GAO

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NAVY ADP PROCUREMENT

Contracting and Market Share Information

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Information Management and
Technology Division

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September 15, 1989

The Honorable John Conyers, Jr.
Chairman, Committee on Government Operations
House of Representatives

The Honorable Frank Horton
Ranking Minority Member, Committee on
   Government Operations
House of Representatives

This report responds to your February 1989 requests for a comprehensive review of federal agencies' compatible computer procurements.[1] In your initial requests and in subsequent discussions with your offices, we were asked to answer several specific questions about 35 agencies' procurements of mainframe computers and mainframe peripheral equipment. Your questions focused on identifying the extent to which agencies' procurements of mainframe computers and mainframe peripherals required compatibility with International Business Machines (IBM) or any other computer manufacturer. You were also interested in knowing details such as the identification of manufacturers whose equipment was acquired by each agency and the procurement methods used to obtain equipment.

Because of your interest in obtaining information about the Navy's activities first, this report answers your questions based on information we obtained from the Navy, including separate information on the Marine Corps' procurements. Information on the other agencies will be reported after we have obtained and analyzed their responses.

Key Information About the Navy's Procurements

The information we obtained from the Navy shows that during the 3 1/2 fiscal years ending in March 1989, 91 percent of the Navy's procurements for mainframes and mainframe peripherals required compatibility. The Navy required IBM compatibility in 237 of its 411 compatible procurements (58 percent). Control Data Corporation, Honeywell Bull,

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[1] A compatible procurement requires hardware or software that functions like specified or existing hardware or software, with little or no modification. Competition in such procurements may occur between manufacturers and marketers—such as system developers and system integrators—to supply equipment that meets the compatible requirements. Since there is the potential for competition between manufacturers and marketers, a compatible procurement does not necessarily result in the award of a sole source contract.

or Unisys compatibility[2] was required by the Navy in the other 174 of 411 compatible procurements (42 percent). When the Navy's procurements required IBM compatibility, IBM equipment was supplied in 171 of those 237 IBM-compatible procurements (72 percent). Furthermore, IBM was the manufacturer that most frequently supplied equipment for the Navy's mainframe and mainframe peripheral procurements overall, including both compatible and other procurements where no compatibility was required. When we used dollars for comparison—as opposed to the number of procurements—we found that in fiscal years 1986, 1988, and 1989 (through the second quarter) the Navy obligated more dollars to (1) IBM-compatible procurements than to any other type of compatible procurement and (2) IBM than to any other equipment manufacturer. Because of one $52 million contract in fiscal year 1987, the Navy obligated more to Unisys-compatible procurements and to procurements involving Unisys equipment in that year.

As requested in discussions with your offices, we also obtained information from the Navy on the procurement methods it uses, including the Navy's use of contractors that participate in the Small Business Administration's program for small disadvantaged businesses—known as 8(a) contractors. Additionally, we collected information on the Navy's procurements performed under the Warner Amendment (10 U. S. C. 2315), which exempts the Department of Defense from General Services Administration (GSA) oversight when procuring certain military-related automated data processing (ADP) resources. Further, we received information from the Navy on its operating system software procurements and on the Marine Corps' procurements of mainframe computers, mainframe peripherals, and operating system software. The detailed questions you asked and our answers are summarized in appendix I. Appendix II contains tables with detailed statistics that are the basis for our answers to your questions.

We agreed with your offices to collect and report information for the 3 1/2 fiscal years from October 1, 1985, through March 31, 1989. All the information we are reporting is based on the Navy's response to a questionnaire we devised and distributed to the 35 agencies. We did not independently validate the information, which the Navy supplied in June

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[2]Since several companies manufacture and market IBM-compatible equipment, competition in IBM-compatible procurements may occur among a variety of manufacturers and marketers. However, there are few if any companies that manufacture equipment compatible with Control Data Corporation, Honeywell Bull, or Unisys. As a result, competition in procurements requiring Control Data Corporation, Honeywell Bull, or Unisys compatibility generally occurs only between the manufacturer of the required equipment and companies marketing that manufacturer's equipment.

1989, nor did we evaluate any documentation related to individual Navy procurements. However, we checked the Navy's information for consistency with the instructions for our questionnaire and, in July 1989, the Navy clarified and revised the original information it provided after we questioned several items. At your request, we did not solicit or obtain comments from the Navy on this report. Appendix III contains additional details on the objective, scope, and methodology of our work.

As arranged with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. We will then send copies to the Secretary of Defense, the Secretary of the Navy, and the Commandant of the Marine Corps, and will also make copies available to others upon request.

This information was compiled under the direction of Jack L. Brock, Jr., Director, Government Information and Financial Management, who can be contacted at (202) 275-3195, should you require additional information. Other major contributors to this report are listed in appendix IV.

Ralph V. Carlone
Assistant Comptroller General

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Abbreviations

ADP	automated data processing
GAO	General Accounting Office
GSA	General Services Administration
IBM	International Business Machines, Inc.
IMTEC	Information Management and Technology Division

Questions and Answers About Navy Procurements

What are the numbers and dollar amounts of the Navy's mainframe and mainframe peripheral procurements requiring compatibility and is there any trend toward the increased use of compatible procurements?

The Navy initiated a total of 452 procurements and obligated a total of $276.9 million for mainframe computers and mainframe peripherals during the 3 1/2 fiscal years ending in March 1989. According to Navy statistics, compatible procurements comprised 411 of the Navy's 452 total procurements (91 percent), representing $248.5 million of the $276.9 million obligated (90 percent). In each of the 3 1/2 fiscal years ending in March 1989—using the Navy's number of procurements as a measure—the percentage of compatible procurements versus other procurements was 87 percent or higher. For the same time period, the percentage of dollars obligated to compatible procurements versus other procurements was 80 percent or higher in each year. Since the Navy's statistics indicate a consistently high percentage of compatible procurements, there was no trend toward increased compatible procurements.

Figure I.1: Number of Navy Mainframe and Mainframe Peripheral Procurements

Number of Procurements
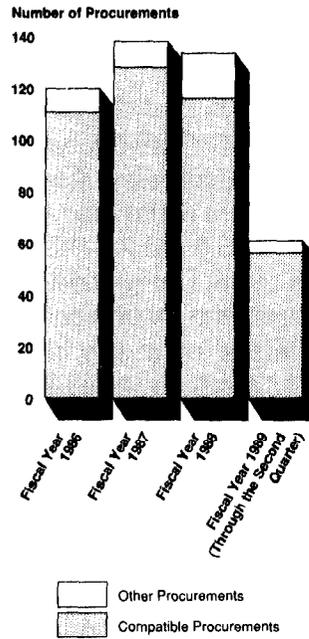
See table II.1 (page 25) for detailed statistics.

Figure I.2: Dollars for Navy Mainframe and Mainframe Peripheral Procurements

(Dollars in Millions)
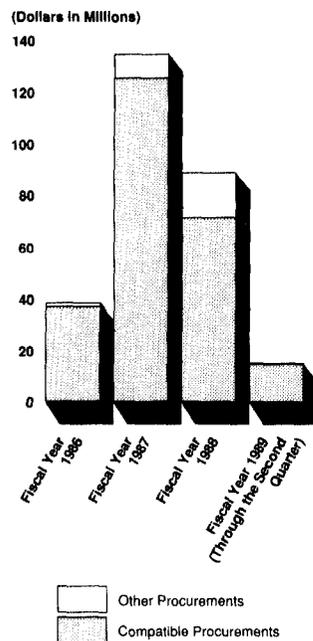
See table II.1 (page 25) for detailed statistics.

What is the distribution of the Navy's compatible mainframe and mainframe peripheral procurements according to type of compatibility?

Those procurements that the Navy identified as having a compatible requirement were for either Control Data Corporation, Honeywell Bull, IBM, or Unisys compatibility. Specifically, 237 of the 411 procurements (58 percent) were to satisfy IBM-compatible requirements representing $86 million of $248.5 million (35 percent) obligated for all compatible procurements. Also, Unisys-compatible requirements represented 37 of the 411 procurements (9 percent) and $115.1 million (46 percent) of the obligations. Unisys' relatively high percentage of the obligations was the result of one $52 million obligation for a contract in fiscal year 1987. While 111 (27 percent) of the Navy's compatible procurements were to meet Honeywell Bull-compatible requirements, they accounted for only $17.1 million (7 percent) of the $248.5 million in obligations. Procurements to meet Control Data Corporation-compatible requirements accounted for 26 (6 percent) of the compatible procurements and $30.3 million (12 percent) of the obligations for compatible mainframe and mainframe peripheral procurements by the Navy.

Figure I.3: Number of Navy Compatible Procurements According to Type of Compatibility

80   Number of Procurements

70

60

50

40

30

20

10

0

□ Fiscal Year 1986   ▨ Fiscal Year 1988
▨ Fiscal Year 1987   ■ Fiscal Year 1989 (Through the Second Quarter)
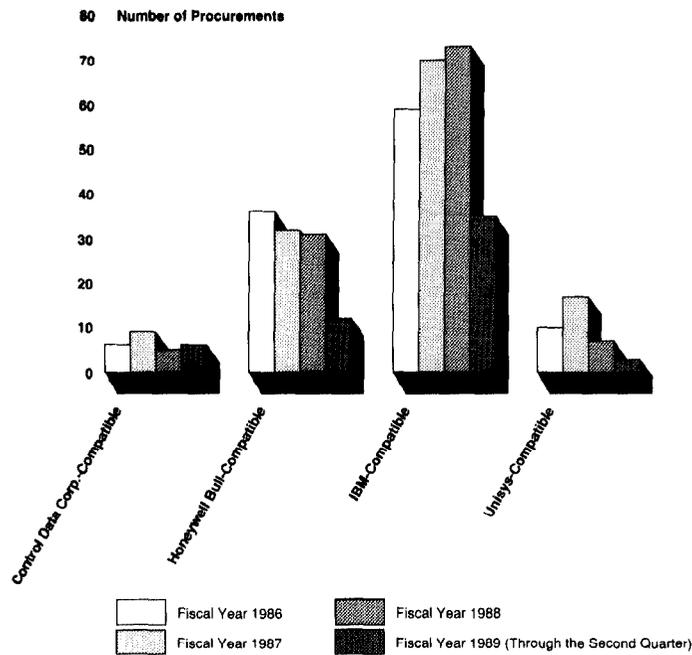
See table II.2 (page 25) for detailed statistics.

Figure I.4: Dollars for Navy Compatible Procurements According to Type of Compatibility

90   (Dollars in Millions)

80

70

60

50

40

30

20

10

0

□ Fiscal Year 1986   ▨ Fiscal Year 1988
▨ Fiscal Year 1987   ■ Fiscal Year 1989 (Through the Second Quarter)
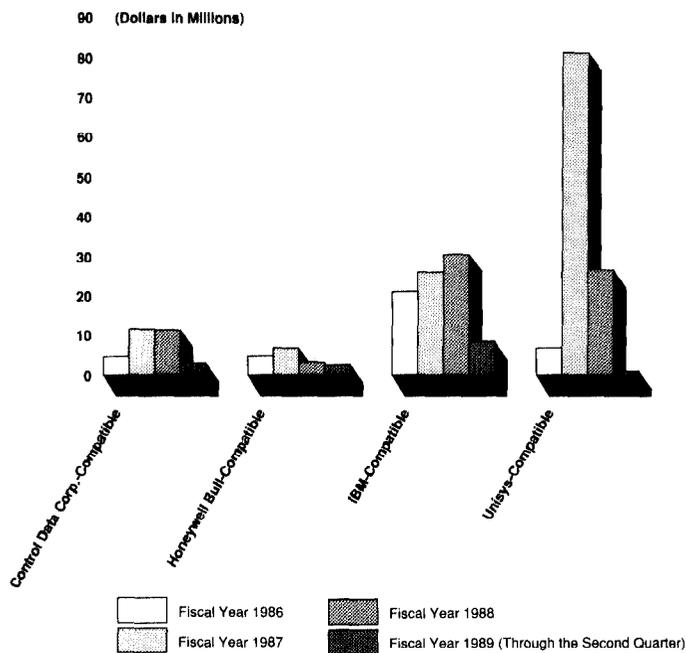
See table II.2 (page 25) for detailed statistics.

What equipment manufacturers are involved in the Navy's IBM-compatible mainframe and mainframe peripheral procurements?

The Navy obtained IBM equipment in the majority of its IBM-compatible procurements in each of fiscal years 1986 through 1989 (through the second quarter). Of the 237 IBM-compatible procurements, 171 (72 percent) resulted in the Navy obtaining IBM equipment. Similarly, of the $86 million obligated to IBM-compatible procurements, $72 million (84 percent) was used in procurements involving IBM equipment.

Figure I.5: Number of Navy IBM-Compatible Procurements According to Manufacturer of Equipment

60   Number of Procurements

Fiscal Year 1986
Fiscal Year 1987
Fiscal Year 1988
Fiscal Year 1989 (Through the Second Quarter)
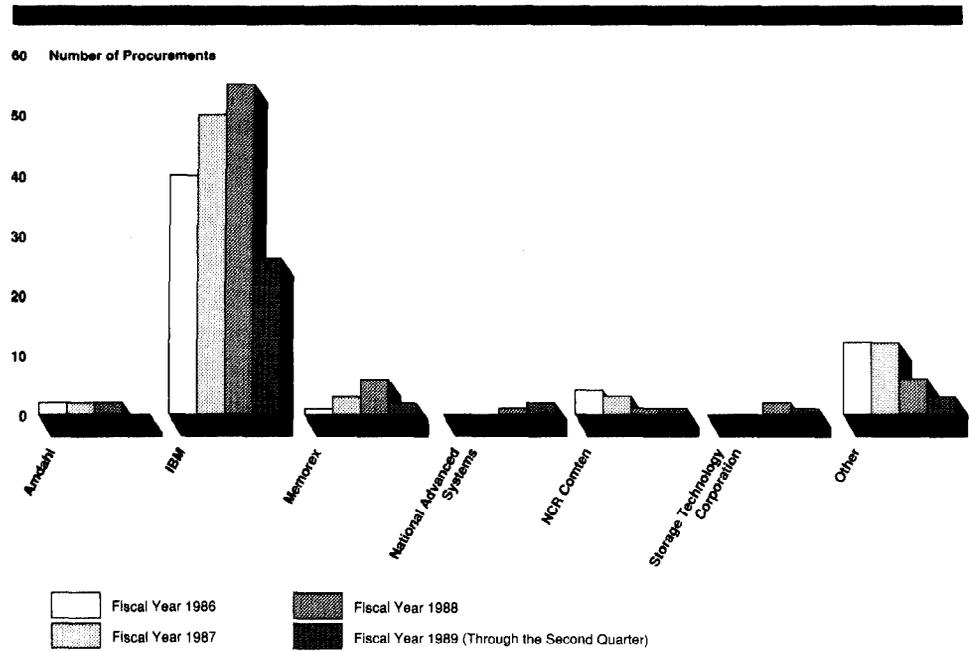
See table II.3 (page 25) for detailed statistics.

Figure I.6: Dollars for Navy IBM-Compatible Procurements According to Manufacturer of Equipment
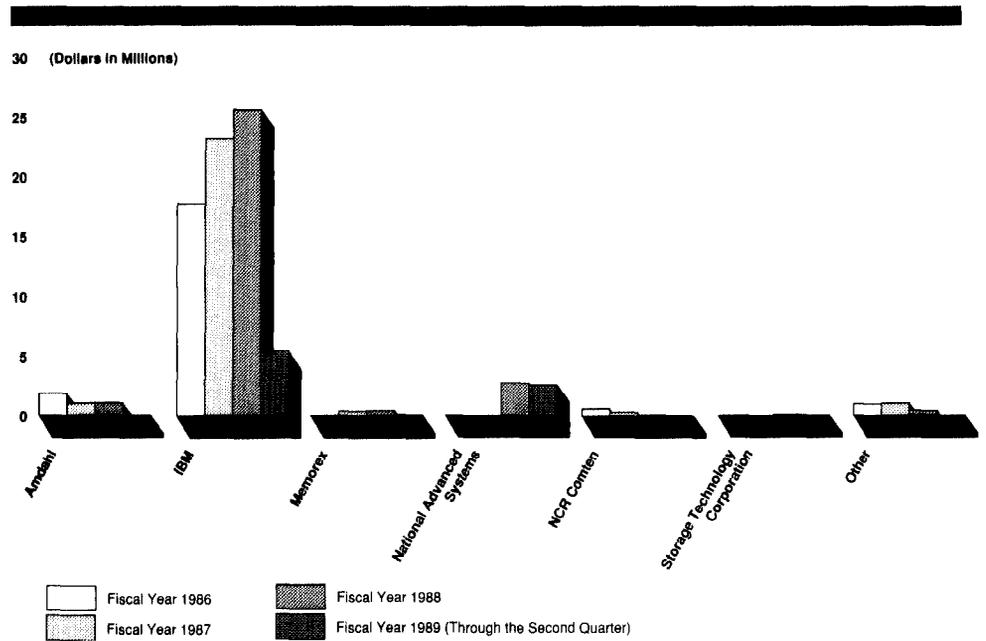
30   (Dollars in Millions)

Fiscal Year 1986
Fiscal Year 1987
Fiscal Year 1988
Fiscal Year 1989 (Through the Second Quarter)

See table II.3 (page 25) for detailed statistics.

What procurement methods were used to obtain all types of compatible mainframe computers and mainframe peripheral equipment?[3] And, did the Navy frequently use new contracts with 8(a) contractors to obtain compatible mainframes and mainframe peripherals?

Using the number of procurements as a measure, GSA schedule purchases and modifications to existing contracts were the first and second most frequently used methods of obtaining equipment when the Navy identified compatible requirements. However, when measured using obligated dollars, the Navy performed most procurements that required compatibility by using sole source new contracts, because of a $52 million sole source new contract with Unisys in fiscal year 1987. Modifications to existing contracts and new contracts with more than one offeror were the second and third most used procurement methods, when measured in obligated dollars. New contracts with companies designated as 8(a) firms by the Small Business Administration were used by the Navy in 2 of 411 compatible procurements.

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[3]We used the following eight mutually exclusive procurement methods to group the Navy's procurements. The first three methods represent specific types of new contracts with mainframe and peripheral equipment manufacturers. (1) Sole source new contracts resulted from soliciting and negotiating with only one source. (2) New contracts with one offeror resulted from competitive procedures where only one company remained in the procurement process at the time the awardee was selected. (3) New contracts with more than one offeror resulted from competitive procedures where the awardee was selected from among multiple competitors. (4) New contracts with developers and integrators include all new contracts with companies that create systems using equipment manufactured by others—except (5) those new contracts separately identified as awarded to 8(a) firms. (6) Modifications to existing contracts include all contract modifications. (7) GSA schedule purchases are orders using GSA's multiple award schedule contracts. (8) The other category includes miscellaneous procurement methods.
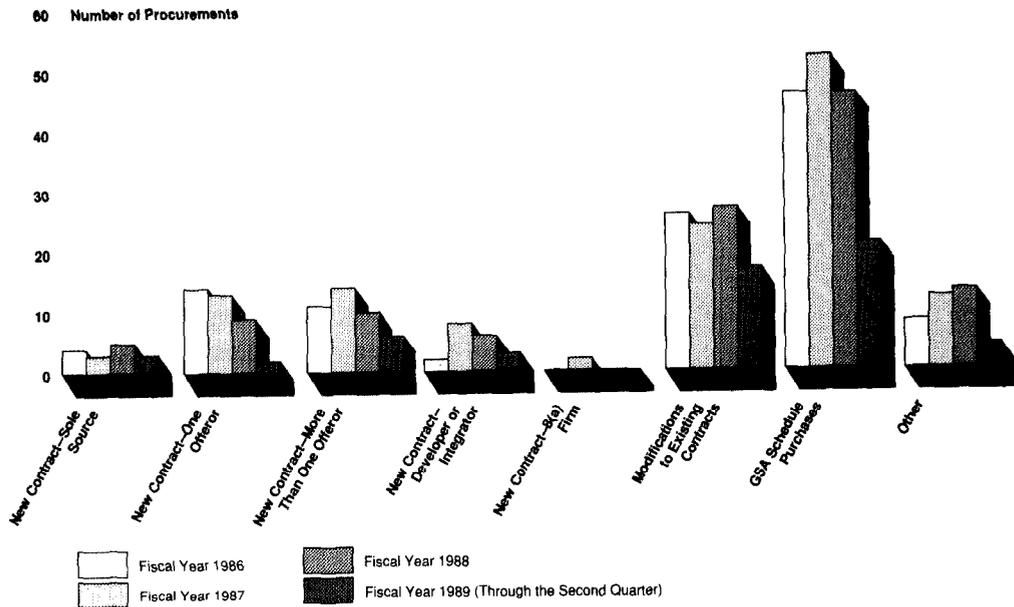
Figure I.7: Number of Navy Compatible Procurements According to Procurement Method

60   Number of Procurements

| | Fiscal Year 1986 | | Fiscal Year 1988 |
| Fiscal Year 1987 | | Fiscal Year 1989 (Through the Second Quarter) |

See table II.4 (page 26) for detailed statistics.

Figure I.8: Dollars for Navy Compatible Procurements According to Procurement Method
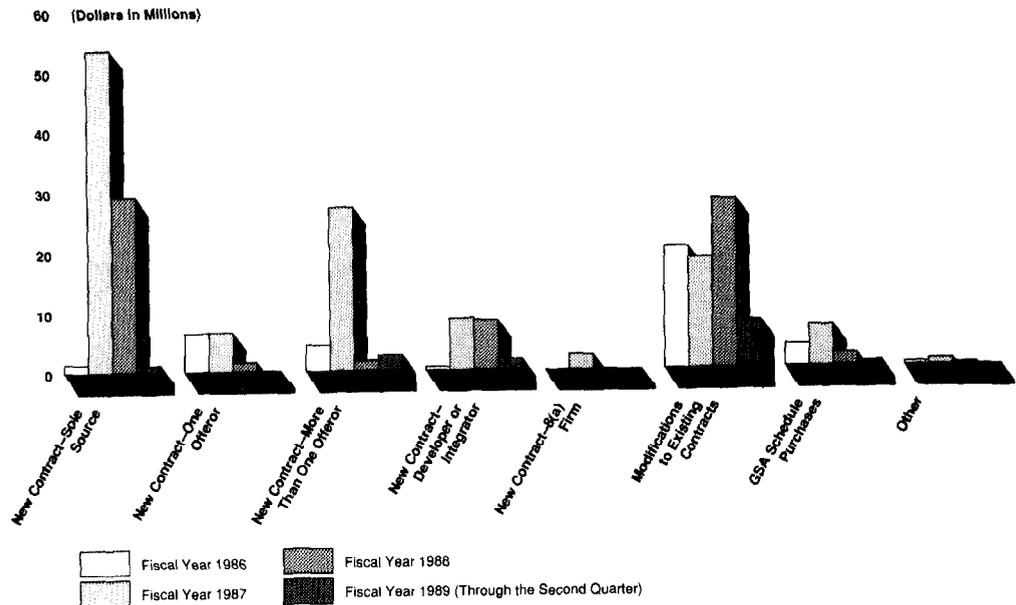
60   (Dollars in Millions)

| | Fiscal Year 1986 | | Fiscal Year 1988 |
| Fiscal Year 1987 | | Fiscal Year 1989 (Through the Second Quarter) |

See table II.4 (page 26) for detailed statistics.

What procurement methods were used to obtain IBM-compatible mainframe computers and mainframe peripheral equipment?[4] And, did the Navy frequently use new contracts with 8(a) contractors to obtain IBM-compatible mainframes and mainframe peripherals?

The Navy most frequently used GSA schedule purchases as the procurement method for obtaining IBM-compatible equipment. However, modifications to existing contracts accounted for more dollar obligations than any other procurement method. New contracts with companies designated as 8(a) firms by the Small Business Administration were used by the Navy on two occasions to obligate $2.6 million of the $86 million total obligated for IBM-compatible procurements.

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[4]See footnote 3.

Figure I.9: Number of Navy IBM-Compatible Procurements According to Procurement Method

40   Number of Procurements

See table II.5 (page 26) for detailed statistics.

Fiscal Year 1986	Fiscal Year 1988
Fiscal Year 1987	Fiscal Year 1989 (Through the Second Quarter)
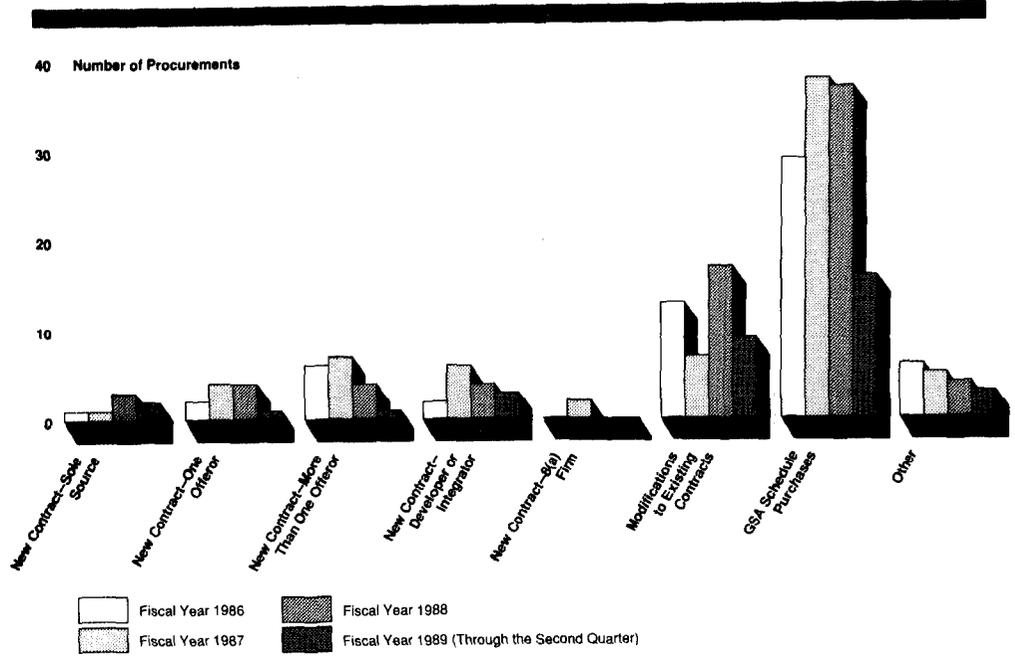
Figure I.10: Dollars for Navy IBM-Compatible Procurements According to Procurement Method
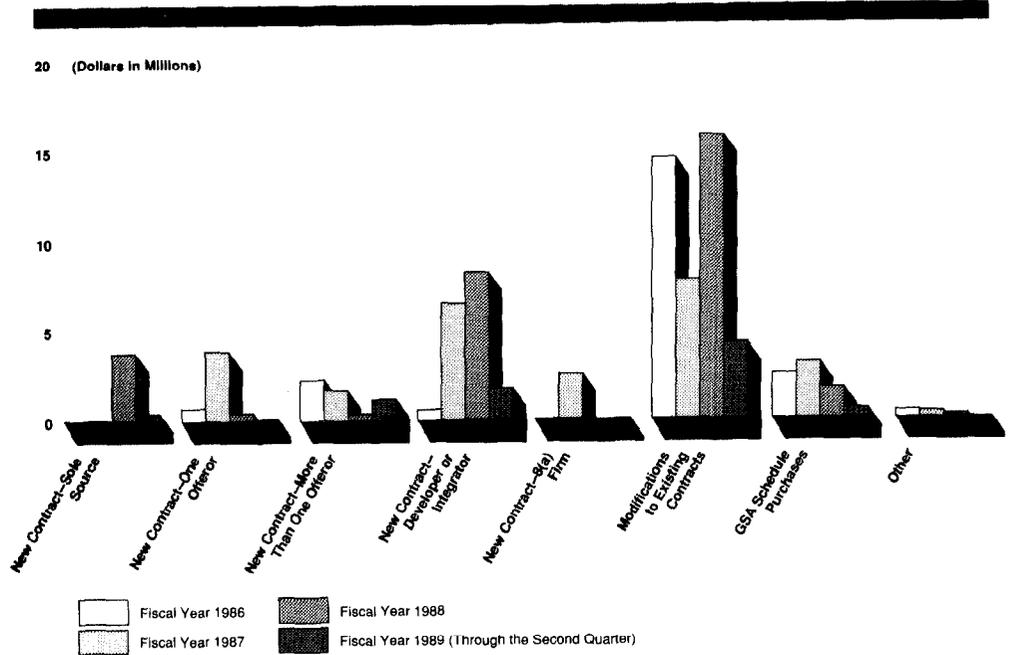
20   (Dollars in Millions)

See table II.5 (page 26) for detailed statistics.

Fiscal Year 1986	Fiscal Year 1988
Fiscal Year 1987	Fiscal Year 1989 (Through the Second Quarter)

What equipment manufacturers are involved in all of the Navy's mainframe and mainframe peripheral procurements, including both procurements where compatibility is required and procurements with no compatibility requirement?

Using the number of procurements as a measure, IBM was the most active supplier of mainframe and mainframe peripheral equipment to the Navy in each of fiscal years 1986 through 1988 and for the first half of fiscal year 1989, with 186 out of 452 total procurements. However, as a result of a single contract for $52 million to Unisys in fiscal year 1987, Unisys was the most active manufacturer that supplied equipment to the Navy, using obligated dollars as the measure. The Navy's obligations to Unisys during the same 3 1/2 year period were $114.6 million of a total of $276.9 million.

Figure I.11: Number of Navy Mainframe and Mainframe Peripheral Procurements According to Manufacturer of Equipment

60   Number of Procurements

Fiscal Year 1986
Fiscal Year 1987
Fiscal Year 1988
Fiscal Year 1989 (Through the Second Quarter)
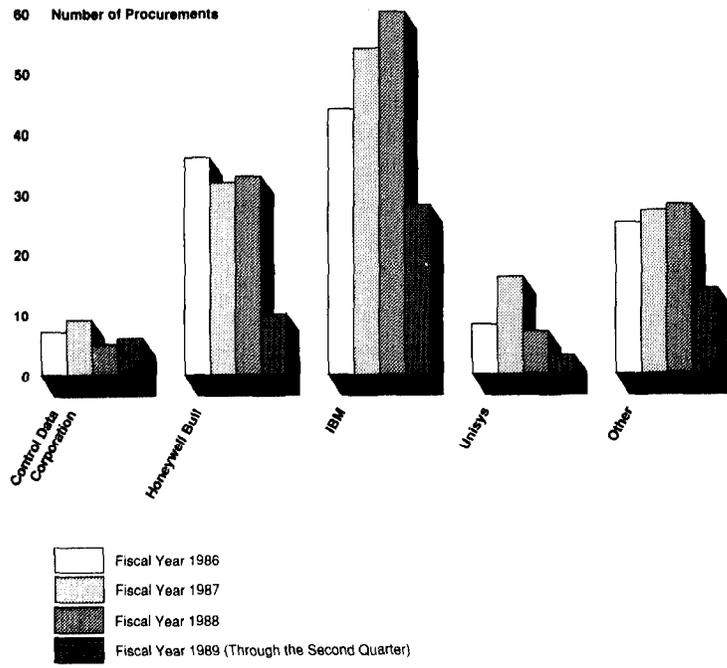
See table II.6 (page 27) for detailed statistics.

Figure I.12: Dollars for Navy Mainframe and Mainframe Peripheral Procurements According to Manufacturer of Equipment

90   (Dollars in Millions)

Fiscal Year 1986
Fiscal Year 1987
Fiscal Year 1988
Fiscal Year 1989 (Through the Second Quarter)
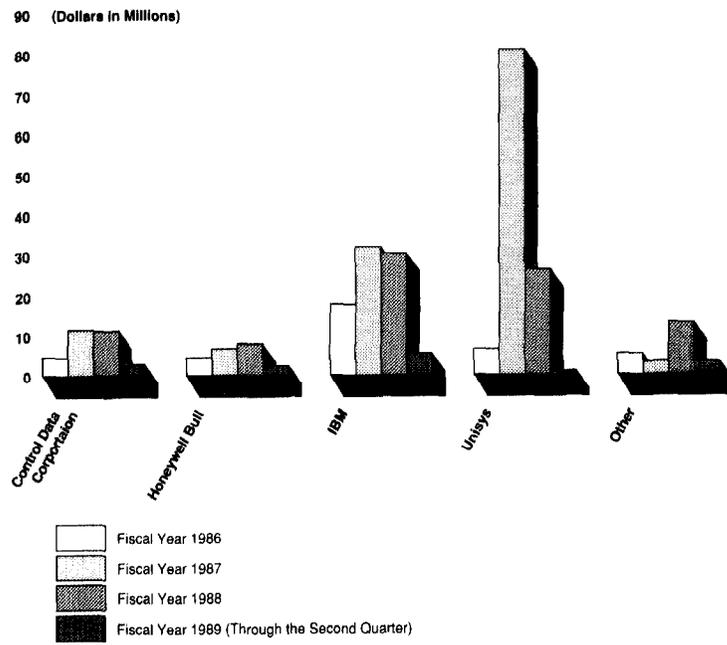
See table II.6 (page 27) for detailed statistics.

To what extent has the Navy procured mainframe computers and mainframe peripheral equipment under the Warner Amendment?

Out of the Navy's total of 452 procurements for mainframe computers and mainframe peripherals, 41 (9 percent), representing $39.3 million in obligations, were conducted under the Warner Amendment. Of those 41 procurements under the Warner Amendment, 37 were compatible procurements. Those 37 procurements represented $25.7 million in obligations.

Figure I.13: Number of Navy Mainframe and Mainframe Peripheral Procurements Under the Warner Amendment

20   Number of Procurements

Other Procurements
Compatible Procurements
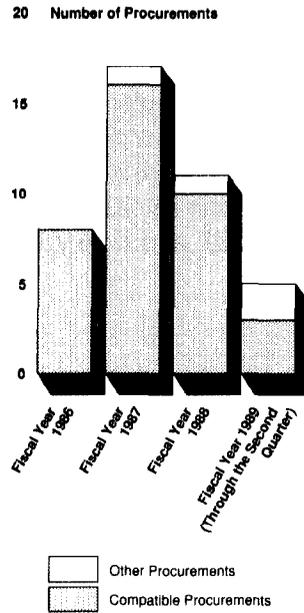
See table II.7 (page 27) for detailed statistics.

Figure I.14: Dollars for Navy Mainframe and Mainframe Peripheral Procurements Under the Warner Amendment

25   (Dollars in Millions)

Other Procurements
Compatible Procurements
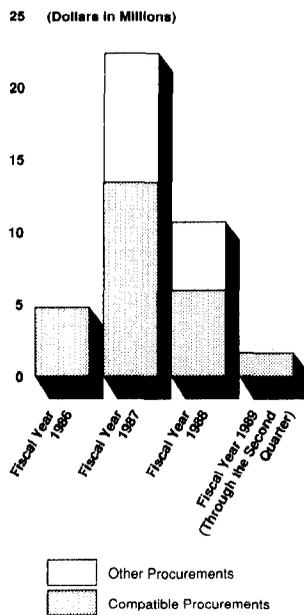
See table II.7 (page 27) for detailed statistics.

How much mainframe computer operating system software did the Navy procure during the 3 1/2 year period ending March 31, 1989. And, what types of mainframe computers was the software for?

The Navy had 165 procurements for operating system software totaling $7.6 million in obligations during the 3 1/2 year period. Ninety-four of these, accounting for $5.3 million in obligations, were for IBM-compatible mainframes, with the remainder divided between Control Data Corporation, Honeywell Bull, and Unisys mainframes.

Figure I.15: Number of Navy Operating System Software Contracts According to Type of Mainframe

40   Number of Contracts

Fiscal Year 1986
Fiscal Year 1987
Fiscal Year 1988
Fiscal Year 1989 (Through the Second Quarter)
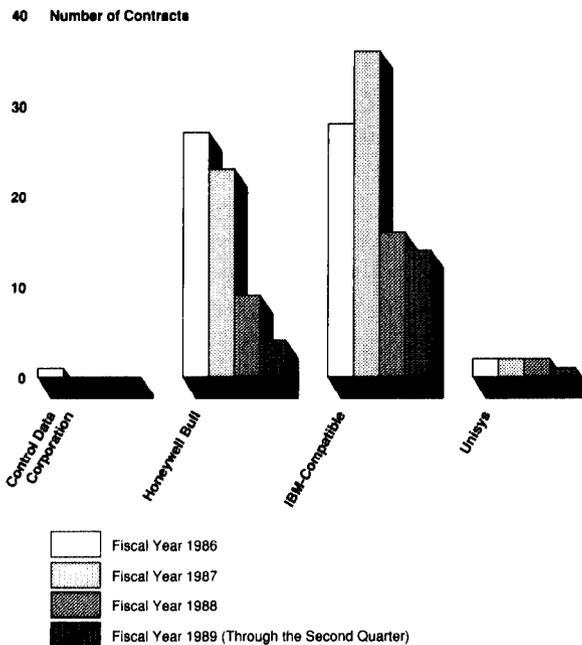
See table II.8 (page 28) for detailed statistics.

Figure I.16: Dollars for Navy Operating System Software Contracts According to Type of Mainframe

3.0   (Dollars in Millions)

Fiscal Year 1986
Fiscal Year 1987
Fiscal Year 1988
Fiscal Year 1989 (Through the Second Quarter)
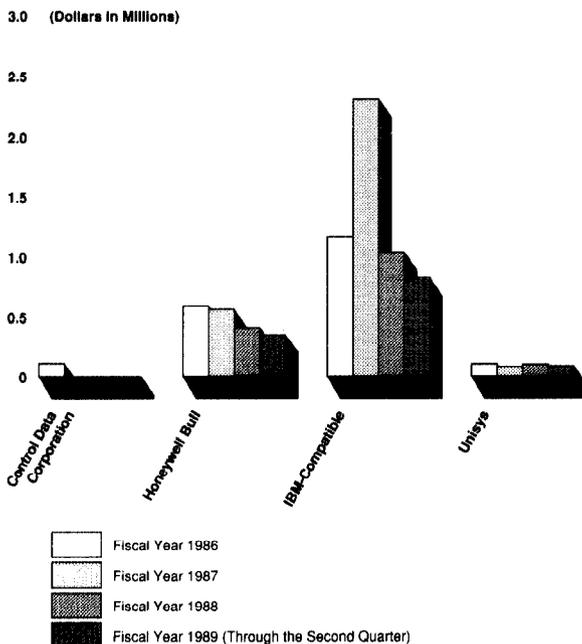
See table II.8 (page 28) for detailed statistics.

What is the extent of mainframe computer, mainframe peripheral, and operating system software procurements by the Marine Corps?

Between the beginning of fiscal year 1986 and mid-fiscal year 1989, the Marine Corps had three procurements for mainframe computers and mainframe peripherals. Each of these procurements had a requirement for compatibility and in each procurement, representing obligations of $52.7 million, IBM equipment was acquired. All three procurements were accomplished by modifications to existing contracts, none of which were conducted under the Warner Amendment. The Marine Corps had five new operating system software contracts totaling $0.7 million in obligations during the 3 1/2 year period. All five operating system software contracts were for IBM-compatible mainframes. See table II.9 (page 28) for detailed statistics.

Detailed Statistics on Navy Procurements

Table II.1: Navy Mainframe and Mainframe Peripheral Procurements

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Compatible	111	$37.1	128	$125.2	116	$71.5	56	$14.7	411	$248.5
Other	9	1.5	10	9.3	17	17.4	5	0.2	41	28.4
Total	**120**	**$38.6**	**138**	**$134.5**	**133**	**$88.9**	**61**	**$14.9**	**452**	**$276.9**
Compatible Percent of Total	93%	96%	93%	93%	87%	80%	92%	98%	91%	90%

[a]Fiscal year 1989 through the second quarter.

Table II.2: Navy Compatible Procurements According to Type of Compatibility

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Control Data Corporation-Compatible	6	$4.6	9	$11.5	5	$11.3	6	$2.9	26	$30.3
Honeywell Bull-Compatible	36	4.7	32	6.6	31	3.2	12	2.6	111	17.1
IBM-Compatible	59	21.1	70	26.0	73	30.6	35	8.3	237	86.0
Unisys-Compatible	10	6.7	17	81.1	7	26.4	3	0.9	37	115.1
Total	**111**	**$37.1**	**128**	**$125.2**	**116**	**$71.5**	**56**	**$14.7**	**411**	**$248.5**

[a]Fiscal year 1989 through the second quarter.

Table II.3: Navy IBM-Compatible Procurements According to Manufacturer of Equipment

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Amdahl	2	$1.8	2	$1.1	2	$1.1	0	$0.0	6	$4.0
IBM	40	17.7	50	23.2	55	25.6	26	5.5	171	72.0
Memorex	1	b	3	0.4	6	0.5	2	0.1	12	1.0
National Advanced Systems	0	0.0	0	0.0	1	2.8	2	2.7	3	5.5
NCR Comten	4	0.6	3	0.3	1	0.1	1	b	9	1.0
Storage Technology Corporation	0	0.0	0	0.0	2	0.1	1	b	3	0.1
Other	12	1.0	12	1.0	6	0.4	3	b	33	2.4
Total	**59**	**$21.1**	**70**	**$26.0**	**73**	**$30.6**	**35**	**$8.3**	**237**	**$86.0**

[a]Fiscal year 1989 through the second quarter.

[b]Represents less than $100,000.

Table II.4: Navy Compatible Procurements According to Procurement Method

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
New Contract—Sole Source	4	$1.4	3	$53.7	5	$29.1	3	$1.2	15	$85.4
New Contract—One Offeror	14	6.3	13	6.5	9	1.6	2	0.2	38	14.6
New Contract—More Than One Offeror	11	4.3	14	27.2	10	1.7	6	2.6	41	35.8
New Contract—Developer or Integrator	2	0.6	8	8.7	6	8.4	3	1.7	19	19.4
New Contract—8(a) Firm	0	0.0	2	2.6	0	0.0	0	0.0	2	2.6
Modifications to Existing Contracts	26	20.3	24	18.5	27	28.1	17	8.1	94	75.0
GSA Schedule Purchases	46	3.7	52	6.9	46	2.1	21	0.9	165	13.6
Other	8	0.5	12	1.1	13	0.5	4	b	37	2.1
Total	111	$37.1	128	$125.2	116	$71.5	56	$14.7	411	$248.5

[a]Fiscal year 1989 through the second quarter.

[b]Represents less than $100,000.

Table II.5: Navy IBM-Compatible Procurements According to Procurement Method

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
New Contract—Sole Source	1	$b	1	$b	3	$3.8	2	$0.4	7	$4.2
New Contract—One Offeror	2	0.7	4	3.9	4	0.4	1	0.1	11	5.1
New Contract—More Than One Offeror	6	2.3	7	1.7	4	0.4	1	1.2	18	5.6
New Contract—Developer or Integrator	2	0.6	6	6.5	4	8.3	3	1.8	15	17.2
New Contract—8(a) Firm	0	0.0	2	2.6	0	0.0	0	0.0	2	2.6
Modifications to Existing Contracts	13	14.6	7	7.8	17	15.8	9	4.3	46	42.5
GSA Schedule Purchases	29	2.5	38	3.2	37	1.7	16	0.5	120	7.9
Other	6	0.4	5	0.3	4	0.2	3	b	18	0.9
Total	59	$21.1	70	$26.0	73	$30.6	35	$8.3	237	$86.0

[a]Fiscal year 1989 through the second quarter.

[b]Represents less than $100,000.

Table II.6: Navy Mainframe and Mainframe Peripheral Procurements According to Manufacturer of Equipment

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Amdahl	2	$1.9	2	$1.1	3	$4.6	0	$0.0	7	$7.6
Control Data Corporation	7	4.6	9	11.5	5	11.3	6	2.9	27	30.3
Honeywell Bull	36	4.5	32	6.8	33	8.0	10	2.5	111	21.8
IBM	44	17.8	54	32.1	60	30.4	28	5.5	186	85.8
Memorex	1	b	3	0.4	6	0.5	2	0.1	12	1.0
National Advanced Systems	0	0.0	0	0.0	1	2.8	2	2.6	3	5.4
NCR Comten	4	0.6	3	0.3	1	0.1	1	b	9	1.0
Storage Technology Corporation	0	0.0	0	0.0	2	0.1	2	0.1	4	0.2
Unisys	8	6.5	16	80.9	7	26.3	3	0.9	34	114.6
Other	18	2.7	19	1.4	15	4.8	7	0.3	59	9.2
Total	**120**	**$38.6**	**138**	**$134.5**	**133**	**$88.9**	**61**	**$14.9**	**452**	**$276.9**

[a]Fiscal year 1989 through the second quarter.

[b]Represents less than $100,000.

Table II.7: Navy Mainframe and Mainframe Peripheral Procurements Under the Warner Amendment

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Compatible	8	$4.8	16	$13.4	10	$5.9	3	$1.6	37	$25.7
Other	0	0.0	1	8.9	1	4.7	2	b	4	13.6
Total	**8**	**$4.8**	**17**	**$22.3**	**11**	**$10.6**	**5**	**$1.6**	**41**	**$39.3**

[a]Fiscal year 1989 through the second quarter.

[b]Represents less than $100,000.

Table II.8: Navy Operating System Software Contracts According to Type of Mainframe

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Control Data Corporation	1	$0.1	0	$0.0	0	$0.0	0	$0.0	1	$0.1
Honeywell Bull	27	0.6	23	0.6	9	0.4	4	0.3	63	1.9
IBM-Compatible	28	1.2	36	2.3	16	1.0	14	0.8	94	5.3
Unisys	2	0.1	2	b	2	0.1	1	0.1	7	0.3
Total	58	$2.0	61	$2.9	27	$1.5	19	$1.2	165	$7.6

[a]Fiscal year 1989 through the second quarter.

[b]Represents less than $100,000.

Table II.9: Marine Corps Mainframe and Mainframe Peripheral Procurements and Operating System Software Contracts

Dollars in Millions

	Fiscal Year 1986		Fiscal Year 1987		Fiscal Year 1988		Fiscal Year 1989[a]		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
IBM-Compatible Procurements	2	$45.4	1	$7.3	0	$0.0	0	$0.0	3	$52.7
Other Procurements	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total Procurements	2	$45.4	1	$7.3	0	$0.0	0	$0.0	3	$52.7
Operating System Software Contracts	2	$0.6	0	$0.0	2	$b	1	$0.1	5	$0.7

[a]Fiscal year 1989 through the second quarter.

[b]Represents less than $100,000.

Objective, Scope, and Methodology

In February 1989, we were requested by the Chairman and the Ranking Minority Member, House Committee on Government Operations, to perform a comprehensive review of the government's use of IBM-compatible ADP procurements. In response to the requests and in subsequent discussions with the Chairman's and Ranking Minority Member's offices, we agreed that procurements of mainframes, mainframe peripherals, and operating system software would be included in our review, with emphasis on compatible procurements. We also agreed to solicit information from 35 federal agencies covering the 3 1/2 fiscal years ending in March 1989.

Our overall objective was to obtain and analyze information on each agencie's ADP procurements. In discussions with the Chairman's and Ranking Minority Member's offices, particular interest was expressed in obtaining information about the Navy's compatible procurement activities. Therefore, this report addresses our objective as it relates to the Navy. We obtained the number and aggregate dollar value of the Navy's mainframe-related contracts, determined if trends toward greater use of compatible requirements exist, identified the distribution of procurements among equipment manufacturers, and identified the procurement methods used to obtain mainframe-related equipment. Additionally, we collected information on the Navy's use of the Warner Amendment in acquiring such equipment. Furthermore, as requested, we obtained data on the Navy's procurement activities for operating system software. Since the Marine Corps is an organizational component of the Navy, we included separate identification of Marine Corps procurements as part of our objective.

To meet our objective and facilitate the Navy's information gathering, we designed a questionnaire which, when properly completed by the Navy, provided us with the necessary information. Specifically, our questionnaire contained a series of charts and provided detailed instructions, with definitions and examples, to help the Navy properly identify and report the information. To ensure a consistent understanding of the terms used in the detailed instructions, the Federal Acquisition Regulation was used to identify key definitions.

In preparing instructions for our questionnaire, we recognized the need to clearly and consistently identify mainframe computers, as opposed to superminicomputers and supercomputers. Because technology and marketing strategies change, criteria such as storage capacity, processing speed, physical size, cooling requirements, and cost do not provide an adequate basis for clear and consistent identification of mainframes.

Therefore, after consulting with computer vendors, GSA, other federal agency officials, and Datapro,[5] we considered computer performance, architecture, and vendor marketing strategy as the basis for classifying particular computers as superminicomputers, mainframes, or supercomputers. Like Datapro, we classified as mainframes some smaller and less expensive models if they belong to a product line, or family, of mainframes sharing a common architecture or operating system. On the other hand, we did not classify as mainframes, models with similar performance characteristics which do not belong to a mainframe family and are manufactured by companies that are not traditionally recognized as mainframe manufacturers. We provided a list of mainframe manufacturers and models in the instructions for our questionnaire as examples of computers that agencies should include in completing the questionnaire.

To help ensure the questionnaire's clarity, we obtained comments on preliminary copies from information resources management officials at the Departments of Agriculture and Transportation. After modifying the questionnaire based on comments received from officials at the Departments of Agriculture and Transportation, we identified senior information resources management officials at the Navy, the Marine Corps, and 33 other federal agencies and requested that they complete the questionnaire.

We furnished the Navy with our questionnaire in mid-April 1989. Upon receiving the Navy's initial response in mid-June 1989, the information was reviewed to determine if the instructions were followed correctly and if the information was clear and consistent. Although we did not independently validate the information supplied in the Navy response, our questionnaire contained internal checks which were used to determine the consistency of the information submitted. Where questions arose regarding the Navy's data, we contacted the Navy officials responsible for completing the questionnaire and gave them the opportunity to clarify the data. Following discussions with Navy information resources management officials to resolve questions about the initial response, the Navy supplied a revised, final response in mid-July 1989. Our work did not include solicitation or evaluation of documents related to the Navy's individual procurements.

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[5]Datapro is a trade publication that provides detailed information on computers, peripheral equipment, and software.

We reviewed the Navy's final response to our questionnaire and, in order to obtain information consistent with the questionnaire instructions, excluded inappropriate data. For example, our instructions directed agencies to report only those procurements for mainframe-related equipment. However, in addition to the data we solicited, the Navy included some procurements for computers other than mainframes. Therefore, to maintain consistent statistics across the 35 federal agencies, the procurements reported by the Navy for equipment other than mainframes and related peripherals were not included in our analyses. Our final analyses were used to develop the figures and tables in appendixes I and II.

We discussed our scope and methodology with the Navy's Director of Information Resources Management in August 1989. The Director expressed concern that we did not solicit statistics on the Navy's procurements of certain computers manufactured by Digital Equipment Corporation and by Hewlett-Packard Company. We explained the rationale we used in classifying specific manufacturers and models of computers as mainframes. Further, following the methodology explained earlier, like Datapro, we did not classify any Digital Equipment Corporation or Hewlett-Packard Company computers as mainframes. Such computers are normally classified as minicomputers or superminicomputers and do not share an architecture common to a family of mainframes. Likewise, we did not include Cray computers because they are normally classified as supercomputers. We note that had we included in our analysis computers manufactured by Digital Equipment Corporation, Hewlett-Packard Company, and Cray, they would not have affected the Navy's statistics specific to IBM-compatible procurements because such computers are not IBM-compatible.

Our review was conducted from February 1989 through August 1989. Discussions were held with Navy officials at the Pentagon and at GAO headquarters. In addition, meetings were conducted with the Department of Defense at the Pentagon, and the Department of Agriculture, the Department of Transportation, and the General Services Administration in Washington, D.C. Our work was performed in accordance with generally accepted government auditing standards.

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