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NAVY LABORATORIES

Plans for Consolidation and Progress Toward Implementation



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The Honorable Robert C. Byrd
Chairman, Committee on Appropriations
United States Senate

The Honorable William H. Natcher
Chairman, Committee on Appropriations
House of Representatives

The November 18, 1991, conference report on the Department of Defense's (DOD) fiscal year 1992 Appropriations Act required us to study and report on DOD's plans to consolidate its defense research and development laboratories, with special emphasis on naval research, development, test, and evaluation (RDT&E); engineering; and fleet support activities. This report discusses issues as agreed with your staff: (1) the Navy's consolidation planning process and its initial plan, (2) the Navy's implementation of the plan and the status of consolidation, and (3) the impact of consolidation on Navy programs.¹ In April 1993, we issued a report on the consolidation of Army RDT&E laboratories.² Because there were no Air Force RDT&E activities recommended for closure or realignment by the 1991 Defense Base Closure and Realignment Commission, we did not review Air Force RDT&E consolidation efforts.

Background

In November 1989, the Secretary of Defense, as part of the Defense Management Review, requested a review of DOD laboratories to improve management through consolidation (streamlining and restructuring). The Navy identified 36 RDT&E, engineering, and fleet support activities,³ representing 67,785 personnel, as candidates for consolidation. The consolidation plan was formulated between August 1990 and April 1991 by the Navy's RDT&E Facilities Consolidation Working Group. In April 1991, the Secretary of the Navy approved plans to consolidate 2 of these activities into 1 corporate laboratory and 34 into 4 distinct full-spectrum

¹Information on cost and savings data, personnel assumptions, duplication of research among the services, and the relationship between the force structure and RDT&E funding is addressed in our report, Military Bases: Navy's Planned Consolidation of RDT&E Activities (GAO/NSIAD-92-316, Aug. 20, 1992).

²Military Bases: Army's Planned Consolidation of Research, Development, Test and Evaluation (GAO/NSIAD-93-150, Apr. 29, 1993).

³Throughout this report we refer to all of these activities as RDT&E activities. These 36 represent the Navy's primary RDT&E activities. Numerous detachments and other sites are not counted separately but are included under their parent activity.

warfare centers: Air, Surface, Undersea, and Command, Control, and Ocean Surveillance.

As required by the 1990 Base Closure Act,⁴ on April 12, 1991, the Secretary of Defense submitted a list of recommended base closures and realignments to the Defense Base Closure and Realignment Commission. The list included the proposals and justifications for closing or realigning 23 Navy RDT&E activities and 4 detachments—a subset of the 36 activities in the Navy's plan. The Base Closure Commission reviewed DOD's proposals, and its July 1, 1991, recommendations rejected the closure of three RDT&E activities, but recommended the remaining proposals. The President and the Congress accepted these recommendations. On January 2, 1992, the Navy began implementing a consolidation plan for the 36 RDT&E activities, which included the Base Closure Commission's recommendations for realigning or closing 20 activities and 4 detachments.

Results in Brief

By consolidating technical and overhead functions, the Navy expects to eliminate 2,770 positions (about 4 percent) of its fiscal year 1990 on-board personnel by fiscal year 1997. Through mission reorganization, the Navy plans to transfer functions and 5,898 associated positions between RDT&E activities. These figures reflect reductions and transfers occurring as a result of consolidation; they do not include potential reductions and transfers of RDT&E personnel that could result from future budget reductions and DOD downsizing efforts.

As of March 1993, the Navy completed relatively simple consolidation actions such as organizational changes not requiring relocation; however, it is still planning other, more complex actions. According to Navy officials, the Navy's initial plan⁵ did not provide sufficient details for implementing all consolidations—it reflected estimates of positions associated with functional transfers and contained some vague and conflicting information. Changes to the initial plan are now being made based on better estimates of positions to be transferred and more current assessments of workload.

⁴The Defense Base Closure and Realignment Act of 1990 specified the procedures for making recommendations for closing and realigning military installations inside the United States. It also established the Defense Base Closure and Realignment Commission to make independent recommendations to the President in 1991, 1993, and 1995, based on its review of the Secretary of Defense's closure and realignment proposals. The Commission's recommendations must be approved by the President and, unless the Congress disapproves, the recommendations become law.

⁵Throughout this report, we refer to the Navy's consolidation plan as approved in 1991 as the initial plan.

The Secretary of Defense's March 12, 1993, recommendations to the 1993 Defense Base Closure and Realignment Commission included proposals to change three 1991 closure recommendations and close or disestablish seven additional RDT&E activities and detachments. Depending on the Base Closure Commission's final recommendations, further changes may be made to the initial plan.⁶

In fiscal year 1992, the Navy eliminated 386 positions and transferred 979 civilian positions. Although warfare centers are taking steps to encourage personnel to transfer with their position, only 16 percent (49 employees), in positions that were geographically relocated in fiscal year 1992, actually moved.

Affected activities are developing plans and taking steps to mitigate anticipated risks to programs resulting from consolidation. The Navy has identified and is addressing two primary risks—loss of capabilities and disruption to programs. The Navy is working with some program offices, the primary customers of Navy RDT&E activities, to address these risks. However, in one case the Navy has not contacted the affected program managers. Although many of the activities' customers are generally pleased with these plans, others, whose programs are affected by large or more complex moves, are concerned that activities will be unable to perform the required work when necessary.

Navy's RDT&E Consolidation Planning Process and Initial Plan

The Navy's plan was developed by the RDT&E Facilities Consolidation Working Group, chaired by the Principal Deputy to the Assistant Secretary of the Navy for Research, Development, and Acquisition. The working group, comprised of representatives from the Navy's systems commands, Assistant Secretaries' offices, the Chief of Naval Operations, and various Navy staff offices, formulated a plan, using information on programs and facilities provided by field activities. The proposed structure of the RDT&E activities was four full-spectrum warfare centers aligned by mission and a single corporate laboratory, called the Naval Research Laboratory, which was assigned responsibility for broadly based research in science and technology. The four warfare centers would be full-spectrum in that their responsibilities would span the entire range of system development, from early development through direct fleet in-service engineering support. The working group presented closure and realignment recommendations to the Secretary during the 1991 base closure process.

⁶The Defense Base Closure and Realignment Act of 1990 states that the Secretary of Defense must initiate all closures and realignments no later than 2 years after the date on which the President submits his report to Congress.

To streamline, the Navy's initial plan reflected eliminating 2,479 positions, about 4 percent, of its fiscal year 1990 on-board personnel by fiscal year 1997. This included 2,193 civilian and 286 military positions. To restructure its RDT&E organization, the Navy plan called for reorganizing the missions of each activity so that similar work being performed at several activities would be performed under the leadership of one activity. Technical functions not part of the activities' assigned mission would be transferred to other warfare centers or activities, along with approximately 6,537 associated civilian positions.

See appendix I for details on the Navy's initial consolidation planning effort and its original plan.

Implementation and Status of the Navy's Plan

Between January 1992 and March 1993, all activities were reorganized under a warfare center reporting to a systems command or the corporate laboratory reporting to the Chief of Naval Research. Activities have developed, or are in the process of developing detailed transition plans to implement other consolidation requirements. Consolidation actions that were relatively simple to implement (such as organizational changes requiring no relocation) have been completed. Other actions are underway and planned for implementation in the near term. Some of the more complex realignments involving the largest numbers of positions to be transferred (such as Warminster, Pennsylvania; White Oak, Maryland; and New London, Connecticut) are still being planned. Others are under review by the 1993 Base Closure Commission.

Changes to the Consolidation Plan

For several reasons, some plans are still being developed. For example, the Navy's initial plan contained estimates of the number of positions associated with functions to be transferred and contained some language that was either too vague or inconsistent to determine what functions or how many positions were affected. As a result, consolidation planners are working to develop plans based on more accurate information of positions associated with functions to be transferred and what they believe to be the intent of reorganization. Adjustments are also being made based on current workload estimates. Efforts include negotiating with other warfare centers to determine what functions and how many positions should be transferred. Some actions require military construction and are being planned.

Accordingly, the Navy revised its initial estimate of the number of positions to be eliminated and transferred. As of March 1993, the Navy anticipated eliminating 2,770 positions (291 more positions than initially estimated) and transferring 5,898 civilian positions (639 fewer positions than initially proposed).

In addition to these changes, the 1993 Base Closure Commission is reviewing DOD recommendations to modify three closure recommendations made by the 1991 Commission. In its March 12, 1993, submission to the Base Closure Commission, DOD recommended that the receiving location for the Naval Electronic Systems Centers in San Diego and Vallejo, California, be changed to San Diego's current location instead of building new facilities elsewhere in San Diego. DOD also recommended that the Naval Mine Warfare Engineering Activity in Yorktown, Virginia, be relocated to the Naval Surface Warfare Center's (NSWC) Panama City, Florida, site instead of Dam Neck, Virginia. Lastly, DOD recommended that the Naval Weapons Evaluation Facility in Albuquerque, New Mexico, remain as a small detachment of the Naval Air Warfare Center's (NAWC) Weapons division rather than being closed.

In addition, NSWC is reassessing the 1991 recommendation to close the Integrated Combat Systems Test Facility in San Diego, California, based on our observation that late funding for a military construction project may affect its ability to meet the July 1997 deadline for closure required by the Defense Base Closure and Realignment Act of 1990.

In its March 12, 1993, submission to the 1993 Base Closure Commission, DOD recommended closing or disestablishing 5 more of the 36 activities and 2 detachments. Three of the five activities recommended for closure or disestablishment are part of the Navy's plan to consolidate the Naval Command, Control, and Ocean Surveillance's (NCCOSC) East Coast In-Service Engineering division, which was rejected by the 1991 Base Closure Commission.

Implementation Efforts to Date

In fiscal year 1992, the Navy eliminated 386 positions—369 civilian and 17 military—14 percent of its revised goal. In addition, it transferred 979 civilian positions (about 17 percent of the Navy's new goal) in fiscal year 1992, of which 673 positions (69 percent) were organizationally restructured and did not relocate. The remaining 306 positions transferred (31 percent) involved organizational changes as well as relocation to different geographical areas.

To determine costs of base closure and realignment actions, the Navy used DOD's 1991 Cost of Base Realignment Actions model. This model, used by all military services during the 1991 base closure and realignment process, assumed that about 53 percent of available personnel would transfer to another location if a job was available at the receiving site.

The Navy is using several methods to encourage staff to move with their function, such as establishing homeowners assistance programs, providing employment incentives such as educational opportunities and, in some cases, new facilities, and paying relocation costs. In addition, the Navy is exploring the possibility of providing relocation and retention bonuses to key personnel.

Despite the Navy's efforts to encourage personnel to transfer with their function, only 49 personnel (about 16 percent) associated with the 306 positions transferred to different geographical areas in fiscal year 1992.

Appendix II addresses the activities' detailed planning efforts and the status of consolidation implementation.

Impact of Consolidation on Navy Programs

The Navy has identified, and is addressing, two principal risks to programs resulting from consolidation: (1) the potential loss of technical capabilities resulting from personnel refusing to transfer with their function to a new location and (2) the potential disruption to programs due to the unavailability of facilities and equipment during the transition period.

To compensate for potential losses of experienced personnel, activities plan to use existing personnel at the receiving site, or to hire outside contractors or new employees. In one case, where few personnel are expected to relocate when their functions are transferred, the receiving division established a temporary detachment at the losing activity to build technical capability. This detachment will be staffed with both personnel at the losing activity who are willing to move, as well as some from the receiving activity.

Activities plan to compensate for downtime in facilities and equipment by scheduling transfers when programs will not require the use of facilities. Warfare centers also plan to limit facilities' downtime by planning prior to the actual transfer.

The Navy transferred some limited work in fiscal year 1992. Gaining activities used in-house personnel and, according to several program managers, there were no disruptions.

Although some program managers were satisfied with efforts to mitigate program risks, other managers were concerned about the activities' ability to perform the required work, the rationale for transferring certain functions, as well as increased costs. In one case, the program manager is concerned that the Navy's plan to relocate functions may result in failure to meet legislatively mandated deadlines. Program managers told us they may exercise other options such as hiring private contractors, sending work to other Navy in-house activities, or adjusting program milestones if the warfare centers are unable to perform work during the transition period or if the costs increase too much.

Appendix III addresses the impact of consolidation on Navy programs in greater detail.

Scope and Methodology

To determine the process used by the Navy to develop its consolidation plan, we met with the Principal Deputy to the Assistant Secretary of the Navy for Research, Development and Acquisition, and interviewed officials from the Naval Sea Systems, the Naval Air Systems, and the Space and Naval Warfare Systems Commands. We also interviewed officials and analyzed documents from selected field activities, the 1991 Defense Base Closure and Realignment Commission, the Chief of Naval Research, and the Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories.

We analyzed information on current implementation plans from the four warfare centers and the corporate laboratory headquarters. In addition, we also visited 20 Navy RDT&E activities throughout the United States and discussed implementation plans with officials from 5 additional Navy RDT&E activities. We reviewed transition plans for specific programs being transferred within and between warfare centers and other documents relating to consolidation implementation. We also reviewed warfare center revisions to the Navy's initial plan submitted to the Navy Laboratory/Center Oversight Council.

To determine the status of implementation, we interviewed officials and analyzed documents from the offices of the Navy Comptroller, the

Assistant Secretary of the Navy for Research, Development and Acquisition, and warfare center headquarters.

To obtain information on the impact of consolidation on Navy programs, we discussed the consolidation plan with several customers of Navy RDT&E activities who fund work at the activities that anticipate relocating functions. Among the transfers discussed were: aircraft programs from Warminster, Pennsylvania, to Patuxent River, Maryland; torpedo and antisubmarine warfare programs from San Diego, California, to Newport, Rhode Island, and Dahlgren, Virginia; communications programs from Vallejo, California, to San Diego, California; conventional gun programs from Louisville, Kentucky, to Port Hueneme, California; and submarine programs from Crane, Indiana, to Newport, Rhode Island.

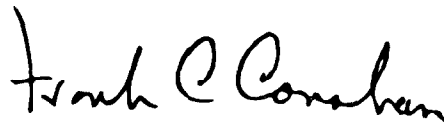
Our work was conducted from February 1992 through March 1993 in accordance with generally accepted government auditing standards.

Agency Comments

We provided a draft of this report to DOD on April 28, 1993. DOD did not provide written comments but provided official comments during an exit conference on March 26, 1993. DOD and Navy officials fully concurred with our findings and conclusions.

We are sending copies of this report to the House and Senate Subcommittees on Defense, the Chairmen of the Senate and House Committees on Armed Services, the Secretaries of Defense and the Navy, the Director of the Office of Management and Budget, and other interested parties. We will make copies available to others upon request.

This report was prepared under the direction of Richard Davis, Director, National Security Analysis. He can be reached at (202) 512-3504 if you or your staff have any questions concerning this report. Major contributors are listed in appendix IV.



Frank C. Conahan
Assistant Comptroller General

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Abbreviations

| | |
|--------|---|
| DOD | Department of Defense |
| NAVAIR | Naval Air Systems Command |
| NAVSEA | Naval Sea Systems Command |
| NAWC | Naval Air Warfare Center |
| NCCOSC | Naval Command, Control, and Ocean Surveillance Center |
| NSWC | Naval Surface Warfare Center |
| NUWC | Naval Undersea Warfare Center |
| RDT&E | Research, Development, Test, and Evaluation |
| SPAWAR | Space and Naval Warfare Systems Command |

The Navy's RDT&E Consolidation Planning Process and Initial Plan

The Navy's efforts to consolidate its Research, Development, Test and Evaluation (RDT&E), Engineering and Fleet Support activities began as a result of the Secretary of Defense's July 1989 Defense Management Report, which called for a sustained, long-term effort to streamline the Department of Defense's (DOD) acquisition management system and the overall management of DOD resources. Subsequent to this report, DOD issued a series of Defense Management Report Decisions that outlined specific tasks necessary to achieve management efficiencies and cost savings. Defense Management Report Decision 922, drafted in October 1989, and approved in November 1990, required each military service to consolidate its RDT&E activities and strengthen RDT&E management, as well as reduce duplication in science and technology among the three military services (referred to as Tri-Service Science and Technology Reliance).

Navy's Initial Consolidation Planning

On August 13, 1990, the Secretary of the Navy directed the Assistant Secretary of the Navy for Research, Development, and Acquisition to develop initial plans for internal Navy consolidation of its RDT&E activities by October 19, 1990. A Facilities Consolidation Working Group, chaired by the Principal Deputy to the Assistant Secretary of the Navy for Research, Development, and Acquisition,¹ and including representatives from the Navy's systems commands, Assistant Secretaries' offices, the Chief of Naval Operations, the Chief of Naval Research, and various Navy staff offices, was formed to develop this plan.

Focus of Navy's Consolidation Planning

The initial focus of the working group's consolidation effort was to streamline (downsize) and restructure the Navy's RDT&E organization to become more efficient. In the fall 1990, the Navy expanded its focus to address the following new legislative mandates requiring further reductions in personnel, budget, and facilities:

- The Budget and Enforcement Act of 1990, October 1990, according to the Navy, effected a more than 21-percent reduction in the Navy's Total Obligation Authority for fiscal years 1990 to 1995;

¹Throughout this report, we refer to the Principal Deputy to the Assistant Secretary of the Navy for Research, Development, and Acquisition as the Principal Deputy.

- The National Defense Authorization Act for Fiscal Year 1991, November 1990, mandated a 20-percent reduction in the civilian defense acquisition workforce for fiscal years 1991 through 1995;² and
- The Defense Base Closure and Realignment Act of 1990, November 5, 1990, permitted DOD to recommend closures and realignment of military installations.

These reductions were of such magnitude that the focus of the Navy's consolidation effort was expanded from simply improving efficiency, to eliminating duplication of effort between activities to preserve the Navy's core RDT&E technical capabilities during personnel and budget reductions.

Activities Considered for Consolidation

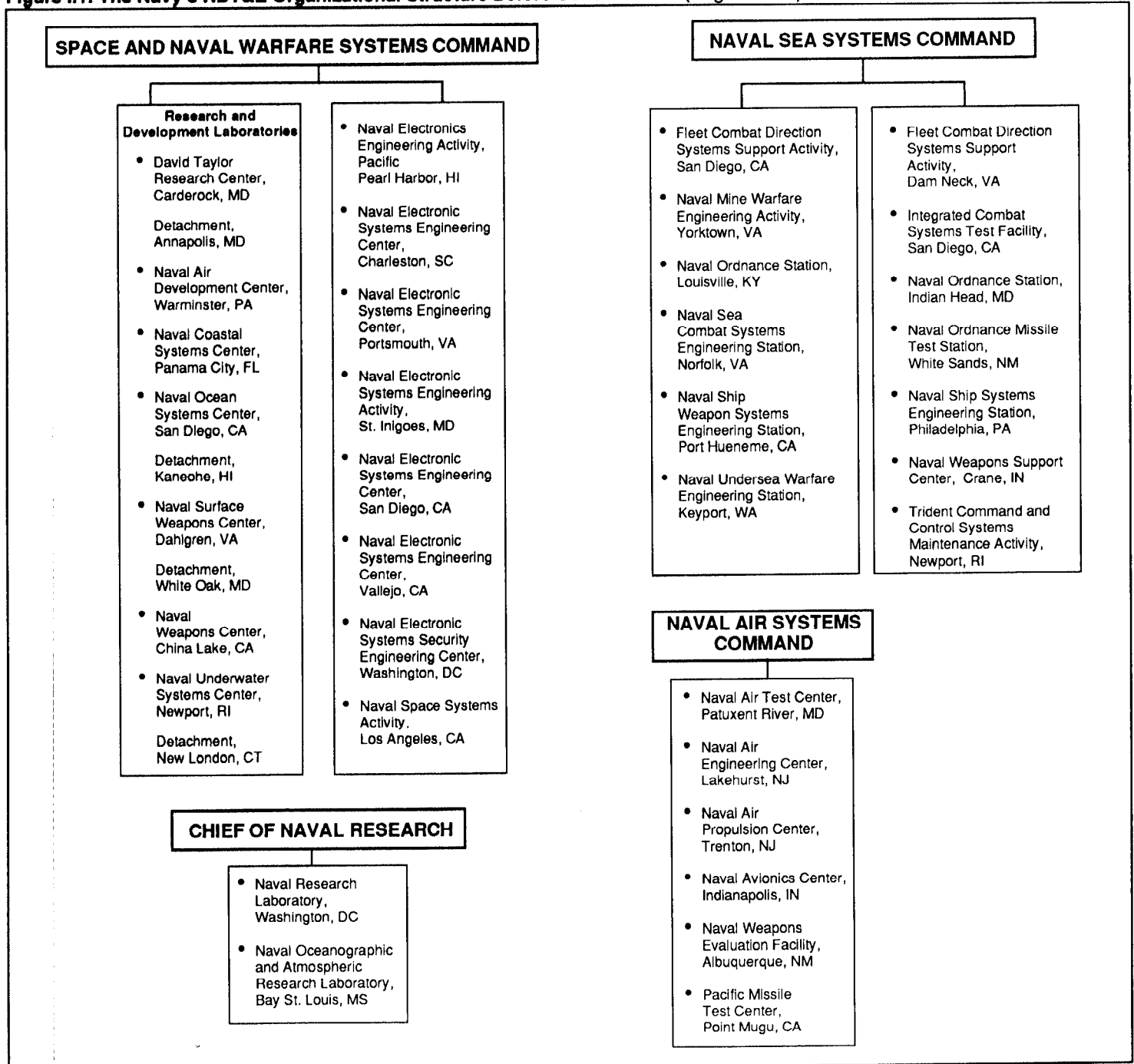
The Navy's RDT&E Facilities Consolidation Working Group initially considered 76 separate Navy activities receiving RDT&E funding. Forty activities were subsequently removed from consideration—26 because their missions were not involved in broad based RDT&E and engineering support functions (e.g., training activities; aviation depots; shipyards; supervisors of shipbuilding, conversion, and repair; and weapons stations) and 14 that were candidates for tri-service consolidation (e.g., medical research laboratories).

The working group focused its efforts on the remaining 36 Navy RDT&E activities, which represented 67,785 personnel. Although nine of these activities were primarily considered research and development centers, they engaged in a combination of research, development, test, and evaluation (RDT&E), and program and fleet support work. Seven research and development centers reported to the Director of Navy Laboratories (also the Deputy Commander, Space and Naval Warfare Systems Command (SPAWAR)), and two reported to the Chief of Naval Research. The remaining 27 activities were primarily responsible for test and evaluation and engineering and fleet support, reporting to three different systems commands, Naval Sea Systems Command (NAVSEA), Naval Air Systems Command (NAVAIR), and SPAWAR. These activities also performed some research and development work. Figure I.1 illustrates the organizational alignment (as of August 1990) of the 36 Navy RDT&E activities that were considered for consolidation.

²This mandate was subsequently rescinded by the National Defense Authorization Act For Fiscal Years 1992 and 1993, Dec. 5, 1991.

**Appendix I
The Navy's RDT&E Consolidation Planning
Process and Initial Plan**

Figure I.1: The Navy's RDT&E Organizational Structure Before Consolidation (August 1990)



Working Group's Initial Consolidation Planning Efforts

According to the Principal Deputy, the working group met periodically to review the most appropriate way to consolidate the 36 RDT&E activities. The group determined that in order to improve work management and provide better program support, the activities should be organized into four "full-spectrum" warfare centers and a corporate laboratory. Under this structure, the individual systems commands would control all RDT&E activities performing work associated with the same technical programs related to a specific platform or warfare area.

By August 22, 1990, the working group had agreed on the concept of forming one streamlined corporate laboratory and four full-spectrum warfare centers (Air, Surface, Undersea, and Command, Control and Ocean Surveillance). Under this structure, each warfare center would report to a systems command and be responsible for an assigned set of technical areas related to its specific platform or warfare area. Functions being performed by each activity not related to the assigned warfare center's mission would be transferred to the appropriate warfare center. The working group assigned 34 activities, including the 7 research and development laboratories reporting to the Director of Navy Laboratories, to a warfare center. According to the Principal Deputy, the two laboratories reporting to the Chief of Naval Research should remain separate from the warfare centers because they conducted broadly based research in science and technology related to all platforms and warfare areas rather than specific technical programs.

In December 1990, the working group presented the Secretary of the Navy its proposal to consolidate the 36 RDT&E activities into 1 corporate laboratory and 4 warfare centers. The Secretary endorsed the concept, and on December 14, 1990, directed the three systems commanders, who would become responsible for the four new warfare centers, and the Chief of Naval Research to prepare detailed implementation plans for consolidation.

Role of the Systems Commands and Field Activities in Consolidation Planning

The systems commands' and the Chief of Naval Research's planning efforts took place from December 1990 until April 1991. Each command formed working groups at headquarters (including some staff that were also members of the Navy's Facilities Consolidation Working Group) to develop detailed plans. Field activities also participated to some extent in consolidation planning, such as meeting with headquarters staff to discuss organizational realignments. The planning process involved defining functional realignments, determining each activity's organizational

alignment, and compiling data such as the number of positions affected by consolidation.

During this same timeframe, the Navy was collecting information to develop recommendations for closing and realigning its RDT&E activities.³ Field activities responded to numerous data calls from the systems commands and provided information concerning the number of people working on specific programs proposed for transfer to other activities. In addition, activities provided information such as the weight of equipment and the costs of moving and rebuilding equipment for use in DOD's Cost of Base Realignment Actions model.

The RDT&E Facilities Consolidation Working Group was responsible for drafting the final RDT&E consolidation proposal based on input from the systems commands. This plan was presented to the Secretary of the Navy in April 1991, who formally approved it on April 12, 1991, and forwarded it to the Secretary of Defense for inclusion in DOD's recommendations to the 1991 Defense Base Closure and Realignment Commission.

Defense Base Closure and Realignment Commission Review

Although consolidating some of the smaller RDT&E activities did not require Defense Base Closure and Realignment Commission's review and analysis,⁴ the Navy wanted to ensure that the Base Closure Commission fully understood the integrated nature of the consolidation plan. Therefore, the Secretary of Defense's April 1991 closure and realignment recommendations submitted to the 1991 Base Closure Commission included the Navy's entire plan to consolidate 34 activities into 4 warfare centers and incorporated the justification to realign 14 of these RDT&E activities (plus 3 detachments) and close 9 (plus 1 detachment). The Navy did not submit the corporate laboratory plan to the Base Closure Commission for review.⁵

³The Defense Base Closure and Realignment Act of 1990 permits the Secretary of Defense to submit a list of proposed military base closures and realignments to the Base Closure Commission by April 15, 1991. It also permits him to submit lists in 1993 and 1995.

⁴The Defense Base Closure and Realignment Act of 1990 requires that the Base Closure and Realignment Commission review and analyze DOD recommendations that involve the closure of any military installation where at least 300 civilian personnel are authorized to be employed or any realignment involving a reduction of more than 1,000, or by more than 50 percent, in the number of personnel authorized to be employed at an installation employing at least 300 civilians.

⁵According to the Principal Deputy, the Navy did not recommend submitting its plan to consolidate the corporate laboratory (two activities), primarily because it was an independent part of the plan and was not integrated with the other warfare centers, and did not meet the criteria required for Commission review.

**Appendix I
The Navy's RDT&E Consolidation Planning
Process and Initial Plan**

In its July 1991 recommendations to the President, the Base Closure Commission recommended realigning 14 RDT&E activities and 3 detachments and closing 6 activities and 1 detachment (see tables I.1 and I.2). The Base Closure Commission rejected DOD's proposal to close three activities in the East Coast In-Service Engineering division, Naval Command, Control, and Ocean Surveillance Center: the Naval Electronic Systems Engineering Center in Charleston, South Carolina; the Naval Electronic Systems Engineering Activity in St. Inigoes, Maryland; and the Naval Electronic Systems Security Engineering Center in Washington, D.C. The Base Closure Commission concluded that the Navy did not examine fully all available alternatives for the location of the division. The Base Closure Commission also recommended that the Navy defer implementation of its consolidation plan until January 1, 1992, in order to give the Secretary of Defense time to consider the findings of an independent Federal Advisory Commission on the Consolidation and Conversion of Defense Research and Development Laboratories.⁶ The President approved these recommendations in July 1991 and they were subsequently accepted by the Congress.

Table I.1: Navy RDT&E Activities Recommended for Closure by the 1991 Defense Base Closure and Realignment Commission

| | Navy RDT&E Activity | Location |
|---|---|-----------------|
| 1 | Integrated Combat Systems Test Facility | San Diego, CA |
| 2 | Naval Electronic Systems Engineering Center | San Diego, CA |
| 3 | Naval Electronic Systems Engineering Center | Vallejo, CA |
| 4 | Naval Mine Warfare Engineering Activity | Yorktown, VA |
| 5 | Naval Space Systems Activity | Los Angeles, CA |
| 6 | Naval Ocean Systems Center Detachment | Kaneohe, HI |
| 7 | Naval Weapons Evaluation Facility | Albuquerque, NM |

Source: July 1991 Defense Base Closure and Realignment Commission Report.

⁶In November 1990, the Congress established this Commission to determine the feasibility and desirability of various means to improve the operation of DOD laboratories.

Appendix I
The Navy's RDT&E Consolidation Planning
Process and Initial Plan

Table I.2: Navy RDT&E Activities Recommended for Realignment by the 1991 Defense Base Closure and Realignment Commission

| | Navy RDT&E Activity | Location |
|----|--|------------------|
| 1 | David Taylor Research Center Detachment | Annapolis, MD |
| 2 | Naval Air Development Center | Warminster, PA |
| 3 | Naval Air Engineering Center | Lakehurst, NJ |
| 4 | Naval Air Propulsion Center | Trenton, NJ |
| 5 | Naval Avionics Center | Indianapolis, IN |
| 6 | Naval Coastal Systems Center | Panama City, FL |
| 7 | Naval Ordnance Station | Indian Head, MD |
| 8 | Naval Ordnance Station | Louisville, KY |
| 9 | Naval Surface Weapons Center Detachment | White Oak, MD |
| 10 | Naval Underwater Systems Center Detachment | New London, CT |
| 11 | Naval Undersea Warfare Engineering Station | Keyport, WA |
| 12 | Naval Weapons Center | China Lake, CA |
| 13 | Naval Weapons Support Center | Crane, IN |
| 14 | Pacific Missile Test Center | Point Mugu, CA |
| 15 | Trident Command and Control Systems Maintenance Activity | Newport, RI |
| 16 | Naval Sea Combat Systems Engineering Station | Norfolk, VA |
| 17 | Fleet Combat Direction Systems Support Activity | San Diego, CA |

Source: July 1991 Defense Base Closure and Realignment Commission report.

Navy Planning Efforts After Base Closure Commission Review

On July 24, 1991, the Under Secretary of the Navy instructed the Assistant Secretary of the Navy for Research, Development, and Acquisition to establish teams to develop detailed transition plans for implementation. Teams were subsequently established under the three systems commands and the Chief of Naval Research. The Federal Advisory Commission issued its report in September 1991 and endorsed the Navy's plan. On December 20, 1991, the Under-Secretary of the Navy authorized the systems commanders and the Chief of Naval Research to begin implementing the consolidation plan on January 2, 1992. The plan included all 36 RDT&E activities. It included not only realigning and closing the RDT&E activities as recommended by the Base Closure Commission, but also consolidating other activities under the warfare centers and the corporate laboratory and reevaluating the East Coast In-Service Engineering division plan.

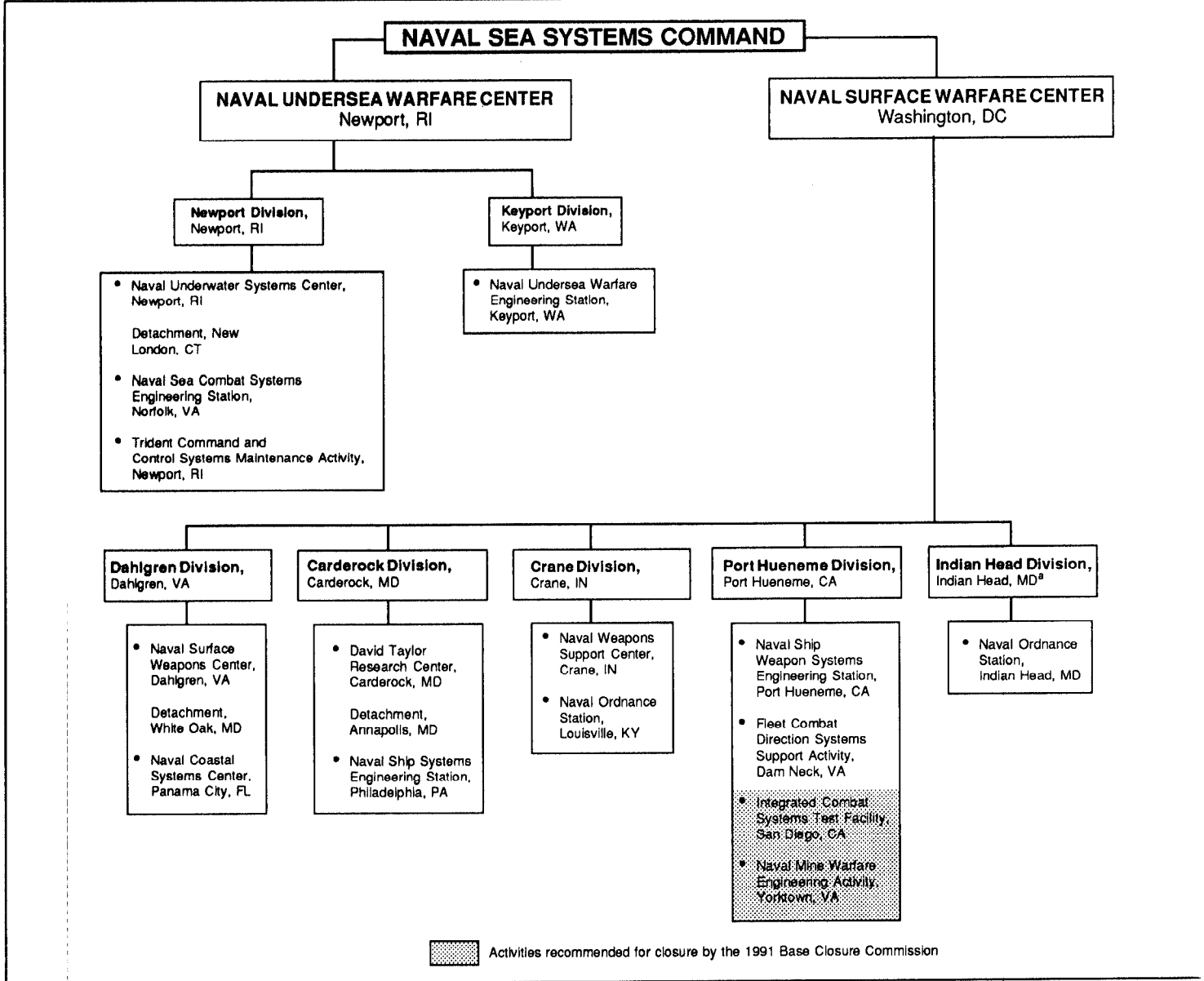
Navy's Approved Consolidation Plan

Under the initial consolidation plan, most of which was reviewed by the Base Closure Commission and subsequently approved by the President and the Congress in July 1991, the Navy's RDT&E activities were reorganized into four warfare centers and one corporate laboratory. Each systems command would provide administrative support for the warfare centers.

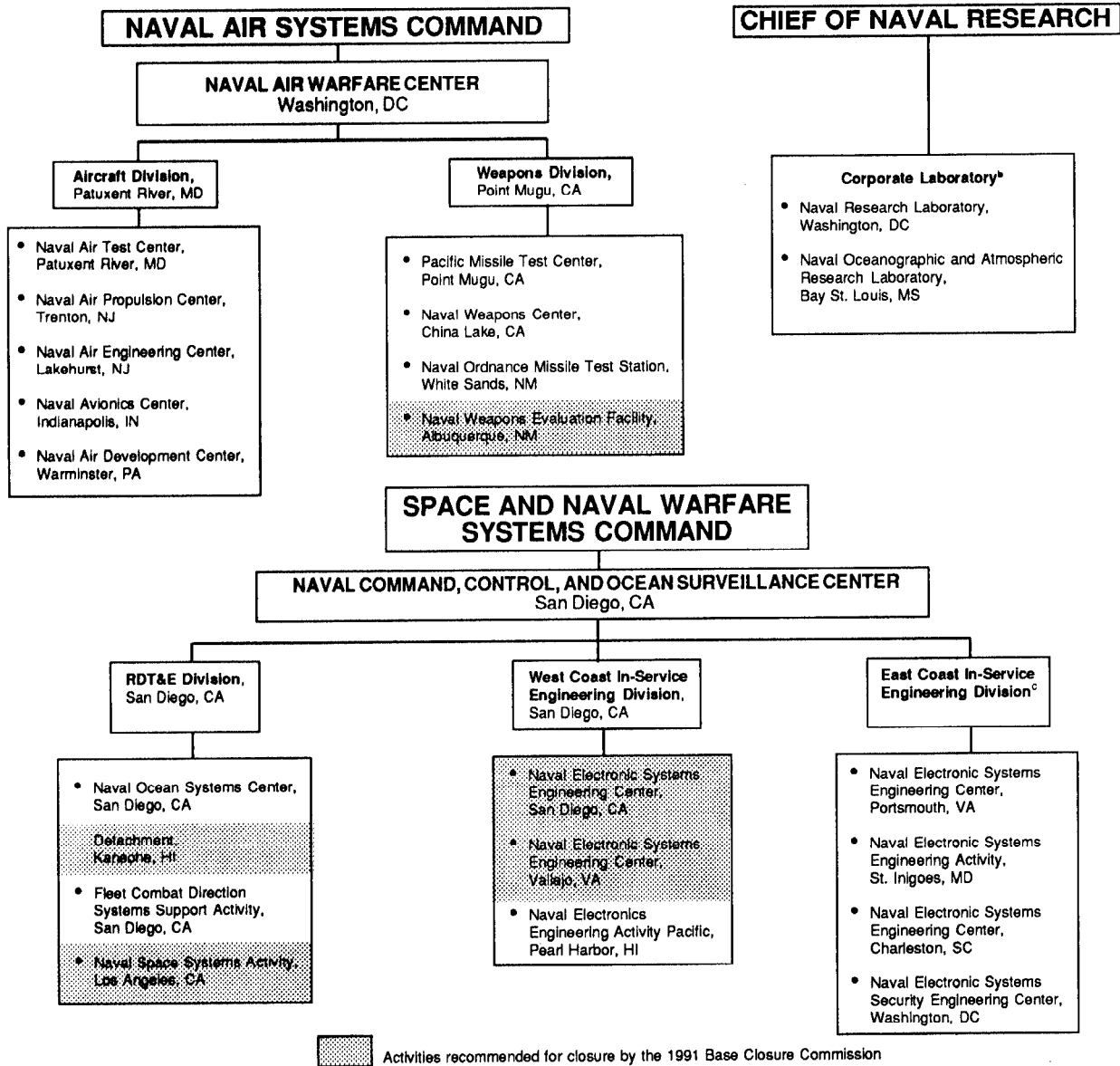
Figure I.2 illustrates the organizational structure of the Navy's RDT&E activities as approved in July 1991.

**Appendix I
The Navy's RDT&E Consolidation Planning
Process and Initial Plan**

Figure I.2: The Navy's New RDT&E Organizational Structure



Appendix I
The Navy's RDT&E Consolidation Planning
Process and Initial Plan



*Indian Head was originally aligned under the Crane division but was designated its own division in August 1991.

^bThese two activities represent the Navy's corporate laboratory, also called the Naval Research Laboratory.

^cThe 1991 Base Closure Commission rejected the consolidation of the East Coast In-Service Engineering division.

Planned Consolidation Savings and Efficiencies

The Navy's initial consolidation plan reflected eliminating civilian and military positions and the duplication of effort between activities through either streamlining or purifying the missions of each warfare center.

To achieve savings, the Navy's plan called for each warfare center and the corporate laboratory to eliminate, by site, a specific number of positions that would no longer be required. The warfare centers and the corporate laboratory are expected to meet these goals by fiscal year 1997. By consolidating its RDT&E infrastructure, the Navy's initial plan estimated eliminating 2,193 civilian positions (3.5 percent) and 286 military positions (5.3 percent). (See table I.3.)

Table I.3: The Navy's Initial Estimate of RDT&E Positions to Be Eliminated

| Navy activity | Positions as of September 30, 1990 | | | Initial estimate of position eliminations | | | Percent of total positions to be eliminated |
|---|------------------------------------|--------------|---------------|---|------------|--------------|---|
| | Civilian | Military | Total | Civilian | Military | Total | |
| Corporate Laboratory | 4,092 | 125 | 4,217 | 37 | 2 | 39 | .9 |
| Naval Air Warfare Center | 21,764 | 3,722 | 25,486 | 1,209 | 229 | 1,438 | 5.6 |
| Naval Command, Control, and Ocean Surveillance Center | 5,807 | 541 | 6,348 | 101 | 20 | 121 | 1.9 |
| Naval Surface Warfare Center | 22,796 | 572 | 23,368 | 596 | 25 | 621 | 2.7 |
| Naval Undersea Warfare Center | 7,974 | 392 | 8,366 | 250 | 10 | 260 | 3.1 |
| Total | 62,433 | 5,352 | 67,785 | 2,193 | 286 | 2,479 | 3.7 |

Source: Navy's July 1991 migration charts and consolidation planning documents.

Although the Navy's plan does not specify what type of civilian and military positions to eliminate, the plan states that reducing overhead functions should be the first priority in achieving consolidation savings. However, according to the Principal Deputy, warfare centers do not have to adhere to a specific number of overhead positions as long as they achieve their overall savings goals.

To preserve technical capabilities while eliminating duplication, the Navy plan establishes centers of technical excellence at each warfare center. Each warfare center, the corporate laboratory, and all subordinate activities are responsible for a particular set of technical areas that support the warfare centers'/corporate laboratory's overall mission. Technical functions and associated positions that are not related to that activity's technical leadership area will be transferred in-place or relocated to the appropriate warfare center and activity.

**Appendix I
The Navy's RDT&E Consolidation Planning
Process and Initial Plan**

For example, the Navy's April 1991 consolidation plan states that the Naval Undersea Warfare Center's Newport division, Newport, Rhode Island, will assume leadership responsibility for all torpedo and torpedo and sonar countermeasures work (work previously performed at three different locations—the Naval Underwater Systems Center in Newport, the Naval Ocean Systems Center in San Diego, California, and the Naval Coastal Systems Center in Panama City, Florida). According to the plan, San Diego and Panama City are to transfer these functions to Newport, where program managers will send all future Navy torpedo and countermeasures RDT&E work.

Table I.4 shows initial Navy estimates of the number of positions associated with transferring functions. These estimates include both transfers that require geographical relocation as well as transfers in-place.

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Table I.4: The Navy's Initial Estimates of the Number of Civilian Positions Associated With Transferring Functions

| Base Closure Commission recommendation (except where noted) | Navy RDT&E activity transferring functions | Navy organization and specific location gaining functions | Planned civilian position transfers July 1991 |
|--|---|--|--|
| Close | Integrated Combat Systems Test Facility, San Diego, CA " b | NSWC Port Hueneme, CA | 34 |
| | | NCCOSC San Diego, CA | 5 |
| Close | Naval Electronic Systems Engineering Center, San Diego, CA ^d | NCCOSC West Coast In-Service Engineering division San Diego, CA | 0 |
| Close | Vallejo, CA | NCCOSC West Coast In-Service Engineering division San Diego, CA | 314 |
| Close | Yorktown, VA | NSWC Dam Neck, VA | 186 |
| Close | Los Angeles, CA | NCCOSC RDT&E division San Diego, CA | 29 |
| Close | Kaneohe, HI " b | NCCOSC RDT&E division San Diego, CA | 190 |
| | | NCCOSC Pearl Harbor, HI | ^e |
| Close | Albuquerque, NM ^b " | NAWC China Lake, CA | 14 |
| | | NAWC Point Mugu, CA | 8 |
| Realign | Annapolis, MD " | NSWC Carderock, MD | 363 |
| | | NSWC Philadelphia, PA | 100 |
| Realign | Warminster, PA " " " b | NAWC Patuxent River, MD | 1,656 |
| | | NAWC Point Mugu, CA ^c | 25 |
| | | NAWC China Lake, CA ^c | 21 |
| | | NCCOSC RDT&E division San Diego, CA ^c | 244 |
| Realign | Lakehurst, NJ ^d | NAWC Lakehurst, NJ | 0 |
| Realign | Trenton, NJ | NAWC Patuxent River, MD | 157 |
| Realign | Indianapolis, IN ^d | NAWC Indianapolis, IN | 0 |
| Realign | Panama City, FL " | NSWC Dahlgren, VA | 60 |
| | | NUWC Newport, RI | 200 |
| Realign | Indian Head, MD ^d | NSWC Indian Head, MD | 0 |
| Realign | Louisville, KY " | NSWC Port Hueneme, CA | 30 |
| | | NSWC Crane, IN | 75 |
| Realign | White Oak, MD | NSWC Dahlgren, VA | 892 |
| Realign | New London, CT " | NUWC Newport, RI | 724 |
| | | NSWC Dahlgren, VA | 50 |
| Realign | Keyport, WA ^d | NUWC Keyport, WA | 0 |
| Realign | China Lake, CA | NCCOSC RDT&E division San Diego, CA | 2 |

(continued)

**Appendix I
The Navy's RDT&E Consolidation Planning
Process and Initial Plan**

| Base Closure Commission recommendation (except where noted) | Navy RDT&E activity transferring functions | Navy organization and specific location gaining functions | Planned civilian position transfers July 1991 |
|--|--|--|--|
| Realign | Crane, IN | NSWC Louisville, KY | 50 |
| | " | NUWC Newport, RI | 100 |
| Realign | Point Mugu, CA (Pacific Missile Range Facility, HI) ^b | Pacific Fleet, Honolulu, HI ^c | 200 |
| Realign | Trident Command and Control Systems Maintenance Activity, Newport, RI ^b | NUWC Newport, RI | 153 |
| Realign | Norfolk, VA | NSWC Dam Neck, VA | 190 |
| | " ^b | NSWC Carderock, MD | 60 |
| Realign | Fleet Combat Direction Systems Support Activity, San Diego, CA ^d | NCCOSC RDT&E division, San Diego, CA | 0 |
| Not Listed ^a | Naval Ocean Systems Center, San Diego, CA ^a | NUWC Newport, RI | 300 |
| | " | NSWC Dahlgren, VA | 100 |
| Not Listed ^a | Patuxent River, MD ^a | Space and Naval Warfare Systems Command, Washington, DC | 5 |
| Total | | | 6,537 |

Source: Department of Defense Base Closure and Realignment Report, April 1991, Navy's Base Closure and Realignment Recommendations: Detailed Analysis, 1991 (tab F), and July 1991 migration charts.

^aThese activities were not included in the 1991 Base Closure and Realignment Commission's recommendations list but are part of the Navy's consolidation plan.

^bTransfers in-place.

^cThese transfers and positions did not appear in tab F but are part of the Navy's initial plan.

^dThese activities were included on the 1991 Base Closure and Realignment Commission's closure and realignment list; however, they are only being organizationally realigned and the functions will remain at the same location.

^eThe initial plan did not breakout transfers from Kaneohe, Hawaii, to San Diego, California, or to Pearl Harbor, Hawaii.

Legend:

NAWC: Naval Air Warfare Center

NCCOSC: Naval Command, Control, and Ocean Surveillance Center

NSWC: Naval Surface Warfare Center

NUWC: Naval Undersea Warfare Center

Although the Navy is transferring some military positions, warfare centers are concentrating their consolidation planning efforts on transferring

civilian positions, which represent the majority of positions to be transferred. In addition, the Navy is formally realigning 14 activities and 3 detachments; however, not all realignments involve the transfer of functions and personnel to different warfare centers or sites.

Assigning Work to Navy RDT&E Activities

Navy RDT&E activities receive their funding primarily from Navy program offices responsible for the development, acquisition, and procurement of major weapon systems. Prior to consolidation, program managers funded work at any Navy in-house RDT&E activity willing and capable of performing that work. The result was a large RDT&E infrastructure that duplicated some work. In approving the consolidation plan in April 1991, the Secretary of the Navy eliminated competition among RDT&E facilities by directing program managers to send new or additional in-house work to the activity assigned to take the lead in that area. Therefore, program managers will no longer be able to select which RDT&E activity will perform the work.

Navy Implementation of Its Plan and Consolidation Status

Consolidation Planning Guidance

The Navy's Research, Development, Test, and Evaluation (RDT&E) consolidation plan is not contained in one document, but consists of a combination of elements. Guidance and direction for developing plans to implement consolidation include:

- the April 12, 1991, plan approved by the Secretary of the Navy;
- the Department of Defense Base Closure and Realignment Report, April 1991;
- tab F to the Navy's Base Closure and Realignment Recommendations: Detailed Analysis, April 1991;
- the recommendations of the 1991 Defense Base Closure and Realignment Commission, July 1, 1991;
- a set of charts, referred to as migration charts, promulgated in July 1991, enumerating the number of personnel affected by the plan; and
- various additional organizational and activity name changes, made sometime after the Navy's April 1991 plan and before implementation began January 2, 1992.

The April 12, 1991, plan reflects a broad outline for reorganizing activities and functions under the warfare centers and sets specific milestones for consolidation implementation. The Department of Defense's (DOD) submission to the Base Closure Commission formally proposed closure and realignment recommendations for Navy RDT&E activities. Tab F to the Navy's detailed analysis provides the justification for the recommendations submitted by DOD to the Base Closure Commission as well as its plans for consolidating other activities. Tab F is also the initial baseline for consolidation planning and contains the most detail in terms of initial functional transfers and consolidation savings goals. The Base Closure and Realignment Commission's recommendations require specific closures and realignments. The migration charts enumerate planned civilian and military position transfers and eliminations at each site as contained in tab F, as well as transfer figures not part of either the April 12, 1991 plan or tab F.

Prior to implementation, the Navy renamed the Surface and Undersea Warfare Center divisions to reflect geographic rather than functional descriptions and added a division under the Naval Surface Warfare Center (NSWC).¹

¹In August 1991, the Navy designated the Naval Ordnance Station at Indian Head, Maryland, as a separate division (Indian Head Division) within NSWC. Under the plan reviewed by the Base Closure Commission, Indian Head was organized as an activity reporting to Crane, Indiana.

Implementation Planning

Following the President's approval of the Base Closure and Realignment Commission's 1991 recommendations, on July 24, 1991, the Under Secretary of the Navy formally directed the Assistant Secretary of the Navy for Research, Development, and Acquisition to begin implementation planning. However, some RDT&E activities had begun planning as early as December 1990, after the Secretary of the Navy officially endorsed the four-warfare center concept.

Transition Teams Established to Develop Plans

Warfare center commanders assigned responsibility for detailed implementation planning to the RDT&E activities. For most divisions, individuals were assigned to coordinate the consolidation effort and establish transition teams to formulate implementation plans and, where applicable, to plan the transfer of technical functions to and from other sites. Transition teams included technical representatives from those activities losing and gaining functions, positions, and personnel.

Difficulties Encountered With the Plan

According to consolidation planners at several warfare centers and transition plans, tab F of the Navy's Base Closure and Realignment Recommendations: Detailed Analysis, April 1991, provided the primary basis for consolidation planning. Based on our analysis and discussions with consolidation planners at several warfare center divisions, tab F did not provide sufficient details to implement all consolidations. According to Navy officials, tab F was prepared in a very short time frame and represented initial estimates. In some cases, tab F was vague, included conflicting information, and, in one case, was incomplete. For example:

- NSWC Crane division officials said that they were not sure what programs were included in the transfer of "miscellaneous submarine systems" from Crane, Indiana, to Naval Undersea Warfare Center (NUWC), Newport, Rhode Island, division and could not trace the origin of the 100 positions associated with this transfer as stated in tab F.
- NSWC Dahlgren division planners were not sure which systems were included in the transfer of 60 positions of "selected mine countermeasures and special warfare systems" from its Panama City, Florida, site to its Dahlgren, Virginia, site. According to transition documents, tab F did not identify the exact nature of the selected systems, nor did it provide a clear statement of purpose of the transfer.
- For the NSWC Carderock division detachment at Annapolis, Maryland, one section of tab F states that 38 percent of existing personnel should be

retained; however, another section states that 32 percent should be retained.

- NSWC planners pointed out that one section of tab F requires that 30 positions supporting in-service engineering work on gun weapon systems be transferred from Louisville, Kentucky, to Port Hueneme, California. In another section, the plan states that in-service engineering for assigned combat systems would transfer from Louisville to Port Hueneme. Officials told us that gun weapon systems and assigned combat systems are different—the gun system is a small component of an overall combat system. Because tab F did not provide clear direction, both divisions have been negotiating what work and positions should be transferred.
- Tab F states that NSWC Dahlgren division retain 550 civilian technical positions at its White Oak, Maryland, detachment to operate several unique facilities; the rest of White Oak's technical functions are to transfer to Dahlgren, Virginia. According to division officials, tab F did not account for approximately 140 administrative positions necessary to support functions remaining at White Oak (e.g., safety, security, environmental, personnel, financial, and contracting).
- Tab F was not specific about the functions and facilities to be transferred from New London, Connecticut, to Newport, Rhode Island. Consolidation planners at NUWC are still deciding what functions and facilities to include in the transfer and one official said that the functions listed in tab F were only candidates.

Initial Plan Being Modified

Because of inconsistent information contained in tab F and to update the number of positions associated with functional transfers, consolidation planners are now proposing changes.

Warfare centers are proposing changes based on reviews of positions associated with specific programs or work to be transferred and on more current estimates of workload. For example, NUWC and the Naval Command, Control, and Ocean Surveillance Center (NCCOSC) revised the number of positions associated with the transfer of torpedo programs from San Diego, California, to Newport, Rhode Island, based on a review of personnel time charged for specific work. Other revisions reflect changes in the number of authorized positions from the time the plan was developed to when it was implemented in January 1992. For example, according to warfare center officials, 191 positions were authorized when the Trident Command and Control Systems Maintenance Activity in Newport, Rhode Island, was disestablished, rather than the 153 NUWC planned to originally transfer.

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Changes to the initial plan also involve canceling some transfers. For example, two separate transfers—50 positions associated with surface ship antisubmarine warfare functions from New London, Connecticut, to Dahlgren, Virginia, and about 140 positions associated with antisubmarine warfare work from Norfolk, Virginia, to Dam Neck, Virginia—were canceled pursuant to a June 3, 1992, agreement between NSWC and NUWC that formally divides this work between them, allowing NUWC to retain the positions and functions originally slated to transfer. According to a Navy official, this agreement reflects a more effective way of performing antisubmarine warfare work.

Further changes are expected as planning continues. For example, NSWC officials are negotiating the specific work and the number of positions that should transfer from Louisville, Kentucky, to Port Hueneme, California, for gun and gun weapon systems in-service engineering work.

Changes to original consolidation milestones and/or the number of personnel transfers must be approved by the Navy/Laboratory Center Oversight Council, which is responsible for overseeing implementation of the consolidation plan.² According to the Principal Deputy, because of the number of changes made to the plan, and recognizing that the numbers contained in tab F were estimates, the Navy established a formal mechanism for the approval of all modifications. Changes were submitted by each warfare center to the oversight council in the form of a baseline. The oversight council approved the new baseline on November 13, 1992, which reflected revised completion dates and a new target for the number of positions expected to transfer.

As of March 1993, the November 1992 baseline was the most current Navy plan. As a result of canceled transfers and more accurate information on positions associated with functional transfers, the current plan reflects relocating 5,898 positions associated with transferring functions, or about 10 percent fewer positions than originally planned. The oversight council will review this baseline periodically.

Table II.1 shows the changes in estimated civilian position transfers from the Navy's initial 1991 plan and the revised November 1992 estimate.

²The oversight council was established on January 2, 1992, and is comprised of the Navy's systems commanders, the Vice Chief of Naval Operations, the Chief of Naval Research, the Assistant Commandant of the Marine Corps, and other top level Navy officials. The council is chaired by the Assistant Secretary of the Navy for Research, Development, and Acquisition.

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Table II.1: Summary of Changes to Estimates of Civilian Positions Transferring

| Base Closure Commission recommendation (except where noted) | Activity transferring functions | Navy organization and specific location gaining functions | Civilian Positions | | |
|--|---|--|-----------------------------|---------------------------|--------|
| | | | Initial plan (July 1991) | November 1992 estimate | Change |
| Close | Integrated Combat Systems Test Facility, San Diego, CA " b | NSWC Port Hueneme, CA | 34 | 50 | 16 |
| | | NCCOSC San Diego, CA | 5 | 5 | 0 |
| Close | Naval Electronic Systems Engineering Center, San Diego, CA ^d | NCCOSC West Coast In-Service Engineering division, San Diego, CA | 0 | 0 | 0 |
| Close | Vallejo, CA | NCCOSC West Coast In-Service Engineering division, San Diego, CA | 314 | 242 | -72 |
| Close | Yorktown, VA | NSWC Dam Neck, VA | 186 | 214 | 28 |
| Close | Los Angeles, CA | NCCOSC RDT&E division San Diego, CA | 29 | 29 | 0 |
| Close | Kaneohe, HI " b | NCCOSC RDT&E division San Diego, CA | 190 | 145 | -20 |
| | | NCCOSC Pearl Harbor, HI | ^e | 25 | |
| Close | Albuquerque, NM ^b " | NAWC China Lake, CA | 14 | 22 | 8 |
| | | NAWC Point Mugu, CA | 8 | 0 | -8 |
| Realign | Annapolis, MD " | NSWC Carderock, MD | 363 | 392 | 29 |
| | | NSWC Philadelphia, PA | 100 | 40 | -60 |
| Realign | Warminster, PA " " " b | NAWC Patuxent River, MD | 1,656 | 1,656 | 0 |
| | | NAWC Point Mugu, CA ^c | 25 | 25 | 0 |
| | | NAWC China Lake, CA ^c | 21 | 21 | 0 |
| | | NCCOSC RDT&E division San Diego, CA ^c | 244 | 259 | 15 |
| Realign | Lakehurst, NJ ^d | NAWC Lakehurst, NJ | 0 | 0 | 0 |
| Realign | Trenton, NJ | NAWC Patuxent River, MD | 157 | 157 | 0 |
| Realign | Indianapolis, IN ^d | NAWC Indianapolis, IN | 0 | 0 | 0 |
| Realign | Panama City, FL " | NSWC Dahlgren, VA | 60 | 60 | 0 |
| | | NUWC Newport, RI | 200 | 140 | -60 |
| Realign | Indian Head, MD ^d | NSWC Indian Head, MD | 0 | 0 | 0 |
| Realign | Louisville, KY " | NSWC Port Hueneme, CA | 30 | 30 | 0 |
| | | NSWC Crane, IN | 75 | 25 | -50 |
| Realign | White Oak, MD | NSWC Dahlgren, VA | 892 | 775 | -117 |
| Realign | New London, CT " | NUWC Newport, RI | 724 | 704 | -20 |
| | | NSWC Dahlgren, VA | 50 | 0 | -50 |
| Realign | Keyport, WA ^d | NUWC Keyport, WA | 0 | 0 | 0 |

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| Base Closure Commission recommendation (except where noted) | Activity transferring functions | Navy organization and specific location gaining functions | Civilian Positions | | |
|---|--|---|--------------------------|------------------------|-------------|
| | | | Initial plan (July 1991) | November 1992 estimate | Change |
| Realign | China Lake, CA | NCCOSC RDT&E division San Diego, CA | 2 | 0 | -2 |
| Realign | Crane, IN | NSWC Louisville, KY | 50 | 50 | 0 |
| | " | NUWC Newport, RI | 100 | 72 | -28 |
| Realign | Point Mugu, CA (Pacific Missile Range Facility, HI) ^b | Pacific Fleet, Honolulu, HI ^c | 200 | 129 | -71 |
| Realign | Trident Command and Control Systems Maintenance Activity, Newport, RI ^b | NUWC Newport, RI | 153 | 191 | 38 |
| Realign | Norfolk, VA | NSWC Dam Neck, VA | 190 | 48 | -142 |
| | " b | NSWC Carderock, MD | 60 | 78 | 18 |
| Realign | Fleet Combat Direction Systems Support Activity, San Diego, CA ^d | NCCOSC RDT&E division San Diego, CA | 0 | 0 | 0 |
| Not Listed ^a | Naval Ocean Systems Center, San Diego, CA ^a | NUWC Newport, RI | 300 | 211 | -89 |
| | " b | NUWC Keyport, WA | 0 | 32 | 32 |
| | " | NSWC Dahlgren, VA | 100 | 71 | -29 |
| Not Listed ^a | Patuxent River, MD ^a | Space and Naval Warfare Systems Command, Washington, DC | 5 | 0 | -5 |
| Total | | | 6,537 | 5,898 | -639 |

Source: Navy's tab F plan and its July 1991 migration charts.

^aThese activities were not included in the 1991 Base Closure and Realignment Commission's recommendations list, but are part of the Navy's consolidation plan.

^bTransfers in-place.

^cThese transfers and positions did not appear in tab F but are part of the Navy's initial plan.

^dThese activities were included in the 1991 Base Closure and Realignment Commission's recommendations list, but are only being organizationally realigned; functions are not being transferred.

^eTab F did not break out transfers from Kaneohe, Hawaii to San Diego, California, or to Pearl Harbor, Hawaii.

In addition to changes in the number of positions to transfer, the Navy increased the number of position eliminations from 2,479 to 2,770 during an August 1992 internal budget review. (See table II.2).

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Table II.2: Revised Planned Civilian and Military Position Eliminations

| Navy RDT&E Activity | Revised planned positions to be eliminated between fiscal years 1992-1997 | | |
|---|--|-----------------|--------------|
| | Civilian | Military | Total |
| Corporate Laboratory | 37 | 2 | 39 |
| Naval Air Warfare Center | 1,264 | 229 | 1,493 |
| Naval Command, Control, and Ocean Surveillance Center | 101 | 20 | 121 |
| Naval Surface Warfare Center | 821 | 25 | 846 |
| Naval Undersea Warfare Center | 261 | 10 | 271 |
| Total | 2,484 | 286 | 2,770 |

Source: Office of the Navy Comptroller, August 1992.

**Status of
Consolidation
Implementation**

The Navy began implementing its consolidation plan on January 2, 1992. As of March 1993, the corporate laboratory, the four warfare centers, and the subordinate divisions had been established. Consolidation actions that were relatively simple to implement (e.g., organizational changes requiring no relocation of functions and positions) have also been completed. Others are underway and planned for consolidation in the near term. Some plans, including the largest and more complex or controversial realignments of Warminster, Pennsylvania; White Oak, Maryland; and New London, Connecticut; have not been completed. Finally, certain plans concerning some activities recommended for closure are either under review or pending approval.

To implement consolidation, each division has, or is in the process of developing transition plans that outline the strategy and milestones for particular consolidation actions. In most cases, these plans relate to specific functional transfers between warfare centers and/or sites, and must be approved by the commanders and technical directors of both the losing and gaining warfare center divisions. As of March 1993, the following transition plans were not yet finalized:

- the transfer of functions from Warminster, Pennsylvania, to Patuxent River, Maryland; and
- the transfer of functions from NUWC New London, Connecticut, to Newport, Rhode Island.

Warfare centers signed memoranda of agreement regarding two other transfers—gun systems from NSWC Louisville, Kentucky, to NSWC Port Hueneme, California, and sonar systems from NSWC Crane, Indiana, to NUWC Newport, Rhode Island—as a prelude to formulating more detailed plans.

In addition, several proposals that were inconsistent with the plan as approved by the 1991 Base Closure Commission were resubmitted to the 1993 Commission for review. In its March 12, 1993, submission to the Base Closure and Realignment Commission, DOD recommended changes to three 1991 closure recommendations:

- the Naval Electronic Systems Engineering Center in San Diego, California (now part of NCCOSC's West Coast In-Service Engineering division);
- the Naval Mine Warfare Engineering Activity in Yorktown, Virginia (now part of NSWC's Port Hueneme division); and
- the Naval Weapon Evaluation Facility in Albuquerque, New Mexico (now part of the Naval Air Warfare Center's (NAWC) Weapons division).

The Naval Surface Warfare Center is also reviewing the closure of the Integrated Combat Systems Test Facility.

Closure of Naval Electronic Systems Engineering Center, San Diego

The 1991 Base Closure Commission recommended closing the Naval Electronic Systems Engineering Center at San Diego, California, as proposed by the Navy. The original plan reflected closing the activity and relocating it to another site in San Diego. Part of this plan was to close the Naval Electronic Systems Center in Vallejo, California, and combine it with the San Diego Engineering Center at the new site. However, according to the Principal Deputy, the new site is not suitable for the type of work the Engineering Center performs and the costs to construct new facilities are expected to be prohibitive. Further, since April 1991, additional space has become available at the Naval Electronic Systems Engineering Center's current location (enough to house both the San Diego and Vallejo activities expected to transfer). If this space is used, it would eliminate the need to move the San Diego activity and build new facilities. On March 12, 1993, DOD recommended changing the receiving location from another location in San Diego to its current location.

Closure of the Naval Mine Warfare Engineering Activity, Yorktown

The 1991 Base Closure Commission recommended closing the Naval Mine Warfare Engineering Activity at Yorktown, Virginia. Functions, facilities, and associated personnel were to transfer to existing space at the Naval Surface Warfare Center's Dam Neck, Virginia, site (formerly the Fleet Combat Direction Systems Support Activity). This activity is a tenant of the Fleet Combat Training Center, Atlantic. However, because the Naval Education and Training Command is planning to consolidate training programs and functions at its Dam Neck site, it informed NSWC on May 13, 1992, that existing space would not be available for Yorktown. Because space is not available at Dam Neck, Virginia, on March 12, 1993, the Secretary of Defense recommended to the 1993 Base Closure Commission that the Yorktown activity be relocated to NSWC Dahlgren division's Panama City, Florida, site.

Closure of the Naval Weapons Evaluation Facility, Albuquerque

The 1991 Base Closure Commission included the Naval Weapons Evaluation Facility in Albuquerque, New Mexico, on its recommended closure list. However, the Navy proposed, in tab F, leaving a small detachment there after closure. The detachment was to be administratively supported by personnel from the Naval Air Warfare Center's Weapons division site at China Lake, California. Based on our observation that the maintenance of a detachment at Albuquerque might not be consistent with the recommendation of the 1991 Base Closure Commission to close the activity, the Navy, through the Secretary of Defense, recommended to the 1993 Commission that Albuquerque be allowed to remain as a detachment.

Closure of the Integrated Combat Systems Test Facility, San Diego

In addition to the closures being submitted to the Base Closure Commission, the Naval Surface Warfare Center is reassessing its plan to close the Integrated Combat Systems Test Facility at San Diego, California, and move its equipment and personnel to Port Hueneme, California, based on our observation that late funding for a military construction project would affect the Navy's ability to meet the statutory 1997 deadline to close the activity. The Navy had planned to move this activity into an unfunded military construction project at Port Hueneme. However, according to NSWC officials, funding for this project will not be available until at least fiscal year 1996, which could inhibit the Navy's ability to close San Diego by the statutory deadline of July 1997. NSWC officials are reviewing alternatives for the activity.

**Other RDT&E Closure
Recommendations**

In addition to these proposals, DOD recommended to the 1993 Base Closure Commission closing or disestablishing 2 detachments and 5 more of the 36 RDT&E activities. These included NSWC White Oak, Maryland (detachment) and Annapolis, Maryland (detachment); NAWC Trenton, New Jersey; NUWC Norfolk, Virginia; and three activities of NCCOSC's East Coast In-Service Engineering division that were rejected by the 1991 Base Closure Commission (St. Inigoes, Maryland; Charleston, South Carolina; and Washington, D.C.).

Realignments and Closures

As of March 1993, 1 of the 17 recommended realignments had been completed; none of the 7 closures recommended by the 1991 Base Closure Commission had been closed. DOD considers a realignment completed when all functions and personnel have been transferred or eliminated. In fiscal year 1992, the Navy realigned the Fleet Combat Direction Systems Support Activity in San Diego, California. The Navy's four largest realignments—Warminster, Pennsylvania; White Oak, Maryland; New London, Connecticut; and Annapolis, Maryland—involve reducing (by transferring out and/or eliminating) the number of personnel by more than one-half of these activities' September 30, 1990, authorized position levels. Realigning these activities is largely dependent upon completing military construction projects at the activities receiving the functions, facilities, and personnel. According to current plans, construction projects are scheduled to be completed in the fiscal year 1996-97 timeframe. During fiscal year 1992, Warminster, New London, and Annapolis transferred a few functions and positions; no functions or positions were transferred from White Oak. The remaining 12 realignments do not involve significant downsizing actions, but, in some cases, do involve the transfer, either physical or in-place, of selected technical functions and personnel. Three 1991 closures also require military construction.

**Elimination of Positions
Due to Streamlining**

In August 1992, the Navy revised the number of civilian and military positions to be eliminated due to consolidation. In fiscal year 1992, the Navy eliminated 386 positions, or 14 percent of its new overall goal (see table II.3).

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**Table II.3: Civilian and Military Position
Eliminations Resulting From
Consolidation**

| Navy RDT&E activity | Total planned positions to be eliminated between fiscal years 1992-97 | Actual number of positions eliminated as of September 30, 1992 | | | Total percent achieved |
|---|---|--|-----------|------------|------------------------|
| | | Civilian | Military | Total | |
| Corporate Laboratory | 39 | 3 | 2 | 5 | 13 |
| Naval Air Warfare Center | 1,493 | 275 | 10 | 285 | 19 |
| Naval Command, Control, and Ocean Surveillance Center | 121 | 0 | 0 | 0 | 0 |
| Naval Surface Warfare Center | 846 | 40 | 2 | 42 | 5 |
| Naval Undersea Warfare Center | 271 | 51 | 3 | 54 | 20 |
| Total | 2,770 | 369 | 17 | 386 | 14 |

Source: Office of the Navy Comptroller, August 1992.

**Transfer of Personnel Due
to Restructuring**

The Navy's current consolidation plan calls for transferring, both in-place and geographically, functions and 5,898 associated civilian personnel within and between warfare centers, as previously shown in table II.1. In fiscal year 1992, the Navy began transferring positions associated with functional transfers to their new warfare center and/or site. The Navy transferred 979 civilian positions in fiscal year 1992. Of these positions, 673, or 69 percent, were reorganized in-place under new warfare centers or sites (see table II.4) and 306 positions, or 31 percent, were geographically relocated (see table II.5).

**Appendix II
Navy Implementation of Its Plan and
Consolidation Status**

Table II.4: Transfers of Civilian Positions and Personnel Requiring No Relocation for Fiscal Year 1992

| Navy RDT&E activity transferring functions | Warfare center and activity gaining functions | Fiscal year 1992 actual | |
|---|---|--------------------------------|-----------------------|
| | | Positions transferred in-place | Personnel transferred |
| Norfolk, VA | NSWC Carderock, MD | 78 | 78 |
| | NSWC Dam Neck, VA | 48 ^a | 45 ^b |
| Trident Command and Control Systems Maintenance Activity, Newport, RI | NUWC Newport, RI | 191 | 182 ^b |
| Naval Ocean Systems Center, San Diego, CA | NUWC Keyport, WA | 30 | 30 |
| | NUWC Newport, RI | 3 ^c | 3 |
| | NSWC Dahlgren, VA | 10 ^a | 0 ^b |
| Warminster, PA | NCCOSC San Diego, CA | 259 | 259 |
| Los Angeles, CA | NCCOSC San Diego, CA | 29 ^a | 26 ^b |
| New London, CT (detachment) | NUWC Newport, RI | 25 ^a | 25 |
| Total | | 673 | 648 |

Source: November 13, 1992, baseline and warfare center data.

^aThese positions were transferred in-place in fiscal year 1992 but are expected to relocate in the future.

^bSeveral positions were vacant at the time of the transfer.

^cOne of these positions is located in Keyport, WA.

Table II.5: Transfers of Civilian Positions and Personnel Involving Geographical Relocation in Fiscal Year 1992

| Activity transferring functions | Warfare center and activity gaining functions | Total positions to be relocated between 1992-97 | Fiscal year 1992 actual | | |
|---|---|---|-------------------------|---------------------|-------------------|
| | | | Positions relocated | Personnel relocated | Percent relocated |
| Crane, IN | NUWC Newport, RI | 72 | 28 | 0 | 0 |
| | NSWC Louisville, KY | 50 | 50 | 0 | 0 |
| Panama City, FL | NUWC Newport, RI | 140 | 46 | 1 | 2 |
| Annapolis, MD (detachment) | NSWC Carderock, MD | 392 | 30 | 21 | 70 |
| Louisville, KY | NSWC Crane, IN | 25 | 25 | 3 | 12 |
| Naval Ocean Systems Center, San Diego, CA | NUWC Newport, RI | 211 | 45 | 0 | 0 |
| | NUWC Keyport, WA | 2 | 2 | 2 | 100 |
| Kaneohe, HI | NCCOSC San Diego, CA | 145 | 79 | 21 | 30 |
| New London, CT (detachment) | NUWC Newport, RI | 704 | 1 | 1 | 100 |
| Total | | 1,741 | 306 | 49 | 16 |

Source: November 13, 1992, baseline and warfare center data.

Warfare Centers Encouraging People to Move

According to warfare center officials, each center is making efforts to encourage people to move with their function by establishing homeowners assistance programs, and providing employment incentives such as educational opportunities and, in some cases, new facilities. The Navy will also pay personnel relocation costs, and is exploring the possibility of providing relocation and retention bonuses to key personnel.

Warfare center officials are using local community organizations at receiving locations to encourage people to transfer. For example, the Army Corps of Engineers determined that employees in the New London, Connecticut, area are eligible for the Homeowners Assistance Program. This is a program offered to civilian and military employees, who, through no fault of their own, face financial loss when selling their homes in an area where real estate values have declined because of base closures or realignments.

NUWC is also considering providing bus service between New London, Connecticut, and Newport, Rhode Island, so that employees in the New London area will not have to move their residences.

NAWC officials said that new buildings to be constructed at Patuxent River, Maryland, should attract employees from Warminster, Pennsylvania. Although many of Warminster's technical equipment may not be replaced, officials believe that because they will be moved into new facilities, the working environment will be attractive enough to retain current personnel. In addition, according to NAWC officials, representatives from St. Mary's County, Maryland, are discussing infrastructure needs such as schools and professional educational opportunities to inform Warminster personnel about the receiving location and build confidence that the receiving area will meet the personal needs of incoming personnel.

To encourage those personnel identified as key to a particular function, some warfare centers are considering offering relocation and retention bonuses. Officials at some warfare centers plan to establish criteria to determine which personnel are vital to the continuation of particular programs transferring to another site.

Few Personnel Transferred in Fiscal Year 1992

During the 1991 base closure process, the Navy used DOD's Cost of Base Realignment Actions model to derive cost and savings estimates of closure and realignment actions. The model assumed that about 53 percent of available personnel would relocate with their position if a job were

available at the receiving location. However, despite the Navy's encouragement, few people moved with their position in fiscal year 1992, as previously reflected in table II.5. Of 306 civilian positions geographically transferred, only 49 people, or 16 percent, in these positions actually moved. In only one case did a majority of personnel transfer with their position. In fiscal year 1992, 21 people out of 30 positions transferred from NSWC Annapolis, Maryland, to Carderock, Maryland, a distance of approximately 50 miles.

According to the Navy's baseline, the transfer of positions associated with specific functions will be phased over several fiscal years, with the majority planned to occur between fiscal years 1994 and 1997. In some cases, transfers are not scheduled to begin for several years. Warfare center officials told us that the number of personnel who relocate are likely to change as the actual transfer approaches. According to these officials, decisions to relocate will be influenced by (1) the distance involved, (2) the economy at the time of the transfer, and (3) the opportunity for employment in the area affected by downsizing.

**Warfare Centers Plan to
Reassign Staff Who Do Not
Transfer**

Planners at donor activities said that they will attempt to reassign personnel who do not transfer with their positions to other projects at the activity, workload permitting. Some activities have been able to reassign most employees because of increasing workload or vacant positions. However, other activities that are closing or significantly downsizing have not had that option and existing personnel have been served reduction-in-force notices.

Impact of Consolidation on Navy Programs

Potential Risks to Programs Resulting From Consolidation

The Navy recognizes that there are potential risks to programs resulting from consolidation. Program managers, the primary customers of Navy Research, Development, Test, and Evaluation (RDT&E) activities, and warfare center officials identified two primary risks to technical programs—loss of capabilities and disruption to programs. These risks were also identified by the 1991 Base Closure Commission’s July 1991 report and the Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories in its September 1991 report. The Federal Advisory Commission noted that the Navy’s plan presented a challenge to minimize disruption of work, loss of key personnel, and disruption to critical research and development programs.

Loss of Capabilities

According to program managers and warfare center officials, one potential risk is the loss of technical capability if experienced personnel do not transfer with their positions. As discussed in appendix II, few or no personnel transferred with their position when functions were relocated to another site in fiscal year 1992. According to several program managers, specialized engineering and technical skills are required to support particular programs. These skills may be difficult to replace and may involve lengthy on-the-job training.

Disruption to Programs

Some program managers expressed concerns that programs moved to another location could be disrupted or delayed because of the time required to transfer and set up technical equipment. Program managers are concerned that their programs would be transferred, or that facilities may be unavailable, during critical phases in the program’s development.

Under the Navy’s consolidation plan, several functional transfers require new military construction. In addition, these transfers can include disassembling, cataloging, and packing equipment at the losing activity and transporting, reassembling, recertifying, and testing it at the new location. During this time, facilities may not be available to support technical programs. Warfare center officials and program managers estimate that, in several cases, facilities and equipment may be unavailable for up to 1 year. For example:

- According to a draft facility transition plan, Naval Air Warfare Center (NAWC) Aircraft division officials estimate that it will take about 1 year to transfer software development and integration equipment supporting the

P-3 Maritime Patrol Aircraft, from Warminster, Pennsylvania, to Patuxent River, Maryland.

- Naval Surface Warfare Center (NSWC) and Navy officials estimate that it will take 1 year to transfer integrated combat software direction systems from San Diego, California, to Port Hueneme, California.
- One program manager for an in-service engineering program at Vallejo, California, expects disruption for approximately 6 months while it is transferred to San Diego.

Program managers also expressed concerns that their programs would be delayed or disrupted due to consolidation. For example, one program manager for environmental protection research and development programs is concerned that the transfer of equipment from Annapolis, Maryland, to Carderock, Maryland, may inhibit the Navy's ability to comply with legislation mandating new environmental standards affecting waste removal aboard ships. In addition, another program manager is concerned that the lack of a firm decision on the final location of the Naval Electronic Systems Engineering Center in San Diego, California, will hinder planning for future work, and that equipment may not be available when needed.

Some program managers are concerned that certain pieces of equipment were never intended to be moved. At least one draft program plan cautioned that in moving complex equipment, errors can occur that may ultimately affect the equipment's operational capability.

Other Concerns

Several program managers expressed concerns that (1) additional funds may be needed from their program budgets to finance program transfers and (2) the costs of doing business at receiving activities may be higher and would subsequently mean that program managers could fund less work.

Navy Is Addressing Ways to Minimize Risks

In most cases, transition plans address risks and preliminary risk mitigation planning has begun. The Navy is planning to mitigate the potential loss of technical capabilities resulting if personnel do not transfer with their function by (1) reassigning staff at the gaining activity to perform new work and (2) establishing temporary detachments at losing activities. The Navy plans to mitigate the potential disruption to programs and reduced support to the fleet resulting from the unavailability

of facilities and equipment by planning the consolidation around program milestones and performing advanced planning prior to consolidation.

Consolidation costs should be funded by the Department of Defense's (DOD) base closure and realignment account and should not have to be borne by program offices. According to Naval Undersea Warfare Center (NUWC) officials, NSWC and NUWC reached an agreement to transfer work from Crane, Indiana, to Newport, Rhode Island, even though program managers were concerned about the higher costs of doing business at Newport. The agreement stated that detailed plans will be developed, which will be approved by program sponsors and will include risk mitigation plans.

Plans to mitigate risks are contained in most written transition plans. Generally, warfare centers involved program managers in transition planning and officials agree that programs cannot be successfully transferred without concurrence from the program manager. Program managers signed approved transition plans for programs transferring into the Naval Undersea Warfare Center and other warfare centers briefed program managers periodically on the transition plans. Some program managers of programs transferring from Vallejo, California, to San Diego, California, stated they were not involved in transition planning; however, because these programs are well established, program managers were not concerned about program transition risks.

Reassigning New Work to Experienced Personnel

Warfare centers plan to preserve technical capabilities for specific programs that are relocating by reassigning existing staff to incoming work and hiring experienced personnel. According to Navy officials, generally, gaining activities have existing expertise to perform incoming work. For example, NSWC Port Hueneme, California, performs in-service engineering work on surface ship combat weapons systems and some engineering work on ship self defense systems. Program managers believe that Port Hueneme will be able to assume the in-service engineering role for gun and gun weapon systems being transferred from Louisville. Navy program managers told us that NUWC Newport has experience in torpedo and countermeasures programs necessary to absorb work from the Naval Command, Control, and Ocean Surveillance Center (NCCOSC) San Diego, California, and NSWC Panama City, Florida. Likewise, NUWC Newport has experience in working on sonar transducers and towed arrays that will enable them to assume this work from Crane, Indiana. A NSWC Carderock, Maryland, division official told us that its Philadelphia, Pennsylvania, site

currently performs in-service engineering work on ship systems, the type of work it will receive from Annapolis, Maryland, in fiscal year 1994.

Receiving locations plan to preserve capabilities in various ways. To successfully transition surface ship antisubmarine warfare, mine, and projectile fuze work from White Oak, Maryland, to Dahlgren, Virginia, the Dahlgren division plans to establish teams at Dahlgren comprised of existing Dahlgren staff, new hires, and White Oak personnel willing to transfer. These teams will work with existing staff at White Oak to become familiar with the program and build expertise. The teams would be established in advance of scheduled moves and would be ready to absorb the work at Dahlgren when it is physically transferred.

Officials at NAWC's Aircraft division plan to compensate for potential losses of experience resulting from the transfer of personnel from Warminster, Pennsylvania, to Patuxent River, Maryland, by establishing core groups of expertise consisting of new hires, support contractors, and reassigned staff.

NCCOSC's West Coast In-Service Engineering division at San Diego, California, plans to use existing personnel to assume satellite communications work from Vallejo, California. NCCOSC first plans to send some personnel to Vallejo on temporary duty status to become familiar with specific programs. The goal is to train San Diego employees on Vallejo programs to facilitate the eventual transition of the programs to San Diego.

Establishing Detachments

To minimize the risk of losing experienced personnel, the Navy is establishing temporary detachments at losing activities to hire and train personnel on programs before they are physically transferred to a new location. The Navy established one detachment in fiscal year 1992, and may establish another, pending the outcome of negotiations between NSWC Crane and Port Hueneme divisions.

Warfare Centers Planning Equipment Moves According to Program Schedules

Officials at some warfare centers are planning to time the transfer of equipment for periods when specific programs will not require its use so that equipment can be shut down with minimum impact. Where possible, warfare centers are identifying specific windows during which equipment can be moved. For example:

- The transition plan for the Extremely High Frequency Satellite Communications program identifies the fourth quarter of fiscal year 1994 and the first quarter of fiscal year 1995 as the proposed window to move from Vallejo, California, to San Diego, California, based on the program's future workload. Several critical events are planned during the next couple of years. According to the NCCOSC plan, facilities that support installation and testing of satellite communications systems aboard surface ships and submarines are necessary to meet the program's initial operational capability milestone in the first quarter of fiscal year 1994 and to meet the schedule for installation of new systems in the second quarter of fiscal year 1995.
- Officials at NUWC Newport division plan to move responsibility for system integration for the surface ship torpedo defense program from Panama City, Florida, to Newport, Rhode Island, after it completes its operational and test evaluations currently scheduled for late fiscal year 1993. Other responsibilities will be transferred at appropriate milestones.

Although officials at NAWC Warminster, Pennsylvania, have identified preliminary windows when facilities supporting its largest programs could be moved with least impact, Warminster's transition team is planning to conduct a review of all programs and their supporting facilities to determine the best time to transfer them to Patuxent River, Maryland. Warminster's transition manager said that some programs may be ending and will not have to be moved, or some existing redundant facilities could be used for programs without loss of support.

If program milestones change over the next several years, the timing of equipment transfers may have to be modified. In addition, warfare center officials are planning to time equipment transfers to the availability of facilities at the gaining activity. In many cases, facilities will not be available until at least fiscal year 1995.

Several Warfare Centers Conducting Advanced Facility Planning

Officials at several warfare centers involved in transferring equipment are also planning to minimize disruption to programs by reviewing the tasks and requirements necessary for moving facilities and equipment into newly constructed or rehabilitated spaces at other locations. These warfare centers are in the process of determining how downtime can be limited, including such methods as replacing, rather than moving, equipment or components at the new location and/or phasing the transfers of equipment so that some systems can back up or compensate for others being transferred.

NAWC Warminster has awarded several contracts to architectural and engineering firms to inventory and estimate the tasks, costs and requirements to disassemble, pack, transport, reassemble, and recertify all equipment to Patuxent River, Maryland. In addition, Warminster expects that the firms, along with Warminster's program engineers, will identify the risks and ways to minimize them prior to the move. For example, Warminster's transition manager stated that ensuring that drawings (schematics) for all equipment are adequate prior to the move will save time when reassembling these facilities at Patuxent River, Maryland.

Officials at NSWC Carderock division are planning to transfer major facilities and equipment from its Annapolis, Maryland, detachment to Carderock, Maryland. Carderock planning officials estimate that these facilities will be unavailable for approximately 6 months. Although detailed planning for relocating equipment has not begun, planners at one department in Annapolis conducted a review of all major equipment to be relocated in conjunction with the design of new facilities to be constructed at Carderock, Maryland. Officials estimate that it would cost less to replace rather than move several pieces of equipment and it would save approximately 6 months in downtime. This estimate was based, in part, on the costs to hire contractors to perform work during the transition period. Funding for replacement of equipment would come from DOD's base closure account.

Likewise, officials at Vallejo, California, are reviewing facilities to be relocated to San Diego, California. Current plans include replacing existing test beds that currently support several satellite communications systems, which are scheduled to be phased out of the fleet soon after the program transfers to San Diego. New test beds to be built in San Diego will be capable of supporting new systems entering the fleet; the existing test beds will remain in Vallejo and will eventually be put out of service. Vallejo's plans to install new equipment at San Diego, while leaving existing equipment operative at Vallejo is so that program support is not disrupted.

Officials at NSWC Dahlgren division are planning to transfer computer equipment associated with surface ship antisubmarine warfare combat control systems from NCCOSC San Diego, California, and White Oak, Maryland, to Dahlgren, Virginia. One consolidation official at the Dahlgren division said that White Oak will begin detailed planning in fiscal year 1994. According to one Dahlgren division planning official, risks to downtime associated with this functional transfer will be mitigated

because both San Diego and White Oak have similar equipment. The Dahlgren division is planning to transfer equipment from San Diego in fiscal year 1994, during which time, facilities at White Oak can be used as back up. Once the equipment from San Diego is operational at Dahlgren, it will be used to back up equipment being transferred from White Oak in fiscal year 1997.

Navy Moved Work in Fiscal Year 1992 With Little Program Disruption

During fiscal year 1992, the Navy began geographically relocating limited work between sites. Some work consisted of specific functions of larger programs, such as the software support function for the MK-50 torpedo program, while other work represented technical support, such as machine shop operations which supports various programs. Generally, these transfers did not require relocation of major equipment. In addition, according to several transition plans and Navy officials, this work did not require special training of personnel and could be easily staffed by gaining activities. For example, warfare center officials told us that NSWC, Louisville, and NCCOSC's RDT&E division, San Diego, were responsible for work similar to that being transferred from Crane, Indiana, and Kaneohe, Hawaii, respectively, and are capable of performing such work. In addition, NUWC Newport, Rhode Island, was preparing to assume responsibility for the MK-50 torpedo program from San Diego even prior to consolidation.

For functional transfers that occurred in fiscal year 1992 where few or no personnel transferred with their position, gaining activities staffed work with in-house personnel or with new hires. Staff became available because of reductions in other programs, or assumed additional responsibilities. For example:

- NUWC Newport, Rhode Island, staffed work on the MK-46 and MK-50 torpedo programs, and the surface ship torpedo defense programs transferred from NCCOSC San Diego, California, and Panama City, Florida, with personnel from the MK-48 and Advanced Capability torpedo programs and other assignments and with new hires.
- NSWC Louisville, Kentucky, was able to staff work associated with the mechanical devices function, consisting mostly of machine shop operations that support several different programs, from Crane, Indiana, with in-house personnel because of a general reduction in its workload.
- NCCOSC's RDT&E division in San Diego staffed work received from Kaneohe, Hawaii, with in-house personnel who worked on similar programs.

In addition, NUWC personnel, experienced in targets work, began traveling periodically to Panama City, Florida, and personnel experienced in torpedo work began traveling to San Diego, California, to become familiar with programs scheduled to transfer to Newport in the future. These people will be responsible for the program once it transfers.

The NSWC Dahlgren division established a temporary detachment at NCCOSC San Diego, California, in recognition that few people will transfer with surface ship antisubmarine warfare combat control systems work from NCCOSC San Diego, California, to NSWC Dahlgren, Virginia. According to Dahlgren division officials, this detachment will assist the division to transition approximately 70 positions to Dahlgren, Virginia, attract and hire key people from NCCOSC San Diego, California, who may be willing to relocate, and/or hire personnel from local contractors.

According to the plan, existing personnel at NCCOSC San Diego will continue to work on their assigned functions until it is moved to Dahlgren. This staff will help train NSWC personnel at the detachment prior to the physical transfer. While the Dahlgren division assumed management control over the surface ship antisubmarine warfare work at San Diego in fiscal year 1993, NCCOSC San Diego, will still be responsible to the program manager for meeting program milestones for approximately 2 fiscal years. This responsibility is expected to gradually transition to the Dahlgren division as its San Diego detachment personnel are trained and become proficient in program work.

Program Manager Evaluations of Plans to Minimize Program Risks

Several program managers, whose programs are affected by RDT&E consolidation, are satisfied with the activities' plans to minimize impacts. Program managers for those programs that moved, or began moving, in fiscal year 1992, told us they were satisfied that work was transferred without risk, and are continuing to be supported. One program manager told us that, in cases where the gaining site cannot perform some work, they are using the old site temporarily.

However, several program managers, whose programs will be affected by large or complex transfers, expressed concerns about the activities' ability to perform required work when necessary. In most cases, these program managers are responsible for programs where transition plans are not yet complete (e.g., Warminster to Patuxent River and Annapolis to Carderock). Some of these program managers also questioned (1) the

rationale for transferring certain functions and (2) the potential for increased program costs if the activities do not have enough funds to pay for the transfer. Officials at one program office said that the transfer may potentially result in program delays.

Although program managers are not formally pursuing other options, most agree that they can take additional steps to minimize the risk during transition periods if necessary. Some program managers can subcontract work with private industry, adjust program milestones, or send work to other in-house laboratories (DOD-wide) with the capabilities to perform. However, some program managers told us that private contractors are not always available and can be more expensive than Navy in-house activities. Others told us that alternatives to in-house activities may not be viable. For example, the program manager for work performed at the Integrated Combat Systems Test Facility in San Diego, California, can perform integrated combat direction software tests aboard ships, or at training facilities at Dam Neck, Virginia, but these tests may not be as reliable as those performed on the regular testing equipment.

Major Contributors to This Report

**National Security and
International Affairs
Division, Washington,
D.C.**

Richard J. Price, Assistant Director
Mary K. Quinlan, Evaluator-in-Charge
Robert H. Goldberg, Staff Evaluator

**Boston Regional
Office**

Richard E. Silveira, Regional Assignment Manager
Kevin F. Murphy, Site Senior
Alson A. Castonguay, Staff Evaluator

**Los Angeles Regional
Office**

Dennis A. De Hart, Regional Management Representative
Harold D. Reich, Site Senior

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