

Audit



Report

OFFICE OF THE INSPECTOR GENERAL

**DEFENSE INFORMATION SYSTEMS AGENCY
MANAGEMENT OF CIRCUIT CONFIGURATIONS FOR
DEFENSE SWITCHED NETWORK ACCESS
REQUIREMENTS**

Report No. 95-100

February 9, 1995

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Acronyms

| | |
|------|---|
| CCSD | Command Communications Service Designator |
| DCTN | Defense Commercial Telecommunications Network |
| DISA | Defense Information Systems Agency |
| DSN | Defense Switched Network |



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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February 9, 1995

**MEMORANDUM FOR DIRECTOR, DEFENSE INFORMATION SYSTEMS
AGENCY**

**SUBJECT: Audit Report on Defense Information Systems Agency Management of
Circuit Configurations for Defense Switched Network Access
Requirements (Report No. 95-100)**

We are providing this report for your review and comments. The report discusses the effectiveness of the Defense Information Systems Agency in managing circuit configurations.

DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. The Director, Defense Information Systems Agency, did not provide comments on the draft of the report. Therefore, the Director, Defense Information Systems Agency, must provide comments on the unresolved recommendations by April 10, 1995.

The courtesies extended to the audit staff are appreciated. If you have questions on this audit, please contact (b) (6), Audit Program Director, at (b) (6) or (b) (6), Audit Project Manager, at (b) (6). The distribution of this report is listed in Appendix H. The audit team members are listed inside the back cover.

David K. Steensma

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Deputy Assistant Inspector General
for Auditing

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Office of the Inspector General, DoD

Report No. 95-100
(Project No. 3RD-0008.01)

February 9, 1995

DEFENSE INFORMATION SYSTEMS AGENCY MANAGEMENT OF CIRCUIT CONFIGURATIONS FOR DEFENSE SWITCHED NETWORK ACCESS REQUIREMENTS

EXECUTIVE SUMMARY

Introduction. This report is the last of three reports resulting from our Audit of the DoD Management of Configurations for Defense Switched Network Access Circuits. The Defense Switched Network is the principal long-haul, general-purpose telecommunications network designed to provide switched* voice, digital data, and video teleconferencing services to DoD customers. The universe for the overall audit was composed of 18,050 Defense Switched Network access circuits and 2,934 special-purpose voice circuits that cost \$32.9 million and \$39.6 million, respectively (a total of \$72.5 million). This report discusses reconfiguration opportunities for Defense Switched Network access circuits.

Objectives. The overall objective of the audit was to evaluate DoD management of circuit configurations for Defense Switched Network access requirements.

Audit Results. A total of 20 DoD and non-DoD installations and organizations in 5 sampled regions in the continental United States were paying for 635 Defense Switched Network access circuits and special-purpose voice circuits, leased for \$1.4 million annually, that were not cost-effective. If the Defense Information Systems Agency implements circuit reconfiguration actions, DoD could reduce costs.

Internal Controls. We did not assess internal controls or the implementation of the DoD Internal Management Control Program because this audit covered only a limited portion of the Defense Communications System.

Potential Benefits of Audit. Based on the results of the statistically selected sample, we calculated that DoD can put \$24.5 million to better use starting in FY 1995 and ending in FY 2001. In addition, implementation of the recommendations would provide for a program that would identify in a more efficient manner economical

*Switched or switching is the process of connecting the calling party to the called party. This process may involve one or many switches.

opportunities to reconfigure circuits. Appendixes E and F summarize the potential benefits resulting from the audit.

Summary of Recommendations. We recommend that the Director, Defense Information Systems Agency, take appropriate action to reconfigure circuits identified in Appendix D; establish a structured program to analyze the configurations of Defense Switched Network access circuits and special-purpose voice circuits to determine whether more cost-effective opportunities exist; and the successor Defense Commercial Telecommunications Network contract include reconfiguration initiatives, such as rehomeing and multiplexing.

Management Comments. The Defense Information Systems Agency did not provide comments as of January 23, 1995. We request the Defense Information Systems Agency to provide comments on this report by April 10, 1995.

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Part I - Introduction

Background

The Defense Communications System is a worldwide composite of DoD-owned and leased telecommunications subsystems and networks that are composed of facilities, personnel, services, and equipment under the management and operational direction of the Defense Information Systems Agency (DISA). The Defense Communications System provides long-haul, common-user, or backbone (general-purpose), and dedicated or point-to-point (special-purpose) telecommunications services for the DoD and other Government organizations. The leased services consist of general-purpose networks,¹ such as the Defense Information Systems Network (to be initially composed of the Defense Switched Network [DSN], the Defense Data Network, and Military Department subnetworks); the Federal Telephone System 2000; and special-purpose circuits, trunks, and networks. The Defense Communications System does not include mobile or transportable communications facilities and assets organic to military forces; tactical telecommunications; base communications (communications within the confines of a post, camp, base, and station, including local interconnect trunks to the first commercial central office providing service in the local area); or on-site facilities associated with or integral to weapon systems.

As an integral part of the Defense Communications System, the DSN is an all-digital, high-speed/high-capacity network designed to provide switched voice, digital data, and video teleconferencing services to DoD customers. The general objective of the DSN is to provide more survivable and cost-effective switched services to meet DoD operational and administrative requirements, ranging from day-to-day activities to conventional war and recovery during and after a nuclear war or national disaster.

The initial concept of the DSN was outlined in an Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) memorandum, "Defense Switched Network (DSN)," on September 6, 1979. An Office of the Under Secretary of Defense for Research and Engineering (now the Director, Defense Research and Engineering) memorandum entitled, "Defense Switched Network Definition, Purpose, Scope" June 23, 1982, defines DSN as "an inter-Base telecommunications system which provides end-to-end common-user and dedicated telephone service for the DoD, with later capability of incorporating data and other traffic." DSN includes all DoD telecommunications from user terminal to user terminal across all connectivity means (Government-owned and leased, terrestrial, and satellite transmission paths and switching facilities).

"The Chairman, Joint Chiefs of Staff Memorandum of Policy No. 8," February 13, 1990, established policy and prescribed responsibilities for use and operation of the DSN applicable to the Joint Staff, unified commands, Military Departments, Defense agencies, and other activities. The memorandum of policy states that the DSN will provide economical telecommunications service

¹A glossary in Appendix A defines communications terms used in this report.

to DSN users. Further, the memorandum directs the Defense Communications Agency, now the DISA, to establish DSN management systems and procedures to ensure responsive, secure, interoperable, survivable, and cost-effective service.

Objectives

The audit objective was to evaluate the management of circuit configurations for DSN access requirements. The specific objective was to determine whether users accessed the DSN using the most cost-effective circuit configurations for telecommunications.

Scope and Methodology

The universe for the overall audit was composed of 726 installations using 18,050 DSN access circuits.² The circuits cost about \$32.9 million annually. The installations were also using 2,934 special-purpose voice circuits³ that cost about \$39.6 million annually. The audit cutoff date for the universe data was June 30, 1993. To analyze the effectiveness of DISA's configuration management of the DSN access circuits, we arranged the 726 installations into 153 geographical regions containing concentrations of circuits. The regions were determined based on the geographical relationship of the installation to the DSN nodal sites. We employed a stratified sampling plan and developed three strata based on the number of DSN circuits within the geographical regions. We then selected a stratified random sample of 2 regions from each stratum or a total of 6 regions from the population of 153 regions (see Appendix B).

During the initial phase of the audit, we examined circuits in the six selected regions. However, due to the closure of Wurtsmith Air Force Base by the Defense Base Closure and Realignment Commission, we eliminated one region near Alpena, Michigan, from the sample, because base closure negated potential

²Recorded in the Defense Commercial Communications Office Customer Inventory Tracking Unification system.

³Recorded in the Defense Commercial Communications Office Defense Information System Database.

Introduction

reconfiguration opportunities. We performed detailed cost analyses to evaluate the configurations of each of the 1,250 DSN access circuits and special-purpose voice circuits used to obtain DSN access in the 5 regions. The table below shows the distribution of those circuits by region.

Circuits Within the Sampled Regions

| <u>Region</u> | <u>No. of Circuits</u> |
|----------------|------------------------|
| Corpus Christi | 51 |
| Fayetteville | 305 |
| Las Cruces | 199 |
| Panama City | 224 |
| San Francisco | <u>471</u> |
| Total | 1,250 |

We adjusted our audit universe to incorporate the implementation of requirements in the memorandum "Defense Switched Network Continental United States Improvement Initiative," September 24, 1993, to include the number of circuits required to achieve the Joint Chiefs of Staff grade of service. The memorandum, issued by the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), directed DISA to implement the findings of a Joint Chiefs of Staff study by upgrading all DSN access circuits in the continental United States to at least a P.03 grade of service in order to improve users' access to the DSN.

We reviewed Telecommunications Service Requests, Telecommunications Service Orders, administrative messages, and other historical documentation, dated from April 1968 to April 1994, describing the purpose and physical location of the circuits. We reviewed current and historical records showing justifications for circuits and examined the physical locations of each sampled circuit. We contacted personnel within the Military Departments, Defense agencies, and DISA having knowledge about the usage of or requirements for a circuit. The purpose of those contacts was to determine the validity of configurations and requirements for the examined circuits. The Defense Commercial Communications Office (now the Defense Information Technology Contracting Office) provided computer-processed data used to perform the audit. Although the systems were not audited, limited testing showed that the data were sufficiently reliable to satisfy the audit objectives. Any inadequacies in those data will not affect the results of the audit or the recommendations, but may affect the resulting potential monetary benefits, because our configuration analyses are based on those data.

In developing reconfiguration proposals, we considered several factors, including technical feasibility, susceptibility to lost services, and the payback period to recoup nonrecurring costs. We obtained price estimates from the Defense Commercial Communications Office for recurring leased circuits, nonrecurring equipment installation costs, and termination liabilities for the leased circuits in the proposed reconfiguration options. In addition, we obtained from a representative vendor the cost estimates for purchasing equipment needed for reconfiguration proposals.

A statistician from the Quantitative Methods Division, Auditing Planning and Technical Support Directorate, Office of the Inspector General, DoD, developed the audit sampling plan and projected the results of our analyses of DSN access circuit configurations.

This economy and efficiency audit was made from June 1993 through April 1994. The audit was made in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. A list of organizations visited or contacted is in Appendix G.

Internal Controls

We did not assess internal controls or the implementation of the DoD Internal Management Control Program as defined in DoD Directive 5010.38, "Internal Management Control Program, April 14, 1987, because this audit covered only a limited portion of the Defense Communications System.

Prior Audits and Other Reviews

Problems similar to those discussed in this report were identified in five prior Inspector General, DoD, audit reports. The reports discuss uneconomical leases of telecommunications services and equipment. Details on those audits are in Appendix C.

Other Matter of Interest

The Defense Commercial Telecommunications Network (DCTN) contract provides the means for leasing end-to-end commercial voice, data, and video communications services throughout the United States. The communications services support routine administrative and command and control user requirements of the DoD, General Services Administration, and other

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authorized users. The DCTN contract provides the pricing for DSN access circuits through the use of rate schedules extracted from the Federal Communications Commission Tariff No. 16. DISA plans to establish a contract to succeed the DCTN contract, set to expire on February 28, 1996, to obtain telecommunications services similar to those offered by and available through the DCTN contract. As of the date of this report, DISA has not issued the request for proposal (to vendors) for the successor contract.

Part II - Finding and Recommendation

DISA Management of Configurations for DSN Access Circuits

A total of 20 DoD and non-DoD installations and organizations in 5 sampled regions in the continental United States are paying for 635 DSN access circuits and special-purpose voice circuits, used to obtain DSN access, that are not cost-effective. The payments continue because DISA has not complied with the requirements of DoD Instruction 4640.14, "Management of Base and Long-Haul Telecommunications Equipment and Services," December 5, 1991. DISA has not planned the most effective and economical telecommunications services for DoD users by establishing a structured program to evaluate the configurations of the DSN access circuits and special-purpose voice circuits. As a result, DISA was unable to identify significant cost reduction opportunities through the use of reconfiguration techniques. Based on a statistical projection of the sample results to the universe of 153 regions, \$413,351 for June 1993 could have been put to better use. We calculated that, from FY 1995 through FY 2001, about \$24.5 million could be put to better use if DISA implements the recommended reconfiguration methodologies throughout the continental United States. (See footnote 7 Appendix E.)

DoD Guidance on Circuit Configuration Management

DoD Directive 4640.13, "Management of Base and Long-Haul Telecommunications Equipment and Services," December 5, 1991, assigns DISA the responsibility for circuit configuration management. The Directive requires DISA to acquire and manage long-haul telecommunications equipment and services for the DoD. Those responsibilities include determining which element (a common-user system) of the Defense Communications System or which contract (Federal Telephone System 2000 or new acquisition) will satisfy the DoD Components' long-haul telecommunications requirements. DoD Instruction 4640.14 further requires DISA to work with the DoD Components in planning for the most effective and economical long-haul telecommunications equipment and service acquisitions. The Instruction states that "DISA and the DoD Components shall ensure that the optimal mix of long-haul telecommunications equipment and services is installed to support mission requirements" and that "traffic studies [analyses of the volume of use on telecommunications paths], configuration analysis, and engineering [of communications, services, and equipment] shall be conducted for each DoD base, post, camp, station, and installation at least every 2 years"

Circuit Reconfigurations

Opportunities for Reconfiguration. The audit showed DISA did not have a structured program to periodically evaluate circuit configurations to obtain the most effective and economical telecommunications services for DoD, as required by DoD Instruction 4640.14. We identified as candidates for reconfiguration 635 DSN access circuits and special-purpose voice circuits used to obtain DSN access. The circuits are leased at a cost of about \$1.4 million annually. We identified sampled circuits as candidates for reconfiguration if the circuits were not cost-effective in their established configurations. If technically feasible, reconfiguration actions would allow DISA to put \$413,351 to better use each month (excluding nonrecurring costs of reconfiguration actions). Results of our analyses of various technical solutions and associated funds put to better use for the sampled circuits are shown in Appendix D. DISA, however, needs to determine the specific technical feasibility and associated potential monetary benefits of reconfiguration solutions. Technical solutions that DISA could consider in achieving cost-effective configurations include rehomings and multiplexing.

Reconfiguration Techniques-Rehomings and Multiplexing. Rehomings of circuits involves the disconnection of a transmission medium from one switch or node and reconnection to another switch or node. Normally, this diversion is made to the nearest location, and the result is either a more cost-effective leased circuit or the disconnection of a leased circuit and the use of a Government-owned transmission medium. Multiplexing is a reconfiguration technique that consists of combining two or more independent circuits into a composite signal through the use of equipment, such as a multiplexer or a sophisticated modem. The signal is then sent via the transmission medium to similar multiplexing equipment at the receiving end, where the process is reversed, restoring the circuits to their original state. Multiplexing includes various combinations of single-channel circuits, multichannel circuits with idle capacity, or fully utilized multichannel circuits that can be consolidated into even larger multichannel circuits. It is more economical to use multiplexing techniques when the cost of leasing a number of independent circuits exceeds the cost of acquiring a multiplex system. The use of reconfiguration techniques has proved to be a source of significant budgetary reductions for the DoD. The potential exists for DISA to obtain significant cost reductions through the use of rehomings and multiplexing.

Regional Reconfiguration Analyses

The audit analyses showed that reconfiguration of DSN access circuits and special-purpose voice circuits used to obtain DSN access in five geographical regions could have avoided expenditures of about \$23,306 (excluding nonrecurring costs of reconfiguration actions) during June 1993. Synopses of conditions at each of the five regions and recommended reconfiguration actions are provided below.

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DISA Management of Configuration for DSN Access Circuits

Corpus Christi, Texas. A total of 30 circuits could be reconfigured at 3 installations in the Corpus Christi region. Those circuits had a total monthly recurring cost of \$11,072. DISA could take the following actions to cost-effectively reconfigure the circuits.

- o Reroute the T1 link between Ingleside Naval Station and the DSN node to be an off-premises extension to the private branch exchange at Corpus Christi Naval Air Station.

- o Obtain local vendor pricing for the existing two single-channel, off-premises extensions from Orange Grove Naval Air Station to the private branch exchange at Corpus Christi Naval Air Station.

- o Upgrade the existing T1 link between Corpus Christi Naval Air Station and the DSN node to an M44 link to accommodate the increase in DSN access circuits from Ingleside Naval Station.

DISA should implement those actions simultaneously. If technically feasible, the three reconfiguration actions could have avoided costs of \$2,491 (prior to consideration of nonrecurring costs of reconfiguration actions) during June 1993. Details on the proposed reconfigurations for the Corpus Christi region are in Table D-1, Appendix D.

Fayetteville, North Carolina. A total of 259 circuits could be reconfigured at 3 installations in the Fayetteville region. Those circuits had a total monthly recurring cost of \$29,526. DISA could take the following actions to cost-effectively reconfigure the circuits.

- o Acquire the 189 circuits at Fort Bragg under one Contract Services Authorization.

- o Acquire the 40 circuits at Pope Air Force Base under one Contract Services Authorization.

- o Reroute one single-channel off-premises extension from Clinton Army National Guard to the existing T1 link at Fort Bragg, using local vendor pricing.

- o Reconfigure the 189 circuits at Fort Bragg using multiplexing techniques.

- o Reconfigure the 40 circuits at Pope Air Force Base using multiplexing techniques.

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DISA Management of Configurations for DSN Access Circuits

DISA should implement the third and fourth actions simultaneously. If technically feasible, all the actions could have avoided costs of \$5,116 a month (prior to consideration of nonrecurring costs of reconfiguration actions). Details on the proposed reconfigurations for this region are in Table D-2 and Table D-3, Appendix D.

Las Cruces, New Mexico. A total of 87 circuits could be reconfigured at 5 DoD organizations and 1 non-DoD organization in the Las Cruces region. Those circuits had a total monthly recurring cost of \$17,842. DISA could implement the following actions as potential cost-effective reconfigurations.

- o Reroute one circuit (using local vendor pricing) between El Paso Defense Subsistence Agency and one single-channel, off-premises extension at El Paso between Fort Bliss and the DSN node to the T1 link.

- o Reroute two circuits (using local vendor pricing) at White Sands Missile Range B301 and one single-channel off-premises extension at Silver City between the White Sands Missile Range and the DSN node to the T1 link.

- o Rehome one DSN access circuit between El Paso Federal Aviation Administration to the Socorro DSN node, the nearest node.

- o Rehome one circuit between Holloman Air Force Base and the Socorro DSN node.

DISA should implement the first two actions simultaneously. If technically feasible, the four reconfiguration actions could have avoided costs of \$2,929 (prior to consideration of nonrecurring costs of reconfiguration actions) during June 1993. Details on the proposed reconfigurations for this region are in Table D-4, Appendix D.

Panama City, Florida. A total of 146 circuits could be reconfigured at 2 organizations on Tyndall Air Force Base, Florida, in the Panama City region. Those circuits had a total monthly recurring cost of \$42,821. DISA could take the following actions to cost-effectively reconfigure the circuits.

- o Reroute the 70 circuits (using local vendor pricing) between the 325th Communications Squadron to the Southeast Air Defense Sector.

- o Rehome the 25 circuits at the Southeast Air Defense Sector (Chatham DSN node [3 circuits]; Ellisville DSN node [7 circuits]; Huntsville DSN node [9 circuits]; Moseley DSN node [1 circuit]; Robins Air Force Base [3 circuits]; Seguin DSN node [1 circuit]; Sweetwater DSN node [1 circuit]) to the Brewton DSN node (51 circuits).

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DISA Management of Configuration for DSN Access Circuits

- o Establish three M44 links between the Southeast Air Defense Sector and the DSN node to accommodate the increase in DSN access circuits from the 325th Communications Squadron and the rehomed circuits from the Southeast Air Defense Sector.

DISA should implement the three actions simultaneously. If technically feasible, the reconfiguration actions could have avoided costs of \$9,593 (prior to consideration of nonrecurring costs of reconfiguration actions) during June 1993. Details on the proposed reconfigurations for this region are in Table D-5, Appendix D.

San Francisco, California. A total of 113 circuits could be reconfigured at 5 DoD installations and 1 non-DoD organization in the San Francisco region.

Those circuits had a total monthly recurring cost of \$12,402. DISA could take the following actions to cost-effectively reconfigure the circuits.

- o Rehome and reroute the two circuits at Mill Valley Air Force Station as single-channel, off premises extensions.

- o Reroute circuits for Mill Valley Air Force Station (one single-channel off-premises extension), Point Arena (one single-channel off-premises extension), and Point Reyes U.S. Coast Guard (one DSN access circuit) between Oakland Army Base and the DSN node to a T1 link.

- o Reconfigure the 82 circuits at Travis Air Force Base using multiplexing techniques.

DISA should implement the first two actions simultaneously. If technically feasible, the three reconfiguration actions could have avoided costs of \$3,177 (prior to consideration of nonrecurring costs of reconfiguration actions) during June 1993. Details on the proposed reconfigurations for this region are in Table D-6, Appendix D.

Statistical Projection of Reconfiguration Solutions

Using statistical sampling techniques, we determined that reconfiguration solutions could reduce the cost of the DSN access circuits and special-purpose voice circuits used to obtain DSN access by a projected \$413,351 during June 1993 (with a margin of error that is plus or minus \$254,439 at a 90-percent confidence level). We calculated the potential monetary benefits of \$24.5 million by using the statistically projected mid-point value of the confidence interval of sample results for June 1993 multiplied by a 72-month interval, less a one-time nonrecurring cost of \$5.3 million. Details of the specific calculations are in Appendices E and F.

Summary

The DoD is not efficiently managing the configurations of DSN access circuits, therefore, is incurring unnecessary costs. As shown in Appendix D, from FY 1993 through FY 2001, the DoD could realize monetary benefits if DISA implements the reconfiguration methodologies described in this report throughout the continental United States.

In addition, those monetary benefits are based on the assumptions that the reconfigurations will be effective March 1, 1995, that the DCTN successor contract will be the same price as the current contract, and that the DCTN successor contract will include reconfiguration methodologies and initiatives similar to those described in this report.

DISA can reduce DSN users' costs while maintaining an acceptable grade of service by implementing alternative circuit configurations similar to those described in this report throughout the continental United States. DISA needs to plan and implement the most effective and economical circuit configurations for the DSN.

Recommendations for Corrective Action

We recommend that the Director, Defense Information Systems Agency:

- 1. Take appropriate action to reconfigure circuits identified in Appendix D.**
- 2. Establish a structured program to analyze the configurations of Defense Switched Network access circuits and special-purpose voice circuits**

used to obtain Defense Switched Network access to determine whether more cost-effective configuration opportunities exist.

3. Include in the statement of work for the successor Defense Commercial Telecommunications Network contract the rehomeing and multiplexing initiatives described in this report.

Defense Information Systems Agency Comments. As of January 23, 1995, DISA had not provided comments.

Audit Response. We request that the Director, Defense Information Systems Agency, provide written comments on the final report.

Part III - Additional Information

Appendix A. Glossary

| | |
|-------------------------|---|
| Access Circuit | A communications capability between two or more users, between a user terminal and a switching terminal, or between two switches. As related to the DSN, an access circuit is a circuit used to provide the user connectivity to the DSN. |
| Channel | A single unidirectional or bidirectional path for transmitting or receiving (or both) electronic signals, usually in a path that is distinct from other parallel paths. |
| General-Purpose Network | A system of circuits or trunks between network switching centers or nodes allocated to provide communications service on a common basis to all connected subscribers. Sometimes described as a common-user network. |
| Grade of Service | A measurement of DSN service based on the percentage of calls blocked. |
| M44 Link | A T1 service that allows up to 44 voice channels to operate over a single T1 Link. |
| Multiplexing | A reconfiguration technique that consists of combining two or more independent circuits into a composite signal through the use of equipment, such as a multiplexer or a sophisticated modem. |
| Node | A tandem switch that collects data traffic from multiple transmission media and routes the data to other switches or nodes. |
| Nodal Site | The location of a node. |
| Off-Premises Extension | A telephone located in an office or building that does not house the main phone system. The off-premises extension has the same capabilities as the main phone system. |
| Private Branch Exchange | A private telephone switching system usually located on the customer's premises. |

| | |
|-------------------|---|
| Rehome | The disconnection of a transmission medium from one switch or node and the reconnection to another switch or node. |
| Switch | A switch is a device that selects paths or circuits for routing telecommunications transmissions. |
| Switched Services | Switched services use a network of switches combined together with circuits to provide connectivity between two or more network users. |
| T1 Link | A digital transmission link. A T1 link can normally handle 24 voice conversations. |
| Trunk | A dedicated circuit connecting two switching centers, central offices, or data concentration devices. This term is often used within the communications community to describe any multichannel circuit. |

Appendix B. Statistical Sampling Plan and Results

Sampling Plan

The audit universe was composed of 726 installations within the continental United States and was arranged into 153 distinct geographical regions. The sampling frame was developed based on reconfiguration applications on DSN circuits during June 1993.

We employed a stratified sampling plan as the sampling design for this audit and developed 3 strata based on the number of DCTN circuits within 153 geographical regions. A stratified random sample of two regions from each stratum (a total of six regions) was selected from the population as shown in Table B-1.

Table B-1. Stratified Sampling Plan

| <u>Strata</u> | <u>Criteria</u> | <u>Population Size (No. of Regions)</u> | <u>Sample Size (No. of Regions)</u> |
|---------------|-----------------------------|---|---|
| I | More than 250 installations | 16 | 2 |
| II | 50 to 250 installations | 68 | 2 |
| III | Fewer than 50 installations | <u>69</u> | <u>2</u> |
| | Totals | 153 | 6 |

Sample Results

The sample results for the six regions for June 1993 represent a summary of gross monetary benefits before taking into consideration nonrecurring costs for installation and equipment associated with reconfigurations. Table B-2 shows the results by stratum and by region.

Appendix B. Statistical Sampling Plan and Results

Table B-2. Sampling Results for June 1993

| <u>Stratum</u> | <u>Regions</u> | <u>Gross Benefits (June 1993)</u> | <u>Non- Recurring Costs</u> |
|----------------|--------------------|---|-------------------------------------|
| I | Fayetteville, NC | \$ 5,116 | \$ 11,557 |
| | San Francisco, CA | <u>3,177</u> | <u>39,712</u> |
| | Subtotal | \$ 8,293 | \$ 51,269 |
| II | Las Cruces, NM | \$ 2,929 | \$ 6,951 |
| | Panama City, FL | <u>9,593</u> | <u>178,074</u> |
| | Subtotal | \$12,522 | \$185,025 |
| III | Alpena, MI | \$ 0 | \$ 0 |
| | Corpus Christi, TX | <u>2,491</u> | <u>35,237</u> |
| | Subtotal | \$ <u>2,491</u> | \$ <u>35,237</u> |
| | Totals | \$23,306 | \$271,531 |

Using stratified projection techniques, we projected the sample results into the universe of 153 regions. Statistical projections of the sample data are shown in Table B-3.

Appendix B. Statistical Sampling Plan and Results

Table B-3. Sampling results for June 1993

| | 90-Percent Confidence Intervals (Using 3 degrees of freedom) | | |
|-------------------------------|---|---------------------------|------------------------|
| | <u>Lower Bound</u> | <u>Point Estimate</u> | <u>Upper Bound</u> |
| Gross Benefits (June 1993) | \$158,912 | \$413,351 | \$667,790 |
| Non-Recurring Costs | \$1,698,512 | \$5,268,808 | \$8,839,104 |

We are 90 percent confident that by using reconfiguration techniques, from \$158,912 to \$667,790 of costs could be reduced during June 1993 before making adjustments for nonrecurring costs. The unbiased point estimate, \$413,351, is the best single estimate for the gross benefits in the population.

Likewise, we are 90 percent confident that the nonrecurring costs for installation and equipment associated with reconfiguration of DSN circuits will be from \$1,698,512 to \$8,839,104. The unbiased point estimate, \$5,268,808, is the most likely single value for nonrecurring costs in this population.

Appendix C. Prior Audits and Other Reviews

Five prior Inspector General, DoD, audit reports discuss problems regarding uneconomical leases of telecommunications services and equipment.

Office of the Inspector General, DoD, Report No. 94-120, "Telecommunications Circuit Allocation Programs - Jacksonville Area," June 6, 1994. The Defense Information Systems Agency (DISA) did not effectively identify reconfiguration opportunities and adequately revalidate requirements. The report states that 63.3 percent of the 166 sampled Command Communications Service Designators (CCSDs) reviewed at DoD organizations in the Jacksonville, Florida, metropolitan area were potentially not cost-effective in their configurations or were no longer required. For the sampled CCSDs, the report identifies 74 (44.6 percent) circuits as candidates for potential reconfiguration. Leases for 31 (18.7 percent) other circuits could be terminated because they were no longer required. About \$9.6 million could be put to better use if DISA either reconfigured or terminated circuits in the Jacksonville area during the execution of the FY 1994 through FY 1999 Future Years Defense Program. Finally, for that same period, about \$1.5 million could be put to better use if DISA reconfigured or terminated 28 circuits that were not part of the audit universe or sample. We recommended that DISA reconfigure or terminate the circuits. DISA reconfigured, terminated, or renegotiated leases for nearly all the circuits discussed in the report. The potential benefits may be greater than the amount shown in the report.

Office of the Inspector General, DoD, Report No. 94-097, "Pricing for Defense Switched Network Access Circuits," May 13, 1994. DISA had not used other available tariffs to determine the cost-effectiveness of the rates applied to Defense Switched Network (DSN) access circuits under Federal Communications Commission Tariff No. 16. Two conditions needed management attention. First, DISA did not identify significant cost reduction opportunities available pursuant to contractual arrangements established in the Defense Commercial Telecommunications Network (DCTN) contract for the acquisition of access circuits to the DSN. Lower prices available from other sources would have reduced the \$27.5 million annual recurring cost of DSN access service by \$10.3 million annually. Second, the accounts payable system at the Defense Commercial Communications Office did not consistently reflect the actual value of the accounts payable liability for 12,451 leased circuits. An analysis of 6,446 sampled circuits showed that the accounts payable for those circuits were overstated by \$117,871 for March 1992. We recommended that the DISA establish a structured program to analyze contract pricing methods as a basis to negotiate with AT&T for cost reductions for DSN access circuits and associated multiplexing equipment. We also recommended that programming weaknesses in the accounts payable system be corrected. DISA concurred with the findings, recommendations, and potential monetary benefits in the report. DISA proposed an alternative solution that would also achieve the goal of reducing the cost of DSN access and stated that the audit report provided the essential leverage to convince AT&T to consider the alternative. That alternative may result in reducing the cost of DSN access by about \$24.3 million, depending on the outcome of negotiations.

Appendix C. Prior Audits and Other Reviews

Office of the Inspector General, DoD, Report No. 94-072, "Telecommunications Circuit Allocation Programs - Kansas City Area," March 31, 1994. DISA had neither effectively identified nor adequately validated reconfiguration opportunities. About 63.1 percent of the 292 sampled CCSDs at DoD organizations in the Kansas City, Missouri, metropolitan area were potentially not cost-effective in their configurations or were no longer required. For the sampled CCSDs, the report identified 33 (35.9 percent) circuits as candidates for potential reconfiguration. Leases for 25 (27.2 percent) other circuits could be terminated because they were no longer required. About \$7.9 million could be put to better use if DISA either reconfigured or terminated circuits in the Kansas City area during the execution of the FY 1994 through FY 1997 Future Years Defense Program. Finally, for that same period, about \$1.3 million could be put to better use if DISA terminated 21 circuits that were not part of the audit universe or sample. We recommended that DISA reconfigure or terminate the circuits. DISA reconfigured, terminated, or renegotiated leases for most of the circuits discussed in the report.

Office of the Inspector General, DoD, Report No. 94-051, "Telecommunications Circuit Allocation Programs - San Antonio Area," March 11, 1994. DISA neither effectively identified reconfiguration opportunities nor adequately revalidated requirements. About 47.6 percent of the 193 sampled CCSDs at DoD organizations in the San Antonio, Texas, metropolitan area were potentially not cost-effective in their configurations or were no longer required. For the sampled CCSDs, 84 (43.5 percent) circuits were candidates for potential reconfiguration. Leases for eight (4.1 percent) other circuits could be terminated because they were no longer required. About \$8.9 million could be put to better use if DISA either reconfigured or terminated circuits in the San Antonio area during the execution of the FY 1994 through FY 1996 Future Years Defense Program. Finally, for that same period, about \$.015 million could be put to better use if DISA terminated one circuit that was not part of the audit universe or sample. We recommended that DISA reconfigure or terminate the circuits. DISA reconfigured, terminated, or renegotiated leases for virtually all the circuits discussed in the report.

Office of the Inspector General, DoD, Report No. 91-110, "Quick-Reaction Report on the Reconfiguration of Automatic Voice Network Access Circuits - Kansas City Area," July 3, 1991. DISA neither identified reconfiguration opportunities nor coordinated implementation of reconfiguration solutions when two or more DoD Components were involved. Less costly reconfiguration opportunities existed, but were not effectively identified or implemented for our universe of 109 CCSDs issued for Automatic Voice Network access circuits at 7 DoD organizations in the Kansas City, Missouri, metropolitan area. About 41 (37.6 percent) of the 109 CCSDs reviewed were potentially not cost-effective in their configurations, and 41 circuits were candidates for multiplexing. The reconfigured multiplexed circuits could result in DoD putting \$658,000 to better use during the execution of the FY 1992 through FY 1997 Future Years Defense Program. We recommended that DISA initiate immediate action to reconfigure the 41 Automatic Voice Network circuits. DISA agreed that although the recommendation was technically feasible, it was not compliant

Appendix C. Prior Audits and Other Reviews

with the contract or the Defense Commercial Telecommunications Network/Automatic Voice Network merger solution previously proposed by AT&T and agreed to by the Government.

DISA proposed that the Inspector General, DoD, perform an audit of the AT&T pricing of the Defense Commercial Telecommunications Network/Automatic Voice Network access lines to assist DISA and the Defense Commercial Communications Office in conducting their annual rate review negotiations with AT&T. The annual rate review is required by the Defense Commercial Telecommunications Network contract. Although the Assistant Inspector General for Auditing disagreed with DISA's position that it was inappropriate to implement the audit recommendation, both agreed that the Inspector General, DoD, would perform the audit to determine whether the AT&T prices and approach under the Defense Commercial Telecommunications Network/Automatic Voice Network merger were adequately supported, cost-effective, and fair. It was also agreed that DISA's support for the audit would be the required action instead of implementing the recommendations. The resultant report from the agreed upon audit was Report No. 94-097 (see page 21).

Appendix D. DSN Access Circuits Recommended for Reconfiguration

Table D-1. Corpus Christi, Texas, Region
(Current Configuration With Grade of Service Adjustment)¹

| <u>Location</u> | <u>Circuits</u> | <u>Leased Monthly Recurring Costs</u> |
|--|-----------------|---|
| Corpus Christi Naval Air Station | 14 | \$ 4,690 |
| Ingleside Naval Station | 14 | 5,837 |
| Orange Grove Naval Air Station ² | <u>2</u> | <u>545</u> |
| Total | 30 | 11,072 |
| <u>Less Leased Costs of Rerouted T1 Link and Single-Channel Circuits</u> | | |
| Ingleside Naval Station | 14 | (1,280) |
| Orange Grove Naval Air Station | 2 | (423) |
| <u>Less Leased Cost of Reconfigured T1 Link</u> | | |
| Corpus Christi Naval Air Station Recurring Cost Reduction (June 1993) | 14 | (6,878) <u>\$ 2,491</u> |
| <u>Nonrecurring Costs of Reconfiguration</u> | | |
| Circuit Installation Charges | | \$20,288 |
| Equipment | | <u>14,949</u> |
| Total Nonrecurring Costs | | <u>\$35,237</u> |

¹Includes the circuits required to achieve the Joint Chiefs of Staff grade of service requirements.

²Off-premises extensions that have DSN access via Corpus Christi Naval Air Station.

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Appendix D. DSN Access Circuits Recommended for Reconfiguration

Table D-2 Fayetteville, North Carolina Region
(Current Configuration)

| <u>Location</u> | <u>Circuits</u> | <u>Leased Monthly Recurring Costs</u> |
|---|-----------------|---|
| Fort Bragg | 189 | \$18,813 |
| Pope Air Force Base | 40 | 6,869 |
| Total | 229 | 25,682 |
| | | |
| <u>Less Leased Costs of Reconfigured T1 Links</u> | | |
| Fort Bragg | 189 | (15,732) |
| Pope Air Force Base | 40 | (5,256) |
| Recurring Cost Reduction (June 1993) | | <u>\$ 4,694</u> |
| | | |
| <u>Nonrecurring Costs of Reconfiguration</u> | | |
| Circuit Installation Charges | | \$ 5,504 |
| Equipment | | 4,715 |
| Total Nonrecurring Costs | | <u>\$10,219</u> |

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Appendix D. DSN Access Circuits Recommended for Reconfiguration

**Table D-3. Fayetteville, North Carolina Region
Current Configuration (With Grade of Service Adjustment)¹**

| <u>Location</u> | <u>Circuits</u> | <u>Leased Monthly Recurring Costs</u> |
|--|-----------------|---|
| Clinton Army National Guard ² | 1 | \$ 628 |
| Fort Bragg | <u>29</u> | <u>3,216</u> |
| Total | 30 | 3,844 |
| | | |
| <u>Less Leased Cost of Rerouted Single-Channel Circuit</u> | | |
| Clinton Army National Guard | 1 | (201) |
| | | |
| <u>Less Leased Costs of Reconfigured T1 Links</u> | | |
| Fort Bragg | 29 | (3,221) |
| Recurring Cost Reduction (June 1993) | | <u>\$ 422</u> |
| | | |
| <u>Nonrecurring Costs of Reconfiguration</u> | | |
| Circuit Installation Charges | | \$1,338 |
| Equipment | | <u>0</u> |
| Total Nonrecurring Costs | | <u>\$1,338</u> |

¹Includes the circuits required to achieve the Joint Chiefs of Staff grade of service requirements.

²Off-premises extension, which has DSN access via Seymour Johnson Air Force Base.

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Appendix D. DSN Access Circuits Recommended for Reconfiguration

Table D-4. Las Cruces, New Mexico Region
Current Configuration (With Grade of Service Adjustment)¹

| <u>Location</u> | <u>Circuits</u> | <u>Leased Monthly Recurring Costs</u> |
|--|-----------------|---|
| El Paso (off-premises extension) ² | 1 | \$ 640 |
| El Paso Defense Subsistence Agency | 1 | 371 |
| El Paso Federal Aviation Administration ³ | 1 | 548 |
| Fort Bliss | 39 | 7,973 |
| Holloman Air Force Base ⁴ | 1 | 1,043 |
| Silver City (off-premises extension) ² | 1 | 526 |
| White Sands Missile Range | 41 | 5,107 |
| White Sands Missile Range B301 | <u>2</u> | <u>1,634</u> |
| Total | 87 | 17,842 |
| <u>Less Leased Costs of Rerouted Single-Channel Circuits</u> | | |
| El Paso Defense Logistics Agency | 1 | (171) |
| El Paso (off-premises extension) | 1 | (171) |
| Silver City (off-premise-extension) | 1 | (150) |
| White Sands Missile Range B301 | 2 | (277) |
| <u>Less Leased Costs of Reconfigured T1 Links</u> | | |
| Fort Bliss | 41 | (7,982) |
| White Sands Missile Range | 44 | (5,120) |
| <u>Less Leased Costs of Rehomed Circuits</u> | | |
| El Paso Federal Aviation Administration | 1 | (370) |
| Holloman Air Force Base | 1 | <u>(672)</u> |
| Recurring Cost Reduction (June 1993) | | <u>\$ 2,929</u> |

¹Includes the circuits required to achieve the Joint Chiefs of Staff grade of service requirements.

²Off-premises extension that has DSN access via Holloman Air Force Base.

³Had DSN access at the Apache node at the time of the audit.

⁴Had DSN access at the Sweetwater node at the time of the audit.

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Appendix D. DSN Access Circuits Recommended for Reconfiguration

Table D-4. Las Cruces New Mexico Region

| <u>Location</u> | <u>Leased Monthly Recurring Costs</u> |
|--|---|
| <u>Nonrecurring Costs of Reconfiguration</u> | |
| Circuit Installation Charges | 6,951 |
| Equipment | <u>0</u> |
| Total Nonrecurring Costs | <u>\$ 6,951</u> |

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Appendix D. DSN Access Circuits Recommended for Reconfiguration

Table D-5. Panama City, Florida Region
Current Configuration (With Grade of Service Adjustment)¹

| <u>Location</u> | <u>Circuits</u> | <u>Leased Monthly Recurring Costs</u> |
|--|-----------------|---|
| Southeast Air Defense Sector-Brewton | 51 | \$ 13,502 |
| Southeast Air Defense Sector-Chatham | 3 | 2,489 |
| Southeast Air Defense Sector-Ellisville | 7 | 3,198 |
| Southeast Air Defense Sector-Huntsville | 9 | 5,359 |
| Southeast Air Defense Sector-Moseley | 1 | 949 |
| Southeast Air Defense Sector-Robins AFB ² | 3 | 1,437 |
| Southeast Air Defense Sector-Seguin | 1 | 999 |
| Southeast Air Defense Sector-Sweetwater | 1 | 1,125 |
| 325th Communications Squadron | <u>70</u> | <u>13,763</u> |
| Total | 146 | 42,821 |
| <u>Less Leased Costs of Rerouted T1 Link</u> | | |
| 325th Communications Squadron ³ | 70 | (3,243) |
| <u>Less Leased Costs of Rehomed Circuits</u> | | |
| Southeast Air Defense Sector ⁴ | 76 | (29,985) |
| Recurring Cost Reduction (June 1993) | | <u>\$ 9,593</u> |
| <u>Nonrecurring Costs of Reconfiguration</u> | | |
| Circuit Installation Charges | | \$133,227 |
| Equipment | | <u>44,847</u> |
| Total Nonrecurring Costs | | <u>\$178,074</u> |

¹Includes the circuits required to achieve the Joint Chiefs of Staff grade of service requirements.

²Air Force Base.

³Rerouted T1 Link to Southeast Air Defense Sector.

⁴The rehomed circuits included the following: 325th Communications Squadron (70 circuits), Brewton node (51 circuits), Chatham node (3 circuits), Ellisville node (7 circuits), Huntsville node (9 circuits), Moseley node (1 circuit), Robins Air Force Base (3 circuits), Seguin node (1 circuit), and Sweetwater node (1 circuit).

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Appendix D. DSN Access Circuits Recommended for Reconfiguration

Table D-6. San Francisco, California Region
Current Configuration (With Grade of Service Adjustment)¹

| <u>Location</u> | <u>Circuits</u> | <u>Leased Monthly Recurring Costs</u> |
|---|-----------------|---|
| Oakland Army Base | 26 | \$ 1,950 |
| Mill Valley Air Force Station ^{2,3} | 2 | 989 |
| Mill Valley Air Force Station (opx) ^{2,4} | 1 | 273 |
| Point Arena (off-premises extension) ⁴ | 1 | 422 |
| Point Reyes U.S. Coast Guard | 1 | 307 |
| Travis Air Force Base ⁵ | <u>82</u> | <u>8,461</u> |
| Total | 113 | 12,402 |
| | | |
| Less Leased Costs of <u>Rerouted Single-Channel Circuits</u> | | |
| Mill Valley Air Force Station | 2 | (359) |
| Mill Valley Air Force Station (opx) | 1 | (179) |
| Point Arena (off-premises extension) | 1 | (230) |
| Point Reyes U.S. Coast Guard | 1 | (181) |
| | | |
| Less Leased Costs of <u>Reconfigured T1 Links</u> | | |
| Oakland Army Base | 26 | (2,244) |
| Travis Air Force Base | 82 | (6,032) |
| Recurring Cost Reduction (June 1993) | | <u>\$ 3,177</u> |
| | | |
| <u>Nonrecurring Costs of Reconfiguration</u> | | |
| Circuit Installation Charges | | \$ 39,712 |
| Equipment | | <u>0</u> |
| Total Nonrecurring Costs | | <u>\$ 39,712</u> |

¹Includes the circuits required to achieve the Joint Chiefs of Staff grade of service requirements.

²Circuit(s) are located at Mill Valley Federal Aviation Administration.

³Currently has DSN access at the San Luis Obispo node.

⁴Off-premises extension, which currently has DSN access via Travis Air Force Base.

⁵Currently has DSN access at the Presidio of San Francisco switch.

Appendix E. Funds Put To Better Use Resulting from Reconfiguration Opportunities

| Program/ Element No. | <u>FY 1995²</u> | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>FY 1999</u> | <u>FY 2000</u> | <u>FY 2001³</u> | <u>72-Month¹ Total</u> |
|---|----------------------------|----------------------|--------------------|--------------------|--------------------|--------------------|----------------------------|---------------------------------------|
| Recurring Reductions (O&M) ⁴ | | | | | | | | |
| I&C ⁵ /LHC ⁶ | \$2,893,457 | \$4,960,212 | \$4,960,212 | \$4,960,212 | \$4,960,212 | \$4,960,212 | \$2,066,755 | \$29,761,272 |
| Nonrecurring Costs (O&M) ⁴ | | | | | | | | |
| I&C ⁵ /LHC ⁶ | (<u>\$2,893,457</u>) | (<u>2,375,351</u>) | -- | -- | -- | -- | -- | (<u>5,268,808</u>) |
| Net Recurring Funds Put to Better Use | <u>\$ 0</u> | <u>\$2,584,861</u> | <u>\$4,960,212</u> | <u>\$4,960,212</u> | <u>\$4,960,212</u> | <u>\$4,960,212</u> | <u>\$2,066,755</u> | <u>\$24,492,464⁷</u> |

¹Monetary benefits are calculated from March 1, 1995 to February 28, 2001.

²Funds put to better use for FY 1995 starting in March 1995.

³Funds put to better use for FY 2000-from October 2000 through February 2001.

⁴Operation and Maintenance.

⁵Intelligence and Communications.

⁶Element title is Long-Haul Communications (Defense Communications System). Element Number is 0303126K.

⁷The 72-month total is calculated based upon the statistically projected mid-point value of the confidence interval of sample results for June 1993 (see Appendix B).

Appendix F. Summary of Potential Benefits Resulting from Audit

| Recommendation Reference | Description of Benefit | Amount and/or Type of Benefit |
|--------------------------|--|---|
| 1., 2., and 3. | Economy and Efficiency. Reconfiguring the identified circuits help ensure that the most effective, efficient, and least costly service is obtained. | Monetary benefits of \$24.5 million* put to better use. Appropriation- Operation and Maintenance, Program Element- 0303126K. |

*Using statistical sampling techniques, we determined that reconfiguration solutions could reduce the cost of the DSN access circuits and special-purpose voice circuits used to obtain DSN access by a projected \$413,351 during June 1993 (with a margin of error that is plus or minus \$254,439 at a 90-percent confidence level). We calculated the potential monetary benefits of \$24.5 million by using the statistically projected mid-point value of the confidence interval of sample results for June 1993 multiplied by a 72-month interval, less a one-time nonrecurring cost \$5.3 million.

Appendix G. Organizations Visited or Contacted

Office of the Secretary of Defense

Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), Washington, DC

Department of the Army

Office of the Director of Information Systems for Command, Control, Communications and Computers, Washington, DC

Headquarters, U.S. Army Forces Command, Fort McPherson, GA

Fort Bliss, El Paso, TX

Fort Bragg, Fayetteville, NC

Headquarters, U.S. Army Reserve Command, Atlanta, GA

Parks Reserve Forces Training Area, Camp Parks, CA

Headquarters, U.S. Army Information Systems Command, Fort Huachuca, AZ

U.S. Army Commercial Communications Office, Fort Huachuca, AZ

White Sands Missile Range, U.S. Army Materiel Command, White Sands, NM

Military Traffic Management Command-Western Area, Oakland Army Base,

Oakland, CA

National Guard Bureau

California National Guard, Alameda, CA

California National Guard, Benicia, CA

California National Guard, Concord, CA

California National Guard, Fairfield, CA

California National Guard, Napa, CA

California National Guard, North Highlands, CA

California National Guard, Petaluma, CA

California National Guard, Point Pillar, CA

California National Guard, Redwood City, CA

California National Guard, San Bruno, CA

California National Guard, San Mateo, CA

California National Guard, San Rafael, CA

California National Guard, Vallejo, CA

Michigan National Guard, Phelps Collins, MI

North Carolina National Guard, Raleigh, NC

Department of the Navy

Office of the Director, Space and Electronic Warfare, Washington, DC

Commander in Chief, U.S. Pacific Fleet, Pearl Harbor, HI

Naval Air Station Alameda, Alameda, CA

Chief of Naval Education and Training, Pensacola, FL

Appendix G. Organizations Visited or Contacted

Department of the Navy (cont'd)

Naval Air Station Corpus Christi, Corpus Christi, TX
Naval Air Station Kingsville, Kingsville, TX
Naval Station Ingleside, Ingleside, TX
Headquarters, Naval Sea Systems Command, Arlington, VA
Mare Island Naval Shipyard, Vallejo, CA
Naval Weapons Station Concord, Concord, CA
Treasure Island Naval Station, Treasure Island, CA
Headquarters, Naval Supply Systems Command, Arlington, VA
Oakland Naval Supply Center, Oakland, CA
Headquarters, Naval Facilities Engineering Command, Alexandria, VA
Navy Public Works Center, Oakland, CA
Headquarters, Naval Computer and Telecommunications Command, Washington, DC
Naval Communications Station Stockton, Stockton, CA
Naval Computer and Telecommunications Station, Pensacola, FL

Department of the Air Force

Office of the Deputy Chief of Staff, Command, Control, Communications, and Computers, Washington, DC
Headquarters, Air Force Command, Control, Communications, and Computer Agency, Scott Air Force Base, IL
Air Force Telecommunications Certification Office, Scott Air Force Base, IL
Holloman Air Force Base, Air Combat Command, Alamogordo, NM
Pope Air Force Base, Air Combat Command, Fayetteville, NC
Seymour Johnson Air Force Base, Air Combat Command, Goldsboro, NC
Tyndall Air Force Base, Air Combat Command, Panama City, FL
325th Communications Squadron
Southeast Air Defense Sector
Wurtsmith Air Force Base,¹ Air Combat Command, Oscoda, MI
March Air Force Base, Air Mobility Command, Riverside, CA
Travis Air Force Base, Air Mobility Command, Fairfield, CA
Point Reyes Air Force Station, Point Reyes, CA
Vandenberg Air Force Base, Air Force Space Command, Lompoc, CA
Pillar Point Air Force Station, Moss Beach, CA

¹Closed June 30, 1993

Defense Agencies

Defense Information Systems Agency

Acquisition Management Organization, Washington, DC

Defense Commercial Communications Office,² Scott Air Force Base, IL

Telecommunications Management and Services Office, Scott Air Force Base, IL

Defense Logistics Agency

Defense Subsistence Region Pacific, Alameda, CA

Defense Subsistence Agency, El Paso, TX

Non-DoD Organizations

Federal Aviation Administration

Federal Aviation Administration, El Paso, TX

Federal Aviation Administration, Mill Valley, CA

Department of Transportation

U.S. Coast Guard, Alameda, CA

U.S. Coast Guard, Point Reyes, CA

Newbridge Networks Incorporated, Herndon, VA

²Now the Defense Information Technology Contracting office

Appendix H. Report Distribution

Office of the Secretary of Defense

Assistant to the Secretary of Defense (Command, Control, Communications and Intelligence)
Under Secretary of Defense (Comptroller)

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management)
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Defense Organization

Director, Defense Contract Audit Agency
Director, Defense Information Systems Agency
Director, Defense Logistics Agency
Director, National Security Agency
Inspector General, Central Imagery Office
Inspector General, Defense Intelligence Agency
Inspector General, National Security Agency
Director, Defense Logistics Studies Information Exchange

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division,
General Accounting Office

Non-Defense Federal Organizations and Individuals (cont'd)

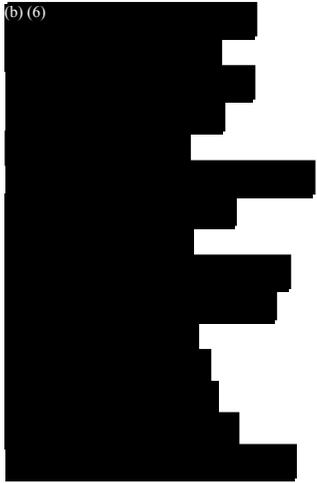
Chairman and Ranking Minority Member of Each of the Following Congressional Committees and Subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Commerce, Science, and Transportation
Senate Subcommittee on Communications,
Committee on Commerce, Science, and Transportation
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on National Security
House Committee on Commerce
House Subcommittee on Telecommunications and Finance,
Committee on Commerce
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal
Justice, Committee on Government Reform and Oversight

Audit Team Members

This report was prepared by the Readiness and Operational Support Directorate,
Office of the Assistant Inspector General for Auditing, Department of Defense.

(b) (6)



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