United States General Accounting Office

GAO

Report to the Associate Director, Retirement and Insurance Group, Office of Personnel Management

December 1988

FEDERAL COMPENSATION

Recovery of Improper Health Benefits Charges Needed

GAO GGD-89-27

GAO

United States
General Accounting Office
Washington, D.C. 20548

B-231323

General Government Division

December 13, 1988

Ms. Jean M. Barber
Associate Director, Retirement
and Insurance Group
Office of Personnel Management

Dear Ms. Barber:

We are reviewing certain aspects of the Federal Employees Health Benefits Program (FEHBP) at the request of the Chairman, Committee on Post Office and Civil Service, House of Representatives. One objective of our review is to determine the reasonableness of the administrative costs charged FEHBP by carriers basing their premiums on claims experience. To help achieve this, we are reviewing the annual accounting statements submitted by the carriers to the Office of Personnel Management (OPM). We have also been interviewing responsible OPM officials and reviewing applicable regulations.

During our review of the accounting statements submitted by one carrier, the Aetna Life Insurance Company, for calendar years 1982 through 1987, we found that the program was improperly charged about $7.2 million for federal income taxes on Aetna's service charge (profit). The Federal Acquisition Regulation in 48 CFR 31.205-41(b)(1) provides that federal income taxes are not an allowable cost. However, Aetna's annual accounting statements for FEHBP and the Retired Federal Employees Health Benefits Program (RFEHBP) for calendar years 1982 through 1987 show Aetna charged the programs for federal income taxes on the carrier's service charge. The charge was made by reducing the investment income the programs earned on reserves held by Aetna. The amounts charged each year are shown in table 1.

Table 1: Amounts Charged the Programs for Federal Income Taxes on Aetna's Service Charge

Year	FEHBP	RFEHBP	Total
1982	$86,970	$1,381	**$88,351**
1983	695,520	1,504	**697,024**
1984	1,508,480	3,088	**1,511,568**
1985	1,655,825	3,074	**1,658,899**
1986	1,529,247	3,110	**1,532,357**
1987	1,683,333	3,255	**1,686,588**
Total	**$7,159,375**	**$15,412**	**$7,174,787**

We have discussed the propriety of these charges with responsible OPM officials. They said that federal income taxes on the service charge are not an allowable cost and this matter would be brought to Aetna's attention during the next OPM audit.

We are bringing this matter to your attention now because addressing this issue through the audit process may delay its resolution for over a year. OPM will only audit Aetna in fiscal year 1989 if there is time left out of that which is reserved for unanticipated audits. The delay in recovering the improper charges would result in the health programs losing investment income that could be earned on over $7 million. In the meantime, Aetna would continue to have the interest-free use of program funds and, if the matter is not brought to its attention, could reduce the investment income credited to the programs again in 1988.

In order to hold the loss of investment income to a minimum, we believe that OPM should expedite its resolution of this matter. Therefore, we recommend that you take action to recover these improper charges now rather than waiting until the next scheduled audit.

We would appreciate being advised within 30 days of any action you take on this matter. We are sending copies of this report to selected congressional committees and others who may have an interest in this matter. If you would like to discuss this matter further, please contact Mr. Thomas Eickmeyer of my staff on 275-8100.

Sincerely yours,

Bernard L. Ungar

Bernard L. Ungar
Associate Director

GAO

United States General Accounting Office

Report to the Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives

December 1988

COMPUTER SYSTEMS

Navy Needs to Assess Less Costly Ways to Implement Its Stock Point System

GAO/IMTEC-89-2

GAO

United States
General Accounting Office
Washington, D.C. 20548

Information Management and
Technology Division

B-224720

December 14, 1988

The Honorable Bill Chappell, Jr.
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

In a March 7, 1986, letter, you asked us to undertake a study of Navy automated logistics supply programs. In October 1986 and September 1987, we provided you with two reports[1] on the Navy's Stock Point ADP Replacement project (SPAR). In November 1987, we agreed with your office to determine whether the Navy has (1) studied less costly alternatives to its current plan for implementing SPAR and (2) identified and eliminated other Navy supply systems that may duplicate SPAR. This report addresses these two issues. As agreed with your office, we have also included information on the status of the Navy's actions on the recommendations in our prior reports.

The SPAR project, which the Navy estimates will cost $2.3 billion over its 24-year life, is intended to improve supply operations by replacing the current system with new hardware and software at 103 stock point locations through 1994. The Navy plans for 38 stock points to be host sites for SPAR, sites that will operate a mainframe computer, and 65 stock points to be satellite sites for SPAR, sites that will be connected to a host site by various forms of telecommunications.

Our review showed that, although specific savings cannot yet be quantified, there are potentially less costly ways to implement SPAR. Defense and Navy instructions require that alternatives be analyzed to determine cost effective approaches; however, the Navy has not yet studied alternative host/satellite configurations. Instead, the Navy's current plan for 38 host systems simply replicates the host/satellite arrangement used by the existing systems that SPAR will replace and is not supported by analysis.

Navy officials elected to defer the study of alternatives and replicate the existing system because they were concerned that support for the new system would diminish if they tried to reduce the number of hosts and,

[1] Navy Supply Systems: Status of Two Projects for Improving Stock Point Operations (GAO/IMTEC-87-1FS, Oct. 9, 1986) and Computer Systems: Navy Stock Point ADP Replacement Program Needs Better Management Controls (GAO/IMTEC-87-30, Sept. 17, 1987).

thus, take mainframe computers away from certain sites. Our work at four planned host sites in the Pacific Northwest area suggests that it is feasible to reduce the number of host sites in that area without adversely affecting supply operations. In addition, two Navy studies indicate that the cost of implementing and operating automated systems like SPAR can be reduced by decreasing the number of host sites and increasing the number of satellite sites.

Before we completed our review in August 1988, the Navy initiated a study of host/satellite alternatives in one geographical area. However, it does not plan to complete such a study for SPAR as a whole (i.e., one that includes all 38 sites) before requesting approval from the Secretary of Defense to implement SPAR, currently planned for June 1990. We are concerned that, without a study of the system as a whole, Defense officials will not be able to ensure that the Navy is pursuing the most cost effective approach and, thus, will not have a valid basis for deciding whether to approve the Navy's implementation request. We are, therefore, recommending that the Secretary of Defense direct the Secretary of the Navy to analyze host/satellite alternatives for SPAR as a whole prior to requesting approval to acquire and implement it. In addition, since implementation will extend through 1994, the Navy may need to update and revise its analysis to reflect, for example, changes in expected work load at specific sites and incorporate any newly available technology. Thus, we are also recommending that the Secretary annually review revisions to the Navy's analysis of alternatives.

Regarding duplication, we found that the Navy identified two supply systems, functionally similar to SPAR, that will be eliminated when SPAR is implemented. The Navy attributes this action to its renewed emphasis on developing standard systems and improving long range planning. We also reviewed the Navy's long range plans for information processing systems for supply operations. We did not find any planned supply systems that duplicate SPAR. Our objectives, scope, and methodology are explained in appendix I.

Background

Spare parts for Navy ships and aircraft are warehoused at and distributed from stock points. Stock points rely extensively on automation to manage an inventory valued at about $30 billion. The Navy uses host and satellite hardware arrangements—the host stock point has the mainframe computer and maintains the data base. Satellite stock points use terminals or microcomputers to access information from the host's

data base by various forms of telecommunications. A SPAR host/satellite hardware arrangement is illustrated in appendix II.

The SPAR project is intended to improve and modernize stock point operations by replacing the existing automated system with new hardware and software at 103 host and satellite stock points. The Navy estimates that SPAR will cost $2.3 billion over its 24-year life. This estimate includes $230 million for initial hardware and system software; $255 million for software conversion, new software development, and system design and management; $770 million for operations and support; and $1,013 million to upgrade hardware over the life of the system.

Stock points presently use the Uniform Automated Data Processing System for Stock Points for managing supply operations. The Navy plans to convert this system's application software from Burroughs hardware to SPAR's IBM hardware at 12 major stock points, and then replace it with the new software. The Navy plans to move directly to the new hardware and new software at the other sites. The Navy's current implementation schedule is shown in appendix III.

For major automated systems (with life cycle development costs exceeding $100 million), the Office of the Secretary of Defense designates the Major Automated Information System Review Council (MAISRC) to review and approve all plans, decisions, and documentation at key stages during system development. The MAISRC completed a staff review of SPAR in June 1987. The next scheduled Defense evaluation is another MAISRC staff review in December 1988. We have illustrated SPAR's development activities in relation to key decision points in appendix IV.

Navy's Analysis of Host/Satellite Alternatives Will Not Be Completed Prior to Defense's Oversight Review

The Navy has begun to study alternative SPAR configurations for some of the sites to determine whether the system's benefits can be achieved with fewer host systems and more satellite systems. However, the Navy does not plan to conduct such studies for all planned sites before it requests approval from the Secretary of Defense's oversight authority, the MAISRC, to acquire and implement the entire system, currently planned for June 1990. Thus, at the time Defense officials are scheduled to make an implementation decision, they will not have sufficient information to determine if the Navy is pursuing the most cost effective configuration for the entire SPAR system. This is particularly significant since the Navy estimates it will be spending over $1.2 billion for new hardware and system software.

Department of Defense Directive 7920.1 and Instruction 7920.2 require that alternatives be analyzed to determine cost effective implementatior approaches. Secretary of the Navy Instruction 5231.1B contains similar requirements. However, when we began our review in July 1987, the Navy had not studied alternative SPAR configurations and did not have criteria for designating which stock points would be host sites. Instead, SPAR plans replicated the number of host systems currently in use or planned, calling for new mainframe computers at 38 sites.

SPAR project officials stated that they had not yet studied alternative configurations because they were concerned that support for the new system would diminish if they tried to decrease the number of host systems (take mainframe computers away from certain sites). They added that, as Supply Command representatives, they do not have the authority to direct other commands' sites to operate as satellites if they choose to be hosts. These officials said that they chose to delay the study of alternatives until after they had obtained experience from initial SPAR host/satellite operations and could then demonstrate to other commands that system benefits would remain the same whether sites operated as hosts (with a mainframe computer) or as satellites (without a mainframe computer). In addition, since SPAR's implementation will extend through 1994, project officials stated that delaying the studies would enable them to take advantage of emerging computer hardware technology.

Our examination of the existing system at four stock points in the Pacific Northwest area suggests that there are opportunities for the Navy to consider replacing host systems with satellite systems, thus consolidating ADP support for supply operations in that area. For example, the naval supply center at Puget Sound is already processing much of the requisition work load for three other host sites in the Pacific Northwest. This work load was referred to Puget Sound because the other host sites could not fill all of the requisitions they received. We also noted that the combined requisition work load for two of the activities is less than Puget Sound's requisition work load. Thus, a different host/satellite configuration may be feasible. However, rather than considering alternative configurations, Navy implementation plans specify that each of these four stock points will continue as a host site under SPAR.

Although specific savings cannot be quantified until the Navy completes an analysis of implementation alternatives, two studies of selected air stations illustrate that the cost of implementing and operating SPAR can

be reduced by increasing the number of satellite sites and decreasing the number of host sites. These studies did not specifically evaluate SPAR; rather, they evaluated the existing supply systems. However, the studies did include an analysis of host and satellite combinations and each of the stations analyzed was a stock point. These studies used representative hardware configurations to make cost comparisons because SPAR hardware cost data were not available when the studies were conducted.

An October 1985 study was prepared to justify SPAR as the replacement for the existing supply system at certain naval air stations. The study shows that a configuration that consists of five hosts and nine satellites is "by far the least costly," about $5.4 million less over an 8-year period, than an all-host configuration. The study indicates that additional telecommunications costs ($9 million) are more than offset by lower costs for hardware and system software procurement and maintenance ($7.6 million) and personnel ($6.8 million).

A December 1986 study evaluated the cost of automation provided by Navy regional data automation centers for Pacific Coast air stations. The study shows that combinations of hosts and satellites at naval air stations are more cost effective than having host sites predominate. For example, one air station serving as a host site for another air station, at a cost of about $15 million, would be about $4.9 million less over a 9-year period than two air stations operating as separate host sites, at a cost of about $19.9 million.

Before we completed our review in August 1988, SPAR project officials had initiated a study of cost effective alternatives for implementing SPAR. The Navy awarded a contract to American Management Systems, in July 1988, for a feasibility study of alternative host/satellite configurations in the Pacific Northwest area. The study, which is scheduled to be completed about December 1988, is intended to provide cost and operational criteria for deciding on the optimal host/satellite configuration for the four host sites in that area.

SPAR project officials informed us that the criteria being developed can be applied in studies of sites other than those in the Pacific Northwest area. However, they stated that they do not plan to complete the studies for all other host sites prior to Defense's oversight review, planned for June 1990. They stated that because of the large number of study sites and the lengthy system implementation period, 1989 to 1994, they will not be able to forecast precisely the optimal configuration at each site. Therefore, they say, they have decided not to evaluate host/satellite

alternatives for the SPAR system as a whole before seeking approval for it. Instead, they plan to obtain approval of the entire system first, and then, prior to acquiring and implementing SPAR at each site, to study the configuration alternatives at each site.

We are concerned that by not evaluating alternative host/satellite configurations for the SPAR system as a whole, the Navy may be precluding less costly alternatives for implementing SPAR. For example, if the Navy purchases and installs a mainframe computer at a specific site with the assumption that the mainframe will support a certain number of satellites, the Navy may not later be able to change this configuration, even if future studies show that it would be more cost effective to do so. In particular, the Navy may not be able to add satellites later because the already purchased and installed computer may not have the capacity to handle the additional work load. In addition, the Navy will be asking the MAISRC to approve the entire SPAR system without requisite cost information on alternative host/satellite configurations.

Navy Initiatives to Reduce System Duplication

The Navy has identified two supply systems,[2] functionally similar to SPAR, that will be eliminated when SPAR is implemented. When the Navy began the SPAR project in 1980, its plan was to replace only the Uniform Automated Data Processing System for Stock Points. The Navy did not consider SPAR as the means to eliminate or avoid duplicate automated supply system developments.

The Navy's ability to identify these duplicative systems was the result of the following factors: (1) the Navy's renewed emphasis on long range planning, (2) the development of standardized systems, and (3) the Navy's establishment of an information system planning process. As a result of these factors, supply management officials formulated a plan, in October 1984, to make SPAR the Navy's standard system for supply. On the basis of the plan, the Navy decided that SPAR could replace the two systems because, like SPAR, they performed basic supply functions and provided supply and financial management information.

The development of standard systems is emphasized in the Navy planning process. Individual system development plans are reviewed by independent Navy organizations to ensure that they are not duplicative

[2]The Uniform ADP Level II Supply/Financial/Resource Management System used by naval air activities and the Supply Management Information System used by naval construction battalion centers.

of other system plans. In addition, planning guidance requires the development of information system architectures[3] to integrate information requirements across Navy commands. And, annual information resource planning conferences are intended to allow different commands to exchange information on their resource plans and to determine if duplicative systems are being planned or developed.

The Navy has systems in addition to SPAR that perform associated, but subordinate, supply management functions. These systems are primarily used to manage repair and overhaul operations rather than supply operations for ships and aircraft. The Navy does not want to eliminate these systems at this time because they are already operational. As these systems are updated, replaced, or modernized, the Navy plans to address the potential functional redundancy as it is now doing on a system by system basis for planned developments.

Follow-up on Prior Recommendations

In our September 1987 report on SPAR, we made several recommendations to improve management controls over the system's development.[4] These recommendations included establishing additional oversight reviews, quantifying performance and cost measures to demonstrate SPAR's economic worth, and developing a detailed transition plan for moving from the existing system to the modernized SPAR system. The MAISRC, in reviewing the status of development, noted similar areas needing improvement and established time frames for completion.

Although progress has been made on some recommendations, Navy and Defense officials responsible for SPAR have not yet complied with our recommendation to establish a system design completion review. These officials intend to reach a decision on this matter in a December 1988 status review of SPAR's development plans. SPAR project officials are working closely with MAISRC staff members to complete the actions directed by the June 1987 MAISRC in time for the December status review. The table in appendix V shows the status of Navy actions on the recommendations in our prior reports.

[3]An information system architecture defines information requirements, flow, and system interfaces and shows how individual systems fit together to form a comprehensive whole.

[4]Computer Systems: Navy Stock Point ADP Replacement Program Needs Better Management Controls (GAO/IMTEC-87-30, Sept. 17, 1987).

Conclusions

The Navy's SPAR program is intended to improve supply operations by replacing the current computer systems with new hardware and software at a cost of $2.3 billion over the systems' 24-year life. Although the cost of implementing and operating SPAR could potentially be reduced by using fewer host systems than the 38 currently planned, the Navy has not yet studied alternative host/satellite configurations. Advances in information technology offer possibilities to change the way the Navy does business. New hardware and telecommunications technology make more cost effective alternatives for implementing SPAR feasible. Yet, as currently planned, SPAR will be implemented in the same configuration of host and satellite sites as the existing system. By using this approach, the Navy may not be taking advantage of all of the benefits, including reduced cost, offered by SPAR's improved technology.

Defense and Navy instructions require that alternatives be analyzed to determine cost effective approaches. While Navy officials have begun to study alternatives in one geographical area, they do not plan to complete a study that includes all 38 planned host sites prior to requesting approval from the MAISRC to acquire and implement the entire system. Instead, the Navy plans to study configuration alternatives at individual sites just prior to the scheduled implementation date for each site. We are concerned that if the Navy follows this approach, it may be precluding less costly alternatives for implementing SPAR. Also, if the MAISRC approves an implementation without requiring the Navy to analyze alternatives, the incentive for completing the analysis may be lost.

As SPAR's implementation is scheduled to extend over a 6-year period (1989 through 1994), we recognize that the Navy will be continually refining its analysis. Thus, continued Defense oversight will be important in ensuring that reasonable compromises—in terms of cost, benefits, and operational needs—are made and cost effective alternatives are pursued.

Recommendations

To ensure that the Navy pursues the most cost effective approach for implementing SPAR and provides all requisite information to the MAISRC, we recommend that the Secretary of Defense direct the Secretary of the Navy to study implementation alternatives for the SPAR system as a whole (all 38 planned host sites). This study should include an analysis of the estimated hardware, telecommunications, and operating costs associated with various host/satellite configurations and examine the feasibility of fewer host systems than the 38 in its current plan. The

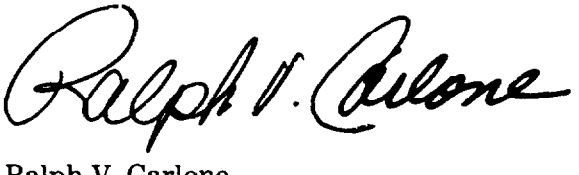
results of this analysis should be provided to the MAISRC as a prerequisite to its approval to acquire and implement the entire SPAR system.

We also recommend that the Secretary of Defense plan for the MAISRC to annually review any refinements the Navy has made to its analysis of host/satellite configurations prior to each site's scheduled implementation date.

Our work, conducted between July 1987 and August 1988, was performed in accordance with generally accepted government auditing standards. We did not obtain official agency comments on a draft of this report. However, we briefed Navy officials directly responsible for SPAR on our findings and have incorporated their views in the report where appropriate.

We are sending copies of this report to the Secretary of Defense and the Secretary of the Navy, the Senate Committee on Appropriations, and the House and Senate Committees on Armed Services. We will also make copies available to other interested parties on request. This report was prepared under the direction of William S. Franklin, Associate Director. Other major contributors are listed in appendix VI.

Sincerely yours,



Ralph V. Carlone
Assistant Comptroller General

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Abbreviations

ADP	automated data processing
GAO	General Accounting Office
IMTEC	Information Management and Technology Division
MAISRC	Major Automated Information System Review Council
SPAR	Stock Point ADP Replacement

Objectives, Scope, and Methodology

The Chairman, Subcommittee on Defense, Committee on Appropriations, asked us in March 1986 to undertake a study of automated logistics supply programs. As requested, we focused on the Stock Point ADP Replacement project (SPAR). Our objectives were to determine whether the Navy (1) has studied less costly alternatives to its current plan for implementing SPAR and (2) identified other Navy supply systems that may duplicate the SPAR initiative. We also determined the status of Navy actions on the recommendations in two of our prior reports.[1]

To determine whether the Navy studied less costly implementation alternatives, we analyzed SPAR project documentation for system planning, costs, schedules, and acquisition planning. We interviewed Navy officials at the Naval Supply Systems Command, Washington, D.C., who are responsible for managing the SPAR project's development, and at the Fleet Material Support Office, Mechanicsburg, Pennsylvania, who are responsible to the SPAR project manager for project design and software development. We also interviewed Navy officials at selected stock points who are responsible for supply management and automated supply system operations at the activities listed in the following table:

Table I.1: Navy Stock Points Visited by GAO

Activity Name	Location	Responsible Navy Command
Naval Supply Center, Puget Sound	Bremerton, Washington	Supply Systems Command
Naval Air Station, Whidbey Island	Oak Harbor, Washington	Pacific Fleet Command
TRIDENT Refit Facility	Bangor, Washington	Strategic Systems Program Office
Strategic Weapons Facility, Pacific	Bangor, Washington	Strategic Systems Program Office
Naval Air Station, Patuxent River	Patuxent River, Maryland	Air Systems Command
Naval Air Engineering Center	Lakehurst, New Jersey	Air Systems Command
Naval Shipyard, Philadelphia	Philadelphia, Pennsylvania	Sea Systems Command

To determine whether the Navy has identified other supply systems that duplicate SPAR, we reviewed the Navy's process to identify duplicate or redundant systems. We concentrated on the Navy's planning process for defining information processing needs for its supply operations. We interviewed Navy officials at the Naval Data Automation Command,

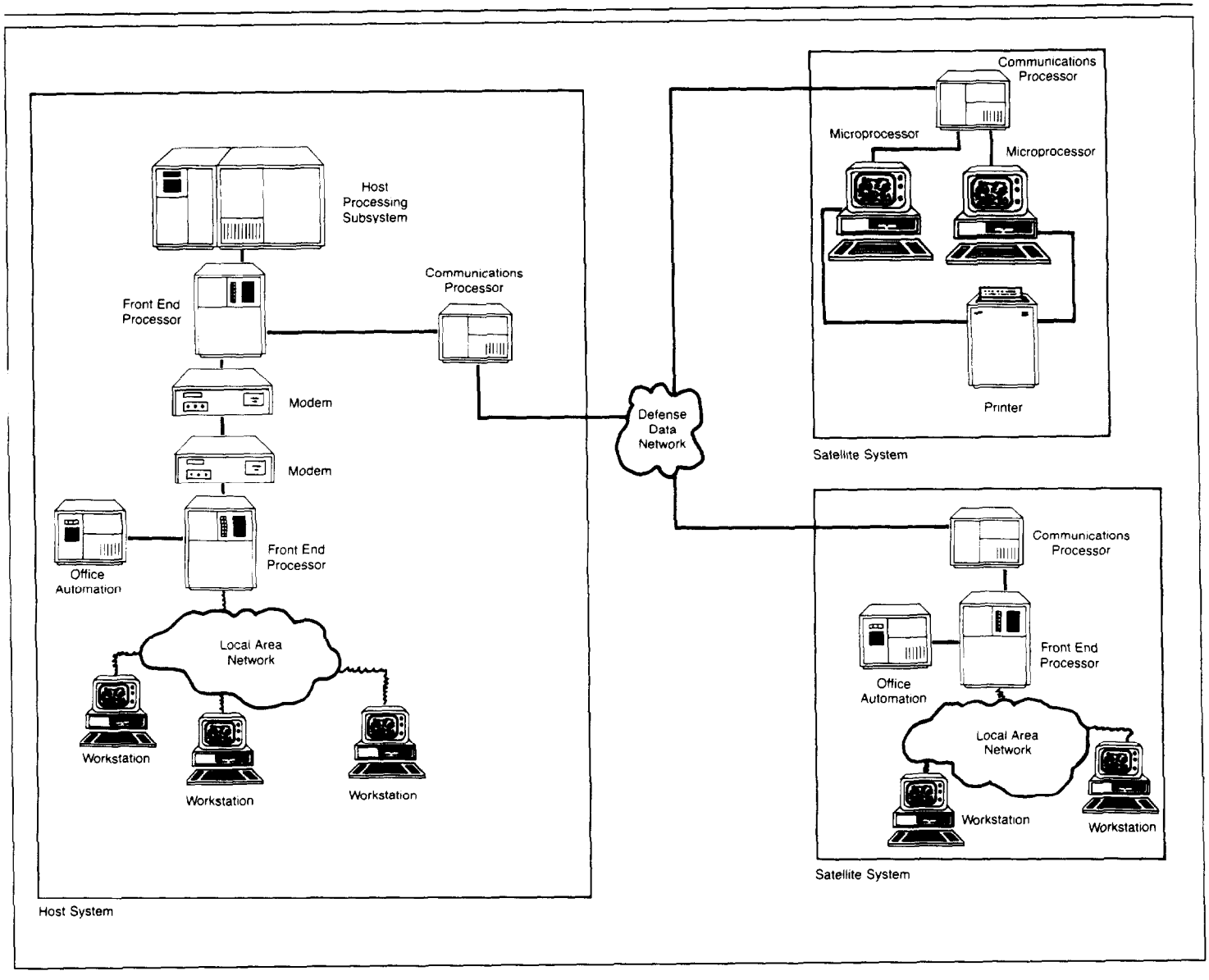
[1]Navy Supply Systems: Status of Two Projects for Improving Stock Point Operations (GAO/IMTEC-87-1FS, Oct. 9, 1986) and Computer Systems: Navy Stock Point ADP Replacement Program Needs Better Management Controls (GAO/IMTEC-87-30, Sept. 17, 1987).

Washington, D.C., who are responsible for reviewing and approving information systems developed by various commands to ensure that duplication is minimized and standardization of automated systems is achieved. Also, we interviewed Navy officials at the Chief of Naval Operations, Information Systems Division, Washington, D.C., who are responsible for validating information requirements, ensuring that they are justified and not duplicative.

We also obtained information on the Navy's progress in complying with our prior recommendations for improving the management of the program. We obtained this information through interviews with Naval Supply Systems Command officials.

Our work, conducted between July 1987 and August 1988, was performed in accordance with generally accepted government auditing standards. We did not obtain official agency comments on a draft of this report. However, we briefed Navy officials directly responsible for SPAR on our findings and have incorporated their views in the report where appropriate.

Stock Point ADP Replacement Project Host/ Satellite Illustration



SPAR Implementation Schedule as of February 1988

Site	Conversion			Modernizaton		
	Order Hardware			Order Hardware		
	Fiscal Year	Date	Installation Date	Fiscal Year	Date	Installation Date
Test Bed, Fleet Material Support Office	1987	Aug. 1987	Nov. 1987			
Naval Supply Center, Charleston	1988	Mar. 1988	June 1988	1989	Aug. 1989	Nov. 1989
Navy Regional Data Automation Center, Pensacola	1989	June 1989	Sept. 1989	1990	Aug. 1990	Nov. 1990
Naval Supply Center, Puget Sound	1989	Aug. 1989	Nov. 1989	1991	Oct. 1990	Jan. 1991
Naval Supply Center, Oakland	1990	Oct. 1989	Jan. 1990	1991	Dec. 1990	Mar. 1991
Naval Supply Center, Pearl Harbor	1990	Dec. 1989	Mar. 1990	1991	Feb. 1991	May 1991
Naval Supply Center, San Diego	1990	Feb. 1990	May 1990	1991	Apr. 1991	July 1991
Naval Supply Depot, Subic Bay	1990	Apr. 1990	July 1990	1991	June 1991	Sept. 1991
Naval Supply Center, Norfolk	1990	June 1990	Sept. 1990	1991	Aug. 1991	Nov. 1991
Navy Regional Data Automation Center, Jacksonville	1990	Aug. 1990	Nov. 1990	1992	Oct. 1991	Jan. 1992
Naval Supply Depot, Yokouska	1991	Oct. 1990	Jan. 1991	1992	Dec. 1991	Mar. 1992
Naval Supply Depot, Guam	1991	Dec. 1990	Mar. 1991	1992	Feb. 1992	May 1992
Marine Corps Air Station, Cherry Point	1991	Feb. 1991	May 1991	1992	Apr. 1992	July 1992
Naval Air Test Center, Patuxent River				1991	Apr. 1991	July 1991
Aviation Supply Office, Philadelphia				1991	May 1991	Aug. 1991
Navy Regional Data Automation Center, Norfolk				1991	Aug. 1991	Nov. 1991
Navy Regional Data Automation Center, San Diego				1992	Oct. 1991	Jan. 1992
Navy Regional Data Automation Center, New Orleans				1992	Dec. 1991	Mar. 1992
Navy Regional Data Automation Center, San Francisco				1992	Feb. 1992	May 1992
Strategic Weapons Facility Pacific, Bremerton				1992	Apr. 1992	July 1992
Trident Refit Facility, Bangor				1992	May 1992	Aug. 1992
Naval Air Station, Whidbey Island				1992	June 1992	Sept. 1992
Naval Air Station, Key West				1992	Aug. 1992	Nov. 1992
Marine Corps Air Station, El Toro				1993	Oct. 1992	Jan. 1993
Strategic Weapons Facility Atlantic, Kings Bay				1993	Dec. 1992	Mar. 1993
Trident Refit Facility, Kings Bay				1993	Dec. 1992	Mar. 1993
Naval Station, Mayport				1993	Feb. 1993	May 1993
Naval Air Station, Brunswick				1993	Mar. 1993	June 1993
Naval Air Station, Oceana				1993	Apr. 1993	July 1993
Naval Air Station, Sigonella				1993	May 1993	Aug. 1993
Naval Station, Keflavik				1993	June 1993	Sept. 1993
Naval Air Facilities, Kadena				1993	July 1993	Oct. 1993
Naval Station, Rota				1993	Aug. 1993	Nov. 1993

(continued)

Site	Conversion			Modernizaton		
	Order Hardware			Order Hardware		
	Fiscal Year	Date	Installation Date	Fiscal Year	Date	Installation Date
Naval Support Activity, Naples				1993	Sept. 1993	Dec. 1993
Naval Air Station, Bermuda				1994	Oct. 1993	Jan. 1994
Naval Station, Guantanamo Bay				1994	Nov. 1993	Feb. 1994
Naval Station, Roosevelt Roads				1994	Dec. 1993	Mar. 1994
Naval Station, Adak				1994	Jan. 1994	Apr. 1994
Construction Battalion Center, Port Hueneme				1994	Feb. 1994	May 1994

SPAR's Development Status and Actions

The Navy began the SPAR program in 1980 as an equipment acquisition and software conversion effort and added system software redesign over 2 years later. The Navy plans to move from the current operating environment—Burroughs batch processing—to the SPAR operating environment in three major stages. The development activities of individual stages are concurrent. We have highlighted significant transition activities in the following table.

Table IV.1: Navy Transition Approach

Stage	Purpose	Activities
Acquisition	Contract award, in August 1987, to purchase new hardware and system software.	Test bed installed November 1987. Acquisition for conversion sites began in March 1988 and is scheduled to end February 1991.
Conversion	Convert current software to operate on new hardware.	Test at test bed site through March 1989. Install software at first site, Charleston, by June 1989; and at 11 other sites by November 1991.
Modernization	Develop new software for efficient operations on new hardware.	Add hardware to 12 conversion sites, acquire 26 additional host sites and 65 satellite sites—to be completed by May 1994. Install redesigned software at first site, January 1990; complete by October 1994.

The Navy awarded the SPAR hardware and system integration contract to Electronic Data Systems and selected Sterling Systems, Inc. to assist in converting the old software to the new system. The Navy installed a SPAR system at its test bed in November 1987. In July 1988, the Navy awarded the conversion contract to Electronic Data Systems; and in July 1989, the SPAR project developers plan to conclude testing of converted system software at the Naval Supply Center in Charleston and request approval to deploy new hardware with the converted software to other sites.

The Navy is developing SPAR under Department of Defense and Navy life cycle management policies that prescribe rules for managing an automated information system development through its useful life. The process requires a phased development approach, and each phase requires formal documentation to justify completed and proposed development decisions, plans, and actions. Approval of each phase, ending with a major milestone decision, allows system developers to proceed to the next development phase.

Initially, when the Navy applied life cycle management policy to SPAR, the program was a conversion effort. Later, modernization was added.

The conversion and modernization efforts are on different development schedules. Progression of the development process matched with SPAR's schedule is shown in the table below.

Table IV.2: Life-Cycle Management Phases With MAISRC Review Dates

Milestone	Phase	Purpose	MAISRC Review Dates	
			Conversion	Modernization
0	Mission Analysis/Project Initiation	Mission need identified and validated.	5/81	11/83
I	Concept Development	Conceptual approach for satisfying need is formulated.	11/83	11/83
II	Definition/Design	Functional needs are defined and operational system design is completed.	10/84	[a]
III	System Development	System development is integrated, tested, and evaluated.	7/89	6/90[b]
IV	Deployment/Operation (Implementation)	Completed systems are installed, operated, and maintained.	[c]	[c]

[a]The Office of the Secretary of Defense had not established a date to conduct this milestone review by the time we completed our field work in August 1988.

[b]This milestone was added in November 1986.

[c]These reviews are optional; there are no plans to conduct them at this time.

Status of Past Recommendations for SPAR

GAO Recommendations	Secretary of Defense's Recommendations	Initial Navy Actions	Status as of July 1988
The Navy should establish a system design completion review (Milestone II) segment.	No specific direction by the Office of the Secretary of Defense.	The Navy agreed to establish a Milestone II date.	A MAISRC in-process review, scheduled for December 1988, will cover this issue.
Defer acquisition of ADP equipment for three conversion sites until the modernized system design is completed.	No specific direction by the Office of the Secretary of Defense.	The Navy disagreed and did not take immediate action.	Navy revised its plans, deferring one site; the House Appropriations Committee deferred another, and the Navy justified the need for the third as an additional prototype site.
Quantify performance and cost measures needed to show how SPAR will improve stock point operations and the system's economic worth.	Provide a quantified estimate of project benefits and life-cycle costs.	The Navy agreed to develop quantified measures by mid-1988.	The Navy has a draft report, but needs to resolve cost and benefit definitions with Defense at the December 1988 meeting.
Develop a detailed plan to ensure a smooth transition from the existing system to the converted and the modernized system.	Review the project transition strategy, including an independent assessment of transition planning.	The Navy agreed to prepare a detailed transition plan by September 1987.	The Navy prepared a plan, dated January 4, 1988. No areas of disagreement with Defense staff were specified.
	Provide a project test and evaluation master plan and detailed test planning documents.	The Navy agreed to develop a project test plan as part of its Quality Assurance Plan.	The Navy completed a draft plan in November 1987. It did not satisfy Defense's detailed requirements and is being reworked.

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