the increased stage and support contractor activity.

Rents, Communications, and Utilities - $7,066,000

The increase of $1,501,000 for FY 1967 reflects a full-year operating cost for facilities activated during FY 1966, and also supports the continued buildup of requirements for electricity at Apollo-Saturn V Launch Complex 39.

Printing and Reproduction - $461,000

The increase of $122,000 for FY 1967 provides for additional contractual printing and reproduction necessary to support the increased level of activity to be provided as the number of stage and support contractors for the Apollo program operational levels buildup.

Other Services - $44,902,000

The increase of $9,826,000 for FY 1967 relates to the impact of the continued physical growth of the installation as facilities which have been under construction for approximately four years are completed, and as the buildup in launch activity increases.

The largest increment of the requirement, $5,655,000 provides for additional man years of effort for the base operations support. Base operations covers maintenance and operation of facilities, supply operations, fire protection, security, and industrial health.

Administrative support services make up the second largest increment of the increase - $2,605,000. This increase provides for additional man years of effort in computer operations, microfilming and documentation, technical writing, library services, and photographic services.

Reimbursement for Air Force support of NASA operations at the Eastern Test Range launch area will increase by $1,324,000 for FY 1967. This increase considers the full-year costs for maintenance of launch and related facilities such as, Launch Complex 13, Hangars E, J, and K transferred from the Air Force to NASA control in January 1966, and the first operational year of a new NASA-DOD agreement which provides that NASA will reimburse the Air Force for photographic and photo-laboratory services at the Eastern Test Range.

The balance of the "other services" increase provides for maintenance and repair costs for instruments and equipment, and maintenance and operation costs in support of unmanned operations at the Western Test Range.

Supplies and Materials - $6,594,000

The increase of $3,044,000 for FY 1967 provides for the issue of supplies and materials used in support of base operations. The supplies and materials consumption rates are consistent with the buildup in stage, spacecraft, and support contractor activity.

Equipment - $1,970,000

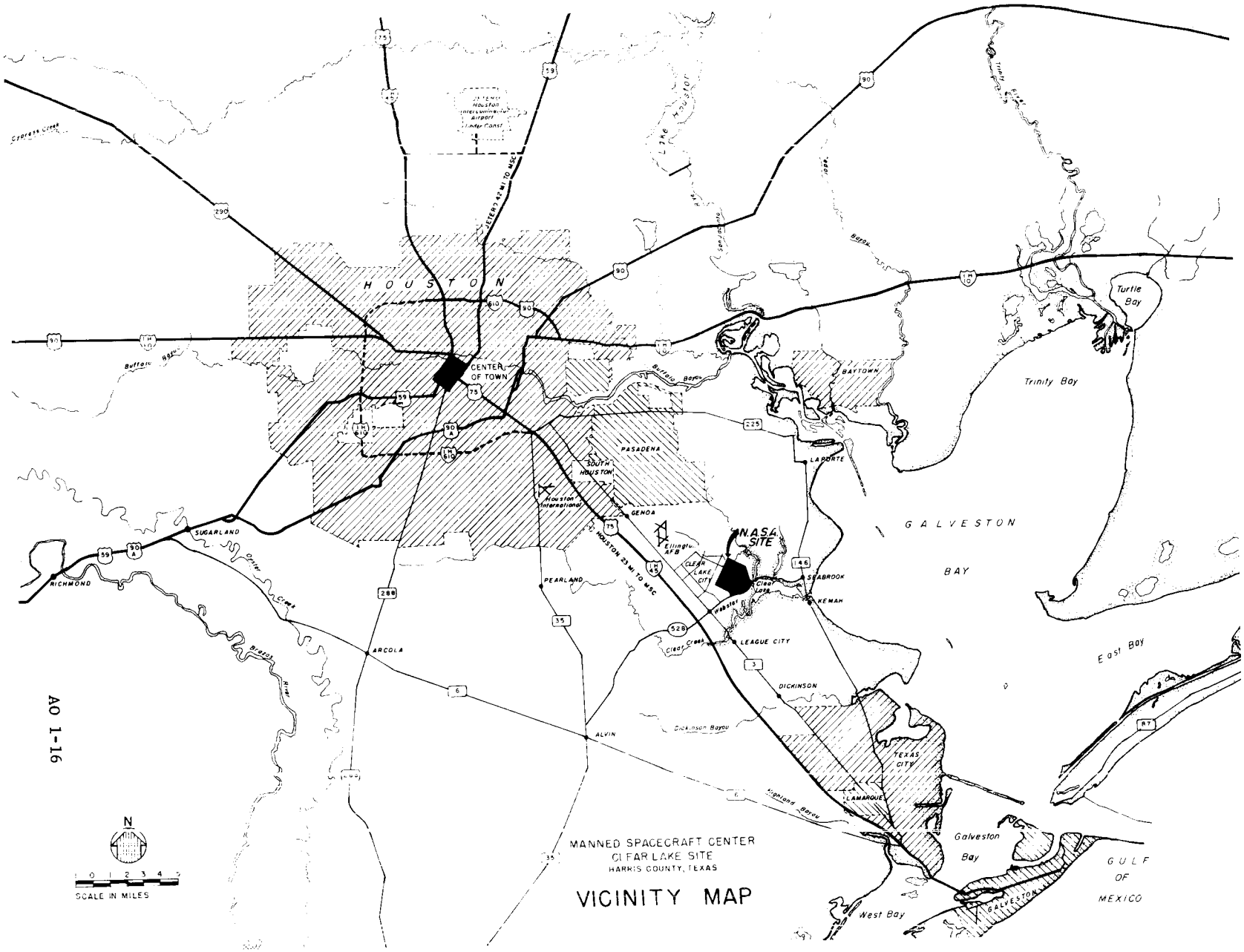
The increase of $1,152,000 for FY 1967 is attributable to equipment requirements in support of base operations such as, fire protection equipment, medical laboratories and emergency power equipment.

Land and Structures - $960,000

The estimate for FY 1967 supports requirements for minor construction projects and modifications at the Kennedy Space Center and at the Eastern and Western Test Ranges. There is a continuing requirement for modification and minor construction of technical and support facilities to permit their effective utilization under evolving improvements in checkout and launch techniques. Funds requested for this purpose will permit the center to react promptly to these requirements.

Insurance Claims and Indemnities - $10,000

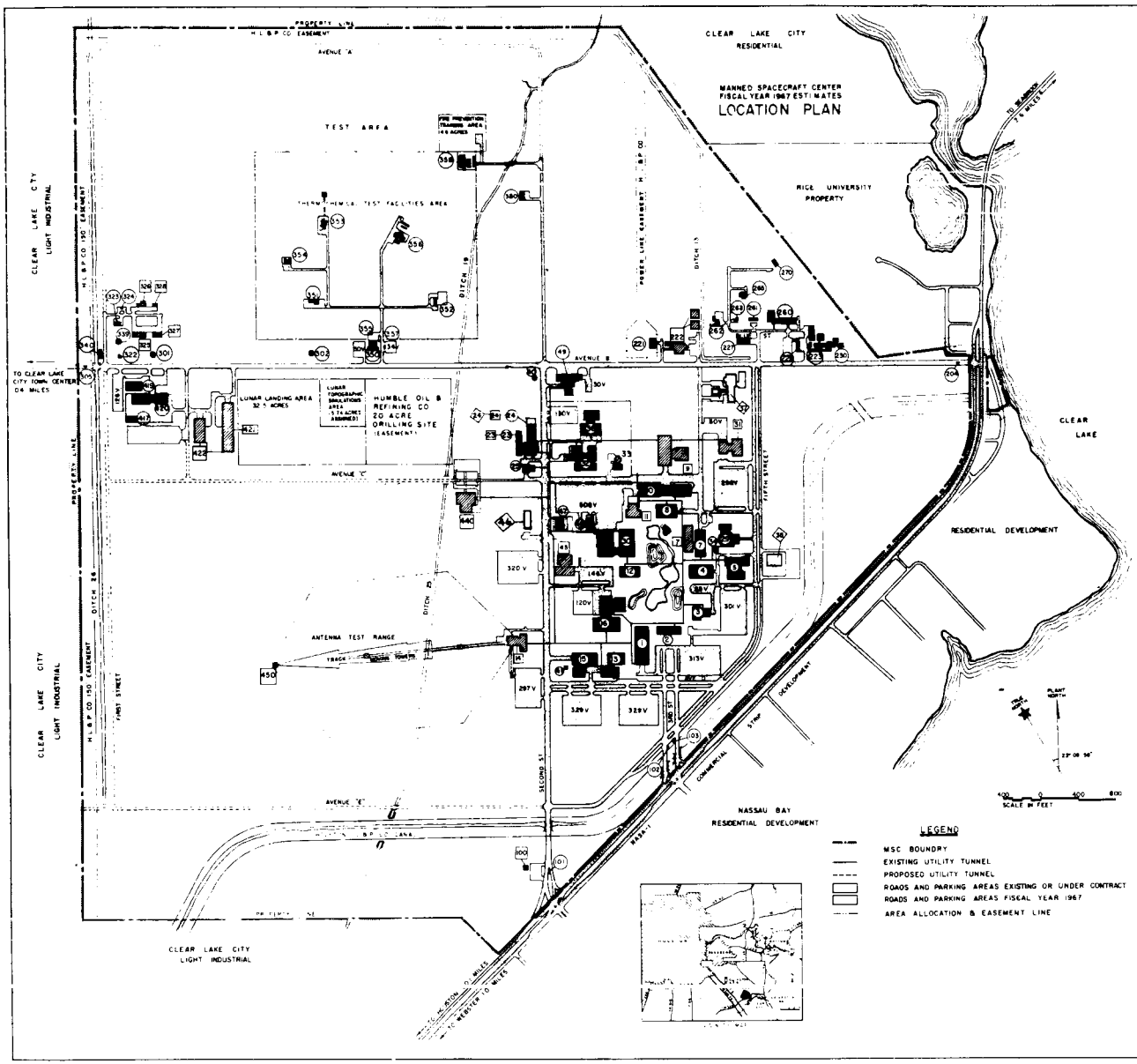
These funds provide payment for the settlement of claims against the United States Government for bodily injury, death, and property damage or loss.



MANNED SPACECRAFT CENTER
CLEAR LAKE SITE
HARRIS COUNTY, TEXAS

VICINITY MAP

AO 1-16



(1) EXISTING FACILITIES (FY-62,63,64)

1 AUDITORIUM FY 62
2 PROJECT MANAGEMENT FY 62
3 CENTRAL CAFETERIA FY 62
4 FLIGHT OPERATIONS OFFICE FY 62
5 MISSION SIMULATION AND TRAINING FACILITY FY 64
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 AND ELECTRONIC SYSTEMS LABORATORY FY 62
16 SPACECRAFT RESEARCH OFFICE AND LABORATORY FY 62,64
23 CENTRAL H&C COOLING TOWER FY 62,63,64
24 CENTRAL HEATING AND COOLING PLANT FY 62,63,64
25 FIRE STATION FY 62
29 FLIGHT ACCELERATION FACILITY FY 63
30 MISSION CONTROL CENTER FY 63

32 SPACE ENVIRONMENT SIMULATION LABORATORY FY 62,65
33 ULTRA HIGH VACUUM SPACE CHAMBER FACILITY FY 64
34 FLIGHT ACCELERATION MOTOR-GENERATOR BUILDING FY 63
36 E S C CONTRACTOR SUPPORT FACILITY FY 62
40 ELEVATED WATER TANK FY 62
41 GAS STORAGE FY 62

47 SOUTHWESTERN BELL TELEPHONE BUILDING NA
48 EMERGENCY POWER BUILDING (MCC-H) FY 63
49 VIBRATION AND ACOUSTIC TEST FACILITY FY 64

101 GUARDHOUSE FY 64
102 GUARDHOUSE FY 64
103 GUARDHOUSE FY 64
204 GUARDHOUSE FY 64
221 ELECTRICAL SUBSTATION FY 62

223 SEWAGE TREATMENT PLANT FY 62,64
226 FIELD CONSTRUCTION OFFICE FY 62,64
227 PRINTING AND REPRODUCTIONS FACILITY FY 65
230 CREW SYSTEMS BIOLOGICAL FACILITY FY 64
260 TRANSLATION AND DOCKING FACILITY FY 63
261 RADIOLOGICAL CALIBRATION AND WASTE STORAGE FACILITY FY 63,64
262 ARC JET, RADIANT HEATING AND ACOUSTIC TEST FACILITY FY 63
263 HEALTH PHYSICS LABORATORY FY 64
265 RADIATION AND FIELDS ACCELERATOR LABORATORY FY 65
270 SOLAR TELESCOPE FACILITY FY 65
301 WATER WELL NO. 1 FY 62
302 WATER WELL NO. 2 FY 62
305 GUARDHOUSE FY 64
322 WATER TREATMENT FY 62
323 FILTER CLEANING AND STORAGE FACILITY FY 65
324 CLASSIFIED WASTE DISINTEGRATOR FACILITY FY 65
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
380 HAZARDOUS MATERIAL STORAGE FACILITY FY 64
416 INTERIM OFFICE SUPPORT FACILITY FY 65
417 GARAGE FY 62
419 SUPPORT OFFICE FY 62
420 SUPPORT SHOP AND WAREHOUSE FY 62

(7) FACILITIES AUTHORIZED OR UNDER CONTRACT

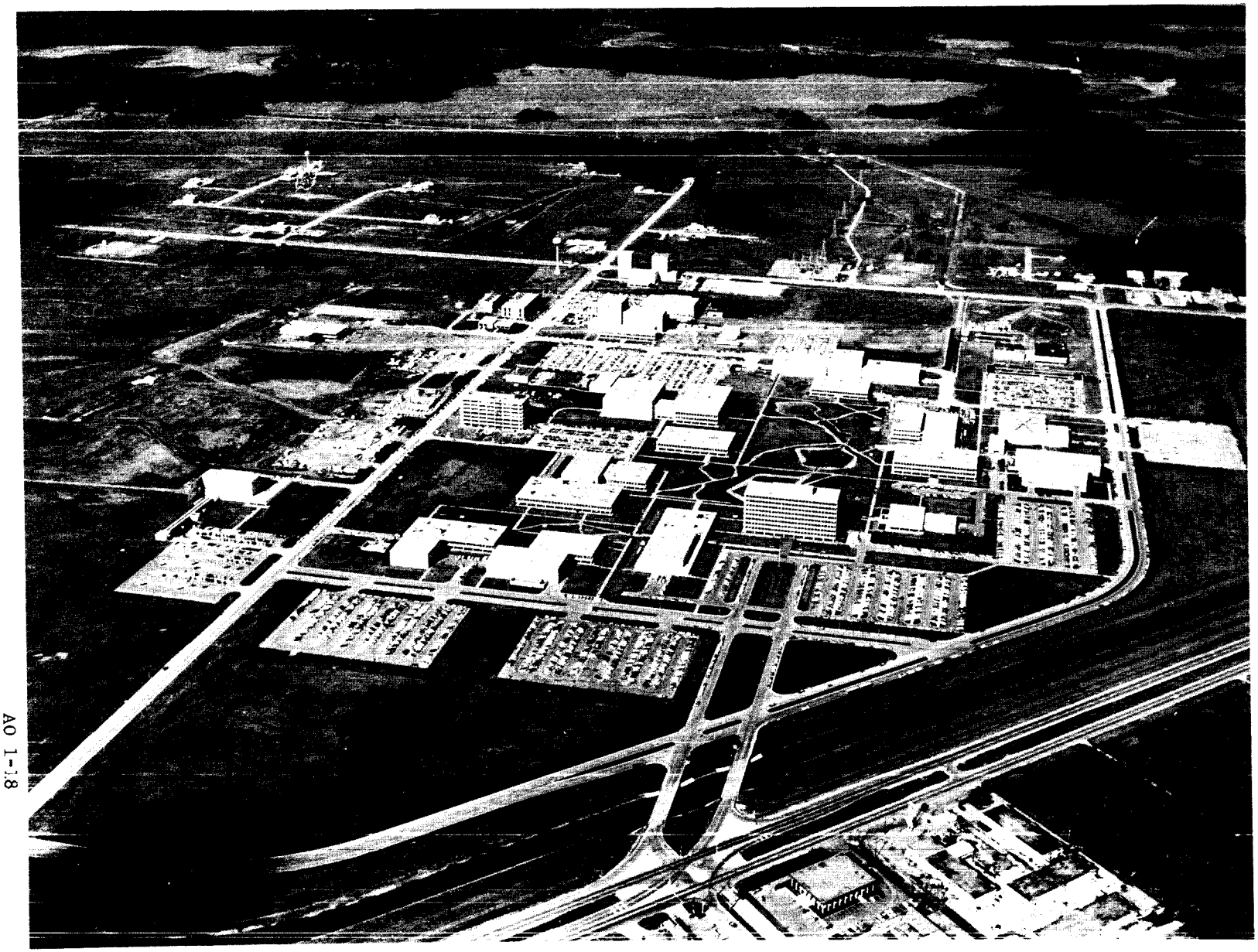
7 LIFE SYSTEMS LABORATORY FY 65
9 TECHNICAL SERVICE FACILITY FY 65
11 BRANCH CAFETERIA FY 65
14 ANECHOIC CHAMBER TEST FACILITY FY 65
23 CENTRAL H&C COOLING TOWER FY 65
24 CENTRAL HEATING & COOLING PLANT FY 65
31 LUNAR MISSION & SPACE EXPLORATION FACILITY FY 65
32 SPACE ENVIRONMENT SIMULATION LABORATORY FY 65,66
33 ULTRA HIGH VACUUM CHAMBER FACILITY FY 64
45 PROJECT ENGINEERING FACILITY FY 64
100 SECURITY CONTROL CENTER FY 65
222 ATMOS RE-ENTRY MAT & STRUCTURES EVAL FACILITY FY 64
325 MAINTENANCE SHOP FACILITY FY 65
326 ROADS AND GROUNDS EQUIPMENT MAINTENANCE FACILITY FY 65
327 M S C WORK CONTROL CENTER FY 65
328 ROADS AND GROUNDS MATERIAL STORAGE FACILITY FY 65
422 LOGISTIC SUPPORT WAREHOUSE FY 65
440 ELECTRONIC SYSTEMS COMPATABILITY
450 ANTENNA SERVICE BUILDING & TOWER FY 64
421 MISSION SUPPORT WAREHOUSE FY 66

(9) PROPOSED FISCAL YEAR 1967 PROJECTS

4&6 ENGINEERING BLDG
24 ADDITION TO CENTRAL HEATING & COOLING PLANT

35 FLIGHT CREW TRAINING FACILITY
37 LUNAR SAMPLE RECEIVING LABORATORY

MANNED SPACECRAFT CENTER



799-990 O - 66 (Fols. p. AO 1-18)

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

STAFFING SUMMARY

	66	67
Excepted	36	36
GS-16	29	29
GS-15	211	216
GS-14	404	425
All other GS	3,911	3,827
Wage Board	218	219
Total Permanent	4,809	4,742
Temporary	119	119
Total Positions	4,928	4,861

OFFICE OF THE DIRECTOR

	66	67
Excepted	4	4
GS-16	-	-
GS-15	-	-
GS-14	-	2
All other GS	12	10
Wage Board	-	-
Total Permanent	16	16

CHIEF OF CENTER MEDICAL PROGRAMS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total Permanent	5	5

AUDIT OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	15	15
Wage Board	-	-
Total Permanent	17	17

PUBLIC AFFAIRS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	4	4
All other GS	52	52
Wage Board	-	-
Total Permanent	57	57

FLIGHT SAFETY OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	10	10
GS-14	6	9
All other GS	43	40
Wage Board	-	-
Total Permanent	60	60

CENTER MEDICAL OFFICE

	66	67
Excepted	-	-
GS-16	1	1
GS-15	5	6
GS-14	2	6
All other GS	41	36
Wage Board	-	-
Total Permanent	49	49

LEGAL OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	[illegible]	[illegible]
GS-14	-	3
All other GS	[illegible]	[illegible]
Wage Board	-	-
Total Permanent	6	[illegible]

GEMINI PROGRAM OFFICE

	66	67
Excepted	4	4
GS-16	3	-
GS-15	25	1
GS-14	36	1
All other GS	122	44
Wage Board	-	-
Total Permanent	190	50

APOLLO SPACECRAFT PROGRAM OFFICE

	66	67
Excepted	4	4
GS-16	4	7
GS-15	[illegible]	56
GS-14	46	88
All other GS	[illegible]	264
Wage Board	-	-
Total Permanent	[illegible]	353

ASSISTANT DIRECTOR FOR FLIGHT OPERATIONS

	66	67
Excepted	1	1
GS-16	1	1
GS-15	4	5
GS-14	2	2
All other GS	20	19
Wage Board	-	-
Total Permanent	28	28

FLIGHT SUPPORT DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	8	11
All other GS	98	93
Wage Board	-	-
Total Permanent	107	107

MISSION PLANNING AND ANALYSIS DIVISION

	66	67
Excepted	-	-
GS-16	1	1
GS-15	6	7
GS-14	15	17
All other GS	290	283
Wage Board	-	-
Total Permanent	313	309

FLIGHT CONTROL DIVISION

	66	67
Excepted	1	-
GS-16	1	-
GS-15	2	4
GS-14	11	12
All other GS	273	266
Wage Board	-	-
Total Permanent	288	282

LANDING AND RECOVERY DIVISION

	66	67
Excepted	-	-
GS-16	1	-
GS-15	2	3
GS-14	5	9
All other GS	98	96
Wage Board	2	2
Total Permanent	108	108

ASSISTANT DIRECTOR FOR ADMINISTRATION

	66	67
Excepted	2	2
GS-16	1	1
GS-15	2	2
GS-14	1	2
All other GS	9	8
Wage Board	-	-
Total Permanent	15	15

RESOURCES MANAGEMENT DIVISION

	66	67
Excepted	1	1
GS-16	-	-
GS-15	2	-
GS-14	10	10
All other GS	158	153
Wage Board	-	-
Total Permanent	171	164

PROCUREMENT AND CONTRACTS DIVISION

	66	67
Excepted	1	1
GS-16	-	-
GS-15	5	6
GS-14	17	18
All other GS	224	216
Wage Board	1	1
Total Permanent	248	242

PERSONNEL DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	3	4
All other GS	91	85
Wage Board	-	-
Total Permanent	95	90

MANAGEMENT SERVICES DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	6	6
All other GS	89	83
Wage Board	-	-
Total Permanent	96	90

ADMINISTRATIVE SERVICES DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	179	174
Wage Board	62	60
Total Permanent	244	237

TECHNICAL SERVICES DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	1	2
All other GS	66	55
Wage Board	139	139
Total Permanent	208	198

ENGINEERING DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	6	6
GS-14	7	7
All other GS	95	89
Wage Board	-	-
Total Permanent	108	102

PHOTOGRAPHIC TECHNOLOGY LABORATORY

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	56	49
Wage Board	-	-
Total Permanent	57	50

MSC - WSTF OPERATIONS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	3	4
GS-14	7	7
All other GS	124	123
Wage Board	-	-
Total Permanent	135	135

ASSISTANT DIRECTOR FOR ENGINEERING AND DEVELOPMENT

	66	67
Excepted	2	2
GS-16	1	1
GS-15	5	5
GS-14	2	2
All other GS	11	11
Wage Board	-	-
Total Permanent	21	21

EXPERIMENTS PROGRAM OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	4	9
GS-14	10	17
All other GS	96	154
Wage Board	-	-
Total Permanent	111	181

OFFICE OF LONG RANGE PLANNING

	66	67
Excepted	1	1
GS-16	-	-
GS-15	4	1
GS-14	-	1
All other GS	3	3
Wage Board	-	-
Total Permanent	8	6

ADVANCED SPACECRAFT TECHNOLOGY DIVISION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	6	8
GS-14	26	24
All other GS	151	221
Wage Board	-	-
Total Permanent	186	256

INFORMATION SYSTEMS DIVISION

	66	67
Excepted	1	-
GS-16	1	-
GS-15	5	5
GS-14	[illegible]	46
All other GS	[illegible]	45
Wage Board	-	-
Total Permanent	92	92

CREW SYSTEMS DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	11	11
GS-14	20	21
All other GS	167	166
Wage Board	2	2
Total Permanent	202	202

COMPUTATION AND ANALYSIS DIVISION

	66	67
Excepted	1	1
GS-16	-	1
GS-15	5	5
GS-14	14	14
All other GS	128	128
Wage Board	-	-
Total Permanent	148	149

INSTRUMENTATION AND ELECTRONIC SYSTEMS DIVISION

	66	67
Excepted	1	1
GS-16	3	3
GS-15	6	8
GS-14	20	23
All other GS	148	143
Wage Board	1	1
Total Permanent	179	179

GUIDANCE AND CONTROL DIVISION

	66	67
Excepted	1	-
GS-16	1	-
GS-15	18	16
GS-14	22	[illegible]
All other GS	104	102
Wage Board	-	-
Total Permanent	146	141

PROPULSION AND POWER DIVISION

	66	67
Excepted	1	1
GS-16	-	-
GS-15	4	5
GS-14	10	13
All other GS	125	121
Wage Board	-	-
Total Permanent	140	140

STRUCTURES AND MECHANICS DIVISION

	66	67
Excepted	1	1
GS-16	1	-
GS-15	9	10
GS-14	24	14
All other GS	158	137
Wage Board	-	-
Total Permanent	193	163

ASSISTANT DIRECTOR FOR FLIGHT CREW OPERATIONS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	1
All other GS	1	1
Wage Board	-	-
Total Permanent	4	4

ASTRONAUT OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	2	3
GS-14	5	9
All other GS	43	38
Wage Board	-	-
Total Permanent	52	52

AIRCRAFT OPERATIONS OFFICE

	66	67
Excepted	[illegible]	[illegible]
GS-16	-	-
GS-15	-	4
GS-14	-	4
All other GS	20	15
Wage Board	8	8
Total Permanent	[illegible]	31

FLIGHT CREW SUPPORT DIVISION

	66	67
Excepted	4	4
GS-16	-	-
GS-15	-	-
GS-14	10	8
All other GS	[illegible]	[illegible]
Wage Board	2	2
Total Permanent	310	307

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

MANNED SPACECRAFT CENTER

MISSION AND CAPABILITIES:

The Manned Spacecraft Center was established in November 1961. The primary mission of the Center is the development of spacecraft, ground control and operational support systems, the development of operational techniques, in-flight life support systems, the selection and training of astronauts, and the preparation for, and conduct of, manned space flight missions. The Center is currently engaged in the following major space research and development programs:

Gemini - The objectives of the Gemini program 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 programs, and scientific investigations. In the Gemini program, the United States is developing and demonstrating the capability for long-duration flights of at least 14 days, rendezvous and docking, post-docking maneuvers, extra-vehicular activity, and controlled re-entry.

During FY 1967, effort will be devoted primarily to final hardware deliveries and operational activities required for manned rendezvous missions.

Apollo Spacecraft - The Apollo spacecraft activity relates to the design, development, fabrication and test of the man-rated Apollo spacecraft. The spacecraft is comprised of three modules: Command Module, Service Module, and the Lunar Excursion Module. This spacecraft is designed to transport three men into a lunar orbit, land two men on the lunar surface and return the crew to earth. The actual lunar orbital and lunar landing flights will be preceded by extended earth-orbital flights to:

1. Qualify the spacecraft,

2. Integrate the flight crews with the spacecraft and systems and enable them to checkout the systems and obtain in-flight training, experience, and proficiency,

3. Develop lunar rendezvous and docking procedures,

4. Practice the techniques of navigation and re-entry,

5. Further develop and implement mission ground control procedures and equipment, and

6. Conduct scientific experiments.

799-990 O - 66 - 5

The objective of the overall Apollo activity is the development of a space vehicle system and an operational capability that will result in a broad program of space exploration, including landing a flight crew on the moon and returning them to earth. The overall Apollo program consists of the following flight phases:

1. Unmanned sub-orbital and earth orbital flights,

2. Manned earth orbital, long-duration, and rendezvous flights, and

3. Manned lunar flights.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year..	4,431	4,928	4,866
Average Number of All Employees....	4,344	4,411	4,798
Administrative Operations.....	$91,036,000	$87,550,000	$98,212,000

INSTALLATION DESCRIPTION:

The Manned Spacecraft Center is located two miles east of the town of Webster, Texas. The site is approximately 20 miles southeast of downtown Houston, and 25 miles northwest of Galveston, Texas. A portion of the site borders on Clear Lake.

Total NASA-owned land consists of 1,600 acres. The capital investment of the Manned Spacecraft Center at the Clear Lake site as of June 30, 1965, was $241,093,481. The Center holds an additional 55,952 acres under use agreement at the White Sands Test Facility with a capital investment of $14,536,800. Combined capital investment of the Manned Spacecraft Center as of June 30, 1965, was $255,630,281.

ANALYSIS OF RESOUCRES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation....	$46,076,000	$49,917,000	$54,866,000
12.	Personnel Benefits.....	3,154,000	3,368,000	3,824,000
	Total, personnel costs..	$49,230,000	$53,285,000	$58,690,000
21.	Travel and Transportation of Persons.....	4,630,000	4,874,000	5,261,000
22.	Transportation of Things..	864,000	893,000	884,000
23.	Rent, Communications, and Utilities.....	7,316,000	9,068,000	9,460,000
24.	Printing and Reproduction.	614,000	700,000	700,000

	1965	1966	1967
25. Other Services.....	11,427,000	13,199,000	16,804,000
Services of other agencies.....	743,000	612,000	615,000
26. Supplies and Materials.....	4,282,000	2,918,000	3,350,000
31. Equipment.....	10,694,000	800,000	1,147,000
32. Lands and Structures.....	1,235,000	1,200,000	1,300,000
42. Insurance Claims and Indemnities.....	1,000	1,000	1,000
Total.....	$91,036,000	$87,550,000	$98,212,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Gemini.....	735	872	154
Apollo.....	2,179	2,552	3,229
Advanced missions.....	68	68	68
Space Science and Applications			
Physics and astronomy.....	6	6	3
Lunar and planetary.....	2	2	1
Launch vehicle development.....	2	2	0
Bioscience.....	1	0	1
Meteorological satellites.....	0	1	1
Advanced Research and Technology			
Space vehicle systems.....	0	0	1
Electronics systems.....	2	2	2
Human factor systems.....	0	0	1
Technology Utilization	5	5	5
Sub-total, direct positions....	3,000	3,510	3,466
Support Personnel			
Director and Staff.....	113	113	113
Administration.....	668	713	695
Research and Development support.	456	473	473

	1965	1966	1967
Sub-total, support positions...	1,237	1,299	1,281
Total, permanent positions.....	4,237	4,809	4,747
Other Positions:			
Positions under cooperative training agreements.....	119	119	119
Other temporary positions.....	75	-	-
Total, all positions.....	4,431	4,928	4,866

Personnel requirements

The Manned Spacecraft Center personnel requirements are in direct support of its primary mission to develop spacecraft and conduct operational missions for manned space flight programs. The activation of the mission control center, the support of Gemini manned flights and Apollo development and manned flights, and flight controller manning for the global tracking stations required an increase in personnel for fiscal year 1966.

As the Gemini program nears completion, personnel will be phased into the Apollo program effort.

Apollo activities managed by the Manned Spacecraft Center will reach their peak during fiscal years 1967 and 1968. Major emphasis will be placed on spacecraft ground and flight qualification testing, culminating in the first manned Apollo mission and the first flight of a lunar-mission-configured spacecraft in calendar year 1967.

Personnel Costs

	1965	1966	1967
Total Positions.....	4,431	4,928	4,866
Permanent.....	4,237	4,809	4,747
Other.....	194	119	119
Personnel Compensation:			
Annual cost of permanent positions.....	$41,391,000	$50,226,000	$50,790,000
Pay above the stated annual rate	159,000	193,000	196,000
Lapses (deduct).....	-187,000	-5,793,000	-453,000
Net cost of permanent postions..	$41,363,000	$44,626,000	$50,533,000
Other personnel compensation....	4,713,000	5,291,000	4,333,000
Total compensation.....	$46,076,000	$49,917,000	$54,866,000
NASA funded.....	46,076,000	49,917,000	54,866,000
Reimbursable.....	---	---	---

	1965	1966	1967
Personnel benefits.....	$3,154,000	$3,368,000	$3,824,000
NASA funded.....	3,154,000	3,368,000	3,824,000
Reimbursable.....	---	---	---
Total Personnel costs.....	$49,230,000	$53,285,000	$58,690,000
NASA funded.....	49,230,000	53,285,000	58,690,000
Reimbursable.....	---	---	---
Average Number of All Employees (Manyears).....	4,344	4,411	4,798

Personnel Costs - $58,690,000

Fiscal year 1967 personnel costs increase $5,405,000 above FY 1966. Because a large number of employees will be recruited in late FY 1966, 387 additional manyears must be financed in FY 1967. The increase also includes a full year's funding of the Federal Employees Salary Act of 1965 which was effective October, 1965.

Travel and Transportation of Persons - $5,261,000

The FY 1967 requirement is $387,000 above FY 1966. Additional funds are needed to support the increased flight activity in FY 1967. During that fiscal year, a combination of Gemini and Apollo flights will place a heavy demand on the staff that support launch, flight, and recovery activities. The tempo of Apollo tests will be stepped up as the Apollo launch activity becomes fully operational. This increased activity requires additional travel to contractor plants, to the Kennedy Space Center, the White Sands Test Facility, and tracking sites.

Transportation of Things - $884,000

The FY 1967 request is $9,000 lower than the FY 1966 requirements. Since the personnel augmentation for the Center will be accomplished during FY 1966, the recruitment plan for the budget year reflects only replacements. Accordingly, there will be fewer movements of household goods at government expense during FY 1967. This reduction is partially offset by an increase in the requirement for freight movements resulting from planned increased purchases of supplies and materials to support testing activities.

Rent, Communications, and Utilities - $9,460,000

The FY 1967 estimate is $392,000 higher than the FY 1966 requirements. This net increase results from increases in communications and utilities that are partially offset by a decrease in ADP equipment rentals.

The increase in communications is attributed to the increase in personnel during FY 1966, and the increased tempo of Apollo activity during FY 1967. The increase in utilities results from additional buildings to be completed late in FY 1966 and during FY 1967.

Printing and Reproduction - $700,000

The amount required in FY 1967 for contractual printing, duplicating, binding, and microfilming remains at the FY 1966 level. There will be an increase in the volume of printing requirements due to increased flight mission activity. It is anticipated that this increased volume can be handled in-house.

Other Services - $17,419,000

This estimate provides for services on a contract basis, by other government agencies and private contractors, on a continuing, as well as a non-recurring or seasonal basis as required for the operation of this Center. The amount required for this purpose in FY 1967 is $3,608,000 higher than the requirement for FY 1966. The significant areas for this increase are as follows:

$867,000 is required for engineering services, and technical documentation. Increases for engineering and drafting services, and safety engineering and inspection services are generated by an additional need for operational modification studies as program phases progress. Specialized contractor engineering support is required to develop drawings, specifications, cost estimates, and other technical data for both building and equipment modifications. Technical documentation and ADP programming support will increase as the program effort moves into the qualification testing phase.

$1,374,000 is required for maintenance and repair as additional buildings and facilities are added to the inventory, as expiration of warranties on installed equipment occur, and as use of laboratories and test facilities increases in support of both Gemini and Apollo activity.

$1,004,000 is required for expansion of requirements for increased scope of the film documentation support services for laboratory and test activities, and contract support of the Center medical operations which provide professional radiation protection and health physics services, occupational medicine and environmental health services.

$350,000 is required to provide janitorial services for additional office building space, for computer facilities and the environmental areas. In addition, security services and fire protection services will expand in FY 1967 because both Gemini and Apollo programs will be involved in operations which will generate increased test activity that must be supported.

Supplies and Materials - $3,350,000

The FY 1967 request is $432,000 above the FY 1966 requirements. This increase is, to a great extent, attributable to supplies and materials for maintenance of additional buildings to be occupied late in FY 1966 and during FY 1967. Also, additional funds are required to provide supplies and materials to be used by the staff recruited late in FY 1966.

Equipment - $1,147,000

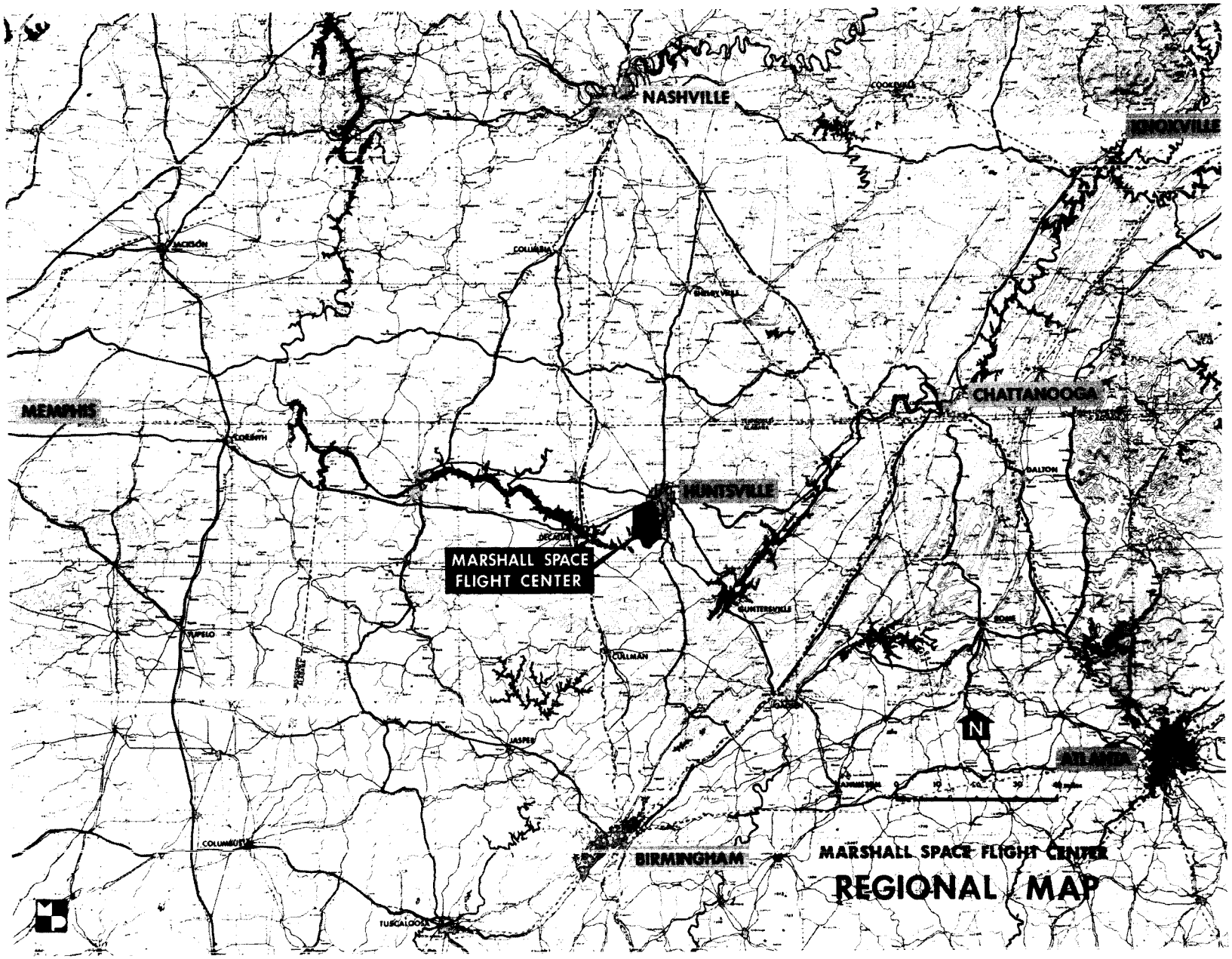
The FY 1967 equipment requirement increases by $347,000. The largest single item to be procured is an automated milling machine. This machine is to be used to support Apollo flight and test hardware that require extremely close tolerances.

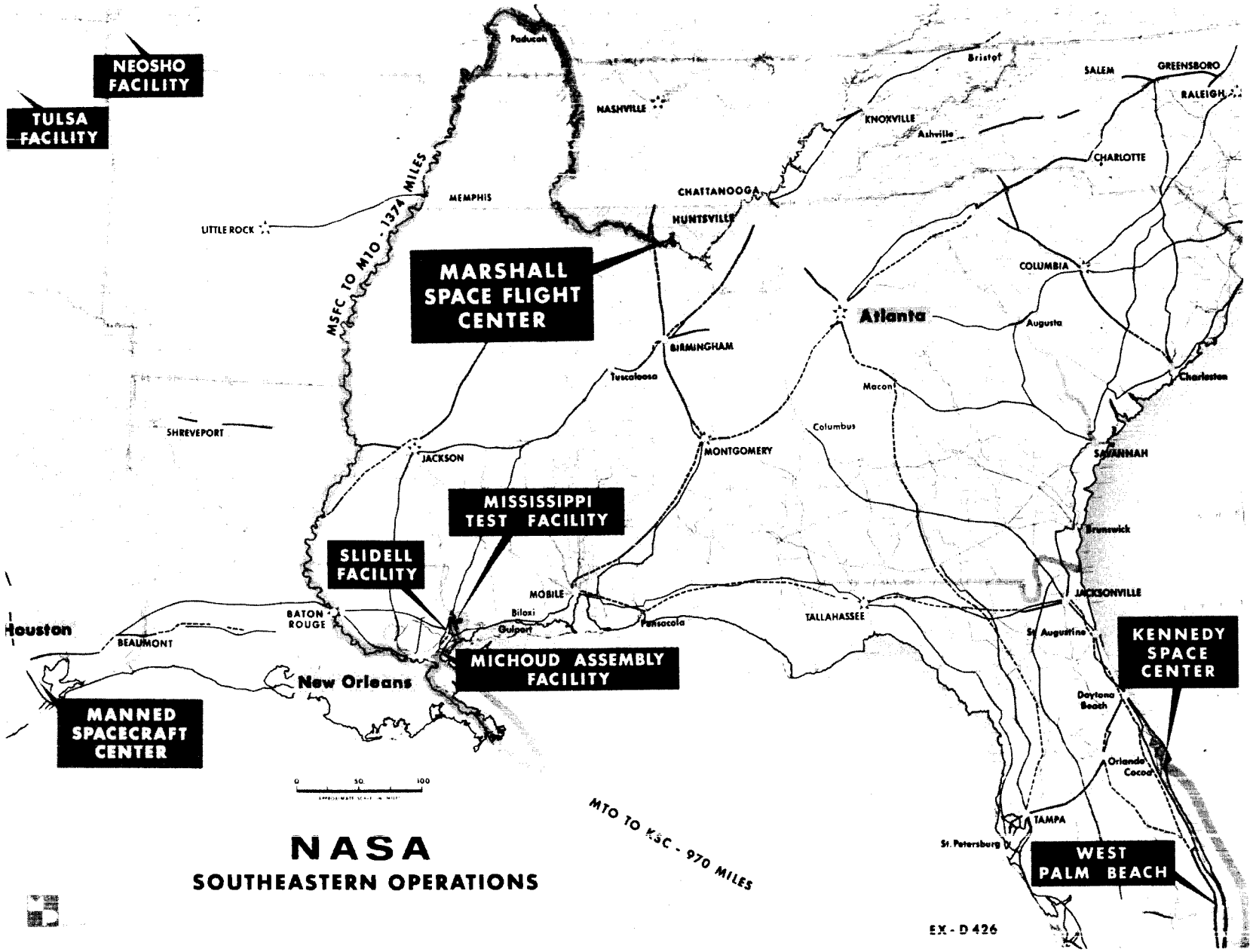
Lands and Structures - $1,300,000

This object classification provides for alterations, modifications, and minor construction of facilities within statutory limitations. The amount requested for FY 1967 exceeds the FY 1966 level by $100,000, and is due to increased activities at the Center. The start of major engineering programs in such areas as environmental and flight acceleration testing will generate the need for modifications. Operational scope increases in mission control, and an increasing Center population will also require alterations in the support facilities area.

Insurance Claims and Indemnities - $1,000

Funds requested are for the settlement of claims and indemnities and are expected to remain at the FY 1966 level.


NASHVILLE
KNOXVILLE
CHATTANOOGA
MEMPHIS
HUNTSVILLE
MARSHALL SPACE FLIGHT CENTER
BIRMINGHAM
ATLANTA
N
MARSHALL SPACE FLIGHT CENTER
REGIONAL MAP

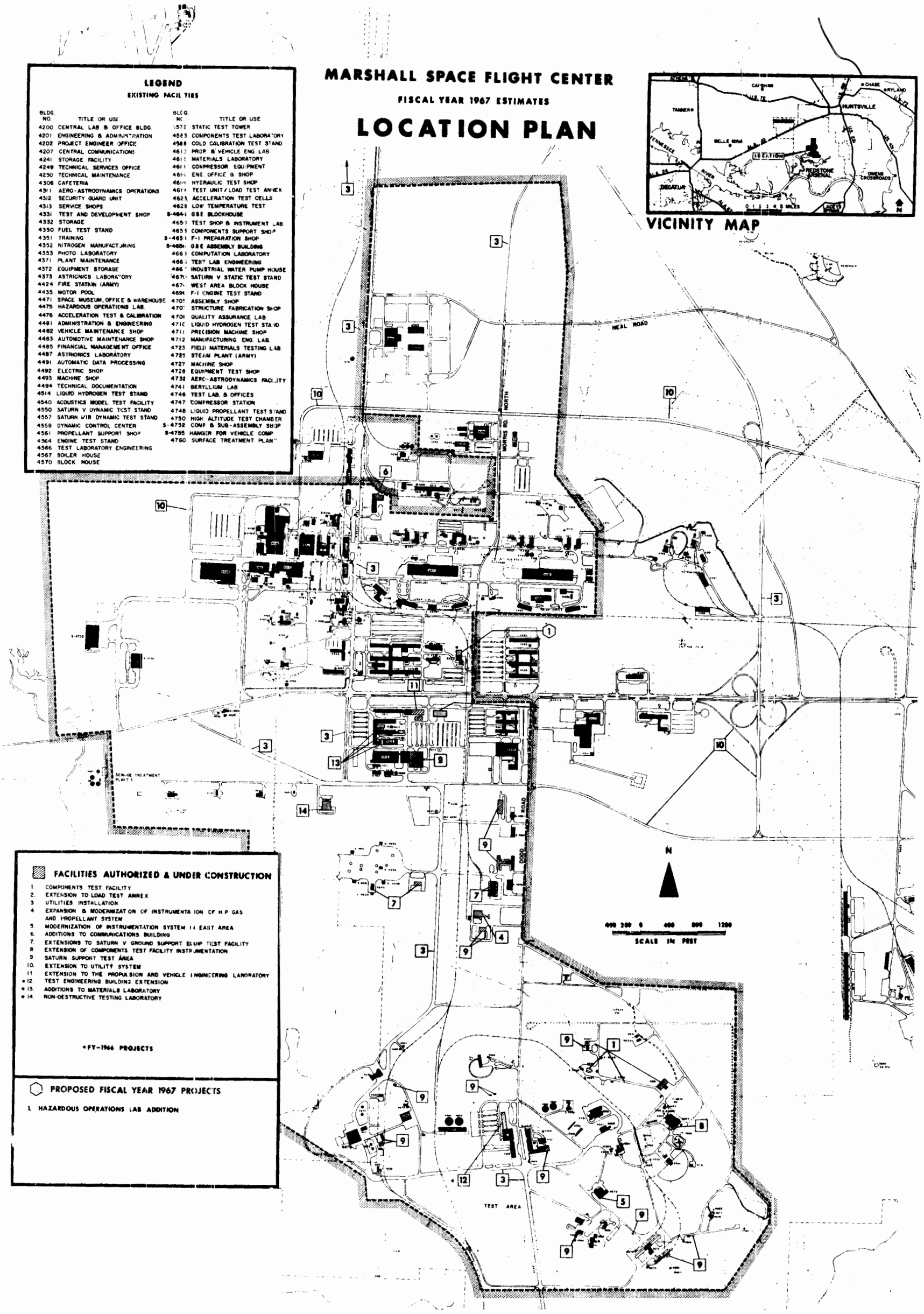


NASA
SOUTHEASTERN OPERATIONS

MARSHALL SPACE FLIGHT CENTER

FISCAL YEAR 1967 ESTIMATES

LOCATION PLAN



LEGEND

EXISTING FACILITIES

BLDG. NO.	TITLE OR USE
4200	CENTRAL LAB & OFFICE BLDG.
4201	ENGINEERING & ADMINISTRATION
4202	PROJECT ENGINEER OFFICE
4207	CENTRAL COMMUNICATIONS
4241	STORAGE FACILITY
4249	TECHNICAL SERVICES OFFICE
4250	TECHNICAL MAINTENANCE
4306	CAFETERIA
4311	AERO-ASTRODYNAMICS OPERATIONS
4312	SECURITY GUARD UNIT
4313	SERVICE SHOPS
4331	TEST AND DEVELOPMENT SHOP
4332	STORAGE
4350	FUEL TEST STAND
4351	TRAINING
4352	NITROGEN MANUFACTURING
4353	PHOTO LABORATORY
4371	PLANT MAINTENANCE
4372	EQUIPMENT STORAGE
4373	ASTRIGNICS LABORATORY
4424	FIRE STATION (ARMY)
4435	MOTOR POOL
4471	SPACE MUSEUM, OFFICE & WAREHOUSE
4475	HAZARDOUS OPERATIONS LAB.
4476	ACCELERATION TEST & CALIBRATION
4481	ADMINISTRATION & ENGINEERING
4482	VEHICLE MAINTENANCE SHOP
4483	AUTOMOTIVE MAINTENANCE SHOP
4485	FINANCIAL MANAGEMENT OFFICE
4487	ASTRIONICS LABORATORY
4491	AUTOMATIC DATA PROCESSING
4492	ELECTRIC SHOP
4493	MACHINE SHOP
4494	TECHNICAL DOCUMENTATION
4514	LIQUID HYDROGEN TEST STAND
4540	ACOUSTICS MODEL TEST FACILITY
4550	SATURN V DYNAMIC TEST STAND
4557	SATURN I/IB DYNAMIC TEST STAND
4558	DYNAMIC CONTROL CENTER
4561	PROPELLANT SUPPORT SHOP
4564	ENGINE TEST STAND
4566	TEST LABORATORY ENGINEERING
4567	BOILER HOUSE
4570	BLOCK HOUSE
4572	STATIC TEST TOWER
4583	COMPONENTS TEST LABORATORY
4588	COLD CALIBRATION TEST STAND
4610	PROP. & VEHICLE ENG. LAB
4611	MATERIALS LABORATORY
4611	COMPRESSOR EQUIPMENT
4611	ENG. OFFICE & SHOP
4611	HYDRAULIC TEST SHOP
4611	TEST UNIT/LOAD TEST ANNEX
4623	ACCELERATION TEST CELLS
4628	LOW TEMPERATURE TEST
S-4644	GSE BLOCKHOUSE
4653	TEST SHOP & INSTRUMENT LAB
4651	COMPONENTS SUPPORT SHOP
S-4651	F-1 PREPARATION SHOP
S-4654	GSE ASSEMBLY BUILDING
4661	COMPUTATION LABORATORY
4661	TEST LAB ENGINEERING
4661	INDUSTRIAL WATER PUMP HOUSE
4670	SATURN V STATIC TEST STAND
4671	WEST AREA BLOCK HOUSE
4691	F-1 ENGINE TEST STAND
4701	ASSEMBLY SHOP
4701	STRUCTURE FABRICATION SHOP
4701	QUALITY ASSURANCE LAB
4710	LIQUID HYDROGEN TEST STAND
4711	PRECISION MACHINE SHOP
4712	MANUFACTURING ENG. LAB.
4723	FIELD MATERIALS TESTING LAB.
4725	STEAM PLANT (ARMY)
4727	MACHINE SHOP
4728	EQUIPMENT TEST SHOP
4732	AERO-ASTRODYNAMICS FACILITY
4741	BERYLLIUM LAB
4746	TEST LAB. & OFFICES
4747	COMPRESSOR STATION
4748	LIQUID PROPELLANT TEST STAND
4750	HIGH ALTITUDE TEST CHAMBER
S-4752	COMP. & SUB-ASSEMBLY SHOP
S-4755	HANGER FOR VEHICLE COMP
4760	SURFACE TREATMENT PLANT

FACILITIES AUTHORIZED & UNDER CONSTRUCTION

1. COMPONENTS TEST FACILITY
2. EXTENSION TO LOAD TEST ANNEX
3. UTILITIES INSTALLATION
4. EXPANSION & MODERNIZATION OF INSTRUMENTATION OF H.P. GAS AND PROPELLANT SYSTEM
5. MODERNIZATION OF INSTRUMENTATION SYSTEM IN EAST AREA
6. ADDITIONS TO COMMUNICATIONS BUILDING
7. EXTENSIONS TO SATURN V GROUND SUPPORT EQUIP. TEST FACILITY
8. EXTENSION OF COMPONENTS TEST FACILITY INSTRUMENTATION
9. SATURN SUPPORT TEST AREA
10. EXTENSION TO UTILITY SYSTEM
11. EXTENSION TO THE PROPULSION AND VEHICLE ENGINEERING LABORATORY
- 12. TEST ENGINEERING BUILDING EXTENSION
- 13. ADDITIONS TO MATERIALS LABORATORY
- 14. NON-DESTRUCTIVE TESTING LABORATORY

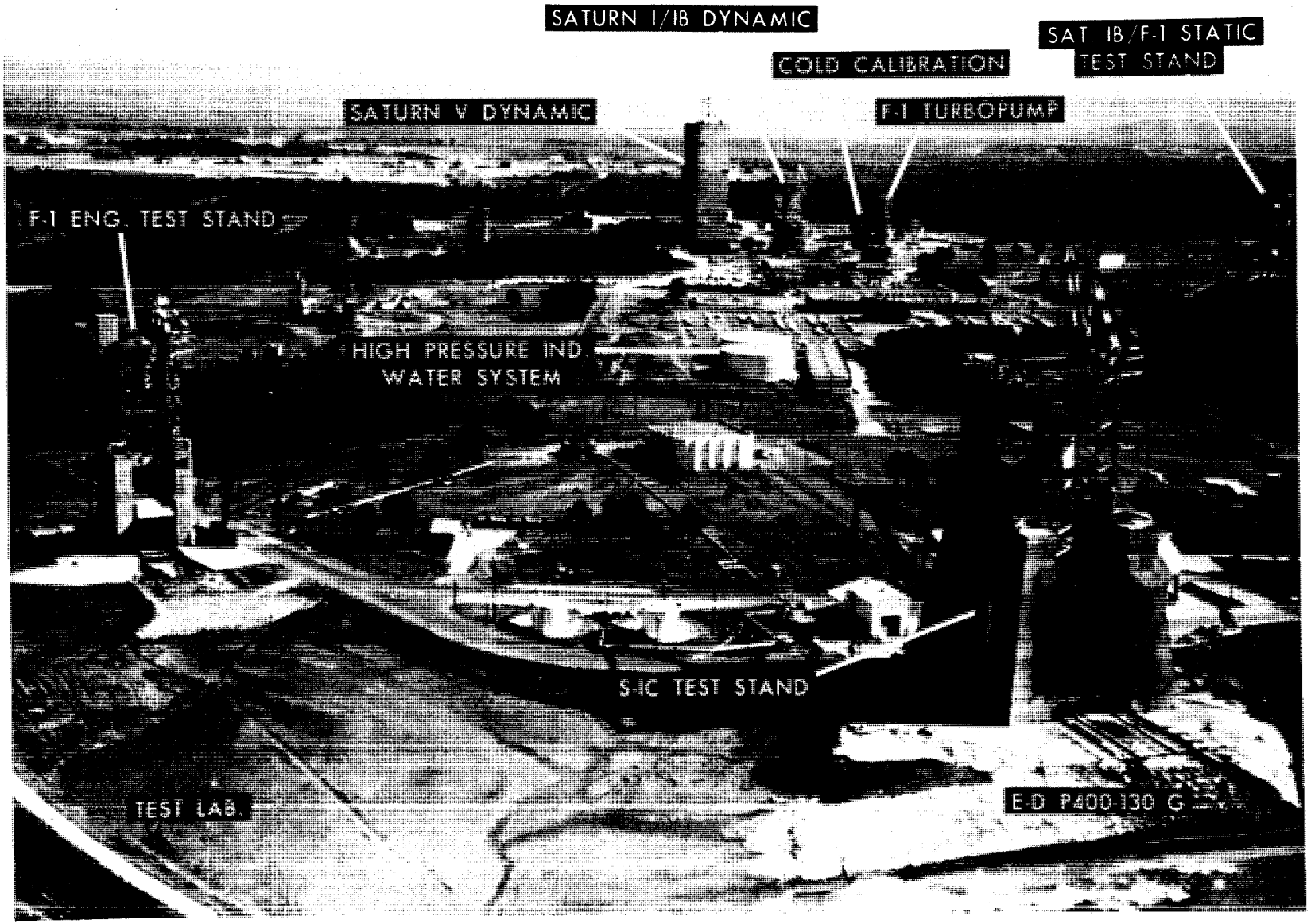
*FY-1966 PROJECTS

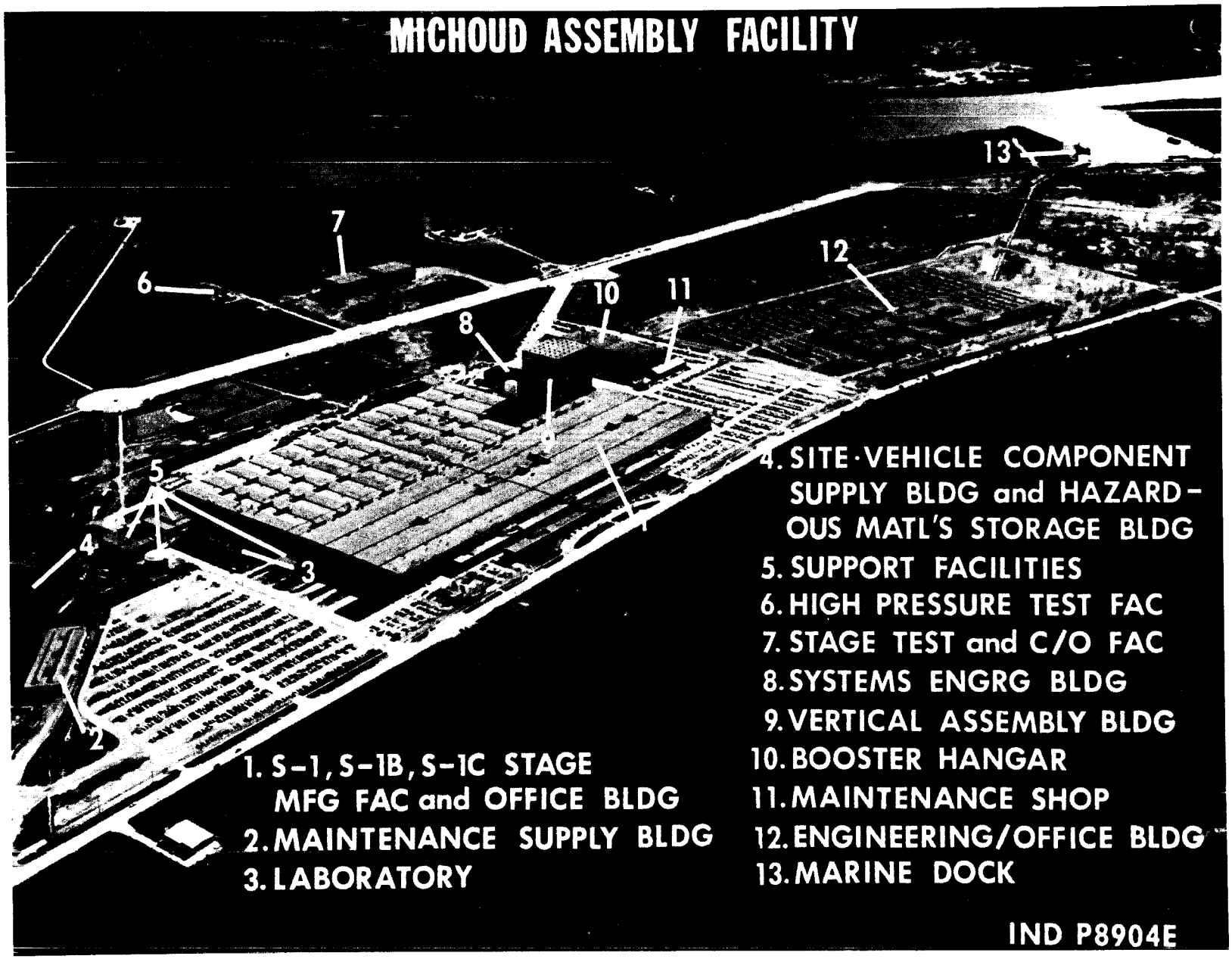
PROPOSED FISCAL YEAR 1967 PROJECTS

1. HAZARDOUS OPERATIONS LAB ADDITION

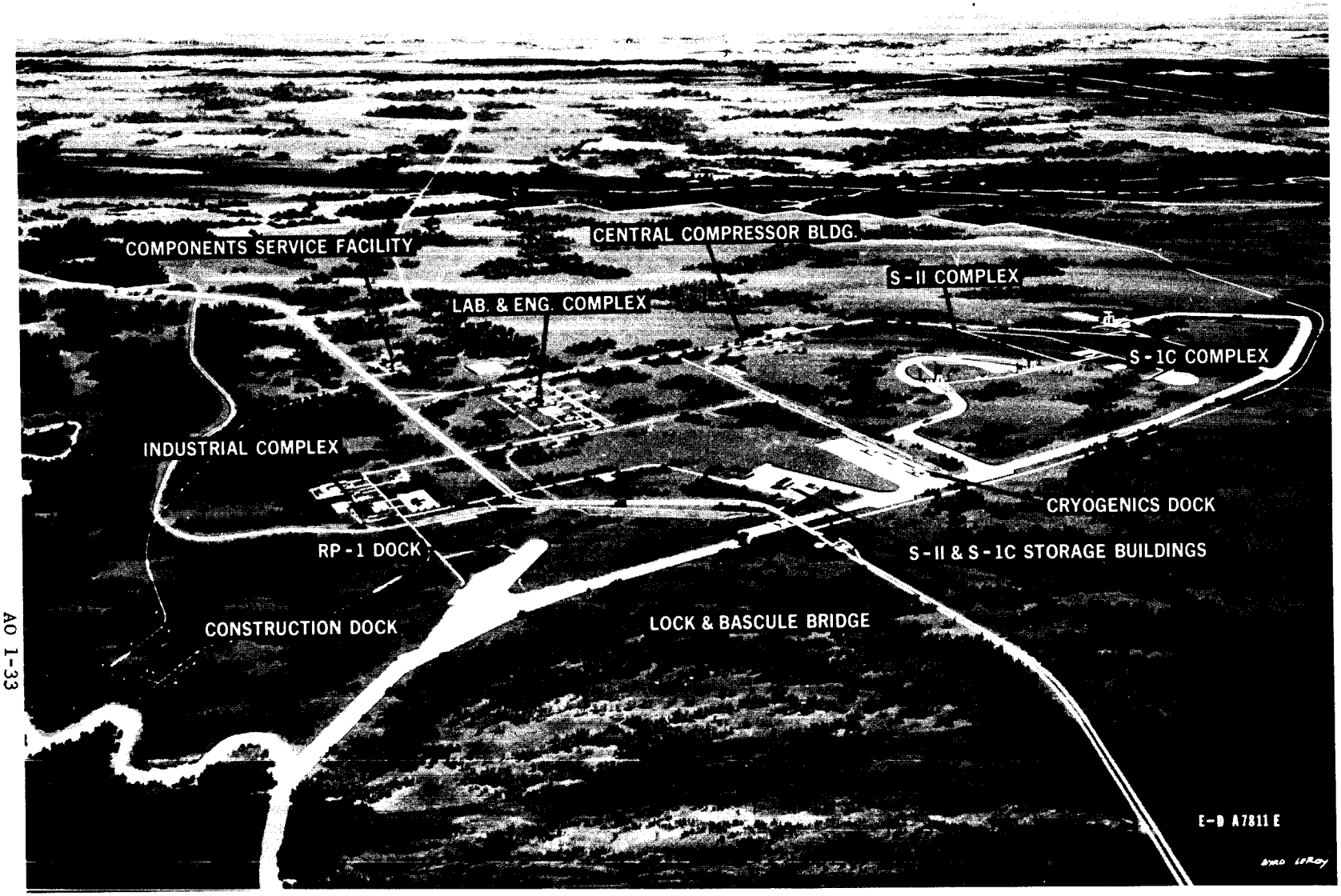
MARSHALL SPACE FLIGHT CENTER
ALL LABORATORIES EXCEPT TEST LAB.

SATURN TEST STANDS - AERIAL VIEW - HUNTSVILLE

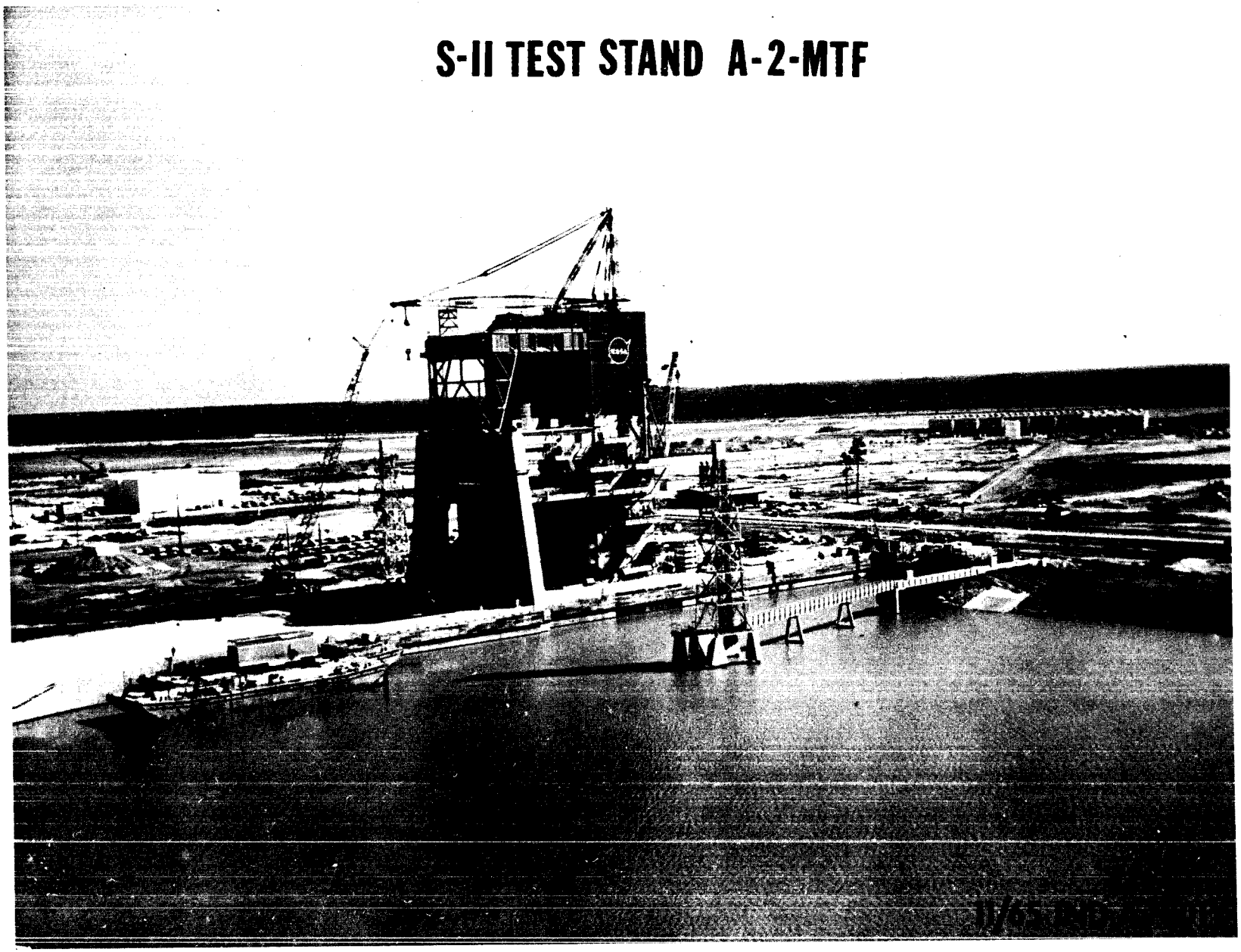



MICHOUD ASSEMBLY FACILITY
1. S-1, S-1B, S-1C STAGE MFG FAC and OFFICE BLDG
2. MAINTENANCE SUPPLY BLDG
3. LABORATORY
4. SITE·VEHICLE COMPONENT SUPPLY BLDG and HAZARDOUS MATL'S STORAGE BLDG
5. SUPPORT FACILITIES
6. HIGH PRESSURE TEST FAC
7. STAGE TEST and C/O FAC
8. SYSTEMS ENGRG BLDG
9. VERTICAL ASSEMBLY BLDG
10. BOOSTER HANGAR
11. MAINTENANCE SHOP
12. ENGINEERING/OFFICE BLDG
13. MARINE DOCK
IND P8904E

MISSISSIPPI TEST FACILITY - AERIAL VIEW



S-II TEST STAND A-2-MTF



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

STAFFING SUMMARY

	66	67
Excepted	49	49
GS-16	61	61
GS-15	360	373
GS-14	761	801
All other GS	4,727	4,591
Wage Board	1,359	1,346
Total Permanent	7,317	7,221
Temporary	169	169
Total Positions	7,486	7,390

OFFICE OF DIRECTOR

	66	67
Excepted	13	13
GS-16	1	1
GS-15	3	3
GS-14	2	2
All other GS	6	6
Wage Board	-	-
Total Permanent	25	25

EXECUTIVE STAFF

	66	67
Excepted	5	5
GS-16	-	-
GS-15	7	9
GS-14	11	12
All other GS	60	57
Wage Board	-	-
Total Permanent	83	83

PUBLIC AFFAIRS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	2
All other GS	28	27
Wage Board	-	-
Total Permanent	30	30

CHIEF COUNSEL

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	2
GS-14	5	5
All other GS 14	14	13
Wage Board	-	-
Total Permanent	20	20

LABOR RELATIONS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	2
All other GS	3	2
Wage Board	-	-
Total Permanent	5	5

MANAGEMENT SERVICES OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	3	4
GS-14	9	9
All other GS	168	167
Wage Board	29	29
Total Permanent	210	210

PURCHASING OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	9	13
All other GS	212	208
Wage Board	-	-
Total Permanent	223	223

TECHNICAL SERVICES OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	2	3
GS-14	8	12
All other GS	278	273
Wage Board	301	301
Total Permanent	589	589

FINANCIAL MANAGEMENT OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	7	7
GS-14	9	14
All other GS	180	175
Wage Board	-	-
Total Permanent	196	196

MANPOWER UTILIZATION AND ADMINISTRATION OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	11	12
All other GS	94	93
Wage Board	-	-
Total Permanent	108	108

FACILITIES AND DESIGN OFFICE

	66	67
Excepted	-	-
GS-16	1	1
GS-15	4	5
GS-14	19	19
All other GS	82	81
Wage Board	-	-
Total Permanent	106	106

NASA AUDIT OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	1	1
All other GS	16	16
Wage Board	-	-
Total Permanent	19	19

RESEARCH AND DEVELOPMENT OPERATIONS

	66	67
Excepted	3	3
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	-	-
Wage Board	-	-
Total Permanent	6	6

INDUSTRIAL OPERATIONS

	66	67
Excepted	2	2
GS-16	-	-
GS-15	5	5
GS-14	2	2
All other GS	5	3
Wage Board	-	-
Total Permanent	14	12

ADVANCED SYSTEMS OFFICE

	66	67
Excepted	-	-
GS-16	3	3
GS-15	18	18
GS-14	26	27
All other GS	62	61
Wage Board	-	-
Total Permanent	109	109

TECHNICAL SYSTEMS OFFICE

	66	67
Excepted	-	-
GS-16	1	1
GS-15	3	3
GS-14	8	8
All other GS	3	3
Wage Board	-	-
Total Permanent	15	15

TECHNICAL STAFF OFFICE

	66	67
Excepted	1	1
GS-16	1	1
GS-15	7	9
GS-14	6	7
All other GS	10	8
Wage Board	-	-
Total Permanent	20	20

OPERATIONS MANAGEMENT OFFICE

	66	67
Excepted	1	1
GS-16	1	1
GS-15	4	4
GS-14	15	17
All other GS	43	41
Wage Board	-	-
Total Permanent	66	66

CONTRACTS OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	4	5
GS-14	14	14
All other GS	129	128
Wage Board	-	-
Total Permanent	146	146

FACILITIES PROJECTS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	2
GS-14	14	14
All other GS	26	26
Wage Board	-	-
Total Permanent	41	42

PROJECT LOGISTICS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	2	3
GS-14	7	7
All other GS	7	8
Wage Board	-	-
Total Permanent	16	18

RESOURCES MANAGEMENT OFFICE

	66	67
Excepted	-	-
GS-16	1	1
GS-15	2	2
GS-14	7	8
All other GS	26	25
Wage Board	-	-
Total Permanent	36	36

AERO-ASTRODYNAMICS LABORATORY

	66	67
Excepted	1	1
GS-16	6	6
GS-15	33	33
GS-14	43	43
All other GS	291	243
Wage board	7	7
Total Permanent	341	333

ASTRIONICS LABORATORY

	66	67
Excepted	6	6
GS-16	5	5
GS-15	53	54
GS-14	105	106
All other GS	555	555
Wage Board	150	150
Total Permanent	874	876

COMPUTATION LABORATORY

	66	67
Excepted	2	2
GS-16	3	3
GS-15	7	7
GS-14	22	26
All other GS	135	128
Wage Board	-	-
Total Permanent	169	166

MANUFACTURING ENGINEERING LABORATORY

	66	67
Excepted	3	3
GS-16	1	1
GS-15	12	12
GS-14	38	38
All other GS	336	300
Wage Board	365	336
Total Permanent	755	690

SATURN I/IB PROGRAM OFFICE

	66	67
Excepted	2	2
GS-16	5	5
GS-15	13	13
GS-14	25	25
All other GS	109	107
Wage Board	-	-
Total Permanent	154	152

SATURN IB/CENTAUR PROGRAM OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	4	4
GS-14	9	9
All other GS	15	15
Wage Board	-	-
Total Permanent	28	28

SATURN V PROGRAM OFFICE

	66	67
Excepted	1	1
GS-16	6	6
GS-15	19	19
GS-14	53	57
All other GS	170	167
Wage Board	-	-
Total Permanent	249	250

ENGINE PROGRAM OFFICE

	66	67
Excepted	1	1
GS-16	6	6
GS-15	11	11
GS-14	21	21
All other GS	79	77
Wage Board	-	-
Total Permanent	118	116

PROPULSION AND VEHICLE ENGINEERING LABORATORY

	66	67
Excepted	2	2
GS-16	6	6
GS-15	53	54
GS-14	105	109
All other GS	503	497
Wage Board	64	64
Total Permanent	733	732

QUALITY AND RELIABILITY ASSURANCE LABORATORY

	66	67
Excepted	1	1
GS-16	3	3
GS-15	27	27
GS-14	45	45
All other GS	484	464
Wage Board	20	20
Total Permanent	580	560

RESEARCH PROJECTS LABORATORY

	66	67
Excepted	1	1
GS-16	3	3
GS-15	12	12
GS-14	25	26
All other GS	67	66
Wage Board	-	-
Total Permanent	108	108

TEST LABORATORY

	66	67
Excepted	1	1
GS-16	4	4
GS-15	22	23
GS-14	39	39
All other GS	263	262
Wage Board	356	356
Total Permanent	685	685

MICHOUD ASSEMBLY FACILITY

	66	67
Excepted	1	1
GS-16	2	2
GS-15	9	9
GS-14	24	24
All other GS	229	224
Wage Board	30	35
Total Permanent	295	295

MISSION OPERATIONS OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	6	7
All other GS	16	16
Wage Board	-	-
Total Permanent	25	26

MISSISSIPPI TEST FACILITY

	66	67
Excepted	-	-
GS-16	2	2
GS-15	4	4
GS-14	14	17
All other GS	63	49
Wage Board	37	48
Total Permanent	120	120

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

GEORGE C. MARSHALL SPACE FLIGHT CENTER

MISSION AND CAPABILITIES:

The George C. Marshall Space Flight Center, which became a 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 Redstone, Jupiter, Pershing, and Saturn. The success of the Saturn launches stems directly from the practical know-how gained through the years and has been instrumental in the building of the technology for the Saturn IB and Saturn V vehicles for the Apollo program.

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

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

Major functions currently assigned include:

1. Program management for developing and producing the following family of large launch vehicles:

   (a) The Saturn IB which provides the Nation with a carrier for large scientific satellite payloads (approximately 18 tons in low-earth orbit), assists in Apollo spacecraft development and qualification, and advances large booster technology in support of Saturn V.

   (b) 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.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.....	7,754	7,486	7,390
Average Number of All Employees.....	7,623	7,469	7,278
Administrative Operations....	$137,787,000	$128,260,000	$131,934,000

INSTALLATION DESCRIPTION:

Operations of the Marshall Space Flight Center are conducted at four primary locations.

The first location, the main Marshall Space Flight Center site is near Huntsville, Alabama, on Army property at the Redstone Arsenal. The Center occupies 1,797 acres under a non-revocable use permit from the Army and 64 leased acres. The capital investment as of June 30, 1965, was $319,555,000. 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 4,325,806 square feet. Another 680,780 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 second location, the Michoud Assembly Facility is located 15 miles east of New Orleans, Louisiana. The facility occupies 897 acres. The capital investment as of June 30, 1965, was $114,010,000. Facilities comprise a total of 3,282,777 square feet, including the main assembly plant, which covers an area of 43 acres under one roof. A new engineering building and the vertical assembly building are complete and occupied. The Michoud Assembly Facility is on the Gulf Intra-Coastal Waterway and has deep-water access via the Mississippi River.

The third location, the Mississippi Test Facility is located in southwest Mississippi, approximately 50 miles northeast of New Orleans, Louisiana. The total land area will be 138,870 acres, of which 13,428 acres will make up the actual test area and will be owned by NASA. The remaining 125,442 acres will be held as a buffer zone. In the buffer area, 7,568 acres will be owned in fee, and 117,874 acres will be under restrictive easement. The capital investment for the Mississippi Test Facility as of June 30, 1965, was $164,854,000. 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 fourth location, the Slidell Central Computer Facility supporting the Michoud Assembly Facility and the Mississippi Test Facility is located on a

14-acre site at Slidell, Louisiana, 20 miles northeast of the Michoud Assembly Facility. The capital investment as of June 30, 1965, was $3,607,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	1965	1966	1967
11. Personnel Compensation...	$79,345,000	$80,206,000	$80,271,000
12. Personnel Benefits.....	5,528,000	5,558,000	5,660,000
Total, personnel costs.	$84,873,000	$85,764,000	$85,931,000
21. Travel and Transportation of Persons.....	3,722,000	3,769,000	3,724,000
22. Transportation of Things.	379,000	366,000	366,000
23. Rent, Communications, and Utilities.....	10,854,000	9,255,000	10,213,000
24. Printing and Reproduction	1,025,000	1,038,000	1,038,000
25. Other Services.....	18,610,000	19,106,000	20,429,000
Services of other agencies.....	2,542,000	2,632,000	2,628,000
26. Supplies and materials...	5,820,000	4,322,000	5,397,000
31. Equipment.....	8,744,000	1,000,000	1,000,000
32. Lands and Structures.....	1,212,000	1,000,000	1,200,000
42. Insurance Claims and Indemnities.....	6,000	8,000	8,000
Total.....	$137,787,000	$128,260,000	$131,934,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Apollo.....	5,485	5,238	5,063
Advanced missions.....	59	94	128
Space Science and Applications			
Physics and astronomy.....	8	8	12
Lunar and planetary exploration.....	3	9	13
Launch vehicle development.....	4	-	-
Meteorological satellites.....	-	1	3

799-996 O - 66 - 7

	1965	1966	1967
Advanced Research and Technology			
Basic research	80	85	92
Space vehicle systems	104	130	141
Electronics systems	71	71	62
Human factor systems	5	5	7
Space power and electric propulsion systems	8	8	22
Nuclear rockets	12	12	12
Chemical propulsion	7	7	17
Tracking and Data Acquisition	5	6	6
Technology Utilization	15	13	13
Sub-total, direct positions	5,866	5,687	5,591
Support personnel			
Director and Staff	186	181	181
Administration	768	750	750
Research and development support	690	699	699
Sub-total, support positions	1,644	1,630	1,630
Total, permanent positions	7,510	7,317	7,221
Other positions:			
Positions under cooperative training agreements	169	169	169
Other temporary positions	75	---	---
Total, all positions	7,754	7,486	7,390

Personnel requirements

The Marshall Space Flight Center personnel ceiling for end FY 1967 has been established at 7,390. This represents a planned reduction of 96 positions from the FY 1966 ceiling. Although the early Saturn launches are complete, both the Saturn IB and V projects have entered critical phases requiring more active participation in systems engineering and development ground testing as initial flight dates approach. The first Saturn IB launches are planned for calendar year 1966. In calendar year 1967, four additional Saturn IB flights, including long-duration manned missions, are planned. Saturn V hardware is undergoing intensive development and qualification ground testing during FY 1966. Heavy emphasis is also being placed on the activation of Saturn V facilities at the Mississippi Test Facility and

Launch Complex 39, Kennedy Space Center. During calendar year 1967, critical ground testing, both development and qualification, will continue in the Saturn V project and Saturn V flights from Launch Complex 39 will begin. The initial unmanned missions will qualify the space vehicle systems in preparation for later manned flights. Throughout these critical periods, increasing contractor activity will require intensified monitoring and quality and reliability assurance inspections.

Personnel Costs

	1965	1966	1967
Total Positions	7,754	7,486	7,390
Permanent	7,510	7,317	7,221
Other	244	169	169
Personnel Compensation:			
Annual cost of permanent positions	$73,635,000	$76,173,000	$76,720,000
Pay above the stated annual rate	280,000	293,000	296,000
Lapses (deduct)	-1,283,000	-2,129,000	-1,747,000
Net cost of permanent positions.	72,632,000	74,337,000	75,269,000
Other personnel compensation	6,714,000	5,869,000	5,002,000
Total compensation	79,346,000	80,206,000	80,271,000
NASA funded	79,345,000	80,206,000	80,271,000
Reimbursable	1,000	---	---
Personnel benefits	5,528,000	5,558,000	5,660,000
NASA funded	5,528,000	5,558,000	5,660,000
Reimbursable	---	---	---
Total personnel costs	84,874,000	85,764,000	85,931,000
NASA funded	84,873,000	85,764,000	85,931,000
Reimbursable	1,000	---	---
Average Number of All Employees (Man Years)	7,623	7,469	7,278

Personnel Costs - $85,931,000

An additional $167,000 is required in FY 1967 for personnel compensation and benefits. This is a net increase, and is due primarily to costs related to the Federal Employee Salary Act, effective October 1965, for a full fiscal year, plus a small increase in average salary resulting from within-grade advancements and promotions. These additional costs are partially offset by a planned reduction in personnel during FY 1967.

Travel and Transportation of Persons - $3,724,000

The amount requested in FY 1967 for travel and transportation of persons is $45,000 less than the amount available for FY 1966. This planned decrease is based upon a planned reduction in personnel at the Center and the completion of test stand activation at the Mississippi Test Facility.

Transportation of Things - $366,000

The amount required for FY 1967 is estimated at the same level as for FY 1966, and provides for transportation of freight, express, drayage, and parcel post.

Rent, Communications, and Utilities - $10,213,000

Requirements for rent, communications, and utilities exceed the FY 1966 estimate by $958,000. This net increase results from an increase in EDP equipment, long distance toll costs, and utilities; partially offset by decreased requirements in rental of office space.

The increase in EDP equipment rental is directly related to the support of requirements for testing leading up to intensified Saturn IB flight activity and continuation of critical ground testing for Saturn V. Long distance tolls will also increase slightly because of additional contractor monitoring associated with this increased activity. A decrease in rental of space is possible as construction of Government facilities at Marshall Space Flight Center is completed. Utilities will increase in FY 1967 as facilities completed in FY 1966 become operational for a full year. These utilities include gas, electricity, water, and sewage disposal; all of which are provided through the Redstone Arsenal. The FY 1967 estimates are based on rates provided by the Department of the Army.

Printing and Reproduction - $1,038,000

The amount required for FY 1967 is estimated to remain at the FY 1966 level and provides for the cost of printing, duplicating, photostating, blueprinting, microfilming, photographing, and reproduction services purchased from Government and commercial sources. These services are required for publication or reproduction of such items as technical manuals, technical reports, computer masters for spare parts lists, and technical documentation.

Other Services - $23,057,000

Contractor and other Government agency services to supplement the in-house capabilities are furnished on a continuing, as well as on a seasonal, intermittent or non-recurring basis. An increase of $1,319,000 will be required in FY 1967 to provide these services. The significant areas for this increase are as follows:

$413,000 is required for such items as technical documentation and drawings. The principal increase is in technical documentation

which results from the Saturn IB coming into the operational test phase, and qualification of the Saturn V space vehicle systems in preparation for later manned flights.

$463,000 is required for maintenance and repair of buildings, grounds, and equipment. This increase is related to additional floor space requiring maintenance, and planned rehabilitation of warehouse areas. Warehouse maintenance has been curtailed due to limited fund availability in the current fiscal year.

The remaining net increase of $443,000 is required primarily for chemical cleaning of research and development equipment and components, and janitorial services. The increase in chemical cleaning is due to continued support of the Mississippi Test Facility, and more component cleaning as a result of additional tests during FY 1967. Janitorial services requirements are related to additional floor space to be maintained as construction projects are completed.

Supplies and Materials - $5,397,000

Requirements for supplies and materials will increase in FY 1967 over FY 1966 by $1,075,000. The increase is the result of a forced reduction during FY 1966 due to limited fund availability. The additional funds requested will restore the normal flow of materials to meet current operating demands.

Equipment - $1,000,000

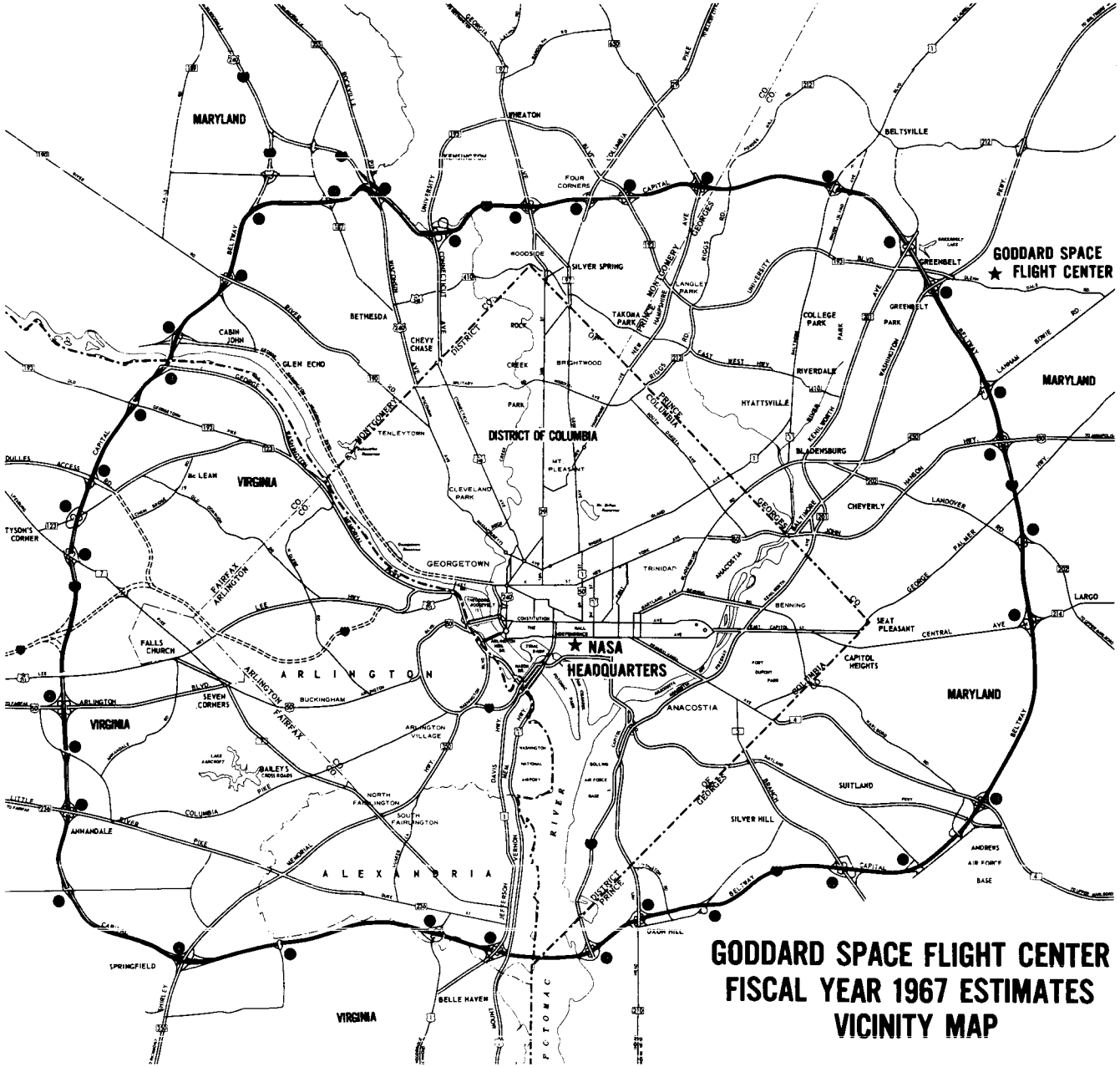
Requirements for equipment are anticipated to remain at the FY 1966 level.

Lands and Structures - $1,200,000

The amount requested for land and structures in FY 1967 exceeds the FY 1966 level by $200,000. This object class provides for alterations, modifications, and minor construction of facilities within statutory limitations. Requirements under this object class are of a continuing nature which are generated by changes in the research and development program, as well as development of new technological approaches.

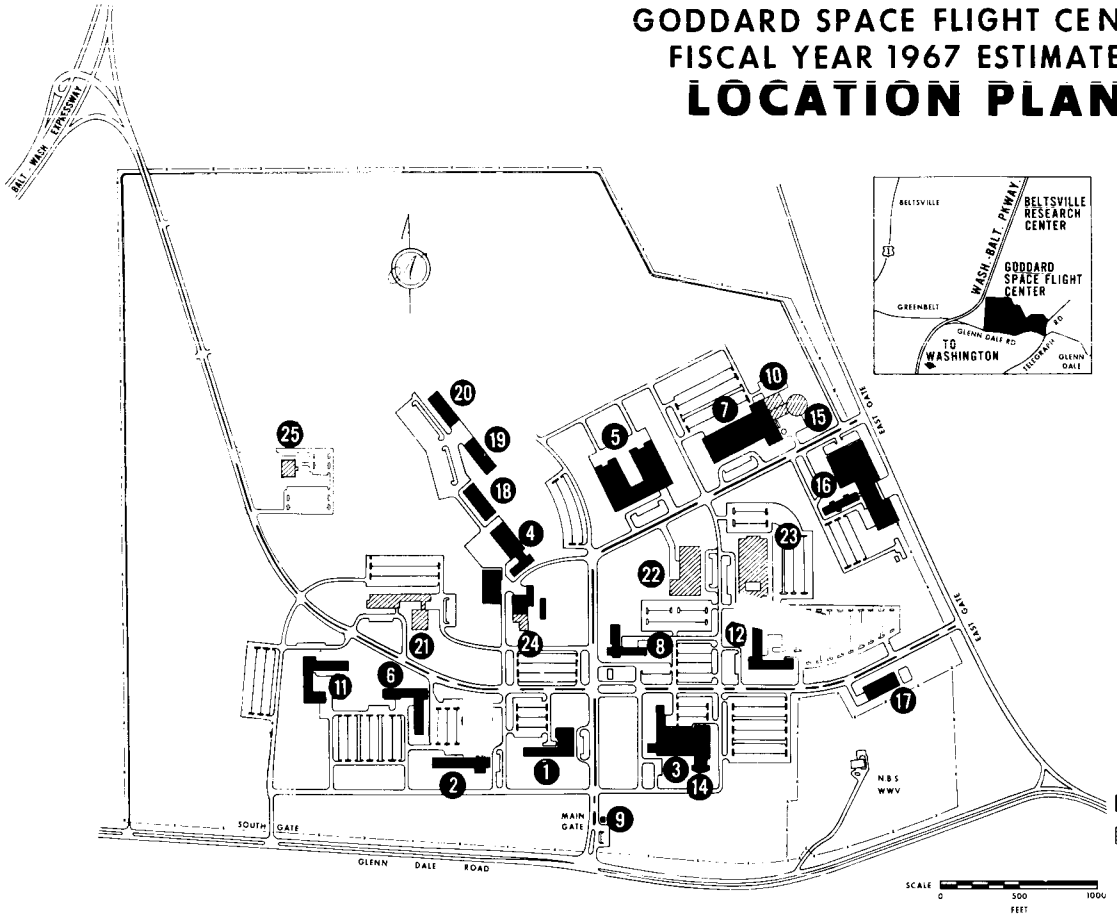
Insurance Claims and Indemnities - $8,000

Funds requested are for the settlement of claims and indemnities, and are expected to remain at the FY 1966 level.



GODDARD SPACE FLIGHT CENTER
FISCAL YEAR 1967 ESTIMATES
VICINITY MAP

GODDARD SPACE FLIGHT CENTER
FISCAL YEAR 1967 ESTIMATES
LOCATION PLAN



1. SPACE PROJECTS BUILDING
2. RESEARCH PROJECTS LABORATORY
3. CENTRAL FLIGHT CONTROL AND RANGE OPERATIONS LABORATORY
4. BOILER HOUSE AND ELECTRIC SUBSTATION
5. INSTRUMENT CONSTRUCTION AND INSTALLATION LABORATORY
6. SPACE SCIENCES LABORATORY
7. PAYLOAD TESTING FACILITY
8. SATELLITE SYSTEMS LABORATORY
9. GATE HOUSE
10. ENVIRONMENTAL TESTING LABORATORY
11. APPLIED SCIENCES LABORATORY
12. TRACKING AND TELEMETRY LABORATORY
14. SPACECRAFT OPERATIONS FACILITY
15. LAUNCH PHASE SIMULATOR
16. DEVELOPMENT OPERATIONS BUILDING
17. MULTI-PURPOSE BUILDING
18. MULTI-PURPOSE BUILDING
19. MULTI-PURPOSE BUILDING
20. MULTI-PURPOSE BUILDING
21. METEOROLOGICAL SYSTEMS DEVELOPMENT LABORATORY
22. MECHANICAL TEST FACILITY AND QUALITY ASSURANCE LABORATORY
23. DATA INTERPRETATION LABORATORY
24. ADDITION TO CENTRAL HEATING AND REFRIGERATION PLANT
25. NASA SPACE SCIENCE DATA CENTER

EXISTING FACILITIES

FACILITIES UNDER CONSTRUCTION

GODDARD SPACE FLIGHT CENTER

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

STAFFING SUMMARY

	66	67
Excepted	35	35
GS-16	30	30
GS-15	205	227
GS-14	376	417
All Other GS	2663	2793
Wage Board	268	257
Total Permanent	3577	3759
Temporary	48	48
Total Positions	3625	3807

CHIEF ADVANCED PLANS STAFF

	66	67
Excepted	1	1
GS-16	–	–
GS-15	2	2
GS-14	1	2
All Other GS	4	3
Wage Board	–	–
Total	8	8

OFFICE OF THE DIRECTOR DEPUTY DIRECTOR ASSOCIATE DIRECTOR

	66	67
Excepted	3	3
GS-16	–	–
GS-15	–	–
GS-14	–	–
All Other GS	5	5
Wage Board	–	–
Total	8	8

ASSISTANT DIRECTOR FOR SYSTEMS RELIABILITY

	66	67
Excepted	2	2
GS-16	–	–
GS-15	1	1
GS-14	2	2
All Other GS	5	5
Wage Board	–	–
Total	10	10

TEST AND EVALUATION DIVISION

	66	67
Excepted	1	1
GS-16	–	–
GS-15	9	9
GS-14	28	30
All Other GS	187	183
Wage Board	–	–
Total	225	223

ASSISTANT DIRECTOR FOR ADMINISTRATION AND TECHNICAL SERVICES

	66	67
Excepted	2	2
GS-16	–	–
GS-15	4	4
GS-14	7	9
All Other GS	53	51
Wage Board	–	–
Total	66	66

FINANCIAL MANAGEMENT DIVISION

	66	67
Excepted	–	–
GS-16	–	–
GS-15	2	2
GS-14	3	4
All Other GS	108	107
Wage Board	–	–
Total	113	113

MANAGEMENT SERVICES AND SUPPLY DIVISION

	66	67
Excepted	–	–
GS-16	–	–
GS-15	1	1
GS-14	2	2
All Other GS	118	118
Wage Board	9	9
Total	130	130

TECHNICAL INFORMATION DIVISION

	66	67
Excepted	–	–
GS-16	–	–
GS-15	–	–
GS-14	1	1
All Other GS	63	63
Wage Board	31	31
Total	95	95

ORGANIZATION AND PERSONNEL DIVISION

	66	67
Excepted	–	–
GS-16	–	–
GS-15	–	–
GS-14	4	4
All Other GS	56	56
Wage Board	–	–
Total	60	60

PROCUREMENT DIVISION

	66	67
Excepted	1	1
GS-16	–	–
GS-15	4	4
GS-14	13	14
All Other GS	266	268
Wage Board	–	–
Total	284	287

PROGRAM SUPPORT DIVISION

	66	67
Excepted	–	–
GS-16	–	–
GS-15	3	3
GS-14	11	12
All Other GS	71	70
Wage Board	–	–
Total	85	85

OFFICE OF TECHNICAL SERVICES

	66	67
Excepted	1	1
GS-16	–	–
GS-15	–	–
GS-14	–	–
All Other GS	1	1
Wage Board	–	–
Total	2	2

FACILITIES ENGINEERING DIVISION

	66	67
Excepted	1	1
GS-16	–	–
GS-15	1	1
GS-14	7	7
All Other GS	64	64
Wage Board	101	101
Total	174	174

EXPERIMENTAL FABRICATION AND ENGINEERING DIVISION

	66	67
Excepted	–	–
GS-16	–	–
GS-15	1	1
GS-14	1	1
All Other GS	32	34
Wage Board	127	116
Total	161	162

ASSISTANT DIRECTOR FOR TRACKING AND DATA SYSTEMS

	66	67
Excepted	3	3
GS-16	3	3
GS-15	16	16
GS-14	17	17
All Other GS	53	63
Wage Board	–	–
Total	92	102

NETWORK ENGINEERING AND OPERATIONS DIVISION

	66	67
Excepted	–	–
GS-16	1	1
GS-15	14	17
GS-14	23	25
All Other GS	139	136
Wage Board	–	–
Total	177	179

DATA SYSTEMS DIVISION

	66	67
Excepted	–	–
GS-16	1	1
GS-15	8	10
GS-14	13	15
All Other GS	130	122
Wage Board	–	–
Total	154	150

MANNED FLIGHT OPERATIONS DIVISION

	66	67
Excepted	–	–
GS-16	1	1
GS-15	14	20
GS-14	30	33
All Other GS	154	296
Wage Board	–	–
Total	199	350

ADVANCED DEVELOPMENT DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	11	12
GS-14	13	14
All Other GS	69	67
Wage Board	–	–
Total	95	95

ASSISTANT DIRECTOR FOR PROJECTS

	66	67
Excepted	3	3
GS-16	–	–
GS-15	1	1
GS-14	1	1
All Other GS	2	2
Wage Board	–	–
Total	7	7

PROJECT OPERATIONS SUPPORT DIVISION

	66	67
Excepted	–	–
GS-16	1	1
GS-15	4	4
GS-14	10	14
All Other GS	65	60
Wage Board	–	–
Total	80	79

INFORMATION PROCESSING DIVISION

	66	67
Excepted	–	–
GS-16	1	1
GS-15	7	8
GS-14	12	14
All Other GS	123	118
Wage Board	–	–
Total	143	141

NASA COMMUNICATIONS DIVISION

	66	67
Excepted	–	–
GS-16	–	–
GS-15	2	3
GS-14	4	6
All Other GS	51	72
Wage Board	–	–
Total	57	81

OAO PROJECT

	66	67
Excepted	–	–
GS-16	1	1
GS-15	6	6
GS-14	4	5
All Other GS	7	6
Wage Board	–	–
Total	18	18

OGO PROJECT

	66	67
Excepted	–	–
GS-16	1	1
GS-15	5	5
GS-14	5	5
All Other GS	10	10
Wage Board	–	–
Total	21	21

OSO AND MSS PROJECT

	66	67
Excepted	–	–
GS-16	–	–
GS-15	3	3
GS-14	9	9
All Other GS	19	19
Wage Board	–	–
Total	31	31

NIMBUS PROJECT

	66	67
Excepted	–	–
GS-16	1	1
GS-15	6	6
GS-14	6	8
All Other GS	8	6
Wage Board	–	–
Total	21	21

ATS PROJECT

	66	67
Excepted	–	–
GS-16	–	–
GS-15	4	4
GS-14	4	5
All Other GS	23	22
Wage Board	–	–
Total	31	31

DELTA PROJECT

	66	67
Excepted	–	–
GS-16	–	–
GS-15	3	2
GS-14	7	6
All Other GS	21	23
Wage Board	–	–
Total	31	31

OPERATIONAL SATELLITES OFFICE

	66	67
Excepted	1	1
GS-16	–	–
GS-15	3	3
GS-14	7	7
All Other GS	7	7
Wage Board	–	–
Total	18	18

LABORATORY FOR SPACE SCIENCES

	66	67
Excepted	3	3
GS-16	4	4
GS-15	12	13
GS-14	26	29
All Other GS	135	131
Wage Board	–	–
Total	180	180

LABORATORY FOR ATMOSPHERIC AND BIOLOGICAL STUDIES

	66	67
Excepted	1	1
GS-16	1	1
GS-15	3	4
GS-14	12	13
All Other GS	80	78
Wage Board	–	–
Total	97	97

ASSISTANT DIRECTOR FOR SPACE SCIENCES

	66	67
Excepted	2	2
GS-16	–	–
GS-15	1	1
GS-14	–	–
All Other GS	7	7
Wage Board	–	–
Total	10	10

GODDARD INSTITUTE FOR SPACE STUDIES

	66	67
Excepted	1	1
GS-16	1	1
GS-15	2	3
GS-14	4	5
All Other GS	29	27
Wage Board	–	–
Total	37	37

LABORATORY FOR THEORETICAL STUDIES

	66	67
Excepted	2	2
GS-16	4	4
GS-15	9	10
GS-14	5	7
All Other GS	77	74
Wage Board	–	–
Total	97	97

ASSISTANT DIRECTOR FOR TECHNOLOGY

	66	67
Excepted	2	2
GS-16	1	1
GS-15	–	–
GS-14	–	–
All Other GS	4	4
Wage Board	–	–
Total	7	7

SPACECRAFT TECHNOLOGY DIVISION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	14	17
GS-14	28	29
All Other GS	129	129
Wage Board	–	–
Total	174	178

SPACECRAFT INTEGRATION AND SOUNDING ROCKET DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	15	16
GS-14	29	31
All Other GS	171	164
Wage Board	–	–
Total	217	213

SYSTEMS DIVISION

	66	67
Excepted	–	–
GS-16	4	4
GS-15	14	15
GS-14	27	31
All Other GS	117	112
Wage Board	–	–
Total	162	162

99-990 O - 66 (Fols. p. 2-3)

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

GODDARD SPACE FLIGHT CENTER

MISSION AND CAPABILITIES:

The Goddard Space Flight Center, the first major United States Laboratory devoted entirely to the investigation and peaceful exploration of space, was established on May 1, 1959.

Although the majority of Goddard's personnel are at the Greenbelt site and at various continental United States installations such as the Goddard Institute for Space Studies in New York City, other personnel are located throughout the world, managing the operation of satellite tracking and communications network stations. One of the Center's major assigned missions is global tracking in support of the United States manned space flight program.

The Center is responsible for development of sounding rockets for scientific investigations; the management of application satellite projects such as Nimbus and the Applications Technology Satellite; and scientific satellite projects such as the Orbiting Solar Observatory, the Orbiting Geophysical Observatory, the Orbiting Astronomical Observatory and Explorers; management and operation of two world-wide tracking and data acquisition networks, the Satellite Tracking and Data Acquisition Network and the Manned Space Flight Network; and project management of NASA's Delta launch vehicle.

The present capabilities of the Center can best be characterized by its diversity. The major portion of Goddard's personnel whose competence and interest are the best measure of the total organizational capabilities, are engaged in scientific studies, in systems engineering, in the development of modern technology for flight spacecraft and for ground systems, and in the technical and administrative management of Goddard's space project responsibilities.

In the space sciences, including the atmospheric sciences, the Center scientists, one of the largest groups in the free world, have been concerned primarily with the near earth measurements in magnetic fields, high and low energy particles, ionospheres, aeronomy, meteorology, micrometeorites, solar physics and astronomy. It is estimated that of all the scientific experiments flown on space vehicles by the United States and selected in open competition from proposals made by university, industry, and other NASA scientists as well as foreign scientists, approximately one-third have been conceived, designed and built by Goddard scientists. At the same time, the Center has had the management responsibility for over 50 percent of the earth

799-990 O - 66 - 3

satellites launched by the NASA. Some of these spacecraft have been designed and built by the engineers and technicians at Goddard (e.g., the Interplanetary Explorer); in other projects the Center has gone to industry for the spacecraft, either as prime contractors (as with the Orbiting Geophysical Observatory) or with the Center acting as its own prime contractor (as with Nimbus).

In the area of tracking and data support, Goddard is responsible for the design, implementation, and operation of global tracking, data acquisition and communication networks supporting NASA as well as appropriate portions of the DOD space program.

The first network, the Minitrack Network, conceived and built by the personnel who became the nucleus of the Center's tracking and data systems capability, has provided support from the beginning of this nation's space efforts. Major augmentations have been accomplished to allow this Network to meet the continuously expanding requirements of the space program. Early in the manned flight program, Goddard was made responsible for the management and operation of the Manned Space Flight Network. The Mercury Network has been modified and augmented and is now providing support to the Gemini program concurrent with the major modification and expansion required to meet the Apollo program needs.

Current planning and study effort is directed to the most efficient application of these unique ground support facilities, both manned and unmanned to the nation's future space program such as the Apollo Extended Systems and, where applicable, future space programs of the Department of Defense.

During 1965 Goddard continued its satellite and sounding rocket launch programs and expanded its operations of two world-wide tracking, data acquisition and data reduction networks. Significant achievements of the Goddard program were:

Scientific Satellites - Five satellites were placed into orbit, including the Orbiting Geophysical Observatory. The Orbiting Solar Observatory provided greater insight into solar phenomena and the functioning of the sun; IMP III continued study of the earth's magnetosphere and solar terrestrial relationships; and Explorer XXVII and the International Satellite for Ionosphere Studies-X (ISIS-X) continued study of the ionosphere.

Sounding Rockets - The continued sounding rockets program not only provided additional knowledge about the region into and above the atmosphere, but also provided in-flight development testing of instrumentation and experimental payloads to be incorporated into later satellites.

Communications Satellites - Early Bird, the first satellite project of the Communications Satellite Corporation, was provided launching and associated services from this Center.

Meteorological Satellites - The Tiros IX and Tiros X continued the development of a global meteorological observation system. Tiros IX was configured to provide continuous earth viewing, thus significantly increasing the satellite effectiveness. Tiros X was the first operational Tiros weather satellite and provided additional operational data for the Weather Bureau.

In its operation of the Manned Space Flight Network, Goddard provided communication and tracking coverage for the successful Gemini-Titan missions three through seven.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.	3,782	3,625	3,807
Average Number of All Employees...	3,595	3,526	3,704
Administrative Operations.....	$92,570,000	$64,040,000	$71,687,000

INSTALLATION DESCRIPTION:

The Goddard Space Flight Center, located 15 miles northeast of Washington, D. C. and one mile east of the Baltimore-Washington Parkway, Greenbelt, Maryland exit, is situated on a 554-acre main site. Three additional areas, totaling 650 acres, are located within two miles of the Center's main site and comprise the Goddard Antenna Test Range, the Magnetic Fields Component Test Facility, the Attitude Control Test Facility, the Manned Space Flight Training Facility and the STADAN Engineering and Real Time Station. Total capital investment as of June 30, 1965 was $197,236,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	1965	1966	1967
11. Personnel Compensation.....	$37,512,000	$38,455,000	$41,563,000
12. Personnel Benefits.....	2,671,000	2,737,000	2,974,000
Total, personnel costs.....	$40,183,000	$41,192,000	$44,537,000
21. Travel and Transportation of Persons.....	2,553,000	2,636,000	2,633,000
22. Transportation of Things.....	1,162,000	1,264,000	1,325,000
23. Rent, Communications, and Utilities.....	7,245,000	8,000,000	9,721,000

	1965	1966	1967
24. Printing and Reproduction....	$398,000	$240,000	$250,000
25. Other Services.....	5,092,000	7,102,000	8,360,000
Services of other agencies.	399,000	188,000	170,000
26. Supplies and Materials.....	1,927,000	1,928,000	1,929,000
31. Equipment.....	32,840,000	1,040,000	2,312,000
32. Lands and Structures.....	771,000	450,000	450,000
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	$92,570,000	$64,040,000	$71,687,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Space Science and Applications			
Physics and astronomy.....	1,065	1,039	1,029
Lunar and planetary.....	20	17	20
Launch vehicle procurement.....	121	36	36
Bioscience.....	9	13	16
Meteorological satellites.....	236	203	200
Communication and applications technology satellites.....	122	127	128
Advanced Research and Technology			
Basic research.....	11	8	8
Space vehicle systems.....	40	47	52
Electronics systems.....	74	67	69
Space power and electric propulsion systems.....	12	13	13
Nuclear rockets.....	24	23	23
Chemical propulsion.....	2	7	6
Tracking and Data Acquisition	625	667	789
Technology Utilization	3	3	3
Sub-total, direct positions.....	2,364	2,270	2,392

	1965	1966	1967
Support personnel			
Director and Staff	6	8	8
Administration	755	749	743
Research and development support	579	550	616
Sub-total, support positions	1,340	1,307	1,367
Total, permanent positions	3,704	3,577	3,759
Other positions:			
Positions under cooperative training agreements	36	36	36
Other temporary positions	42	12	12
Total, all positions	3,782	3,625	3,807

Personnel requirements:

As the program emphasis shifts from scientific investigations in space to increased support of the Manned Space Flight Network, personnel are reassigned from areas of declining workload such as Interplanetary Monitoring Platforms and Advanced Orbiting Solar Observatory to those areas where the workload is increasing as in the Tracking and Data Acquisition effort. The requirement for additional personnel to provide global tracking support of the United States manned space flight program is immediate and critical. Personnel shifts have been made to the extent practicable to meet the most immediate needs. The increased complexity of the Apollo program and the compressed Gemini flight schedule create an urgent need for an additional 182 positions for the Manned Space Flight Network in FY 1967 which cannot be met by the internal reassignment of personnel.

Personnel Costs

	1965	1966	1967
Total Positions	3,782	3,625	3,807
Permanent	3,704	3,577	3,759
Other	78	48	48
Personnel Compensation:			
Annual cost of permanent positions	$37,965,000	$38,559,000	$41,163,000
Pay above the stated annual rate	146,000	148,000	158,000

	1965	1966	1967
Lapses (deduct).....	$-2,100,000	$-1,408,000	$-1,100,000
Net cost of permanent positions.....	36,011,000	37,299,000	40,221,000
Other personnel compensation....	2,046,000	1,788,000	1,907,000
Total compensation.....	38,057,000	39,087,000	42,128,000
NASA funded.....	37,512,000	38,455,000	41,563,000
Reimbursable.....	545,000	632,000	565,000
Personnel benefits.....	2,716,000	2,784,000	3,016,000
NASA funded.....	2,671,000	2,737,000	2,974,000
Reimbursable.....	45,000	47,000	42,000
Total personnel costs.....	$40,773,000	$41,871,000	$45,144,000
NASA funded.....	40,183,000	41,192,000	44,537,000
Reimbursable.....	590,000	679,000	607,000
Average Number of All Employees (Man Years).....	3,595	3,526	3,704

Personnel Costs - $44,537,000

Personnel costs for FY 1967 are estimated to increase by $3,345,000 due to the addition of 182 personnel required by the Manned Space Flight Network, higher average employment, and the full years effect of the Federal Employees Salary Act of 1965.

Travel and Transportation of Persons - $2,633,000

The FY 1967 requirement is estimated at approximately the same level as FY 1966.

The coordination and direction of program activities at various locations, including contractor's plants, educational institutions, launch sites and other field centers, requires substantial travel of Goddard personnel. This travel is essential to effectively monitor, supervise, and evaluate the contractual effort expended as well as the resolving of numerous technical problems which occur in the development process.

Transportation of Things - $1,325,000

The increase of $61,000 is primarily attributable to additional man-years of effort required for the local transportation contract.

Rent, Communications and Utilities - $9,721,000

The increase of $1,721,000 is due primarily to the following:

Rent $7,527,000 - With the introduction of the new generation equipment, the IBM 7094 systems will be phased out by the end of FY 1968. It is necessary, however, to continue the lease of peripheral equipment to the 7094 computers along with the added lease costs of peripheral equipment to the super-speed IBM 360 series of computers, purchased in FY 1965. These costs are necessary to meet current requirements and concurrently ensure the orderly updating of existing computer facilities to a totally integrated super-speed configuration needed to meet known future requirements. During this transition period, rental requirements are increasing by a net of $1,415,000, as the increased cost of computer equipment rentals is partially offset by a decrease in rental of structures as new buildings on-site become available for occupancy.

Communications $1,100,000 - Communication requirements increase by $62,000 to provide for a facsimile terminal and associated circuit costs, increased FTS costs and various installation costs connected with relocation moves.

Utilities $1,094,000 - The completion of on-site buildings and facilities in 1967 and off-site facilities together with increased computer usage account for the $244,000 increase in electrical utilities costs in FY 1967.

Printing and Reproduction - $250,000

Contract printing requirements are estimated to increase by $10,000 due to expanded workload.

Other Services - $8,360,000

The net increase of $1,258,000 in service contracts is primarily to provide for full year funding of the computer services contract for operating an IBM 360 super-speed computer system at the Goddard Institute for Space Studies. This contractual cost includes personnel, peripheral equipment, supplies and maintenance of a government-owned computer.

Maintenance and repair costs are decreased by $77,000 reflecting a reduction in building alteration activity.

The cost for security guard services and janitorial services are expected to increase by $187,000 to extend coverage to the on-site and off-site facilities being completed in FY 1967, and to provide the full year costs of services to those facilities completed during FY 1966.

Supplies and Materials - $1,929,000

The estimate for this object classification is consistent with the FY 1966 level. There is a shift, however, from electronic materials to fuels and lubricants directly attributable to the growth of the physical plant.

Equipment - $2,312,000

The increase of $1,272,000 is required for purchase of a large-scale computer to be used for telemetry data processing; shop equipment and machinery, test equipment, and library books.

Lands and Structures - $450,000

The estimate for minor construction, modifications and alterations are planned at the FY 1966 level.

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

PACIFIC LAUNCH OPERATIONS OFFICE

MISSION AND CAPABILITIES:

The Pacific Launch Operations Office was consolidated under the John F. Kennedy Space Center, NASA, effective October 1, 1965. The FY 1966 and FY 1967 requirements of this Office are included with the estimates for the John F. Kennedy Space Center.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.....	22	---	---
Average Number of All Employees.....	22	---	---
Administrative Operations.....	$844,000	---	---

INSTALLATION DESCRIPTION:

The Pacific Launch Operations Office is located at Vandenberg Air Force Base, California, approximately 150 miles northwest of Los Angeles.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation.....	$213,000	---	---
12.	Personnel Benefits.....	15,000	---	---
	Total, personnel costs.....	$228,000	---	---
21.	Travel and Transportation of Persons.....	38,000	---	---
22.	Transportation of Things.....	6,000	---	---
23.	Rent, Communications, and Utilities.....	41,000	---	---
24.	Printing and Reproduction.....	6,000	---	---
25.	Other Services.....	42,000	---	---
	Services of other agencies.....	164,000	---	---
26.	Supplies and Materials.....	91,000	---	---
31.	Equipment.....	44,000	---	---
32.	Lands and Structures.....	184,000	---	---
42.	Insurance Claims and Indemnities.	---	---	---
	Total.....	$844,000	---	---

799-990 O - 66 - 3

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

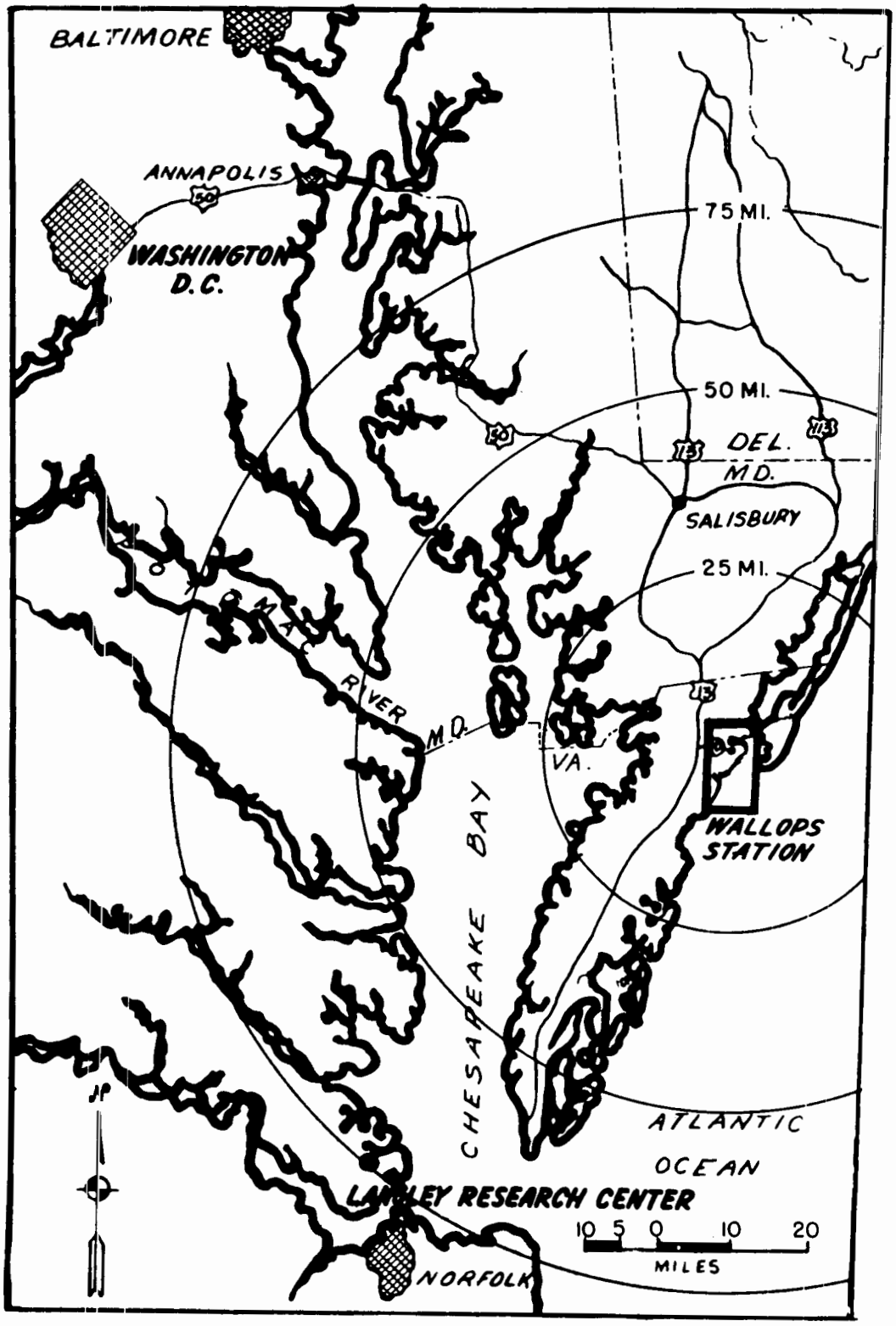
	1965	1966	1967
Direct Personnel by Program			
Support Personnel			
Director and Staff	4	---	---
Administration	8	---	---
Research and development support	7	---	---
Sub-total, support positions	19	---	---
Total, permanent positions	19	---	---
Other positions:			
Positions under cooperative training agreements	---	---	---
Other temporary positions	3	---	---
Total, all positions	22	---	---

Personnel Costs

	1965	1966	1967
Total Positions	22	---	---
Permanent	19	---	---
Other	3	---	---
Personnel Compensation:			
Annual cost of permanent positions	$194,000	---	---
Pay above the stated annual rate	1,000	---	---
Lapses (deduct)	-4,000	---	---
Net cost of permanent positions	191,000	---	---
Other personnel compensation	22,000	---	---
Total compensation	213,000	---	---
NASA funded	213,000	---	---
Reimbursable	---	---	---
Personnel benefits	15,000	---	---
NASA funded	15,000	---	---
Reimbursable	---	---	---

	1965	1966	1967
Total personnel costs.....	$228,000	---	---
NASA funded.....	228,000	---	---
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	22	---	---

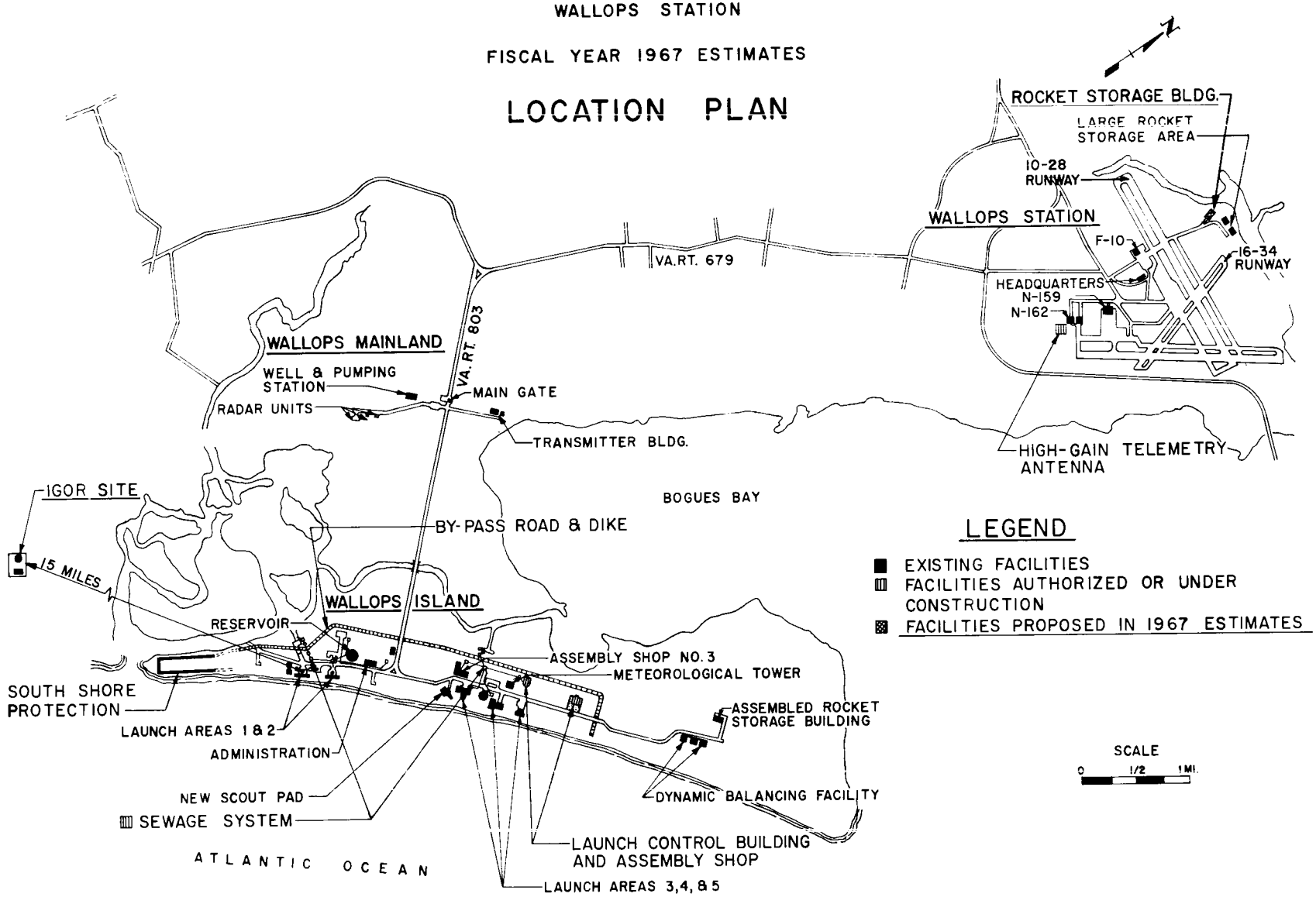
WALLOPS STATION LOCATION

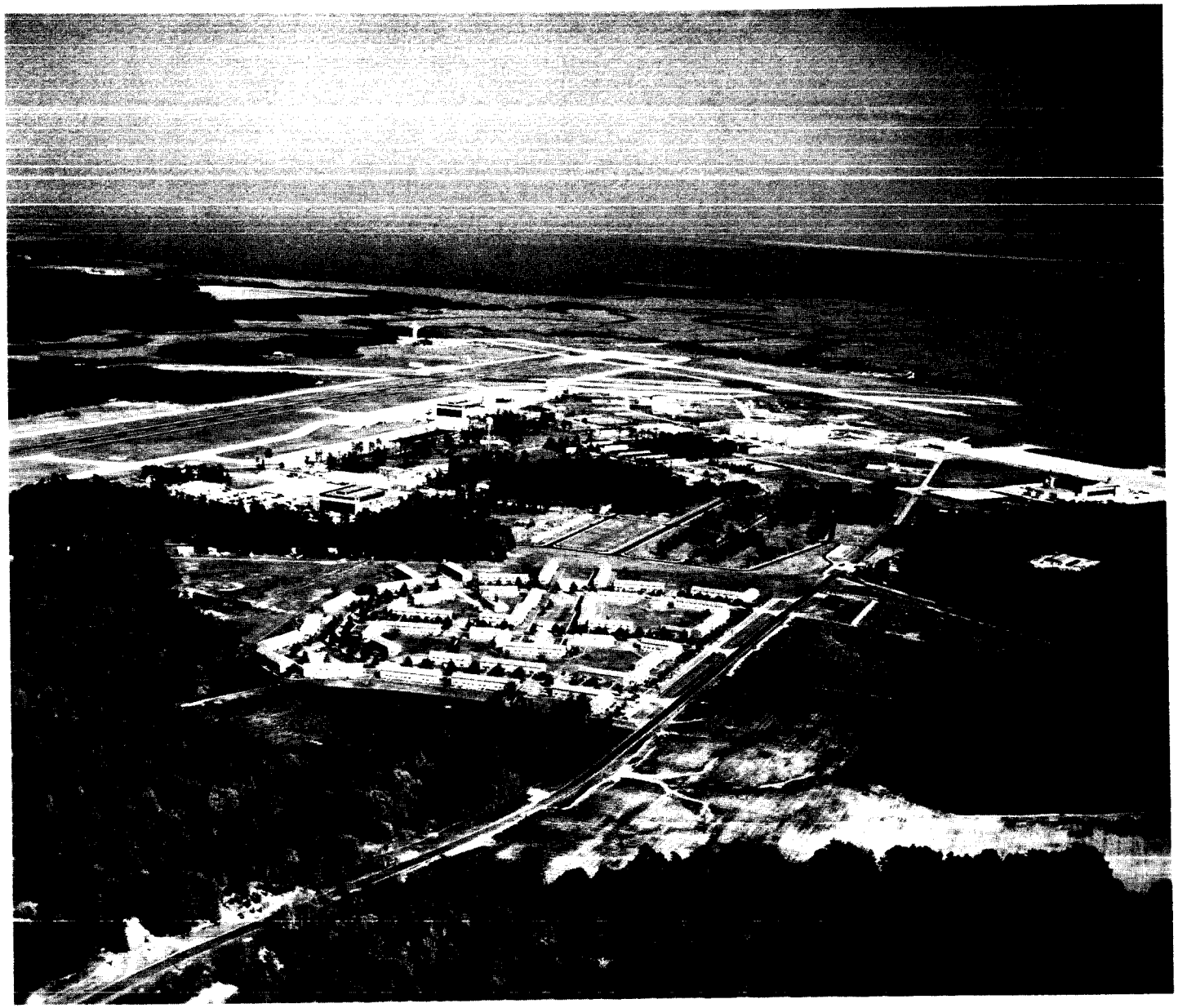


WALLOPS STATION

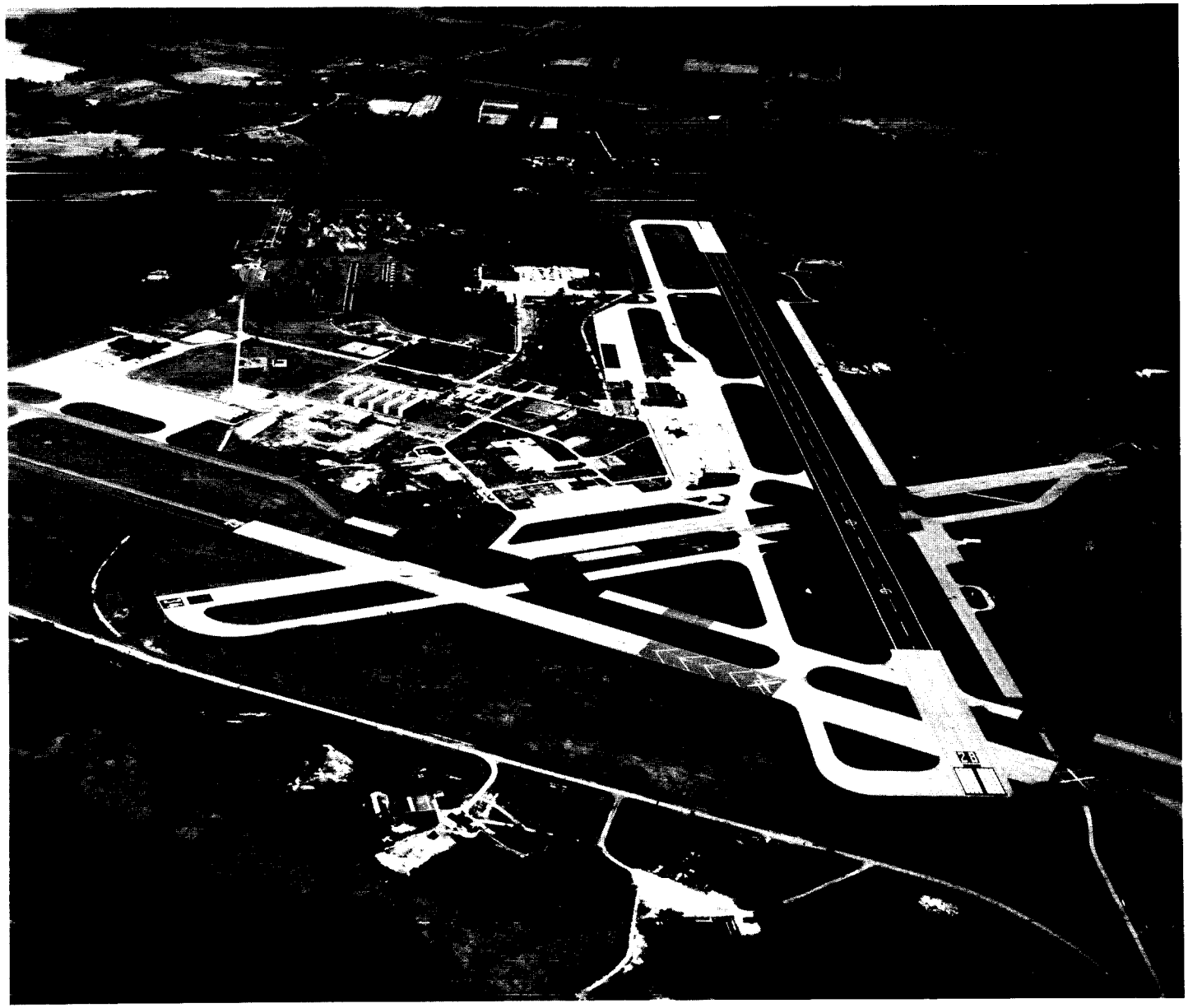
FISCAL YEAR 1967 ESTIMATES

LOCATION PLAN





Toms Cove and Wallops Station



Runways 34, 28, 16, and 22 at Wallops Station

South End of Wallops Island Looking North

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

WALLOPS STATION

STAFFING SUMMARY

	66	67
Excepted	2	2
GS-16	1	1
GS-15	4	6
GS-14	10	13
All other GS	357	352
Wage Board	144	144
Total Permanent	518	518
Temporary	12	12
Total Positions	530	530

DIRECTOR

	66	67
Excepted	1	1
All other GS	4	4
Total Permanent	5	5

FLIGHT TEST DIVISION

	66	67
GS-15	2	3
GS-14	3	3
All other GS	111	110
Wage Board	32	32
Total Permanent	148	148

TECHNICAL SERVICES DIVISION

	66	67
GS-14	1	1
All other GS	42	42
Wage Board	108	108
Total Permanent	151	151

RANGE ENGINEERING DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	1	2
GS-14	5	8
All other GS	86	82
Wage Board	-	-
Total Permanent	94	94

ADMINISTRATIVE MANAGEMENT DIVISION

	66	67
GS-15	1	1
GS-14	1	1
All other GS	114	114
Wage Board	4	4
Total Permanent	120	120

799-990 O - 66 - 10

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

WALLOPS STATION

MISSION AND CAPABILITIES:

Wallops Island was established as the Pilotless Aircraft Research Station of the National Advisory Committee for Aeronautics (NACA) in 1945. This installation's early mission included wind tunnel and laboratory investigations of a variety of aerodynamic problems of flight, as well as serving as a launch site for meteorological and sounding rockets. When the resources and facilities of NACA were transferred to the newly established National Aeronautics and Space Administration (NASA) in 1958, this facility was renamed Wallops Station.

Under NASA, the present mission of Wallops Station is to plan and conduct the integration, test, checkout and launch of space probes, as well as to track, acquire, record, reduce and analyze the data obtained from these activities. 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, and providing administrative and management support for certain programs and projects. Wallops has recently been assigned project management responsibilities for the University Explorer (OWL) which will investigate auroral and airglow phenomena as well as study solar-terrestrial relationships, and is expected to undertake in the near future project management of the X-Ray Explorer which will gather data on stellar X-ray sources discovered by sounding rockets.

Wallops Station is this country's most active launch site. Nearly 6,000 launches have taken place from there since 1945. Vehicles launched from Wallops Station range in size from the small Hasp meteorological rocket to the four-stage Scout, which is capable of placing a 240 pound payload in a 300 mile orbit. A variety of scientific and experimental re-entry spacecraft launched from Wallops have provided scientific and technical data ranging from information on the flight characteristics of aircraft, launch vehicles and spacecraft to data on the upper atmosphere and space environment.

Although the major portion of these launchings are in support of NASA projects, launchings are also conducted for the armed forces, the Atomic Energy Commission and other government organizations, as well as non-government scientific organizations. Wallops Station is also the launching site for numerous projects undertaken in cooperation with foreign nations under NASA's program of international cooperation. Among the station's achievements of the past calendar year are: the launching of 487 sounding rockets, Explorer XXVII (NASA Beacon Explorer), Explorer XXX (Naval Research Laboratory IQSY), SECOR

(U. S. Army geodetic), and the first Aerobee 350 sounding rocket, the only liquied fuel vehicle fired from Wallops. Also, Wallops Station managed the construction of a new launch facility at Point Barrow, Alaska from which 11 sounding rockets were successfully launched. The Mobile Range Expedition aboard the U. S. N. S. Coratan successfully launched 90 sounding rockets off the coast of South America between February and April.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions end of year...	555	530	530
Average Number of All Employees....	530	523	523
Administrative Operations.....	$10,931,000	$9,446,000	$10,166,000

INSTALLATION DESCRIPTION:

Wallops Station consists of three separate areas on the Atlantic Coast of Virginia's eastern shore: The main base (formerly Chincoteague 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 south east of the main base and is connected to the mainland 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 government owned 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. The total capital investment as of June 30, 1965, was $75,323,000. New construction completed during the past calendar year included a new Scout launching facility, a new telemetry building, a dynamic balancing facility, and an addition to the assembly shop.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation.....	$4,437,000	$4,692,000	$4,865,000
12.	Personnel Benefits.....	305,000	333,000	345,000
	Total, personnel costs.....	$4,742,000	$5,025,000	$5,210,000
21.	Travel and Transportation of Persons.....	166,000	185,000	185,000
22.	Transportation of Things....	113,000	153,000	124,000
23.	Rent, Communications, and Utilities.....	625,000	430,000	442,000

	1965	1966	1967
24. Printing and Reproduction.	$32,000	$35,000	$35,000
25. Other Services.....	1,001,000	1,390,000	1,729,000
Services of other agencies	77,000	53,000	65,000
26. Supplies and Materials....	1,450,000	1,250,000	1,451,000
31. Equipment.....	2,207,000	480,000	480,000
32. Lands and Structures.....	518,000	445,000	445,000
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	$10,931,000	$9,446,000	$10,166,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Space Science and Applications			
Physics and astronomy.....	68	74	69
Bioscience.....	6	6	6
Meteorological satellites.....	6	6	3
Advanced Research and Technology			
Space vehicle systems.....	45	45	45
Electronics systems.....	1	1	1
Space power and electric propulsion systems.....	5	-	-
Chemical propulsion.....	-	5	5
Aeronautics.....	15	15	15
Tracking and Data Acquisition	32	39	39
Sub-total, direct positions.....	178	191	183
Support personnel			
Director and Staff.....	5	5	5
Administration.....	208	205	205
Research and development support.....	127	117	125
Sub-total, support positions.....	340	327	335
Total, permanent positions.....	518	518	518

	1965	1966	1967
Other Positions:			
Positions under cooperative training agreements.....	12	12	12
Other temporary positions.....	25	---	---
Total, all positions.....	555	530	530

Personnel Costs

	1965	1966	1967
Total Positions.....	555	530	530
Permanent.....	518	518	518
Other.....	37	12	12
Personnel Compensation:			
Annual cost of permanent positions..	$3,862,000	$4,211,000	$4,315,000
Pay above the stated annual rate....	38,000	16,000	17,000
Lapses (deduct).....	-112,000	-106,000	-47,000
Net cost of permanent positions.....	3,788,000	4,121,000	4,285,000
Other personnel compensation.....	649,000	571,000	580,000
Total Compensation.....	4,437,000	4,692,000	4,865,000
NASA Funded.....	4,437,000	4,692,000	4,865,000
Reimbursable.....	---	---	---
Personnel benefits.....	305,000	333,000	345,000
NASA funded.....	305,000	333,000	345,000
Reimbursable.....	---	---	---
Total personnel costs.....	4,742,000	5,025,000	5,210,000
NASA funded.....	4,742,000	5,025,000	5,210,000
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	530	523	523

Personnel Costs - $5,210,000

Increased personnel costs are estimated to be $185,000 higher than 1966 as a result of the cost of the Federal Employees Salary Act of 1965 for a full year; within-grade step increase; career development and for retirement contributions and other benefits.

Transportation of Things - $124,000

Anticipated requirements for transportation of things are $29,000 less than

FY 1966 due to reduced requirements for transportation of equipment to the launch facility at Point Barrow, Alaska.

Rent, Communications, and Utilities - $442,000

Estimated requirements are $12,000 above FY 1966 due to increased communications and electricity costs necessary to accommodate greatly increased use of Wallops Station airfield, the experimental radar and tracking equipment turned over to NASA by the Massachusetts Institute of Technology, and the Coquina Beach, North Carolina, tracking site.

Other Services - $1,794,000

Increased anticipated costs of $351,000 above the FY 1966 level reflects the increased requirement for maintenance, repairs and alterations to the aging facilities of the main base, and the continuous maintenance and repair of the station's equipment. Also included is the cost of the addition of four men and increased overtime demands on the fire fighting crew necessitated by increased airport activity, and the first full year of service provided by technical documentation and supply management contracts which were initiated in FY 1966.

Supplies and Materials - $1,451,000

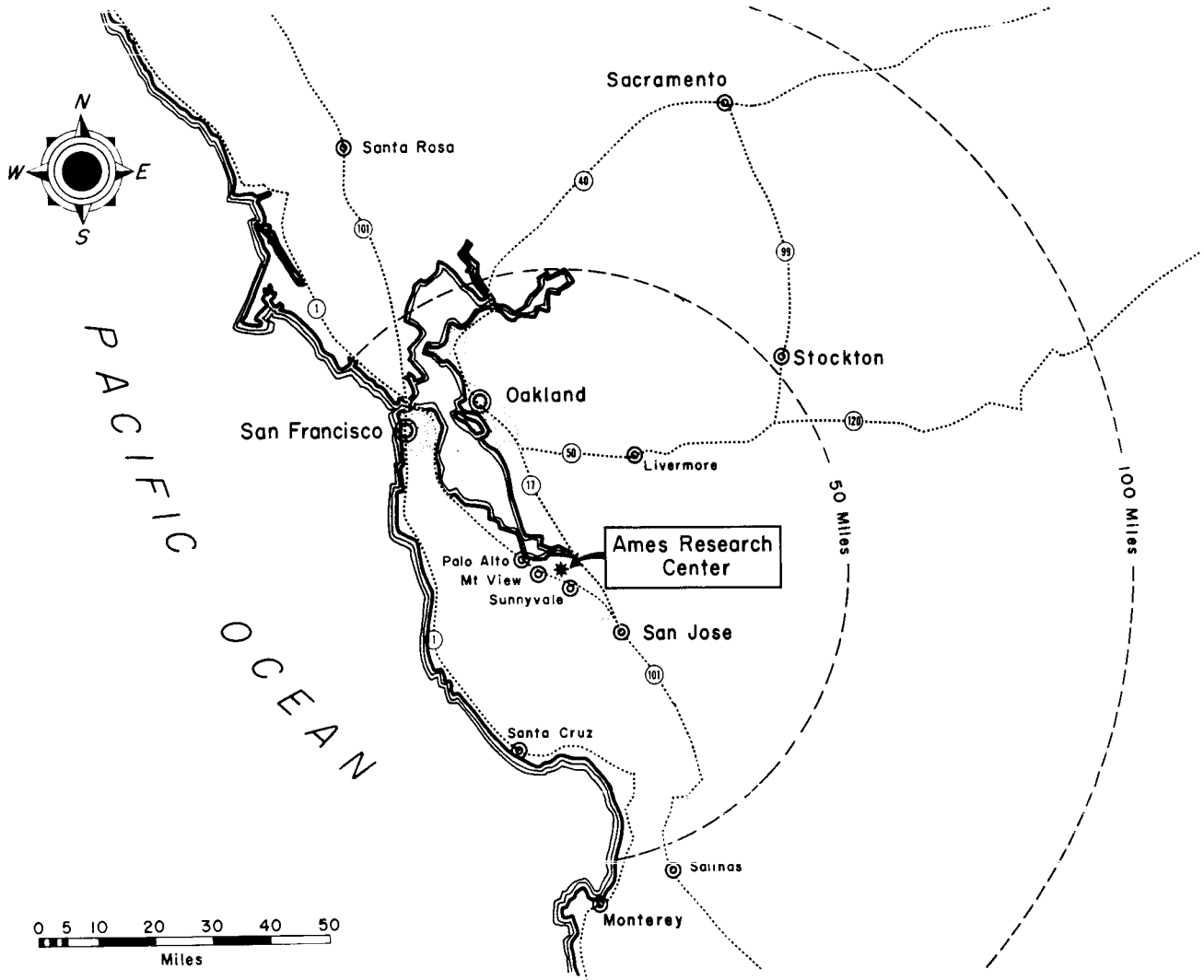
The increase of $201,000 is primarily the result of recently acquired administrative support responsibility for the joint Air Force-NASA Radar Facility at Wallops Station, as well as remotely located facilities at Coquina Beach, North Carolina, and Fort Churchill, Canada. Also, the increased activity which is expected in FY 1967 at the recently completed launch facility at Point Barrow, Alaska, will require additional expenditures for supplies and materials.

All other object classifications - $1,145,000

Other requirements include the cost of travel, printing and reproduction, purchase of equipment, and minor construction, all of which are expected to remain at the FY 1966 level.

AMES RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

VICINITY MAP



AMES RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

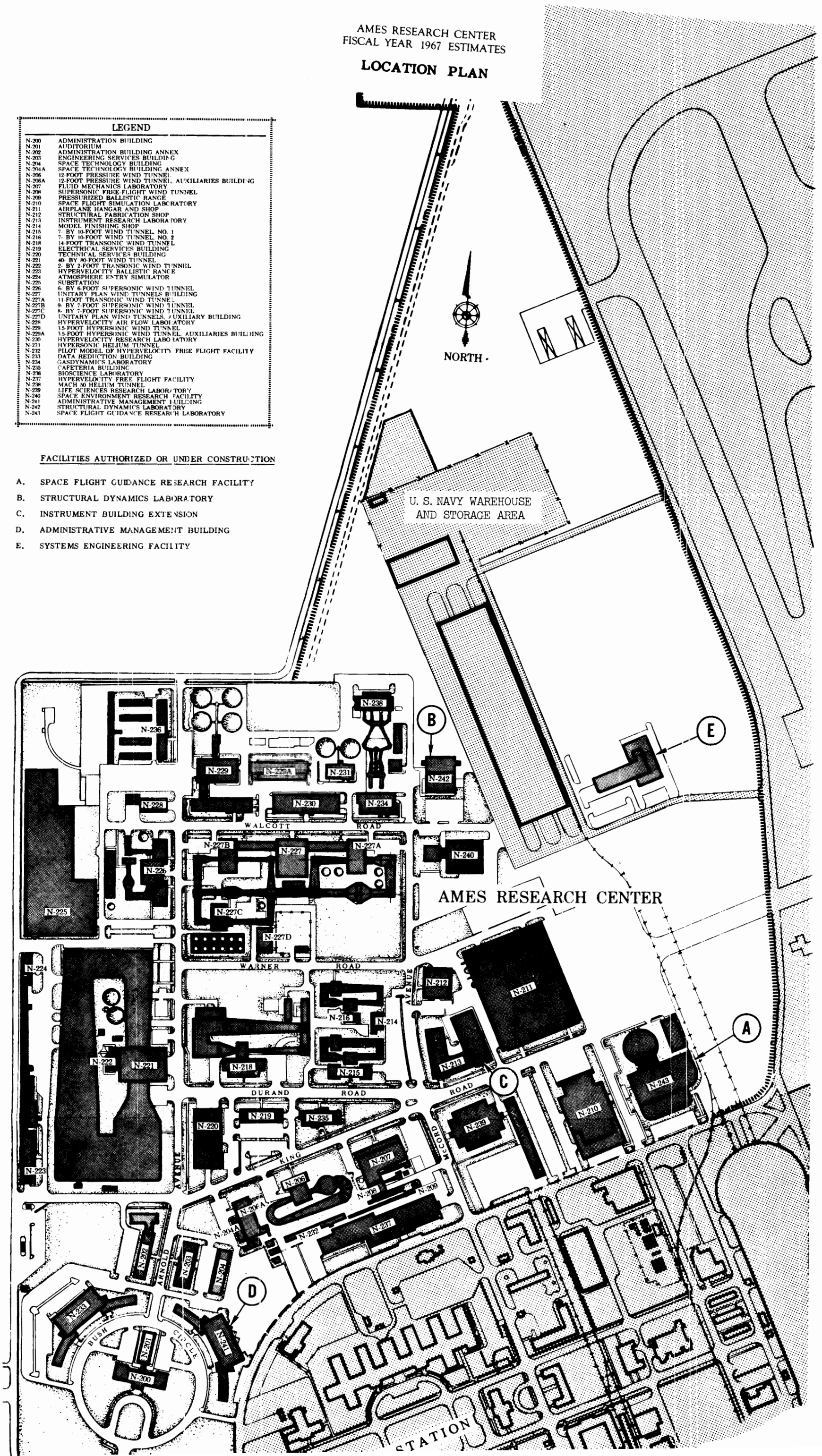
LOCATION PLAN

LEGEND

N-200	ADMINISTRATION BUILDING
N-201	AUDITORIUM
N-202	ADMINISTRATION BUILDING ANNEX
N-203	ENGINEERING SERVICES BUILDING
N-204	SPACE TECHNOLOGY BUILDING
N-204A	SPACE TECHNOLOGY BUILDING ANNEX
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-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	6- BY 7-FOOT SUPERSONIC WIND TUNNEL
N-227D	UNITARY PLAN WIND TUNNELS, AUXILIARY 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	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
N-241	ADMINISTRATIVE MANAGEMENT BUILDING
N-242	STRUCTURAL DYNAMICS LABORATORY
N-243	SPACE FLIGHT GUIDANCE RESEARCH LABORATORY

FACILITIES AUTHORIZED OR UNDER CONSTRUCTION

A. SPACE FLIGHT GUIDANCE RESEARCH FACILITY
B. STRUCTURAL DYNAMICS LABORATORY
C. INSTRUMENT BUILDING EXTENSION
D. ADMINISTRATIVE MANAGEMENT BUILDING
E. SYSTEMS ENGINEERING FACILITY



LEGEND

N-200	ADMINISTRATION BUILDING
N-201	AUDITORIUM
N-202	ADMINISTRATION BUILDING ANNEX
N-203	ENGINEERING SERVICES BUILDING
N-204	SPACE TECHNOLOGY BUILDING
N-204A	SPACE TECHNOLOGY BUILDING ANNEX
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-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, AUXILIARY 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	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
N-241	ADMINISTRATIVE MANAGEMENT BUILDING
N-242	STRUCTURAL DYNAMICS LABORATORY
N-243	SPACE FLIGHT GUIDANCE RESEARCH LABORATORY

FACILITIES AUTHORIZED OR UNDER CONSTRUCTION

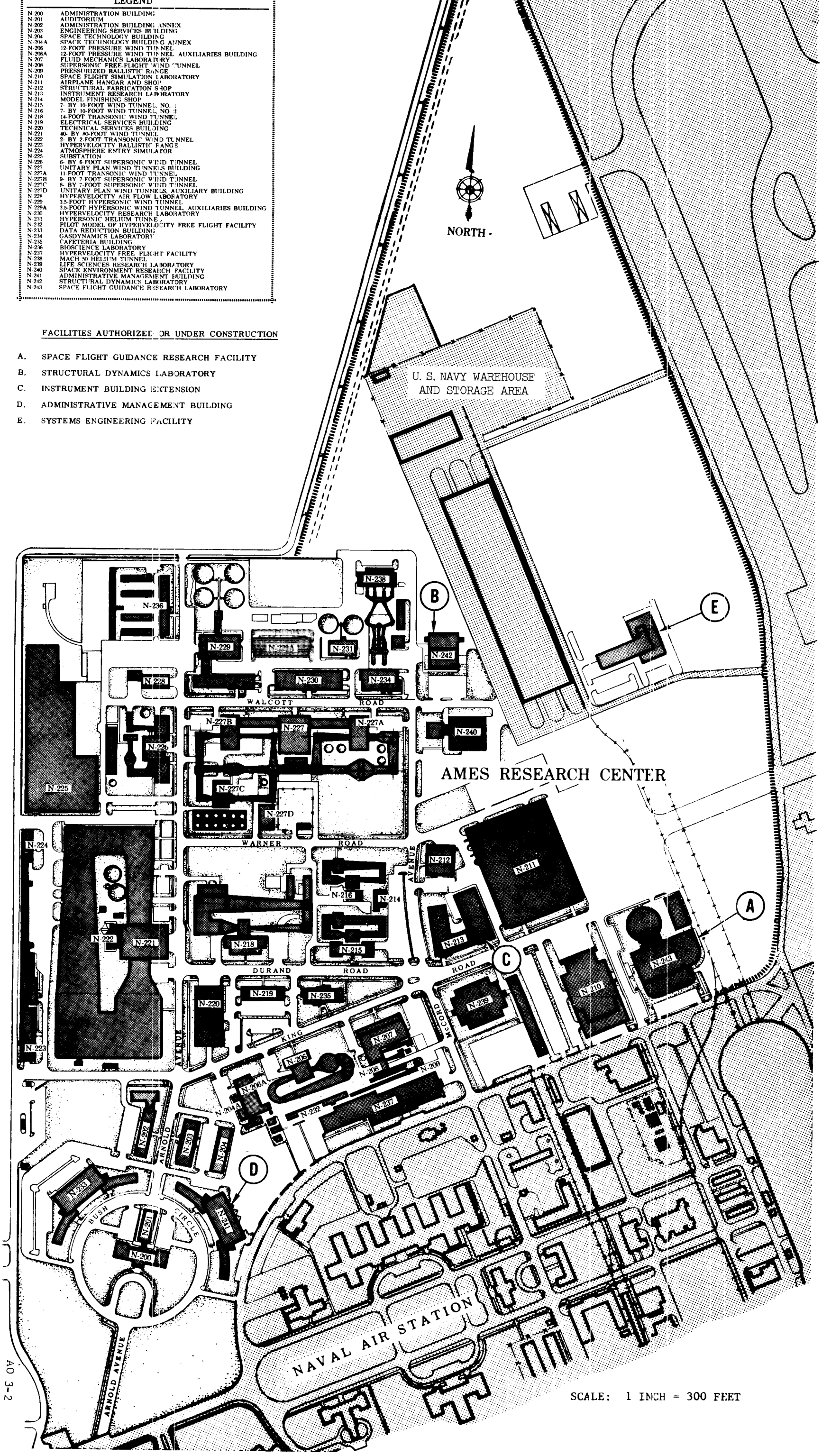
A. SPACE FLIGHT GUIDANCE RESEARCH FACILITY

B. STRUCTURAL DYNAMICS LABORATORY

C. INSTRUMENT BUILDING EXTENSION

D. ADMINISTRATIVE MANAGEMENT BUILDING

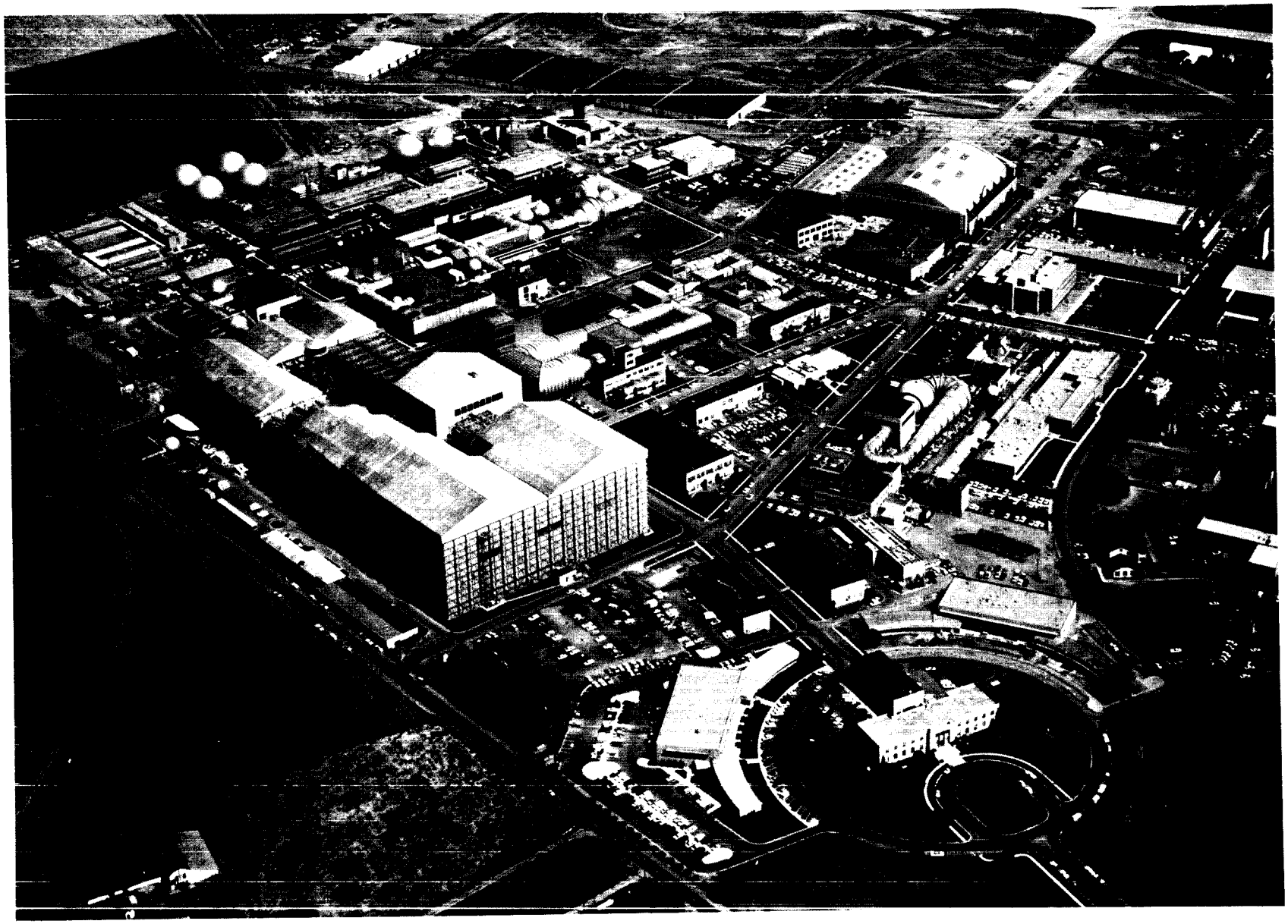
E. SYSTEMS ENGINEERING FACILITY



SCALE: 1 INCH = 300 FEET

AO 3-2

AMES RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES



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

STAFFING SUMMARY

	66	67
Excepted	26	26
GS-16	20	20
GS-15	120	130
GS-14	139	190
All other GS	1,162	1,108
Wage Board	753	717
Total Permanent	2,220	2,191
Temporary	20	20
Total Positions	2,240	2,211

DIRECTOR

	66	67
Excepted	2	2
GS-15	3	3
All other GS	5	5
Total Permanent	10	10

PROGRAMS AND RESOURCES OFFICE

	66	67
GS-16	1	1
GS-15	1	1
GS-14	1	2
All other GS	8	7
Total Permanent	11	11

TECHNOLOGY UTILIZATION OFFICE

	66	67
GS-15	1	1
GS-14	1	1
All other GS	2	2
Total Permanent	4	4

PUBLIC INFORMATION OFFICE

	66	67
GS-14	1	1
All other GS	4	4
Total Permanent	5	5

OART MISSION ANALYSIS DIVISION

	66	67
Excepted	2	2
GS-16	2	2
GS-15	8	8
GS-14	11	17
All other GS	23	17
Total Permanent	46	46

ASSISTANT DIRECTOR AERONAUTICS AND FLIGHT MECHANICS

	66	67
Excepted	1	1
GS-15	-	1
GS-14	1	-
All other GS	1	1
Total Permanent	3	3

AERONAUTICS DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	7	8
GS-14	10	13
All other GS	72	71
Wage Board	56	51
Total Permanent	147	145

FULL SCALE AND SYSTEMS RESEARCH DIVISION

	66	67
Excepted	2	2
GS-16	2	2
GS-15	15	16
GS-14	15	23
All other GS	82	70
Wage Board	10	10
Total Permanent	126	123

INSTRUMENTATION DIVISION

	66	67
Excepted	2	2
GS-16	1	1
GS-15	7	8
GS-14	10	10
All other GS	114	112
Wage Board	119	107
Total Permanent	253	240

SIMULATION SCIENCES DIVISION

	66	67
GS-16	1	1
GS-15	3	4
GS-14	3	3
All other GS	12	10
Wage Board	19	30
Total Permanent	38	48

ASSISTANT DIRECTOR ASTRONAUTICS

	66	67
Excepted	1	1
GS-15	1	1
All other GS	1	1
Total Permanent	3	3

THERMO AND GAS DYNAMICS DIVISION

	66	67
Excepted	2	2
GS-16	3	3
GS-15	16	19
GS-14	15	19
All other GS	91	85
Wage Board	45	45
Total Permanent	172	173

VEHICLE ENVIRONMENT DIVISION

	66	67
Excepted	1	1
GS-16	4	3
GS-15	11	13
GS-14	10	15
All other GS	96	90
Wage Board	36	34
Total Permanent	158	156

SPACE SCIENCES DIVISION

	66	67
Excepted	2	2
GS-15	8	8
GS-14	10	22
All other GS	35	22
Wage Board	16	16
Total Permanent	71	70

ASSISTANT DIRECTOR LIFE SCIENCES

	66	67
Excepted	2	2
GS-14	-	1
All other GS	3	2
Total Permanent	5	5

EXOBIOLOGY DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	5	5
GS-14	3	8
All other GS	38	36
Total Permanent	48	51

ENVIRONMENTAL BIOLOGY DIVISION

	66	67
Excepted	2	2
GS-16	1	1
GS-15	6	5
GS-14	5	7
All other GS	45	45
Wage Board	2	4
Total Permanent	61	64

BIOTECHNOLOGY DIVISION

	66	67
Excepted	1	1
GS-16	-	1
GS-15	5	5
GS-14	4	9
All other GS	39	41
Total Permanent	49	57

ASSISTANT DIRECTOR DEVELOPMENT

	66	67
Excepted	1	1
All other GS	1	1
Total Permanent	2	2

SYSTEMS ENGINEERING DIVISION

	66	67
GS-16	1	1
GS-15	4	5
GS-14	7	7
All other GS	14	13
Total Permanent	26	26

PROJECT PIONEER

	66	67
Excepted	1	1
GS-15	4	4
GS-14	9	9
All other GS	32	33
Total Permanent	46	47

PROJECT BIOSATELLITE

	66	67
Excepted	1	1
GS-16	1	1
GS-15	5	5
GS-14	9	9
All other GS	50	50
Wage Board	7	7
Total Permanent	73	73

ASSISTANT DIRECTOR ADMINISTRATION

	66	67
Excepted	1	1
GS-14	1	1
All other GS	1	1
Total Permanent	3	3

LEGAL OFFICE

	66	67
GS-15	1	1
GS-14	1	1
All other GS	1	1
Total Permanent	3	3

MEDICAL OFFICE

	66	67
GS-15	1	1
Total Permanent	1	1

ADMINISTRATIVE SERVICES DIVISION

	66	67
All other GS	30	30
Wage Board	6	6
Total Permanent	36	36

FISCAL DIVISION

	66	67
GS-14	1	1
All other GS	76	76
Total Permanent	77	77

PERSONNEL DIVISION

	66	67
GS-15	1	1
GS-14	-	-
All other GS	55	46
Total Permanent	56	47

PROCUREMENT AND SUPPLY DIVISION

	66	67
GS-15	1	1
GS-14	2	2
All other GS	75	80
Wage Board	19	19
Total Permanent	97	102

TECHNICAL INFORMATION DIVISION

	66	67
All other GS	38	38
Wage Board	15	15
Total Permanent	53	53

RESEARCH FACILITIES AND EQUIPMENT DIVISION

	66	67
GS-16	1	1
GS-15	5	5
GS-14	8	8
All other GS	113	113
Wage Board	59	59
Total Permanent	186	186

TECHNICAL SERVICES DIVISION

	66	67
GS-15	1	1
GS-14	1	1
All other GS	5	5
Wage Board	344	314
Total Permanent	351	321

799-9 O - 66 (Fols. p. 3-3)

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

AMES RESEARCH CENTER

MISSION AND CAPABILITIES:

The mission of the Ames Research Center has been broadened significantly since the establishment of NASA and now includes a major research responsibility in the life sciences, flight project management responsibility, and responsibility for spacecraft experimentation in the space sciences, in addition to the traditional research mission in the physical sciences. In the current and budget years, Ames has flight project management responsibility for Pioneer and Biosatellite projects. Pioneer is now providing 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.

Research in the physical sciences includes studies in atmosphere entry and environmental physics, guidance and control systems, and aeronautics. The work 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 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 micrometeoric 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 studies involving lunar approach, lunar landing, and rendezvous. The research in control systems is directed at examining various techniques applicable to satellite attitude stabilization and techniques applicable to verticle and short take-off (V/STOL) aircraft, the supersonic transport, and the Apollo spacecraft. The research program in aeronautics is directed at studies of the problems associated with high speed 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.

799-990 O - 66 - 11

Research in the space sciences includes studies in the field 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, and micrometeoroids in space, and studies to determine the composition and structure of planets and of planetary and stellar atmospheres.

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

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year..	2,270	2,240	2,211
Average Number of All Employees....	2,224	2,244	2,222
Administrative Operations.....	$31,807,000	$32,923,000	$33,475,000

INSTALLATION DESCRIPTION:

The Ames Research Center was established in 1940 and is located at the southern end of San Francisco Bay on about 226 acres of 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. 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, 1965, was $175,016,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	1965	1966	1967
11. Personnel Compensation.....	$21,027,000	$21,935,000	$22,572,000
12. Personnel Benefits.....	1,549,000	1,584,000	1,629,000
Total, personnel costs...	$22,576,000	$23,519,000	$24,201,000

	1965	1966	1967
21. Travel and Transportation of Persons.....	$643,000	$676,000	$670,000
22. Transportation of Things....	23,000	25,000	25,000
23. Rent, Communications, and Utilities.....	4,575,000	4,733,000	5,133,000
24. Printing and Reproduction...	27,000	27,000	27,000
25. Other Services.....	1,611,000	1,537,000	1,706,000
Services of other agencies	137,000	140,000	150,000
26. Supplies and Materials.....	1,296,000	1,148,000	1,100,000
31. Equipment.....	608,000	730,000	280,000
32. Lands and Structures.....	311,000	388,000	183,000
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	$31,807,000	$32,923,000	$33,475,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Apollo.....	5	5	5
Space Science and Applications			
Physics and astronomy.....	53	66	66
Lunar and planetary exploration	124	110	109
Bioscience.....	218	219	217
Meteorological satellites.....	---	---	1
Advanced Research and Technology			
Basic research.....	320	320	316
Space vehicle systems.....	245	248	241
Electronics systems.....	140	140	139
Human factor systems.....	134	137	137
Aeronautics.....	351	355	346
Sub-total, direct positions..	1,590	1,600	1,577

	1965	1966	1967
Support personnel			
Director and Staff.....	48	53	49
Administration.....	319	319	323
Research and development support.	253	248	242
Sub-total, support positions...	620	620	614
Total, permanent positions.....	2,210	2,220	2,191
Other positions:			
Positions under cooperative training agreements.....	---	---	---
Other temporary positions.....	60	20	20
Total, all positions.....	2,270	2,240	2,211

Personnel requirements

The personnel complement is unquestionably the most critical resource at Ames because of the Center's obligation to conduct research on a broad base in both ground-based laboratories and flight projects and the severe restrictions on complement authorizations which results from similar agency commitments at all centers. Because of these limitations, the management of the manpower resource is the subject of careful and continual review and adjustment at all management levels within the Center. A constant trade-off between programs is carried on at the research division level to achieve the best possible balance between personnel requirements and resources available.

Personnel Costs

	1965	1966	1967
Total Positions.....	2,270	2,240	2,211
Permanent.....	2,210	2,220	2,191
Other.....	60	20	20
Personnel Compensation:			
Annual cost of permanent positions.....	$21,093,000	$22,299,000	$22,435,000
Pay above the stated annual rate..	80,000	84,000	86,000
Lapses (deduct).....	-638,000	-997,000	-519,000
Net cost of permanent positions...	20,535,000	21,386,000	22,002,000
Other personnel compensation.....	492,000	549,000	570,000
Total compensation.....	21,027,000	21,935,000	22,572,000
NASA funded.....	21,027,000	21,935,000	22,572,000
Reimbursable.....	---	---	---

	1965	1966	1967
Personnel benefits.....	$1,549,000	$1,584,000	$1,629,000
NASA funded.....	1,549,000	1,584,000	1,629,000
Reimbursable.....	---	---	---
Total personnel costs.....	22,576,000	23,519,000	24,201,000
NASA funded.....	22,576,000	23,519,000	24,201,000
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	2,224	2,244	2,222

Personnel Costs - $24,201,000

The personnel cost for FY 1967 is estimated to be $24,201,000 covering 2,222 manyears of employment. Of this amount $22,572,000 is for personnel compensation and $1,629,000 for personnel benefits. The FY 1967 estimate includes an increase of $682,000 over the amount for the current fiscal year. This increase is required to cover the cost of the Federal Employees Salary Act of 1965 on a full year basis, for within-grade step increases and career development, for retirement contributions and other benefits.

The following table shows the major items which are included in the estimate for personnel costs:

	FY 1967 Estimate	Increase or Decrease from FY 1966
Personnel Compensation		
Net cost of permanent positions	$22,002,000	$+616,000
Other personnel compensation...	570,000	+21,000
Sub-total.....	$22,572,000	$+637,000
Personnel Benefits		
Retirement contributions.....	1,395,000	+40,000
Other benefits.....	234,000	+5,000
Sub-total.....	$1,629,000	$+45,000
Total, personnel costs.....	$24,201,000	$+682,000

Travel and Transportation of Persons - $670,000

There is a slight reduction of $6,000 in this category paralleling the reduction in the total number of permanent positions at the Ames Research Center.

Transportation of Things - $25,000

There is no change in this category from the FY 1966 level.

Rent, Communications, and Utilities - $5,133,000

The total increase of $400,000 in this category is almost entirely for the lease cost of ADP equipment. This includes the addition of four remote high-speed computing stations for more effective communications between the scientist and the computer. It also includes minor modifications to the existing basic computational system and increased use of extra shift time.

Printing and Reproduction - $27,000

Commercial printing costs have been significantly reduced in past years through the acquisition of modern printing equipment which has enhanced the in-house printing capability. Thus, the FY 1967 cost is expected to remain at the same level as in FY 1966.

Other Services - $1,856,000

Total increase for this category is $179,000. Support services, performed under contract, include janitorial services, refuse handling and art work. It is also planned to continue the use of business management consulting firms for reviewing and recommending potential modifications to current policies and practices. A minor increase of $10,000 in cost of fire protection services provided by the U.S. Navy is anticipated due to the increased number of new facilities becoming available in FY 1967.

Supplies and Materials - $1,100,000

Requirements for funds in this category are $48,000 lower in FY 1967 than for FY 1966, primarily because of the reduction in procurement of office supplies.

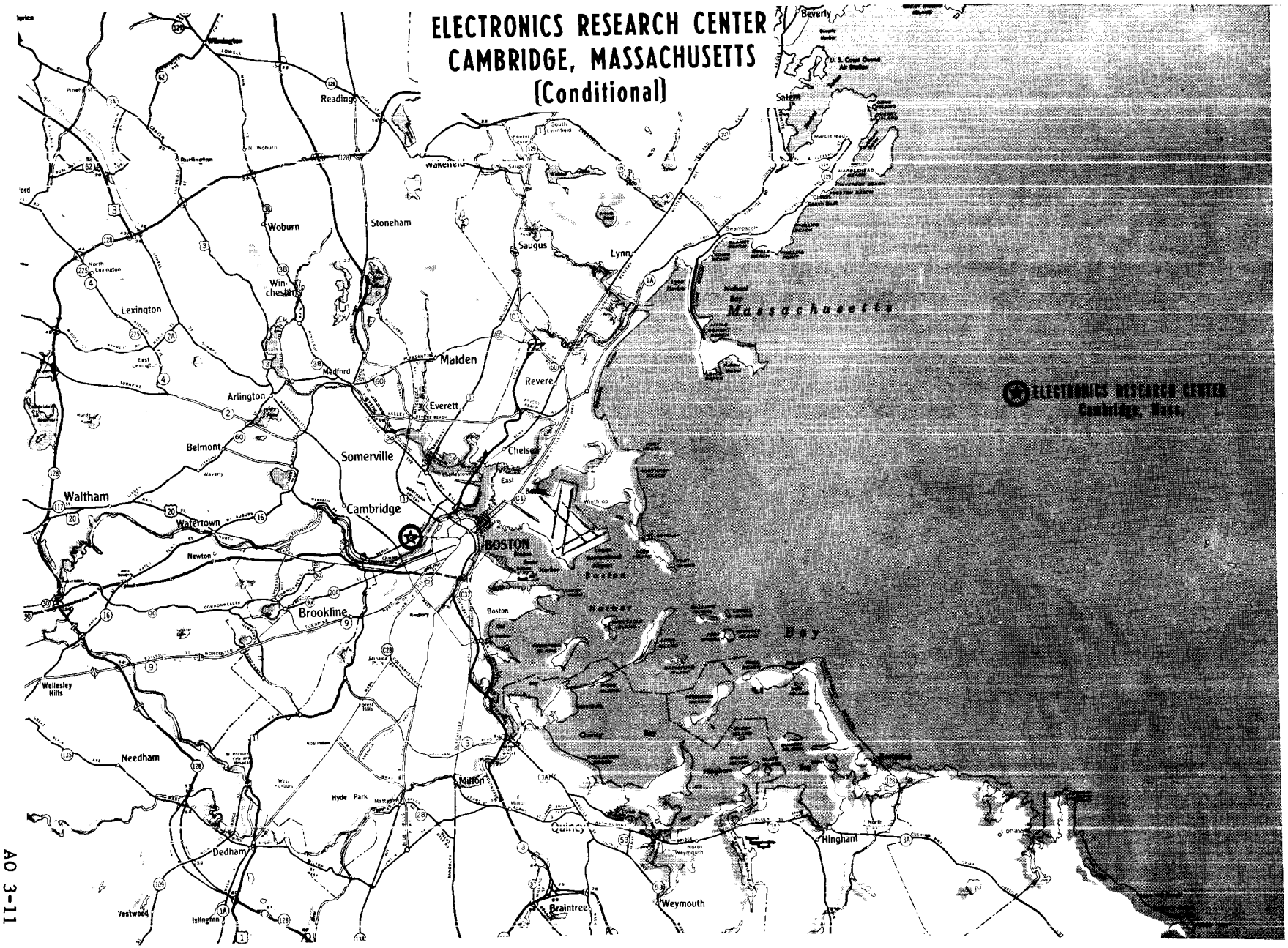
Equipment - $280,000

The requirement for equipment has been reduced $450,000 in FY 1967 from the FY 1966 level. The purchase in FY 1966 of the IBM 7094 computer ($344,000) associated with minor reductions in laboratory and photographic equipment makes up this sizeable reduction.

Lands and Structures - $183,000

This category has been reduced $205,000 in FY 1967. In FY 1966 a minor construction project for the addition to the old administration building to house the Mission Analysis Division was accomplished. With this one time item complete the subsequent reduction is realized.

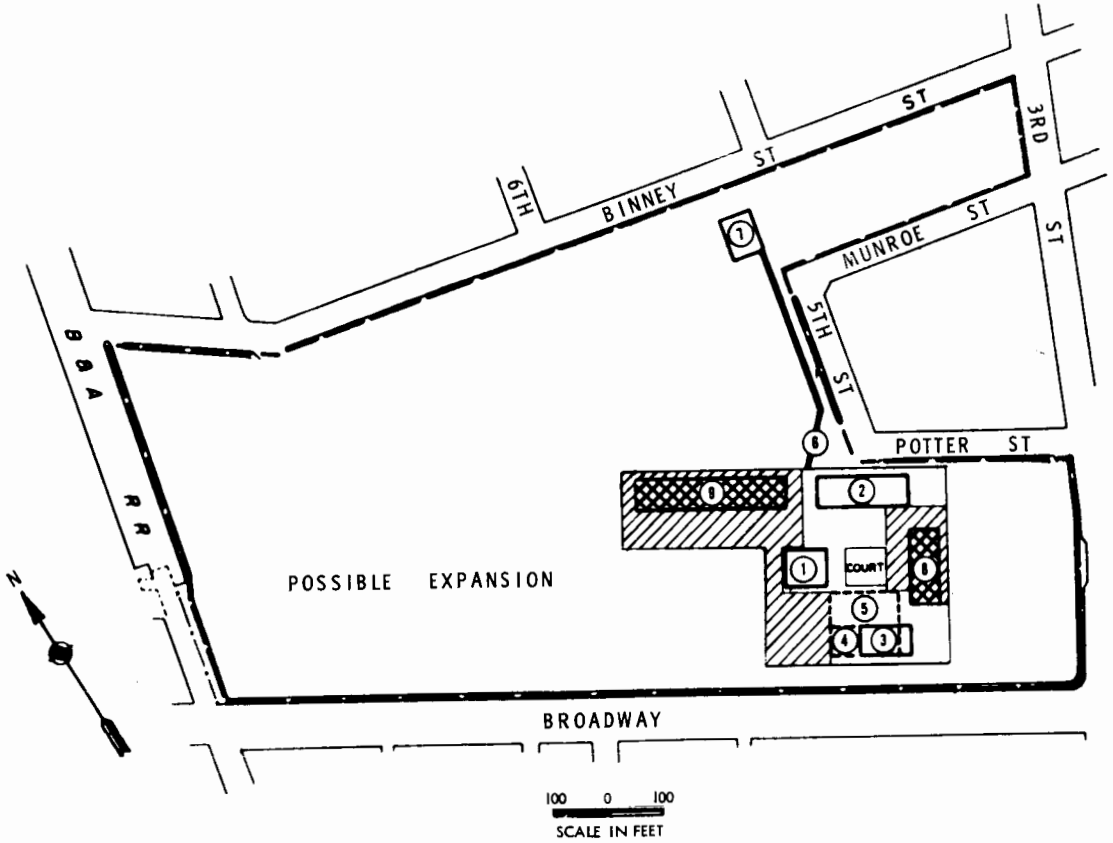
ELECTRONICS RESEARCH CENTER
CAMBRIDGE, MASSACHUSETTS
(Conditional)

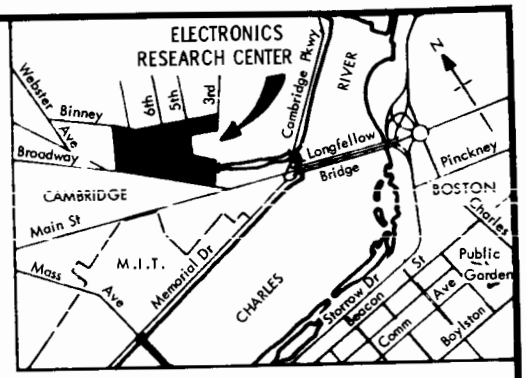


ELECTRONICS RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

LOCATION PLAN

CAMBRIDGE, MASS





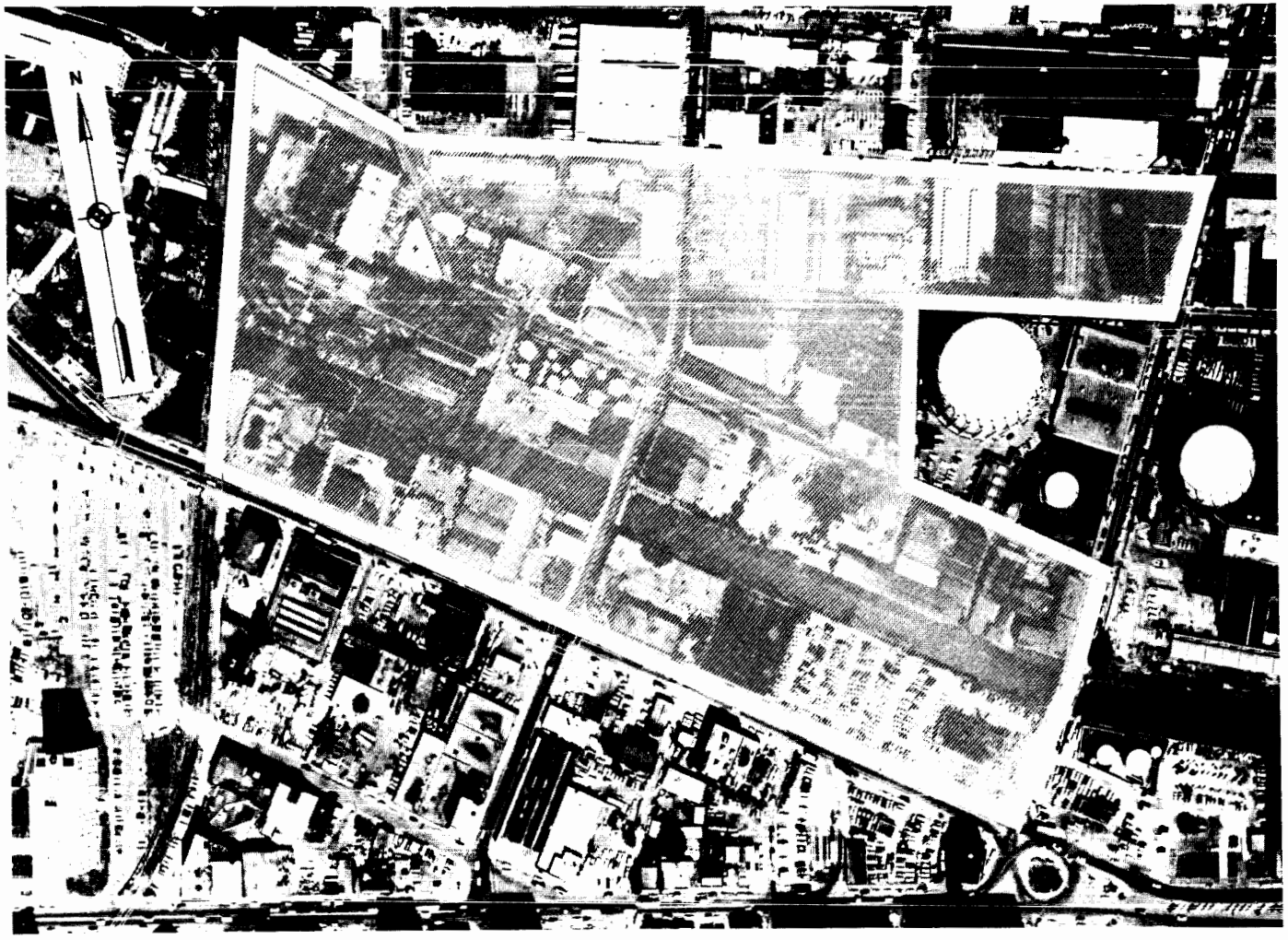
0 0.1 0.2 0.3 0.4 0.5
SCALE IN MILES

1. TOWER-E/A & GENERAL PURPOSE LABORATORIES
2. MICROWAVE RADIATION
3. AUDITORIUM
4. KITCHEN (BASEMENT)
5. DINING (BASEMENT)
6. UTILITY TUNNEL
7. CENTER SERVICE BUILDING
8. QUALIFICATIONS & STANDARDS/ELECTRONIC COMPONENTS LABORATORY
9. SPACE GUIDANCE/OPTICAL COMMUNICATIONS LABORATORY

LEGEND

- FY-65 & 66 FACILITIES
- FACILITIES PROPOSED IN 1967 ESTIMATES
- BASEMENTS ASSOCIATED WITH FY-67 FACILITIES
- PROJECT BOUNDARY

ELECTRONICS RESEARCH CENTER
CAMBRIDGE, MASS.



AERIAL VIEW

759-090 O - 66 - 12

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

ELECTRONICS RESEARCH CENTER

OFFICE OF THE DIRECTOR

	66	67
Excepted	2	2
GS-16	-	-
GS-15	4	7
GS-14	6	5
All other GS	16	19
Total Permanent	28	33

STAFFING SUMMARY

	66	67
Excepted	10	10
GS-16	10	10
GS-15	46	77
GS-14	83	126
All other GS	401	777
Total Permanent	550	1,000
Temporary	-	-
Total Positions	550	1,000

PROGRAMS AND RESOURCES OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	3	4
GS-14	5	6
All other GS	41	48
Total Permanent	50	59

ADMINISTRATION OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	3
GS-14	6	8
All other GS	102	159
Total Permanent	110	171

FACILITIES AND ENGINEERING OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	10	15
All other GS	69	134
Total Permanent	84	154

SYSTEMS DIVISION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	7	9
GS-14	4	11
All other GS	22	66
Total Permanent	36	89

ELECTRONIC COMPONENTS DIVISION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	8	16
GS-14	20	15
All other GS	54	119
Total Permanent	85	153

GUIDANCE AND CONTROL DIVISION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	7	20
GS-14	14	33
All other GS	38	72
Total Permanent	62	128

INSTRUMENTATION AND DATA PROCESSING RESEARCH DIVISION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	6	7
GS-14	9	17
All other GS	28	74
Total Permanent	46	101

ELECTROMAGNETIC DIVISION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	6	7
GS-14	9	16
All other GS	31	86
Total Permanent	49	112

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

ELECTRONICS RESEARCH CENTER

MISSION AND CAPABILITIES:

The mission of the Electronics Research Center is to increase the agency's cabability by providing the knowledge and advanced technology needed to improve performance and reliability of space and aeronautical electronic systems and components. The Center meets this responsibility in two principal ways:

First, the Center organizes, manages, and conducts a comprehensive program of basic and applied space electronics research in order to: (a) investigate concepts and techniques that will provide the technological foundation for the development of electronic equipment of reduced weight, size, power drain, and complexity, able to operate for long periods of time in the temperatures, radiation, vacuum, and other harsh conditions found in space; (b) investigate concepts and techniques, establish performance characteristics, test procedures, and specifications for space electronic components and techniques that will make space electronics equipment inherently more reliable; and (c) devise new electronic concepts and techniques and prove their feasibility, both analytically and experimentally, leading to space and aeronautical electronic equipment with performance characteristics far beyond these of today.

Second, the Center provides a focal point for national space electronics research, coordinating nationwide research efforts and sponsoring electronics research conducted by industry, universities, and private institutions. In this capacity, the Center (a) responds to the needs of specific space and aeronautical programs and projects for new electronic techniques, concepts, and devices, and helps shape future electronics research to resolve anticipated problems in these programs; (b) distributes knowledge about basic and applied research on electronics within NASA and also to industry, universities, and other members of the scientific and engineering community; and (c) provides to NASA programs and projects electronic scientists and engineers who are fully knowledgeable in the electronics state-of-the-art.

Electronics research being managed and conducted by the Center during FY 1966 and FY 1967 is largely contracted with industry and universities and is focused in the following areas:

1. Space electronics materials and components.

2. Guidance and navigation of space vehicles, spacecraft, aircraft and supporting ground based equipment.

3. Space vehicle, spacecraft and aircraft control, stabilization and information systems.

4. Electronic system simulation, analysis, evaluation and integration in the fields of guidance, control, navigation, tracking, communication and instrumentation.

5. Electronic power conditioning and distribution.

6. Space and ground based instrumentation technology.

7. Space and ground based computers and computing systems.

8. Solid state physics, microwave propagation, microwave communications, and transmitting and receiving phenomena.

9. Optical communications.

An in-house research effort is being conducted by the Center staff on those tasks offering great promise for space electronics technology and on those problems requiring first-hand experience on the part of the Center personnel in order to contract related research with industry and universities.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.	250	550	1,000
Average Number of All Employees...	134	330	842
Administrative Operations.....	$3,201,000	$6,233,000	$15,143,000

INSTALLATION DESCRIPTION:

The Electronics Research Center is provisionally located in leased quarters in Cambridge, Massachusetts. The proposed permanent site is a tract in the Kendall Square area of Cambridge. The tract is one and a half miles west of the center of Boston and is immediately north of the Massachusetts Institute of Technology and one and a half miles from Harvard University. It consists of about 29 acres to be conveyed by the city of Cambridge to NASA and is bounded on the north by Binney Street, on the south by Broadway, on the east by Third Street, and on the west by the New York Central Railroad. An auxiliary urban site will be required in addition to the permanent urban site as noted in the January 1, 1964 report to Congress on NASA, Electronics Research Center.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	1965	1966	1967
11. Personnel Compensation....	$1,362,000	$3,389,000	$9,012,000
12. Personnel Benefits.....	100,000	262,000	687,000
Total, personnel costs..	$1,462,000	$3,651,000	$9,699,000

	1965	1966	1967
21. Travel and Transportation of Persons.....	$118,000	$302,000	$347,000
22. Transportation of Things....	28,000	70,000	136,000
23. Rent, Communications, and Utilities.....	340,000	688,000	1,836,000
24. Printing and Reproduction...	13,000	25,000	44,000
25. Other Services.....	316,000	610,000	1,990,000
Services of other agencies	464,000	258,000	359,000
26. Supplies and Materials.....	64,000	229,000	412,000
31. Equipment.....	396,000	400,000	320,000
32. Lands and Structures.....	---	---	---
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	$3,201,000	$6,233,000	$15,143,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Advanced Research and Technology			
Electronics systems.....	115	312	701
Sub-total, direct positions..	115	312	701
Support Personnel			
Director and Staff.....	22	27	35
Administration.....	94	158	189
Research and development support.	13	53	75
Sub-total, support positions...	129	238	299
Total, permanent positions.....	244	550	1,000
Other Positions:			
Positions under cooperative training agreements.....	---	---	---
Other temporary positions.....	6	---	---
Total, all positions.....	250	550	1,000

Personnel requirements

The increase of $6,048,000 over FY 1966 provides for an increased staffing of 450 positions and the full year cost of personnel employed during FY 1966. The increase is in accordance with the phased growth originally planned in the long-range development of the Electronics Research Center and will provide for the staffing of those technical functions necessary to achieve program objectives. The personnel requirements of the Electronics Research Center are directly related to its primary mission to generate new scientific knowledge and stimulate advanced electronics technology for support of future missions.

Personnel Costs

	1965	1966	1967
Total Positions	250	550	1,000
Permanent	244	550	1,000
Other	6	---	---
Personnel Compensation:			
Annual costs of permanent positions	$2,593,000	$5,919,000	$10,604,000
Pay above the stated annual rate	10,000	23,000	40,000
Lapses (deduct)	-1,301,000	-2,678,000	-1,835,000
Net cost of permanent positions	1,302,000	3,264,000	8,809,000
Other personnel compensation	60,000	125,000	203,000
Total compensation	1,362,000	3,389,000	9,012,000
NASA funded	1,362,000	3,389,000	9,012,000
Reimbursable	---	---	---
Personnel benefits	100,000	262,000	687,000
NASA funded	100,000	262,000	687,000
Reimbursable	---	---	---
Total personnel costs	1,462,000	3,651,000	9,699,000
NASA funded	1,462,000	3,651,000	9,699,000
Reimbursable	---	---	---
Average Number of All Employees (Man Years)	134	330	842

Personnel Costs - $9,699,000

The estimate for personnel costs in FY 1967 increases by $6,048,000 over the FY 1966 requirement. This increase in funding is required to support the personnel growth from 550 personnel and 330 man years in FY 1966 to 1,000 personnel and 842 man years in FY 1967. The Federal Employees Salary Act of 1965, effective the first pay period in October, 1965, is estimated to increase personnel costs by $420,000 in FY 1967.

Travel and Transportation of Persons - $347,000

The estimate for travel and transportation of persons reflects an increase of $45,000 over FY 1966. Most of the increase ($25,000) is required for contract monitoring, and program planning and coordination to support the research and development effort. Of the balance, $13,000 is required for Electronics Research Center personnel to participate in scientific and technical committees and working panels, and $7,000 for administrative management relative to the organization and operations of the Center, which includes $1,000 for rental of passenger vehicles.

Transportation of Things - $136,000

These estimates are for transportation of household goods and personal effects and freight, drayage, express, and parcel post. The FY 1967 requirement is $66,000 above FY 1966. Costs for transportation of household goods and personal effects are $55,000 above FY 1966 due to the expected move of 153 employees as compared to the move of 95 employees in FY 1966. The balance of the requirement is for costs of shipment of supplies and equipment from commercial suppliers and other NASA installations.

Rent, Communications, and Utilities - $1,836,000

The estimate for rent, communications and utilities is $1,148,000 above the FY 1966 requirements. The increase results from the following:

$544,000 for rental of an additional 100,000 sq. ft. of office and laboratory space to accommodate an additional 450 personnel;

$516,000 for rental of electronic data processing equipment to support both management and the in-house research and development effort;

$39,000 for rental of other equipment; and

$49,000 for communications costs due to Center growth.

Printing and Reproduction - $44,000

Due to the extremely limited in-house capability, the printing and reproduction requirements will be provided by commercial firms and other Government agencies. The FY 1967 estimate is $19,000 above the FY 1966 requirement. Approximately one-half of the increase is for support of the construction program in the reproduction of plans, specifications, and blueprints. The balance is for technical reports and planning documents from the research laboratories.

Other Services - $2,349,000

An additional $1,481,000 will be required in FY 1967 to provide for contractor and other government agency services furnished on a continuing intermittent, or nonrecurring basis to supplement the in-house capabilities of the Center.

An increase of $960,000 is required for electronic data processing services. These services provide programmers, mathematicians, and other data processing specialists to support in-house research programs and tasks. In addition, these services provide for commercial processing for digitizing analog records, problem analysis, data reduction, and certain management functions such as payroll, cost accounting and inventory control and analysis.

An additional $169,000 is requested for maintenance and repair of buildings, maintenance of instruments and research equipment, and management studies.

An increase of $251,000 is requested for tuition, educational services and brochures, and service contracts to support the research laboratories. The funding is required primarily for service contracts, such as optical grinding, precision machine work, electronic fabrication and testing, and materials testing.

An increase of $101,000 is requested for services performed by other government agencies. Services provided are for security guards, telephone operators, janitors, and minor modifications to the additional space to be rented in FY 1967.

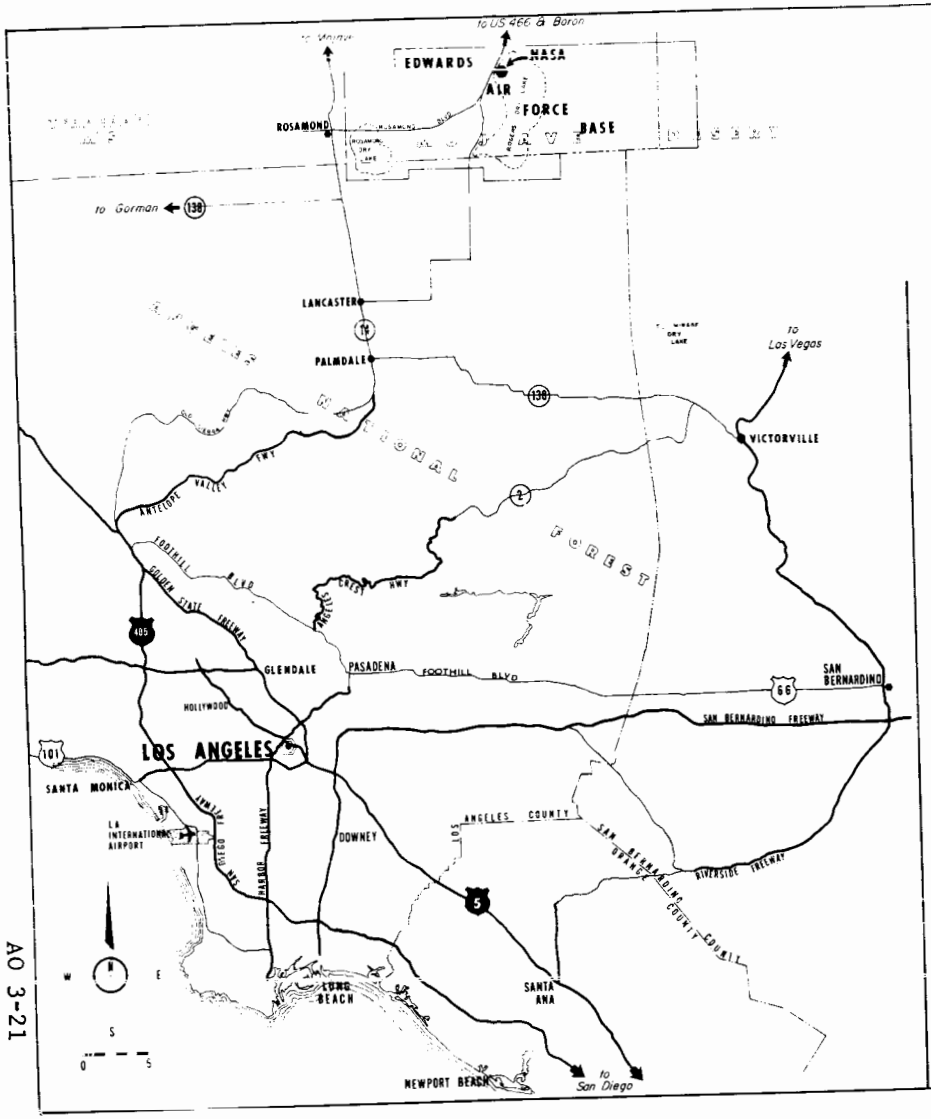
Supplies and Materials - $412,000

The level of funding requested for FY 1967 reflects an increase of $183,000 over the FY 1966 requirement. This additional funding is required to support the planned increase in personnel, and for technical support and in-house maintenance.

Equipment - $320,000

The amount requested is $80,000 less than the requirement for FY 1966 due to the reduction of purchases for shop machinery and electronic equipment.

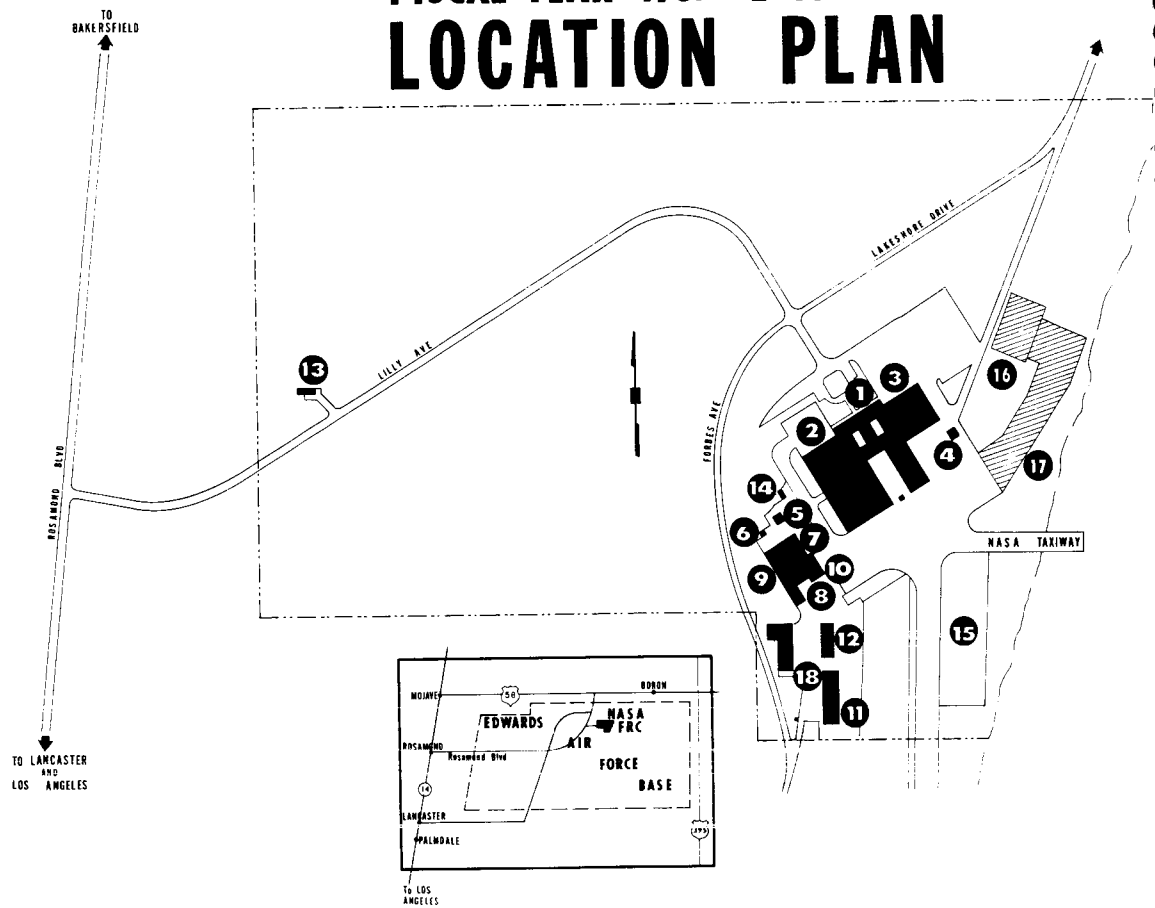
FLIGHT RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES
VICINITY MAP



KEY PLAN

710-930 O - 66 - 13

FLIGHT RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES
LOCATION PLAN



1. LABORATORY
2. MAIN HANGAR
3. CALIBRATION HANGAR
4. AUXILIARY POWER UNIT BUILDING X-15
5. BOILER HOUSE
6. PAINT STORAGE SHED
7. WAREHOUSE Nº 1
8. WAREHOUSE Nº 1 ADDITION
9. WAREHOUSE Nº 2
10. GROUND SUPPORT
11. WAREHOUSE Nº 4
12. TRAILER PARKING
13. COMMUNICATION BUILDING
14. PAINT SPRAY BUILDING
15. JET RUN-UP PAD
16. HIGH TEMPERATURE LOADS CALIBRATION FACILITY
17. TAXIWAY & RAMP
18. WAREHOUSE Nº 3

EXISTING FACILITIES
FACILITIES AUTHORIZED & UNDER CONSTRUCTION

AO 3-23

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

FLIGHT RESEARCH CENTER

STAFFING SUMMARY

	66	67
Excepted	6	6
GS-16	3	3
GS-15	20	21
GS-14	23	22
All other GS	307	300
Wage Board	245	244
Total Permanent	604	596
Temporary	14	14
Total Positions	618	610

OFFICE OF THE DIRECTOR

	66	67
Excepted	3	3
GS-16	1	1
GS-15	2	2
GS-14	1	1
All other GS	8	7
Wage Board	24	24
Total Permanent	39	38

RESEARCH DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	9	8
GS-14	7	7
All other GS	102	102
Wage Board	1	1
Total Permanent	121	120

OPERATIONS DIVISION

	66	67
Excepted	2	2
GS-16	-	-
GS-15	6	8
GS-14	6	4
All other GS	22	21
Wage Board	123	122
Total Permanent	159	157

DATA SYSTEMS DIVISION

	66	67
Excepted	-	-
GS-16	1	1
GS-15	2	2
GS-14	7	8
All other GS	93	90
Wage Board	74	74
Total Permanent	177	175

ADMINISTRATIVE DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	82	80
Wage Board	23	23
Total Permanent	108	106

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

FLIGHT RESEARCH CENTER

MISSION AND CAPABILITIES:

The Flight Research Center, established in 1947, conducts research in and evaluates problems of manned flight, both within and outside the atmosphere. The work 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.

The current and projected programs at this center include aeronautics projects, such as 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 psace flight program concerning project Apollo is provided through lunar landing research.

Most important of the facilities and special equipment for conducting these programs are the aircraft. They range from lightweight civil aircraft for handling qualities investigations to century series fighters used for pilot proficiency and general investigations and to X-15 rocket aircraft used for hypersonic research and reentry investigations. Special purpose vehicles such as 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:

	1965	1966	1967
Authorized Positions, end of year	669	618	610
Average Number of All Employees....	617	617	610
Administrative Operations.....	$10,523,000	$9,335,000	$9,641,000

INSTALLATION DESCRIPTION:

The Flight Research Center, Edwards, California, is 65 air miles north of Los Angeles. The Center is located at the north end of Edwards Air Force Base on 218 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 three-station radar range operated by the Center is located on the third floor of the office-laboratory building. A high temperature loads calibration facility is under construction. The total capital investment as of June 30, 1965 was $31,398,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation.....	$6,105,000	$6,312,000	$6,510,000
12.	Personnel Benefits.....	441,000	453,000	481,000
	Total, personnel costs.....	$6,546,000	$6,765,000	$6,991,000
21.	Travel and Transportation of Persons.....	221,000	222,000	220,000
22.	Transportation of Things.....	20,000	40,000	40,000
23.	Rent, Communications, and Utilities.....	393,000	317,000	270,000
24.	Printing and Reproduction.....	23,000	20,000	20,000
25.	Other Services.....	1,467,000	911,000	989,000
	Services of other agencies..	37,000	4,000	4,000
26.	Supplies and Materials.....	422,000	475,000	506,000
31.	Equipment.....	1,293,000	480,000	500,000
32.	Lands and Structures.....	101,000	100,000	100,000
42.	Insurance Claims and Indemnities.....	---	1,000	1,000
	Total.....	$10,523,000	$9,335,000	$9,641,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

	Personnel Distribution		
	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Apollo.....	51	37	6

	1965	1966	1967
Space Science and Applications			
Physics and astronomy.....	2	2	2
Advanced Research and Technology			
Basic research.....	1	1	1
Space vehicle systems.....	29	49	49
Electronics systems.....	34	28	28
Human factor systems.....	13	13	13
Aeronautics.....	317	319	345
Tracking and Data Acquisition.....	39	37	37
Technology Utilization.....	1	1	1
Sub-total, direct positions.....	487	487	482
Support personnel			
Director and Staff.....	11	11	10
Administration.....	107	106	104
Sub-total, support positions.....	118	117	114
Total, permanent positions.....	605	604	596
Other positions:			
Positions under cooperative training agreements.....	14	14	14
Other temporary positions.....	50	-	-
Total, all positions.....	669	618	610

Personnel requirements

The research effort may change slightly due to the new B-70 and F-111 airplane programs which are contingent on delivery dates of the aircraft; the effort on the Apollo S/C (LLRV) will terminate during the 1st quarter.

Personnel Costs

	1965	1966	1967
Total Positions.....	669	618	610
Permanent.....	605	604	596
Other.....	64	14	14
Personnel Compensation:			
Annual cost of permanent positions.....	$5,689,000	$5,979,000	$6,009,000
Pay above the stated annual rate.	22,000	23,000	23,000
Lapses (deduct).....	-71,000	-229,000	-24,000
Net cost of permanent positions..	5,640,000	5,773,000	6,008,000
Other personnel compensation.....	465,000	539,000	502,000
Total compensation.....	6,105,000	6,312,000	6,510,000
NASA funded.....	6,105,000	6,312,000	6,510,000
Reimbursable.....	---	---	---
Personnel benefits.....	441,000	453,000	481,000
NASA funded.....	441,000	453,000	481,000
Reimbursable.....	---	---	---
Total personnel costs.....	6,546,000	6,765,000	6,991,000
NASA funded.....	6,546,000	6,765,000	6,991,000
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	617	617	610

Personnel Costs - $6,991,000

The personnel cost for FY 1967 is estimated at $6,991,000 covering 610 man years of employment. The amount of $6,510,000 is requested for personnel compensation and $481,000 for personnel benefits. The FY 1967 estimate includes an increase of $226,000 over the amount for the current fiscal year. This increase is required to cover the additional costs due to the Federal Employees Salary Act of 1965 for a full year; within-grade increases; the career development program; retirement contributions; and other benefits.

The following table shows the major items which are included in the estimated personnel costs:

	FY 1967 Estimate	Increase or Decrease from FY 1966
Personnel Compensation:		
Net cost of permanent positions.....	$6,008,000	+$235,000
Other personnel compensation.....	502,000	-37,000
Sub-total.....	6,510,000	+ 198,000

	FY 1967 Estimate	Increase or Decrease from FY 1966
Personnel Benefits:		
Retirement contributions.....	395,000	22,000
Other benefits.....	86,000	6,000
Sub-total.....	481,000	28,000
Total, personnel costs.....	$6,991,000	$226,000

Travel and Transportation of Persons - $220,000

Increased travel required in connection with the XB-70 program and other flight projects is offset by reduced travel in other areas. This fact, coupled with a reduction in personnel assigned to the Center, results in a net reduction of $2,000.

Transportation of Things - $40,000

The FY 1967 level is the same as FY 1966. The funds are primarily for the transportation of spare parts and equipment from other government agencies and the shipment of household goods of new personnel hired to fill vacated positions.

Rent, Communications, and Utilities - $270,000

A net decrease of $47,000 in FY 1967 is estimated because of the purchase of a digital computer system which is scheduled for delivery in late FY 1966. The savings related to ADP equipment rental are offset by an increase in utilities of $31,000 which results from the completion of the High Temperature Loads Calibration Facility.

Printing and Reproduction - $20,000

The funding for this category remains at the same level as FY 1966.

Other Services - $993,000

The funding for other services provides for an increase of $78,000 over FY 1966. This increase is primarily related to the new High Temperature Loads Calibration Facility which will become operational, and custodial services in the form of security and janitorial services that must be provided.

799-990 O - 66 - 14

Supplies and Materials - $506,000

The funding for this category shows an increase of $31,000. This increase is requested to cover cost that will be incurred in the expanded flight programs, primarily the XB-70. Areas of increases will be general operating and service materials, and hardware items.

Equipment - $500,000

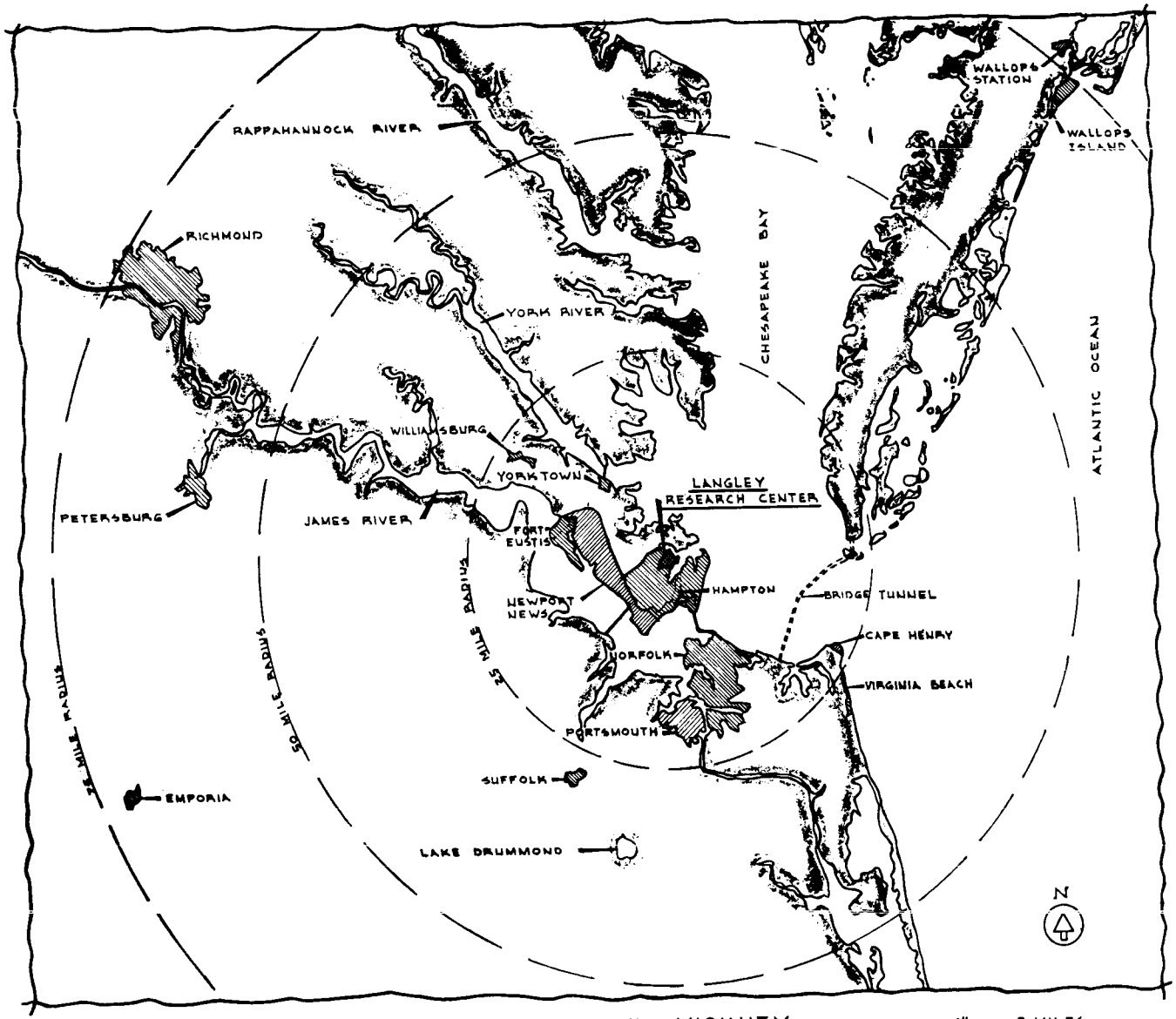
This category is estimated at approximately the FY 1966 level. The slight increase of $20,000 is almost entirely for replacement of motor vehicles and training and electronics equipment.

Lands and Structures - $100,000

The FY 1967 request remains at the FY 1966 level. These funds are required to modify a part of the main building into laboratory and shop space.

Insurance Claims and Indemnities - $1,000

The funding in this category remains the same as FY 1966.

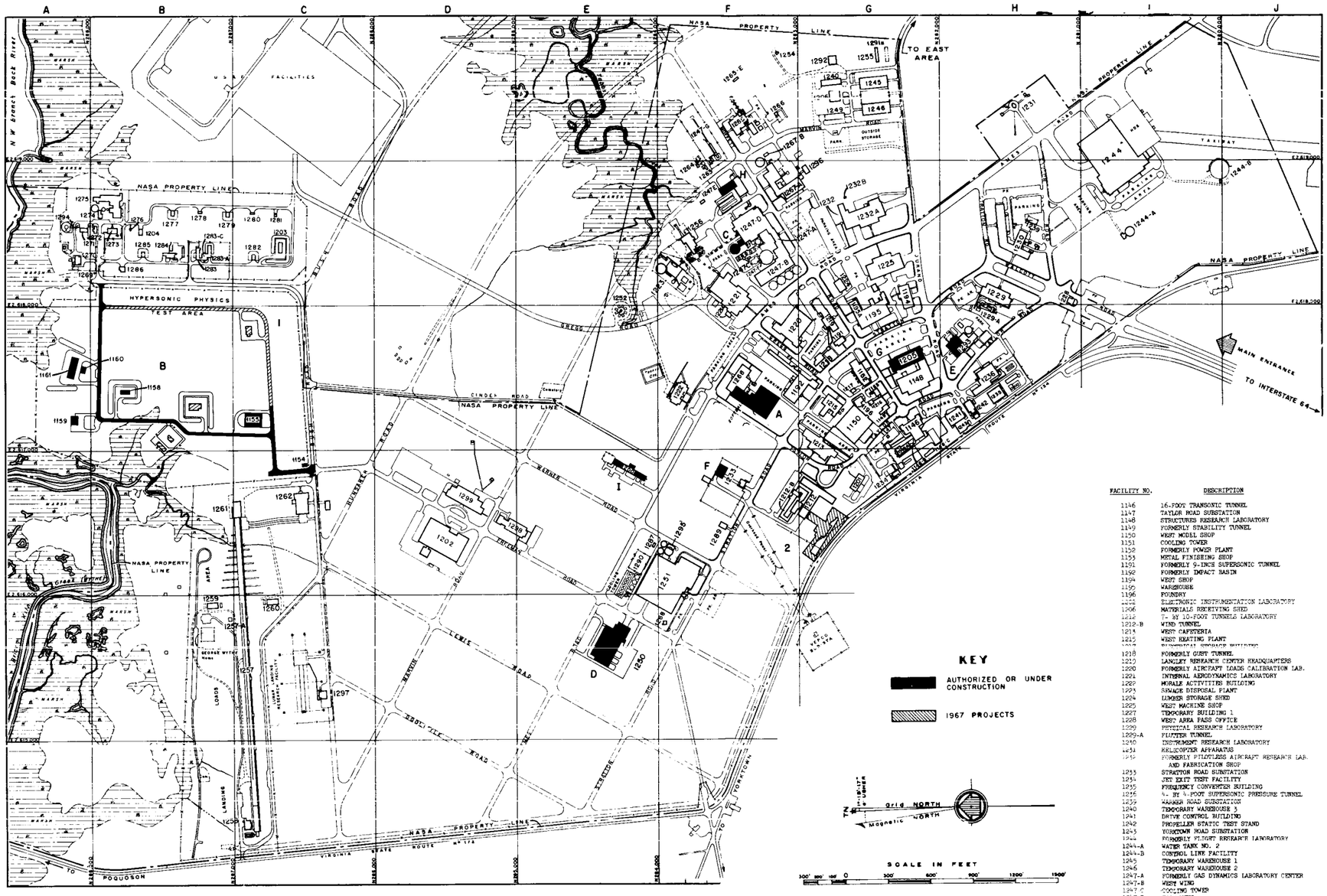


LANGLEY RESEARCH CENTER AND VICINITY

1" = 8 MILES

LANGLEY RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

LOCATION PLAN



WEST AREA

PROPOSED FISCAL YEAR 1967 PROJECTS

1. REACTIVE CHEMICAL DISTRIBUTION AREA
2. V/STOL TRANSITION WIND TUNNEL

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
1222	ELECTRONIC INSTRUMENTATION LABORATORY
1206	MATERIALS RECEIVING SHED
1212	7- BY 10-FOOT TUNNELS LABORATORY
1212-B	WIND TUNNEL
1214	WEST CAFETERIA
1215	WEST HEATING PLANT
[illegible]	[illegible]
1218	FORMERLY GUST TUNNEL
1219	LANGLEY RESEARCH CENTER HEADQUARTERS
1220	FORMERLY AIRCRAFT LOADS CALIBRATION LAB.
1221	INTERNAL AERODYNAMICS LABORATORY
1222	MORALE ACTIVITIES BUILDING
1223	SEWAGE DISPOSAL PLANT
1224	LUMBER STORAGE SHED
1225	WEST MACHINE SHOP
1227	TEMPORARY BUILDING 1
1228	WEST AREA PASS OFFICE
1229	PHYSICAL RESEARCH LABORATORY
1229-A	FLUTTER TUNNEL
1230	INSTRUMENT RESEARCH LABORATORY
1231	HELICOPTER APPARATUS
1232	FORMERLY PILOTLESS 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	WARNER ROAD SUBSTATION
1240	TEMPORARY WAREHOUSE 3
1241	DRIVE CONTROL BUILDING
1242	PROPELLER STATIC TEST STAND
1243	YORKTOWN ROAD SUBSTATION
1244	FORMERLY FLIGHT RESEARCH LABORATORY
1244-A	WATER TANK NO. 2
1244-B	CONTROL LINE FACILITY
1245	TEMPORARY WAREHOUSE 1
1246	TEMPORARY WAREHOUSE 2
1247-A	FORMERLY GAS DYNAMICS LABORATORY CENTER
1247-B	WEST WING
1247-C	COOLING TOWER
1247-D	EAST WING
1247-E	COMPRESSOR BUILDING
1247-F	AMES ROAD SUBSTATION
1247-G	HIGH-PRESSURE SHOCK TUBE
1249	TEMPORARY WAREHOUSE 4
1251	UNITARY PLAN WIND TUNNEL
1252	WATER TANK NO. 1
1254	AMMUNITION STORAGE 1

FACILITY NO.	DESCRIPTION
1255	TEMPORARY WAREHOUSE 6
1256	9- BY 6-FOOT THERMAL STRUCTURES TUNNEL
1257	LANDING LOADS TRACK
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	MOFFETT ROAD SUBSTATION
1267	HIGH-TEMPERATURE MATERIALS LABORATORY
1268	DATA REDUCTION BUILDING
1269	GATE HOUSE (HYPERSONIC PHYSICS TEST AREA)
1270	ROCKET PROPELLANT TEST UNIT, HPTA
1271	OPEN SHED, HPTA
1272	HEATING PLANT, HPTA
1273	OPERATIONS CENTER, HPTA
1274	CERAMIC-HEATED MACH 15 JET, HPTA
1275	IMPACT AND PROJECTILE TEST UNIT, HPTA
1276	IGNITER ASSEMBLY BUILDING, HPTA
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, HPTA
1285	STORAGE H
1286	ROCKET ASSEMBLY AND PROPELLANT ALTERATION 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
1298	STABILIZATION AND CONTROL EQUIPMENT LABORATORY
1299	VERTICAL ANTENNA TEST FACILITY AND ADDITION

FACILITIES AUTHORIZED AND UNDER CONSTRUCTION

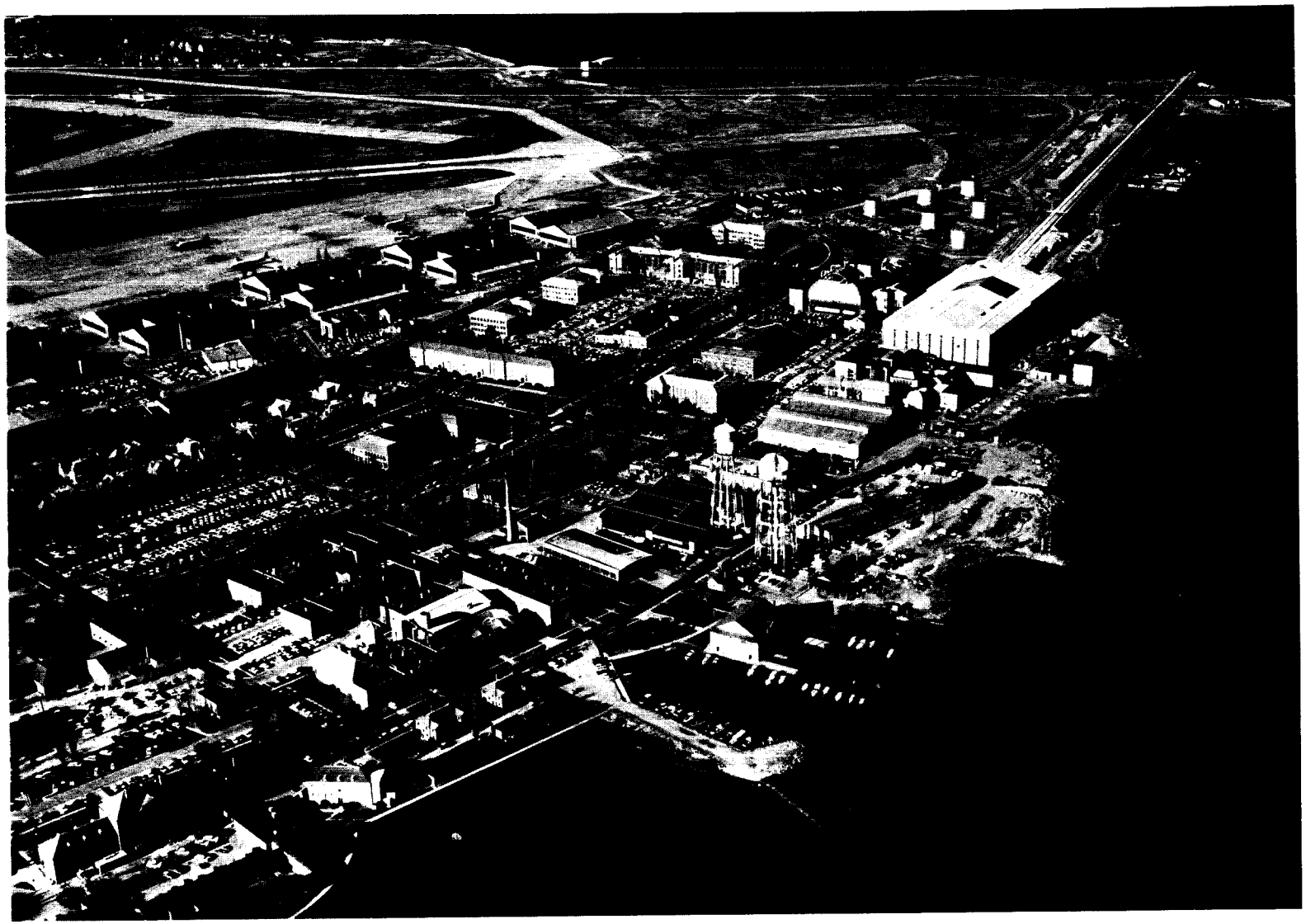
A FLIGHT CONTROL RESEARCH FACILITY
B MAGAZINE AND TEST AREA FOR HIGHLY REACTIVE CHEMICAL MATERIALS
C INCD. CAP. FOR MACH 6 AND 8.5 TUNNELS
D LIFE SUPPORT TECHNOLOGY LABORATORY
E THERMAL CONTROL HOUSING AND BUILDING ADDITION FOR DYNAMICS RESEARCH LAB.
F UTILITY IMPROVEMENTS
G FATIGUE RESEARCH LABORATORY
H ADDITION TO CENTRAL HIGH-PRESSURE AIR SUPPLY
I HOT GAS RADIATION RESEARCH FACILITY

799-990 O - 66 (Fols. p. 3-31)

LANGLEY RESEARCH CENTER
Hampton, Virginia

AERIAL VIEW - West Area

LANGLEY RESEARCH CENTER
Hampton, Virginia



AERIAL VIEW - East Area

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

STAFFING SUMMARY

	66	67
Excepted	31	31
GS-16	25	25
GS-15	156	180
GS-14	215	234
All other GS	2,308	2,221
Wage Board	1,499	1,488
Total Permanent	4,234	4,179
Temporary	70	70
Total Positions	4,304	4,249

DIRECTOR
ASSOCIATE DIRECTOR

	66	67
Excepted	2	2
GS-15	4	4
All other GS	5	5
Wage Board	-	-
Total Permanent	11	11

SENIOR STAFF SCIENTIST

	66	67
Excepted	1	1
Total Permanent	1	1

COOPERATIVE PROJECTS OFFICE

	66	67
GS-16	1	1
Total Permanent	1	1

MANNED SPACECRAFT PROJECTS OFFICE

	66	67
GS-16	1	1
Total Permanent	1	1

RESEARCH STAFF OFFICE

	66	67
GS-14	1	1
All other GS	6	6
Wage Board	-	-
Total Permanent	7	7

PROGRAM CONTROL ANALYSIS AND BUDGET OFFICE

	66	67
GS-15	1	1
GS-14	1	1
All other GS	6	6
Wage Board	-	-
Total Permanent	8	8

TECHNOLOGY UTILIZATION OFFICE

	66	67
GS-14	1	1
All other GS	2	2
Wage Board	-	-
Total Permanent	3	3

RESEARCH CONTRACTS AND INFORMATION OFFICE

	66	67
GS-15	1	1
GS-14	1	1
All other GS	-	-
Wage Board	-	-
Total Permanent	2	2

RESEARCH REPORTS DIVISION

	66	67
GS-14	1	1
All other GS	51	51
Wage Board	-	-
Total Permanent	52	52

OFFICE OF ASSISTANT DIRECTOR (GROUP 1)

	66	67
Excepted	1	1
GS-15	1	1
All other GS	-	-
Wage Board	-	-
Total Permanent	2	2

ANALYSIS AND COMPUTATION DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	4	6
GS-14	5	6
All other GS	144	140
Wage Board	10	10
Total Permanent	165	164

INSTRUMENT RESEARCH DIVISION

	66	67
Excepted	1	1
GS-16	-	-
GS-15	6	7
GS-14	7	8
All other GS	156	152
Wage Board	41	41
Total Permanent	211	209

SPACE MECHANICS DIVISION

	66	67
Excepted	1	1
GS-16	3	3
GS-15	10	10
GS-14	8	9
All other GS	70	68
Wage Board	-	-
Total Permanent	[illegible]	[illegible]

FLIGHT INSTRUMENTATION DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	8	10
GS-14	16	16
All other GS	200	195
Wage Board	21	21
Total Permanent	247	244

OFFICE OF ASSISTANT DIRECTOR (GROUP 2)

	66	67
Excepted	1	1
Total Permanent	1	1

DYNAMIC LOADS DIVISION

	66	67
Excepted	1	1
GS-16	4	4
GS-15	8	9
GS-14	20	21
All other GS	99	95
Wage Board	1	1
Total Permanent	133	131

STRUCTURES RESEARCH DIVISION

	66	67
Excepted	4	4
GS-16	2	2
GS-15	16	18
GS-14	11	11
All other GS	121	114
Wage Board	-	-
Total Permanent	154	149

OFFICE OF ASSISTANT DIRECTOR (GROUP 3)

	66	67
Excepted	1	1
GS-15	1	1
All other GS	-	-
Wage Board	-	-
Total Permanent	2	2

AERO-PHYSICS DIVISION

	66	67
Excepted	2	2
GS-16	3	3
GS-15	13	15
GS-14	13	15
All other GS	153	146
Wage Board	1	1
Total Permanent	185	182

FLIGHT MECHANICS AND TECHNOLOGY DIVISION

	66	67
Excepted	3	3
GS-16	2	2
GS-15	13	15
GS-14	8	9
All other GS	70	65
Wage Board	34	34
Total Permanent	130	128

FULL-SCALE RESEARCH DIVISION

	66	67
Excepted	3	3
GS-16	2	2
GS-15	24	26
GS-14	12	13
All other GS	139	134
Wage Board	-	-
Total Permanent	180	178

OFFICE OF ASSISTANT DIRECTOR FOR FLIGHT PROJECTS

	66	67
Excepted	1	1
GS-15	1	1
GS-14	2	2
All other GS	3	3
Wage Board	-	-
Total Permanent	7	7

FLIGHT REENTRY PROGRAMS OFFICE

	66	67
GS-16	1	1
GS-15	4	5
GS-14	3	3
All other GS	11	9
Wage Board	-	-
Total Permanent	19	18

LUNAR ORBITER OFFICE

	66	67
Excepted	2	2
GS-16	-	-
GS-15	6	7
GS-14	6	8
All other GS	37	33
Wage Board	-	-
Total Permanent	51	50

SCOUT PROJECT OFFICE

	66	67
GS-15	3	3
GS-14	6	7
All other GS	29	24
Wage Board	-	-
Total Permanent	38	34

APPLIED MATERIALS AND PHYSICS DIVISION

	66	67
Excepted	3	3
GS-16	[illegible]	[illegible]
GS-15	10	12
GS-14	25	27
All other GS	171	161
Wage Board	20	20
Total Permanent	230	224

SPACE VEHICLE DESIGN CRITERIA

	66	67
GS-15	2	3
GS-14	1	2
All other GS	2	2
Wage Board	-	-
Total Permanent	5	7

LRC-PMR FIELD PROJECTS OFFICE

	66	67
GS-14	1	2
All other GS	8	7
Wage Board	-	-
Total Permanent	9	9

MORL STUDIES OFFICE

	66	67
GS-16	-	-
GS-15	2	1
GS-14	2	3
All other GS	7	4
Wage Board	-	-
Total Permanent	11	10

OFFICE OF ASSISTANT DIRECTOR FOR ADMINISTRATION

	66	67
Excepted	1	1
Other GS	1	1
Wage Board	-	-
Total Permanent	2	2

OFFICE OF CHIEF COUNSEL

	66	67
GS-15	1	1
GS-14	2	2
All other GS	2	2
Wage Board	-	-
Total Permanent	5	5

OFFICE OF PATENT COUNSEL

	66	67
GS-15	1	1
GS-14	3	3
All other GS	3	3
Wage Board	-	-
Total Permanent	7	7

OFFICE OF PUBLIC AFFAIRS

	66	67
GS-14	2	2
All other GS	3	3
Wage Board	-	-
Total Permanent	5	5

SECURITY OFFICE

	66	67
GS-14	1	1
All other GS	10	10
Wage Board	1	1
Total Permanent	12	12

ADMINISTRATIVE SERVICES DIVISION

	66	67
GS-14	1	1
All other GS	76	75
Wage Board	-	-
Total Permanent	77	76

FISCAL DIVISION

	66	67
GS-14	1	1
All other GS	102	101
Wage Board	-	-
Total Permanent	103	102

PERSONNEL DIVISION

	66	67
GS-15	1	1
GS-14	3	3
All other GS	49	48
Wage Board	-	-
Total Permanent	53	52

PHOTOGRAPHIC DIVISION

	66	67
All other GS	40	39
Wage Board	44	44
Total Permanent	84	83

PROCUREMENT DIVISION

	66	67
Excepted	1	1
GS-14	5	5
All other GS	118	117
Wage Board	32	32
Total Permanent	156	155

SAFETY OFFICE

	66	67
All other GS	3	3
Wage Board	-	-
Total Permanent	3	3

COST ENGINEERING STAFF

	66	67
GS-14	1	1
All other GS	7	7
Wage Board	-	-
Total Permanent	8	8

PROGRAM SCHEDULES AND ANALYSIS UNIT

	66	67
All other GS	14	14
Wage Board	-	-
Total Permanent	14	14

PLANNING CONTROL OFFICE

	66	67
All other GS	11	11
Wage Board	-	-
Total Permanent	11	11

TECHNICAL SERVICE CONTRACT SUPPORT UNIT

	66	67
All other GS	13	13
Wage Board	-	-
Total Permanent	13	13

OFFICE OF CHIEF, ENGINEERING AND TECHNICAL SERVICES

	66	67
GS-16	2	2
GS-14	1	1
All other GS	5	5
Wage Board	-	-
Total Permanent	8	8

ELECTRICAL SYSTEMS DIVISION

	66	67
GS-15	3	4
GS-14	5	5
All other GS	67	66
Wage Board	206	206
Total Permanent	281	281

FLIGHT VEHICLES AND SYSTEMS DIVISION

	66	67
GS-16	1	1
GS-15	6	7
GS-14	18	21
All other GS	116	109
Wage Board	-	-
Total Permanent	141	138

MECHANICAL SERVICE DIVISION

	66	67
GS-15	2	3
GS-14	4	4
All other GS	27	26
Wage Board	906	900
Total Permanent	939	933

PLANT MAINTENANCE DIVISION

	66	67
GS-14	1	1
All other GS	5	5
Wage Board	177	172
Total Permanent	183	178

RESEARCH MODELS AND FACILITIES DIVISION

	66	67
GS-15	4	5
GS-14	16	16
All other GS	146	140
Wage Board	5	5
Total Permanent	171	166

AO 3-35

799-990 O - 66 (Fols. p. 3-34)

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

LANGLEY RESEARCH CENTER

MISSION AND CAPABILITIES:

The Langley Research Center conducts a broad range of programs to advance the aeronautical and space flight capabilities of the nation.

The aeronautical research program aims at the extension of aircraft performance, the assurance of adequate stability and control, the specification of critical operating loads and fatigue criteria, the optimization of vehicle structures and materials, the reduction of aircraft noise, the refinement of new propulsive systems, and the improvement of flight safety and operations techniques. Special emphasis is placed on the acquisition of sufficient basic technology to facilitate the successful development of efficient supersonic and high-subsonic-speed transports, high-performance military aircraft, practicable hypersonic ramjet vehicles, and advanced vertical-and-short-takeoff-and-landing (V/STOL) aircraft.

In the space flight field, the Langley Research Center executes a broad range of research programs to provide a rational basis for future space developments, and manages and supports a large number of current space flight projects. Especially noteworthy are the investigations of atmosphere entry aerothermodynamics, heat shielding, and communications "blackout" for earth-orbital, lunar, and planetary missions; the definition of structural dynamics characteristics of large launch vehicles and spacecraft landing systems; the evolution of advanced configurations for lifting entry and controlled landing spacecraft, recoverable first-stage boosters, earth-to-orbit vehicles, and expandable space structures; the determination of the effects of heat, vacuum, loads, noise, climate, micrometeoroids, and radiation of the operational environments on the performance of vehicle systems and materials; the generation of technology for improved navigation and control systems, instrumentation, data handling and communication equipment, vehicle propulsion and power devices, and aerospace materials; the development of space vehicles for refined measurements of the earth's geodetic elements and atmospheric density, and of the interplanetary micrometeoroid hazard; the management of the Lunar Orbiter project for detailed photographic and geophysical surveys of the moon; the perfection of navigation aids and surface strength assessment techniques for lunar and planetary landing missions; the operation of the Scout launch vehicle in its various national and international satellite and entry vehicle applications; and the provision of wide ranges of crucial technology for the Gemini and Apollo programs, as well as a number of other unmanned space projects. The Langley Research Center also investigates basic problems regarding the design and operation of advanced planetary exploration spacecraft, and has a prominent role in the definition of the Mars probe/lander vehicles of the Voyager program.

As a continuation of the Langley Research Center's pioneering efforts that produced the research airplane and Mercury spacecraft projects, special emphasis is placed on research for the extension of manned flight capabilities. Research on advanced flight concepts, therefore, includes closely coupled studies of man's functional performance and vehicular accommodations, to maximize the integrated potentials of crew, vehicle, and mission. Here, the unique laboratory capabilities for simulation of the piloting experience of rendezvous, extraterrestrial landings, all-weather navigation and landing, etc., facilitate the establishment of handling requirements, optimum displays and controls, and operational techniques for new generations of vehicles and missions. The Center also improves the technology of man-machine integration on the complete vehicle level, as in its studies of promising designs for manned orbital laboratories; on the systems level, as in its research on flight crew operations with advanced life support systems for long duration missions; and on the applications level, as in its evaluation of the merits and feasibility of manned support of a large orbiting telescope. Such work also provides a sound foundation for the Center's responsibilities in the identification of appropriate uses for Apollo applications vehicles.

The new knowledge and capabilities acquired through such research serve as vital stepping stones to the realization of national flight aspirations.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.	4,374	4,304	4,249
Average Number of All Employees...	4,316	4,335	4,227
Administrative Operations.....	$58,998,000	$63,006,000	$62,587,000

INSTALLATION DESCRIPTION:

The Langley Research Center, Hampton, Virginia, is located approximately 100 air miles south of Washington, D. C. The Center is divided into two separate areas adjacent to the runway facilities of the Langley Air Force Base, and occupies 772 acres of government owned land. The West Area consists of 750 acres of which 430 acres are owned by NASA and 320 acres are under permit from the Air Force. The East Area consists of 22 acres under permit from the Air Force. Runways, some utilities, and certain other facilities are used jointly by NASA and the Air Force. In addition, there are 110 acres of NASA owned land located in the city of Newport News, Virginia, 3,277 acres under permit from other government agencies, and 17 acres under lease. The total acreage owned, under permit, or leased, is 4,176. The total capital investment as of June 30, 1965, was $276,178,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	1965	1966	1967
11. Personnel Compensation.....	$39,355,000	$41,036,000	$41,999,000
12. Personnel Benefits.....	2,880,000	2,993,000	3,043,000
Total, personnel costs....	$42,235,000	$44,029,000	$45,042,000
21. Travel and Transportation of Persons.....	1,430,000	1,503,000	1,489,000
22. Transportation of Things....	373,000	370,000	370,000
23. Rent, Communications, and Utilities.....	4,984,000	5,607,000	6,035,000
24. Printing and Reproduction...	175,000	201,000	201,000
25. Other Services.....	2,699,000	2,807,000	3,319,000
Services of other agencies	63,000	63,000	63,000
26. Supplies and Materials.....	2,681,000	2,700,000	2,720,000
31. Equipment.....	3,401,000	5,256,000	2,878,000
32. Lands and Structures.....	957,000	470,000	470,000
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	$58,998,000	$63,006,000	$62,587,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Apollo.....	10	9	9
Advanced mission studies.....	14	14	13
Space Science and Applications			
Physics and astronomy.....	82	63	46
Lunar and planetary.....	102	148	154
Sustaining university program.....	1	---	---
Launch vehicle development.....	2	3	2
Launch vehicle procurement.....	41	35	35
Bioscience.....	---	1	1
Meteorological satellites.....	13	13	12
Communication and applications technology satellites.....	4	3	3

	1965	1966	1967
Advanced Research and Technology			
Basic research	350	354	348
Space vehicle systems	754	714	700
Electronics systems	512	515	500
Human factor systems	55	58	65
Space power and electric propulsion systems	22	21	20
Chemical propulsion	48	57	61
Aeronautics	718	713	706
Tracking and Data Acquisition	19	20	21
Sub-total, direct positions	2,747	2,741	2,696
Support personnel			
Director and Staff	32	32	32
Administration	515	515	510
Research and development support	950	946	941
Sub-total, support positions	1,497	1,493	1,483
Total, permanent positions	4,244	4,234	4,179
Other positions:			
Positions under cooperative training agreements	49	50	50
Other temporary positions	81	20	20
Total, all positions	4,374	4,304	4,249

Personnel requirements

The current and projected research effort is devoted to a broad range of programs to advance national aeronautical and space flight capabilities in accordance with NASA missions. In the field of aeronautics, the Langley Research Center program is directed to the extension of aircraft performance and other related problems with special emphasis on acquisition of sufficient basic technology to facilitate the development of efficient supersonic transports, hypersonic ramjet vehicles, and V/STOL aircraft. Activity in support of space flight includes research in many scientific disciplines to provide a rational basis for future space accomplishments. The Center also directs a number of space flight projects, varying in size and scope from sounding rockets to the lunar orbiter project for detailed photographic and geophysical surveys of the moon. Minor reassignments of personnel between programs will be effected in conformity with changing program priorities and assigned Center complement.

799-990 O - 66 - 15

Personnel Costs

	1965	1966	1967
Total Positions	4,374	4,304	4,249
Permanent	4,244	4,234	4,179
Other	130	70	70
Personnel Compensation:			
Annual cost of permanent positions	$38,587,000	$40,491,000	$40,627,000
Pay above the stated annual rate	148,000	156,000	156,000
Lapses (deduct)	-876,000	-1,148,000	-133,000
Net cost of permanent positions	37,859,000	39,499,000	40,650,000
Other personnel compensation	1,496,000	1,537,000	1,349,000
Total compensation	39,355,000	41,036,000	41,999,000
NASA funded	39,355,000	41,036,000	41,999,000
Reimbursable	---	---	---
Personnel benefits	2,880,000	2,993,000	3,043,000
NASA funded	2,880,000	2,993,000	3,043,000
Reimbursable	---	---	---
Total personnel costs	42,235,000	44,029,000	45,042,000
NASA funded	42,235,000	44,029,000	45,042,000
Reimbursable	---	---	---
Average Number of All Employees (Man Years)	4,316	4,335	4,227

Personnel Costs - $45,042,000

The personnel costs for FY 1967 are estimated to be $45,042,000 covering 4,227 man years of employment. Of this amount, $41,999,000 is requested for personnel compensation and $3,043,000 for personnel benefits. The FY 1967 estimate includes an increase of $1,013,000 over the amount for the current fiscal year. This increase is requested to cover the cost of the Federal Employees Salary Act of 1965 on a full year basis, for within-grade step increases and career development, for retirement contributions and other benefits.

The following table shows the major items which are included in the estimate for personnel costs:

	FY 1967 Estimate	Increase or Decrease from FY 1966
Personnel compensation:		
Net cost of permanent positions.....	$40,650,000	$+1,151,000
Other personnel compensation.....	1,349,000	-188,000
Sub-total.....	41,999,000	+963,000
Personnel benefits:		
Retirement contributions.....	2,652,000	+76,000
Other personnel benefits.....	391,000	-26,000
Sub-total.....	3,043,000	+50,000
Total, personnel costs.....	$45,042,000	$+1,013,000

Travel and Transportation of Persons - $1,489,000

This requirement for travel reflects a reduction of $14,000 in FY 1967. This reduction is based upon continuing improvement of contract administration procedures and a reduction in permanent personnel.

Transportation of Things - $370,000

The requirements for this service is estimated to remain at the FY 1966 level.

Rent, Communications, and Utilities - $6,035,000

This category increases by $428,000 in the FY 1967 estimates. The major portion of this increase, $321,000, is for lease of ADP equipment. In FY 1966, the Center began a three phase replacement program of its existing ADP system. Procurement for Phase I, with the exception of the part that will be purchased in FY 1967, is underway. In addition, in FY 1967 the Center will lease the Phase II increment until such time as funds are available for its purchase. No funds are requested at this time for Phase III requirements.

Costs of communications increase $10,000. This increase is to provide communication services to new buildings that will be completed in FY 1967.

Likewise, utilities increase by $100,000 in FY 1967 because of increased consumption of electrical power required for the new buildings.

The foregoing increases are partially offset by minor decreases in other sub-object classifications.

Printing and Reproduction - $201,000

The cost of printing and reproduction is estimated to remain at the same level in FY 1967 as the FY 1966 requirement. Contractual printing is utilized to supplement in-house capabilities during peak work loads and also for work beyond the scope of the in-house reproduction facilities.

Other Services - $3,382,000

The estimate for this category is $512,000 greater than for FY 1966. Maintenance cost on ADP equipment increases by $256,000 due to full year funding for maintenance on equipment purchased in FY 1966.

Custodial services increase by $217,000 in FY 1967 as a result of anticipated higher wage rates due to the minimum wage standards set in the Service Contract Act of October 1965.

Small increases are also estimated for maintenance on aircraft and buildings in FY 1967.

Supplies and Materials - $2,720,000

The estimate for supplies and materials in FY 1967 is $20,000 higher than the level in FY 1966. This increase is required for general maintenance and the additional supplies and materials that will be required to support the new facilities that will become available during late FY 1966 and FY 1967.

Equipment - $2,878,000

The FY 1967 estimate for equipment is $2,378,000 less than the level for FY 1966. This reduction is related to procurement in FY 1966 of the initial increment of equipment in Phase I of the program to replace the existing ADP system. In FY 1967, $1,982,000 is required to complete the purchase of equipment under Phase I.

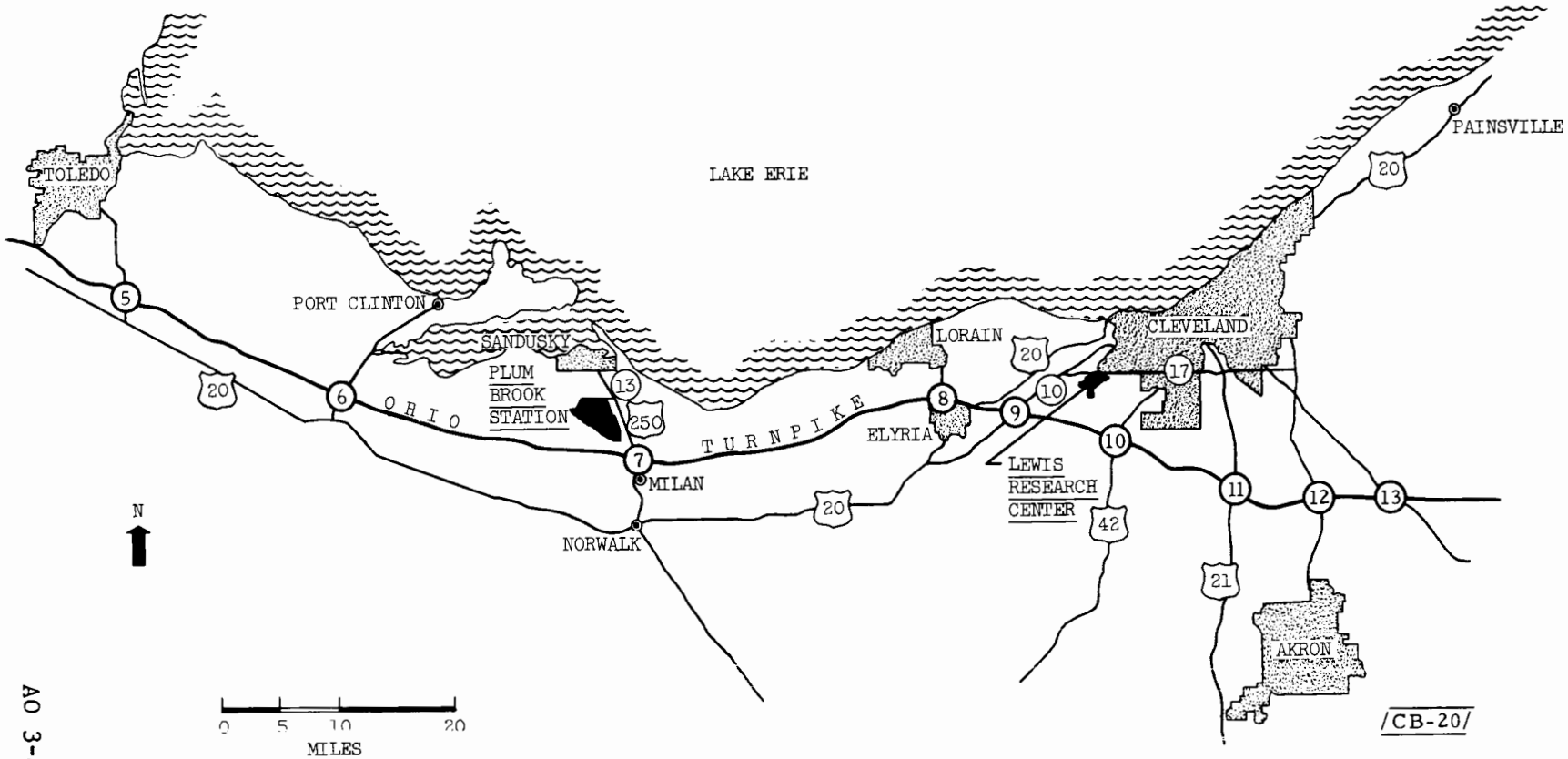
Requirements for other equipment items, such as mechanical and shop machinery, reflect a minor increase in FY 1967. These increased requirements, although offset by the reduction in procurement of ADP equipment, are required to replace out-dated and worn equipment.

Lands and Structures - $470,000

The estimate for FY 1967 is the same as the requirement for FY 1966. The Center will continue in FY 1967 to up-grade support facilities through needed alterations and repairs.

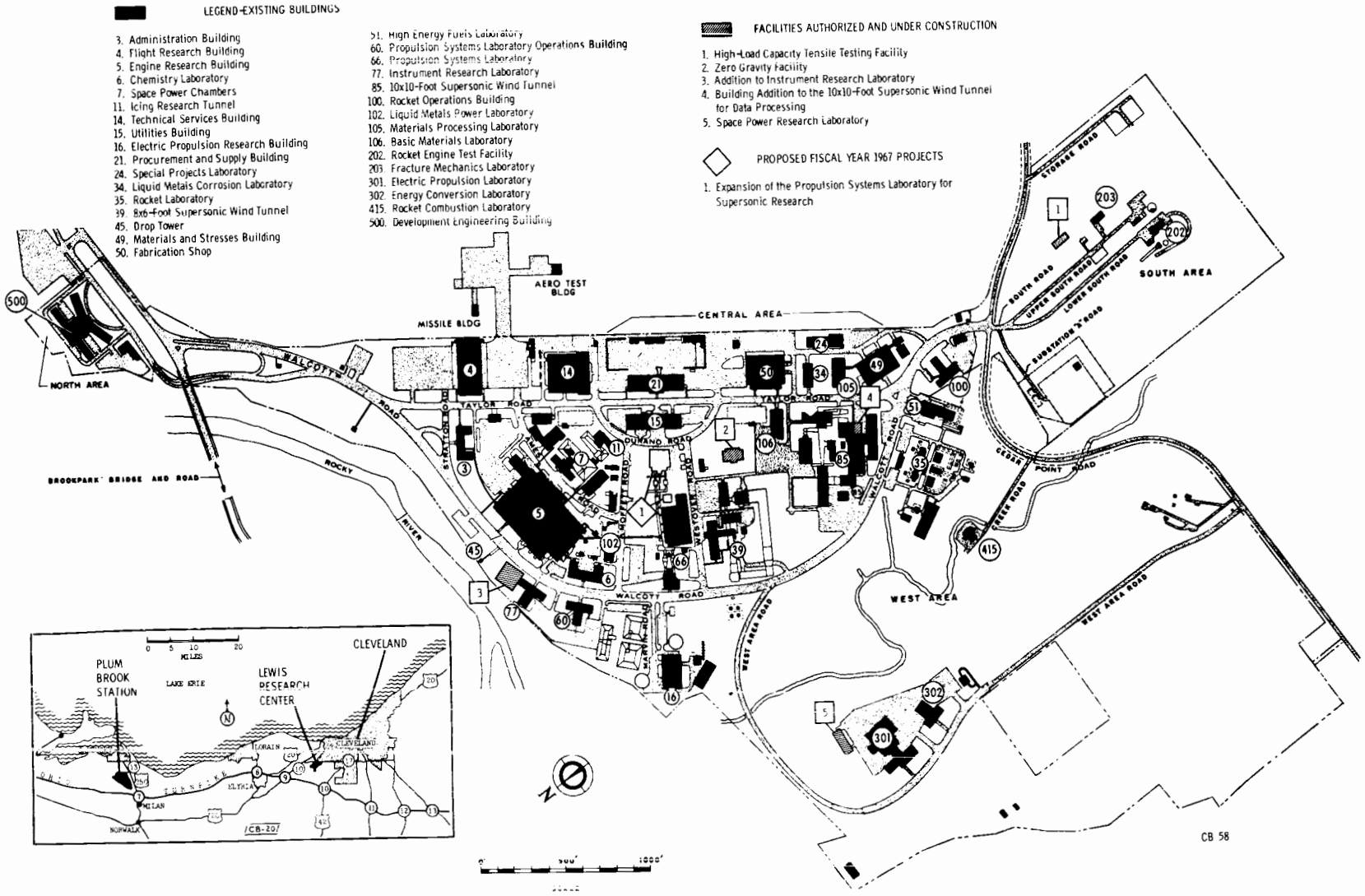
LEWIS RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

LOCATION OF LEWIS RESEARCH CENTER INCLUDING PLUM BROOK STATION



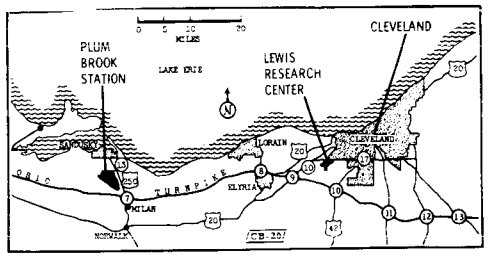
LEWIS RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

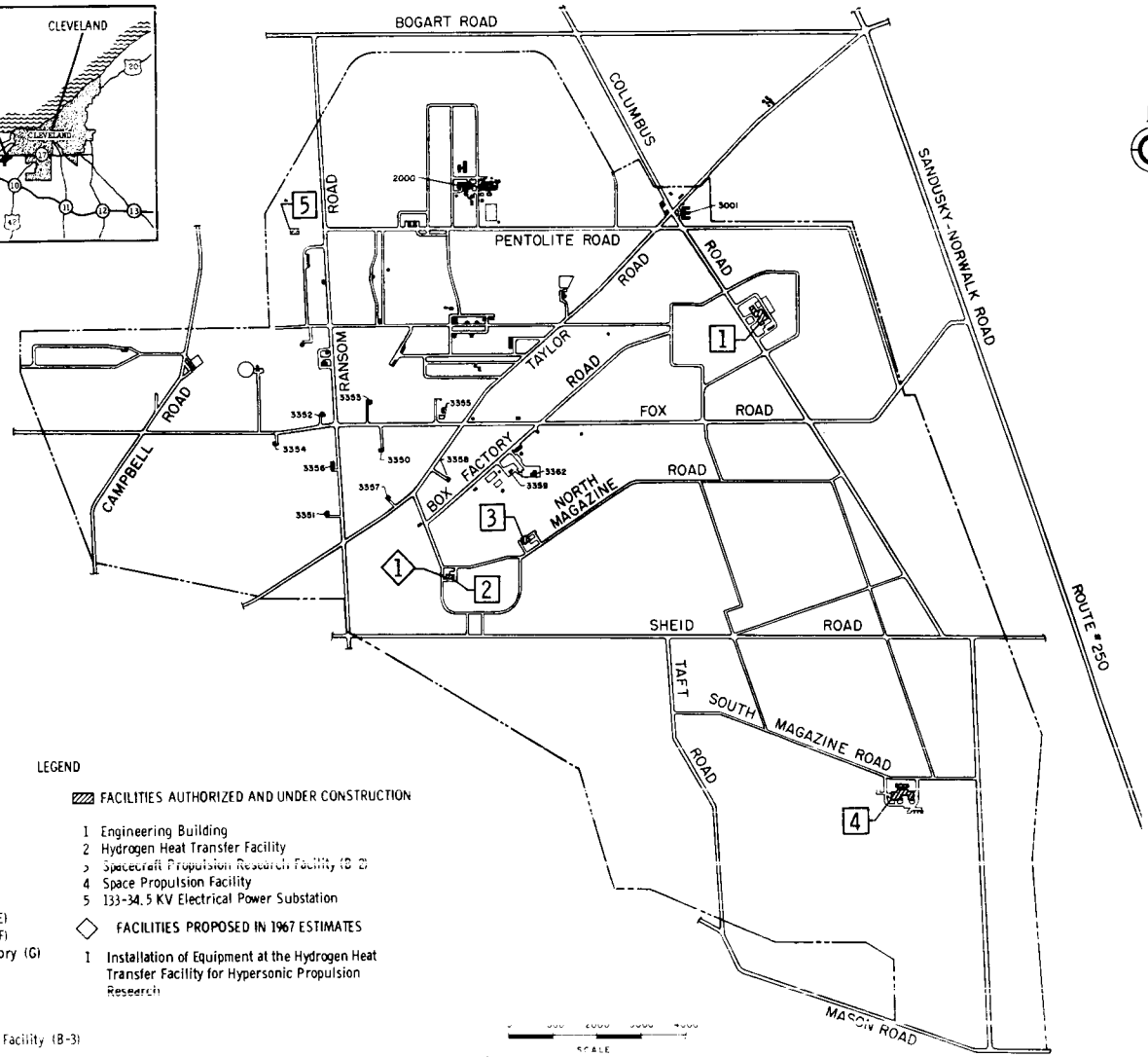
LOCATION PLAN



LEWIS RESEARCH CENTER
PLUM BROOK STATION
FISCAL YEAR 1967 ESTIMATES

LOCATION PLAN





LEGEND

EXISTING FACILITIES

2000 Reactor Facility
3001 Administration Building
3350 Rocket Pump Laboratory (A)
3351 Rocket Turbo-pump Laboratory (C)
3352 Rocket Turbine Laboratory (D)
3353 Rocket Systems Dynamics Laboratory (E)
3354 Rocket Systems Hydraulic Laboratory (F)
3355 Rocket Turbine and Pump Pilot Laboratory (G)
3356 Central Control and Data Building (H)
3357 Fluorine Pump Laboratory (I)
3358 Rocket Systems Laboratory (J)
3359 Altitude Rocket Test Facility (B-1)
3362 Nuclear Rocket Dynamics and Controls Facility (B-3)

FACILITIES AUTHORIZED AND UNDER CONSTRUCTION

1 Engineering Building
2 Hydrogen Heat Transfer Facility
3 Spacecraft Propulsion Research Facility (B-2)
4 Space Propulsion Facility
5 133-34.5 KV Electrical Power Substation

FACILITIES PROPOSED IN 1967 ESTIMATES

1 Installation of Equipment at the Hydrogen Heat Transfer Facility for Hypersonic Propulsion Research

LEWIS RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

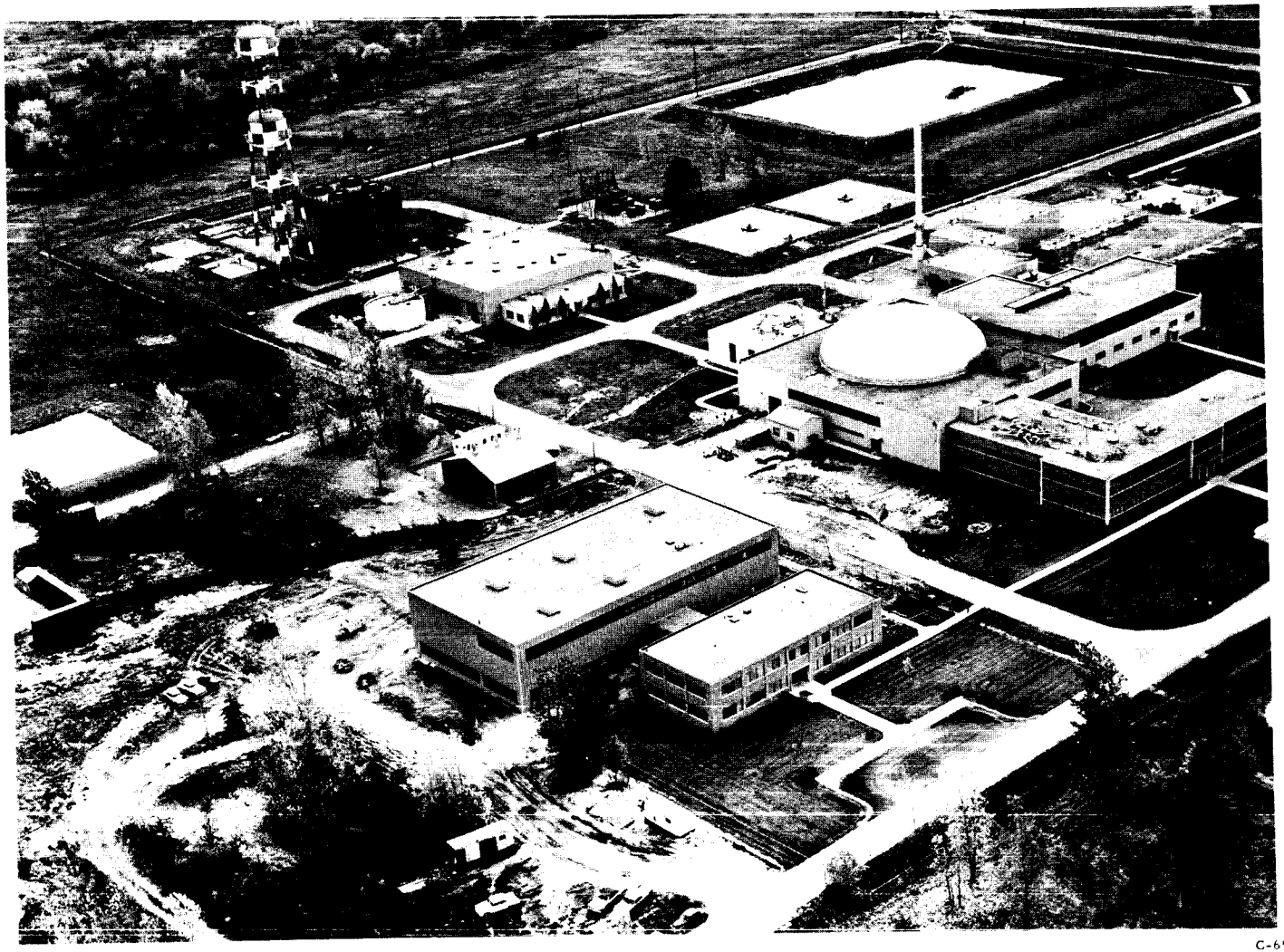
CLEVELAND FACILITIES

C-69628

LEWIS RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

PLUM BROOK STATION

(NORTH PORTION SHOWING REACTOR GROUP)



C-65-3009

LEWIS RESEARCH CENTER
FISCAL YEAR 1967 ESTIMATES

PLUM BROOK STATION
(ENGINEERING BUILDING)

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

STAFFING SUMMARY

	66	67
Excepted	30	30
GS-16	26	26
GS-15	155	175
GS-14	301	320
All other GS	2,368	2,478
Wage Board	1,730	1,718
Total Permanent	4,610	4,747
Temporary	32	32
Total Positions	4,842	4,779

RESOURCES PLANNING OFFICE

	66	67
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	2	2
All other GS	9	9
Wage Board	-	-
Total Permanent	12	12

OFFICE OF THE DIRECTOR

	66	67
Excepted	2	2
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	2	2
Wage Board	-	-
Total Permanent	5	5

OFFICE OF ASSOCIATE DIRECTOR FOR RESEARCH

	66	67
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total Permanent	2	2

OFFICE OF RESEARCH PLANS AND PROGRAMS

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	3	3
Wage Board	-	-
Total Permanent	5	5

OFFICE OF ASSOCIATE DIRECTOR FOR DEVELOPMENT

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	1	1
Wage Board	-	-
Total Permanent	3	3

OFFICE OF DEVELOPMENT PLANS AND PROGRAMS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	8	8
Wage Board	-	-
Total Permanent	12	12

PLUM BROOK STATION OFFICE OF DIRECTOR

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	6	6
Wage Board	-	-
Total Permanent	8	8

STAFF ASSISTANTS

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	3	3
All other GS	44	44
Wage Board	-	-
Total Permanent	47	47

OFFICE OF ASSISTANT DIRECTOR FOR ADMINISTRATION

	66	67
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	6	6
Wage Board	-	-
Total Permanent	7	7

STAFF ASSISTANTS

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	30	30
Wage Board	-	-
Total Permanent	31	31

OFFICE OF CHIEF OF TECHNICAL SERVICES

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	3	3
Wage Board	-	-
Total Permanent	5	5

OFFICE OF ASSISTANT DIRECTOR FOR PUBLIC AFFAIRS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	18	17
Wage Board	-	-
Total Permanent	21	20

CHEMISTRY AND ENERGY CONVERSION DIVISION

	66	67
Excepted	2	2
GS-16	3	3
GS-15	16	17
GS-14	22	24
All other GS	88	85
Wage Board	-	-
Total Permanent	131	131

MISSION ANALYSES BRANCH

	66	67
Excepted	-	-
GS-16	-	-
GS-15	4	4
GS-14	2	2
All other GS	16	16
Wage Board	-	-
Total Permanent	22	22

OFFICE OF RELIABILITY AND QUALITY ASSURANCE

	66	67
Excepted	-	-
GS-16	1	1
GS-15	3	3
GS-14	17	18
All other GS	20	20
Wage Board	-	-
Total Permanent	41	42

ELECTROMAGNETIC PROPULSION DIVISION

	66	67
Excepted	1	1
GS-16	1	1
GS-15	13	14
GS-14	14	15
All other GS	104	97
Wage Board	-	-
Total Permanent	133	128

SPACE POWER SYSTEM DIVISION

	66	67
Excepted	2	2
GS-16	-	-
GS-15	9	10
GS-14	26	28
All other GS	118	113
Wage Board	-	-
Total Permanent	155	153

MATERIAL AND STRUCTURES DIVISION

	66	67
Excepted	2	2
GS-16	2	2
GS-15	12	14
GS-14	14	15
All other GS	114	108
Wage Board	-	-
Total Permanent	144	141

CENTAUR PROJECT

	66	67
Excepted	1	1
GS-16	3	3
GS-15	14	15
GS-14	22	27
All other GS	128	115
Wage Board	1	1
Total Permanent	169	162

INSTRUMENT AND COMPUTING DIVISION

	66	67
Excepted	1	1
GS-16	4	4
GS-15	10	12
GS-14	11	14
All other GS	186	181
Wage Board	52	52
Total Permanent	264	264

AGENA PROJECT

	66	67
Excepted	1	1
GS-16	2	2
GS-15	8	7
GS-14	16	17
All other GS	70	63
Wage Board	-	-
Total Permanent	98	91

FLUID SYSTEMS COMPONENTS DIVISION

	66	67
Excepted	2	2
GS-16	4	4
GS-15	10	14
GS-14	21	21
All other GS	87	80
Wage Board	-	-
Total Permanent	124	121

CHEMICAL ROCKET SYSTEMS DIVISION

	66	67
Excepted	2	2
GS-16	3	3
GS-15	7	8
GS-14	15	16
All other GS	98	93
Wage Board	-	-
Total Permanent	125	122

NUCLEAR REACTOR DIVISION

	66	67
Excepted	2	2
GS-16	3	3
GS-15	10	10
GS-14	27	30
All other GS	96	91
Wage Board	-	-
Total Permanent	138	136

ADVANCED DEVELOPMENT AND EVALUATION DIVISION

	66	67
Excepted	2	2
GS-16	1	1
GS-15	9	13
GS-14	18	18
All other GS	147	143
Wage Board	-	-
Total Permanent	177	177

SPACECRAFT TECHNOLOGY DIVISION

	66	67
Excepted	1	1
GS-16	-	-
GS-15	6	10
GS-14	10	11
All other GS	108	102
Wage Board	-	-
Total Permanent	125	124

ROCKET SYSTEMS DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	6	6
All other GS	60	56
Wage Board	-	-
Total Permanent	67	63

REACTOR DIVISION

	66	67
Excepted	-	-
GS-16	1	1
GS-15	1	1
GS-14	10	10
All other GS	84	80
Wage Board	-	-
Total Permanent	96	92

ENGINEERING DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	7	7
All other GS	43	41
Wage Board	1	1
Total Permanent	52	50

ADMINISTRATION DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	21	21
Wage Board	5	5
Total Permanent	26	26

FACILITIES SERVICE DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All other GS	14	14
Wage Board	301	301
Total Permanent	316	316

PERSONNEL DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	62	62
Wage Board	-	-
Total Permanent	65	65

FINANCE DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	71	71
Wage Board	-	-
Total Permanent	72	72

ADMINISTRATIVE SERVICES DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	46	46
Wage Board	-	-
Total Permanent	47	47

PROCUREMENT AND SUPPLY DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	6	6
All other GS	180	172
Wage Board	26	26
Total Permanent	212	204

TECHNICAL INFORMATION DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	93	93
Wage Board	19	19
Total Permanent	113	113

PLANT SERVICES DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	40	40
Wage Board	125	122
Total Permanent	166	163

TEST INSTALLATIONS DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	20	20
Wage Board	646	643
Total Permanent	667	664

FACILITIES OPERATIONS DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	36	36
Wage Board	330	327
Total Permanent	368	365

FABRICATION DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All other GS	32	32
Wage Board	218	215
Total Permanent	252	249

ENGINEERING DESIGN DIVISION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	5	5
GS-14	8	8
All other GS	160	160
Wage Board	6	6
Total Permanent	179	179

FACILITIES ENGINEERING DIVISION

	66	67
Excepted	1	1
GS-16	-	-
GS-15	5	5
GS-14	9	9
All other GS	71	71
Wage Board	-	-
Total Permanent	86	86

CONSTRUCTION OFFICE

	66	67
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	22	22
Wage Board	-	-
Total Permanent	23	23

799-990 O - 66 (Pols. p. 3-48)

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

LEWIS RESEARCH CENTER

MISSION AND CAPABILITIES:

The principle mission of the Center has always been propulsion. During World War II, many improvements were made in reciprocating aircraft engines, engine fuels, superchargers, and other engine accessories. After the war, all facilities were converted for research on turbojet engines, and a rocket laboratory was built. The maximum operating altitude of turbojet engines was greatly increased, pioneer work was done on afterburners, combustion efficiency and the efficiency of compressors and turbines was improved, and an air-cooled turbine blade was developed. Rocket work proceeded slowly at first, but the feasibility of using high-energy fluorine and hydrogen instead of kerosene as the fuel, was established. With the establishment of the NASA, work on ion propulsion and spacecraft power systems expanded from theoretical studies and bench-type experiments into hardware approaching practical sizes, and new facilities were added to develop systems which will power and propel our advanced future missions.

The primary mission of the Lewis Research Center is now research and development in the areas of advanced propulsion and space power generation. This includes work on the high-energy chemical, nuclear, and electric rocket engines and 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.

This in-house research provides technical input and direction to the related development, or contractual, efforts for which Lewis has managerial responsibility. For example, the Lewis Research Center maintains technical management of NASA contracts on electric propulsion, nuclear and solar turbo-electric space power systems, and liquid hydrogen rocket technology. In addition, Lewis has the development responsibility for the Atlas-Centaur and the Atlas-Agena launch vehicles.

Major research tools, or facilities, at the Lewis Research Center (including the Plum Brook Station) are designed to simulate various flight conditions and range from atmospheric wind tunnels to large space environment facilities (or vacuum tanks). 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 towers, 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:

	1965	1966	1967
Authorized Positions, end of year..	4,917	4,842	4,779
Average Number of All Employees....	4,861	4,748	4,642
Administrative Operations.....	$68,546,000	$67,207,000	$66,284,000

INSTALLATION DESCRIPTION:

The Lewis Research Center occupies two sites. The older one, established in 1941, is on the southwest edge of Cleveland, Ohio, and consists of 82 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 of which about 15 acres are leased from Cleveland. A newer site, established in 1956, is located south of Sandusky, Ohio, on land formerly occupied by the Plum Brook Ordnance Works. Known as the Plum Brook Station, it occupies 6,031 acres, of which 5,981 are owned and 50 are in easements. The research programs at Plum Brook 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 turbopumps are developed for cryogenic propellants. The total capital investment of the Lewis Research Center, including the Plum Brook Station, as of June 30, 1965 was $265,754,000.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation.....	$46,439,000	$47,993,000	$49,064,000
12.	Personnel Benefits.....	3,373,000	3,499,000	3,581,000
	Total, personnel costs.....	$49,812,000	$51,492,000	$52,645,000
21.	Travel and Transportation of Persons.....	1,469,000	1,470,000	1,455,000
22.	Transportation of Things.....	303,000	303,000	303,000
23.	Rent, Communications, and Utilities.....	3,839,000	3,389,000	3,449,000
24.	Printing and Reproduction....	50,000	50,000	50,000

	1965	1966	1967
25. Other Services.....	$3,862,000	$3,654,000	$3,656,000
Services of other agencies	139,000	139,000	139,000
26. Supplies and Materials.....	2,435,000	2,028,000	2,055,000
31. Equipment.....	6,323,000	4,380,000	2,230,000
32. Lands and Structures.....	312,000	300,000	300,000
42. Insurance Claims and Indemnities.....	2,000	2,000	2,000
Total.....	$68,546,000	$67,207,000	$66,284,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Apollo.....	24	---	---
Space Science and Applications			
Lunar and planetary exploration	1	---	---
Launch vehicle development.....	247	230	170
Launch vehicle procurement.....	116	125	124
Advanced Research and Technology			
Basic research.....	465	485	490
Space vehicle systems.....	219	208	210
Electronics systems.....	59	70	70
Human factor systems.....	1	---	---
Space power and electric propulsion systems.....	851	734	713
Nuclear rockets.....	625	457	447
Chemical propulsion.....	422	558	565
Aeronautics.....	85	250	305
Technology Utilization.....	6	6	6
Sub-total, direct positions..	3,121	3,123	3,100

	1965	1966	1967
Support personnel			
Director and Staff.....	17	17	17
Administration.....	575	561	556
Research and development support.	1,102	1,109	1,074
Sub-total, support positions...	1,694	1,687	1,647
Total, permanent positions.....	4,815	4,810	4,747
Other positions:			
Positions under cooperative training agreements.....	11	11	11
Other temporary positions.....	91	21	21
Total, all positions.....	4,917	4,842	4,779

Personnel Costs

	1965	1966	1967
Total Positions.....	4,917	4,842	4,779
Permanent.....	4,815	4,810	4,747
Other.....	102	32	32
Personnel Compensation:			
Annual cost of permanent positions.....	$45,017,000	$47,854,000	$48,371,000
Pay above the stated annual rate	173,000	184,000	186,000
Lapses (deduct).....	-859,000	-1,900,000	-1,399,000
Net cost of permanent positions.	44,331,000	46,138,000	47,158,000
Other personnel compensation....	2,108,000	1,855,000	1,906,000
Total compensation.....	46,439,000	47,993,000	49,064,000
NASA funded.....	46,439,000	47,993,000	49,064,000
Reimbursable.....	---	---	---
Personnel benefits.....	3,373,000	3,499,000	3,581,000
NASA funded.....	3,373,000	3,499,000	3,581,000
Reimbursable.....	---	---	---
Total personnel costs.....	49,812,000	51,492,000	52,645,000
NASA funded.....	49,812,000	51,492,000	52,645,000
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	4,861	4,748	4,642

Personnel Costs - $52,645,000

The personnel cost for FY 1967 is estimated to be $52,645,000 covering 4,642 manyears of employment. Of this amount $49,064,000 is requested for personnel compensation and $3,581,000 for personnel benefits. The FY 1967 estimates include an increase of $1,153,000 over FY 1966. This increase is required to cover the cost of the Federal Employees Salary Act of 1965 on a full year basis, for within-grade step increases, and career development, for retirement contributions and other benefits.

The following table shows the major items which are included in the estimate for personnel cost:

	FY 1967 Estimate	Increase or Decrease from FY 1966
Personnel Compensation		
Net cost of permanent positions..	$47,158,000	$+1,020,000
Other personnel compensation.....	1,906,000	+51,000
Sub-total.....	$49,064,000	$+1,071,000
Personnel Benefits		
Retirement contributions.....	$3,055,000	$+64,000
Other personnel benefits.....	526,000	+18,000
Sub-total.....	$3,581,000	$+82,000
Total personnel cost.....	$52,645,000	$+1,153,000

Travel and Transportation of Persons - $1,455,000

This estimate is $15,000 less than the FY 1966 level. This reduction is primarily due to a proportionate reduction in permanent positions.

Transportation of Things - $303,000

The FY 1967 level for this category is the same as FY 1966. The majority of the cost under this item is for transportation of equipment transfered to the Lewis Research Center from other federal agencies.

Rent, Communications, and Utilities - $3,449,000

This estimate is $60,000 higher than in the current year. Savings realized in FY 1967 for lease of ADP equipment are due to the purchase of a new system in FY 1966 and are less than the increased cost for utilities. Increased utility costs are directly related to new facilities becoming operational in FY 1967 and increased power requirements generated by increased tunnel usage for supersonic transport research.

Printing and Reproduction - $50,000

It is estimated that printing and reproduction requirements will remain at the FY 1966 level.

Other Services - $3,795,000

This estimate is a net increase of $2,000 over the FY 1966 level. Included in the estimate is an increase of $43,000 related to the maintenance requirements for ADP equipment procured in FY 1966 and for maintenance of EAM equipment, offset by decreases in the maintenance and repair of facilities.

Supplies and Materials - $2,055,000

There is an increase of $27,000 anticipated in FY 1967 requirements to cover the cost of plumbing supplies to support center facilities. The balance of the requested funds are at the same level as FY 1966 and are needed for normal support expenses at the Center.

Equipment - $2,230,000

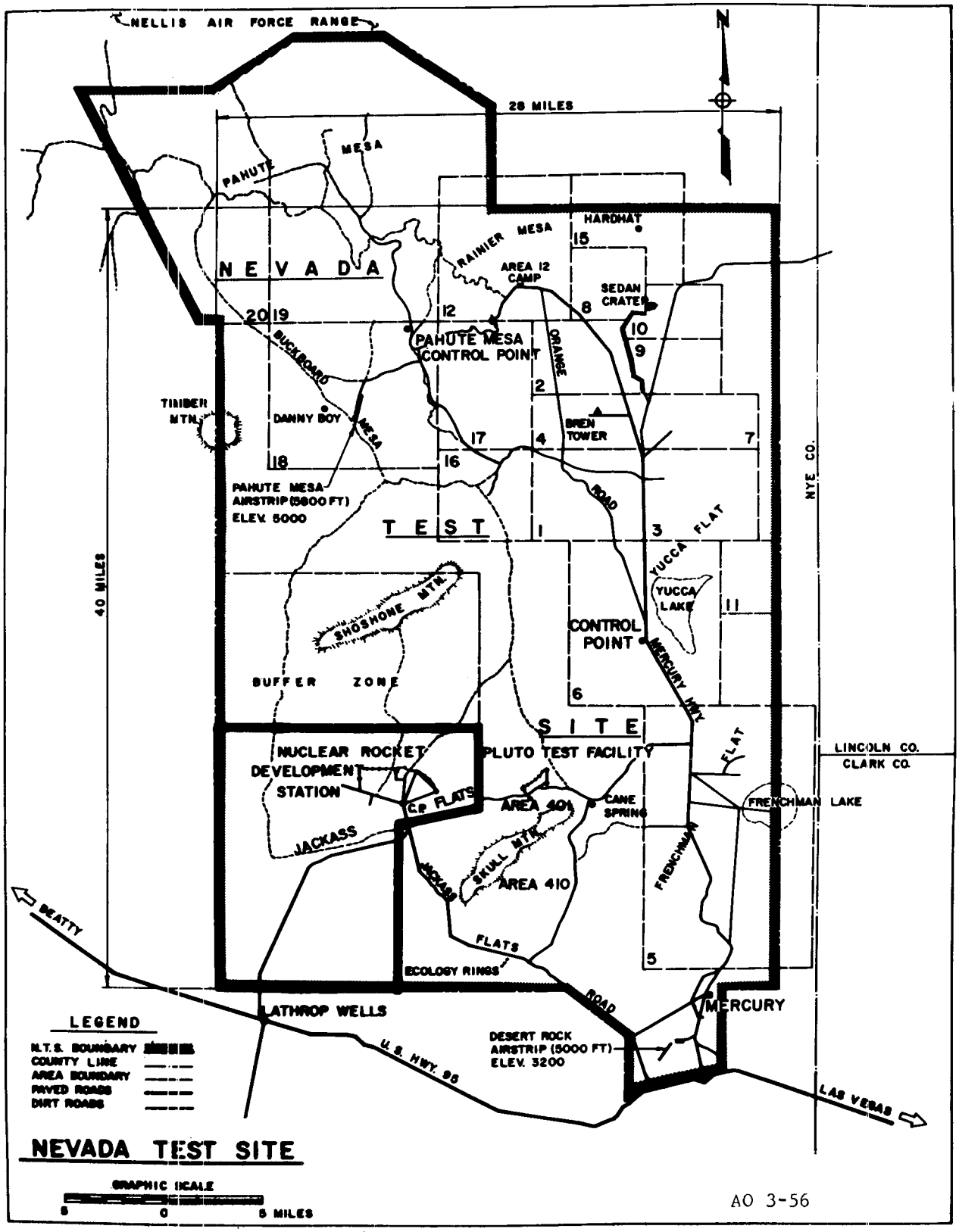
This estimate is $2,150,000 less than the current year level. This decrease is the result of the purchase of a new ADP system in FY 1966. Other equipment items will remain at the FY 1966 level of operations.

Lands and Structures - $300,000

No increase is requested in this estimate. Experience indicates that a stabilized level of effort is required in the alteration and repair of new and existing facilities.

Insurance Claims and Indemnities - $2,000

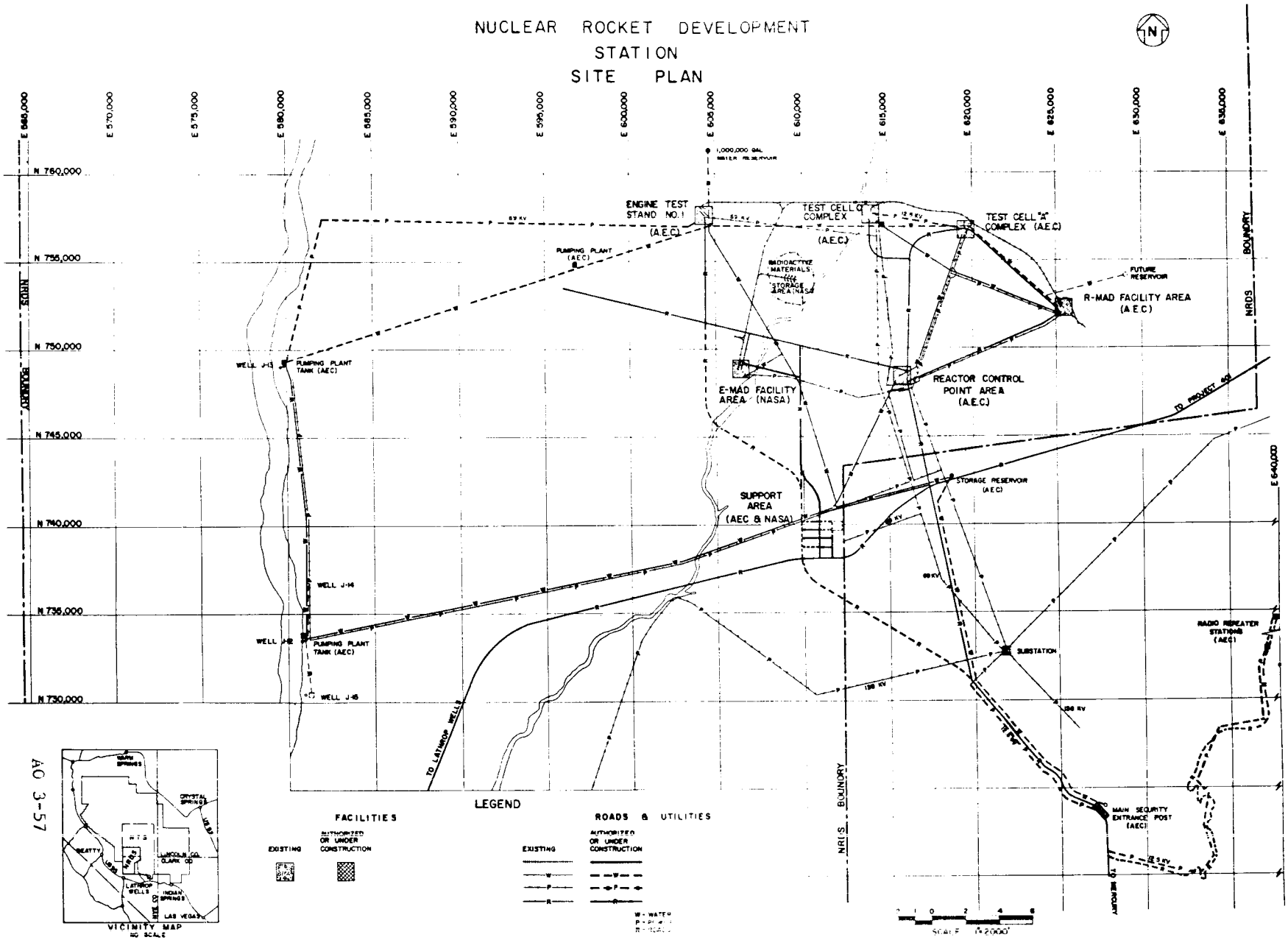
This estimate does not change from FY 1966. These funds are needed to settle miscellaneous and small claims.



AO 3-56

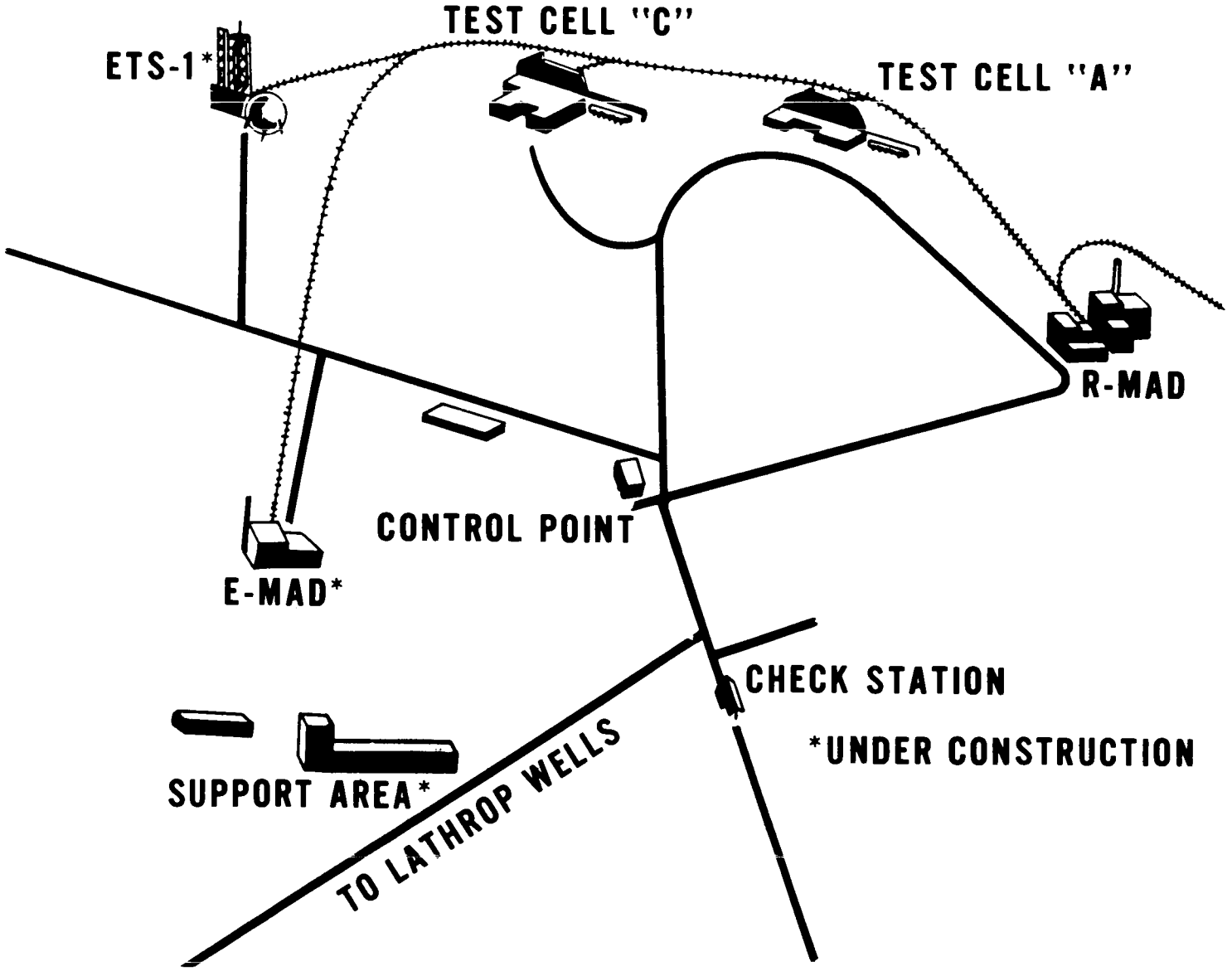
799-990 O - 66 - 17

NUCLEAR ROCKET DEVELOPMENT STATION SITE PLAN

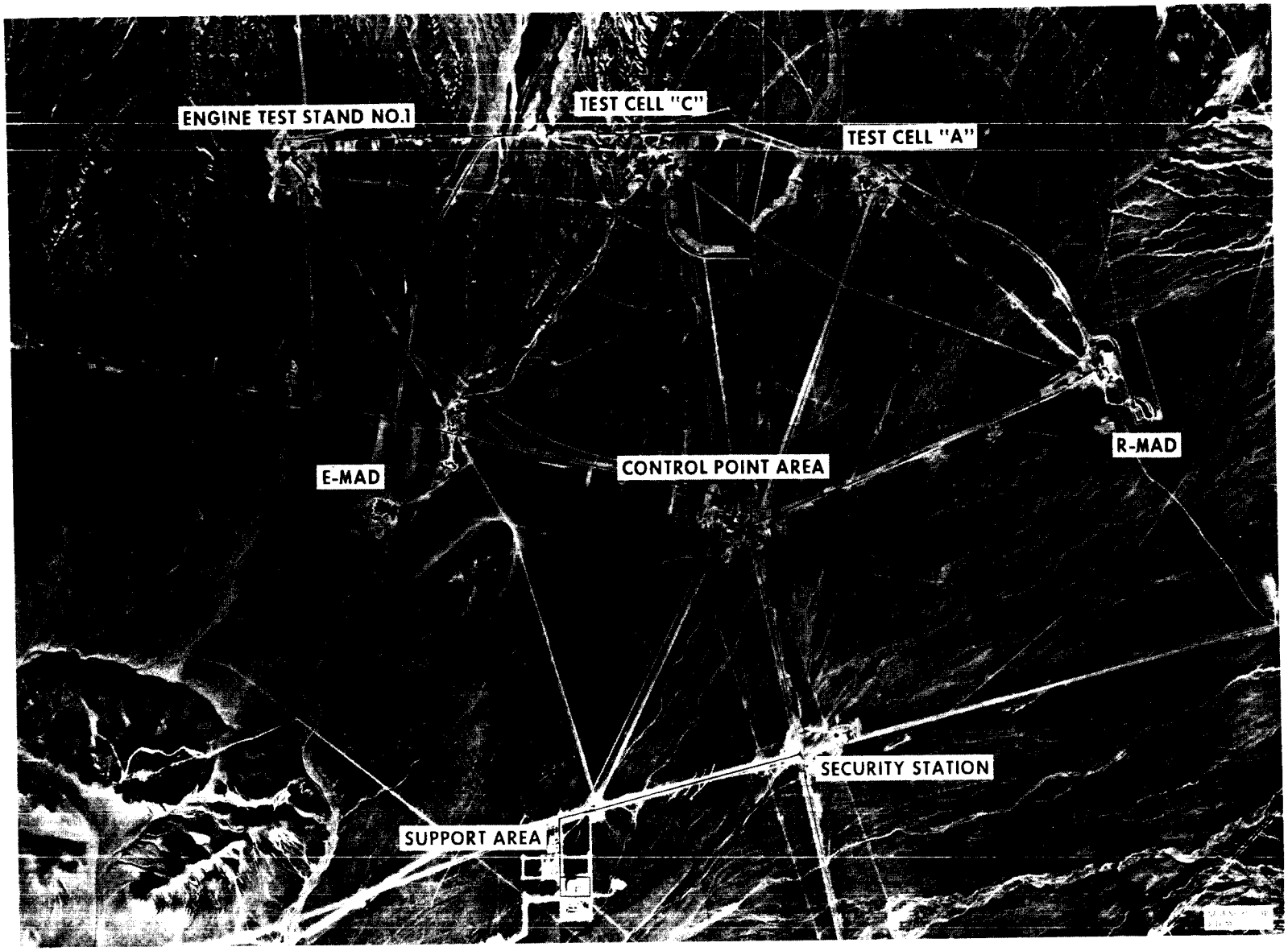


AO 3-57

NUCLEAR ROCKET DEVELOPMENT STATION LAYOUT



NUCLEAR ROCKET DEVELOPMENT STATION



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

SPACE NUCLEAR PROPULSION OFFICE

STAFFING SUMMARY

	66	67
Excepted	2	2
GS-16	6	6
GS-15	25	25
GS-14	17	17
All other GS	67	65
Total Permanent	117	115
Temporary	-	-
Total Positions	117	115

OFFICE OF THE MANAGER

	66	67
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	-	-
All other GS	4	4
Total Permanent	6	6

ALBUQUERQUE EXTENSION

	66	67
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	1	1
All other GS	-	-
Total Permanent	1	1

NERVA BRANCH

	66	67
Excepted	-	-
GS-16	1	1
GS-15	3	3
GS-14	-	-
All other GS	1	1
Total Permanent	5	5

CLEVELAND EXTENSION

	66	67
Excepted	1	1
GS-16	2	2
GS-15	15	15
GS-14	11	11
All other GS	40	40
Total Permanent	69	69

ADVANCED ENGINE BRANCH

	66	67
Excepted	-	-
GS-16	1	1
GS-15	1	1
GS-14	-	-
All other GS	-	-
Total Permanent	2	2

NEVADA EXTENSION

	66	67
Excepted	-	-
GS-16	1	1
GS-15	4	4
GS-14	5	5
All other GS	21	19
Total Permanent	31	29

FACILITIES BRANCH

	66	67
Excepted	-	-
GS-16	1	1
GS-15	1	1
GS-14	-	-
All other GS	1	1
Total Permanent	3	3

AO 3-60

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

SPACE NUCLEAR PROPULSION OFFICE

MISSION AND CAPABILITIES:

The mission of the Space Nuclear Propulsion Office is to provide the necessary research, design and engineering data, test hardware, and general technology required to develop nuclear rocket systems with power levels, operating times, restart conditions, and specific impulse values suitable for advanced space exploration missions. Through the use of nuclear rocket propulsion, significant performance advantages accrue to such missions as lunar base logistics operations, deep space probing with heavy complex spacecraft, and manned exploration of the planets.

The major areas of effort are the research and engineering of the nuclear reactor, and the development of certain nonnuclear components into a complete experimental engine system. Because of progress in developing the graphite solid core reactor, the current emphasis is moving to the engine system phase which includes development of the nonnuclear components and their integration with the reactor.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year...	117	117	115
Average Number of All Employees.....	102	111	112
Administrative Operations.....	$1,669,000	$1,824,000	$1,847,000

INSTALLATION DESCRIPTION:

The nuclear rocket program is a joint AEC-NASA undertaking. To ensure an integrated program, the Space Nuclear Propulsion Office, established by an interagency agreement between AEC and NASA, manages all aspects of the program.

The Office consists of a headquarters office located at Germantown, Maryland, and three field extensions located in Ohio, New Mexico, and Nevada. At the Nevada location, 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 consists of a 90,000 acre site approximately 90 miles northwest of Las Vegas. The total capital investment of NASA funded facilities as of June 30, 1965 was $15,194,052.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

	1965	1966	1967
11. Personnel Compensation.....	$1,318,000	$1,460,000	$1,483,000
12. Personnel Benefits.....	94,000	106,000	108,000
Total, personnel costs.....	$1,412,000	$1,566,000	$1,591,000
21. Travel and Transportation of Persons.....	199,000	200,000	198,000
22. Transportation of Things.....	4,000	3,000	3,000
23. Rent, Communications, and Utilities.....	---	---	---
24. Printing and Reproduction....	---	---	---
25. Other Services.....	37,000	38,000	38,000
Services of other agencies.	17,000	17,000	17,000
26. Supplies and Materials.....	---	---	---
31. Equipment.....	---	---	---
32. Lands and Structures.....	---	---	---
42. Insurance Claims and Indemnities.....	---	---	---
Total.....	$1,669,000	$1,824,000	$1,847,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Advanced Research and Technology			
Nuclear Rockets.....	110	110	108
Support personnel			
Director and Staff.....	2	2	2
Administration.....	2	2	2
Research and development support.....	3	3	3
Sub-total, support positions.....	7	7	7
Total, permanent positions.....	117	117	115
Other positions.....	---	---	---
Total, all positions.....	117	117	115

Personnel requirements

The total manpower level in FY 1967 will be decreased by two positions. The increase in personnel costs amounting to $25,000 is required to fund for a full year cost of the Federal Employees Salary Act of 1965 effective October 1, 1965.

Personnel Costs

	1965	1966	1967
Total Positions	117	117	115
Permanent	117	117	115
Other	---	---	---
Personnel Compensation:			
Annual cost of permanent positions	$1,419,000	$1,510,000	$1,501,000
Pay above the stated annual rate	5,000	5,000	5,000
Lapses (deduct)	-115,000	-64,000	-32,000
Net cost of permanent positions	1,309,000	1,451,000	1,474,000
Other personnel compensation	9,000	9,000	9,000
Total compensation	1,318,000	1,460,000	1,483,000
NASA funded	1,318,000	1,460,000	1,483,000
Reimbursable	---	---	---
Personnel benefits	94,000	106,000	108,000
NASA funded	94,000	106,000	108,000
Reimbursable	---	---	---
Total personnel costs	1,412,000	1,566,000	1,591,000
NASA funded	1,412,000	1,566,000	1,591,000
Reimbursable	---	---	---
Average Number of All Employees (Man Years)	102	111	112

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

NASA HEADQUARTERS

STAFFING SUMMARY

	66	67
Excepted	191	191
GS-16	65	65
GS-15	377	399
GS-14	300	321
All other GS	1,211	1,141
Wage Board	18	18
Total Permanent	2,162	2,135
Temporary	65	65
Total Positions	2,227	2,200

ADMINISTRATOR

	66	67
Excepted	11	11
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	5	5
Wage Board	-	-
Total Permanent	19	19

EXECUTIVE SECRETARY

	66	67
Excepted	1	1
GS-16	-	-
GS-15	3	3
GS-14	3	3
All other GS	55	55
Wage Board	2	2
Total Permanent	64	64

ADMINISTRATION NASA-Wide

	66	67
Excepted	16	16
GS-16	1	1
GS-15	42	42
GS-14	47	48
All other GS	142	137
Wage Board	-	-
Total Permanent	248	244

HEADQUARTERS OPERATIONS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	6	6
All other GS	227	225
Wage Board	15	15
Total Permanent	253	251

DEFENSE AFFAIRS

	66	67
Excepted	3	3
GS-16	-	-
GS-15	1	2
GS-14	1	-
All other GS	5	5
Wage Board	-	-
Total Permanent	10	10

GENERAL COUNSEL

	66	67
Excepted	6	6
GS-16	-	-
GS-15	11	11
GS-14	6	6
All other GS	29	28
Wage Board	-	-
Total Permanent	52	51

INDUSTRY AFFAIRS

	66	67
Excepted	10	10
GS-16	1	1
GS-15	17	18
GS-14	36	37
All other GS	84	80
Wage Board	-	-
Total Permanent	148	146

INTERNATIONAL AFFAIRS

	66	67
Excepted	2	2
GS-16	1	1
GS-15	3	3
GS-14	-	-
All other GS	21	21
Wage Board	-	-
Total Permanent	27	27

LEGISLATIVE AFFAIRS

	66	67
Excepted	2	2
GS-16	-	-
GS-15	4	4
GS-14	2	2
All other GS	20	20
Wage Board	1	1
Total Permanent	29	29

POLICY ANALYSIS

	66	67
Excepted	3	3
GS-16	-	-
GS-15	2	2
GS-14	2	2
All other GS	10	10
Wage Board	-	-
Total Permanent	17	17

PROGRAMMING

	66	67
Excepted	7	7
GS-16	-	-
GS-15	13	14
GS-14	12	12
All other GS	39	37
Wage Board	-	-
Total Permanent	71	70

PUBLIC AFFAIRS

	66	67
Excepted	4	4
GS-16	-	-
GS-15	14	14
GS-14	20	20
All other GS	80	78
Wage Board	-	-
Total Permanent	118	116

TECHNOLOGY UTILIZATION

	66	67
Excepted	6	6
GS-16	-	-
GS-15	8	8
GS-14	13	13
All other GS	51	50
Wage Board	-	-
Total Permanent	78	77

MANNED SPACE FLIGHT

	66	67
Excepted	39	39
GS-16	12	12
GS-15	116	124
GS-14	88	97
All other GS	198	175
Wage Board	-	-
Total Permanent	453	447

SPACE SCIENCE AND APPLICATIONS

	66	67
Excepted	38	38
GS-16	23	23
GS-15	60	68
GS-14	28	38
All other GS	147	125
Wage Board	-	-
Total Permanent	296	292

TRACKING AND DATA ACQUISITION

	66	67
Excepted	6	6
GS-16	5	5
GS-15	19	20
GS-14	10	10
All other GS	22	20
Wage Board	-	-
Total Permanent	62	61

ADVANCED RESEARCH AND TECHNOLOGY

	66	67
Excepted	36	36
GS-16	22	22
GS-15	59	61
GS-14	24	25
All other GS	76	70
Wage Board	-	-
Total Permanent	217	214

799-990 O - 66 (Fols. p. 3-63)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

NASA HEADQUARTERS

STAFFING SUMMARY

	66	67
Excepted	191	191
GS-16	65	65
GS-15	377	399
GS-14	300	321
All other GS	1,211	1,141
Wage Board	18	18
Total Permanent	2,162	2,135
Temporary	65	65
Total Positions	2,227	2,200

ADMINISTRATOR

	66	67
Excepted	11	11
GS-16	-	-
GS-15	1	1
GS-14	2	2
All other GS	5	5
Wage Board	-	-
Total Permanent	19	19

EXECUTIVE SECRETARY

	66	67
Excepted	1	1
GS-16	-	-
GS-15	3	3
GS-14	3	3
All other GS	55	55
Wage Board	2	2
Total Permanent	64	64

ADMINISTRATION NASA-Wide

	66	67
Excepted	16	16
GS-16	1	1
GS-15	42	42
GS-14	47	48
All other GS	142	137
Wage Board	-	-
Total Permanent	248	244

HEADQUARTERS OPERATIONS

	66	67
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	6	6
All other GS	227	225
Wage Board	15	15
Total Permanent	253	251

DEFENSE AFFAIRS

	66	67
Excepted	3	3
GS-16	-	-
GS-15	1	2
GS-14	1	-
All other GS	5	5
Wage Board	-	-
Total Permanent	10	10

GENERAL COUNSEL

	66	67
Excepted	6	6
GS-16	-	-
GS-15	11	11
GS-14	6	6
All other GS	29	28
Wage Board	-	-
Total Permanent	52	51

INDUSTRY AFFAIRS

	66	67
Excepted	10	10
GS-16	1	1
GS-15	17	18
GS-14	36	37
All other GS	84	80
Wage Board	-	-
Total Permanent	148	146

INTERNATIONAL AFFAIRS

	66	67
Excepted	2	2
GS-16	1	1
GS-15	3	3
GS-14	-	-
All other GS	21	21
Wage Board	-	-
Total Permanent	27	27

LEGISLATIVE AFFAIRS

	66	67
Excepted	2	2
GS-16	-	-
GS-15	4	4
GS-14	2	2
All other GS	20	20
Wage Board	1	1
Total Permanent	29	29

POLICY ANALYSIS

	66	67
Excepted	3	3
GS-16	-	-
GS-15	2	2
GS-14	2	2
All other GS	10	10
Wage Board	-	-
Total Permanent	17	17

PROGRAMMING

	66	67
Excepted	7	7
GS-16	-	-
GS-15	13	14
GS-14	12	12
All other GS	39	37
Wage Board	-	-
Total Permanent	71	70

PUBLIC AFFAIRS

	66	67
Excepted	4	4
GS-16	-	-
GS-15	14	14
GS-14	20	20
All other GS	80	78
Wage Board	-	-
Total Permanent	118	116

TECHNOLOGY UTILIZATION

	66	67
Excepted	6	6
GS-16	-	-
GS-15	8	8
GS-14	13	13
All other GS	51	50
Wage Board	-	-
Total Permanent	78	77

MANNED SPACE FLIGHT

	66	67
Excepted	39	39
GS-16	12	12
GS-15	116	124
GS-14	88	97
All other GS	198	175
Wage Board	-	-
Total Permanent	453	447

SPACE SCIENCE AND APPLICATIONS

	66	67
Excepted	38	38
GS-16	23	23
GS-15	60	68
GS-14	28	38
All other GS	147	125
Wage Board	-	-
Total Permanent	296	292

TRACKING AND DATA ACQUISITION

	66	67
Excepted	6	6
GS-16	5	5
GS-15	19	20
GS-14	10	10
All other GS	22	20
Wage Board	-	-
Total Permanent	62	61

ADVANCED RESEARCH AND TECHNOLOGY

	66	67
Excepted	36	36
GS-16	22	22
GS-15	59	61
GS-14	24	25
All other GS	76	70
Wage Board	-	-
Total Permanent	217	214

799-990 O - 66 (Pols. p. 3-53)

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 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 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 extravehicular activity; Apollo - to provide a broad national capability for manned space exploration, including earth-orbital, lunar orbital, and lunar surface operations and to achieve the specific objective of manned lunar landing and return within this decade; and Advanced Missions - to plan a broad program of exploration which will achieve and maintain a position of space leadership for the United States. The Office of Manned Space Flight has launch responsibility for all major manned and unmanned missions utilizing NASA launch vehicles. This Office also has over-all institutional responsibility for the three

799-390 O - 66 - 18

installations primarily concerned with the manned space flight programs. These installations are: the George C. Marshall Space Flight Center, including Mississippi Test Facility, Michoud Assembly Facility, and Slidell where a computer facility is located; the Manned Spacecraft Center, including NASA activities at the White Sands Test Facility; and the John F. Kennedy Space Center, NASA, including NASA activities at the Eastern and Western Test Ranges.

The Office of Space Science and Applications - Responsible for NASA programs involving the unmanned scientific investigation of the space environment including the moon, planets, and interplanetary space utilizing ground-based, airborne, and space techniques such as sounding rockets, earth satellites, and deep space probes (e.g., Voyager); for scientific experiments to be conducted by man in space and selection and training of astronaut-scientists; for the research and development of space flight applications in such areas as meteorology, communications, navigation, geodesy, and economic geographic surveys, and for the support of operational systems using these developments; for the development, procurement, and use of light and medium class launch vehicles, such as Centaur; and for the sustaining university program.

The Office of Space Science and Applications has an over-all institutional responsibility for those NASA installations primarily involved in space science and applications programs. These are the Goddard Space Flight Center, Wallops Station, and the Jet Propulsion Laboratory, including the NASA Resident Office which administers the 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 over-all institutional responsibility for the research centers primarily involved in carrying out NASA's advanced research programs. These installations are: the Ames Research Center, the Electronics Research Center, the Flight Research Center, the Langley Research Center, the 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 agency-wide coordination of the management of automatic data processing systems and services.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.	2,263	2,227	2,200
Average Number of All Employees...	1,989	2,063	2,043
Administrative Operations.....	$51,516,000	$56,286,000	$58,667,000

INSTALLATION DESCRIPTION:

The NASA Headquarters is located at 400 Maryland Avenue, S. W., Washington, D. C., and also occupies two other buildings in the southwest area of the District of Columbia, as well as storage facilities in nearby Arlington, Virginia. With the exception of the space leased in the Reporter's Building and the warehousing space, personnel occupy government-owned buildings.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation.....	$25,311,000	$27,281,000	$27,946,000
12.	Personnel Benefits.....	1,959,000	2,167,000	2,373,000
	Total, personnel costs....	$27,270,000	$29,448,000	$30,319,000
21.	Travel and Transportation of Persons.....	2,550,000	2,642,000	2,642,000
22.	Transportation of Things....	341,000	295,000	295,000
23.	Rent, Communications, and Utilities.....	1,899,000	2,341,000	2,390,000
24.	Printing and Reproduction...	1,580,000	1,925,000	2,075,000
25.	Other Services.....	12,654,000	15,048,000	16,024,000
	Services of other agencies	2,778,000	2,472,000	2,807,000
26.	Supplies and Materials.....	500,000	555,000	555,000
31.	Equipment.....	1,936,000	1,550,000	1,550,000
32.	Lands and Structures.....	---	---	---
42.	Insurance Claims and Indemnities.....	8,000	10,000	10,000
	Total.....	$51,516,000	$56,286,000	$58,667,000

The above estimates for FY 1966 and FY 1967 are distributed between NASA-wide support functions, conducted or administered centrally, which provide service to all centers; and for Headquarters operations which are for the support of the day-to-day operations of all Headquarters offices. The following table shows this comparison by object classification:

Analysis of Funding for NASA-wide Support and Headquarters Operations

Object Classification	FY 1966 Total	FY 1966 NASA-wide Support	FY 1966 Hdqtrs. Operat.	FY 1967 Total	FY 1967 NASA-wide Support	FY 1967 Hdqtrs. Operat.
	(In thousands of dollars)					
11. Personnel Comp...	$27,281	$25,004	$2,277	$27,946	$25,563	$2,383
12. Personnel Benef..	2,167	2,012	155	2,373	2,209	164
21. Travel and Trans of Persons.....	2,642	2,588	54	2,642	2,588	54
22. Trans. of Things.....	295	234	61	295	234	61
23. Rent, Communic. & Utilities....	2,341	1,261	1,080	2,390	1,319	1,071
24. Printing & Repro	1,925	1,772	153	2,075	1,922	153
25. Other Services...	17,520	15,638	1,882	18,831	16,818	2,013
26. Supplies & Mat...	555	15	540	555	15	540
31. Equipment.....	1,550	1,345	205	1,550	1,345	205
32. Land & Structures	---	---	---	---	---	---
42. Ins. Claims and Indemnities....	10	---	10	10	---	10
Total.....	$56,286	$49,869	$6,417	$58,667	$52,013	$6,654

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Gemini.....	103	75	43
Apollo.....	249	291	321
Advanced missions.....	101	87	83

	1965	1966	1967
Space Science and Applications			
Physics and astronomy.....	57	57	56
Lunar and planetary exploration.....	76	76	74
Sustaining university program.....	71	71	71
Launch vehicle development.....	10	6	4
Launch vehicle procurement.....	15	19	20
Bioscience.....	26	26	26
Meteorological satellites.....	20	20	20
Communication and applications technology satellites.....	21	21	21
Advanced Research and Technology			
Basic research.....	31	31	31
Space vehicle systems.....	44	44	43
Electronics systems.....	37	37	37
Human factor systems.....	22	22	22
Space power and electric propulsion systems.....	31	31	30
Nuclear rockets.....	3	3	3
Chemical propulsion.....	22	22	22
Aeronautics.....	27	27	26
Tracking and Data Acquisition	60	62	61
Technology Utilization	14	14	14
Sub-total, direct positions.....	1,040	1,042	1,028
Support personnel			
*Director and Staff.....	617	618	611
Administration (Headquarters).....	258	253	251
*Research and development support.....	248	249	245
Sub-total, support positions.....	1,123	1,120	1,107
Total, permanent positions.....	2,163	2,162	2,135
Other positions:			
Positions under cooperative training agreements.....	---	---	---
Other temporary positions.....	100	65	65
Total, all positions.....	2,263	2,227	2,200
*NASA-wide support.	(865)	(867)	(856)

Personnel requirements

The FY 1967 budget request includes a total of 2,200 civilian positions for NASA Headquarters, a reduction of 27 positions below the current fiscal year.

Of the 2,135 permanent positions shown in the above table, 1,028 are directly related to the staffing of the scientific and technical program areas in the Office of Manned Space Flight, the Office of Space Science and Applications, the Office of Advanced Research and Technology, the Office of Tracking and Data Acquisition, and the Office of Technology Utilization. Of the remaining 1,107 permanent positions, 856 are for NASA-wide support functions relating to the review, coordination, direction and planning of activities such as procurement, financial management, audit, acquisition and dissemination of scientific and technical information, and the balance of 251 are for Headquarters operations concerned with administrative services, personnel, security, accounts and reports, and contracts.

Personnel Costs

	1965	1966	1967
Total Positions	2,263	2,227	2,200
Permanent	2,163	2,162	2,135
Other	100	65	65
Personnel Compensation:			
Annual cost of permanent positions	$26,308,000	$27,849,000	$27,945,000
Pay above the stated annual rate	101,000	107,000	107,000
Lapses (deduct)	-2,464,000	-2,165,000	-1,538,000
Net cost of permanent positions	23,945,000	25,791,000	26,514,000
Other personnel compensation	1,366,000	1,490,000	1,432,000
Total compensation	25,311,000	27,281,000	27,946,000
NASA funded	25,311,000	27,281,000	27,946,000
Reimbursable	---	---	---
Personnel benefits	1,959,000	2,167,000	2,373,000
NASA funded	1,959,000	2,167,000	2,373,000
Reimbursable	---	---	---
Total personnel costs	27,270,000	29,448,000	30,319,000
NASA funded	27,270,000	29,448,000	30,319,000
Reimbursable	---	---	---
Average Number of All Employees (Man Years)	1,989	2,063	2,043

Personnel Costs - $30,319,000

The personnel costs for FY 1967 are estimated to be $30,319,000 covering 2,043 manyears of employment. Of this amount, $27,946,000 is requested for personnel compensation and $2,373,000 for personnel benefits. The FY 1967 estimate is $871,000 over the amount for the current fiscal year. This increase is required to cover the cost of the Federal Employees Salary Act of 1965 on a full year basis, for within-grade step increases and career development, for retirement contributions and other benefits, and for increased costs payable to the Department of Labor for benefits and other payments made from the Employees' Compensation Fund during FY 1965.

The following table shows the major items which are included in the estimate for personnel costs:

	FY 1967 Estimate	Increase or Decrease from FY 1966
Personnel compensation:		
Net cost of permanent positions.....	$26,514,000	$+723,000
Other personnel compensation.....	1,432,000	-58,000
Sub-total.....	$27,946,000	$+665,000
Personnel benefits:		
Retirement contributions.....	1,749,000	+56,000
Other benefits.....	365,000	+61,000
Employees' Compensation Fund.....	259,000	+89,000
Sub-total.....	2,373,000	+206,000
Total personnel costs.....	$30,319,000	$+871,000

Of the $30,319,000 requested for personnel costs, $27,772,000 is estimated for salaries and benefits of employees engaged in NASA-wide programs and activities which are conducted or administered centrally for the benefit of all centers, and $2,547,000 for personnel engaged in Headquarters operations.

Travel and Transportation of Persons - $2,642,000

The FY 1967 estimate of $2,642,000 for travel and transportation of persons is the same level as FY 1966 requirements. Of this amount, $2,425,000 is for NASA employee travel and transportation and $217,000 for non-NASA employee travel costs of technical and research advisory committees, and for costs of local transportation.

The amount requested includes $2,588,000 in support of NASA-wide programs and activities; and the remainder of $54,000 is related to Headquarters operations.

Transportation of Things - $295,000

The FY 1967 amount of $295,000 requested for transportation of things is the same level required for the current fiscal year. The costs under this object classification include $195,000 for domestic and overseas shipments of exhibits and spacemobiles; $56,000 for transportation of household goods and personal effects; and $44,000 for freight, express, drayage and parcel post costs of shipments to NASA installations, and rental of trucks from the General Services Administration.

Of the $295,000 requested in FY 1967, $234,000 is for support of NASA-wide activities and $61,000 for Headquarters operations.

Rent, Communications, and Utilities - $2,390,000

The FY 1967 estimate of $2,390,000 under this object classification includes: $590,000 for rents, a net increase of $49,000 over FY 1966, which provides for an increase of $58,000 required for rental of space to house the NASA Scientific and Technical Information Facility on a full year basis in FY 1967 and a decrease of $9,000 for rental of ADP equipment; and $1,800,000 for communications costs which are projected at the same level as the current fiscal year requirements.

The following table reflects the items included in the FY 1967 estimates for rents and communications:

	FY 1967 Estimate	Increase or Decrease from FY 1966
Rents:		
Space	$367,000	$+58,000
ADP and EAM equipment	89,000	-9,000
Office duplicating equipment	134,000	---
Total, rents	$590,000	$+49,000
Communications:		
Leased lines	366,000	---
Local telephone & exchange service	451,000	---
Long distance tolls	295,000	---
Postage and TWX	688,000	---
Total, communications	$1,800,000	---
Total, rents and communications	$2,390,000	$+49,000

Of the $2,390,000 requested for FY 1967 for rents and communications, $1,319,000 is estimated for NASA-wide support and $1,071,000 for Headquarters operations.

Printing and Reproduction - $2,075,000

The FY 1967 estimate for these services is $2,075,000, an increase of $150,000 above the FY 1966 level. Over 90 per cent, or $1,915,000 of the FY 1967 estimate is for printing and related services which will be performed through government sources. The remaining $160,000 is for printing and photostating to be done by commercial sources. The major activities funded under this object classification are as follows:

	FY 1967 Estimate	Increase over FY 1966
Scientific and technical information publications	$1,100,000	$+150,000
Educational and information publications	350,000	---
Printing and reproduction of administrative issuances, forms, etc.	625,000	---
Total, printing and reproduction	$2,075,000	$+150,000

The increase of $150,000 requested in FY 1967 in the scientific and technical information activity includes $50,000 for NASA's abstracting and indexing journal "Scientific and Technical Aerospace Reports," $60,000 for printing of technical reviews, monographs, handbooks and data compliations, and $40,000 for special publications on selected aerospace topics.

Of the $2,075,000 requested in FY 1967, $1,922,000 is for printing and reproduction services for NASA-wide support activities and $153,000 for Headquarters operations.

Other Services - $18,831,000

The FY 1967 request for other services is $18,831,000, a net increase of $1,311,000 above the FY 1966 level. Listed in the following table are the major items which are funded under this object classification:

	FY 1967 Estimate	Increase or Decrease over FY 1966
Scientific and technical information facility	$5,308,000	$+341,000
Documentation journal literature	1,810,000	+300,000
Translation services	350,000	-75,000

799-990 O - 66 - 19

	FY 1967 Estimate	Increase or Decrease over FY 1966
Scientific information systems development	$355,000	---
Technical publications preparation	885,000	$+288,000
Dissemination of information through educational institutions and other channels	1,305,000	---
Educational and information media services	1,725,000	---
Educational exhibit services	745,000	---
Security investigations	1,300,000	---
Reliability and quality assurance studies	500,000	+60,000
Incentive contracting study	197,000	+197,000
Training programs	400,000	+50,000
Miscellaneous studies and services	1,938,000	-131,000
Headquarters operations	2,013,000	+131,000
Total, other services	$18,831,000	$+1,311,000

Of the net increase of $1,311,000 for other services, over 75%, or $1,004,000, is requested for the NASA-wide scientific and technical information program. This includes:

1. $341,000 to provide increased support for operation of NASA's contractor operated Scientific and Technical Information Facility. The workload of the facility has been increasing between 20 and 30% each year over the past several years. It is anticipated that this trend will continue in FY 1967. The increased workload is caused by the additional number of scientific and technical reports which are becoming available from NASA supported research and development programs, and from interagency agreements and exchange arrangements with domestic and foreign organizations.

2. $300,000 for documentation of world-wide journal literature to process the increased volume of significant foreign aerospace literature for immediate use in the U. S. aerospace programs.

3. $75,000 for additional translation services required to handle the rise in world-wide journal activity in the aerospace sciences and the availability of a continually increasing volume of material originally published in foreign languages.

4. $288,000 for preparation of manuscript material for specialized scientific and technical publications. This includes $163,000 for handbook and data compilations on selected aerospace subjects, and $125,000 increased support of the Langley Research Center printing plant operations for specialized services such as editing, verification of references, and preparation of graphs and tables.

The remaining increase of $307,000 is required for the other NASA-wide support functions and for Headquarters operations, as follows:

For other NASA-wide requirements, a net increase of $176,000 consisting of increases of: (1) $60,000 for reliability and quality assurance studies relating to subjects such as systems design trade-off studies, quality assurance methodology and development of publications on special topics; (2) $197,000 for initiation of an incentive contracting effectiveness study; and (3) $50,000 for agency-wide training of personnel in technical management, supervisory and administrative areas common to several NASA centers with emphasis on training programs relating to supervisory management, incentive contracting, financial management, and contract administration. The foregoing increases are partially offset by decreases amounting to $131,000 in a variety of miscellaneous studies and services.

For Headquarters operations, an increase of $131,000 consisting of: (1) $110,000 for computer operation, programming and systems design services; and (2) $21,000 for contract administration and security guard services.

Supplies and Materials - $555,000

The FY 1967 estimate of $555,000 for supplies and materials is the same level required for FY 1966. The items under this object classification primarily include the purchase of pamphlets and documents for the scientific and technical information program, office and photographic supplies and materials, and subscriptions and technical books for the law and technical libraries.

Of the amount estimated for FY 1967, $15,000 is for NASA-wide support and $540,000 for Headquarters operations.

Equipment - $1,550,000

The FY 1967 estimate for equipment is the same level required for the current fiscal year. The items for FY 1966 and FY 1967 under this object classification include $205,000 for purchase of mechanical, photographic and miscellaneous office equipment; $155,000 for procurement of replacement vehicles for the existing spacemobile fleet which will exceed the 80,000 mile mark in FY 1966 and will become uneconomical to maintain and repair, and for updating of model inventory and equipment to be placed in these spacemobiles;

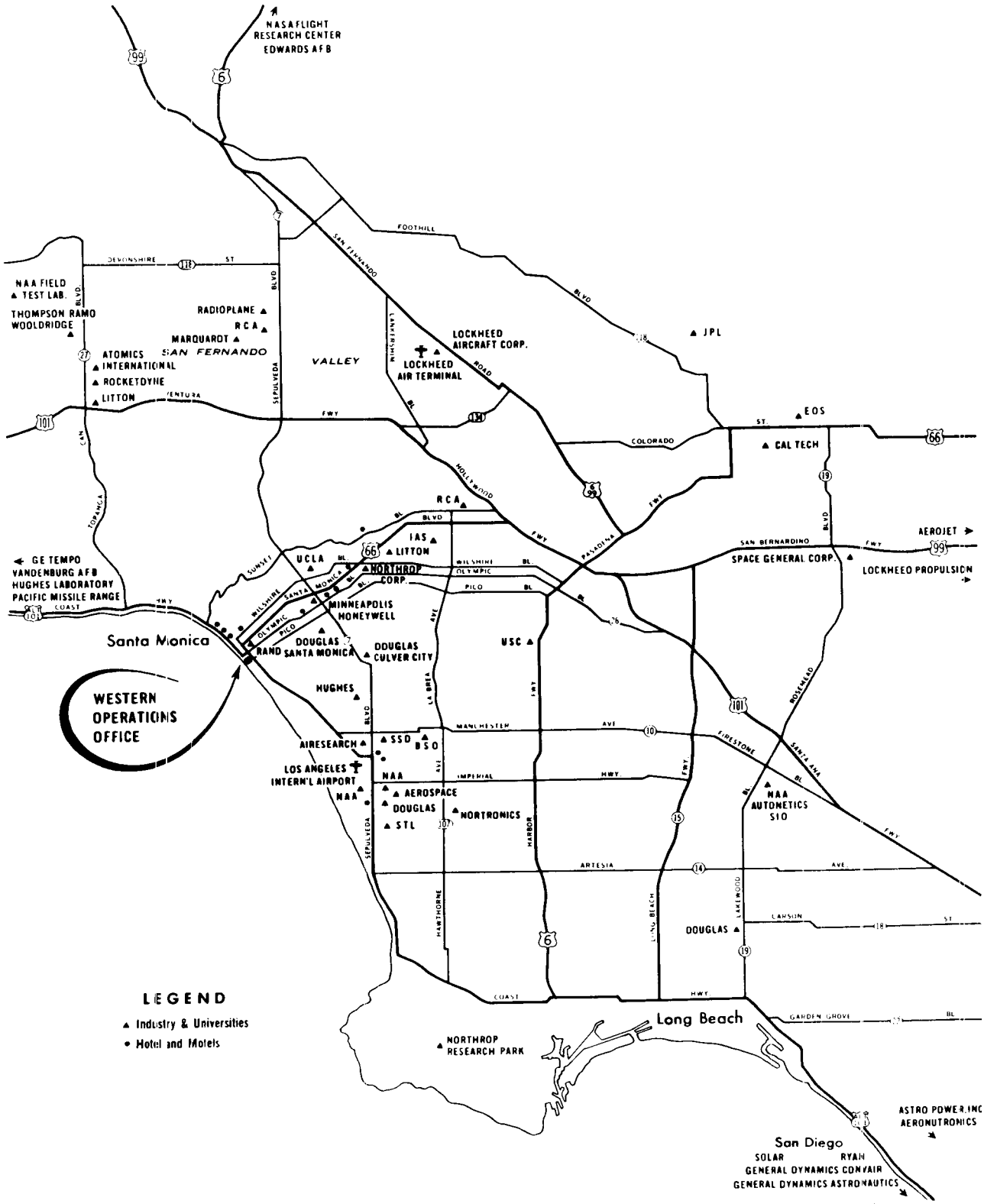
799-990 O - 66 - 2)

$80,000 for purchase of miscellaneous equipment for the Scientific and Technical Information Facility; and $1,110,000 for procurement of educational exhibits and materials which will provide up-to-date coverage of NASA programs in the manned and unmanned exploration of space, and to up-date the exhibit inventory to keep abreast of technical programs. These exhibits are designed for use in educational institutions, teachers and students fairs and workshops, professional and technical organizations and display before the general public, both domestic and foreign.

Of the $1,550,000 required in FY 1967 for equipment described above $1,345,000 is for support of NASA-wide activities and $205,000 for Headquarters operations.

Insurance Claims and Indemnities - $10,000

The FY 1967 requirement is estimated at the same level as for the current fiscal year. These funds cover payment of claims of $2,500 or less under the provisions of 28 U.S.C. 2672 for injury, death, or loss of property 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.


NASA FLIGHT RESEARCH CENTER EDWARDS AFB
NAA FIELD
TEST LAB.
THOMPSON RAMO WOOLDRIDGE
RADIOPLANE
RCA
MARQUARDT
SAN FERNANDO
VALLEY
ATOMICS INTERNATIONAL
ROCKETDYNE
LITTON
LOCKHEED AIRCRAFT CORP.
LOCKHEED AIR TERMINAL
JPL
EOS
CAL TECH
RCA
IAS
LITTON
UCLA
NORTHROP CORP.
MINNEAPOLIS HONEYWELL
DOUGLAS SANTA MONICA
RAND
DOUGLAS CULVER CITY
USC
HUGHES
AIRESEARCH
SSD
BSO
LOS ANGELES INTERN'L AIRPORT
NAA
AEROSPACE
DOUGLAS
STL
NORTRONICS
NAA AUTONETICS S10
DOUGLAS
NORTHROP RESEARCH PARK
Long Beach
San Diego
SOLAR
RYAN
GENERAL DYNAMICS CONVAIR
GENERAL DYNAMICS ASTRONAUTICS
ASTRO POWER, INC
AERONUTRONICS
AEROJET
SPACE GENERAL CORP.
LOCKHEED PROPULSION
GE TEMPO
VANDENBERG AFB
HUGHES LABORATORY
PACIFIC MISSILE RANGE
Santa Monica
WESTERN OPERATIONS OFFICE
LEGEND
Industry & Universities
Hotel and Motels

AO 4-14

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

WESTERN OPERATIONS OFFICE

STAFFING SUMMARY

	66	67
Excepted	4	4
GS-16	1	1
GS-15	12	12
GS-14	47	47
All other GS	322	317
Total Permanent	386	381
Temporary	5	5
Total Positions	391	386

DIRECTOR

	66	67
Excepted	2	2
All other GS	3	3
Total Permanent	5	5

NASA RESIDENCY OFFICE - JPL

	66	67
GS-15	2	2
GS-14	6	6
All other GS	13	13
Total Permanent	21	21

LEGAL DIVISION

	66	67
GS-15	2	2
GS-14	3	3
All other GS	6	5
Total Permanent	11	10

ADMINISTRATIVE SERVICES DIVISION

	66	67
All other GS	36	35
Total Permanent	36	35

PUBLIC AFFAIRS DIVISION

	66	67
All other GS	8	8
Total Permanent	8	8

PERSONNEL DIVISION

	66	67
All other GS	9	9
Total Permanent	9	9

NASA-O DOWNEY

	66	67
Excepted	1	1
GS-15	1	1
GS-14	6	6
All other GS	125	124
Total Permanent	133	132

TECHNICAL DIVISION

	66	67
GS-16	1	1
GS-15	6	6
GS-14	25	25
All other GS	50	49
Total Permanent	82	81

CONTRACTS DIVISION

	66	67
Excepted	1	1
GS-15	1	1
GS-14	6	6
All other GS	47	46
Total Permanent	55	54

FINANCE DIVISION

	66	67
GS-14	1	1
All other GS	25	25
Total Permanent	26	26

799-990 O - 66 (Pts. p. 4-14)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

WESTERN OPERATIONS OFFICE

STAFFING SUMMARY

	66	67
Excepted	4	4
GS-16	1	1
GS-15	12	12
GS-14	47	47
All other GS	322	317
Total Permanent	386	381
Temporary	5	5
Total Positions	391	386

DIRECTOR

	66	67
Excepted	2	2
All other GS	3	3
Total Permanent	5	5

NASA RESIDENCY OFFICE - JPL

	66	67
GS-15	2	2
GS-14	6	6
All other GS	13	13
Total Permanent	21	21

LEGAL DIVISION

	66	67
GS-15	2	2
GS-14	3	3
All other GS	6	5
Total Permanent	11	10

ADMINISTRATIVE SERVICES DIVISION

	66	67
All other GS	36	35
Total Permanent	36	35

PUBLIC AFFAIRS DIVISION

	66	67
All other GS	8	8
Total Permanent	8	8

PERSONNEL DIVISION

	66	67
All other GS	9	9
Total Permanent	9	9

NASA-O DOWNEY

	66	67
Excepted	1	1
GS-15	1	1
GS-14	6	6
All other GS	125	124
Total Permanent	133	132

TECHNICAL DIVISION

	66	67
GS-16	1	1
GS-15	6	6
GS-14	25	25
All other GS	50	49
Total Permanent	82	81

CONTRACTS DIVISION

	66	67
Excepted	1	1
GS-15	1	1
GS-14	6	6
All other GS	47	46
Total Permanent	55	54

FINANCE DIVISION

	66	67
GS-14	1	1
All other GS	25	25
Total Permanent	26	26

799-990 O - 66 (Fols. p. 4-14)

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

WESTERN OPERATIONS OFFICE

MISSION AND CAPABILITIES:

The primary mission of the Western Operations Office is to represent NASA in the southwestern area and 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, Colorado. The Western Operations Office functions as a field support activity in such areas as procurement, technical management, public affairs and educational programs, legal and patent reviews, financial management activities, and other administrative support.

Technical management support, as assigned by NASA Headquarters and field centers, encompasses advanced technology contracts and many research and development hardware contracts. Contract activity includes negotiations for advanced technology, hardware, basic agreements with major contractors, and procurement of pressurants and propellants for NASA and contractors requirements. The Western Operations Office mission also includes operation of an in-plant staff at the North American Aviation plant at Downey, California, to handle over-all contract administration and quality assurance for the Apollo and Saturn projects.

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:

	1965	1966	1967
Authorized Positions, end of year	405	391	386
Average Number of All Employees..	377	382	378
Administrative Operations.....	$22,693,000*	$5,987,000	$6,149,000

*Includes $17,034,000 for purchase of computers for JPL.

INSTALLATION DESCRIPTION:

The main Western Operations Office is located at 150 Pico Boulevard, Santa Monica, California. The Office occupies a group of buildings under commercial lease and no government investment in buildings or acreage is involved at this location.

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., mainly for Apollo and Saturn work. 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 $45 million as of June 30, 1965. The responsibility for management of property and facilities valued at $39.5 million was transferred from the Air Force to NASA on July 1, 1964. A few additional Western Operations Office personnel are assigned to other contractor locations within the Los Angeles area where full time project support is required.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation...	$4,115,000	$4,289,000	$4,426,000
12.	Personnel Benefits.....	289,000	309,000	317,000
	Total, personnel costs.	$4,404,000	$4,598,000	$4,743,000
21.	Travel and Transportation of persons.....	247,000	282,000	282,000
22.	Transportation of Things.	8,000	45,000	50,000
23.	Rent, Communications, and Utilities.....	349,000	402,000	402,000
24.	Printing and Reproduction	15,000	15,000	15,000
25.	Other Services.....	522,000	514,000	517,000
	Services of other agencies.....	12,000	14,000	58,000
26.	Supplies and Materials...	51,000	53,000	53,000
31.	Equipment.....	17,085,000	64,000	29,000
32.	Lands and Structures.....	---	---	---
42.	Insurance Claims and Indemnities.....	---	---	---
	Total.....	$22,693,000	$5,987,000	$6,149,000

JUSTIFICATION BY OBJECT CLASSIFICATION:

Personnel Distribution

	1965	1966	1967
Direct Personnel by Program			
Manned Space Flight			
Gemini	4	2	-
Apollo	161	162	163
Advanced missions	8	10	10
Space Science and Applications			
Physics and astronomy	15	15	14
Lunar and planetary exploration	15	14	14
Launch vehicle procurement	5	4	5
Bioscience	-	2	2
Communication and applications technology satellites	7	7	6
Advanced Research and Technology			
Space vehicle systems	3	3	3
Electronics systems	23	21	20
Space power and electric propulsion systems	2	2	2
Chemical propulsion	4	4	4
Technology Utilization	3	3	3
Sub-total, direct positions	250	249	246
Support personnel			
Director and Staff	9	9	9
Administration	63	63	62
Research and Development support	64	65	64
Sub-total, support positions	136	137	135
Total, permanent positions	386	386	381

	1965	1966	1967
Other positions			
Positions under cooperative training agreements.....	-	-	-
Other temporary positions.....	19	5	5
Total, all positions.....	405	391	386

Personnel Costs

	1965	1966	1967
Total Positions.....	405	391	386
Permanent.....	386	386	381
Other.....	19	5	5
Personnel Compensation:			
Annual cost of permanent positions.....	$3,985,000	$4,193,000	$4,221,000
Pay above the stated annual rate.....	15,000	16,000	16,000
Lapses (deduct).....	- 170,000	- 228,000	- 111,000
Net cost of permanent positions	3,830,000	3,981,000	4,126,000
Other personnel compensation...	285,000	308,000	300,000
Total Compensation.....	4,115,000	4,289,000	4,426,000
NASA funded.....	4,115,000	4,289,000	4,426,000
Reimbursable.....	---	---	---
Personnel benefits			
NASA funded.....	289,000	309,000	317,000
Reimbursable.....	289,000	309,000	317,000
Total personnel costs.....	4,404,000	4,598,000	4,743,000
NASA funded.....	4,404,000	4,598,000	4,743,000
Reimbursable.....	---	---	---
Average Number of All Employees (Man Years).....	377	382	378

Personnel Compensation and Benefits - $4,743,000

Personnel costs in FY 1967 are estimated to be $145,000 higher than in FY 1966, of which $137,000 is for personnel compensation and $8,000 is for personnel benefits. The estimate reflects the additional cost resulting from higher pay scales in effect for a full year, and for within-grade step increases, retirement contributions and other benefits.

Travel and Transportation of Persons - $282,000

Travel and transportation requirements in FY 1967 are expected to remain at the FY 1966 level. The total estimate includes $230,000 needed for employee travel to direct and coordinate technical program and administrative activities; to attend NASA technical meetings and working panels; and for the cost of temporary assignments and transfers. The balance of $52,000 will be used for the expense of local transportation and toll charges, and the rental of passenger motor vehicles from the General Services Administration.

Transportation of Things - $50,000

Transportation of things is estimated to increase $5,000 in FY 1967. This increase is related to the movement of household goods to accommodate the personnel turnover anticipated in FY 1967. The estimate also includes $38,000 for transportation of NASA exhibits in the western area of the United States.

Rent, Communications, and Utilities - $402,000

Fiscal year 1967 requirements in this area are estimated to remain unchanged from FY 1966.

The estimate includes $192,000 required for the commercial lease of real property and the rental of equipment, of which $168,000 is to continue the lease of 46,800 square feet of office space at an average annual cost of $3.60 per square foot. The remaining amount of $24,000 covers the rental of office and other equipment on a term basis.

The FY 1967 requirement of $205,000 for communications services is composed of the following items:

Leased lines.....	$4,000
Long distance tolls.....	39,000
Local telephone and exchange.....	71,000
All other communications.....	91,000

The balance of the FY 1967 estimate, amounting to $5,000, is required for utilities, primarily electric power.

Printing and Reproduction - $15,000

The FY 1967 cost of printing and reproducing technical and administrative reports, publications and forms is estimated to continue at the FY 1966 level. The estimate includes $3,000 to cover the printing of administrative materials by other government agencies, and $12,000 for the commercial printing of technical documents and related publications.

Other Services - $575,000

Requirements for other services in FY 1967 indicate a net increase of $47,000 over FY 1966. This results from planned expansion of the Reliable Electrical Connections School facilities at an additional cost of $12,000, in order to accelerate quality assurance certification of contractor personnel in time to assure adherence to space hardware production schedules; the augmentation of the technical reference library staff at an increased amount of $8,000 to serve the progressively larger use of these services by industry in the western area; and the assistance of Defense Contracts Administration Services Regions (DCASR) in providing contract administration services, which will require $44,000 of additional funding. These estimated increases are partially offset by the expected reduction of $17,000 in the cost of leasing, maintenance and operation of administrative aircraft at the Jet Propulsion Laboratory because of the disposal of a NASA-owned aircraft.

The following table indicates estimated FY 1967 funding for this area by the major requirements:

ADP equipment operation	$30,000
Custodial services	18,000
JPL administrative aircraft lease, maintenance and operation	245,000
Technical reference library	80,000
Reliable electrical connections school	120,000
Contract administration services	50,000
Miscellaneous minor services	32,000
Total	$575,000

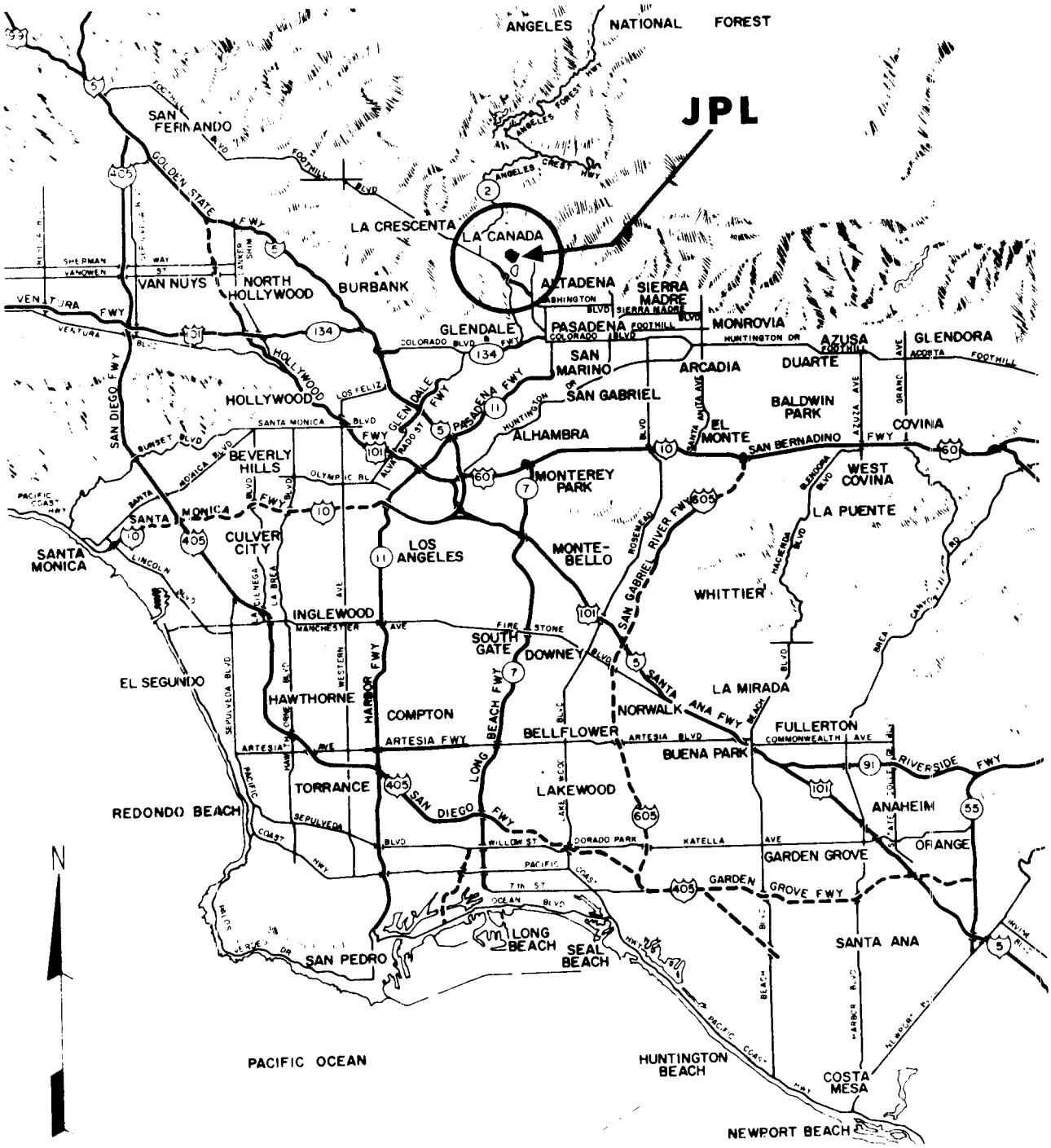
Supplies and Materials - $53,000

The cost of supplies and materials for FY 1967 is expected to remain at the FY 1966 level. The estimate includes $48,000 for replacement of office supplies and $5,000 for purchase of expendable photographic, maintenance and operating supplies.

Equipment - $29,000

The FY 1967 estimate of $29,000 is $35,000 below FY 1966. The estimate includes $16,000 for the procurement of two replacement engines for leased administrative aircraft supporting the Jet Propulsion Laboratory; $4,000 to purchase two passenger motor vehicles (for replacement); and $9,000 for acquisition of photographic and non-capitalized equipment, and replacement of office furniture and equipment.

799-990 O - 66 - 2



JET PROPULSION LABORATORY
Vicinity Map

AO 5-1

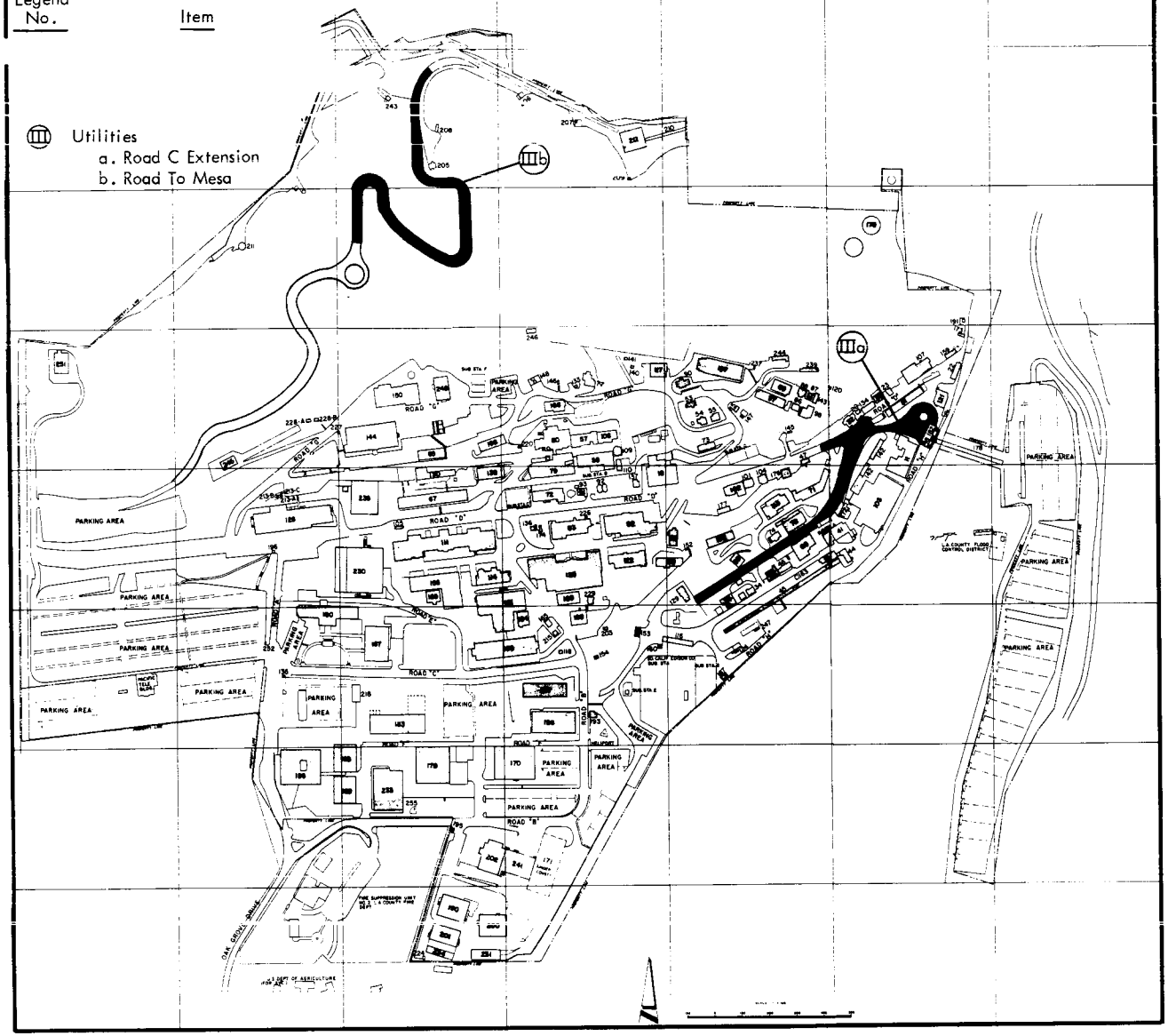
JET PROPULSION LABORATORY
FISCAL YEAR 1967 ESTIMATES

LOCATION PLAN

Proposed Fiscal Year 1967 Facilities

Legend

No.	Item
III	Utilities
	a. Road C Extension
	b. Road To Mesa



AO 5-3

CALIFORNIA INSTITUTE OF TECHNOLOGY

STAFFING SUMMARY

	66	67
Direct Positions		
Flight Projects	1,049	1,049
Deep Space Network	343	336
Supporting Research and Technology	651	658
Other	425	425
Total Direct	2,468	2,468
Support Positions	1,782	1,782
Total Positions	4,250	4,250

JET PROPULSION LABORATORY
LABORATORY DIRECTOR

	66	67
Total Positions	22	22

ASSISTANT LABORATORY DIRECTOR
RESEARCH AND ADVANCED DEVELOPMENT

	66	67
Total Positions	662	669

ADVANCED STUDIES

	66	67
Total Positions	6	6

ARMS CONTROL

	66	67
Total Positions	7	7

ASSISTANT LABORATORY DIRECTOR
TRACKING AND DATA ACQUISITION

	66	67
Total Positions	354	347

QUALITY ASSURANCE AND RELIABILITY

	66	67
Total Positions	75	75

PUBLIC INFORMATION AND EDUCATION SERVICES

	66	67
Total Positions	[illegible]	[illegible]

ASSISTANT LABORATORY DIRECTOR
LUNAR AND PLANETARY PROJECTS

	66	67
Total Positions	1,073	1,073

PERSONNEL ADMINISTRATION AND SUPPORTING SERVICES

	66	67
Total Positions	405	401

FABRICATION SERVICES

	66	67
Total Positions	118	128

ASSISTANT LABORATORY DIRECTOR
TECHNICAL DIVISION

	66	67
Total Positions	632	632

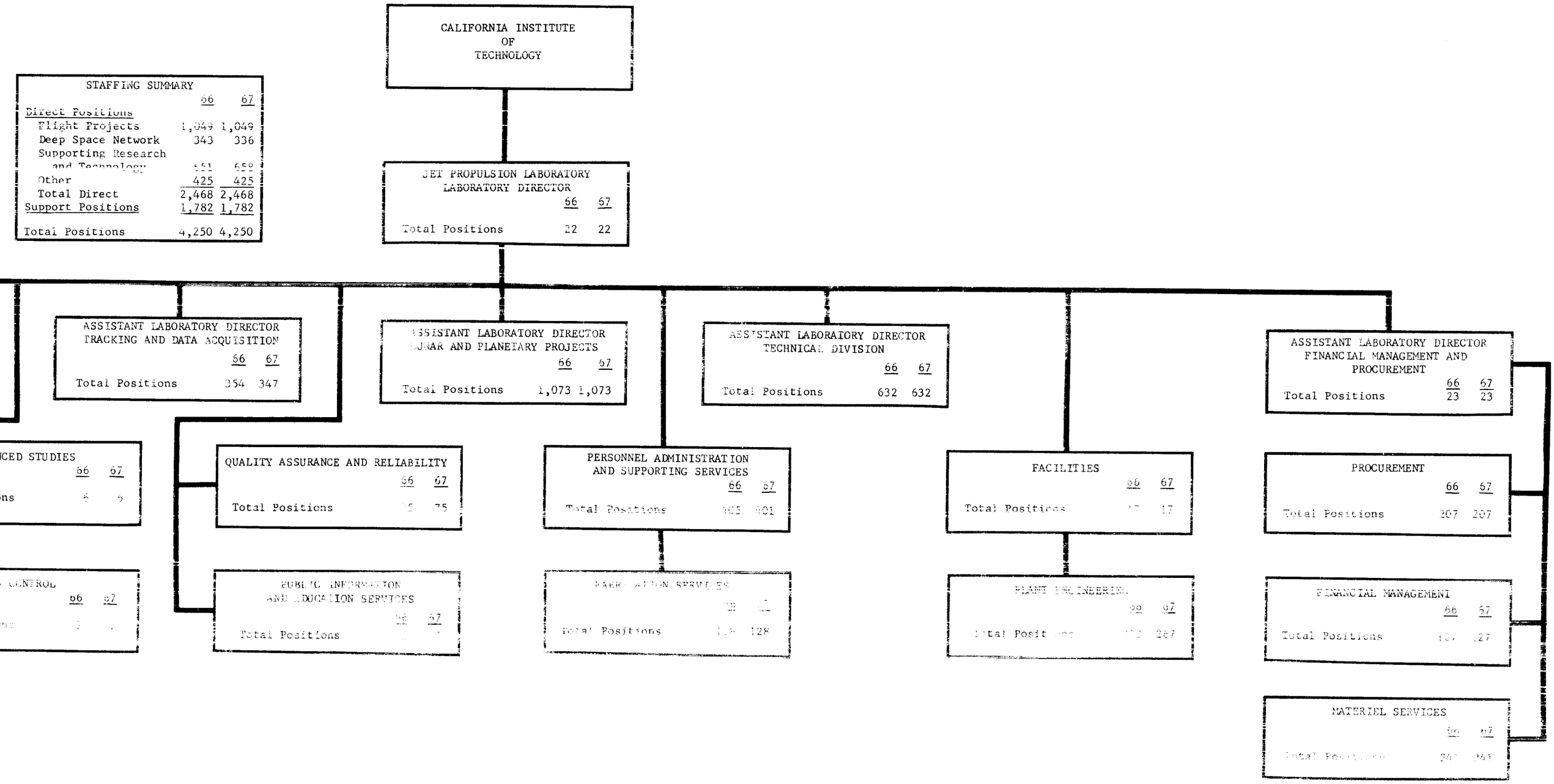
FACILITIES

	66	67
Total Positions	17	17

PLANT ENGINEERING

	66	67
Total Positions	274	267

749-990 O - 65 (Pt. 1, p. 3-3)


CALIFORNIA INSTITUTE OF TECHNOLOGY
STAFFING SUMMARY
66 67
Direct Positions
Flight Projects 1,049 1,049
Deep Space Network 343 336
Supporting Research and Technology 651 658
Other 425 425
Total Direct 2,468 2,468
Support Positions 1,782 1,782
Total Positions 4,250 4,250
JET PROPULSION LABORATORY
LABORATORY DIRECTOR
66 67
Total Positions 22 22
ASSISTANT LABORATORY DIRECTOR
TRACKING AND DATA ACQUISITION
66 67
Total Positions 354 347
ASSISTANT LABORATORY DIRECTOR
LUNAR AND PLANETARY PROJECTS
66 67
Total Positions 1,073 1,073
ASSISTANT LABORATORY DIRECTOR
TECHNICAL DIVISION
66 67
Total Positions 632 632
ASSISTANT LABORATORY DIRECTOR
FINANCIAL MANAGEMENT AND PROCUREMENT
66 67
Total Positions 23 23
CED STUDIES
66 67
ns 6 6
CONTROL
66 67
QUALITY ASSURANCE AND RELIABILITY
66 67
Total Positions 75
PUBLIC INFORMATION AND EDUCATION SERVICES
66 67
Total Positions
PERSONNEL ADMINISTRATION AND SUPPORTING SERVICES
66 67
Total Positions 401
PARKS AND MEDICAL SERVICES
Total Positions 128
FACILITIES
66 67
Total Positions 17
PLANT ENGINEERING
66 67
Total Positions 267
PROCUREMENT
66 67
Total Positions 207 207
FINANCIAL MANAGEMENT
66 67
Total Positions 127
MATERIEL SERVICES
66 67
Total Positions 243

ADMINISTRATIVE OPERATIONS

FISCAL YEAR 1967 ESTIMATES

JET PROPULSION LABORATORY

The Jet Propulsion Laboratory (JPL) is a contractor operated facility. Personnel and other costs of operating this Laboratory are funded under the Research and Development appropriation, except for the lease of administrative aircraft and the purchase of passenger motor vehicles. 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 for FY 1967.

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 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.

Functions of the Jet Propulsion Laboratory

Formulate and carry out research programs which are in consonance with the Institute's obligations to support the national space program.

Conceive and perform advanced development and experimental engineering investigations which further the technology required in support of the national space program.

Perform studies and recommend and carry out scientific investigations in space. Make determinations of the feasibility of carrying out various scientific missions in space, determine the significance of such missions, and analyze and interpret data returned from these missions.

Undertake the development and construction of prototypes and flight hardware in support of approved programs.

Provide operational support for certain NASA space programs.

Advise and assist NASA in the formulation and the evaluation of long-range national plans for the space program and, when appropriate, participate in formulating objectives and requirements for major development programs.

Areas of Primary Project Activity

The Jet Propulsion Laboratory is responsible for the following major activities:

Lunar and deep space unmanned scientific missions.

Project management of complete spacecraft systems.

Tracking, data acquisition, data reduction and analysis required by lunar and deep space flights.

Advanced spacecraft guidance and control systems.

Advanced solid propellant and liquid propellant spacecraft engines.

Integration of advanced propulsion systems into spacecraft.

SUMMARY OF RESOURCES REQUIREMENTS:

	1965	1966	1967
Authorized Positions, end of year.	3,998	4,250	4,250
Average Number of All Employees...	4,119	4,125	4,200
Administrative Type Cost.....	$63,151,000	$65,699,000	$71,218,000

INSTALLATION DESCRIPTION:

The Jet Propulsion Laboratory is located in Pasadena, California, approximately 20 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, California, the Laboratory occupies 171.7 acres of land, 145.9 of which are owned by NASA and 25.8 leased from the city of Pasadena and commercial sources. At Goldstone, California, facilities are located on 40 acres of land occupied under permit from the Army. At Edwards Air Force Base, Muroc, California, facilities are located on 600 acres of land occupied under permit from the Air Force. The Table Mountain, California, facilities of the Laboratory are located on 10.5 acres of land occupied under permit from the Forest Service of the Department of Agriculture. The capital investment value as of June 30, 1965, was $128,177,167.

ANALYSIS OF RESOURCES REQUIREMENTS BY OBJECT CLASSIFICATION:

		1965	1966	1967
11.	Personnel Compensation.....	$43,862,000	$44,435,000	$46,516,000
12.	Personnel Benefits.....	2,827,000	3,550,000	4,609,000
	Total, personnel costs....	$46,689,000	$47,985,000	$51,125,000
21.	Travel and Transportation of Persons.....	2,934,000	2,710,000	2,931,000
22.	Transportation of Things....	308,000	375,000	370,000
23.	Rent, Communications, and Utilities.....	7,256,000	8,109,000	10,099,000
24.	Printing and Reproduction...	232,000	266,000	288,000
25.	Other Services.....	2,314,000	2,696,000	2,773,000
26.	Supplies and Materials.....	2,549,000	2,172,000	2,331,000
31.	Equipment.....	671,000	911,000	826,000
32.	Lands and Structures.....	198,000	475,000	475,000
42.	Insurance Claims and Indemnities.....	---	---	---
	Total.....	$63,151,000	$65,699,000	$71,218,000

Personnel Distribution

	1965	1966	1967
Direct Personnel			
Lunar and planetary flight projects.....	985	1,049	1,049
Deep space network.....	276	343	336
Supporting research and technology.....	707	651	658
Other direct manpower.....	336	425	425
Sub-total, direct positions.....	2,304	2,468	2,468
Support Personnel			
Director and Staff.....	108	116	116
Technical divisions.....	369	390	390
Quality assurance and reliability.....	72	75	75
Personnel administration and supporting services	342	359	359
Procurement.....	187	207	207
Financial management.....	128	127	127
Plant engineering.....	209	220	220

	1965	1966	1967
Material services	234	241	241
Fabrication services	45	47	47
Sub-total, support positions	1,694	1,782	1,782
Total, all positions	3,998	4,250	4,250

U. S. GOVERNMENT PRINTING OFFICE : 1966 O - 799-990