



TRENDS IN GOVERNMENT CONTRACTING

Growth of
Intramural Activity

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Growth of Intramural Activity

A Publication of

**AEROSPACE RESEARCH CENTER
AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
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The mission of the Aerospace Research Center is to engage in research, analyses and advanced studies designed to bring perspective to the issues, problems and policies which affect the industry and, due to its broad involvement in our society, affect the nation itself. The objectives of the Center's studies are to improve understanding of complex subject matter, to contribute to the search for more effective government-industry relationships and to expand knowledge of aerospace capabilities that contribute to the social, technological and economic well being of the nation.

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INTRODUCTION AND SUMMARY

Background and Study Objectives

During the past three years the Aerospace Research Center has studied many aspects of the government-industry relationship including procurement problems, research and development, and the general economic behavior of the industry. As a result of these investigations, AIA firmly believes that the economic strength of the United States as well as its dominant position in world markets has to a large extent been due to a national commitment to support the concept of free enterprise. The capability of the private industrial sector to support government requirements depends on the continued support from the government for research and development (R&D), procurement, and operations and maintenance (O&M) programs and systems undertaken by federal agencies. AIA contends that a decline in the contract share in any of these areas could erode the economic and political position of the U.S. in the world community. In addition, a shift towards a higher proportion of federal in-house R&D or O&M could result in a decline in industrial capability and/or interest to support high priority national interest programs.

If for example, the trend continues toward more

federal in-house R&D and a concomitant decline is realized in the private sector's financial ability to support independent R&D, the result would be a weakening of the high technological position of the U.S. *vis-a-vis* the world. Such a decline in industrial capability will also result in a decrease in industrial technical expertise available to the nation. Moreover, a similar trend appears to have developed for industrial contracting by at least the Department of Defense for O&M.

The objective of the study, therefore, is to analyze the trends in federal R&D support and O&M contracting in support of federal programs. Specifically, federal R&D funding is analyzed to determine if there is any long-term trend towards a growth of in-house R&D. An examination is also made of the trend in industrial contracting for O&M to determine the degree of deviation from the long-term trend for contracting with private industry.

Conclusions

I. Purchase of Goods and Services

For many years the belief was held in the federal government that it was in the national interest to rely to the greatest possible extent upon private industry for government goods and services. Today, while policy dictates that the government (with few accepted exceptions) not compete with private enterprise, the practice has been to reduce the share of total budget outlays that are available to industry, thus diverting an ever-increasing percent of the budget to government in-house programs and operation.

An analysis of the federal government's purchases of goods and services reveals that:

The government's role as a consumer of goods and services is becoming increasingly more important; however, its impact on the private sector through its role as an employer and a contractor to private industry may be even more important:

- Federal purchases of goods and services as a percent of the total federal budget dropped from 53 percent in 1965 to 40 percent in 1973.
- Federal purchases of goods and services LESS COMPENSATION dropped from 30 percent of the total federal budget in 1965 to only 20 percent in 1973.
- Federal purchases of goods and services LESS COMPENSATION declined from nearly 58 percent of total goods and services purchased in 1965 to about 50 percent in 1973.

II. Research and Development

Historically the U.S. government has had an unqualified commitment to technological progress, which in turn has been highly responsible in the long-run for the strength of the nation's economy and its position in the international community of nations. In large measure, much of the growth of this nation's superior quality of life, high standard of living and its Gross National Product (GNP) can be attributable to scientific and technological excellence. Constant increases in the quality as well as the mix and quantity of goods and services available to consumers worldwide is dependent on sustained national commitments to research and development.

The numerous charts and tables of this study bear ample evidence of the federal government's past concern and acceptance of its commitment to support R&D in the private sector. Unfortunately, recent past and present trends no longer attest to the government's concern as R&D funding levels have been reduced drastically while simultaneously reducing the share of funds allocated to private enterprise. Moreover, the shift in national priorities from the area of defense and space, which demand high-technological input factors, to social problem areas has dissipated further the industrial teams of high-technology capability, while permitting the government to support more and more R&D efforts in-house.

While the federal government continues to support active R&D programs not only within the government but also among the various sectors of the private economy, the data reveals major alterations or shifts in areas of effort. Specifically, shifting budget priorities and the changing nature of R&D support lead to the following conclusions:

- Changes in national priorities have resulted in a principal shift away from national defense and space research and technology support towards health and income security components of the budget. In 1965 defense and space claimed over 46 percent of total federal budget outlays; today they account for only 30 percent.
- Overall government support of R&D has declined significantly in recent years, dropping from 12.3 percent of total federal budget outlays in 1965 to 6.3 percent in 1974.
- The federal government's R&D funding empha-

sis seems to be toward more intramural (in-house) programs while reducing the share allocated to the private sector. In 1965, the government reserved 21 percent of its total R&D funds for intramural support; in 1973 the share had jumped to 28 percent. Concurrently, industrial R&D support dropped from 60 percent to 47 percent.

III. Operation and Maintenance

In addition to the trend toward increased support for intramural R&D programs there is a parallel effort on the part of the government to perform more of its support services in-house. While the ratio of contract to in-house depot level maintenance has moved erratically in recent years, it is clear that the Army and Air Force especially are moving away from their historical dependence on the private sector for operation and maintenance support. The Navy, on the other hand, has been increasing its contracts to industry but even so this ratio is still far below the other services. Comparing the depot level maintenance for aerospace work within the three military services, the trend is:

DEPOT LEVEL MAINTENANCE OF AIRCRAFT, ENGINES AND ACCESSORIES

Army, Navy and Air Force
In-House Compared With Contract As a Percent of Total
FY 1968 and 1974

Service	Performed In-House		Performed Under Contract	
	1968	1974	1968	1974
Army	52.3%	68.2%	47.7%	31.8%
Navy	83.9	74.8	16.1	25.2
Air Force	42.1	56.9	57.9	43.1

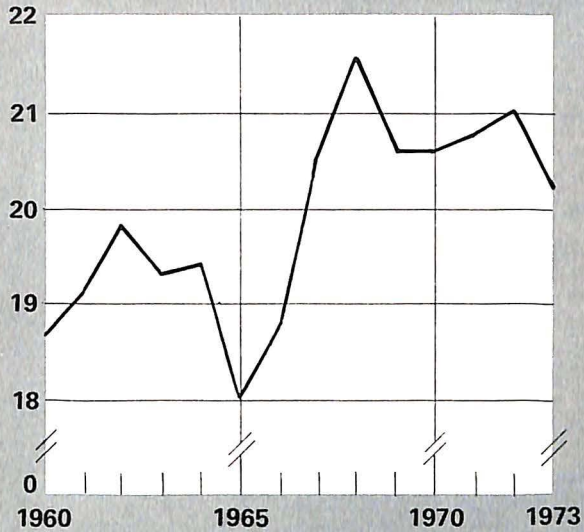
Such trends, all developed from official government data, clearly indicate a definite trend toward greater reliance on government in-house activities for goods and services that could have been obtained from the private sector. Without question, the government's stated policy "of relying on the private enterprise system to supply its needs" is not practiced by contract officers responsible for implementing that policy.

CHART 1

FEDERAL BUDGET OUTLAYS
AS A PERCENT OF THE GROSS
NATIONAL PRODUCT

Fiscal Years 1960-1973

Percent



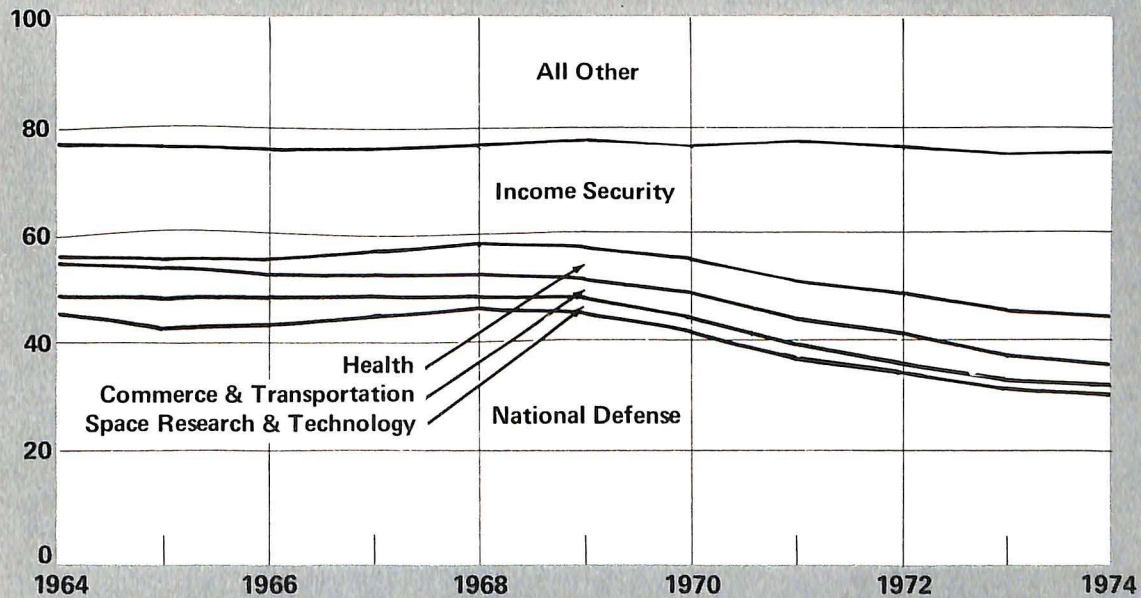
Source: *Economic Report of the President, 1974*.
Note: Table 1.

CHART 2

DISTRIBUTION OF THE FEDERAL BUDGET

Selected Sectors as a Percent of Total
Fiscal Years 1964-1974

Percent



Source: *Economic Report of the President, 1974*.
NOTE: Table 2.

CHART 3

TOTAL FEDERAL GOODS & SERVICES
By Category of Expenditure
1965-1973

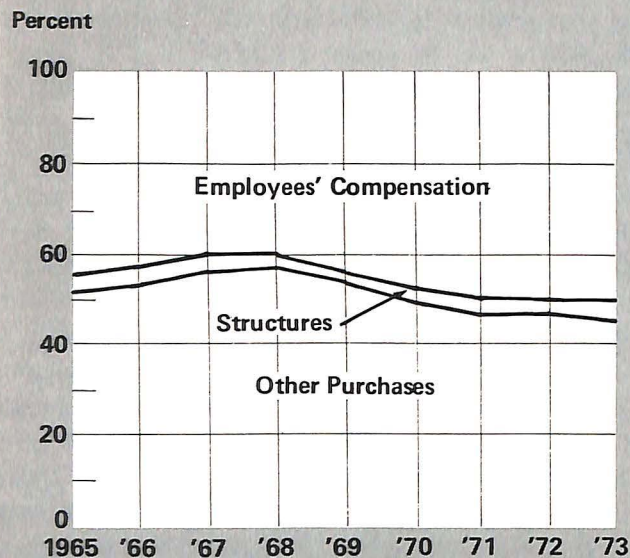


CHART 4

FEDERAL RESEARCH AND DEVELOPMENT OBLIGATIONS
By Performer As a Percent of Total
Fiscal Years 1965-1974

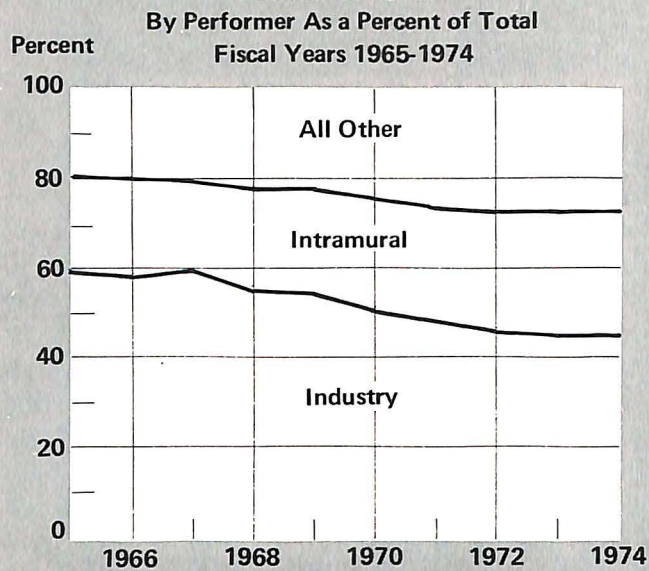


CHART 5

FEDERAL RESEARCH AND DEVELOPMENT FUNDS
Distribution as a Percent of Total
1960-1974

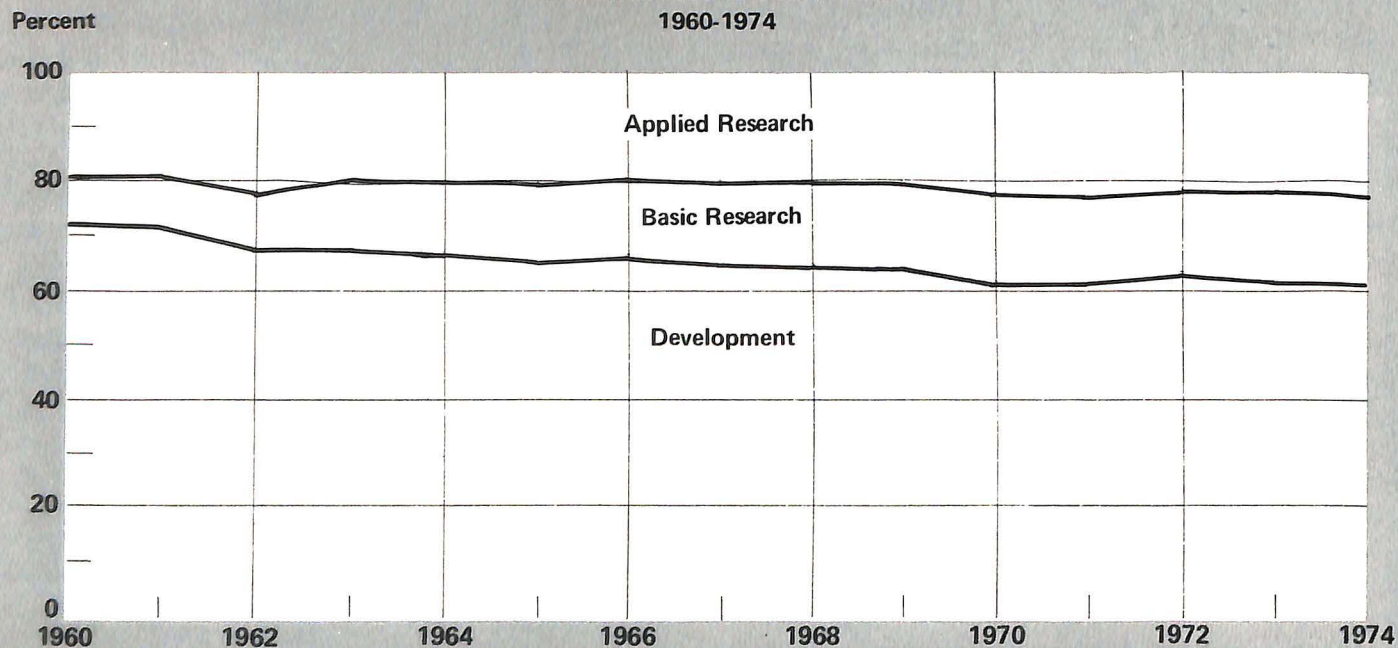
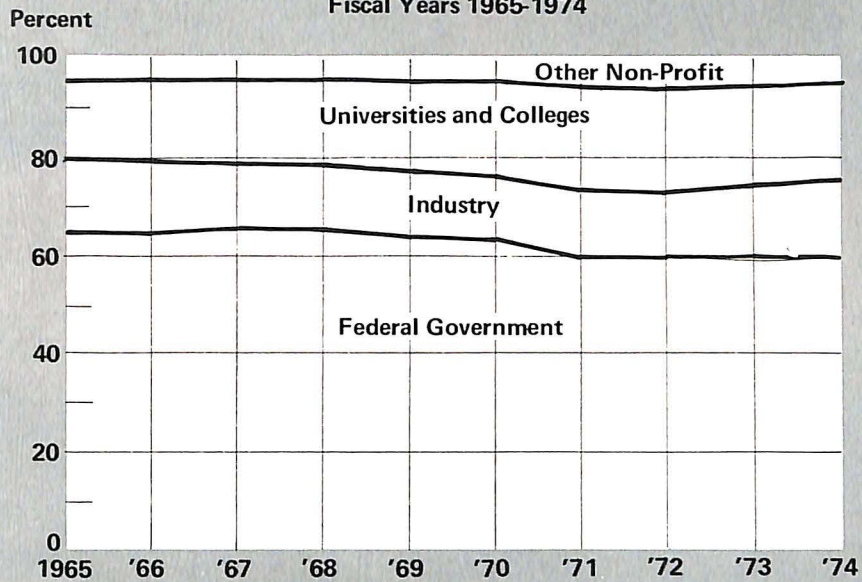


CHART 6

BASIC RESEARCH FUND SOURCES

As a Percent of Total
Fiscal Years 1965-1974



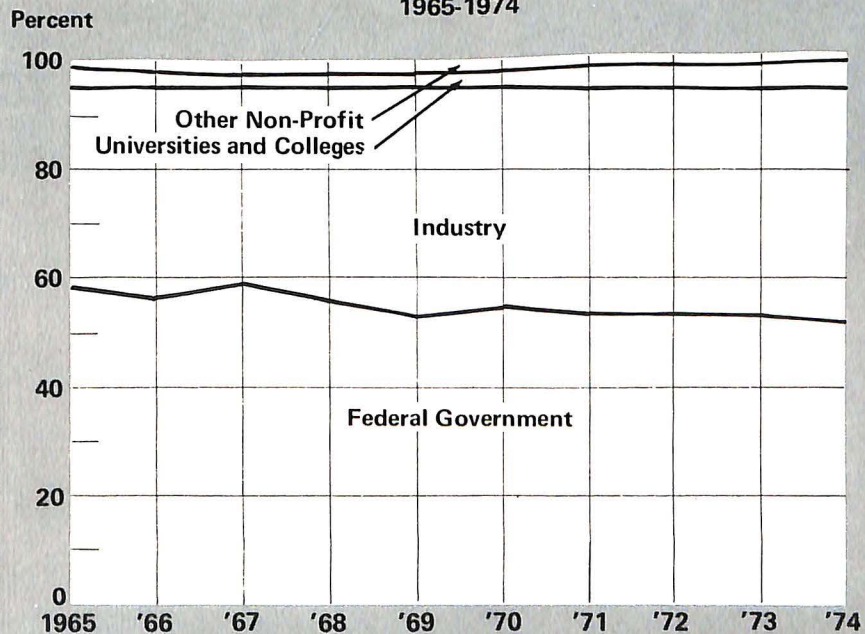
Source: NSF, *National Patterns of R&D Resources*, 1953-1974.

NOTE: Table 9.

CHART 7

APPLIED RESEARCH FUND SOURCES

As a Percent of Total
1965-1974

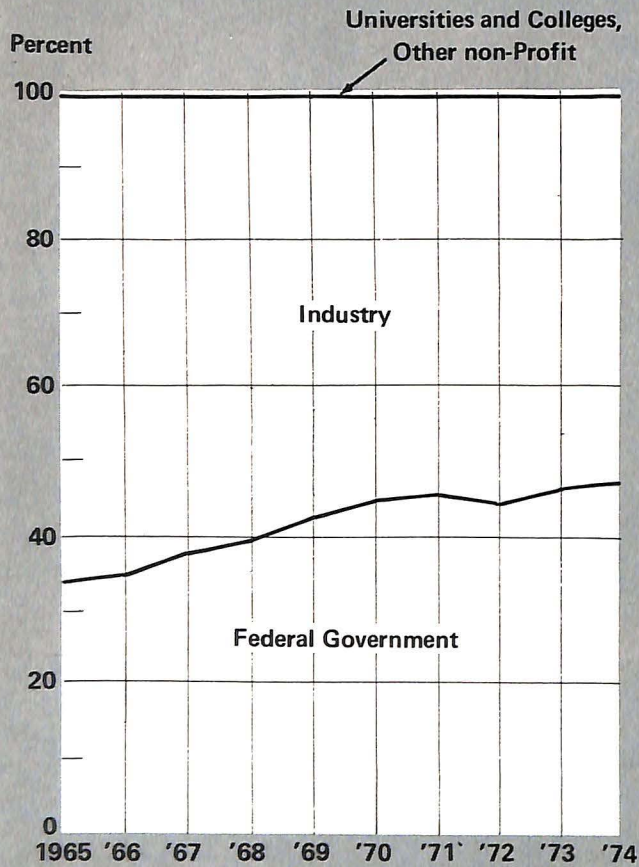


Source: NSF, *National Patterns of R&D Resources*, 1953-1974.

NOTE: Table 10.

CHART 8

DEVELOPMENT FUND SOURCES
As a Percent of Total
1965-1974



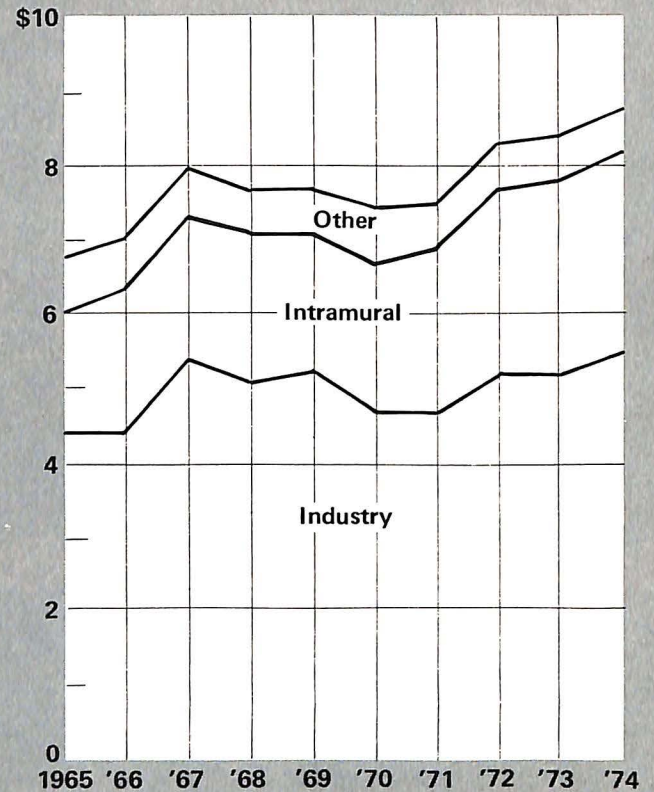
Source: NSF, *National Patterns of R&D Resources, 1953-1974*.

NOTE: Table 11

CHART 9

**DEPARTMENT OF DEFENSE
RESEARCH AND DEVELOPMENT
OBLIGATIONS**

By Performer
Fiscal Years 1965-1974
(Billions of Dollars)



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities, Vol. XV-XXII*.

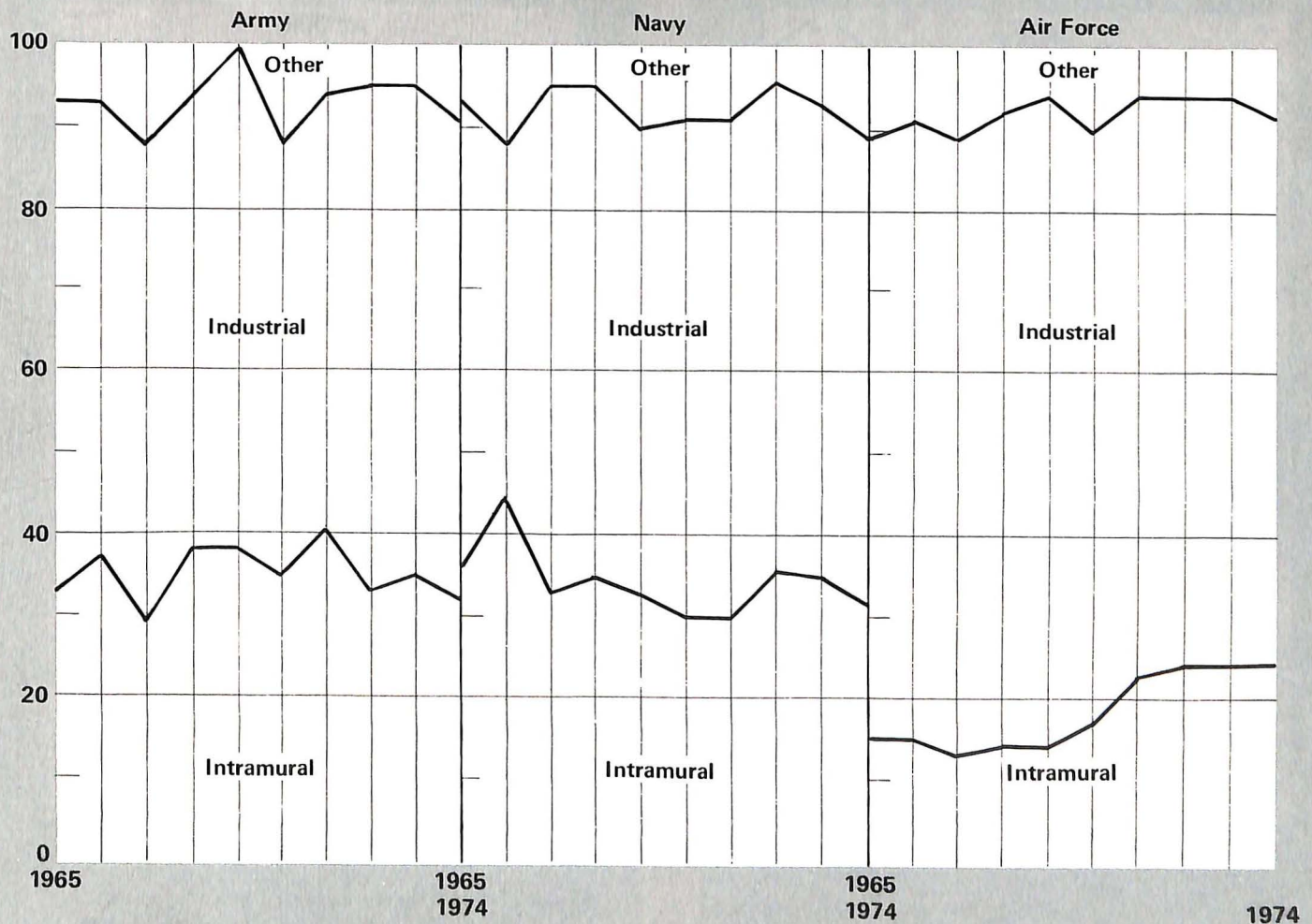
NOTE: Table 13.

CHART 10

ARMY, NAVY AND AIR FORCE RESEARCH AND DEVELOPMENT OBLIGATIONS

By Performer As a Percent of Subtotals

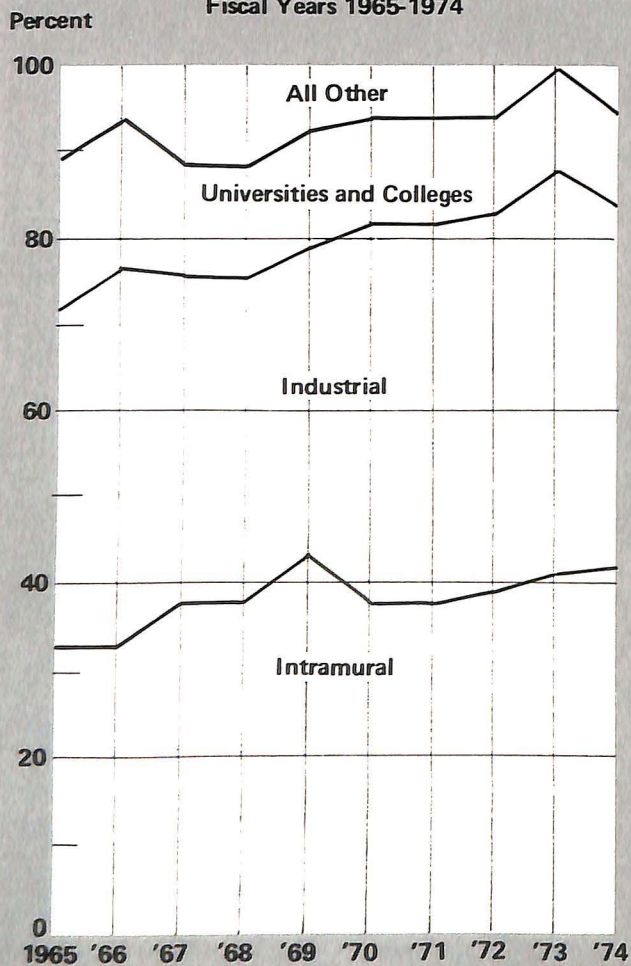
Fiscal Years 1965-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Tables 14, 15 and 16.

CHART 11

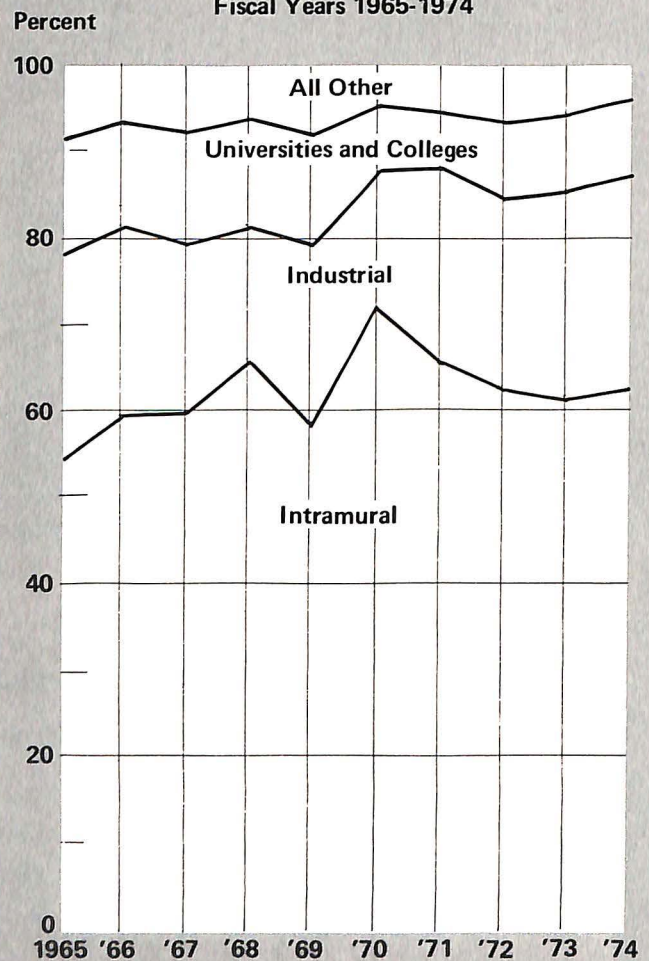
**DEPARTMENT OF DEFENSE
RESEARCH OBLIGATIONS**
By Performer As a Percent of Total
Fiscal Years 1965-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 17.

CHART 12

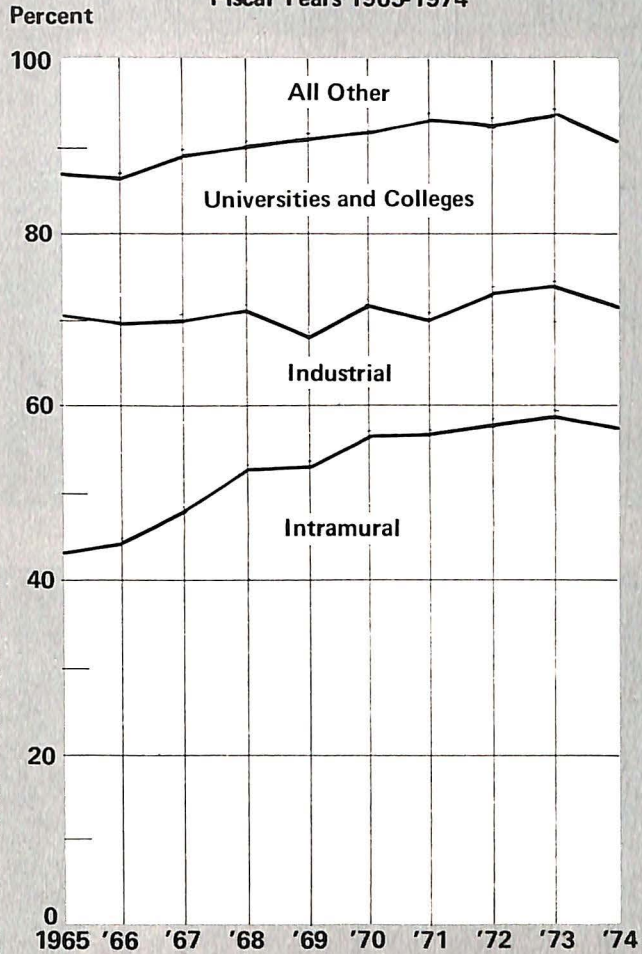
**DEPARTMENT OF THE ARMY
RESEARCH OBLIGATIONS**
By Performer As a Percent of Total
Fiscal Years 1965-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 18.

CHART 13

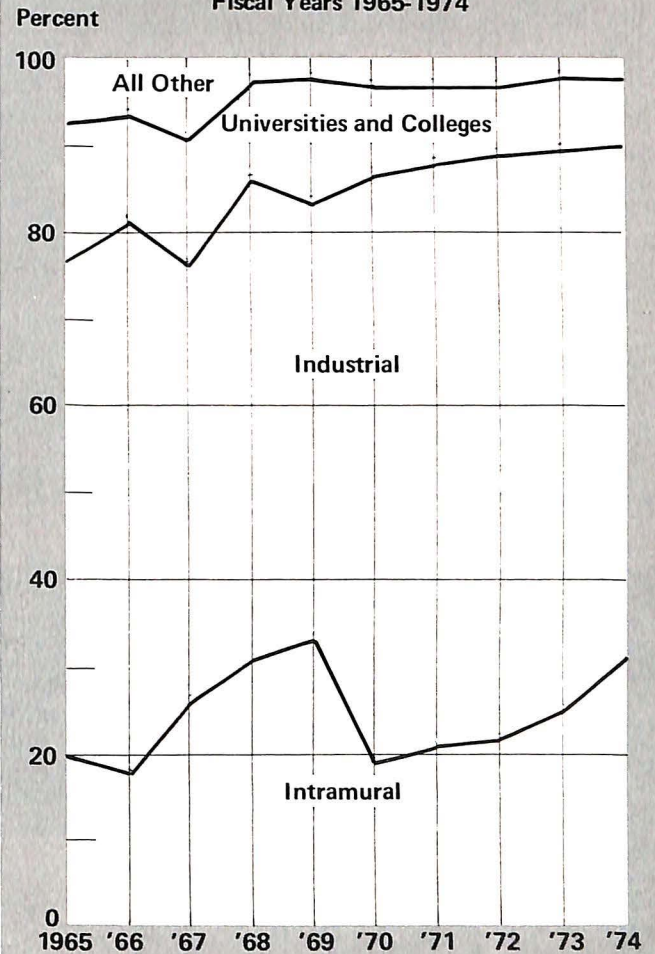
**DEPARTMENT OF THE NAVY
RESEARCH OBLIGATIONS**
By Performer As a Percent of Total
Fiscal Years 1965-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 19.

CHART 14

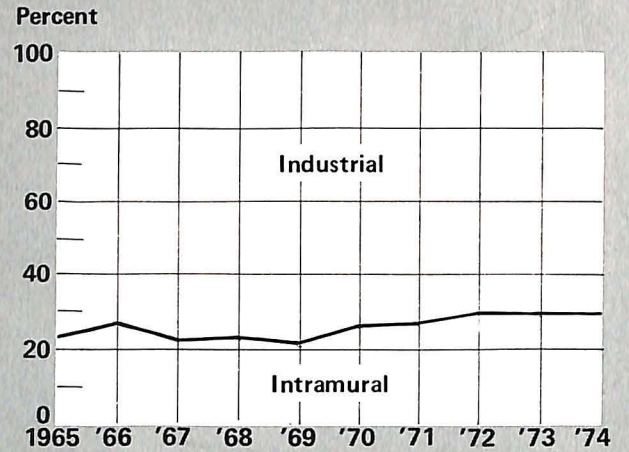
**DEPARTMENT OF THE AIR FORCE
RESEARCH OBLIGATIONS**
By Performer As a Percent of Total
Fiscal Years 1965-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 20.

CHART 15

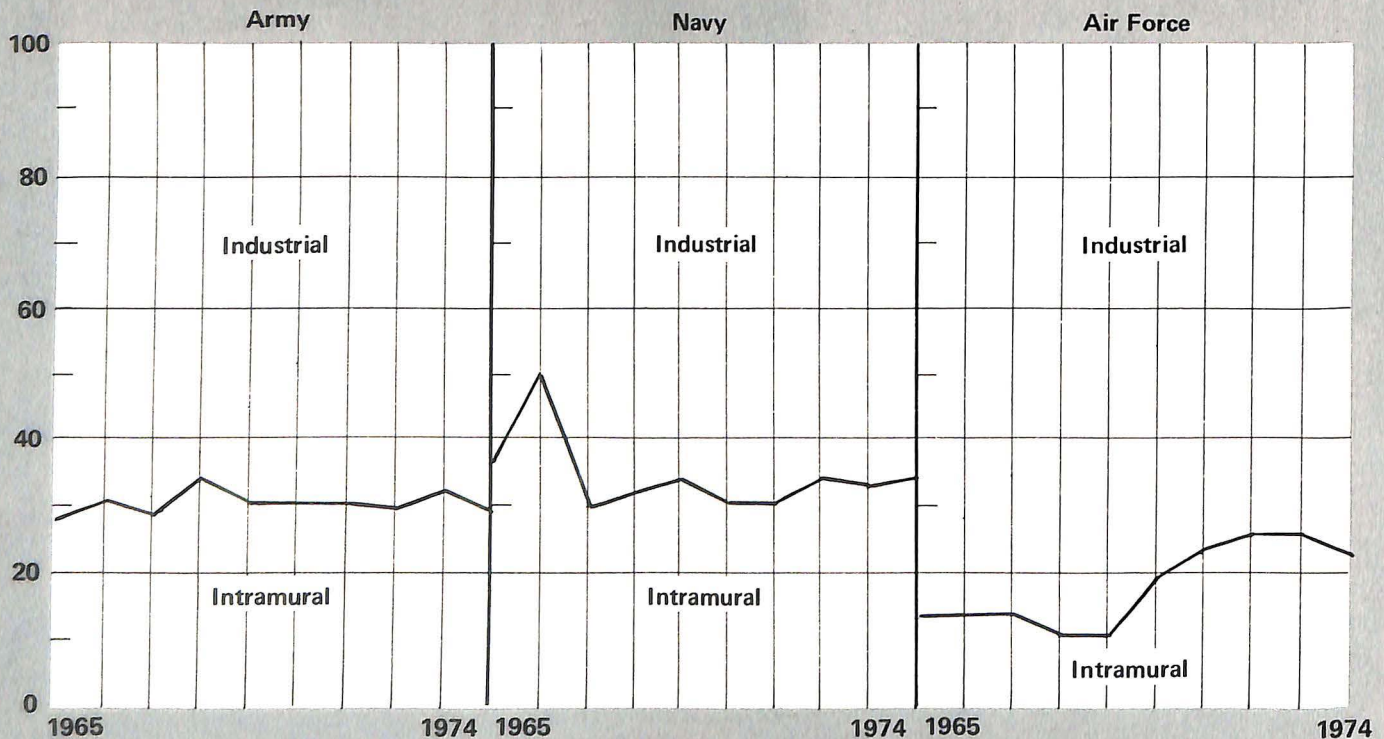
DEPARTMENT OF DEFENSE
DEVELOPMENT OBLIGATIONS
Intramural and Industrial As a Percent of Total
Fiscal Years 1965-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 21.

CHART 16

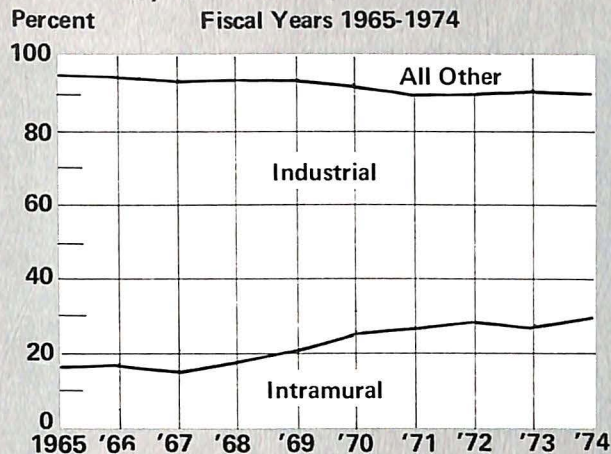
DEVELOPMENT OBLIGATIONS
Intramural and Industrial As a Percent of Total
Fiscal Years 1965-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Tables 22, 23 and 24.

CHART 17 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION RESEARCH AND DEVELOPMENT OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1965-1974

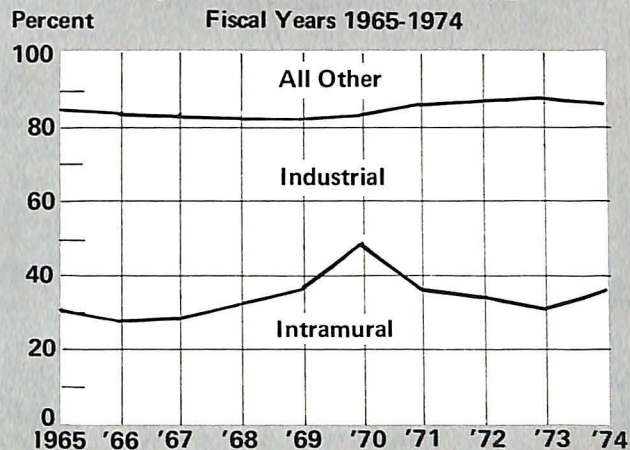


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 25.

CHART 18

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION RESEARCH OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1965-1974

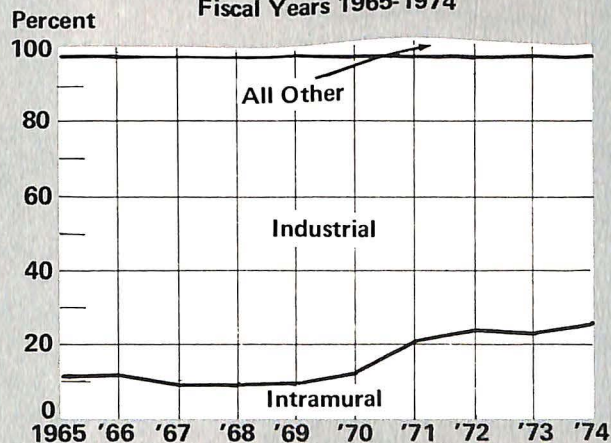


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 26.

CHART 19

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DEVELOPMENT OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1965-1974

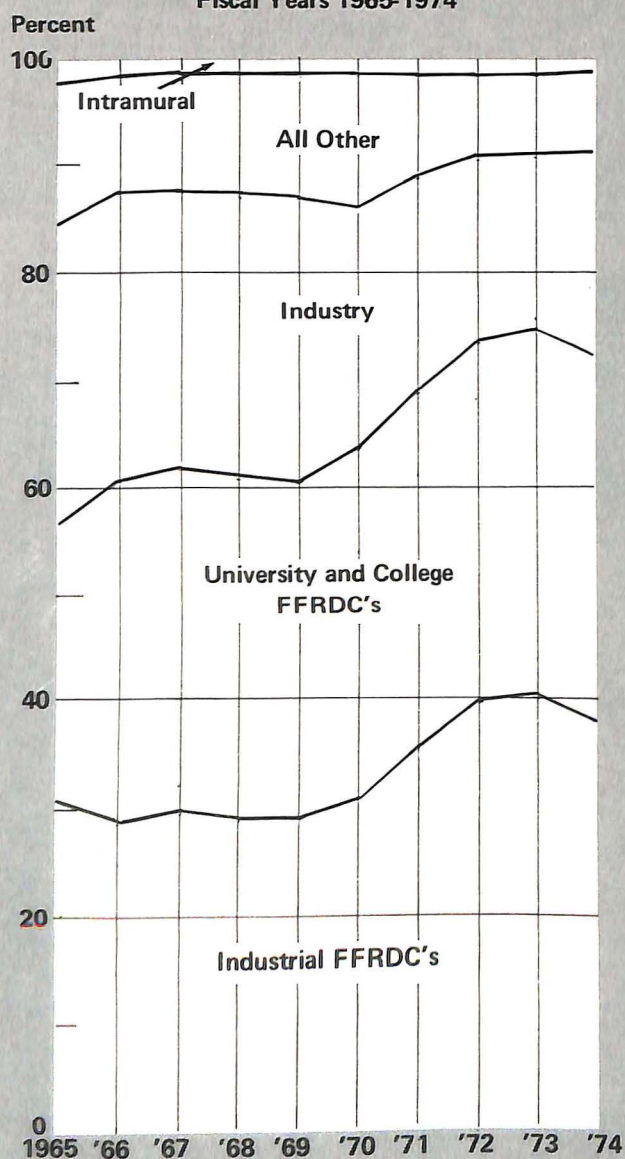


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 27.

CHART 20

ATOMIC ENERGY COMMISSION
RESEARCH AND DEVELOPMENT
OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1965-1974

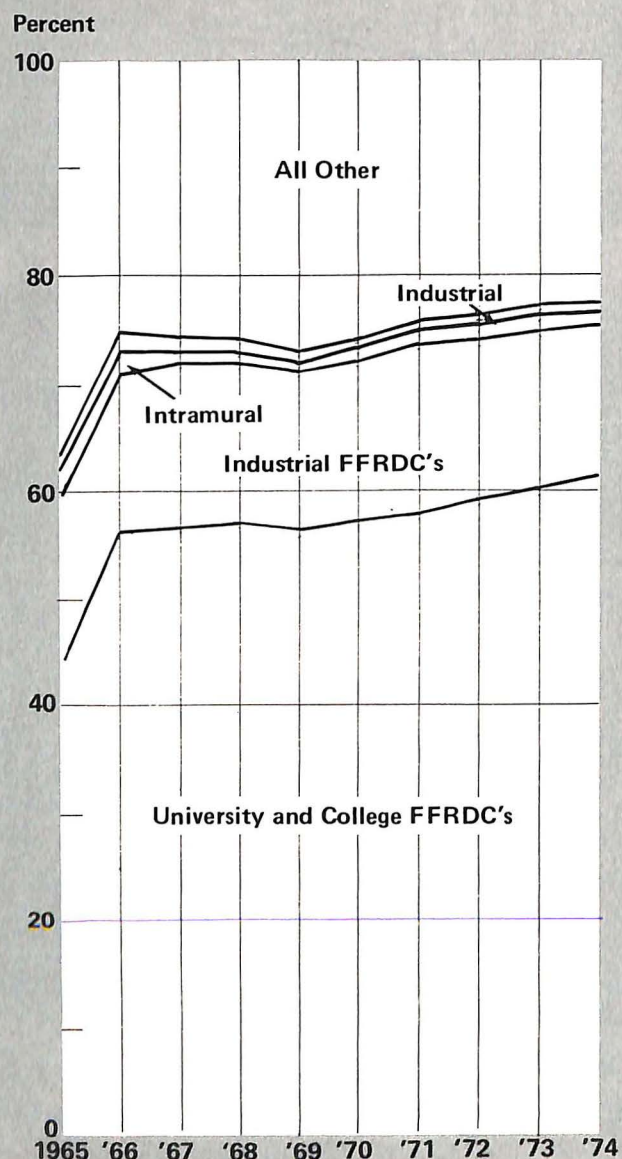


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
FFRDC: Federally Funded Research and Development Centers.
NOTE: Table 28.

CHART 21

ATOMIC ENERGY COMMISSION
RESEARCH OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1965-1974

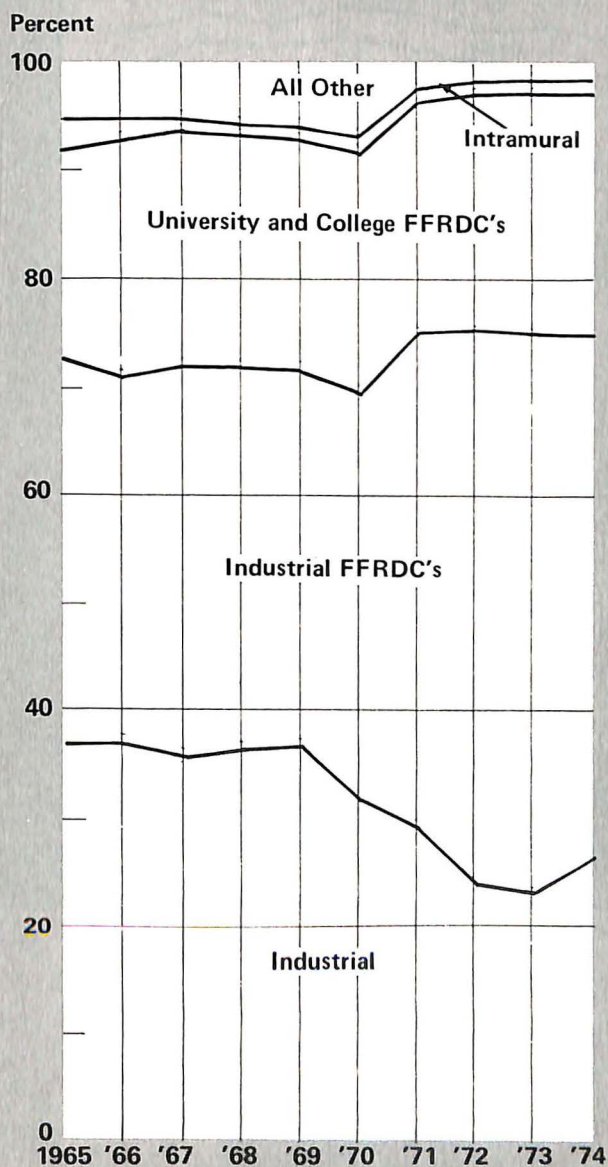


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
FFRDC: Federally Funded Research and Development Centers.
NOTE: Table 29.

CHART 22

ATOMIC ENERGY COMMISSION
DEVELOPMENT OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1965-1974

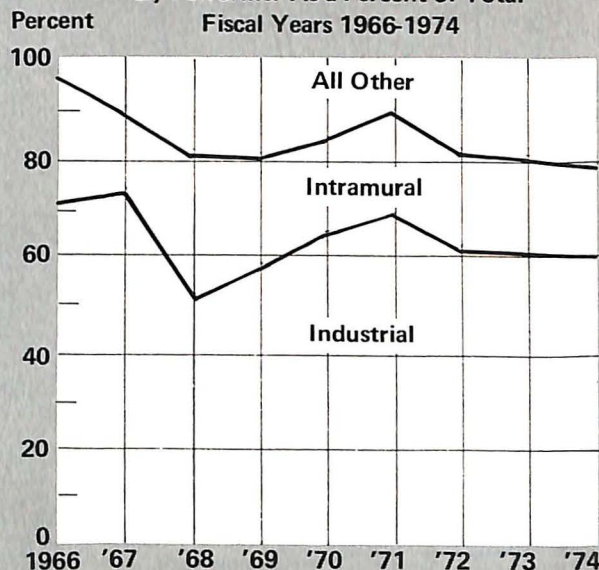


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
FFRDC: Federally Funded Research and Development Centers.
NOTE: Table 30.

CHART 23

DEPARTMENT OF TRANSPORTATION
RESEARCH AND DEVELOPMENT
OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1966-1974

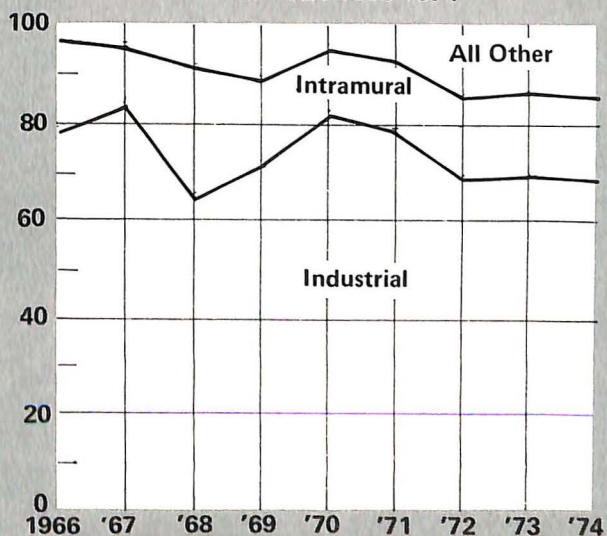


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 31.

CHART 24

DEPARTMENT OF TRANSPORTATION
DEVELOPMENT OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1966-1974

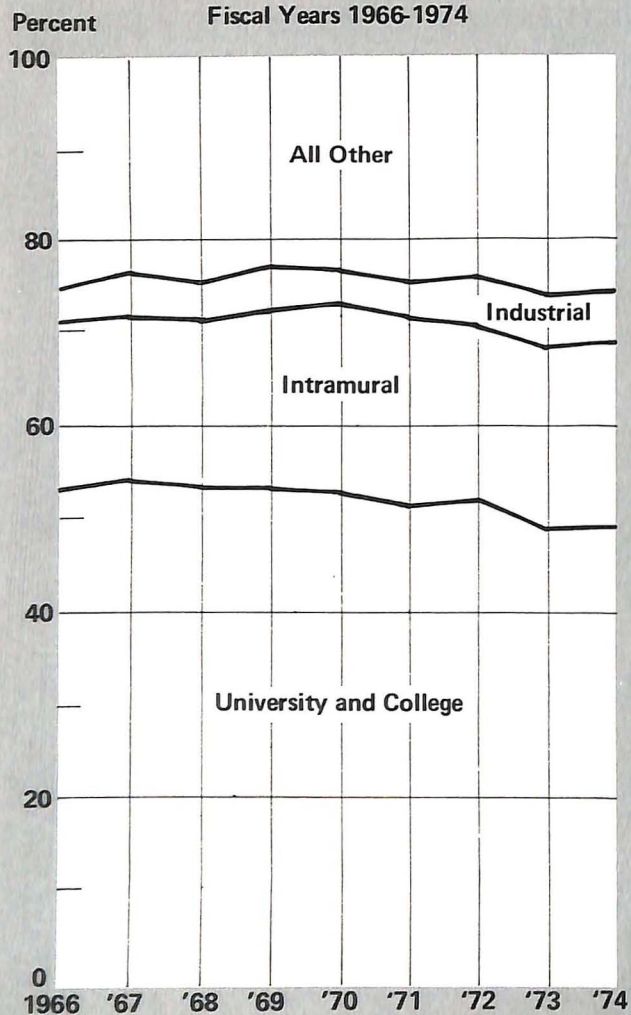


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 32.

CHART 25

DEPARTMENT OF HEALTH,
EDUCATION AND WELFARE
RESEARCH AND DEVELOPMENT
OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1966-1974

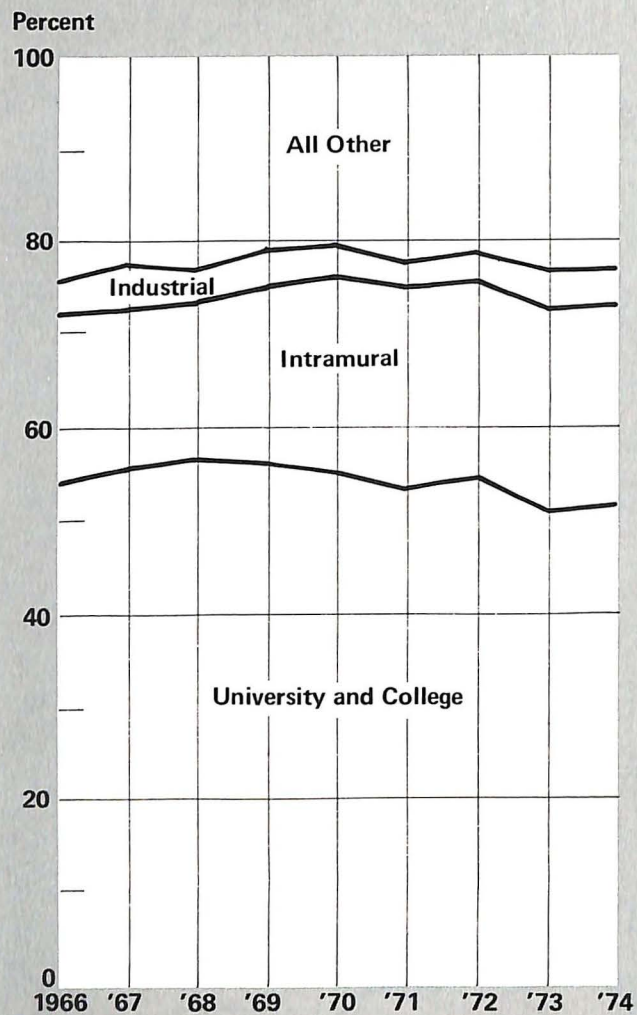


Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 33.

CHART 26

DEPARTMENT OF HEALTH,
EDUCATION AND WELFARE
RESEARCH OBLIGATIONS

By Performer As a Percent of Total
Fiscal Years 1966-1974



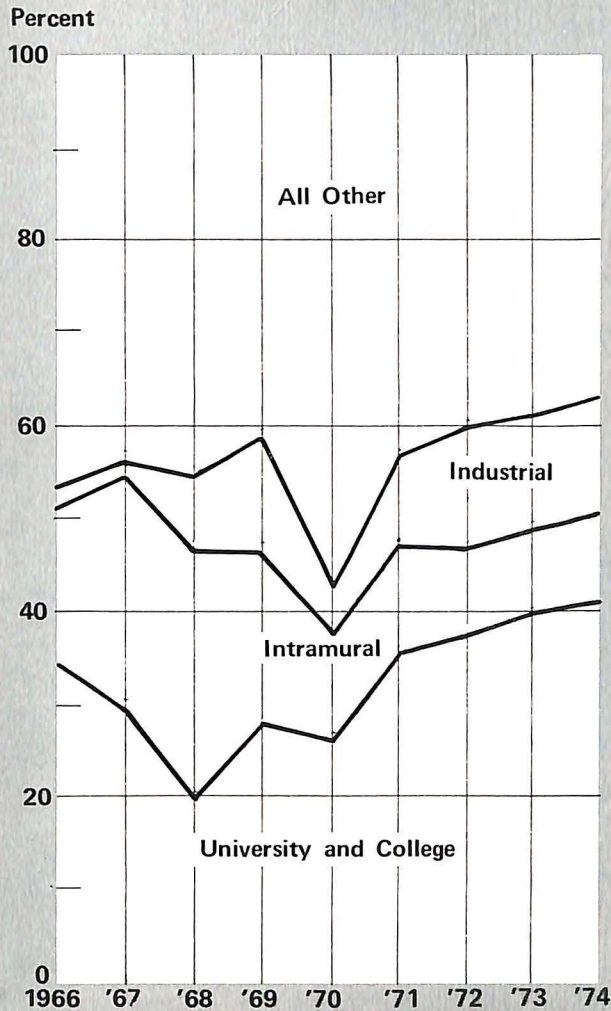
Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.
NOTE: Table 34.

CHART 27

DEPARTMENT OF HEALTH,
EDUCATION AND WELFARE
DEVELOPMENT OBLIGATIONS

By Performer As a Percent of Total

Fiscal Years 1966-1974



Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

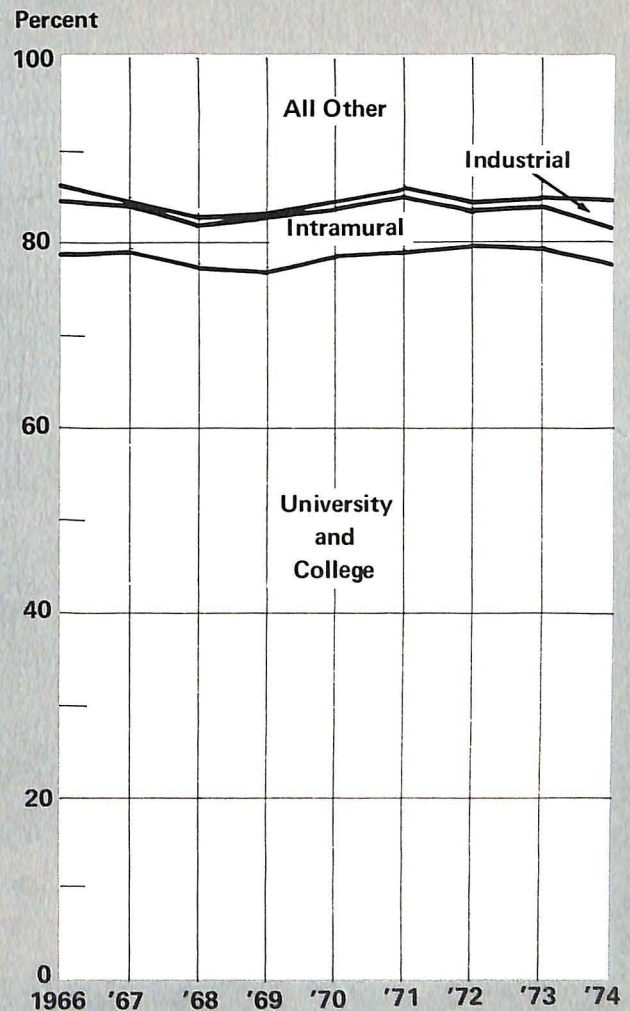
NOTE: Table 35.

CHART 28

NATIONAL SCIENCE FOUNDATION
RESEARCH AND DEVELOPMENT
OBLIGATIONS

By Performer As a Percent of Total

Fiscal Years 1966-1974



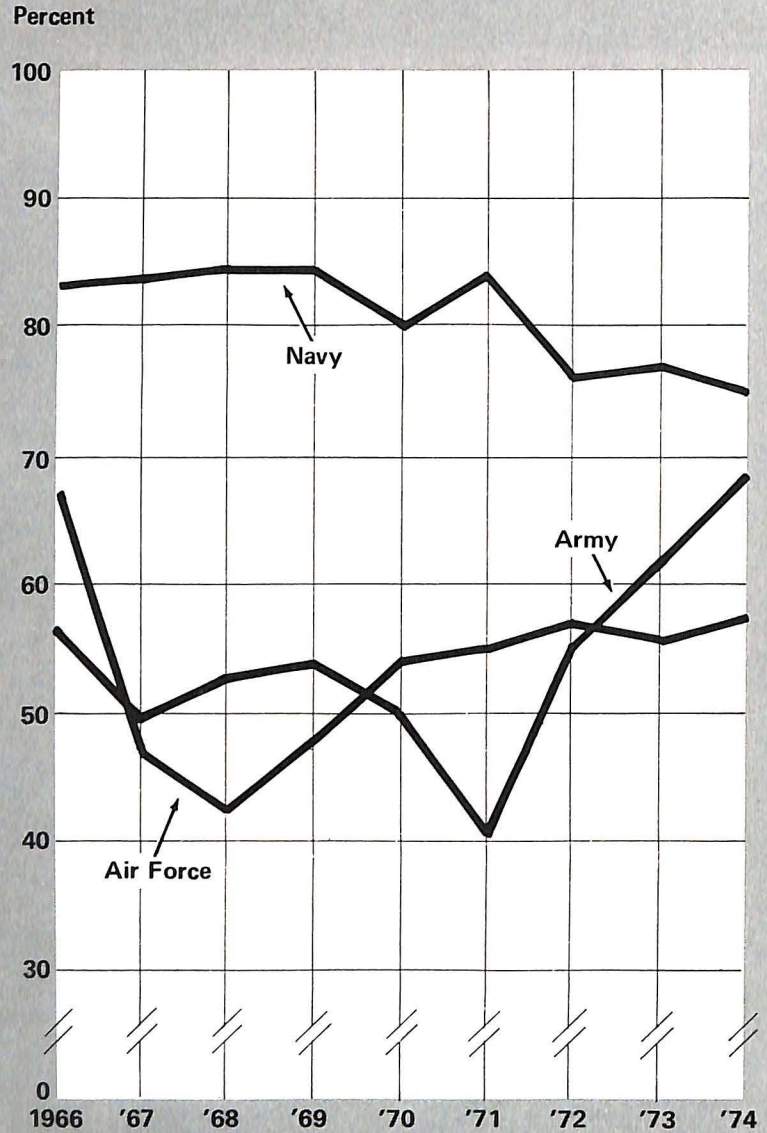
Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

NOTE: Table 36.

CHART 29

DEPOT LEVEL MAINTENANCE OF
AIRCRAFT, ENGINES AND
ACCESSORIES

By Performer; In-House As a Percent of Total
Fiscal Years 1966-1974



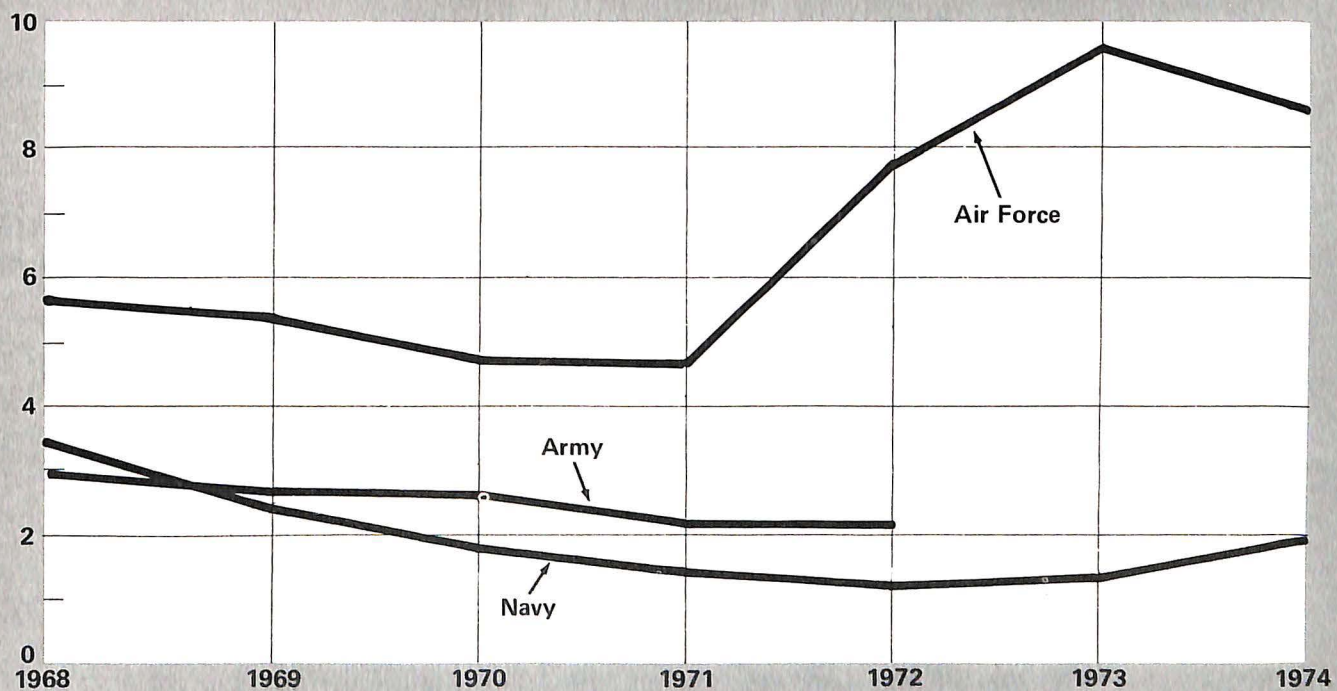
NOTE: Table 46.

CHART 30

DEPARTMENT OF DEFENSE SERVICE SUPPORT CONTRACT OUTLAYS

As a Percent of Total
Fiscal Years 1968-1974

Percent



Note: Tables 47, 48 and 49.

TABLE 1
THE RELATION OF FEDERAL BUDGET OUTLAYS TO
THE GROSS NATIONAL PRODUCT
1960-1975
(Billions of Dollars)

FISCAL YEAR	FEDERAL BUDGET OUTLAYS	GROSS NATIONAL PRODUCT ¹	OUTLAYS AS PERCENT OF GNP
1960	\$ 92.2	\$ 493.7	18.7 %
1961	97.8	511.9	19.1
1962	106.8	540.2	19.8
1963	111.3	575.4	19.3
1964	118.6	611.5	19.4
1965	118.4	658.7	18.0
1966	134.7	717.4	18.8
1967	158.3	771.9	20.5
1968	178.8	829.1	21.6
1969	184.5	897.3	20.6
1970	196.6	953.7	20.6
1971	211.4	1,016.3	20.8
1972	231.9	1,105.4	21.0
1973	246.5	1,211.7	20.2
1974	274.7	N.A.	
1975	304.0	N.A.	

Source: *Economic Report of the President*, 1974, p. 249, 324.

¹G.N.P. adjusted to a fiscal year base.

TABLE 2
DISTRIBUTION OF THE FEDERAL BUDGET BY SELECTED SECTORS
(IN PERCENT)
1964-1975

YEAR	NATIONAL DEFENSE	SPACE RESEARCH & TECHNOLOGY	COMMERCE & TRANSPORTATION	HEALTH	INCOME SECURITY
1964	45.2	3.5	5.5	1.4	21.2
1965	41.9	4.3	6.3	1.4	21.7
1966	42.2	4.4	5.4	1.9	21.5
1967	44.3	3.4	4.8	4.2	19.7
1968	45.0	2.6	4.5	5.4	19.1
1969	44.0	2.3	4.3	6.3	20.5
1970	40.8	1.9	4.8	6.6	22.2
1971	36.7	1.6	5.4	6.8	26.5
1972	33.8	1.5	4.9	7.4	28.0
1973	30.8	1.3	5.3	7.5	29.6
1974	29.3	1.2	4.9	8.5	30.9

Source: *Economic Report of the President*, 1974, p. 325-26.

TABLE 3
FEDERAL GOVERNMENT PURCHASES OF GOODS AND SERVICES
1965-1973¹
(Millions of Dollars)

Year	Total Federal Budget (TFB)	Compen- sation of Employees	Structures	Other Purchases	Total Goods & Services (TGS) 3+4+5	Total TGS less Compensa- tion (TGS - C) 6 - 3	TGS as a Percent of TFB $6 \div 2$	TGS - C as a Percent of TFB $7 \div 2$	TGS - C as a Percent of TGS $7 \div 6$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1965	\$ 126,541	\$ 28,450	\$ 3,627	\$ 34,820	\$ 66,897	\$ 38,447	52.9 %	30.4 %	57.5 %
1966	146,453	32,591	3,644	41,538	77,773	45,182	53.1	30.9	58.1
1967	168,544	35,865	3,171	51,650	90,706	54,841	53.8	32.5	60.5
1968	181,691	39,484	3,106	56,898	99,488	60,004	54.8	33.0	60.3
1969	190,568	42,177	3,021	53,585	98,781	56,604	51.8	29.7	57.3
1970	203,927	45,164	3,107	47,911	96,182	51,018	47.2	25.0	53.0
1971	220,333	47,265	3,957	46,420	97,642	50,377	44.3	22.9	51.6
1972	244,719	50,736	4,456	49,669	104,861	54,125	42.8	22.1	52.0
1973	264,154	52,816	4,698	49,044	106,558	53,742	40.3	20.3	50.4

¹ Adjusted to calendar year basis.

Source: *Survey of Current Business*, July 1969, July 1970, July 1973. Table 3.1.

TABLE 4
FEDERAL OBLIGATIONS FOR TOTAL
RESEARCH AND DEVELOPMENT
1965-1974
(Billions of Dollars)

YEAR	CURRENT DOLLARS	CONSTANT 1958 DOLLARS
1965	14.6	13.3
1966	15.3	13.6
1967	16.5	14.3
1968	15.9	12.7
1969	15.6	12.5
1970	15.3	11.6
1971	15.5	11.2
1972	16.6	11.5
1973	17.0	11.3
1974	17.4	11.3

Source: NSF. *Federal Funds for Research, Development and other Scientific Activities*, Vols. XV-XXII.

TABLE 5
FEDERAL RESEARCH AND DEVELOPMENT OBLIGATIONS, BY AGENCY
SELECTED FISCAL YEARS
 (Billions of Current Dollars and Constant 1958 Dollars)

AGENCY	1965		1967		1974 ^E	
	CURRENT	CONSTANT ^a	CURRENT	CONSTANT ^a	CURRENT	CONSTANT ^a
Agriculture	0.2	0.2	0.3	0.3	0.3	0.2
Commerce	0.1	0.1	0.1	0.1	0.2	0.1
Defense	6.8	6.2	8.0	6.9	8.8	5.7
HEW	0.9	0.8	1.1	1.0	1.9	1.2
Interior	0.1	0.1	0.2	0.2	0.3	0.2
Transportation	—	—	0.3	0.3	0.4	0.3
AEC	1.2	1.1	1.3	1.1	1.4	0.9
EPA	—	—	—	—	0.1	0.1
FAA	0.1	0.1	—	—	—	—
NASA	5.0	4.6	4.9	4.2	3.0	1.9
NSF	0.2	0.2	0.3	0.3	0.5	0.3
OEO	*	*	*	*	—	—
VA	*	*	*	*	0.1	0.1
All Others	0.1	0.1	0.1	0.1	0.3	0.2
TOTAL	14.7	13.5	16.6	14.5	17.3	11.2

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XXII, p. 130.

a — GNP price deflator adjusted to fiscal year basis

* — less than .05

E — Estimate

— Equal to zero.

TABLE 6
FEDERAL RESEARCH AND DEVELOPMENT FUNDS
 Distribution as a Percent of Total
 1960-1974
 (Millions of Dollars)

YEAR	TOTAL FEDERAL R&D	BASIC RESEARCH		APPLIED RESEARCH		DEVELOPMENT	
		AMOUNT	PERCENT	AMOUNT	PERCENT	AMOUNT	PERCENT
1960	\$ 8,752	\$ 693	7.9 %	\$ 1,725	19.7 %	\$ 6,334	72.4 %
1961	9,264	841	9.1	1,804	19.5	6,619	71.4
1962	9,926	1,091	11.0	2,127	21.4	6,708	67.6
1963	11,219	1,310	11.7	2,205	19.7	7,704	68.7
1964	12,553	1,595	12.7	2,503	19.9	8,455	67.4
1965	13,033	1,817	13.9	2,653	20.4	8,563	65.7
1966	13,990	1,986	14.2	2,729	19.5	9,275	66.3
1967	14,420	2,173	15.1	2,874	19.9	9,373	65.0
1968	14,952	2,344	15.7	3,007	20.1	9,601	64.2
1969	14,912	2,386	16.0	2,982	20.0	9,544	64.0
1970	14,765	2,469	16.7	3,261	22.1	9,035	61.2
1971	15,013	2,390	15.9	3,323	22.1	9,300	62.0
1972	16,132	2,531	15.7	3,415	21.2	10,186	63.1
1973	16,595	2,673	16.1	3,622	21.8	10,301	62.1
1974 ^E	17,060	2,770	16.2	3,760	22.1	10,530	61.7

Source: NSF, *National Patterns of R&D Resources* (74-304), pp. 28-29.

E — Estimate

TABLE 7
RESEARCH AND DEVELOPMENT OBLIGATIONS VS. BUDGET OUTLAYS
 1965-1974
 (Billions of Dollars)

YEAR	R&D TOTAL	BUDGET TOTAL	PERCENT OF R&D TO TOTAL BUDGET
1965	\$ 14.6	\$ 118.4	12.3 %
1966	15.3	134.7	11.4
1967	16.5	158.3	10.4
1968	15.9	178.8	8.9
1969	15.6	184.5	8.5
1970	15.3	196.6	7.8
1971	15.5	211.4	7.3
1972	16.6	231.9	7.2
1973 ^E	17.0	246.5	6.9
1974 ^E	17.4	274.7	6.3
1975	N.A.	304.4	—

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XXII, p. 132.
Economic Report of the President, 1974, p. 249.

E — Estimate

TABLE 8
FEDERAL R&D OBLIGATIONS, BY PERFORMERS
FY 1965-74
(Billions of Dollars)

YEAR	TOTAL	INTRAMURAL		INDUSTRY		ALL OTHERS	
		AMOUNT	PERCENT	AMOUNT	PERCENT	AMOUNT	PERCENT
1965	\$ 14.6	\$ 3.1	21.1 %	\$ 8.7	59.7 %	\$ 2.8	19.2 %
1966	15.3	3.4	22.2	8.9	58.2	3.0	19.6
1967	16.5	3.4	20.6	9.9	60.0	3.2	19.4
1968	15.9	3.4	21.4	9.0	56.6	3.5	22.0
1969	15.6	3.5	22.4	8.7	55.8	3.4	21.8
1970	15.3	3.9	25.5	8.0	52.3	3.4	22.2
1971	15.5	4.2	27.1	7.6	49.0	3.7	23.9
1972	16.6	4.5	27.1	7.9	47.6	4.2	25.3
1973 ^E	17.0	4.7	27.6	8.0	47.1	4.3	25.3
1974 ^E	17.4	4.8	27.6	8.2	47.1	4.4	25.3

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

E — Estimate

TABLE 9
BASIC RESEARCH FUND SOURCES
1965-1974
(Percent)

YEAR	FEDERAL GOVERNMENT	INDUSTRY	UNIVERSITIES & COLLEGES	OTHER NON-PROFIT
1965	63.7	15.7	15.6	5.0
1966	63.6	15.9	15.8	4.7
1967	64.7	14.2	16.4	4.6
1968	64.3	14.2	17.0	4.5
1969	63.5	13.8	18.0	4.7
1970	62.6	13.6	19.0	4.8
1971	59.8	14.1	21.0	5.1
1972 ^P	59.2	13.5	21.4	5.1
1973 ^E	60.3	14.3	20.3	5.1
1974 ^E	60.0	15.0	20.0	5.0

Source: NSF, *National Patterns of R&D Resources, 1953-1974*, p. 28.

P — Preliminary

E — Estimate

TABLE 10
SOURCES OF APPLIED RESEARCH FUNDS
1965-1974
(Percent)

YEAR	FEDERAL GOVERNMENT	INDUSTRY	UNIVERSITIES & COLLEGES	OTHER NON-PROFIT
1965	58.5	36.5	3.4	1.6
1966	56.6	38.3	3.3	1.8
1967	58.9	37.5	3.6	1.9
1968	55.2	39.2	3.6	2.0
1969	53.0	41.3	3.6	2.1
1970	54.4	40.1	3.3	2.2
1971	53.8	40.0	3.9	2.2
1972	53.3	39.9	4.7	2.2
1973	52.4	40.1	5.4	2.1
1974	51.8	40.3	5.9	2.0

Source: NSF, *National Patterns of R&D Resources, 1953-1974*, p. 29.

TABLE 11
SOURCES OF DEVELOPMENT FUNDS
1965-1974
(Percent)

YEAR	INDUSTRY	FEDERAL GOVERNMENT	UNIVERSITIES & COLLEGES	OTHER NON-PROFIT
1965	65.6	34.0	0.1	0.3
1966	64.8	34.8	0.1	0.4
1967	61.6	37.9	0.1	0.3
1968	59.9	39.6	0.1	0.4
1969	56.9	42.7	0.1	0.4
1970	54.4	45.1	0.1	0.4
1971	54.2	45.3	0.1	0.4
1972	54.9	44.7	0.1	0.4
1973	53.4	46.1	0.2	0.3
1974	52.1	47.4	0.2	0.4

Source: NSF, *National Patterns of R&D Resources, 1953-1974*, p. 29.

TABLE 12

INDUSTRIAL DEVELOPMENT FUNDS VS. FEDERAL GOVERNMENT DEVELOPMENT FUNDS
1965-1974
(Millions of Dollars)

YEAR	TOTAL FEDERAL & INDUSTRIAL FUNDING	INDUSTRIAL		GOVERNMENT	
		FUNDING	PERCENT OF TOTAL	FUNDING	PERCENT OF TOTAL
1965	\$ 12,996	\$ 4,433	34.1 %	\$ 8,563	65.9 %
1966	14,252	4,977	34.9	9,275	65.1
1967	15,135	5,762	38.1	9,373	61.9
1968	15,948	6,347	39.8	9,601	60.2
1969	16,706	7,162	42.9	9,544	57.1
1970	16,527	7,492	45.3	9,035	54.7
1971	17,077	7,777	45.5	9,300	54.5
1972	18,484	8,298	44.9	10,186	55.1
1973	19,187	8,886	46.3	10,301	53.7
1974	20,117	9,587	47.7	10,530	52.3

Source: Derived from NSF, *National Patterns of R&D Resources*, 1953-1974, p. 29.

TABLE 13

DEPARTMENT OF DEFENSE R&D OBLIGATIONS
BY PERFORMER
FY 1967-1974
(Billions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	6.8	7.0	8.0	7.7	7.7	7.4	7.5	8.3	8.4	8.8
Intramural	1.6	1.9	1.9	2.0	1.9	2.0	2.2	2.5	2.6	2.7
Industry	4.4	4.4	5.4	5.1	5.2	4.7	4.7	5.2	5.2	5.5
FFRDC (Ind.)	*	*	*	*	*	*	*	*	*	*
Univ. & College	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2
FFRDC (U&C)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Other Non-Profit	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FFRDC (Other Non-Profit)	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Other	*	*	*	*	*	*	*	—	—	—
Foreign	*	*	*	*	*	*	*	*	*	*

Source: NSF, *Federal Funds for Research Development & Other Scientific Activities*, Vols. XV-XXII.

E — Estimate

* — less than 0.05

TABLE 14
DEPARTMENT OF THE ARMY R&D OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Billions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
TOTAL	1.5	1.6	1.7	1.6	1.6	1.7	1.7	2.1	2.0	2.2
Intramural	0.5	0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7
Industry	0.9	0.9	1.0	0.9	1.0	0.9	0.9	1.3	1.2	1.3
FFRDC (Ind.)	*	*	*	*	*	*	—	—	*	—
Univ. & College	*	*	*	*	*	*	*	*	*	*
FFRDC (U&C)	*	*	*	*	*	*	*	*	*	*
Other Non-Profit	*	*	*	*	*	*	*	*	*	*
FFRDC (Non-Profit)	*	*	*	*	*	*	*	*	*	*
Other	*	*	*	*	*	*	*	*	*	*
Foreign	*	*	*	*	*	*	*	*	*	*

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

* — less than 0.05

TABLE 15
DEPARTMENT OF THE NAVY R&D OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Billions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	1.4	1.6	2.1	2.0	2.1	2.3	2.3	2.5	2.6	2.8
Intramural	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.9	0.9	0.9
Industry	0.8	0.7	1.3	1.2	1.2	1.4	1.4	1.5	1.5	1.6
FFRDC (Ind.)	—	—	—	—	—	—	—	—	—	—
Univ. & College	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FFRDC (U&C)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Non-Profit	*	*	*	*	*	*	*	*	*	0.1
FFRDC (Non-Profit)	*	*	*	*	*	*	*	*	*	*
Other	*	*	*	*	*	*	*	*	*	*
Foreign	*	*	*	*	*	*	*	*	*	*

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

^E — Estimate

* — less than 0.05

TABLE 16
DEPARTMENT OF THE AIR FORCE R&D OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Billions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	3.4	3.3	3.8	3.6	3.5	3.0	3.1	3.3	3.3	3.4
Intramural	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.8	0.8	0.8
Industry	2.5	2.5	2.9	2.8	2.8	2.2	2.2	2.3	2.3	2.3
FFRDC (Ind.)	*	*	*	*	—	—	—	—	—	—
Univ. & College	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FFRDC (U&C)	*	*	*	*	*	*	*	*	*	*
Other Non-Profit	0.1	0.1	0.1	0.1	*	*	*	*	*	*
FFRDC (Non-Profit)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other	*	*	*	—	*	—	—	—	—	—
Foreign	*	*	*	*	*	*	*	*	*	*

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

E — Estimate

* — less than 0.05

TABLE 17
DEPARTMENT OF DEFENSE RESEARCH OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Billions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	1.8	1.8	1.6	1.6	1.4	1.6	1.6	1.8	1.7	1.9
Intramural	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8
Industry	0.7	0.8	0.6	0.6	0.5	0.7	0.7	0.8	0.8	0.8
FFRDC (Ind.)	*	*	*	*	*	*	*	*	*	*
Univ. & College	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
FFRDC (U&C)	0.1	0.1	0.1	0.1	*	*	*	*	*	*
Other Non-Profit	*	*	0.1	*	*	*	*	0.1	0.1	*
FFRDC (Other Non-Profit)	*	*	*	*	*	*	*	*	*	*
Other	*	*	*	*	*	*	*	—	—	—
Foreign	*	*	*	*	*	*	*	*	*	*

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

E — Estimate

* — less than 0.05

TABLE 18
DEPARTMENT OF THE ARMY RESEARCH OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	291.8	299.3	284.5	280.6	274.7	291.5	339.1	351.0	367.1	374.9
Intramural	158.9	177.8	170.7	184.2	161.9	212.8	223.6	220.0	225.5	230.4
Industry	71.1	66.7	56.1	45.5	55.7	41.6	75.0	77.3	87.4	93.2
FFRDC (Ind.)	*	—	*	—	—	—	—	—	—	—
Univ. & College	36.9	35.7	35.8	34.1	35.6	24.5	23.3	30.5	35.6	32.5
FFRDC (U&C)	6.4	5.5	6.0	5.5	6.8	3.0	0.1	4.9	5.0	5.0
Other Non-Profit	6.0	9.9	10.6	6.8	6.6	4.1	8.4	11.9	12.2	12.5
FFRDC (Other Non-Profit)	9.6	0.7	1.2	1.5	6.4	3.8	7.6	5.0	0.3	0.1
Other	*	0.1	0.7	0.5	0.5	0.5	*	—	—	—
Foreign	3.0	2.9	3.3	2.6	1.2	1.3	1.1	1.4	1.0	1.1

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

E — Estimate

* — less than 0.05

TABLE 19
DEPARTMENT OF THE NAVY RESEARCH OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	319.5	300.3	301.2	291.3	294.9	272.9	273.2	303.2	278.4	292.5
Intramural	139.4	133.2	146.2	154.9	158.7	157.0	155.8	178.1	165.8	169.7
Industry	88.2	77.1	65.8	52.4	43.6	41.3	36.6	45.6	42.3	42.1
FFRDC (Ind.)	—	—	—	—	—	—	—	—	—	—
Univ. of College	52.4	50.6	57.5	51.1	67.5	53.5	62.8	59.1	53.9	56.6
FFRDC (U&C)	22.0	25.7	11.0	16.2	18.3	14.4	12.5	14.3	10.0	17.5
Other Non-Profit	8.4	5.4	9.4	10.0	6.3	6.4	5.3	5.8	6.1	6.4
FFRDC (Other Non-Profit)	6.8	7.0	9.1	—	—	*	—	—	—	—
Other	—	—	—	—	—	—	—	—	—	—
Foreign	2.4	1.2	2.2	0.6	0.4	0.3	0.1	0.2	0.3	0.2

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

* — less than 0.05

TABLE 20
DEPARTMENT OF THE AIR FORCE RESEARCH OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	667.4	827.4	599.2	610.0	516.5	665.0	677.2	725.2	754.6	845.5
Intramural	138.5	150.7	159.9	189.1	174.0	131.8	146.8	161.1	192.9	268.4
Industry	381.3	528.5	299.2	338.4	260.0	452.5	450.4	487.6	486.6	501.5
FFRDC (Ind.)	1.0	0.2	*	—	—	—	—	—	—	—
Univ. & College	101.8	105.3	90.9	73.1	75.9	66.0	64.6	61.9	62.3	61.7
FFRDC (U&C)	31.9	30.8	34.4	1.8	0.2	0.2	0.3	0.3	0.3	0.3
Other Non-Profit	8.3	5.9	8.1	4.0	3.2	13.5	13.6	13.4	11.7	12.9
FFRDC (Other Non-Profit)	—	—	—	—	—	—	—	—	—	—
Other	*	0.3	*	*	*	—	—	—	—	—
Foreign	4.8	5.5	6.6	3.4	3.2	1.1	1.5	0.8	0.8	0.7

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

* — less than 0.05

TABLE 21
DEPARTMENT OF DEFENSE DEVELOPMENT OBLIGATIONS
INTRAMURAL VS. INDUSTRIAL
FY 1965-1974
(Billions of Dollars)

YEAR	TOTAL	INTRAMURAL		INDUSTRIAL	
		OBLIGATIONS	PERCENT OF TOTAL	OBLIGATIONS	PERCENT OF TOTAL
1965	\$ 4.8	\$ 1.1	22.9 %	\$ 3.7	77.1 %
1966	4.9	1.3	26.5	3.6	73.5
1967	6.1	1.3	21.3	4.8	78.7
1968	5.8	1.3	22.4	4.5	77.6
1969	5.8	1.2	20.7	4.6	79.3
1970	5.5	1.4	25.5	4.1	74.5
1971	5.5	1.5	27.3	4.0	72.7
1972	6.2	1.8	29.0	4.4	71.0
1973	6.2	1.8	29.0	4.4	71.0
1974 ^E	6.6	1.9	28.8	4.7	71.2

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 22

**DEPARTMENT OF THE ARMY DEVELOPMENT OBLIGATIONS
INTRAMURAL VS. INDUSTRIAL**

FY 1965-1974
(Billions of Dollars)

YEAR	TOTAL	INTRAMURAL		INDUSTRIAL	
		OBLIGATIONS	PERCENT OF TOTAL	OBLIGATIONS	PERCENT OF TOTAL
1965	\$ 1.1	\$ 0.3	27.2 %	\$ 0.8	72.7 %
1966	1.3	0.4	30.8	0.9	69.2
1967	1.4	0.4	28.6	1.0	71.4
1968	1.2	0.4	33.3	0.8	66.6
1969	1.3	0.4	30.8	0.9	69.2
1970	1.3	0.4	30.8	0.9	69.2
1971	1.3	0.4	30.8	0.9	69.2
1972	1.7	0.5	29.4	1.2	70.5
1973	1.6	0.5	31.3	1.1	68.7
1974 ^E	1.8	0.5	27.8	1.3	72.2

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 23

**DEPARTMENT OF THE NAVY DEVELOPMENT OBLIGATIONS
INTRAMURAL VS. INDUSTRIAL**

FY 1965-1974
(Billions of Dollars)

YEAR	TOTAL	INTRAMURAL		INDUSTRIAL	
		OBLIGATIONS	PERCENT OF TOTAL	OBLIGATIONS	PERCENT OF TOTAL
1965	\$ 1.1	\$ 0.4	36.4 %	\$ 0.7	63.6 %
1966	1.2	0.6	50.0	0.6	50.0
1967	1.7	0.5	29.4	1.2	70.6
1968	1.6	0.5	31.3	1.1	68.8
1969	1.8	0.6	33.3	1.2	66.7
1970	2.0	0.6	30.0	1.4	70.0
1971	2.0	0.6	30.0	1.4	70.0
1972	2.1	0.7	33.3	1.4	66.7
1973	2.2	0.7	31.8	1.5	68.2
1974	2.4	0.8	33.3	1.6	66.7

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

TABLE 24

**DEPARTMENT OF THE AIR FORCE DEVELOPMENT OBLIGATIONS
INTRAMURAL VS. INDUSTRIAL
FY 1965-1974
(Billions of Dollars)**

YEAR	TOTAL	INTRAMURAL		INDUSTRIAL	
		OBLIGATIONS	PERCENT OF TOTAL	OBLIGATIONS	PERCENT OF TOTAL
1965	\$ 2.4	\$ 0.3	12.5 %	\$ 2.1	87.5 %
1966	2.3	0.3	13.0	2.0	87.0
1967	3.0	0.4	13.3	2.6	86.7
1968	2.8	0.3	10.7	2.5	98.3
1969	2.8	0.3	10.7	2.5	98.3
1970	2.2	0.4	18.2	1.8	81.8
1971	2.2	0.5	22.7	1.7	77.3
1972	2.4	0.6	25.0	1.8	75.0
1973	2.4	0.6	25.0	1.8	75.0
1974	2.3	0.5	21.7	1.8	78.3

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

TABLE 25

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
RESEARCH AND DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)**

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	4,951.5	5,050.0	4,867.0	4,429.4	3,963.3	3,799.9	3,257.9	3,157.2	3,199.6	2,969.2
Intramural	863.1	872.1	813.2	791.2	820.9	988.0	909.1	927.3	901.3	911.7
Industry	3,852.1	3,926.8	3,795.9	3,379.6	2,895.4	2,516.2	2,073.6	1,957.2	2,051.7	1,817.7
FFRDC (Ind.)	1.0	1.4	2.4	2.3	3.5	4.3	3.1	2.5	2.4	—
Univ. & College	124.1	117.2	124.1	130.6	125.1	131.2	134.0	119.0	117.5	114.4
FFRDC (U&C)	84.1	103.6	106.1	102.8	100.1	126.8	109.2	124.0	114.7	112.6
Non-Profit	16.7	21.1	23.6	21.3	17.2	31.0	26.8	22.6	11.4	12.3
FFRDC (Other Non-Profit)	1.6	1.1	0.8	0.7	0.5	1.0	0.4	3.8	0.5	0.4
Other	8.1	6.2	—	—	—	—	—	—	—	—
Foreign	0.6	0.5	0.9	0.9	0.6	1.4	1.8	0.9	0.1	0.1

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 26
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
RESEARCH OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	1,289.9	1,357.9	1,379.7	1,356.2	1,295.9	1,409.7	1,497.0	1,480.5	1,431.3	1,316.4
Intramural	405.6	385.9	408.2	451.9	487.7	679.7	547.0	510.6	462.1	463.5
Industry	694.2	762.5	757.6	680.3	591.9	503.6	742.1	766.1	784.2	672.8
FFRDC (Ind.)	0.8	1.4	2.1	2.0	2.5	2.0	0.7	2.3	2.4	—
Univ. & College	95.6	109.0	99.7	108.6	106.0	96.7	96.4	83.2	82.2	80.0
FFRDC (U&C)	78.1	81.2	100.3	95.7	92.1	102.9	88.2	98.2	90.5	89.1
Other Non-Profit	6.5	10.6	10.8	16.8	15.0	22.6	20.8	18.3	9.3	10.6
FFRDC (Other Non-Profit)	0.5	0.7	0.4	0.5	0.3	0.9	0.1	1.6	0.5	0.4
Other	8.1	6.2	—	—	—	—	—	—	—	—
Foreign	0.4	0.5	0.5	0.5	0.4	1.3	1.6	0.3	—	0.1

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 27
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	3,661.6	3,692.1	3,488.3	3,073.2	2,667.4	2,390.2	1,761.0	1,676.7	1,768.4	1,652.8
Intramural	457.5	486.3	405.0	339.3	333.2	308.4	362.1	416.7	439.1	448.2
Industry	3,158.0	3,164.3	3,039.2	2,699.4	2,303.5	2,012.6	1,331.4	1,191.2	1,267.5	1,145.0
FFRDC (Ind.)	0.2	—	0.3	0.4	1.0	2.3	2.4	0.2	*	—
Univ. & College	28.5	22.4	24.4	22.0	19.1	34.5	37.6	35.8	35.3	34.4
FFRDC (U&C)	6.0	8.2	5.8	7.1	8.1	23.9	21.0	25.8	24.2	23.5
Other Non-Profit	10.1	10.5	12.8	4.5	2.2	8.4	6.0	4.3	2.2	1.8
FFRDC (Other Non-Profit)	1.0	0.5	0.4	0.1	0.2	0.1	0.3	2.2	—	—
Other	—	—	—	—	—	—	—	—	—	—
Foreign	0.3	—	0.4	0.4	0.2	0.1	0.2	0.6	0.1	—

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XVII.

E — Estimate

* — Less than 0.05.

TABLE 28

ATOMIC ENERGY COMMISSION
RESEARCH AND DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	1,240.7	1,212.4	1,257.3	1,369.0	1,405.9	1,346.0	1,302.9	1,297.7	1,358.4	1,411.4
Intramural	30.9	19.9	15.1	16.5	17.0	17.5	16.8	16.3	17.2	17.1
Industry	342.5	324.7	320.6	364.3	373.1	300.0	265.6	216.3	220.4	255.6
FFRDC (Ind.)	381.1	342.4	372.2	399.0	407.2	409.6	465.6	515.0	543.2	530.7
Univ. & College	74.4	82.2	89.5	92.6	101.4	100.3	93.9	84.5	84.4	86.5
FFRDC (U&C)	320.1	391.6	405.7	432.9	441.4	448.0	432.3	438.1	464.6	491.1
Other Non-Profit	9.1	9.8	11.0	12.9	10.9	9.7	8.2	10.6	9.3	9.5
FFRDC (Other Non-Profit)	78.2	35.9	39.3	48.3	54.1	59.9	19.7	16.1	18.1	20.1
Other	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Foreign	4.1	5.7	3.6	2.3	0.6	0.6	0.6	0.6	1.1	0.7

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 29

ATOMIC ENERGY COMMISSION
RESEARCH OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	334.0	370.9	391.7	402.0	417.3	433.1	429.0	417.1	434.0	458.0
Intramural	6.1	6.0	5.6	5.4	5.2	4.8	4.9	4.6	5.3	5.4
Industry	3.7	6.8	4.1	4.4	4.7	3.6	3.0	2.6	3.2	3.4
FFDRC (Ind.)	53.0	56.8	59.6	58.9	62.5	66.6	69.6	64.4	63.9	65.2
Univ. & College	70.8	79.3	85.8	89.1	97.7	96.6	89.6	81.0	80.7	83.0
FFRDC (U & C)	146.1	205.8	220.3	227.0	230.3	244.7	244.7	243.2	258.7	277.4
Other Non-Profit	5.7	5.5	5.5	6.1	5.5	4.8	4.5	8.5	7.9	8.5
FFRDC (Other Non-Profit)	44.3	6.3	9.9	10.5	10.6	11.3	12.0	12.0	13.7	14.4
Other	0.3	0.2	0.2	—	0.1	0.1	0.1	0.1	0.1	0.1
Foreign	4.0	4.2	0.8	0.6	0.6	0.6	0.6	0.6	0.5	0.6

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol XV-XXII.

E—Estimate

TABLE 30

**ATOMIC ENERGY COMMISSION
DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1965-1974
(Millions of Dollars)**

PERFORMER	1965	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	906.7	841.5	865.6	967.0	988.6	912.9	873.9	880.5	924.5	953.4
Intramural	24.8	14.0	9.5	11.2	11.8	12.7	11.9	11.6	11.9	11.7
Industry	338.8	317.9	316.5	359.9	368.3	296.5	262.6	213.7	217.2	252.2
FFRDC (Ind.)	328.1	285.6	312.7	340.2	344.7	343.0	396.1	450.6	479.3	465.5
Univ. & College	3.6	2.9	3.7	3.5	3.7	3.7	4.3	3.5	3.7	3.5
FFRDC (U & C)	174.0	185.8	185.4	205.9	211.1	203.3	187.6	194.9	206.0	213.7
Other Non-Profit	3.4	4.2	5.6	6.8	5.3	4.9	3.7	2.1	1.4	1.0
FFRDC (Other Non-Profit)	33.9	29.7	29.4	37.8	43.4	48.6	7.8	4.1	4.4	5.7
Other	—	—	—	0.1	0.1	0.2	0.1	0.1	0.1	—
Foreign	0.1	1.4	2.8	1.7	*	*	*	—	0.6	—

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E—Estimate

*—Less than 0.05

TABLE 31

**DEPARTMENT OF TRANSPORTATION
RESEARCH AND DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1966-1974
(Millions of Dollars)**

PERFORMER	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	171.7	283.6	171.7	228.0	317.3	482.5	351.2	366.9	425.1
Intramural	41.2	45.1	51.9	53.7	64.2	101.4	71.5	74.1	80.5
Industry	125.9	212.4	90.0	132.4	206.4	333.6	218.1	225.2	258.5
FFRDC (Ind.)	*	—	—	—	—	*	—	—	—
Univ. & College	1.4	11.1	11.9	12.8	10.9	9.9	13.3	15.7	22.1
FFRDC (U & C)	—	—	—	1.7	—	6.1	0.8	0.4	0.5
Other Non-Profit	1.5	1.9	2.1	6.0	10.3	2.1	6.6	7.1	7.7
FFRDC (Other Non-Profit)	1.5	2.2	3.3	4.9	3.2	7.0	9.5	9.0	10.8
Other	0.1	10.8	12.5	16.2	22.4	22.3	31.4	35.4	45.1
Foreign	*	—	*	0.2	—	0.1	—	—	—

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

E—Estimate

*—Less than 0.50

TABLE 32

**DEPARTMENT OF TRANSPORTATION
DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1966-1974
(Millions of Dollars)**

PERFORMER	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	153.3	238.6	116.1	160.1	229.1	309.3	230.9	242.4	272.3
Intramural	28.5	31.3	30.9	27.2	32.4	48.1	40.5	43.7	46.8
Industry	122.5	201.1	77.1	116.9	189.6	244.5	159.8	168.8	187.6
FFRDC (Ind.)	—	—	—	—	—	—	—	—	—
Univ. & College	0.2	2.1	2.7	4.7	0.3	1.8	5.7	3.6	3.7
FFRDC (U&C)	—	—	—	0.8	—	5.9	—	—	—
Other Non-Profit	0.6	0.3	0.4	1.5	0.6	0.4	2.1	2.5	2.6
FFRDC (Other Non-Profit)	1.5	2.1	2.4	3.1	2.9	3.7	7.8	7.2	8.8
Other	—	1.7	2.6	5.8	3.3	4.9	14.9	16.7	22.9
Foreign	—	—	—	—	—	0.1	—	—	—

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 33

**DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
RESEARCH AND DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1966-1974
(Millions of Dollars)**

PERFORMER	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	1,014.4	1,146.6	1,251.8	1,297.4	1,221.0	1,467.1	1,751.1	1,807.7	1,900.2
Intramural	181.7	204.4	221.5	243.4	246.6	297.5	327.6	352.3	369.4
Industry	36.5	51.7	48.1	60.5	43.7	54.7	85.3	99.8	104.3
FFRDC (Ind.)	—	—	—	0.2	—	—	—	—	—
Univ. & College	537.6	619.8	671.3	695.0	646.6	761.7	915.9	887.9	943.0
FFRDC (U&C)	—	7.9	13.0	10.6	8.0	7.2	9.2	0.8	0.8
Other Non-Profit	187.1	187.6	188.7	178.7	184.4	216.5	249.9	303.4	329.5
FFRDC (Other Non-Profit)	—	15.8	24.2	24.9	27.7	27.3	25.9	5.6	5.9
Other	50.2	37.4	59.7	55.5	48.4	76.4	111.9	123.5	113.5
Foreign	21.3	21.9	25.3	28.7	15.6	34.8	25.4	34.5	33.8

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 34
DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
RESEARCH OBLIGATIONS
BY PERFORMER
FY 1966-1974
(Millions of Dollars)

PERFORMER	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	966.2	1,082.0	1,147.1	1,174.1	1,129.3	1,302.3	1,464.4	1,467.9	1,548.6
Intramural	173.6	188.3	193.2	220.4	235.7	278.2	302.2	318.9	335.4
Industry	35.3	50.6	40.1	45.4	38.9	37.9	47.2	58.8	62.3
FFRDC (Ind.)	—	—	—	—	—	—	—	—	—
Univ. & College	520.6	599.9	649.7	659.4	621.9	698.2	805.7	751.2	796.0
FFRDC (U&C)	—	7.8	8.7	5.8	4.9	4.9	4.3	0.7	0.7
Other Non-Profit	168.0	178.2	172.4	166.4	163.3	189.2	216.8	250.7	264.4
FFRDC (Other Non-Profit)	—	*	1.5	1.1	2.6	3.3	3.2	1.4	1.7
Other	47.8	35.9	56.6	48.1	46.9	56.2	61.2	52.2	54.6
Foreign	21.0	21.3	24.7	27.5	15.1	34.4	23.7	33.9	33.4

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 35
DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1966-1974
(Millions of Dollars)

PERFORMER	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	48.2	64.6	104.7	123.4	91.7	173.7	286.7	339.8	351.6
Intramural	8.1	16.2	28.3	23.0	10.9	19.3	25.4	33.4	34.0
Industry	1.2	1.1	7.9	15.1	4.8	16.9	38.1	41.0	41.9
FFRDC (Ind.)	—	—	—	0.2	—	—	—	—	—
Univ. & College	17.0	19.9	21.6	35.7	24.7	63.6	110.2	136.6	147.0
FFRDC (U&C)	—	0.1	4.3	4.8	3.1	2.2	4.9	0.1	0.1
Other Non-Profit	19.2	9.5	16.3	12.3	21.1	27.2	33.0	52.6	65.1
FFRDC (Other Non-Profit)	—	15.8	22.6	23.8	25.2	24.0	22.7	4.2	4.2
Other	2.4	1.4	3.1	7.4	1.5	20.2	50.7	71.3	58.9
Foreign	0.4	0.7	0.6	1.2	0.5	0.4	1.8	0.6	0.4

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vols. XV-XXII.

E — Estimate

TABLE 36
NATIONAL SCIENCE FOUNDATION
RESEARCH AND DEVELOPMENT OBLIGATIONS
BY PERFORMER
FY 1966-1974
(Millions of Dollars)

PERFORMER	1966	1967	1968	1969	1970	1971	1972	1973 ^E	1974 ^E
TOTAL	227.3	262.4	283.5	273.8	289.0	336.9	454.8	462.4	525.1
Intramural	13.3	12.2	12.2	15.0	13.9	19.4	17.9	19.1	21.5
Industry	2.9	1.7	1.4	1.5	2.8	3.5	4.7	5.2	13.4
FFRDC (Ind.)	—	—	—	—	—	2.6	4.8	2.5	4.8
Univ. & College	179.9	208.8	221.0	212.6	228.0	266.6	362.5	368.2	408.7
FFRDC (U&C)	15.3	16.9	21.2	24.5	25.7	31.5	40.4	39.4	42.6
Other Non-Profit	14.4	22.3	22.2	17.3	15.9	7.8	16.3	17.0	19.5
FFRDC (Other Non-Profit)	—	—	5.0	2.7	0.8	1.9	5.6	4.5	7.0
Other	1.0	0.1	0.1	—	0.1	2.9	0.8	2.0	3.5
Foreign	0.5	0.5	0.3	0.2	1.8	0.8	1.9	4.6	4.1

Source: NSF, *Federal Funds for Research, Development and Other Scientific Activities*, Vol. XV-XXII.

E — Estimate

TABLE 37
ARMY RESEARCH, DEVELOPMENT, TEST & EVALUATION ACTIVITIES
BY FACILITY
FISCAL YEARS 1969 & 1973
(Millions of Dollars)

FACILITY	1969		1973	
	TOTAL RDT&E	IN-HOUSE RDT&E	TOTAL RDT&E	IN-HOUSE RDT&E
Aeromedical Research Unit	\$ 0.5	\$ 0.5	\$ 1.8	\$ 1.8
Air Defense Board	2.2	2.2	2.8	2.7
Airborne Comm. & Electrical Lab.	1.2	1.2	2.1	2.1
Arctic Test Center	2.4	2.4	2.9	2.9
Armor & Engineering Board	1.9	1.9	2.2	2.2
Material Systems Analysis Agency	13.7	11.8	11.0	6.6
Aviation Testing Board	5.7	3.4	6.3	3.8
Ballistics Research Lab.	19.0	13.8	38.4	23.9
Colorado Regions Research & Evaluation Lab.	3.7	3.4	4.7	3.9
Construction Engineering Research Lab.	2.3	2.3	6.2	3.5
Desert Test Center	26.3	23.1	11.8	11.1
Edgewood Arsenal	43.6	32.5	31.5	29.3
Electronic Proving Ground	13.0	9.9	7.9	5.3
Engineer Topographic Lab.	9.4	4.2	10.0	6.2
Engineer Waterways Experimental Station	10.9	9.6	14.5	12.2
Frankford Arsenal Lab.	33.0	17.6	27.2	20.3
Harry Diamond Lab.	24.3	12.1	43.0	23.2
Human Engineering Lab.	3.1	2.3	6.0	4.7
Infantry Board	0.9	0.7	1.2	1.2
Institute of Dental Research	0.5	0.5	0.9	0.9
Institute of Surgical Research	0.9	0.9	1.6	1.6
Letterman Army Institute of Research	0.5	0.5	0.6	0.6
Materials & Mechanics Research Station	8.0	7.2	19.0	11.3
Medical Research & Nutrition Lab.	2.2	2.2	2.6	2.6
Medical Research Institute of Infectious Diseases	3.5	2.0	6.6	6.6
Medical Research Lab.	1.7	1.7	1.7	1.7
Medical Research Unit (K.L.)	0.2	0.2	0.3	0.3
Medical Research Unit (C.Z.)	0.2	0.2	0.1	0.1
Missile, Research, Development & Engineering Lab.	71.9	29.9	91.6	33.4
Mobility Equipment Research & Development Center	40.4	14.1	49.7	19.0
Natick Labs.	18.4	11.3	22.8	15.6
Picatinny Arsenal Lab.	63.1	41.0	80.3	42.3
Research Inst. of Environmental Medicine	2.3	2.3	2.9	2.9
Rock Island Arsenal Lab.	16.7	5.9	14.7	10.0
Tank Automotive Lab.	23.8	11.6	34.1	14.9
Tropic Test Center	3.4	3.3	2.6	2.6
Walter Reed Institute of Research	13.7	13.3	15.2	15.2
White Sands Missile Range	94.1	74.5	92.7	73.8
Yuma	7.1	7.1	10.9	9.8
Total	589.7	384.6	682.4	432.1

Source: Department of Defense

TABLE 38

**ARMY RESEARCH, DEVELOPMENT, TEST & EVALUATION ACTIVITIES
BY FACILITY
FISCAL YEARS 1969 & 1973
(Millions of Dollars)**

FACILITY	1969		1973	
	TOTAL RDT&E	IN-HOUSE RDT&E	TOTAL RDT&E	IN-HOUSE RDT&E
Air Mobility Research & Development Lab.	\$	\$	\$ 37.9	\$ 12.4
Atmospheric Sciences Lab.			9.8	8.7
Aviation Systems Test Activity			4.4	4.4
Avionics Lab.			12.7	10.5
Benet Weapons Lab.			10.7	8.3
Combat Surveillance Lab.			40.7	14.2
Communications ADP Lab.			21.6	10.9
Electronic Warfare Lab.			32.1	14.8
Electronic Technology & Devices Lab.			16.7	9.9
Field Artillery Board			1.1	1.1
Land Warfare Lab.			7.2	4.5
Material Testing Directorate			9.5	9.4
Medical Bio-Engineering Research & Development Lab.			1.4	1.4
Night Vision Lab.			38.2	16.0
Research & Development Technology Support Activity			9.9	9.7
Research Institute for Behavioral & Social Science			5.7	2.8
Limited War Lab.	8.4	4.5		
Behavioral Scientific Research Lab.	2.7	1.7		
Engineer Reactor Group	1.4	1.0		
Engineer Topographic Lab.	9.4	4.2		
Coating and Chemical Lab.	2.3	0.7		
Nuclear Defense Lab.	2.7	2.3		
Aviation Material Lab.	22.3	5.8		
Aviation Test Activity	2.8	2.8		
Electronic Research & Development Lab.	196.2	94.6		
Biological Lab.	21.1	18.7		
Waterviolet Arsenal	5.5	4.8		
Development & Project Services	8.8	8.5		
Ground Equipment Test Activity	2.7	2.2		
Aberdeen Research & Development Center	0.3	0.2		
Total	286.6	152.0	259.6	139.0

Source: Department of Defense

Note: From the various DOD sources readily available, comparable data could not be obtained for some facilities for both 1969 and 1973.

TABLE 39

**NAVY RESEARCH, DEVELOPMENT, TEST & EVALUATION ACTIVITIES
BY FACILITY**

FISCAL YEARS 1969 & 1973
(Millions of Dollars)

FACILITY	1969		1973	
	TOTAL RDT&E	IN-HOUSE RDT&E	TOTAL RDT&E	IN-HOUSE RDT&E
Aerospace Medical Research Lab.	\$ 3.0	\$ 2.8	\$ 3.3	\$ 3.3
Air Development Center	68.7	43.9	87.5	42.4
Air Engineering Center	9.9	6.2	9.8	6.7
Air Propulsion Test Center	9.1	7.7	12.6	9.1
Air Test Center	32.7	29.2	31.8	27.9
Air Test Facility	5.3	4.9	1.5	1.4
Civil Engineering Lab.	5.2	3.8	10.6	9.6
Clothing & Textile Research Institute	0.7	0.7	0.8	0.8
Dental Research Institute	0.2	0.2	0.3	0.3
Electronics Lab Center	27.3	24.8	32.1	22.5
Explosive Ordnance Disposal Facility	1.3	0.6	2.7	1.5
Medical Field Research Lab.	0.6	0.6	0.8	0.8
Medical Research Institute	4.7	4.7	5.1	5.1
Medical Research Unit #2	1.3	1.3	1.6	1.6
Medical Research Unit #3	1.1	1.1	0.9	0.9
Medical Research Unit #4	0.7	0.7	0.7	0.7
Missile Center	27.2	18.3	27.5	24.4
Naval Ordnance Lab.	61.4	42.7	73.6	41.6
Ordnance Missile Test Facility	1.7	1.2	2.2	1.6
Research Lab.	89.9	80.9	158.9	153.6
Ship Research & Development Center	30.9	28.3	96.7	44.9
Space Systems Activity	2.4	0.4	4.4	0.8
Submarine Medical Research Lab.	1.3	1.3	1.4	1.4
Undersea Center	37.9	26.4	50.3	33.2
Naval Unit (Ft. Detrick)	0.2	0.1	0.1	0.1
Weapons Center	107.4	60.3	101.7	63.3
Weapons Evaluation Facility	1.7	1.7	1.0	1.0
Weapons Lab.	22.1	19.2	37.9	30.6
Weapons Neuropsych Research Unit	0.7	0.7	1.3	1.3
Personnel Research & Development Center	2.6	2.6	6.2	5.7
Toxicology Unit	0.1	0.1	0.4	0.4
Pacific Missile Range	70.3	41.2	67.0	43.1
Total	629.6	458.6	832.7	581.8

Source: Department of Defense

TABLE 40
NAVY RESEARCH, DEVELOPMENT, TEST & EVALUATION ACTIVITIES
BY FACILITY
FISCAL YEARS 1969 & 1973
(Millions of Dollars)

FACILITY	1969		1973	
	TOTAL RDT&E	IN-HOUSE RDT&E	TOTAL RDT&E	IN-HOUSE RDT&E
Environmental Prediction Research Facility	\$	\$	\$ 1.4	\$ 0.9
Aerospace Recovery Facility			2.5	2.4
Coastal Systems Lab.			10.5	9.1
Underwater Systems Center			47.7	40.4
Underwater Weapons Station	15.0	10.4		
Ship Research & Development Lab #1	12.5	9.2		
Training Devices Center	16.6	9.5		
Ship Research & Development Lab #2	13.6	12.4		
Applied Sciences Lab.	12.7	9.1		
Radiological Defense Lab.	8.9	7.6		
Aerospace Recovery Facility	2.6	2.4		
Electronic Systems Testing & Evaluation Center	1.3	1.3		
Total	83.2	61.9	62.1	52.8

Source: Department of Defense

Note: From the various DOD sources readily available, comparable data could not be obtained for some facilities for both 1969 and 1973.

TABLE 41
AIR FORCE RESEARCH, DEVELOPMENT, TEST & EVALUATION ACTIVITIES
BY FACILITY
FISCAL YEARS 1969 & 1973
(Millions of Dollars)

FACILITY	1969		1973	
	TOTAL RDT&E	IN-HOUSE RDT&E	TOTAL RDT&E	IN-HOUSE RDT&E
Aeropropulsion Lab.	\$ 47.4	\$ 5.8	\$ 54.5	\$ 8.5
Aerospace Research Lab.	13.1	6.5	11.4	6.5
Armament Development & Testing Center	76.1	41.1	114.8	57.6
Arnold Engineering & Development Center	48.7	6.8	47.3	12.6
Avionics Lab.	91.5	6.1	103.6	11.9
Cambridge Research Lab.	62.4	26.5	54.4	33.5
Flight Dynamics Lab.	43.3	10.5	51.5	24.1
Flight Test Center	34.1	29.6	48.1	36.3
Frank J. Seeler Research Lab.	0.3	0.3	0.5	0.5
Human Research Lab.	3.3	1.5	13.8	4.5
Materials Lab.	30.4	1.7	35.4	10.2
Rocket Propulsion Lab.	36.0	10.8	24.3	10.0
Rome Air Development Center	68.4	20.5	95.5	22.2
Weapons Lab.	50.3	12.3	79.3	29.2
Aerospace Medical Research Lab.	9.0	3.4	13.1	5.8
Total	614.3	183.4	747.5	273.4

Source: Department of Defense

TABLE 42
AIR FORCE RESEARCH, DEVELOPMENT, TEST & EVALUATION ACTIVITIES
BY FACILITY
FISCAL YEARS 1969 & 1973
(Millions of Dollars)

FACILITY	1969		1973	
	TOTAL RDT&E	IN-HOUSE RDT&E	TOTAL RDT&E	IN-HOUSE RDT&E
Space & Missile Test Center	\$	\$	\$ 57.5	\$ 7.9
USAF School of Aerospace			10.3	8.5
Aeromedical Lab.	2.5	1.4		
School of Aviation Medicine	10.6	7.4		
Aerospace Medical Lab.	0.2	0.2		
Armament Lab.	33.6	5.4		
Special Weapons Center	20.7	16.9		
Missile Development Center	42.3	35.4		
Eastern Test Range	200.8	45.2		
Western Test Range	80.3	22.1		
Total	391.0	134.0	67.8	16.4

Source: Department of Defense

Note: From the various DOD sources readily available, comparable data could not be obtained for some facilities for both 1969 and 1973.

TABLE 43

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
RESEARCH AND DEVELOPMENT FUNDING
INTRAMURAL & EXTRAMURAL**

FY 1969 & 1972
(Millions of Dollars)

CENTER	1969		1972	
	INTRAMURAL	EXTRAMURAL	INTRAMURAL	EXTRAMURAL
Ames	59.9	45.0	54.3	30.0
Electronic	26.8	17.3	—	—
Flight	22.5	3.7	19.5	0.7
Goddard	73.9	296.1	67.0	229.8
Kennedy	473.0	23.0	382.6	15.4
Langley	105.7	37.6	95.6	19.1
Lewis	93.4	85.1	83.6	58.0
Manned	287.4	589.5	259.7	441.7
Marshall	—	380.4	377.0	260.4
Wallops	15.8	1.9	13.5	1.5
Nuclear	16.7	—	15.2	—
Total	1,223.0	1,479.6	1,368.0	1,056.6

TABLE 44

**DEPARTMENT OF TRANSPORTATION RESEARCH PROGRAMS
BY FACILITY**

FY 1969, 1972, 1973
(Thousands of Dollars)

FACILITY	1969	1972	1973
NAFEC*	25,200	25,066	22,748
Ground Transportation Proving Center	—	8,739	12,348
Transportation Systems Center	—	28,643	32,143
Aeronautical Center	1,800	3,400	2,160

Source: NSF, *Directory of Federal R&D Installations*, 1969, p. 903-929; DOT, 1972 and 1973.

*NAFEC — National Aviation Facilities Experimental Center

TABLE 45
DEPARTMENT OF TRANSPORTATION RESEARCH SUPPORT
INTRAMURAL & EXTRAMURAL
FY 1969, 1972, 1973
(Thousands of Dollars)

FACILITY	1969		1972		1973	
	INTRA-MURAL	EXTRA-MURAL	INTRA-MURAL	EXTRA-MURAL	INTRA-MURAL	EXTRA-MURAL
NAFEC*	23,300	1,900	11,435	13,630	11,877	10,870
Aeronautical Center	1,800	—	822	2,578	823	1,337
Ground Transportation Proving Center	—	—	2,531	6,208	3,571	8,777
Transportation Systems Center	—	—	8,295	20,348	9,295	22,848

Source: NSF, *Directory of Federal R&D Installations*, 1969; 1972 and 1973 data computed.

*NAFEC — National Aviation Facilities Experimental Center

TABLE 46

**DEPOT LEVEL MAINTENANCE OF AIRCRAFT, ENGINES AND ACCESSORIES
ARMY, NAVY AND AIR FORCE**

FY 1966-1974
(Millions of Dollars)

YEAR	ARMY					NAVY					AIR FORCE				
	Total	Contract		In-House		Total	Contract		In-House		Total	Contract		In-House	
		Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent
1966	\$ 87.1	\$ 37.8	43.4 %	\$ 49.3	56.6 %	\$ 351.3	\$ 60.5	17.2 %	\$ 290.8	82.8 %	\$ 375.9	\$ 123.9	33.0 %	\$ 252.0	67.0 %
1967	123.1	62.0	50.4	61.1	49.6	383.3	64.3	16.8	319.3	83.2	586.0	311.2	53.1	274.8	46.9
1968	186.6	89.0	47.7	97.6	52.3	400.3	64.3	16.1	336.0	83.9	662.3	383.3	57.9	279.0	42.1
1969	279.0	129.4	46.4	149.6	53.6	654.5	106.3	16.2	548.5	83.8	1,154.4	604.9	52.4	549.6	47.6
1970	285.0	142.6	50.0	142.4	50.0	595.4	121.3	20.4	474.1	79.6	1,074.1	495.0	46.1	579.1	53.9
1971	262.4	156.1	59.5	106.3	40.5	527.2	87.8	16.7	439.4	83.3	1,039.3	469.4	45.2	569.9	54.8
1972	239.7	108.0	45.1	131.7	54.9	526.6	126.0	23.9	400.6	76.1	1,072.8	463.1	43.2	609.7	56.8
1973	231.6	89.2	38.5	142.4	61.5	542.0	125.0	23.1	417.0	76.9	1,156.1	514.7	44.5	641.4	55.5
1974 ^E	174.6	55.6	31.8	119.0	68.2	541.2	236.6	25.2	405.2	74.8	1,150.8	496.2	43.1	654.6	56.9

E — Estimate

TABLE 47
DEPARTMENT OF THE ARMY SERVICE SUPPORT CONTRACTS
FY 1968-1974
(Millions of Dollars)

Year	Contracts					O&M Outlays	Contracts as Percent of O&M Outlays
	Technical Engineering	Personnel Services	Management Services	Contractor-Operated Facilities	Total		
1968	\$ 36.7	\$ 45.2	\$ 30.7	\$ 115.9	\$ 228.4	\$ 7,929.5	2.9 %
1969	36.0	27.0	25.8	122.1	210.8	8,029.9	2.6
1970	41.0	14.9	4.2	127.3	187.4	7,570.2	2.5
1971	28.1	12.0	5.8	106.9	152.8	7,124.3	2.1
1972	41.4	21.2	8.7	79.7	151.0	7,179.5	2.1
1973	—	—	—	—	—	6,339.2	—
1974	—	—	—	—	—	6,731.0	—

NOTE: All data reflects outlays as reported in official Department of Defense documents; inter-agency and inter-program transfers are not accounted for.

TABLE 48
DEPARTMENT OF THE NAVY SERVICE SUPPORT CONTRACTS
FY 1968-1974
(Millions of Dollars)

Year	Contracts					O&M Outlays	Contracts as Percent of O&M Outlays
	Technical Engineering	Personnel Services	Management Services	Contractor-Operated Facilities	Total		
1968	\$ 103.2	\$ 41.0	\$ 10.0	\$ 9.9	\$ 164.0	\$ 4,730.3	3.5 %
1969	76.3	35.3	9.1	15.1	134.1	5,336.5	2.5
1970	52.1	30.8	2.4	14.2	99.6	5,108.8	1.9
1971	34.4	23.0	1.6	15.0	73.9	5,072.1	1.5
1972	29.9	24.7	0.4	16.2	71.2	5,308.0	1.3
1973 ^E	30.7	25.4	0.4	14.8	71.3	5,250.3	1.4
1974 ^E	76.7	25.7	0.4	26.1	128.8	6,573.5	2.0

NOTE: All data reflects outlays as reported in official Department of Defense documents; inter-agency and inter-program transfers are not accounted for.

E — Estimate

TABLE 49
DEPARTMENT OF THE AIR FORCE SERVICE SUPPORT CONTRACTS
FY 1968-1974
(Millions of Dollars)

Year	Contracts					O&M Outlays	Contracts as Percent of O&M Outlays
	Technical Engineering	Personnel Services	Management Services	Contractor-Operated Facilities	Total		
1968	\$ 147.1	\$ 91.6	\$ *	\$ 97.3	\$ 336.0	\$ 5,943.8	5.7 %
1969	192.3	58.4	.2	117.0	368.0	6,811.9	5.4
1970	161.8	33.4	*	122.6	317.7	6,658.8	4.8
1971	125.6	31.3	*	146.3	303.2	6,384.6	4.7
1972	112.8	232.0	*	178.7	523.5	6,751.2	7.8
1973 ^E	92.8	264.5	*	170.7	528.0	5,460.2	9.7
1974 ^E	121.7	282.6	*	162.1	566.4	6,496.6	8.7

NOTE: All data reflects outlays as reported in official Department of Defense documents; inter-agency and inter-program transfers are not accounted for.

E — Estimate

* — Less than 0.05.



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1725 DE SALES STREET, N.W., WASHINGTON, D.C. 20036