

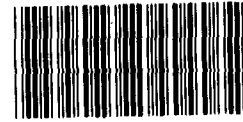
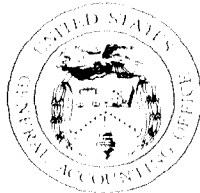
GAO

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

May 1990

COMPUTER SYSTEMS

Further Development of Navy's Source Data System Needs to Be Reassessed



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**Information Management and
Technology Division**

B-238255

May 8, 1990

The Honorable John P. Murtha
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

This report responds to your predecessor's September 16, 1988, request, and discussions with your office, to review the Navy's development and management of the Source Data System project (SDS).

Twelve years ago the Navy initiated this project, with life-cycle costs initially estimated at \$1 billion, to automate military pay and personnel data reported by its field activities. The SDS project automates a manual process of preparing and editing data entry documents and transmitting the data to the Navy's centralized systems for pay and personnel processing. These central systems are used to pay about \$21 billion annually to nearly 704,000 active duty and drilling reserve personnel. The primary objective of the SDS project is to increase the accuracy and timeliness of the data reported to these central systems.

SDS was to be developed and deployed as three separate subsystems: one for active duty personnel in the United States and overseas; a second for active duty personnel on-board ships; and a third for reserves.¹ These three subsystems and the telecommunications connecting them to the Navy's centralized pay and personnel systems were to provide a Navy-wide solution to automating the manual input of pay and personnel data reported by field activities. Our objectives, scope, and methodology are detailed in appendix I.

Results in Brief

The Navy's SDS project has fallen far short of original expectations. As of the end of fiscal year 1989, the Navy had spent about \$174 million and still had not completed the project. While SDS was to have been completed in 1982, only about 64 percent of active duty personnel had been converted to SDS as of February 28, 1990. Active duty personnel stationed overseas and on-board ships are not on SDS. The Navy estimates that SDS will be deployed Navy-wide for active duty personnel by 1994,

¹The reserve subsystem was to support only the drilling reserves. Drilling reserves are defined as ready reserve personnel who participate in a Naval Reserve program in a drill pay status.

over 12 years later than originally planned. The Navy now estimates that it will cost an additional \$33 million to complete development and deploy SDS Navy-wide. The reserve subsystem is no longer part of the SDS project since its requirements are being incorporated into a separately developed system.

At those locations where SDS is deployed, reporting of personnel and pay data is considerably more accurate and timely. However, SDS does not meet all performance goals where deployed, nor will it achieve all the expected performance goals when fully deployed Navy-wide.

The program has been characterized by unclear lines of authority and responsibility for developing and deploying SDS, failure to coordinate among Navy commands, delays, and false starts. While original SDS plans called for a senior-level steering committee to coordinate the development and deployment of SDS across commands, this committee never convened. The authority and responsibility to develop and deploy SDS is still fragmented within the Navy, and there is no current Navy-approved plan, strategy, or economic assessment of the overall SDS project. Further, the oversight provided by the Office of the Secretary of Defense was both incomplete and prematurely withdrawn. Because of this project's long history, fragmented authority, and lack of oversight, we were not always able to obtain complete information or identify the precise causes for the problems we found. Nevertheless, it is clear that this project has wandered and needs to be reevaluated. We are making recommendations aimed at reassessing the overall management and future direction of this project and curtailing further investments in it while a reassessment is made.

Background

The Navy's personnel and pay operations are split between two major commands. The Naval Military Personnel Command, operating under the direction of the Chief of Naval Operations, is responsible for personnel management functions. The Navy Accounting and Finance Center, operating under the direction of the Comptroller of the Navy, is responsible for military pay functions. To carry out their respective personnel and pay missions, these Navy activities must share information in their centralized automated systems because many personnel actions establish, change, or discontinue certain military pay and allowances.

In the late 1970s, the Navy primarily used mail-based, manual reporting systems for transmitting pay and personnel data from field activities to centrally located, but separate pay and personnel systems. Between

1978 and 1986, we, the Naval Audit Service, and the Naval Inspector General reviewed the Navy's field reporting and centralized pay and personnel systems.² The common theme of these reports was that the exchange of data between field disbursing offices and the central pay system and between field personnel offices and the central personnel system was inaccurate and slow. In fact, the Navy found the central pay system to be inaccurate about 48 percent of the time in 1979. As a result, the Navy, to pay the service members accurately on payday, paid different amounts than the amounts shown on the central pay system.

In 1982 we reported that the Navy's pay system did not meet generally accepted accounting standards and recommended that the Navy bring its system into compliance with these standards.³ The Navy, as required by the Federal Managers' Financial Integrity Act,⁴ reported to the President and the Congress in 1984 that its military pay accounting system did not conform with the principles, standards, and related requirements prescribed by the Comptroller General. In fiscal year 1989, the Navy reported that corrective actions had been taken and the pay system substantially conformed to these requirements.

To improve its military pay and personnel systems, the Navy began, in 1977, a major program called the Pay and Personnel Administrative Support System (PASS) to streamline the data reporting process and improve communications between the personnel and disbursing field offices and the centrally located pay and personnel systems. This two-phased program was co-sponsored by the Comptroller of the Navy and the Chief of Naval Operations and was to be managed and implemented under the direction of the PASS program manager within the Personnel Command.

The first phase called for merging field pay and personnel organizations. By 1981, approximately 3,500 personnel offices and 134 disbursing offices ashore were consolidated into 152 pay/personnel support offices worldwide.

The second phase, SDS, called for developing an automated field reporting and management information system to support the consolidated field offices as well as the ship-board offices. The field reporting system

²See page 17 for a list of related GAO and Navy reports.

³GAO letter to the Secretary of the Navy, B-199833, Feb. 2, 1982.

⁴Federal Managers' Financial Integrity Act of 1982, 31-U.S.C. 3512 (b) and (c).

was to be developed and deployed as three separate subsystems, each supporting a different personnel community—active duty personnel stationed in the United States and overseas (referred to as ashore), personnel on-board ships (referred to as afloat), and personnel in the drilling reserves. The management information system was to provide field offices access to data in the central pay and personnel systems that were not available under the manual reporting system.

The Navy decided to develop the ashore subsystem first, then the reserve subsystem, and finally the afloat subsystem. According to SDS project office officials these three subsystems were to be developed separately to accommodate the different hardware and communications environments employed by each user community.

The SDS project was to be a joint effort of the Personnel Command and the Comptroller of the Navy. An SDS project management office was established within the Personnel Command to design, develop, and deploy SDS.

SDS Project Hindered by Poor Planning and Management

As of September 30, 1989, the Navy had spent about \$174 million to develop, deploy, and operate SDS, but this effort has fallen far short of original expectations. As of February 28, 1990, only about 64 percent of active duty personnel had been converted to SDS. Active duty personnel stationed overseas and on-board ships are not on SDS, and reserves are no longer part of the SDS project.

Development of Subsystems Continually Changing

The Navy spent over \$13 million developing reserve and afloat subsystems but they were not used. Also, deployment overseas of the ashore subsystem was delayed because of a lack of funds.

Reserves. After spending about \$1.1 million to nearly complete development of a reserve subsystem, the Navy decided to satisfy the reserve's requirements with another system being developed by the Commander, Naval Reserve Force. Consequently, work on the subsystem was suspended.

Afloat. The Navy prototyped the afloat subsystem at a cost of \$12 million on 12 ships for about 5 years. In September 1989, however, the Navy abandoned this effort.

The SDS project office has recently prepared conceptual plans for developing and deploying a new afloat subsystem, which is expected to cost at least \$24 million. This subsystem will be developed in two modules. The first module will utilize an already partially deployed scaled-down interim system called the Uniform Microcomputer Disbursing System (UMIDS)⁵ for reporting pay data. A second module will be developed for reporting personnel data. Over the long term the Navy plans to evolve these two modules into a single integrated afloat subsystem, which they plan to interface and/or operate with a new ship-board hardware platform planned for the mid-1990s. Life-cycle costs for the new approach are not yet known. The Navy expects to make a deployment decision on this approach in November 1990.

Overseas Deployment of Ashore Subsystem. Deployment of SDS for active duty personnel stationed overseas also encountered delays and redirection. An ashore subsystem was developed to support both United States and overseas locations. According to the project's original plan, deployment of SDS overseas was to have been completed in 1982. However, according to the Navy, the overseas deployment was delayed because sufficient funding was not available. In the meantime, according to the project manager, the manufacturer has come out with a new, less expensive model of the hardware previously planned for deployment overseas. This hardware is being used along with the already developed ashore software to prototype the subsystem for overseas activities. This approach is expected to cost at least \$9 million. Subject to the availability of funding, the SDS project manager expects to commence deployment overseas in December 1991.

Life-Cycle Costs and Benefits Have Fluctuated Widely

Since the inception of SDS, the Navy has had difficulty identifying life-cycle costs and benefits. From 1977 to 1985, the Navy prepared four separate economic analyses of life-cycle cost and benefit estimates justifying the SDS project.⁶ The life-cycle cost estimates changed significantly, starting with costs estimated initially at \$1.1 billion in 1977, then declining to \$859 million 2 years later, then increasing to over \$3 billion in another 2 years, and most recently to \$643 million 4 years later in 1985. At the same time, the Navy's cost estimate for developing and deploying

⁵UMIDS was developed during 1981 and 1982 as an interim system until SDS was deployed. UMIDS was designed to support only pay functions, not personnel.

⁶These economic analyses did not include estimates of costs and benefits for the afloat subsystem. Also, the 1979 economic analysis did not include estimates of costs and benefits for the reserve subsystem.

the ashore and reserve subsystems steadily increased from \$13.8 million in 1977 to over \$180 million in 1985. Estimated benefits, on the other hand, remained relatively unchanged in the first three economic analyses, but increased five-fold in the latest estimate, made in 1985. We could find no evidence that the Navy had independently verified these analyses. Despite these wide swings, Defense and Navy officials allowed the project to proceed. Furthermore, even though the SDS project has undergone a number of delays and changes in direction since 1985, the Navy has not updated its estimates of costs and benefits.

Project Management and Control Was Not Adequate

No single organization has been responsible for managing SDS Navy-wide. Initially, the three subsystems (ashore, afloat, and reserves) were to be developed under a single project office coordinated by a senior steering committee. However, at least three different offices have been responsible for developing them, a fourth office developed the UMIDS system, and no office was clearly responsible for ensuring a coordinated approach. In fact, we had considerable difficulty getting information such as cost data for all three subsystems and the UMIDS system because there was no single point of contact that was able to identify life-cycle costs or actual expenditures for SDS Navy-wide.

The program has been characterized by unclear lines of authority and responsibility for developing and deploying SDS, failure to coordinate between commands, and delays. Although initial planning documents called for a senior-level steering committee to coordinate the development and deployment of SDS across commands, we found no evidence this committee ever convened. As a result, divided and ever-changing organizational and project development responsibilities did not ensure a focused, timely solution to the development and deployment of SDS Navy-wide.

The Navy recognized these problems in 1989. As a result of a program review of the afloat subsystem, the Navy concluded that the program management was diffused, only part of the program was being reviewed by various project managers, and coordination among the various organizations was lacking. The Navy also concluded that management deficiencies were created, in part, by a June 1983 decision that relieved the PASS program manager of any responsibility for the SDS project. The Navy review made a number of recommendations that included:

- redefining the authority, role, and responsibility of the PASS program manager as intended in the original functional description;

- establishing a steering group or committee to provide coordination with various commands;
- developing a memorandum of understanding to define clear lines of authority and responsibility; and
- realigning headquarters elements and resources to support an effective program management organization.

As of March 9, 1990, the Navy had developed a memorandum of understanding to return responsibility for developing the afloat subsystem to the SDS project office. Also, a project management charter is being drafted to define lines of authority and responsibility for developing and deploying the afloat subsystem.

SDS Project Lacked Sustained Defense Program Oversight

The Office of the Secretary of Defense's Major Automated Information System Review Committee (MAISRC)⁷ had oversight responsibility for SDS from 1979 to 1987. During its initial review in 1982, the MAISRC stated that the Navy's proposed development approach for the ashore subsystem was sound and, in developing SDS, it should continue to apply sound life-cycle management principles and ensure the availability of adequate telecommunications and acquire and upgrade, as necessary, hardware and software resources. The MAISRC also directed the Navy to furnish it with any future plans for developing the reserve subsystem and to notify it of slippages in the project and ensure that privacy requirements and security safeguards were incorporated. However, MAISRC records did not indicate that there was any concern over the estimated cost or benefits of the project.

In 1987 the MAISRC, satisfied with the development and deployment schedule of SDS for ashore and reserves, delegated its oversight responsibility of SDS to the Navy. The MAISRC, however, did not review the afloat subsystem as part of the overall SDS project, even though it had always been a major part of SDS. According to the SDS program analyst from the Defense Comptroller's Office, the MAISRC did not review the afloat subsystem because it was being developed and funded as a separate program under the Ship-board Non-Tactical ADP Program (SNAP).

After the MAISRC delegated oversight to the Navy, the Navy redirected the afloat prototype for personnel assigned on-board ships and the

⁷This committee was created within the Office of the Secretary of Defense to provide structured oversight and prudent fiscal management in acquiring major automated information systems.

planned utilization of the ashore portion for personnel stationed overseas. As noted earlier, the Navy is making a number of changes to its conceptual approach for providing SDS to personnel assigned on-board ships and overseas.

In mid-1988 the Assistant Secretary of Defense (Comptroller) required each military service to report quarterly on all systems for which it had delegated oversight review. Although the project office prepared these reports, the Navy did not file the first four of the required quarterly reports since the ashore subsystem had already been developed and was being deployed. The Comptroller's office initially agreed, but later required the Navy to begin submitting reports as a result of our ongoing audit work. The Navy submitted its first quarterly report on SDS for the period ending September 30, 1989.

SDS Improves Accuracy and Timeliness but Some Performance Goals Are Not Achievable

At those locations where SDS is deployed, reporting of personnel and pay data is considerably more accurate and timely. However, SDS does not meet all performance goals where deployed nor will it achieve all the expected performance goals when deployed at the remainder of the intended locations. Further, certain other performance goals established for SDS are unrealistic since their achievement depends on actions outside the control of SDS.

The Navy established three primary goals for SDS: (1) error rates in data used to update the central pay and personnel data bases were to be less than 3 and 1 percent respectively, (2) 99 percent of the field-generated pay and personnel transactions were to be transmitted and prepared for updating within 24 hours of release by the field offices, and (3) no more than 1 percent of all centrally computed pay amounts would be overridden at field offices within the continental United States. Prior to SDS the update error rates were 9 and 13 percent for pay and personnel respectively; on average, it took 13 days to send data, via mail, from the field offices to a central office and to prepare the data for updating the central pay and personnel systems; and the override rate was 48 percent.

At those field activities where SDS is deployed, Navy statistics show that update error rates and untimely submissions decreased significantly from May through November 1989. SDS error rates of 1.3 and .9 percent for pay and personnel data respectively were well within the established goals. For timeliness, about 89 percent of the pay and 86 percent of the personnel inputs were transmitted and ready for updating within 24 hours, which is short of the 99 percent goal. The Navy also reduced

its override rate from 48 percent to about 10 percent, which is short of its 1 percent goal.

Another goal was to reduce the annual loss resulting from overpaying personnel when they leave or separate from the Navy to less than \$4 million. Navy records showed that although the number of personnel being overpaid has been reduced, these losses rose from \$6 million in 1979 to an estimated \$15 million in 1989. The \$4 million goal, however, cannot be achieved unless changes unrelated to SDS are made. One major source of overpayments is the payment of reenlistment bonuses to personnel who do not complete their commitment. While SDS can assist in the identification of funds owed by service members who do not complete their enlistment, the collection of any funds due the government, which often requires a manual collection process, is outside the control of SDS.

Conclusions and Recommendations

Clearly the Navy needs to fix its systems for field reporting of pay and personnel data—we came to this conclusion long ago and so did the Navy and its auditor and inspector general staffs. When properly planned and applied, modern technology offers viable solutions to make these fixes. Yet, after spending 12 years and about \$174 million, the Navy has produced only a portion of the originally envisioned system.

Where the system has been deployed, it has produced substantial improvements in the accuracy and timeliness of reported data; however, the rest of the Navy is not reaping these improvements. Furthermore, the Navy has not prepared realistic estimates of life-cycle costs and benefits in the past nor have such estimates been prepared for its new strategy for providing SDS support for personnel on ships and overseas.

Technology still offers potential benefits to the Navy, but until the causes of SDS delays, cost escalations, and false starts are identified and corrected, the public, the Congress, and the Secretary of Defense cannot be assured that further expenditures of time and funds on SDS will be wisely spent. Project oversight by the Office of the Secretary of Defense and the Navy is necessary to ensure that these problems are corrected and the SDS program produces cost-effective solutions in a timely manner.

We recommend the Secretary of Defense direct the Secretary of the Navy to (1) reassess the management, plans, goals, alternative solutions,

cost, and benefits of the SDS project and determine whether it or a portion of it should be continued, and (2) ensure that spending for SDS and planned solutions are held to a minimum while this reassessment is conducted.

If, on the basis of this reassessment, the Navy decides to continue with SDS, we recommend that the Office of the Secretary of Defense review the Navy's decision and reinstate MAISRC oversight for the entire project. In addition, we recommend that the Office of the Secretary of Defense provide the Congress with a revised budget forecast for SDS based upon a current estimate of project and life-cycle costs.

As requested by your office, we did not obtain official agency comments on this report. We discussed the issues in this report with officials from the Department of Defense and the Department of the Navy, and have included their comments where appropriate.

As arranged with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from its issue date. We will then send copies of this report to the Chairmen, House and Senate Committees on Appropriations, and other interested Members of Congress; the Secretaries of Defense and the Navy; the Director, Office of Management and Budget; and others upon request.

This work was performed under the direction of Samuel W. Bowlin, Director, Defense and Security Information Systems, who can be reached at (202)-275-4649. Other major contributors are listed in appendix II.

Sincerely yours,


for Ralph V. Carlone
Assistant Comptroller General

Contents

| | |
|---|----|
| Letter | 1 |
| Appendix I Objectives, Scope and Methodology | 14 |
| Appendix II Major Contributors to This Report | 16 |
| Related GAO and Navy Products | 20 |

Abbreviations

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|--------|---|
| GAO | General Accounting Office |
| IMTEC | Information Management and Technology Division |
| MAISRC | Major Automated Information System Review Committee |
| PASS | Pay and Personnel Administrative Support System |
| SDS | Source Data System |
| SNAP | Ship-board Non-Tactical ADP Program |
| UMIDS | Uniform Microcomputer Disbursing System |

Objectives, Scope and Methodology

On September 16, 1988, the Subcommittee on Defense, House Committee on Appropriations, requested that GAO review the Navy Source Data System (SDS). In subsequent discussions with the subcommittee staff, our specific objectives were to determine whether the project is meeting expected objectives and goals and to identify any shortfalls of the project. We agreed to determine the original and present scope, goals, and objectives of SDS and identify reasons for any changes; to evaluate and measure the extent to which SDS is meeting stated goals and objectives; and to identify other automation initiatives being pursued by the Navy that may address SDS goals and objectives.

We examined the original project scope as presented in the 1977 Economic Analysis and compared it with other life-cycle management documents. In addition, we met with cognizant agency officials in order to determine the reasons for changes in the scope of the project and to identify other automation initiatives started by the Navy and to also have them clarify the performance goals and objectives.

We obtained various performance statistics from the Navy Finance Center and from the Naval Military Personnel Command and compared those statistics with the stated goals. In addition, we reviewed the pay and personnel operations at 10 Personnel Support Detachments in order to determine how SDS operates and determine if it is meeting its performance objectives. We also met with agency officials to obtain their comments on our findings.

Our review was conducted primarily at the Navy Accounting and Finance Center and the Naval Military Personnel Command in Washington D.C. In addition, we interviewed agency officials at the Navy Finance Center in Cleveland, Ohio. We also interviewed personnel aboard the USS O'Brien and the USS Hewitt at San Diego Naval Station and the USS Bainbridge and USS Trenton at Norfolk Naval Station.

Our review was conducted from November 1988 to March 1990. We discussed issues covered in this report with officials from the Department of Defense, Office of the Inspector General; the Office of the Comptroller of the Department of Defense; Department of Navy, Naval Military Personnel Command, and the Navy Accounting and Finance Center. In doing our work, we had difficulty obtaining information on certain decisions or explanations for those decisions. This difficulty arose because of the long history of this project, its changing and fragmented organization structure and its lack of central control and oversight. As you requested, we did not obtain written agency comments on a draft of this

Appendix I
Objectives, Scope and Methodology

report but did incorporate their verbal comments where appropriate. Our work was performed in accordance with generally accepted government auditing standards.

Major Contributors to This Report

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Related GAO and Navy Products

The Navy's Advanced Information System — A Personnel Information System for the 1980-1990s (GAO/LCD-78-122, Sept. 18, 1978).

The Navy's Computerized Pay System is Unreliable and Inefficient — What Went Wrong? (GAO/FGMSD-80-71, Sept. 26, 1980).

Report of the Navy Pay System Review (Naval Inspector General, 008/2666, Dec. 17, 1982).

Pay/Personnel Administration Support System (PASS) and Joint Military Entitlements Payment System (JUMPS) (Naval Audit Service, T202222, Nov. 29, 1983).

Survey of Actions to Correct Problems with the Navy's Military Pay System (GAO/AFMD-85-05, Oct. 12, 1984).

Navy's Progress In Implementing The Federal Managers' Financial Integrity Act (GAO/NSIAD-85-150, Sept. 27, 1985).

Debt Collection: Navy's Efforts to Collect Debts From Former Service Members (GAO/AFMD-85-51-BR, May 19, 1986).

Development of the Navy Pay and Personnel Source Data System (Naval Audit Service, D30006, Nov. 26, 1986).

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