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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

August 2, 1991

*Mailed -
OA Messenger
8/5/91
Disattached*

MEMORANDUM FOR: ASSISTANT SECRETARY OF DEFENSE FOR COMMAND,
CONTROL, COMMUNICATIONS AND INTELLIGENCE
ASSISTANT SECRETARY OF COMMERCE FOR
COMMUNICATIONS AND INFORMATION
DEFENSE COMMISSIONER, FEDERAL COMMUNICATIONS
COMMISSION
COMMISSIONER, INFORMATION RESOURCES MANAGEMENT
SERVICE, GENERAL SERVICES ADMINISTRATION
MANAGER, NATIONAL COMMUNICATIONS SYSTEM
ASSISTANT ASSOCIATE DIRECTOR FOR INFORMATION
RESOURCES MANAGEMENT, FEDERAL EMERGENCY
MANAGEMENT AGENCY

SUBJECT: JOINT TELECOMMUNICATIONS RESOURCES BOARD
MEETING, AUGUST 12, 1991

A meeting of the Joint Telecommunications Resources Board (JTRB) has been scheduled for August 12, 1991 from 3 P.M. to 5 P.M. in Room 208 of the Old Executive Office Building.

Four items will be presented to the Board at this meeting:

- A briefing on security aspects of the Public Switched Network (PSN) by Ben Morriss and Herb Bennington, Chairman of the NSTAC Network Security Task Force.
- A briefing on recent disruptions in the PSN by Jack Fiorito and John O'Rourke of Bell Communications Research (Bellcore).
- The National Plan for Telecommunications Support in Non-Wartime Emergencies will be briefed by John Christenson, OMNCS, soliciting Board approval.

- A classified briefing on the JTRB Exercise of March 1, 1991, identifying requirements generated by the exercise, a draft work plan, and progress to date will be presented by William Belford, OMNCS.

I look forward to seeing you on August 12, 1991. Should you have any questions, please do not hesitate to contact the Board's Executive Secretary, John O'Neil at 202/395-3272.

A handwritten signature in black ink, reading "D. Allan Bromley". The signature is fluid and cursive, with a large initial "D" and a long, sweeping underline.

D. Allan Bromley
Director

cc: Don Pilling
Pat Linhares
John Osterholz
Ben Morriss

Phone: 695-0348

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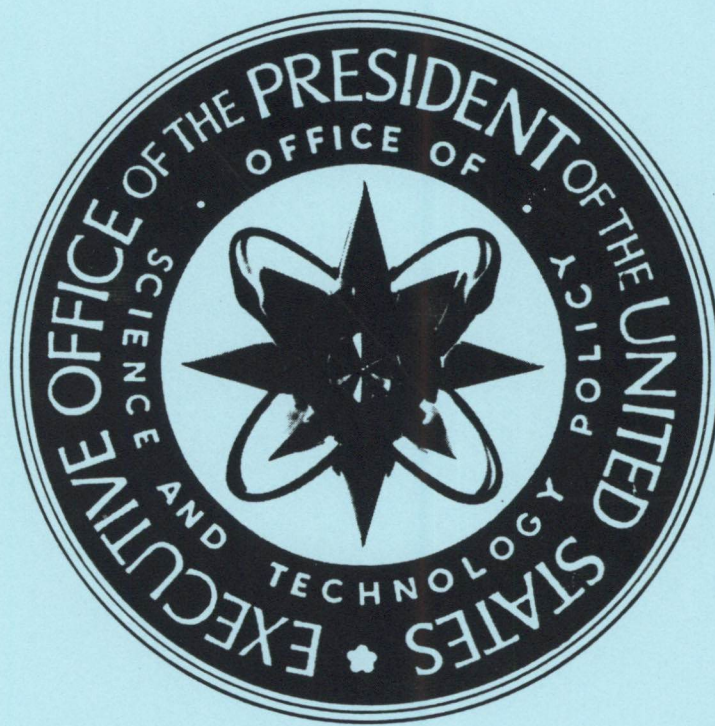
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Federal Emergency Management Agency
Room 505
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**NATIONAL PLAN FOR
TELECOMMUNICATIONS
SUPPORT IN NON-WARTIME
EMERGENCIES
(DRAFT)**



AUGUST 1991

FOREWORD

This National Plan has been prepared in coordination with the member organizations of the Joint Telecommunications Resources Board (JTRB). It serves as the basis for planning for the utilization of national telecommunication assets and resources in support of non-wartime emergencies, as defined by E.O. 12472, including those Presidentially declared major disasters and emergencies covered by the Robert T. Stafford Disaster Relief Act, and in Extraordinary Situations declared by the Director, Federal Emergency Management Agency (FEMA). This plan contains national planning guidance and operational direction for telecommunications support in these situations. This plan is the formal U.S. Government plan applicable to all Federal Executive departments, agencies, and other organizations in accordance with Executive Order 12472, "Assignment of National Security and Emergency Preparedness Telecommunications Functions," April 3, 1984, and other national policy direction. This plan supersedes the National Plan for Telecommunications Support in Non-Wartime Emergencies dated September 1987. Any changes or corrections required should be forwarded to the Manager, National Communications System, ATTN: NCS Emergency Preparedness (Operations), 701 South Courthouse Road, Arlington, VA 22204.

Director
Office of Science and Technology Policy
Executive Office of the President

Distribution: NCS/NCC List A

NATIONAL PLAN FOR TELECOMMUNICATIONS SUPPORT IN NON-WARTIME EMERGENCIES

TABLE OF CONTENTS

		<u>Page No.</u>
1.0	INTRODUCTION	1
1.1	PURPOSE	1
1.2	SCOPE	1
1.3	APPLICABILITY	1
1.4	AUTHORITY	1
1.5	REFERENCES	1
1.6	SUPERSESSION	3
2.0	CONCEPT OF OPERATIONS	4
2.1	GENERAL	4
2.2	PRESIDENTIALLY DECLARED MAJOR DISASTERS AND EMERGENCIES	4
2.3	EXTRAORDINARY SITUATIONS	7
2.4	OTHER EMERGENCIES	9
3.0	ROLES AND RESPONSIBILITIES	10
3.1	JOINT TELECOMMUNICATIONS RESOURCES BOARD	10
3.2	DIRECTOR, FEDERAL EMERGENCY MANAGEMENT AGENCY	11
3.3	FEMA REGIONAL DIRECTOR	12
3.4	FEDERAL COORDINATING OFFICER	13
3.5	SENIOR FEMA OFFICIAL	13
3.6	DISASTER RECOVERY MANAGER	13
3.7	FEMA REGIONAL COMMUNICATIONS MANAGER	13
3.8	MANAGER, NATIONAL COMMUNICATIONS SYSTEM	15
3.9	MANAGER, NATIONAL COORDINATING CENTER	16
3.10	NCS COMMUNICATIONS RESOURCE MANAGER	16
3.11	ADMINISTRATOR, GENERAL SERVICES ADMINISTRATION	17
3.12	NATIONAL COMMUNICATIONS SYSTEM REGIONAL MANAGER/GSA ZONAL EMERGENCY COMMUNICATIONS PLANNER	18
3.13	FEDERAL EMERGENCY COMMUNICATIONS COORDINATOR	19
3.14	NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION	21
3.15	FEDERAL COMMUNICATIONS COMMISSION	21

	<u>Page No.</u>
3.16 SECRETARY OF DEFENSE	21
3.17 OTHER FEDERAL ORGANIZATIONS	22
3.18 TELECOMMUNICATION INDUSTRY	23
3.19 AMATEUR RADIO	23
ANNEX A: REPORT FORMATS	
ANNEX B: ACRONYM LIST	
ANNEX C: DEFINITIONS	

NATIONAL PLAN FOR TELECOMMUNICATIONS
SUPPORT IN NON-WARTIME EMERGENCIES

TABLE OF EXHIBITS

	<u>Page No.</u>
Exhibit 2-1: Major Disaster and Emergency Response Sequence	6
Exhibit 2-2: Extraordinary Situation Response Sequence	8

NATIONAL PLAN FOR TELECOMMUNICATIONS SUPPORT IN NON-WARTIME EMERGENCIES

1.0 INTRODUCTION

1.1 PURPOSE

This National Plan establishes procedures for planning and using National telecommunication assets and resources in support of non-wartime emergencies, including Presidentially declared Emergencies and Major Disasters, Extraordinary Situations, and other emergencies. It establishes responsibilities, outlines missions, and identifies functions in support of the Federal official exercising the authorities of Public Law (PL) 93-288, as amended, Executive Order (E.O.) 12472, and other applicable authorities. It provides for telecommunications staff support for the Federal Emergency Management Agency (FEMA) Regional Director (RD), the Federal Coordinating Officer (FCO), and/or the Senior FEMA Official (SFO).

1.2 SCOPE

This plan provides guidance for planning and providing telecommunications support for Federal activities involved in non-wartime emergencies as provided for in the references cited in Section 1.5.

1.3 APPLICABILITY

This plan is applicable to all Federal Executive departments, agencies, and organizations.

1.4 AUTHORITY

The authority for the Office of Science and Technology Policy (OSTP), assisted by the National Communications System (NCS), to develop plans to coordinate and manage telecommunications support for Federal organizations in non-wartime emergencies is derived from E.O. 12472, "Assignment of National Security Emergency Preparedness Telecommunications Functions," April 3, 1984.

1.5 REFERENCES

In addition to E.O. 12472, the following references are applicable:

- Public Law 93-288, as amended by Public Law 100-707, "Robert T. Stafford Disaster Relief and Emergency Assistance Act"
- Communications Act of 1934, 47 U.S.C. 151 et seq as amended

- E.O. 12673, "Delegation of Disaster Relief and Emergency Assistance Functions," March 23, 1989
- E.O. 12656, "Assignment of Emergency Preparedness Responsibilities," November 18, 1988
- E.O. 12148, "Federal Emergency Management," July 20, 1979
- Title 47, Code of Federal Regulations, Part 64, Appendix A, "Telecommunications Service Priority (TSP) System for National Security Emergency Preparedness"
- National Security Emergency Preparedness Telecommunications Procedures Manual, July 1, 1985, as amended by FCC Memorandum and Opinion Order (CCB-DFD-85-36), released January 3, 1987
- Department of Defense (DoD) Directive 3025.1, "Use of Military Resources During Peacetime Civil Emergencies within the United States, its Territories, and Possessions," May 23, 1980
- Army Regulation 500-60, "Disaster Relief", September 1, 1981
- "Plan for Federal Response to a Catastrophic Earthquake," April 15, 1987
- "Federal Radiological Emergency Response Plan (FRERP)," Federal Register, Vol. 50, No. 217, November 8, 1985
- "Headquarters, U.S. Forces Command (FORSCOM) Military Assistance to Civil Authority Plan (MACAP), Annex G, (Communications)," April 28, 1987, with Change 1, March 13, 1980
- "Standard Operating Procedures for Joint Telecommunications Resources Board," January 18, 1989
- White House Memorandum, Subject: "National System for Emergency Coordination (NSEC)," January 19, 1989
- FEMA/General Services Administration (GSA) Memorandum of Understanding (MOU), February 2, 1989
- FEMA Instruction 9360.1, "National Network Operations Center," June 5, 1989
- FEMA Manual 8720.1, "Guidance for Emergency Response Team Planning," July 1985

- FEMA Manual, "Headquarters Plan for Emergency Support Teams," February 8, 1984.

1.6 SUPERSESSION

This plan supersedes the National Plan for Telecommunications Support in Non-Wartime Emergencies dated September 1987.

2.0 CONCEPT OF OPERATIONS

Telecommunications support is provided on a management by exception basis. Requirements are satisfied at the lowest level possible. Only situations which are beyond the response element capabilities will be referred to higher levels for resolution.

The concept of operations is to establish, to the extent possible, emergency management centers in, or near, the affected areas and to support field operations with existing Emergency Operation Centers and information systems.

2.1 GENERAL

The Federal Emergency Management Agency (FEMA) Integrated Emergency Management System (IEMS) calls for the cooperative efforts of Federal, State, and local governments with the private sector in preparing for, mitigating, responding to, and recovering from the continuum of possible disasters, emergencies, and Extraordinary Situations. Planning for regional emergency telecommunications support for the FEMA Regional Director (RD), Federal Coordinating Officer (FCO), and Senior FEMA Official (SFO) is the responsibility of the NCS Regional Manager/GSA Zonal or Regional Emergency Communications Planner (NCSRM/GSA ZECP or RECP). Coordination between FEMA and GSA will be made at all levels of planning and response pursuant to the FEMA/GSA Memorandum of Understanding, dated February 2, 1989. Emergency management for a specific event begins with an incident assessment managed by the FEMA RD. If a Presidential disaster is declared under Public Law (P.L.) 93-288, as amended, an FCO is appointed by the Director, FEMA, on behalf of the President. If the incident is evaluated as an Extraordinary Situation, the Director, FEMA, will appoint an SFO. Federal telecommunications support for those emergency situations not declared under P.L. 93-288, as amended, or are not considered an Extraordinary Situation, will be provided as specified in Section 2.4.

2.2 PRESIDENTIALLY DECLARED MAJOR DISASTERS AND EMERGENCIES

The intent of P.L. 93-288, as amended, is to provide, at the request of a State Governor, orderly and continuing supplemental assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from disasters. Section 418 of P.L. 93-288, as amended, states, "The President is authorized during, or in anticipation of, an emergency or major disaster, to establish temporary communications systems and to make such communications available to State and local government officials and other persons as he deems appropriate."

Immediately after the declaration of a Major Disaster or Emergency by the President, an FCO is designated by the Director, FEMA, on behalf of the President, to coordinate Federal assistance in the disaster area. The FEMA RD will appoint a Disaster Recovery Manager (DRM) to control and approve the expenditure of FEMA funds. To enhance the effectiveness of recovery operations, the FCO and DRM are usually the same individual. The FCO normally

establishes a Disaster Field Office (DFO) in the affected area. After completion of a survey of the disaster area, the FCO may direct establishment of one or more Disaster Application Centers (DAC).

2.2.1 Telecommunications Support. The FCO may assign initial telecommunications management responsibility to the FEMA Regional Communications Manager (FRCM) or, if the situation requires, requests GSA to assign a Federal Emergency Communications Coordinator (FECC). At the request of the FCO, the NCSRM/GSA ZECP or RECP may become, or the GSA Regional Office of Information Resources Management may appoint, a representative to become the FECC on the FCO's staff. The FECC is responsible for coordinating the entire Federal emergency telecommunications response in the disaster area.

The status of telecommunications in the disaster area is evaluated by the FECC. Telecommunications deemed necessary to support the disaster response and recovery activities are established utilizing surviving commercial capabilities. In establishing communications, the Telecommunications Service Priority (TSP) System rules and procedures may be applied. If required, commercial carrier resources may be supplemented, as required, by other available emergency telecommunication resources. Emphasis will be placed on the use of commercial resources as they become available. Emergency resources obtained from other sources are to be promptly released as adequate commercial capabilities are reestablished. Every effort should be made to ensure the release of emergency resources within 30 days of the Major Disaster or Emergency declaration.

The Director, FEMA, or the FCO generally directs that emergency support teams of Federal personnel be deployed to the emergency or disaster area. One such support team may be a telecommunications team which will constitute the Emergency Communications Staff (ECS), headed by either the FRCM or the FECC. The size and composition of the ECS may vary depending upon the magnitude and severity of the Major Disaster or Emergency. It may range from one person to a team of several telecommunication specialists drawn from GSA, DoD, FEMA, other Federal organizations, and the telecommunications industry. As the Chief of the ECS, the FRCM or the FECC must ensure that the FCO and other FCO staff elements have access to telecommunications.

The FRCM or the FECC, assisted by the members of the ECS, will advise the FCO on all telecommunication matters, and take action to ensure that required services are provided in support of the Federal disaster response and recovery effort. The FECC should coordinate with Federal, State, and local organizations and the major private relief organizations involved with disaster recovery to ascertain their telecommunications requirements. The FRCM or the FECC will process them in the order of priority established by the FCO, consistent with the provisions of the TSP System rules and regulations.

In cases where simultaneous Major Disasters or Emergencies encompass two or more standard Federal regions, the Manager, NCS, will identify a Communications Resource Manager (CRM) from the NCS staff. The function of the CRM is to assist the FECC. The CRM will

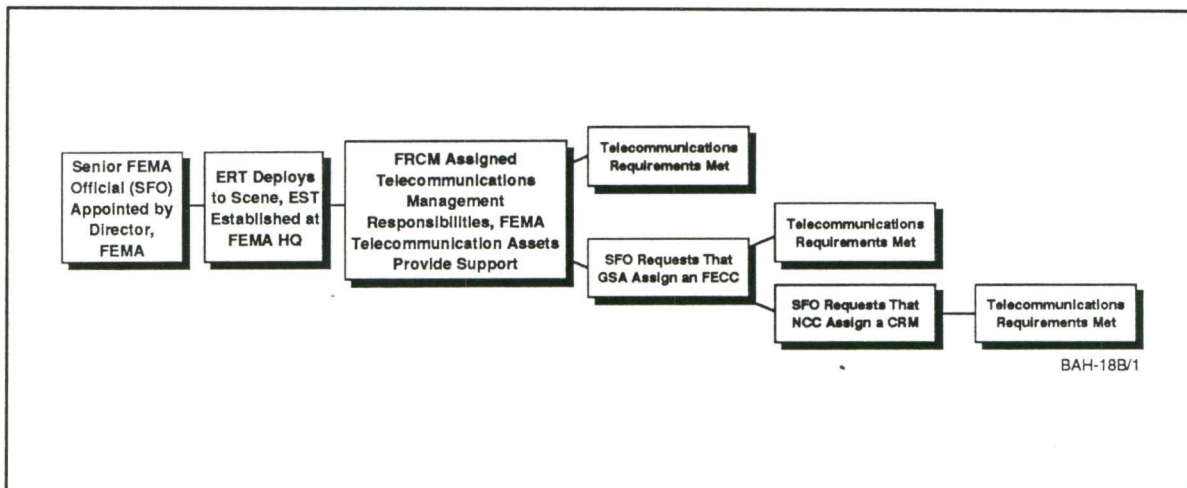
function from within the National Coordinating Center for Telecommunications (NCC), coordinating efforts with the FEMA National Network Operations Center (NNOC). The CRM will be deployed to the field if requested by an FCO.

In the exercise of these responsibilities, the CRM will be guided by direction provided by the Manager, NCS, and the JTRB. The Manager, NCS, the Manager, NCC, the Defense Commissioner, Federal Communications Commission (FCC), and the Director, FEMA, will ensure that all information regarding potential and/or actual emergency situations with significant telecommunication implications is brought to the attention of the Chairman, JTRB. This will facilitate the undertaking of any Federal emergency response activities required beyond those already being executed by responsible agencies as part of their established emergency response procedures, and in support of the priorities established by the FCO.

When the allocation of telecommunication resources cannot be resolved by the CRM, the matter will be presented to the Manager, NCS. If the matter cannot be resolved by the Manager to the satisfaction of the parties involved, it will be presented to the JTRB for resolution.

Exhibit 2-1 shows the response sequence for presidentially declared Major Disasters and Emergencies.

EXHIBIT 2-1 MAJOR DISASTER AND EMERGENCY RESPONSE SEQUENCE



2.3 EXTRAORDINARY SITUATIONS

In some situations requiring Federal Government involvement, individual Federal organizations will respond under their own authorities, and no "on-scene" coordination among organizations will be required. In other situations, there may be a need for FEMA to provide a clearinghouse function and common point-of-contact for the responding State and local jurisdictions and Federal organizations. A situation or event that has significant national impact or one that requires a significant Federal Government presence, but does not meet the criteria of P.L. 93-288, as amended, is considered an Extraordinary Situation.

When an Extraordinary Situation occurs that requires a Federal Government response, the cognizant Federal agency will have the lead responsibility for the majority of "on site" functions during the initial response. FEMA will have the lead in coordinating assistance to State and local governments and other responding Federal organizations, and will help to develop and present recommended protective or support measures. FEMA is also responsible for providing information on the off-site Federal response to the Executive Office of the President and the U.S. Congress.

The FEMA coordination in an Extraordinary Situation will be accomplished by an Emergency Response Team (ERT) at the scene. The ERT will normally be led by an SFO, appointed by the Director, FEMA, or a senior official authorized or appointed to act for the Director, FEMA. An ERT will be deployed to the scene of an Extraordinary Situation when: (1) The Director, FEMA, concurs with a Governor's request for assistance; or (2) the Director, FEMA, feels that the requirement or potential exists for a significant Federal presence. A requirement for a Federal presence can exist in the absence of a Governor's request for assistance when a situation occurs that is wholly or partially the responsibility of the Federal Government or when Federal statutes require the involvement of more than one Federal organization.

The ERT will be supported by an Emergency Support Team (EST), headed by an EST Director. The EST will operate from the FEMA Emergency Information and Coordination Center (EICC) in the FEMA Headquarters in Washington, DC. The SFO will report to the Director, FEMA, and will communicate and provide information and reports through the EST using the operational facilities of FEMA and the EICC.

2.3.1 Telecommunications Support. Telecommunications support for Extraordinary Situations is accomplished on a management by exception basis within the context of the FEMA ERT/EST concept as contained in FEMA Manual 8720.1, "Guidance for Emergency Response Team Planning," July 1985. The initial telecommunications support for the ERT will be the responsibility of the FRCM, utilizing existing fixed and mobile capabilities of the FEMA National Emergency Management System (NEMS). When these resources are inadequate to meet the support requirements of the ERT and Federal organizations, the SFO will request GSA to assign an FECC. If activated, the FECC will report to the SFO and assume the functions of principal Federal manager for emergency telecommunications. To ensure that

telecommunication requirements are met, the FECC may use TSP System rules and procedures to request priority provisioning and restoration of telecommunication services.

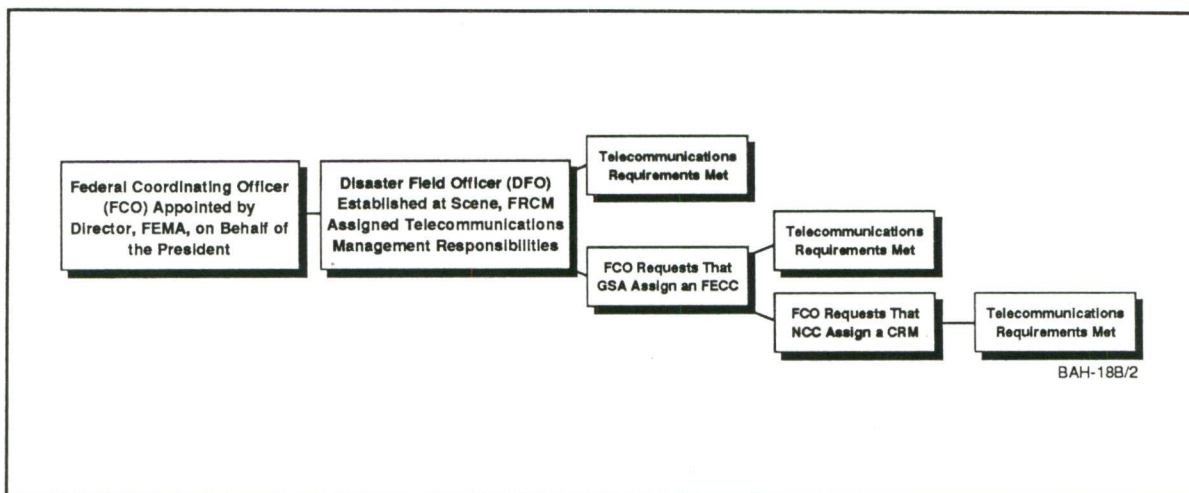
In cases where the Extraordinary Situation encompasses two or more standard Federal regions, the Manager, NCS, will identify a CRM from the NCS staff. The function of the CRM is to assist the FECC. The CRM will function from within the NCC, coordinating efforts with the FEMA NNOC. The CRM will be deployed to the field if requested by an SFO.

The CRM will be guided by direction provided by the Manager, NCS, and the JTRB, and will apply TSP System rules and regulations. The CRM will also coordinate with the FEMA NNOC. The Manager, NCS, the Manager, NCC, the Defense Commissioner, FCC, and the Director, FEMA will keep the Chairman, JTRB, informed as prescribed in the "JTRB Standard Operating Procedures" issued by the Director, OSTP.

When the allocation of telecommunication resources cannot be resolved by the CRM, the matter will be presented to the Manager, NCS. If the matter cannot be resolved by the Manager to the satisfaction of the parties involved, it will be presented to the JTRB for resolution.

Exhibit 2-2 shows the response sequence for Extraordinary Situations.

EXHIBIT 2-2 EXTRAORDINARY SITUATION RESPONSE SEQUENCE



2.4 OTHER EMERGENCIES

Telecommunications support for emergency situations which are not declared under P.L. 93-288, as amended, and are not considered Extraordinary Situations, will normally be independently accomplished by the involved Federal organization(s). When telecommunication service providers are unable to satisfy all telecommunication service requirements, or when there are conflicts between multiple Federal organizations, the matter should be brought to the attention of the NCC.

3.0 ROLES AND RESPONSIBILITIES

This section defines the roles and responsibilities of all organizations and individuals involved in telecommunications support in non-wartime emergencies. These roles and responsibilities are addressed for each major phase of emergency response (predeployment, deployment, and postdeployment).

3.1 JOINT TELECOMMUNICATIONS RESOURCES BOARD

The JTRB will provide assistance to the Director, Office of Science and Technology Policy (OSTP) in the exercise of those non-wartime emergency telecommunication functions assigned by Executive Order (E.O.) 12472. The JTRB's role is to monitor potential or actual telecommunication emergency situations that pose significant threats to telecommunication facilities or services, and situations that may create the need for extraordinary telecommunications support. During Emergencies, Major Disasters, or Extraordinary Situations, the JTRB will be supported by the National Communication System (NCS) organizational structure utilizing the resources of the National Coordinating Center for Telecommunications (NCC), the Defense Information Systems Agency (DISA) Network Management Operations Center (NMOC), the Federal Emergency Management Agency (FEMA) Emergency Information and Coordination Center (EICC) and National Network Operations Center (NNOC), and other Federal agency operation centers as necessary. When the President activates the National System for Emergency Coordination (NSEC), the JTRB will function as the Telecommunications Functional Group to support and coordinate relief operations, assess problems, propose solutions, and facilitate resolution of specific emergency functional needs.

3.1.1 Predeployment Phase. The JTRB is responsible for the periodic review and approval of updated versions of this plan.

3.1.2 Deployment Phase. The JTRB is responsible for:

- Reviewing information submitted to the Chairman, JTRB, evaluating response and support requirements, and providing recommendations to appropriate officials of the Executive Office of the President
- Facilitating the concerted exercise of non-wartime emergency telecommunication authorities and responsibilities by individual Federal entities
- Advising and assisting the Chairman, JTRB in the resolution of competing demands for telecommunication services, and determining necessary service priorities resulting from non-wartime emergency situations.

3.1.3 Postdeployment Phase. The JTRB has no specified roles and responsibilities during this phase.

3.2 DIRECTOR, FEDERAL EMERGENCY MANAGEMENT AGENCY

The Director, FEMA, will keep all concerned Federal organizations informed of potential, developing, and existing Emergencies, Major Disasters, and Extraordinary Situations. Upon presidential declaration of an Emergency or a Major Disaster, the Director will appoint a Federal Coordinating Officer (FCO) on behalf of the President. When an Extraordinary Situation has significant national impact or requires a significant Federal Government presence, the Director will appoint a Senior FEMA Official (SFO). The Director will provide overall guidance and direction to the Federal recovery efforts. The Director, FEMA, is responsible for performing the Civil Defense functions delegated under E.O 12148, and for providing disaster preparedness planning, mitigation, response, and recovery assistance to State and local governments pursuant to Public Law (P.L.) 93-288, as amended.

3.2.1 Predeployment Phase. The Director, FEMA, is responsible for:

- Reviewing the ten standard Federal regional plans developed in support of this National Plan, and coordinating them with the Manager, NCS, and the Administrator, General Services Administration (GSA)
- Supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP
- Ensuring that all information regarding potential and/or actual emergency situations with significant telecommunication implications is brought to the attention of the Chairman, JTRB
- Directing establishment of Disaster Field Offices (DFOs) and Disaster Application Centers (DACs), if deemed necessary.

3.2.2 Deployment Phase. The Director, FEMA, is responsible for:

- Monitoring the provision of telecommunication services to support the Federal response, by use of reports from the Administrator, GSA, and other sources
- Deploying Federal response teams to the affected area
- Supporting the JTRB as required.

3.2.3 Postdeployment Phase. The Director, FEMA, has no specified roles or responsibilities during this phase.

3.3 FEMA REGIONAL DIRECTOR

The FEMA Regional Director (RD) provides policy and procedural guidance to the NCS Regional Manager/GSA Zonal or Regional Emergency Communications Planner (NCSRM/GSA ZECF or RECF) during the predeployment phase, and facilitates coordination between the NCSRM/GSA ZECF or RECF and officials of Federal, State, and local government agencies which may be involved in recovery operations within the region.

3.3.1 Predeployment Phase. The FEMA RD is responsible for:

- Advising the NCSRM/GSA ZECF or RECF of developing situations which may result in an Emergency or Major Disaster, or that may require a Federal Government presence
- Actively supporting the coordination activities of the NCSRM/GSA ZECF or RECF in gathering data from Federal, State, and local government agencies in the region
- Ensuring the development of a Regional Emergency Communications Plan in support of this National Plan
- Assigning a FEMA Regional Communications Manager (FRCM) to the staff of the Federal Emergency Communications Coordinator (FECC) to coordinate telecommunication actions with the NCSRM/GSA ZECF or RECF, and providing guidance and assistance in fulfillment of the assigned mission
- Surveying the disaster area to identify potential DFO and DAC locations. The survey team may include the NCSRM/GSA ZECF or RECF or an FECC, and telecommunication industry representatives
- Authorizing the FRCM to assist in developing, preparing, and publishing the Regional Emergency Communications Support Plan.

3.3.2 Deployment Phase. The FEMA RD is responsible for:

- Providing an FRCM to perform FEMA assigned duties, and if implemented, serving on the Emergency Communications Staff
- Providing the capability to interface with Federal, State, and local Civil Defense Communications Systems, and coordinating with the Radio Amateur Civil Emergency Service (RACES), Military Affiliate Radio System (MARS), Amateur Radio Emergency Services (ARES), other amateur radio organizations, and organized Personal Service Radio (PSR) groups to provide reliable radio communications in support of the FCO or SFO mission.

3.3.3 Postdeployment Phase. The FEMA RD has no specified roles or responsibilities during this phase.

3.4 FEDERAL COORDINATING OFFICER

The FCO is appointed by the Director, FEMA, on behalf of the President to coordinate Federal disaster relief efforts during an Emergency or Major Disaster. The FCO is responsible for making an immediate appraisal of the types of relief most urgently needed; establishing Disaster Field Offices and Disaster Application Centers as necessary; coordinating the administration of recovery activities of other Federal organizations and private relief organizations which have agreed to operate under FCO supervision. The FCO will determine, in coordination with the State Coordinating Officer (SCO), the type, quantity, and priority of relief required.

3.5 SENIOR FEMA OFFICIAL

The SFO is appointed by the Director, FEMA, to coordinate overall Federal response during an Extraordinary Situation. The SFO is responsible for the effective coordination of the overall Federal response at the scene of the Extraordinary Situation. This includes directing the Emergency Response Team, establishing emergency response facilities, assessing on-scene telecommunication needs to meet Federal telecommunication requirements, coordinating with Federal, State, local, and volunteer agencies to ensure proper and timely response, and encouraging and assisting all Federal organizations responding to the Extraordinary Situation to employ their resources with maximum effectiveness. The SFO will provide the FEMA Regional Communications Manager with the requirements and priorities for establishing emergency telecommunications support.

3.6 DISASTER RECOVERY MANAGER

Upon the declaration of a Major Disaster or Emergency, the FEMA RD will appoint a DRM to administer/manage disaster relief and recovery programs authorized by P.L. 93-288, as amended. The expenditure of FEMA funds will be controlled, approved, and managed by the DRM.

3.7 FEMA REGIONAL COMMUNICATIONS MANAGER

The FRCM will provide telecommunications support to the FCO and the SFO. The FRCM will recommend the activation of an FECC when circumstances warrant. The FRCM will then serve on the Emergency Communications Staff. The FRCM will coordinate with the Emergency Support Team (EST) through the FEMA NNOC.

3.7.1 Predeployment Phase. The FRCM is responsible for:

- Planning for the provisioning of telecommunications support to the FCO, the SFO, and, if activated, the FECC for declared Emergencies, Major Disasters, and Extraordinary Situations
- Planning for the provisioning of telecommunications support to ERT activities in Extraordinary Situations utilizing primarily the fixed and mobile FEMA NEMS capabilities
- Supporting the NCSRM/GSA ZECF or RECF in developing the Regional Plan, with emphasis on State annexes.

3.7.2 Deployment Phase. The FRCM is responsible for:

- Ensuring that telecommunications support, as requested by the FCO or SFO, is provided in the affected area
- Coordinating deployment of National Emergency Management System (NEMS) assets
- Recommending the activation of an FECC to the FCO or SFO when circumstances warrant
- Reporting the status of FEMA mobile and/or transportable assets to the NNOC
- Preparing and forwarding status reports as required
- Recommending the services of a CRM to the FCO or SFO, if warranted.

3.7.3 Postdeployment Phase. The FRCM (if no FECC has been activated) is responsible for:

- Determining which portions of temporarily established disaster support telecommunications are no longer required
- Recommending to the FCO or SFO, as appropriate, the release of those telecommunication assets which are no longer required
- Taking the required steps to discontinue those services and effect the release of telecommunication personnel and assets that are no longer required, when approved by the FCO or SFO
- Monitoring the post deployment telecommunications situation

- Preparing an after-action report.

3.8 MANAGER, NCS

The Manager, NCS, will ensure the provision of adequate telecommunications support to Federal recovery operations. The Manager, NCS, through the NCC, will provide information and assistance to the JTRB as required.

3.8.1 Predeployment Phase. The Manager, NCS, is responsible for:

- Supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP
- Ensuring that all information regarding potential and/or actual emergency situations with significant telecommunication implications is brought to the attention of the Chairman, JTRB
- Coordinating response activities with FEMA, GSA, and other JTRB member organizations
- Supporting maintenance of this plan
- Reviewing all Regional Emergency Telecommunications Support Plans developed in support of this plan
- Providing advice and assistance to the NCSRM/GSA ZECs or RECs
- Monitoring the status of critical situations which have the potential of developing into Emergencies, Major Disasters, or Extraordinary Situations, and those that may require emergency telecommunications support
- Maintaining working relationships with the telecommunications industry at the national level through the joint industry-government NCC which is capable of assisting in the initiation, coordination, restoration, and reconstitution of NS/EP telecommunication services and facilities. Insofar as these relationships are concerned, they shall be in accordance with the requirements of law and the applicable rules of the Federal Communications Commission (FCC)
- Establishing within the NCC all necessary procedures for facilitating the collection and dissemination of information required to support the JTRB
- Having the capability to conduct periodic tests and exercises of this Plan on a regional basis in coordination with FEMA and GSA.

3.8.2 Deployment Phase. The Manager, NCS, is responsible for:

- Monitoring the recovery efforts and, as required, coordinating the provision of telecommunications needed by the Federal Government
- Appointing a CRM, if requested by the FCO or SFO, to assist the FECC in those instances where telecommunication service vendors are unable to satisfy all requirements, when there are conflicts between multiple FECCs, or when the allocation of available resources cannot be fully accomplished at the field level
- Coordinating, when requested by the FECC, with NCS member organizations to obtain additional telecommunication specialists to augment the Emergency Communications Staff
- Providing a 24-hour a day point of contact
- Supporting the JTRB as required.

3.8.3 Postdeployment Phase. The Manager, NCS, is responsible for:

- Monitoring progress in reconstitution of telecommunication services and facilities
- Monitoring the release and return of emergency telecommunication assets
- Reviewing reports and analyzing lessons learned for incorporation into policies and plans.

3.9 MANAGER, NATIONAL COORDINATING CENTER FOR TELECOMMUNICATIONS

The Manager, NCC, will monitor all Emergencies, Major Disasters, and Extraordinary Situations to determine that adequate NS/EP telecommunication services are being provided to support recovery operations. Further, the Manager will assess the impact upon existing Federal government NS/EP telecommunication services and, if necessary, coordinate the restoration and/or rerouting of such services with the appropriate service providers. When required, the Manager, NCC will execute the functions and responsibilities of the CRM.

3.10 NCS COMMUNICATIONS RESOURCE MANAGER

The CRM will, when activated, function from the NCC or, when requested by the FCO or SFO, deploy to the scene of the Emergency, Major Disaster, or Extraordinary Situation. The primary role of the CRM will be one of coordination among service providers and standard Federal region personnel during concurrent regional emergencies.

3.10.1 Predeployment Phase. The NCS CRM has no specified roles or responsibilities during this phase.

3.10.2 Deployment Phase. The NCS CRM is responsible for:

- Coordinating with telecommunication service providers when they are unable to satisfy all telecommunication service requirements, when there are conflicts between multiple FECCs, or when the allocation of available resources cannot be fully accomplished at the field level
- Deploying to the field, upon the request of the FCO or SFO, to perform assigned responsibilities with the support of the FEMA NNOC and the NCS NCC
- Preparing a "decision" package for the Manager, NCS, if required.

3.10.3 Postdeployment Phase. The NCS CRM has no specified roles or responsibilities during this phase.

3.11 ADMINISTRATOR, GENERAL SERVICES ADMINISTRATION

The Administrator, GSA, will ensure that an NCSRM/GSA ZECF or RECF and FECC are identified for each of the ten standard Federal regions. The Administrator will authorize the NCSRM/GSA ZECF or RECF to accept guidance from the FEMA RD during the predeployment phase of a telecommunications emergency. National level guidance will be provided by the GSA Information Resources Management Service (IRMS) Emergency Communications Coordinator. The Administrator will authorize the NCSRM/GSA ZECF or RECF or designated alternates to perform the function of the FECC upon request by the FCO or SFO.

3.11.1 Predeployment Phase. The Administrator, GSA, is responsible for:

- Reviewing all GSA Regional Emergency Telecommunication Plans developed in support of this plan and coordinating such plans with the Manager, NCS
- Assigning an NCSRM/GSA ZECF or RECF in each of the standard Federal regions and providing guidance and assistance to them in the fulfillment of their assigned missions
- Supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP.

3.11.2 Deployment Phase. The Administrator, GSA, is responsible for:

- Appointing the FECC to function on the staff of the FCO or SFO and notifying the FCO or SFO of the appointment

- Providing one or more GSA representatives to augment the Emergency Communications Staff so that the FECC may perform assigned FCO or SFO staff actions
- Supporting the JTRB, as required
- Providing for a 24-hour a day point of contact.

3.11.3 Postdeployment Phase. The Administrator, GSA, is responsible for coordinating the phaseout of any emergency telecommunications support provided.

3.12 NATIONAL COMMUNICATIONS SYSTEM REGIONAL MANAGER/GENERAL SERVICES ADMINISTRATION ZONAL OR REGIONAL EMERGENCY COMMUNICATIONS PLANNER

The NCSRM/GSA ZECF or RECF will prepare and maintain a Regional Support Plan for each designated standard Federal region, coordinating plan development with counterpart NCSRM/GSA ZECFs or RECFs in contiguous regions. The NCSRM/GSA ZECF or RECF will supervise the training of potential FECCs within the assigned region.

3.12.1 Predeployment Phase. The NCSRM/GSA ZECF or RECF is responsible for:

- Maintaining liaison with telecommunication service providers within their respective regions
- Developing mutually acceptable working arrangements with the FEMA RD for the performance of assigned functions
- Providing staff telecommunications planning support to the FEMA RD relative to emergency and disaster preparedness functions
- Performing assigned duties under the staff supervision of the parent agency (GSA)
- Preparing and maintaining a Regional Emergency Communications Support Plan. This plan is subject to review by the Administrator, GSA, the Manager NCS, and approval by the Regional Administrator, GSA and the FEMA RD
- Establishing coordination channels with the NCSRM/GSA ZECFs or RECFs of adjoining regions to ensure proper coordination of telecommunication support requirements between and among standard Federal regions

- Establishing relationships and points of contact with other Federal regional elements, numbered Army emergency operation centers, telecommunication service providers, State and local government representatives, and other organizations having control over telecommunication resources within the regions
- Performing such other tasks related to emergency telecommunications support planning as may be required by the FEMA RD.

3.12.2 Deployment Phase. The NCSRM/GSA ZECF or RECF has no specified roles or responsibilities during this phase.

3.12.3 Postdeployment Phase. The NCSRM/GSA ZECF or RECF has no specified roles or responsibilities during this phase.

3.13 FEDERAL EMERGENCY COMMUNICATIONS COORDINATOR

When requested, the FECC will deploy to the scene of a Presidentially declared Emergency or Major Disaster, or an Extraordinary Situation to survey the status of telecommunications and to determine surviving capabilities and the extent of damage within the impacted area. The FECC will coordinate with other Federal organizations to determine their emergency telecommunication service requirements and will convene and chair the Emergency Communications Staff.

3.13.1 Predeployment Phase. The FECC has no specified roles or responsibilities during this phase.

3.13.2 Deployment Phase. The FECC is responsible for:

- Surveying and reporting to the NCC and NNOC the status of telecommunications to determine the surviving capabilities within the area of the disaster, emergency, or extraordinary situation
- Determining, in coordination with the FCO/DRM or the SFO, and other Federal organizations, the emergency telecommunications required to efficiently control and conduct the recovery operations
- Identifying the NSEP telecommunication service requirements that need to be provided or restored, and using Telecommunications Service Priority (TSP) System rules and procedures as needed for emergency and essential services
- Coordinating with the FEMA RD and staff, if a separate office is established, to determine telecommunication requirements needed to support that function
- Serving as the Chief of the Emergency Communications Staff

- Consulting with telecommunication industry representatives and advising the FCO or SFO on the supportability, from a telecommunications standpoint, of locations being considered for DFOs and DACs
- Ensuring the prompt establishment of telecommunications in the disaster area in accordance with the priorities established by the FCO or SFO, consistent with the provisions of the TSP System rules and regulations
- Serving as the sole central telecommunications coordinating point to receive and process requests for emergency telecommunication services from all Federal and major private relief organizations involved with recovery operations. Actions shall be taken on such requests in accordance with priorities established by the FCO or SFO, consistent with applicable laws and regulations
- Requesting assistance from the Administrator, GSA, the Manager, NCS, points of contact for other NCS member organization regional elements, the NCC, and the telecommunications service providers, as necessary, to satisfy requirements
- Coordinating the installation of all Federal Government telecommunication services area of the disaster, emergency, or extraordinary situation
- Requesting deployment of Department of Defense (DoD) controlled resources, through the Disaster Control Officer (DCO) on site or through the cognizant CONUS Army emergency operations center. Specify whether operators, maintenance personnel, or technicians are required to be deployed with any requested equipment
- Maintaining constant surveillance of the operational status of telecommunications within the area
- Establishing control procedures for reissuance of any mobile or portable equipment brought into the area
- Preparing and forwarding periodic telecommunications status reports to the GSA Emergency Operation Facility (EOF).

3.13.3 Postdeployment Phase. The FECC (if activated) is responsible for:

- Determining which portions of temporarily established support telecommunications are no longer required
- Recommending to the FCO or SFO the release of those telecommunication assets which are no longer required

- Taking necessary steps to discontinue those services and effect the release of personnel and assets that are no longer required, when directed by the FCO or SFO
- Continuing to monitor the postdeployment telecommunications situation
- Preparing an after-action report.

3.14 NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

The National Telecommunications and Information Administration (NTIA) will provide policy and procedural guidance concerning the control and allocation of radio frequency assignments in those parts of the electromagnetic spectrum assigned to the Federal Government. The NTIA shall amend, modify, or revoke such assignments as necessary and will develop plans and procedures for spectrum priorities, including a system for radio spectrum management. NTIA will also assist the Director of the OSTP in the implementation of these plans and procedures in non-wartime emergencies, including the resolution of any conflicts in or among such priorities. Finally, the NTIA will maintain and publish the NTIA Emergency Readiness Plan for Use of the Radio Spectrum.

3.15 FEDERAL COMMUNICATIONS COMMISSION

The FCC has the responsibility for reviewing the policies, plans, and procedures that are developed by all entities licensed or regulated by the Commission to provide national security and emergency preparedness telecommunication services, in order to ensure that such policies, plans and procedures are consistent with the public interest, convenience, and necessity. The FCC shall perform such functions as required by law with respect to all entities licensed or regulated by the Commission, including (but not limited to) the extension, discontinuance, or reduction of common carrier facilities or services; the control of common carrier rates, charges, practices, and classifications; the construction authorization, activation, deactivation, or closing of radio stations, services, and facilities; the assignment of radio frequencies to Commission licensees; the investigation of violations of pertinent law and regulation; and the initiation of appropriate enforcement actions.

3.16 SECRETARY OF DEFENSE

The Secretary of Defense shall provide assistance in civil emergencies in accordance with national policies, consistent with defense priorities as set forth in DoD Directive 3025.1. The Secretary of Defense has designated the Secretary of the Army as the DoD Executive Agent for DoD support to civil emergencies.

3.16.1 Predeployment Phase. The Secretary of Defense is responsible for supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP.

3.16.2 Deployment Phase. The Secretary of Defense, through the Secretary of the Army (Directorate of Military Support), is responsible for:

- Ensuring the deployment of resources as requested by the FECC acting on behalf of the FCO, in accordance with the provisions of DoD Directive 3025.1
- Ensuring deployed military personnel respond to the guidance of the FECC on the use of DoD assets committed to the affected area
- Ensuring the provision of minimum and critical telecommunications support at, or in the vicinity of, a disaster area pending the availability of normal telecommunication capabilities. Note: DoD telecommunications support rendered will supplement other resources or temporarily substitute for other support until such other support is available. DoD support is not rendered in lieu of other support
- Support the JTRB, as required.

3.16.3 Postdeployment Phase. The Secretary of Defense has no specified roles and responsibilities during this phase.

3.17 OTHER FEDERAL ORGANIZATIONS

Other Federal organizations will support the Federal response and recovery effort when requested by the FCO. The Federal organizations will provide an organizational representative to the Emergency Communications Staff when requested by the FECC.

3.17.1 Predeployment Phase. Other Federal organizations have no specified roles or responsibilities during this phase.

3.17.2 Deployment Phase. Other Federal organizations are responsible for:

- Supporting the Federal disaster recovery effort to the maximum extent possible with personnel and resources as the situation dictates, if the FCO or SFO requests their assistance
- Notifying the FECC when telecommunications support (other than that provided by the FECC) is supplied to a representative of the organization at an operational location. Notification will be made by the organization's senior representative on site as soon as the type, quantity, and nature of the support are known
- Using their organization's resources to meet their mission requirements before requesting the FECC to obtain emergency telecommunications support

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- Notifying the FECC promptly of all telecommunication requirements and available assets. This will eliminate the possibility of service duplications and ensure prompt provision of needed services and facilities to the proper user
- Notifying the FECC promptly when their telecommunication resources are to be withdrawn or discontinued
- Notifying the FECC when telecommunication resources provided by the FECC are no longer required.

3.17.3 Postdeployment Phase. Other Federal organizations have no specified roles or responsibilities during this phase.

3.18 TELECOMMUNICATIONS INDUSTRY

The telecommunications industry will develop emergency procedures and policies to assist the rapid restoration of existing telecommunication services and the initiation of new services. Some have 24-hour per day network operations centers or use pre-established Emergency Operations Centers to respond to major telecommunication outages. For the purpose of this plan, a contact list will be distributed separately through GSA, IRMS channels, for use by Government representatives required to contact the commercial service providers involved in responding to Emergencies, Major Disasters, and Extraordinary Situations.

3.19 AMATEUR RADIO

Amateur Radio ^{operators and their} networks/systems may provide daily and emergency public service communications during Emergencies and Major Disasters. The American Radio Relay League (ARRL) sponsors the combined facilities of the Amateur Radio Emergency Services (ARES) and the National Traffic System (NTS), and recognizes the Radio Amateur Civil Emergency Services (RACES) and the Military Affiliate Radio System (MARS). Other licensed amateur activities and Personal Service Radio (PSR) groups also provide public communications during Emergencies and Major Disasters. Members of the Radio Emergency Associated Communication Teams (REACT) perform similar services utilizing Citizen Band radio equipment.

participates

for supporting emergency operations

ANNEX A

REPORT FORMATS

1. GENERAL - Telecommunication status reports are necessary to keep all involved organizations informed of the activities and status of telecommunications support being provided to the FCO or SFO. These reports are to be prepared and submitted as indicated herein. Reports will be reviewed by the OMNCS, Emergency Preparedness staff and used as a basis for telecommunication summaries to the Manager, NCS and the Chairman, JTRB.

A. Reports by the FECC will be submitted by telephone or sent by facsimile to the GSA Emergency Operating Facility (EOF). The GSA EOF is responsible for proper format and further dissemination to the Manager NCS, GSA, and FEMA.

B. Reports by the FRCM will be submitted in accordance with the above paragraph and the instructions contained in Chapter 7, FEMA Manual 8720.1, July 31, 1985.

2. TYPES OF REPORTS

A. INITIAL REPORT - This report concerns the initial assessment made by the FECC or FRCM after deployment, and is to be submitted as soon as possible. This report will be considered report number one (1). The following information should be included in the initial report.

(1) Name of Major Disaster or Emergency (declaration number), or Extraordinary Situation, and date declared

(2) Major city and geographical area(s) affected by the Major Disaster, Emergency, or Extraordinary Situation

(3) A summary of the extent of damage to existing telecommunications

(4) Contact on the scene (name and organization of individuals)

(5) Telecommunications service provider(s) on the scene (name and organization of individuals)

(6) Estimate of the telecommunications, by type, required to support the relief/recovery operations

(7) Assistance required from outside of the immediate area

(8) Miscellaneous

B. RECURRING STATUS REPORT - These reports concern the operational status of telecommunications and will be submitted periodically by the FECC or FRCM. They are a summary of the day-to-day events and are recommended for daily submissions. However, such daily submissions should not be at the expense of operational commitments. These reports shall be consecutively numbered beginning with two (2). The following information should be included in recurring status reports.

(1) Name of Major Disaster or Emergency (declaration number) or Extraordinary Situation and date declared

(2) Location

(3) Date of report

(4) Report Number

(5) Changes in telecommunication support requirements since the previous report

(6) Additional assistance required

(7) Problem area(s)

C. AFTER-ACTION REPORT - This report will be made within thirty days following the redeployment of the FECC or FRCM. After-Action reports should follow the following format:

SECTION 1.0 - General

This section should state the name of the Emergency or Major Disaster and provide the Declaration Number or Extraordinary Situation designation. It should provide the inclusive dates (beginning and termination) of telecommunication support operations.

SECTION 2.0 - Background

This section will be historical in nature and will contain a narrative of important activities beginning with the events precipitating the telecommunications involvement and including a detailed summary of the scope and impact of the particular emergency or disaster.

SECTION 3.0 - Significant Telecommunication Support Activities

This section will identify personnel involved and describe the type of supporting telecommunications provided FEMA and other Federal and State organizations. Problems encountered, actions taken, and the response by other organizations and the

U.S. telecommunications industry in providing support should be highlighted. This part may be expanded as necessary.

SECTION 4.0 - Discussion

This section should discuss all major problems encountered in providing telecommunications support, as well as lessons learned, to include recommendations.

3. DISTRIBUTION OF REPORTS.

TO: Associate Director
State and Local Programs and Support Directorate
Federal Emergency Management Agency
Washington, D.C. 20472

INFO: Manager, NCS (NCS-NE-O), 701 South Courthouse Road,
Arlington, VA 22204
GSA, IRMS, NSEP Division, Washington, D.C. 20405
FEMA, NNOC, P.O. Box 129, Berryville, VA 22611
FCC, Managing Director, 1919 M St NW,
Washington, D.C. 20554

ANNEX B

ACRONYM LIST

ARES	Amateur Radio Emergency Services
ARRL	Amateur Radio Relay League
CFR	Code of Federal Regulations
CRM	Communications Resource Manager
DAC	Disaster Application Center
DCO	Disaster Control Officer
DFO	Disaster Field Office
DISA	Defense Information Systems Agency
DoD	Department of Defense
DRM	Disaster Recovery Manager
ECS	Emergency Communications Staff
EICC	Emergency Information and Coordination Center
E.O.	Executive Order
EOC	Emergency Operation Center
EOF	Emergency Operations Facility
ERT	Emergency Response Team
EST	Emergency Support Team
FCC	Federal Communications Commission
FCO	Federal Coordinating Officer
FECC	Federal Emergency Communications Coordinator

FEMA	Federal Emergency Management Agency
FORSCOM	U.S. Forces Command
FRCM	FEMA Regional Communications Manager
FRERP	Federal Radiological Emergency Response Plan
GSA	General Services Administration
IEMS	Integrated Emergency Management System
IRMS	Information Resources Management Service
JTRB	Joint Telecommunications Resources Board
MACAP	Military Assistance to Civil Authority Plan
MARS	Military Affiliate Radio System
MOU	Memorandum of Understanding
NCC	National Coordinating Center for Telecommunications
NCS	National Communications System
NCSRM/GSA ZECP or RECP	National Communications System Regional Manager/General Services Administration Zonal or Regional Emergency Communications Planner
NEMS	National Emergency Management System
NMOC	Network Management Operations Center
NNOC	National Network Operations Center
NSEC	National System for Emergency Coordination
NS/EP	National Security and Emergency Preparedness
NTIA	National Telecommunications and Information Administration
OC	Operations Center

OMNCS	Office of the Manager, NCS
OSTP	Office of Science and Technology Policy
P.L.	Public Law
PRS	Personal Radio Service
RACES	Radio Amateur Civil Emergency Service
RD	Regional Director
REACT	Radio Emergency Associated Communications Teams
RECP	Regional Emergency Communications Planner
RM	Regional Manager
SCO	State Coordinating Official
SFO	Senior FEMA Official
TSP	Telecommunications Service Priority
ZECP	Zonal Emergency Communications Planner

ANNEX C

DEFINITIONS

The definitions used herein are intended solely for use within the context of this plan to provide a common understanding by all recipients and users. These definitions do not necessarily apply to general usage, although some are published in the Code of Federal Regulations (CFR), implementing the Disaster Relief Act of 1988 (44 CFR Part 205).

1. AMATEUR RADIO COMMUNICATIONS - Noncommercial radio communication by or among amateur radio stations solely with a personal aim and without pecuniary or business interest.
2. COMMERCIAL SERVICE PROVIDER - Any person or firm engaged as a carrier for hire, in interstate, intrastate, or foreign communications by wire or radio.
3. COMMUNICATIONS EMERGENCY - A condition which results or threatens to result in extensive damage to, or degradation of, vital telecommunication services, systems and/or facilities in a disaster or Extraordinary Situation area; and/or one which creates an unusual Federal demand for telecommunication services which cannot be satisfied without extraordinary management action. This condition includes those situations where telecommunication requirements exceed the capabilities existing prior to an emergency as well as the capabilities remaining after the emergency occurs.
4. COMMUNICATIONS RESOURCE MANAGER - That person appointed by the Manager, NCS, to assist in resolving claims for telecommunication resources where telecommunication service providers are unable to satisfy all telecommunication service requirements, when there are conflicts among multiple Federal Emergency Communications Coordinators, or when the allocation of available resources cannot be fully accomplished at the field level.
5. DISASTER AREA - The area designated by FEMA, as a result of a Presidential declaration of an Emergency or a Major Disaster. Prior to a declaration, the FEMA Regional Director may identify a disaster area for the purpose of mobilizing emergency telecommunication resources in anticipation of a Presidential declaration of an Emergency or Major Disaster.
6. DISASTER APPLICATIONS CENTER - The temporary center or centers established in the disaster area at a location convenient to the affected population to provide a single place at which individuals may receive information on, and apply for, available assistance.
7. DISASTER CONTROL OFFICER - That DoD military representative appointed as the single point of contact for the Federal Coordinating Officer (FCO) during each declared emergency or disaster.
8. DISASTER FIELD OFFICE - The temporary office established in the disaster area, as close

as possible to available communications, from which the FCO and FEMA RD/DRM and staff administer the disaster relief program as defined in Public Law 93-288, as amended.

9. DISASTER RECOVERY MANAGER - That person appointed to exercise the authority of the FEMA Regional Director for a particular Emergency or Major Disaster.

10. EMERGENCY - As defined by P.L. 93-288, as amended, "Emergency" means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives; to protect property, public health, and safety; or to lessen or avert the threat of a catastrophe in any part of the United States.

11. EMERGENCY COMMUNICATIONS STAFF - Those regional telecommunications specialists of NCS member organizations plus representatives of the telecommunications industry, when required, who assist the Federal Emergency Communications Coordinator in carrying out assigned functions. This Emergency Communications Staff meets the criteria of the National System for Emergency Coordination as a regional telecommunications functional group.

12. EMERGENCY RESPONSE TEAM - The FEMA group composed of a headquarters element and a regional element, that is deployed to the scene of an Extraordinary Situation to coordinate the overall Federal response for which FEMA has been assigned responsibility.

13. EMERGENCY SUPPORT TEAM (EST):

a. For a Declared Major Disaster, Emergency Support Teams (ESTs) may be appointed by the President and deployed to a Major Disaster area to assist the FCO in carrying out responsibilities pursuant to Section 303, PL 100-707. Such ESTs will be composed of personnel detailed from Federal organizations as directed by the President.

b. For an Extraordinary Situation, an EST is a FEMA Headquarters group that coordinates program and administrative support for the FEMA Director and the SFO during the response and recovery phases of an Extraordinary Situation.

14. EXTRAORDINARY SITUATIONS - Any situation which, in the judgment of the FEMA Director, has unique national significance and requires coordination of the Federal presence. The term includes a radiological incident or disaster, catastrophic hazardous material situation, catastrophic manmade emergency, a major civil disturbance having national significance, and response to an incident associated with a special event such as a political, sports, or entertainment extravaganza.

15. FEDERAL COORDINATING OFFICER - That person appointed by the President to coordinate Federal disaster relief efforts with the disaster assistance activities of State and local governments and volunteer organizations.

16. FEDERAL EMERGENCY COMMUNICATIONS COORDINATOR - That person, assigned by the General Services Administration, who functions as the principal Federal manager for emergency telecommunication requirements in Major Disasters, Emergencies, and Extraordinary Situations, when requested by the FCO or SFO.
17. FEMA NATIONAL NETWORK OPERATIONS CENTER - The central point from which FEMA's National Emergency Management System can be directed, controlled, and restored in support of day-to-day and emergency requirements.
18. FEMA REGIONAL COMMUNICATIONS MANAGER - That person assigned by the Federal Emergency Management Agency to manage FEMA's telecommunication assets and to serve as a member of the Emergency Communications Staff.
19. JOINT TELECOMMUNICATIONS RESOURCES BOARD - That organization established to assist the Director of the Office of Science and Technology Policy in the exercise of assigned non-wartime emergency telecommunication management functions.
20. MAJOR DISASTER - As defined by P.L. 93-288, as amended, "Major Disaster" means any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under P.L. 93-288, as amended, to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.
21. NATIONAL COMMUNICATIONS SYSTEM - That organization established by Executive Order 12472 to assist the President, National Security Council, Director of the Office of Science and Technology Policy, and Director of the Office of Management and Budget in: (1) the exercise of their wartime and non-wartime emergency telecommunication functions, and (2) the coordination of the planning for and provision of national security emergency preparedness telecommunications for the Federal government under all circumstances, including crisis or emergency, attack, recovery, and reconstitution.
22. NATIONAL COORDINATING CENTER FOR TELECOMMUNICATIONS - A joint telecommunications industry-Federal government operation established to assist in the initiation, coordination, restoration, and reconstitution of national security and emergency preparedness telecommunication services and facilities.
23. NATIONAL SECURITY AND EMERGENCY PREPAREDNESS TELECOMMUNICATIONS - National Security and Emergency Preparedness telecommunication services are those which are used to maintain a state of readiness or to respond to and manage any event or crisis (local, national or international), which causes or could cause injury or harm to the population, damage to or loss of property, or degrade or

threaten the national security and emergency preparedness posture of the United States.

24. NATIONAL SYSTEM FOR EMERGENCY COORDINATION - A White House Memorandum, dated January 19, 1988, establishes Presidential approval of a system to provide timely, effective, and coordinated assistance to State and local governments in extreme catastrophic technological, natural, or other domestic emergencies of national significance. When the NSEC is activated, the Federal Government's response to major domestic crises will be consistent with current emergency plans, including this National Plan, and will use existing domestic and national security crisis information and management systems.

25. NETWORK MANAGEMENT OPERATIONS CENTER - The DISA 24-hour operations center that provides a point of contact for the NCS and NCC during non-duty hours.

26. NCS REGIONAL MANAGER/GSA ZONAL OR REGIONAL EMERGENCY COMMUNICATIONS PLANNER - That person, assigned by the GSA, to provide Federal regional planning for emergencies covered by this plan and other national telecommunication response plans.

27. SENIOR FEMA OFFICIAL - The senior staff person appointed by the Director, FEMA to coordinate the overall Federal response at the scene of an Extraordinary Situation.

28. TELECOMMUNICATIONS FUNCTIONAL GROUP - A Telecommunications Functional Group is one of the interagency functional groups which could be activated under the NSEC.

29. TELECOMMUNICATIONS SERVICE PRIORITY SYSTEM - The NSEP TSP System is the regulatory, administrative, and operational system authorizing and providing for priority treatment (i.e., provisioning and restoration) of NSEP Telecommunication services. As such, it establishes the framework for NSEP telecommunication service vendors to provision, restore, or otherwise act on a priority basis to ensure effective NSEP telecommunication services.

30. UNITED STATES - The fifty States, District of Columbia, Puerto Rico, Virgin Islands, Guam, American Samoa, Palau, the Marshall Islands, Federated States of Micronesia, and the Northern Mariana Islands. "State" means any of the foregoing individually.



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC

July 9, 1991

Summary of Commission Proceedings
Regarding Telephone Service

The Federal Communications Commission (FCC) today announced four special action steps to be taken in response to recent telephone service interruptions affecting about 10 million customers in the Baltimore-Washington metropolitan area (and adjacent West Virginia), Los Angeles, and Pittsburgh, all of which have been the subject of widespread media coverage and public concern.

These special action steps -- outlined at a closed FCC meeting held Tuesday, July 9, 1991, and subsequently reviewed with the Commissioners -- are as follows:

(1) The FCC as soon as possible will convene a meeting at which representatives of the telecommunications industry--interexchange and local exchange carriers, equipment manufacturers, software providers, standards organizations, and user groups -- will report on the recent incidents, on measures taken to remedy problems, and on future efforts to prevent service interruptions.

The agenda for the meeting will include:

- (a) possible risks faced by contemporary and future networks;
- (b) network interconnection issues;
- (c) the effectiveness of current communications and coordinating measures (including standards setting and testing bodies); and,
- (d) what mechanisms are available and should be used with respect to network coordination and service integrity issues.

(2) The Common Carrier Bureau and other FCC staff will accelerate Commission research efforts and report on how service disruption and interruptions are handled in other critical industries (transportation and the electric power industry, for example) in the United States and abroad, and what procedures are used to dealing with such emergencies.

(3) The FCC will establish a special staff within the Common Carrier Bureau whose mandate will be to investigate and address systematically issues of network performance. This staff will work with the National Coordinating Center and other existing bodies to enhance "real time" responses to any future public network problems. It will assist the FCC's designated Defense Commissioner, Andrew Barrett, in fulfilling his defense- and emergency-related responsibilities. And,

(4) The FCC will move immediately to establish comprehensive, formal notification requirements concerning service problems. These reporting requirements will specify which firms are subject to such requirements, at what level an event will trigger reporting obligations, the time within which notification must occur, and what parties must be notified. The Commission's goal: A continuously functioning, systematic response mechanism at the FCC.

"High quality and reliability have been the touchstones of our American telecommunications industry," said Chairman Alfred C. Sikes in announcing the FCC's actions.

"The Commission continues to have full faith in the fundamental strength of our public telephone network," he stated, "and we are persuaded that the recent events are -- in all probability -- inadvertent side effects of continuing progress, rather than evidence of any fundamental flaws."

"The actions we set in motion today are designed to ensure the network's continued strength, and to ensure that the Commission is fully equipped in the future to investigate and respond to any problems in the system," Chairman Sikes said.

At the Commission's closed meeting July 9, the Chief of the FCC's Common Carrier Bureau, Richard M. Firestone, and the Chief

of the Bureau's Domestic Facilities Division, James R. Keegan, provided the Commission with information including the following:

° Fundamental Network Soundness. Although several significant interruptions in telephone service have occurred in recent years, the staff believes there is virtually no evidence indicating an adverse change in the reliability and high-quality which have been a fundamental characteristic of U.S. public communications networks generally. Indeed, most problems are attributable to inadvertent side effects of efforts to upgrade network capabilities.

New technologies contribute significant new capabilities as well as challenges, reflecting the complexities associated with major advances in communications technologies which are occurring worldwide. There is no ground to assume that service interruptions indicate deterioration in network performance or the U.S. communications infrastructure.

° Continuing Advances. Given the demands of users and pressures of an increasingly competitive communications marketplace, there will almost certainly be greater investment in and technological dependence upon fiber optic communications, digital switching, "out-of-band" signalling, and a diversity of product manufacturers and suppliers.

At the same time, commercial and societal dependence upon communications will increase. In general, these constitute positive, affirmative developments. Nevertheless, it is appropriate for the FCC and other regulatory bodies to be fully cognizant of the risks and challenges change presents and to accord great weight to service and related public interest issues.

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° Actions Needed. In an increasingly diverse, pluralistic, and competitive marketplace, the FCC needs to ensure that its overarching public interest responsibilities will continue to be satisfied.

FCC Commissioners Andrew C. Barrett, Ervin S. Duggan, James H. Quello, and Chairman Alfred C. Sikes participated in the closed meeting. Commissioner Sherrie P. Marshall was out-of-town on previously scheduled official business.

Cleared in for JTRB Meeting - 12 Aug 91

ANDERSON, John Robert	07/19/40
ANDREWS, Duane P.	01/19/45
BARRETT, Andrew C.	04/14/40
BELFORD, William B.	08/12/33
BERENSON, Lawrence	11/17/41
BUCKHOLTZ, Thomas	09/19/45
CAMPBELL, Bruce C.	09/10/40
CHAMBLESS, Valerie	01/23/63
CHRISTENSEN, John E.	12/03/31
FIORITO, Jack	05/08/37
FLYNN, George	12/25/33
GRIMES, John	10/29/35
MC KIE, Alan R.	03/23/33
MORRISS, Benham E.	02/20/28
OBUCHOWSKI, Janice	07/20/51
O'ROURKE, John	05/19/44
OSTERHOLZ, John	05/08/47
PARLOW, Richard	11/16/34
POST, Robert	12/23/54
REINKE, Roger	02/13/31
SHORT, Alonzo E., Jr.	01/27/39
SUGRUE, Thomas	02/09/47
TASSIE, James	09/22/39
BENINGTON, Herbert	10/28/28
NEWLAND, Margaret	03/04/50
OAKLEY, William B.	08/15/40

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

August 12, 1991

MEMORANDUM FOR D. ALLAN BROMLEY

THROUGH: MICHELLE K. VAN CLEAVE *mkv*
FROM: JOHN F. O'NEIL *JFO*
SUBJECT: JTRB MEETING, AUGUST 12, 1991
FROM 3 P.M. TO 5 P.M. - ROOM 208, OEOB

A meeting of the Joint Telecommunications Resources Board (JTRB) has been scheduled to cover the following topics:

- Network Security
- Disruptions to the Public Switch Network (PSN)
- The National Plan for Telecommunications Support in Non-Wartime Emergencies
- The JTRB Exercise held March 1, 1991

Network Security. The National Security Telecommunications Advisory Committee (NSTAC) formed a task force to address concerns about potential disruption of National Security and Emergency Preparedness (NS/EP) telecommunications through network software manipulation. The task force concluded recent intrusions into the PSN confirm "hackers" have significant capabilities to penetrate key switching and signalling system elements. Individual companies are aware and are taking action; the task force provided service suppliers with a checklist of steps that, when followed, would substantially enhance the security of their own networks. The task force reported that "until there is confidence that strong, comprehensive security programs are in place, the telecommunications industry should assume that a motivated and resourceful adversary, in one concerted manipulation of network software, could degrade at least portions of the PSN and monitor or disrupt the telecommunications serving NS/EP users."

A follow-on task force will:

1. Identify a mechanism and provide an implementation plan for security information exchange concerning risks and remedies.
2. Recommend steps to Government agencies that will improve the flow of Government information about threat to industry.
3. Recommend to the Government research and development (R&D) needed for commercially applicable security tools.
4. Evaluate existing industry-wide standards activities for network security and make recommendations.

Ben Morriss and Herb Benington (UNISYS), Task Force Chairman will brief the Board on progress to date.

PSN Disruptions. During June 1991, the Public Switch Network experienced disruptions in several areas which affected the ability to make outgoing calls. Press reporting has identified a DSC switch and attendant software as the problem. Bell Communications Research (Bellcore) has led the industry effort to recreate the incidents and identify comprehensive fixes. Bellcore will brief the Board on its findings. You may recall that Mr. Barrett of the FCC called you on this issue when the disruptions occurred. At that time, you offered to place it on the agenda for this meeting of the JTRB.

National Plan. The National Plan for Telecommunications Support in Non-Wartime Emergencies is the planning basis for utilization of National telecommunications assets and resources in support of non-wartime emergencies, as defined in Executive Order 12472, including Presidentially declared major disasters and emergencies covered by the Robert T. Stafford Disaster Relief Act, and Extraordinary Situations declared by the Director, Federal Emergency Management Agency (FEMA). This plan also contains operational direction for telecommunications support in these situations. It is the formal Government plan applicable to all Federal Executive departments, agencies, and other organizations in accordance with Executive Order 12472, Assignment of National Security and Emergency Preparedness Telecommunications Functions, April 3, 1984, and other national policy direction.

This plan will supersede the current one. At this meeting you will seek Board members concurrence with the plan before you sign it.

This revision streamlines and updates procedures for support. The format of the plan itself has been changed to make it easier to use. Essentially, it builds on a proven system. This version has been staffed with the Board member agencies.

JTRB Exercise. The JTRB held a table top exercise on March 1, 1991. At that time, it identified a number of issues and requirements which required further action. The JTRB will receive a briefing on the exercise, the issues and requirements, a work plan to address the issues and requirements, and a status report. This briefing will be classified.

An attendance list is at Tab 1.

Talking points are at Tab 2.

Joint Telecommunications Resources Board Meeting
Room 208, Old Executive Office Building
Monday, August 12, 1991 - 3 P.M.

List of Attendees

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Dr. D. Allan Bromley
Ms. Michelle K. Van Cleave
Col John F. O'Neil

Department of Defense (DOD)

Duane Andrews
John Grimes
John Robert Anderson

Department of Commerce (DOC)

Janice Obuchowski
Thomas Sugrue
Richard Parlow
Roger Reinke

General Services Administration (GSA)

Thomas Buckholtz
George Flynn

Federal Emergency Management Agency (FEMA)

Bruce C. Campbell
Lawrence Berenson

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National Communications System (NCS)

LTG Alonzo E. Short
Benham E. Morriss

Joint Telecommunications Resources Board Meeting
Room 208, Old Executive Office Building
Monday, August 12, 1991
3 P.M.

Seating Arrangement

Screen

John Osterholz
OEO

Ben Morriss
NCS

LTG Al Short
NCS

Tom Buckholts
GSA

Duane Andrews
OSD

John O'Neil
OSTP

Bill Belford
NCS

Pat Linhares
NSC

Bruce Campbell
FEMA

Janice Obuchowski
DoC

Alan McKie
FCC

Michelle Van Cleave
OSTP

Dr. Bromley
OSTP
Chairman

**Chairman's Talking Points
for
Joint Telecommunications Resources Board Meeting**

Monday, August 12, 1991, 3 P.M.

I. Opening Remarks:

- Welcome, hope everyone is having an enjoyable summer.
- I keep waiting for the summer lull, but I haven't seen it yet.
- Hope you make the best of the remainder of summer.
- As you probably know, Lieutenant General Rodgers has retired.
- We'll miss him at the JTRB--I've written to him and told him so.
- But, we are glad to welcome Lieutenant General Alonzo Short as the new Manager.
- It is great to have you join us, General.
- We have an interesting agenda before us today.
- Herb Benington of UNISYS, Chairman of NSTAC Task Force on Network Security, and Ben Morriss will brief us on network security.
- Jack Fiorito and John O'Rourke of Bellcore will brief on recent disruptions to the PSN.
- John Christenson, GSA, but working at NCC, will bring us up to date on the rewrite of our national plan.
- Bill Belford will brief us on our exercise of 1 March and work ongoing to answer our questions and requirements.
- We should have plenty to stimulate discussion today.
- Ben, would you please introduce our first item.

II. (First Briefing: Network Security)

- **Herb, Ben, thank you very much for that fine presentation.**
- **I appreciate you taking the time to join us today.**
- **As you know, the President appreciates the good work of the NSTAC, which stands as an excellent example of the kind of government-industry partnership my office has been seeking to encourage.**
- **We will continue to rely upon you to bring these national concerns to our attention as your work continues.**
- **Discussion?**

III.

I would also like to ask Ben to introduce our second set of briefers to discuss the recent disruptions to the PSN. Ben ...

- (Second briefing: Problems with PSN)
- Thank you.
- A number of the members of the JTRB expressed concern about these disruptions, so in light of the presentation we just heard, I would like to invite comment as to whether any Government action is warranted, in the form of a statement or steps, to address public concerns.

JTRB must remain
transparent
FCC have any recs respecting
statement or recs - or has
FCC already handled this

IV. And now, John Christenson, a member of GSA now working in NCC, will give us a short presentation on the National Plan.

- This rewrite streamlines and updates procedures for support.
- The format should make it easier to read.
- It builds on a proven system.
- I understand you have had a chance to review.
- (Third briefing: National Plan)
- (Following briefing, solicit concurrence on the plan.)
- (If all concur, you will sign out the plan.)

John Christenson
Comment

V. The final item is classified, so I can give those without proper clearance the rest of the day off!

- Bill Belford will bring us up to date on our exercise of 1 March, and the status of follow-on activities.**
- (Classified briefing.)**
- I hope we will be able to receive a final briefing on this at our next meeting.**

VI. Thank you all very much for your hard work in preparing for this meeting.

- We are making real progress towards having the mechanisms in to help us manage a crisis.**
- I think we are making a great contribution for our nation, and serving the President well.**
- Thanks again.**

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC

July 9, 1991

Summary of Commission Proceedings
Regarding Telephone Service

The Federal Communications Commission (FCC) today announced four special action steps to be taken in response to recent telephone service interruptions affecting about 10 million customers in the Baltimore-Washington metropolitan area (and adjacent West Virginia), Los Angeles, and Pittsburgh, all of which have been the subject of widespread media coverage and public concern.

These special action steps -- outlined at a closed FCC meeting held Tuesday, July 9, 1991, and subsequently reviewed with the Commissioners -- are as follows:

(1) The FCC as soon as possible will convene a meeting at which representatives of the telecommunications industry-- interexchange and local exchange carriers, equipment manufacturers, software providers, standards organizations, and user groups -- will report on the recent incidents, on measures taken to remedy problems, and on future efforts to prevent service interruptions.

The agenda for the meeting will include:

- (a) possible risks faced by contemporary and future networks;
- (b) network interconnection issues;
- (c) the effectiveness of current communications and coordinating measures (including standards setting and testing bodies); and,
- (d) what mechanisms are available and should be used with respect to network coordination and service integrity issues.

(2) The Common Carrier Bureau and other FCC staff will accelerate Commission research efforts and report on how service disruption and interruptions are handled in other critical industries (transportation and the electric power industry, for example) in the United States and abroad, and what procedures are used to dealing with such emergencies.

(3) The FCC will establish a special staff within the Common Carrier Bureau whose mandate will be to investigate and address systematically issues of network performance. This staff will work with the National Coordinating Center and other existing bodies to enhance "real time" responses to any future public network problems. It will assist the FCC's designated Defense Commissioner, Andrew Barrett, in fulfilling his defense- and emergency-related responsibilities. And,

(4) The FCC will move immediately to establish comprehensive, formal notification requirements concerning service problems. These reporting requirements will specify which firms are subject to such requirements, at what level an event will trigger reporting obligations, the time within which notification must occur, and what parties must be notified. The Commission's goal: A continuously functioning, systematic response mechanism at the FCC.

"High quality and reliability have been the touchstones of our American telecommunications industry," said Chairman Alfred C. Sikes in announcing the FCC's actions.

"The Commission continues to have full faith in the fundamental strength of our public telephone network," he stated, "and we are persuaded that the recent events are -- in all probability -- inadvertent side effects of continuing progress, rather than evidence of any fundamental flaws."

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FCC Commissioners Andrew C. Barrett, Ervin S. Duggan, James H. Quello, and Chairman Alfred C. Sikes participated in the closed meeting. Commissioner Sherrie P. Marshall was out-of-town on previously scheduled official business.

THE WHITE HOUSE

WASHINGTON

0138

January 12, 1989

MEMORANDUM FOR THE HONORABLE FRANK C. CARLUCCI
Executive Agent, National Communications System

SUBJECT: US Co-Chairman of the US/Canada Civil
Emergency Planning Committee for
Telecommunications

The US/Canada Civil Emergency Planning Committee for Telecommunications is a standing committee of the US/Canada Civil Emergency Planning Consultative Group (US/Canadian bilateral agreement, April 28, 1986). The Committee for Telecommunications is co-chaired by a representative of the Canadian Department of Communications and the US National Security Council. The responsibilities and functions of the Committee are outlined in the Terms of Reference, May 27, 1988, at the attachment.

Pursuant to EO 12472, it is requested that you have the Manager, National Communications System (NCS), or his designee, assume the US co-chairmanship of the Committee. The Office of the Manager, NCS, should become the office of record (US Secretariat) for the Committee's activities. The co-chairman is also a member of the US Consultative Group chaired by the Director, Federal Emergency Management Agency (FEMA). The US Committee's Interagency Working Group consisting of the Department of Defense (ASDC¹I), Department of State (OC), Department of Commerce (NTIA), Federal Communications Commission, Federal Emergency Management Agency, and the National Communications System (NCS/NCC) provides the interagency planning and coordination for the Committee's activities as outlined in the attachment and as tasked by the US Consultative Group. The activities of the Committee will be reported in the NCS Annual Report to the Executive Office of the President.

The Committee should continue to emphasize the coordination of planning activities with the NATO Civil Communications Planning Committee (CCPC) for the establishment of a US/Canada/NATO joint telecommunications service priority (TSP) system. The management and coordination of US/Canada emergency communications resources should use the robust capabilities of the National Telecommunications Management Structure (NTMS) to the maximum extent.

practical, i.e., the Nationwide Emergency Telecommunications Service (NETS) and the NCS SHARES (HF Radio). US/Canada emergency cross-border communications operations and exercises coordination functions are assigned to the NCS National Coordinating Center (NCC) for Telecommunications. The Joint Telecommunications Resource Board's (JTRB) Standing Operating Procedures will be used for resolving US telecommunications resource issues. The US/Canada emergency preparedness communications coordination arrangements/procedures should be contained in the US National Plan for Telecommunications support for Non-Wartime Emergencies.



Colin L. Powell

Attachment

cc: Secretary of State (OC)
Secretary of Defense (ASDC¹I)
Secretary of Commerce (NTIA)
Director, Office of Science and Technology Policy
Director, Federal Emergency Management Agency
Chairman, Federal Communication Commission
✓ Manager, National Communication System
Director, White House Situation Support Staff



Federal Emergency Management Agency

Washington, D.C. 20472

NP-IR-PE-PP

SEP 19 1990

Benham E. Morriss
Deputy Manager
National Communications System
Washington, D.C. 20305-2010

Dear Mr. Morriss:

The Federal Emergency Management Agency (FEMA) wishes to state for the record that it nonconcurs with the publication and distribution of the enclosed, undated Change 1 to the National Plan for Telecommunications Support in Non-Wartime Emergencies.

Our nonconcurrence is based upon the following:

The content was not developed in coordination with FEMA and the General Services Administration (GSA);

The proposed change was not submitted for coordination to the Joint Telecommunications Resources Board (JTRB); and,

The Chief of Operations Readiness, Office of Emergency Preparedness, Office of the Manager, National Communications System, is not the appropriate official to sign a change to a document which was originally promulgated by the Director, Office of Science and Technology Policy (OSTP), Executive Office of the President.

FEMA will not distribute the document and recommends that it be withdrawn from circulation. We further recommend that if changes to the original plan are required, they be staffed in the appropriate manner.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce J. Campbell", is written over a horizontal line.

Bruce J. Campbell
Assistant Associate Director for
Information Resources Management

Enclosure

cc: Michael L. Corrigan, GSA
John O'Neil, OSTP



NATIONAL COMMUNICATIONS SYSTEM

OFFICE OF THE MANAGER
WASHINGTON, D.C. 20305 - 2010

IN REPLY
REFERTO

NCS-EP-0

NOV 6 1990

Mr. Bruce J. Campbell
Assistant Associate Director
Information Resources Management
Federal Emergency Management Agency
500 C Street, Southwest - Room 505
Washington, D. C. 20472

Dear ~~Mr. Campbell~~ ^{Bruce}:

Your September 19, 1990 letter regarding change one to the National Plan for Telecommunications Support in Non-Wartime Emergencies was brought up as new business at the September 21, 1990 meeting of the Committee of Principals. As you and I discussed prior to the June 28, 1990 Committee of Principals meeting, we believe all of the Federal Emergency Management Agency recommended changes, as well as those submitted by the General Services Administration, were incorporated into the document with the exception of those pertaining to the United States - Canada Civil Emergency Planning. We did not delete the latter because they were inserted at the specific request of the National Security Advisor to the President. Further, the changes were coordinated with Colonel O'Neil of the Office of Science and Technology Policy. Due to its routine nature, it was agreed to promulgate the changes without coordination by the Joint Telecommunication Resources Board.

We are disappointed that you have decided not to distribute the change within your agency. This leaves only the Federal Emergency Management Agency disaster assistance personnel without the benefit of these changes, a majority of which were provided by them.

I have referred your letter to the Director, Office of Science and Technology Policy with a request that he take appropriate action to deal with this issue.

Sincerely,

B. E. MORRISS
Deputy Manager

Copy to:

Mr. Michael L. Corrigan (GSA)
COL John F. O'Neil, USMC (OSTP)



OFFICE OF
THE CHAIRMAN

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

July 29, 1991

Honorable Edward J. Markey
Chairman, Subcommittee
on Telecommunications and Finance
2133 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Markey:

Attached is a copy of the Common Carrier Bureau's preliminary report on the telephone service outages experienced in June and July by Bell Atlantic and Pacific Bell. As you know, the Commission met with the affected carriers immediately following service problem reports and launched an extensive investigation. Relevant state commissions and other cognizant Federal agencies were contacted promptly. Subsequently, I also directed the Bureau to include in its report the issues raised in your letter of June 28, 1991. The Commissioners and I also received a closed briefing on the progress of that report a few days later and provided further direction.

At this time, it appears that each event involved a recent version of software supplied by DSC Communications Corporation. We understand that the software erroneously omitted information that should instruct the Signalling System 7 (SS7) network how to process certain network messages. Improper handling of the messages caused congestion in the system, eventually resulting in the loss of interoffice call handling capability. Professional staff from Bell Atlantic, Pacific Bell, Bellcore, DSC, and other industry representatives are continuing to investigate the outages to learn more about these events.

Most consumers who attempted to complete calls within the disrupted service areas were severely affected, with some limited exceptions. Services that do not rely on the Pacific or Bell Atlantic SS7 networks, such as 911, calls within the same end office, and interexchange carrier services, continued to operate. Private line networks also were largely unaffected. Thus, many Federal Government users experienced only a slight impact. Consumers who had choices among networks were less severely affected than consumers that did not have options.

We share your concerns, however, not only with respect to the millions who were impacted by the outages, but also with respect to the implications of these incidents.

The Communications Act places a duty on common carriers to provide reliable and efficient service to the public. We, together with other regulatory bodies and the affected industries, must and will ensure that these responsibilities are met.

It is troubling that lessons learned from previous outages involving other carriers in implementing SS7 software apparently were not shared within the industry in a way that reduced the risk or spread of disruptions.

Honorable Edward J. Markey

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U.S. carriers also appear to have been largely unaware of very similar service challenges foreign telephone carriers have experienced.

The Commission is committed to vigorous oversight and a strengthened process that will facilitate the regular, timely exchange of information among those responsible for quality network performance. Therefore, we will be convening representatives from all facets of the industry to thoroughly discuss with us possible risks faced by contemporary and future networks; network interconnection issues; the effectiveness of current communications and coordinating measures (including standards setting and testing bodies); and what processes and systems are available and should be used with respect to network coordination and service integrity.

In addition, we are establishing formal notification requirements concerning outage incidents. We are expanding our relationship with the National Coordination Center, an arm of the National Communications System, to better track outage events. We are also reviewing other industries, both domestically and internationally, to determine if there are models for assuring reliable service in a diverse and complicated setting that can be drawn upon to improve performance in the telecommunications industry.

Although this investigation and preliminary report notes concerns in some quarters about certain aspects of the implementation of CCS7 technology, the Commission remains confident of the fundamental strength of our public telephone networks. Transitions to better technology are not without some risk. I assure you that the Commission will continue to hold the industry accountable for ensuring such risks are minimized.

Sincerely,



Alfred C. Sikes
Chairman

Enclosure

PRELIMINARY REPORT ON NETWORK OUTAGES

BY THE COMMON CARRIER BUREAU

JULY 1991

I. Introduction and Summary

In recent weeks, at least six separate network outages have occurred in Bell Operating Company (BOC) service territories that involve the Signalling System 7 (SS7) network currently being used or installed by the telecommunications industry worldwide. These outages occurred in: (1) Pacific Bell's service area in Los Angeles on June 10; (2) Pacific Bell's service area in Los Angeles on June 26; (3) Bell Atlantic's service areas in Maryland, the District of Columbia, Virginia, and West Virginia on June 26; (4) Pacific Bell's service area in the San Francisco Bay area on July 1; (5) Bell Atlantic's service area in Pittsburgh on July 1; and (6) Bell Atlantic's service area in Pittsburgh on July 2. Although these outages have certain characteristics in common, each presents slightly different factual circumstances. This initial report briefly describes SS7, outlines the chronology of events for each outage as understood at this time, provides an analysis of the industry's actions and discusses further action the Commission is considering. Appendices A through F provide information regarding each instance of service outage as we understand it at this time. Figure 1 provides a diagram of a typical SS7 network.

In all cases, the equipment most directly involved in each outage was manufactured by DSC Communications, Inc., of Plano, Texas (formerly Digital Switch Corporation). DSC manufactures both the hardware and the software for the nodes (Signal Transfer Points or STPs) that are a crucial part of SS7 networks. On July 5, 1991, DSC released a statement that it is working with engineers from Pacific Bell, Bell Atlantic, and Bellcore (Bell Communications Research -- the research organization owned by the seven Regional Bell Holding Companies) to "determine and resolve the causes of the outages." DSC stated that it duplicated "a critical problem" in its laboratory, the investigation of which showed that a "trigger event" caused network congestion that was not handled properly, thus resulting in a "backup" of traffic in the STP. DSC states that this congestion propagated to other network elements, resulting in service disruption.

On July 9, DSC stated that it isolated an error in its software that contributed to these outages. DSC reported that the error consisted of a mistake concerning three bits of code in a software program containing millions of lines of code. This error occurred in the process of making upgrades to the software that runs DSC's STPs. These upgrades reportedly are typical of several different minor upgrades DSC provides each year to meet customer requests. For the more comprehensive upgrades, that occur perhaps twice a year, DSC states that it conducts detailed comprehensive tests of the new software in its laboratory. In this case, however, the software upgrade was not comprehensive and, in DSC's engineering judgment, needed testing only for certain functions. All of the STPs involved in the six outage incidents were interconnected to software that had the coding error at the time of the

outage. It appears at this time, however, that the defective software alone would not have caused the outages.

The defective DSC software was operating in more than 50 STPs at the end of June, and only a few of these failed. In each failure instance, a triggering event, either in an office served by the STP or in the STP itself, was combined with both the faulty software and a high volume of calling traffic during a "busy hour," i.e., a peak calling period from 11:00 a.m. to 2:00 p.m. on business days. The triggering events included such things as a timing clock problem in the STP, a hardware failure, or a separate error in the STP's programming or data tables.

DSC states that it has engineered and tested a software change that has been installed in the Pacific Bell and Bell Atlantic networks, as well as in other networks that had the defective software. DSC believes this change will prevent the STPs from becoming congested by ignoring messages when congestion conditions approach, thereby preventing surges from affecting other elements of the network. This is not viewed as a long term solution because Bellcore standards do not permit network messages to be ignored. DSC also indicates that it is continuing its investigation with equipment manufacturers, Bellcore, Pacific Bell, and Bell Atlantic. As is discussed below, Japan, Sweden, and other domestic carriers have also experienced problems.

II. Background

Signalling System 7 (SS7) is the latest installment in the Common Channel Signalling (CCS) systems first developed by the International Telegraph and Telephone Consultative Committee (CCITT) standards-setting group in 1976. The purpose of CCS is to utilize the technology of a packet switched, digital network to route calls faster and thus increase the capabilities of transmission facilities. In addition, CCS helps telephone companies manage the network by shifting traffic loads more easily.

The SS7 version of CCS technology began to be introduced in the United States in the mid-1980's. Relying on out-of-band signalling, the system provides only the signalling¹ necessary to complete calls and it does so on a network that is physically separate from the network that transmits and switches the calls themselves. Previous signalling systems, such as Multi-Frequency (MF) Signalling, provided what is known as in-band signalling which used the same network both to transmit calls and to provide the signalling necessary to complete calls. As the network became more complicated and traffic volumes grew, carriers looked to the development of CCS, which employs out-of-band signalling and requires two separate paths: one for call transmission and one for signalling. In addition to performing network

¹ Signalling consists of supervisory functions that provide on-hook and off-hook designations; call set-up information from the dialed digits; call take-down which indicates that the call is complete; and network management information about the switches and the network.

management and signalling functions more efficiently, the SS7 network can provide other services. It helps reduce fraud by making attempts to avoid charges easier to detect. The separate signalling network also can be used to deliver Caller ID and other customized local area switched (CLASS) services as well as access to 800 and 900 data bases for interexchange carriers. SS7 networks have been deployed by AT&T, MCI, US Sprint, and other interexchange carriers as well as, more recently, by many LECs, including the BOCs.²

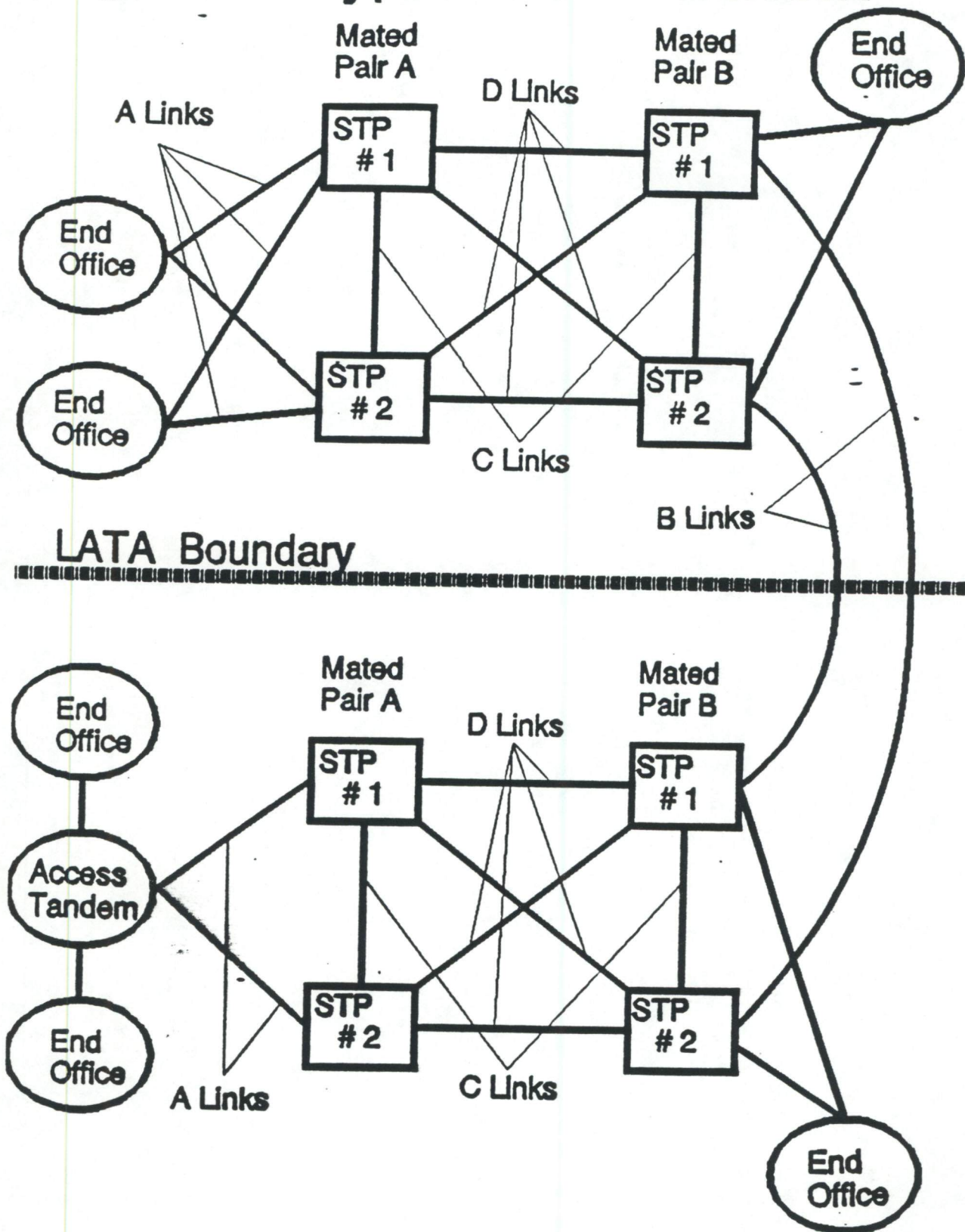
The signalling network interconnects with the public switched network at various points, which include end offices (local offices) and access tandems. (See Figure 1.) End offices are the point at which end users connect to the network. Bell Company end offices in the United States typically use either a No. 5ESS switch manufactured by AT&T or a DMS100 switch manufactured by Northern Telecom. Access tandems are offices that connect to several end offices and do not connect directly to end users. Access tandems also employ equipment from different manufacturers but of a higher capacity than end offices, such as the No. 4ESS switch manufactured by AT&T or the DMS200 switch manufactured by Northern Telecom. Typically, several end offices connect to the greater network through an access tandem which also connects those end offices to interexchange carrier facilities (known as Points of Presence or POPs) in that area. Thus, an access tandem is a larger and more sophisticated office than an end office and serves aggregated levels of traffic.

The signalling network parallels the transmission network in design and deployment. The primary SS7 node (which corresponds to an end office in the transmission network) is the Signal Transfer Point (STP), which connects the signalling network to either end offices, access tandems, or both. The STP does not transmit the call itself but instead provides the signalling necessary to tell the end offices and access tandems how they should route the call. All SS7 networks deploy STPs in what is known as "mated pairs." In the case of the BOCs, these pairs are made up of two identical STP switches that are located in the same LATA³ but in different cities selected so that if an earthquake, fire, flood, or other problem affects one STP in the pair, the other STP should remain unaffected. In addition, each STP in the pair is engineered to handle individually the expected traffic that will flow through both STPs in the mated pair and still use less than the pair's total capacity. Each STP in a pair operates contemporaneously with its mate (i.e., under usual circumstances, no STP is idle) and each end office has physical links to both STPs in the mated pair. Therefore, each individual STP is designed to take the full traffic load immediately if its mate fails so that customers should be unaffected by such an event. Engineers indicate that this duplication and load level should mean no more than 2 hours downtime in 40 years in an individual STP or 3 minutes per year, both of which equate to a reliability factor of 99.9999 percent.

² Under current deployment schedules, approximately 75 percent of BOC lines are expected to be served by SS7 technology by the end of 1994.

³ LATAs are Local Access and Transport Areas, which are the geographic areas within which each BOC provides service. BOCs generally are prohibited under the Modification of Final Judgment (MFJ) from providing interLATA service.

Figure 1: Typical SS7 Network



In the standard SS7 configuration, end offices and access tandems are connected to STPs through "A links." These links, and all other links in the SS7 network, are 56 kbps lines, which are equivalent to voice grade lines. "A links" are deployed in redundant sets of two or four and each link is laid on a separate geographic path if possible. In any case, redundant routing of the "A links" from each end office or access tandem to each STP is installed. "C links" connect each STP in a given mated pair to its mate. In LATAs that have high traffic volumes, the BOC may deploy more than one mated pair of STPs. "D links" connect one mated pair in a LATA to any other mated pair in that LATA. "D links" are deployed in what is called a "quad arrangement" which requires four different "D link" paths between each and every STP in the LATA. In addition, each "D link" path often has redundancy in the form of up to eight separate 56 kbps lines connecting each STP to the other STPs in the "quad." "B links" connect the STPs in one LATA to any STP pairs that BOC may have in an adjacent LATA. Because the MFJ prohibits the BOCs from providing service across LATA boundaries, "B links" generally do not handle any typical SS7 routing messages, but instead transmit only BOC administrative and internal company messages.

STPs, like digital switches, are software controlled. In fact, each STP is made up of several software-controlled processors. As with most complex software programs, the STP programs are upgraded periodically, between two and five times a year. The standard procedure for upgrading software is to avoid changing all the STPs in a LATA at one time, but instead to stagger the installation of new software so that problems do not occur simultaneously in more than one STP in a mated pair. In addition, to avoid service disruptions during the busy hour, software upgrades and other routine maintenance activities generally are done during periods of low calling volumes, known as the "maintenance window," which occurs at night (10:00 p.m. to 6:00 a.m.) and on weekends.

The installation and implementation of SS7 networks is fairly standard among the BOCs and is accomplished pursuant to guidelines established by Bellcore and standards-setting bodies. The MFJ generally prohibits the BOCs from either manufacturing or designing both hardware and software. Thus, the BOCs cannot manufacture STPs or alter the software provided by the STP manufacturer, but they do encode "routing overlays" on the software that is provided. The BOCs may do some testing of the software before permanent installation, but most BOCs currently do not have the capabilities to do exhaustive testing. Their activity generally is limited to integrating the SS7 facilities into their individual transmission networks. STPs deployed in the U.S. are manufactured by DSC, AT&T, Northern Telecom, and Ericsson. The manufacturers of switches in end offices deployed in the United States include AT&T, Northern Telecom, GTE, ITT/Alcatel, Stromberg-Carlson, and Siemens. Access tandem switches deployed in the United States are manufactured by AT&T and Northern Telecom. The manufacturer of each of these types of equipment provides both the hardware and the software for the individual switches and all subsequent software upgrades. Industry fora establish interconnection and interface standards for these various types of equipment. Thus, although equipment and software of different manufacturers may interact in SS7 networks, testing and standards are relied upon to ensure compatibility.

III. The Causes of the Outages

A. Summary

In each of the six incidents, it appears that the outage was caused by a combination of three factors: (1) the use of defective software interconnected with the STP; (2) a triggering event that most likely involved a hardware problem; and (3) a peak period or "busy hour" of calling. DSC, the manufacturer of the faulty software, acknowledges that software upgrades mistakenly omitted three bits of code in the software upgrade. Other SS7 networks, including those manufactured by DSC which do not have the software error, have experienced similar triggering events during heavy calling periods and have not failed. Thus, the one common element identified to date in each event is the defective software.

The Bureau's investigation of these outages included individual interviews with a cross-section of the industry and a review of relevant documents and research materials. We conclude that other factors also may have contributed to the outages, but further inquiry will be necessary before any definitive conclusions can be reached. One possible contributing factor is that the international or domestic SS7 standards are established in a way that exposes SS7 networks to risks of outages. Another possibility is that customers' specifications -- or customizations -- of software used with SS7 networks increase the exposure of the networks to risks. Third, STPs may perform in unanticipated ways when deployed in operational settings. Fourth, the interaction of different varieties of switching equipment with particular varieties of STPs, without appropriate testing, may increase the exposure of the networks to risks. The potential of each contributing factor is discussed in turn.

Finally, although the companies involved claim internal audits show no evidence of intentional, unauthorized activity -- and, independently, the Bureau also has found no evidence of sabotage -- that possibility remains under investigation.

B. SS7 Standards

The national and international standards-setting processes are highly structured. Beginning with the International Telecommunication Union (ITU), an arm of the United Nations, the international telecommunications industry develops standards for transmission, switching, protocols, and many other matters. In the CCITT, which is an international forum to address telecommunications issues other than radio-related matters, the U.S. Department of State takes the lead in representing the interests of the U.S. government and U.S. companies. In developing positions, however, consistent with our privatized telecommunications industry structure, the government relies on the industry for technical support and substantive contributions. The American National Standards Institute (ANSI) coordinates U.S. standards-setting activities and acts as an umbrella organization that sanctions those activities by organizations that ANSI accredits pursuant to specified criteria. Many U.S. groups have input into ANSI, including the Computer and Business Equipment Manufacturers Association (CBEMA), the Institute of Electrical and Electronics

Engineers (IEEE), the Electronic Industries Association (EIA) and, most notably for telecommunications networks, the Exchange Carrier Standards Association (ECSA). The ECSA was formed by exchange carriers after the divestiture of the Bell Operating Companies from AT&T to continue standards-setting activity previously undertaken by the unified Bell system. It has formed a Carrier Liaison Committee that acts as an umbrella organization over the following specialized forums: the Interexchange Carriers Compatibility Forum (addressing technical interconnection and interface issues among exchange and interexchange carriers), the National Operations Forum (addressing access issues of national significance), and the Ordering and Billing Forum (addressing national ordering and billing issues regarding access services).

The ECSA also sponsors several issue-specific committees and working groups that are accredited by ANSI to establish standards. Of particular relevance is the Telecommunications Committee (T1 Committee), which was created in the 1980's to establish standards for the exchange and interexchange carriers in this country. The T1 Committee, along with its working groups and subcommittees, has become a primary source of U.S. technical input into the CCITT and the ANSI. Personnel from Bellcore (representing the Bell Operating Companies), as well as from all major telecommunications interests, contribute to the efforts of the T1 Committee. The T1 Committee has formed the T1S1 Subcommittee to address services, architecture, and signalling and the T1X1 Subcommittee to address hierarchy and synchronization issues, with a particular emphasis on standards for interconnection and interface between and among exchange and interexchange carriers. The T1Q1 Subcommittee is responsible for standards for performance, including signal quality, call blocking probability, "interruption objectives," network dependability, transmission impairments and transmission planning in evolving networks, and call and packet processing performance. The T1S1 and T1X1 consider issues regarding the structure and use of SS7, including the operation, administration, and maintenance of STPs and other parts of the SS7 network. T1S1.3 is charged with setting standards for common channel signalling.⁴

The CCITT standards relating to SS7 are voluminous. There is some concern in the industry that the international standard, the domestic implementation of that standard, or both, may have contributed to the specific outages at issue or may create risks of potential future outages. In particular, concerns have been raised about how the various protocols treat congestion and congestion control, and the way the "time values" of different systems interact. Diagnostic or network message routines are established so that return messages must be received within a prescribed time. If they are not, the processors in the STP may take themselves out of service or may determine that a problem situation exists when, in fact, it does not. Sweden reportedly had outages in its SS7 network that may have elements in common with those experienced in the Pacific Telesis and Bell Atlantic territories. Japan also has experienced

⁴ The group is addressing SS7 issues including: message transfer, signalling connection control, ISDN applications, and transaction capability application. AT&T designs and programs its own SS7 systems, within the established standards but also to meet its own requirements or the requirements of particular purchasers of AT&T equipment.

related failures. NTT reports that a number of SS7 network faults were related to signalling links. Typically, given a triggering event, an abnormal volume of maintenance messages will propagate throughout the system, ultimately causing widespread outages. One possible conclusion is that the standards should be more robust or durable. Notwithstanding these concerns, however, SS7 networks provided by at least four different manufacturers continue operating in many different networks both domestically and worldwide. Viewed overall, these networks appear to be providing greater efficiency and additional services while also providing highly reliable service.

A second area of concern is whether the existing industry mechanisms are identifying network problems, sharing information about these problems, and resolving them in a timely manner. A carrier or manufacturer may not wish to acknowledge publicly that it had or is having a problem relating to network performance or certain equipment if, for example, doing so could aid competitors. Each of the major interexchange carriers admitted to having outages associated with malfunctions in its Signalling System 7 network. Additionally, some believe the consensus process used in existing fora does not address issues with sufficient dispatch. Questions have been raised regarding the efficacy of the existing structures.

C. SS7 Specifications

Because SS7 network hardware and software are used by several carriers and by several types of carriers, the various manufacturers design somewhat different versions of the same equipment. Thus, MCI, for example, uses DSC STPs and software upgrades in its network that are designed in accordance with both industry standards and MCI's own specifications. For the BOCs, however, Bellcore sets the specifications for SS7 equipment. In fact, software may be designed by a manufacturer to be installed as part of a particular BOC's transmission network, but the BOCs generally are prohibited by the MFJ from designing software. Therefore, certain features and functions of STPs manufactured by DSC for use by other carriers may differ somewhat from the STPs manufactured by DSC for use by the BOCs.

SS7 involves the transmission of "call messages," which are at the heart of signalling. These call messages check whether the called number is available and determine the best route for the call to be transmitted. The SS7 network also generates network messages (or maintenance messages), which, at this time, are internal to each carrier and keep the signalling network running properly. Some of those network messages are sent back and forth within the network routinely and on a specified schedule, while others are sent back and forth as a result of certain events, such as a change in calling volumes or a hardware failure. Our discussions with the industry indicate that there is disagreement regarding how much flexibility carriers should have in interpreting and implementing SS7 standards to meet their particular requirements. For example, some believe network messages should be disregarded in certain circumstances, while others believe they must be handled in strict accordance with established standards. The significance of these disagreements will become more pronounced as carriers move increasingly to interconnection of their individual SS7 networks. Thus, the Commission will consider issues regarding interconnected networks and will take appropriate steps.

D. The June and July Outages

The industry has installed more than 100 STPs manufactured by DSC. At the time of the outages, 57 of those STPs apparently had defective software and 43 did not. The first faulty software upgrades were shipped by DSC in April 1991. DSC states it first became aware of a problem on June 10, when Pacific Bell informed DSC of its problem. See Appendix A. DSC attributes that outage to an overload of "cockpit orders," by which DSC means an excessive amount of network messages (or maintenance messages) were being generated. Those messages became congested which, in accordance with SS7 design, caused individual STPs to notify other STPs and other parts of the network that they were overloaded.

DSC states that it has engineered STP software to line up messages (both call messages and network messages) in a "queue" as they accumulate for transmission and processing. Current Bellcore standards require that no messages be "thrown away" even when these queues are full. If the queues become full, the messages begin to overload the STP and this congestion backs up to the end offices. The defective software at issue erroneously omitted three bits of information used by the algorithm that handles congestion. Normally, this algorithm would tell the STP how to handle the congestion of messages. DSC states that, although it usually tests major software upgrades thoroughly, the upgrade at issue was not a major change and, therefore, it was tested for only certain functions related to the software changes that were made. Among the functions DSC did not test this upgrade for were the instructions for handling message congestion. Thus, when the new software was in place without those instructions, and a hardware failure or other problem occurred at the peak hour, the STP did not know how to handle the congestion correctly. The congestion disabled the signalling links attached to the other interconnected STPs that provide back up call handling capabilities, ultimately shutting the entire STP system down. DSC states that, in attempting to recreate the circumstances of the outages, it does not know the mix of network and call messages that occurred at the time of the outages because the STP does not record the mix of those messages. Therefore, DSC states that it is still unsure about the source of the initial congestion.

In the time since the outages at issue occurred, DSC has changed the software programs by installing a "patch" that requires the STP to dispose of excess messages (both network messages and call messages) when the queues are full. Although this fix solves the immediate problem, it violates Bellcore standards which do not permit network messages to be discarded.

E. Equipment Interaction

It appears the outages would not have happened absent a triggering event--a failure in another network element other than the STPs' software. Potentially, a broad range of such other systems (or equipment) could provide a trigger. Currently, new editions of software are not, and probably could not be, tested rigorously in an environment that includes the simulation of a complete range of potentially contributing trigger sources. Like STP software, these other elements, many of which also are software driven, undergo steady evolution. To be complete, testing against all possible failures must be

continuous, especially in an environment in which users demand customized changes to meet their own requirements.

IV. Effect of the Outages

Although a thorough analysis of the effect of these outages on the U.S. economy would require a comprehensive and long-term survey of millions of customers, we know that a number of factors involved in these cases may have mitigated the actual direct economic loss incurred. First, the outages lasted several hours and affected signalling between offices within a particular LATA. Private lines, interexchange traffic, and traffic within an end office for the most part were unaffected. Another factor that limited the direct economic effect of these outages is that many telephone calls are used to convey information that may not be time sensitive. Because the outages in these instances lasted for only several hours, in many cases, the information that would have been conveyed during the time of the outages was sent in the period after service restoration. The most significant impact would have been on economic activity dependent upon interoffice calling where communication at the time of the outage was crucial to a commercial transaction. Attempting to quantify such activity would be conjecture. This mitigating factor does not apply to urgent public service operations, but it does limit direct commercial losses when the network failure is limited in both geographic scope and duration. The Commission's concern, however, must be for all users and must not be limited to those with a substantial economic interest at stake. Some consumers were able to use private lines or, particularly in the Baltimore-Washington area, interexchange carrier networks, to complete calls during the outage. Others were able to use cellular telephones, although blocking became a problem as cellular traffic loads became heavy. Emergency service 911 networks also largely remained operational, although, as in other cases, higher than normal volumes of calls created some blockage and delay problems. In short, consumers that had choices among networks were less severely affected than consumers that did not have options.

V. Tentative Conclusions and Recommendations

A. Tentative Conclusions

Although several significant interruptions in telephone service have occurred in recent years, affecting millions of subscribers, the Bureau believes there is virtually no evidence to indicate an adverse change in the reliability and high quality that have been fundamental characteristics of telecommunications in this country. Most of the recent problems have been related to efforts to improve network capabilities so that more services, and higher quality services, can be provided. New technologies contribute significant new capabilities as well as opportunities and challenges, reflecting the complexities associated with major advances in communications technologies that are occurring worldwide. The Bureau finds no grounds to believe that these service interruptions indicate deterioration in network performance or in the national telecommunications infrastructure.

Given the service demands of users, and the pressures on carriers to meet those demands in an increasingly competitive communications marketplace, there will be greater investment in and technological dependence on fiber optic communications, digital switching, out-of-band signalling, and a mix of diverse manufacturers and providers. At the same time, commercial and societal dependence on communications will increase. In general, these developments are positive. Nevertheless, it is extremely important for the FCC and other bodies to be fully cognizant of the risks and challenges that change can present and to accord great weight to service quality and related issues of concern to the public.

Current SS7 networks are designed to include significant levels of redundancy in hardware. Software redundancy is not as ubiquitous as now appears necessary. In AT&T's network failure of January 15, 1990, a coding error in software governing AT&T's switches, associated with the SS7 signalling network, combined with a failure in a circuit board during peak traffic loads, led to massive blocking on AT&T's network for a nine hour period. The local exchange carriers claim to have learned from AT&T's outage. They state that, after AT&T's outage, a task force was developed that established a hierarchy of 37 recommendations. They state that Bellcore, along with the BOCs, has been involved in an ongoing testing project to address how vendors implement congestion control procedures. A review of restoration procedures and emergency contact lists were exchanged at the industry Network Operations Forum (NOF). Vendors have been advised of new system capacity and reliability requirements. In addition, Bellcore is developing specifications for "E links" which will interconnect STPs in different areas to provide additional back up. Work continues on specific plans to ensure proper redundancy.

Notwithstanding these efforts, in each of the recent outage incidents, STPs were deployed with software having the same coding error and the new software was largely untested. Had diverse software been used in different STPs, the outages may have been avoided or their impact may have been more limited. On the other hand, even if "E links" were deployed to interconnect even more STPs, the result could have been even more widespread network failures unless the backup STPs were immune to the software failure that was instrumental in the initial outages.

Network isolation techniques will become even more important as SS7 networks become increasingly interconnected, both domestically and worldwide. Currently, industry participants are confident that "gateways" -- access points at which network interconnection will take place -- can be designed to minimize the possibility of a fault in one network spreading and thereby disabling other networks. There is disagreement regarding the efficacy of diversity in software. Some believe that it is essential, while others believe that it will introduce greater exposure to the risks associated with any additional complication of the network. In any event, reliable software that controls the various networks will be critical in avoiding incidents experienced by AT&T in 1990, by Bell Atlantic and Pacific Bell several weeks ago, and by other carriers both domestically and worldwide.

Also, information sharing and standards-setting organizations must be effective. There appear to have been a number of network failures associated with SS7 implementation both domestically and abroad, but the industry does not seem fully informed regarding each incident. Nor has the industry moved effectively to avoid the recurrence of problems. Even among the BOCs, it appears key operations people at Bell Atlantic were not aware of the failure experienced by Pacific Bell on June 10. And even within Bell Atlantic, it appears employees in Pittsburgh may not have been fully informed of how to minimize the outage on July 1 based on the experience in the Washington-Baltimore area on June 26. It is important that the causes of major outage events be documented so that problems are identified, shared among the industry, and addressed effectively.

B. Recommendations

In an increasingly diverse and competitive marketplace, the FCC must ensure that its overriding public interest responsibilities will continue to be met. To that end, the Commission has announced the initiation of four steps to be taken in response to the network outages. First, the Commission will convene a meeting at which representatives of the telecommunications industry, including exchange carriers, interexchange carriers, software providers, equipment manufacturers, standards-setting organizations, and user representatives, will report on the recent incidents, on measures taken to restore service, and measures necessary to prevent future problems. The agenda for this meeting will include: the risks faced by current and future networks, network interconnection issues, an evaluation of the effectiveness of current coordination and communications measures within the industry, the available and possible mechanisms for network coordination, and service integrity. Second, Commission staff will research and report on the handling of emergencies and service disruptions in other analogous critical industries in this country and abroad. Third, the Commission will establish a special staff within the Common Carrier Bureau whose mandate will be to investigate and address systematically issues of network performance. This staff will work with the National Coordinating Center and other bodies to improve responses to any future network problems. Fourth, the Commission will establish comprehensive, formal notification requirements concerning service problems. These reporting requirements will specify which firms are subject to such requirements, what events will trigger reporting obligations, the time within which notification must occur, and the procedures for notification.

Ultimately, while it is the carriers that must make fundamental decisions regarding network design and architecture, this Commission, together with other regulatory agencies, must hold carriers accountable for their decisions.

APPENDIX A

Outage Incident Number 1

Date of Occurrence: June 10, 1991

Operating Company: Pacific Bell

Location:

City and State: Los Angeles, California

LATA: Los Angeles LATA

Description of Facilities: PacBell has two mated pairs of STPs in the L.A. LATA. The north pair has one STP in Downtown L.A. and one in Sherman Oaks. That pair serves approximately 65 end offices and access tandems. The two STPs in each mated pair are connected through C links. The north pair is connected to the south pair through a "quad" formation of D Links. The south mated pair has one STP in Gardena and one in Anaheim. The south mated pair serves approximately 35 end offices and access tandems. The L.A. mated pairs are connected through B links to the two mated pairs in the San Francisco Bay area, but those B links do not carry call processing traffic because that traffic would cross a LATA boundary in violation of the MFJ. Instead, those B links carry only PacBell internal administrative messages. Diagram attached

Time Series of Event:

Time triggering event began: approx. 8:55 a.m. Pacific time, Sherman Oaks STP experiences problems.

Time service outage began: 12:00

Time service began to be restored: 10:30 a.m.

Time fully operational again: 1:15 p.m.

Time of any further trouble: June 26

Hardware Involved: (manufacturer and type)

STP: DSC

End offices switches: AT&T and Northern Telecom

Access tandems: AT&T and Northern Telecom

Software Involved: (manufacturer and type)

Number of software upgrade in operation: 03.01, 03.03, and 03.07

When upgrade was installed in each STP: 03.07 installed in Sherman Oaks STP on June 9, 1991; 03.07 installed in Gardena on June 8, 1991; 03.03 installed in Anaheim on November 1, 1990; 03.01 installed in Los Angeles on June 29, 1990.

What Happened:

At approximately 8:55 a.m., the Sherman Oaks STP began to experience problems when it generated a large volume of message routing errors. Within seconds, the STP experienced severe congestion and was removed from the network. The Anaheim STP, which is mated to the Gardena STP, also experienced congestion over the "D links" connecting it to the Sherman Oaks STP. Therefore, PacBell removed the Anaheim STP from the network as well, leaving two STPs in different mated pairs operational. The network began to stabilize at 10:30 a.m., and at that time, customer impact appears to have been minimal.

At approximately noon, PacBell tried to restore the Anaheim and Sherman Oaks STPs, which created severe congestion in the Gardena STP from "D link" restoral. This congestion propagated back to the Anaheim STP, causing PacBell to remove both the Gardena and the Anaheim STPs from service, resulting in service disruption for the 31 offices served by that mated pair. At 1:15 p.m., PacBell restored the Gardena STP manually by bringing each link back into service slowly and by carefully controlling congestion. At this time, PacBell decided to keep the Anaheim STP off the network and to wait until off-peak hours to attempt to restore it.

The Sherman Oaks STP had been using the 03.03 generic software until June 9, on which date PacBell completed a routine software upgrade to the 03.07 generic. PacBell schedules its software upgrades into its SS7 network slowly and on a staggered schedule for the various STPs. The Sherman Oaks STP received its upgrade over the weekend of June 8, when traffic volumes are low. But, PacBell did not load the new software into the other STP in that mated pair during that same weekend. Instead, an STP in the other mated pair, the Gardena STP, received the new software on June 8. The Anaheim STP was using 03.03 software since November 1990. The Los Angeles STP was using 03.01 software since June 1990, however, which generic version did not contain the error in the code later identified by DSC. PacBell states that, as a result, the Los Angeles STP never experienced internal congestion caused by erroneous messages, but instead became overloaded in reaction to the congestion generated by the other three STPs in the LATA.

When changing over software packages, the computer requires an installation program to be used to instruct the machine how to load the new software. The specific installation program used to convert the Sherman Oaks STP to new software, combined with what PacBell identifies as "unusual conditions," allowed a software bug to corrupt two data tables in the STP processor during the process of loading the new software.

Effect of Outage:

Population Affected: 31 end offices

Types of services affected: interoffice, intraLATA calls were interrupted. Other services directly affected include: custom 800 services, calling card billing data base access services. 811, 411, 611, and cellular services. All services were disrupted at least somewhat except: intraoffice services, private line services, operator services, 911 emergency services, and interexchange (interLATA) services. Although those services were not disrupted directly, they were overloaded due to the outages for the other services.

Restorative Measures:

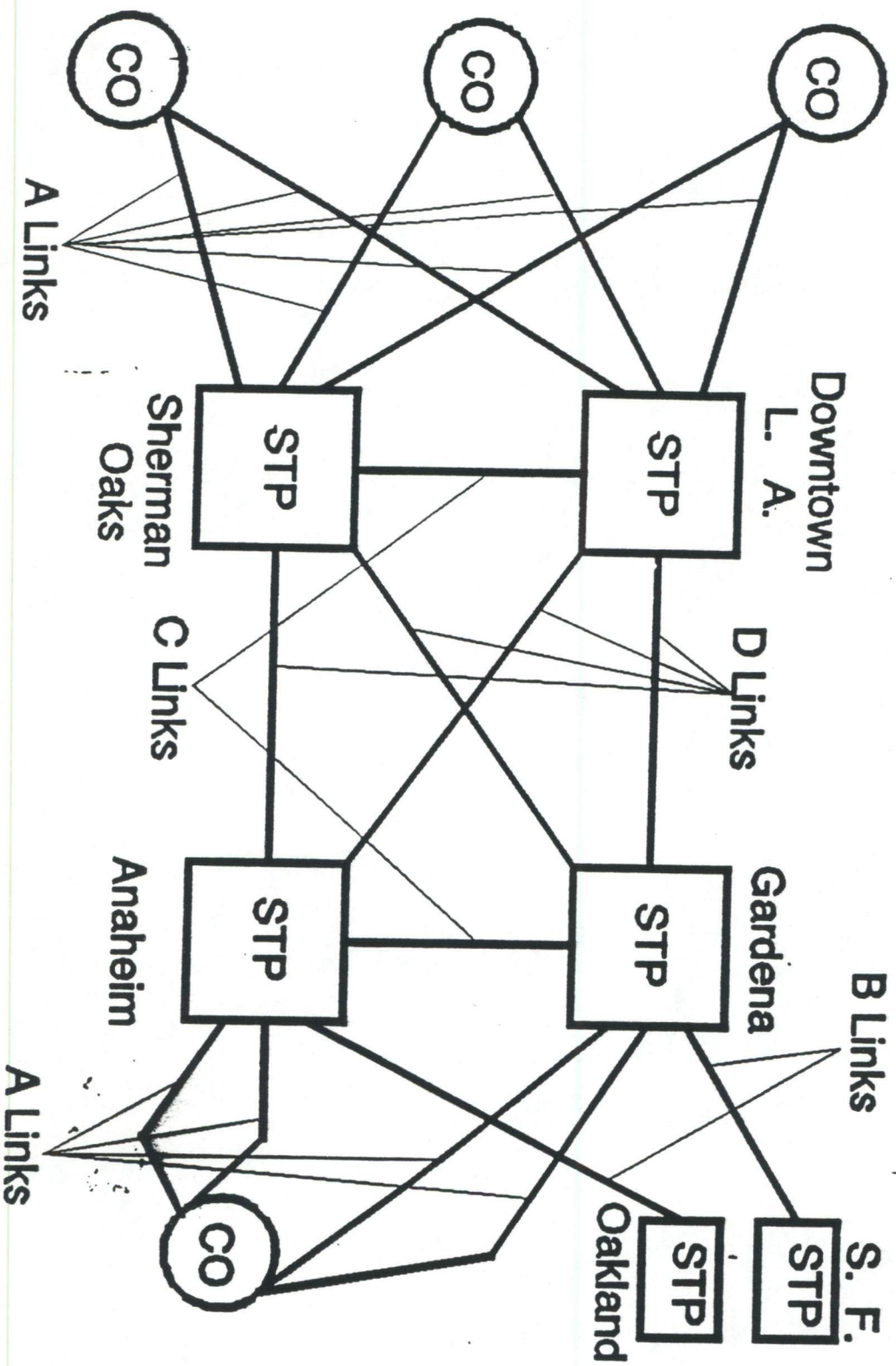
After approximately one hour of outage, PacBell manually isolated the Sherman Oaks, Anaheim, and Gardena STPs and brought each one back up into service separately, slowly, and manually. Approximately one day after the event, PacBell discovered the scribbled data tables and approximately one day later, DSC found the bug in the installation software. PacBell later identified and corrected the damaged data tables, and DSC corrected the software bug and introduced additional tests for this condition in their software loading procedures.

Preventative Measures:

PacBell states that it took immediate steps to equip all STPs with the maximum number of "D links" in a balanced configuration. In addition, because of its concern for certain processor capacities during major maintenance events, PacBell increased the capacities of certain processors.

Between June 10 and the next problem on June 26, PacBell thought it had identified the problem and why it propagated through the other STPs. On June 11, DSC officials went to California to discuss the June 10 outage. On June 24, DSC officials returned to California to investigate further the June 10 incident. On June 25, several PacBell senior managers and engineers went to DSC headquarters in Plano, Texas, to meet with top officials of DSC to discuss further the June 10 outage. Those PacBell managers were at DSC headquarters on June 26 when the second outage occurred and they brought the SS7 network back up remotely from Plano.

Los Angeles Area STPs



APPENDIX B

Outage Incident Number 2

Date of Occurrence: June 26, 1991

Operating Company: Pacific Bell

Location:

City and State: Los Angeles, California

LATA: Los Angeles LATA

Description of Facilities: same as June 10 incident

Diagram attached

Time Series of Event:

Time triggering event began: approximately 10:40 a.m. Pacific time

Time service outage began: approximately 11:00 a.m.

Time service began to be restored: within one half hour

Time fully operational again: by 1:00 p.m.

Time of any further trouble: none

Hardware Involved: (manufacturer and type)

STP: DSC

End offices switches: AT&T and Northern Telecom

Access tandems: AT&T and Northern Telecom

Software Involved: (manufacturer and type)

Number of software upgrade in operation: 03.01, 03.03, and 03.07

When upgrade was installed in each STP: 03.07 installed in Sherman Oaks STP on June 9, 1991; 03.07 installed in Gardena on June 8, 1991; 03.03 installed in Anaheim on November 1, 1990; 03.01 installed in Los Angeles on June 29, 1990.

What Happened:

During the weekend of June 2, PacBell began to load the downtown L.A. and Anaheim STPs (which are in two different mated pairs) with the new generic software upgrade, 03.07, provided by DSC. Each STP has several processors, each of which has data tables that contain routing and other information. Each STP processor is supposed to have identical data tables so that all traffic in the LATA is routed according to design. Periodically, perhaps as often as once every twenty minutes, each STP checks to see if all data tables in each processor are consistent.

At approximately 10:40 a.m. Pacific time, on Wednesday, June 26, one of the data tables in some of the processors in the L.A. STP (which did not have the new software upgrade and instead had version 03.01) showed inconsistent data. The inconsistent data appeared in only one STP (downtown L.A.), which is a situation that PacBell had seen in an individual STP prior to June 10 and which had been handled routinely on those occasions. In addition, PacBell states that the mismatch in data was a result of normal checking performed automatically by the STP to insure internal data integrity. This mismatch resulted in the removal of common control equipment and the associated links. Within minutes, the total signalling network serving the Los Angeles area was overloaded by severe congestion.

Based on the inconsistent data tables, the Los Angeles STP began to sever the links to those processors. Approximately 70% of the links to that STP were severed. Then, the same situation occurred as happened on June 10 -- what appeared to look like a system overload or congestion of network management messages propagated throughout the other three STPs in the L.A. LATA. After ten or fifteen minutes, when the seriousness of the situation became evident, PacBell tried to recover, but was not able to do so. A significant increase in maintenance messages occurred and the STP was not able to handle it. Instead, the STPs were getting (or thought they were getting) many more maintenance messages than they could handle. This event occurred after PacBell had taken some action to avoid the propagation problems it experienced on June 10.

Effect of Outage:

Population Affected: 103 end offices

Types of services affected: all services were disrupted except: private line, 911 emergency services, and interexchange (interLATA) services. Although those services were not disrupted directly, they experienced some overload due to the outages for the other services.

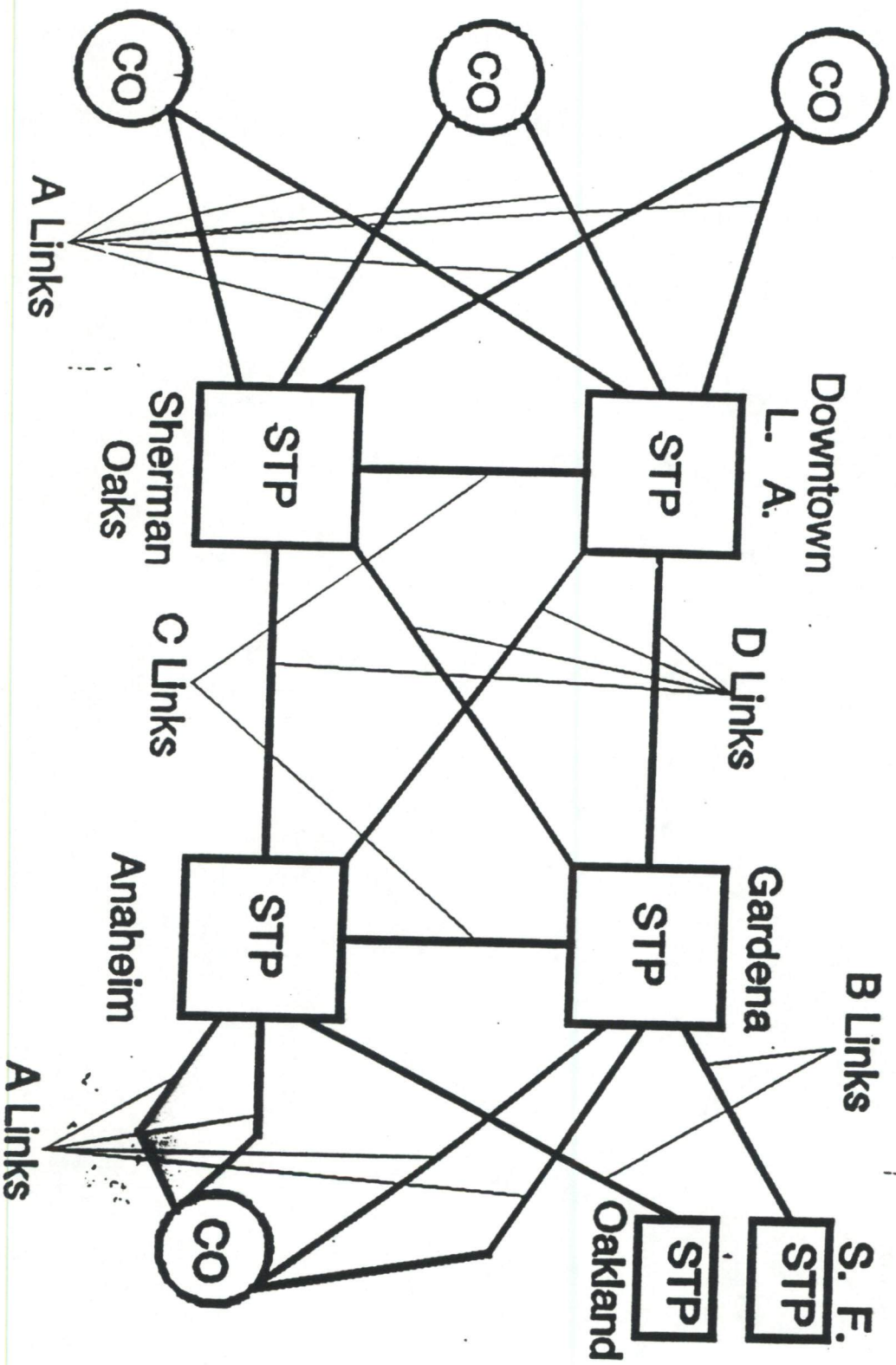
Restorative Measures:

PacBell senior engineers and executives were in Plano, Texas on June 26 to meet with DSC officials about the June 10 outage. PacBell officials brought the system back up on June 26 through remote links to DSC headquarters in Plano. PacBell once again restored service by bringing each end office and STP back up manually, while at the same time carefully monitoring congestion.

Preventative Measures:

PacBell is working with DSC to replicate the PacBell network and the events of June 10 and June 26 in the DSC lab to learn more about the cause of the events and the possible remedies. PacBell expects such tests to take about two weeks. The test will replicate the triggering events and will watch the propagation through a prototype network. PacBell believes that although the effects appeared similar, the triggering events on June 10 and June 26 were different. DSC engineers have established on-site 24 hour monitoring of PacBell's STPs.

Los Angeles Area STPs



APPENDIX C

Outage Incident Number 3

Date of Occurrence: June 26, 1991

Operating Company: Bell Atlantic

Location:

City and State: Baltimore, Maryland, and Washington, D.C. The resulting congestion caused service disruptions in Washington, D.C., Maryland, Virginia, and West Virginia.

LATA: Baltimore is in a separate LATA from the Washington, D.C. area

Description of facilities: In the Washington area, C&P has one mated STP pair, comprised of an STP in southwest Washington, D.C. and an STP in Hyattsville, Maryland, which was placed into service in March 1989. The Washington STP pair is linked to the Baltimore STP pair through B links. In Baltimore, C&P has one STP pair that has an STP in Baltimore and an STP in Pikesville, Maryland; this pair was placed into service in May 1991. A regional pair of STPs includes one STP in Jenkintown, Pennsylvania, and one in Fort Washington, Pennsylvania, which do not switch any traffic. Both the Washington STP pair and the Baltimore STP pair are linked to the regional STPs in Pennsylvania through D links.

Diagram attached

Time Series of Event:

Time triggering event began: approx. 11:10 a.m. EDT

Time service outage began: approx. 12:00 noon EDT

Time service began to be restored: approx. 5:00 p.m. EDT

Time fully operational again: all service restored between 6:00 p.m. and 9:00 p.m. EDT

Time of any further trouble: none

Hardware Involved: (manufacturer and type)

STP: DSC (in place in the Bell Atlantic region since 1988). Washington STP pair was installed in 1989. Baltimore STP was installed in 1991.

End offices switches: Northern Telecom, AT&T, and Siemens

Access tandems: no access tandems involved

Software Involved: (manufacturer and type)

Number of software upgrade in operation: Baltimore STP pair used 03.03 generic and Washington STP pair used 03.02 generic

When upgrade was installed in each STP: software upgrades installed in these STP pairs in May 1991 (before peak calling period on Mother's Day).

What Happened:

This incident began in Baltimore and migrated to the Washington STP pairs through the connecting B links. The resulting congestion was confined to the C links connecting the mated pair of STPs located in Washington and Hyattsville. The D links connecting the Washington/Hyattsville pair of STPs to the regional STPs located in Jenkintown/Fort Washington, Pennsylvania, were not affected because these D links are used only to access 800 database and customer billing databases located at the regional STPs. These transactions take up only a very small part of the overall traffic under

normal circumstances. With service disruptions in progress, even fewer 800 database queries were getting through.

The Baltimore STP began to malfunction on June 26 at approximately 11:00 a.m. EDT when a processor in that STP began to transfer messages to its mate in Pikesville, Maryland. Those messages reflected a hardware malfunction apparently involving a faulty circuit board (line card) that occurred in the Baltimore STP. Bell Atlantic first noticed trouble with this piece of hardware approximately two days before the outage. The day before the outage, Bell Atlantic tried to perform normal diagnostic procedures to determine what was wrong with the circuit board and in that process, Bell Atlantic replaced the faulty board with spare circuit boards it had on hand. Bell Atlantic had replaced this board several times when trouble reports began on June 26, so that by the time the outage began, Bell Atlantic did not have any spare boards left on site.

At this time, Bell Atlantic believes that the problem did not occur in the set of signalling clusters associated with that faulty circuit board, but instead occurred in another of the 4 signalling clusters in each STP. (Each signalling cluster contains 24 lines.) Cluster No. 2 in the Baltimore STP had the faulty circuit board. After replacing the circuit board several times, Bell Atlantic experienced only intermittent early morning indications of problems on June 26.

At approximately 11:00 a.m. on June 26, however, alarms began to sound in the Baltimore STP which began to print out Information Problem Reports (IPRs). At this time, the Pikesville STP was running properly and it was handling all the traffic that was rerouted from its mated pair in Baltimore. At 11:51 a.m. EDT, the Pikesville STP noticed congestion in the form of too many messages going back and forth between STPs on the links. The A links that connected Baltimore STP to end offices and tandems were "bouncing," which means they were coming back up into operation for a short time and were going down again and were repeating this cycle. That bouncing causes a significant increase in the number of maintenance and other internal messages sent over the SS7 network and, therefore, this bouncing added to the congestion. Bell Atlantic surmises that the end offices and tandems were taking out the A links themselves because those offices were receiving Signalling Link Test Messages (SLTMs) from the STP. When an A link comes back up into operation, the end office and the STP send each other periodic test messages on each link to keep track of the status of that link. The end office waits approximately 100 milliseconds to see if the Signalling Link Test Acknowledgment (SLTA) is returned from the STP. If the STP does not return that acknowledgment, then the end office brings the link down. If this occurs twice in a row, the end office shuts the link down completely, but Bell Atlantic stated that this shut down was not designed to forestall overcongestion.

Within minutes of receiving the first trouble report from the Baltimore STP, C&P technicians along with technicians from DSC began diagnosing the problem. But, the connection between the Baltimore and Pikesville mated pairs became congested so quickly with maintenance messages that it was unable to process signalling messages. Thus, both the Baltimore and the

Pikesville STPs became clogged with congestion. In addition, that congestion spread to the mated pair serving the Washington, D.C. area. This congestion resulted in the Baltimore STP shutting down the end office and access tandem connections supported by that STP. By noon, the STPs in Baltimore, Pikesville, Washington, and Hyattsville were disabled, disrupting service to more than 5 million customers. This congestion was further compounded by the volume of messages on the SS7 network that were generated by the STPs and the end offices when they tried to recover.

Since the network was unable to recover, C&P severed the connections between the Baltimore and Washington STPs and tried to restore each pair independently. Due to the subsequent outages in its service area in Pittsburgh on July 1 and July 2, Bell Atlantic is assessing its analysis of the June 26 incident in Baltimore.

When this type of shut down occurs, a Broadcast Warning Message (BWM) is sent through the SS7 network which lets all the other STPs and offices know that a particular STP is out of service and that all the signalling normally routed through that STP must be rerouted. The protocols of SS7 are supposed to send out this warning and accomplish rerouting without bringing down the A links.

Bell Atlantic installed the STP pair in Baltimore after its request for a waiver of the interexchange restriction of the MFJ to allow it to aggregate signalling traffic from more than one LATA in one STP pair was denied. When that request was denied, Bell Atlantic installed the STP pair in the Baltimore LATA and had to rehome the traffic that previously had been routed by STPs in Washington (which is in a different LATA). Since March, Bell Atlantic began to rehome the end offices and tandems and, by June 26, was mid-way in that process. The B links between the Baltimore and the Washington STP pairs provide intracompany messages, but unlike the PacBell situation, the Bell Atlantic B links also provide transition service as rehoming takes place and signalling for "corridor" traffic, such as foreign exchange lines, which allow a Baltimore business to have a local calling number for Washington callers. Apparently, the Baltimore STPs spread the congestion messages over these B links to the Washington STP pairs.

Before June 26, Bell Atlantic had experienced only one outage incident with its SS7 network, which it began installing in 1985. That previous event occurred in November 1990, at 2:00 a.m., when the STP located in the Pittsburgh LATA became overloaded while attempting to interconnect with the Line Information database (LIDB) that will be used to route 800 calls. This congestion resulted in a delay in call setup capability in that STP. Although this incident caused congestion of network management messages from the STP, the problems were corrected immediately and Bell Atlantic states that customers experienced no significant inconvenience as a result of that incident.

Effect of Outage:

Population Affected: service was disrupted in Washington, D.C., Maryland, West Virginia, and Virginia, affecting 5 million customers served by 6.5 million lines

Types of services affected: interoffice, intraLATA calls were interrupted. All services were disrupted at least somewhat except: intraoffice services, private line services, operator services, 911 emergency services, and interexchange (interLATA) services. Although those services were not disrupted directly, they experienced some overloading, due to the outages for the other services.

Restorative Measures:

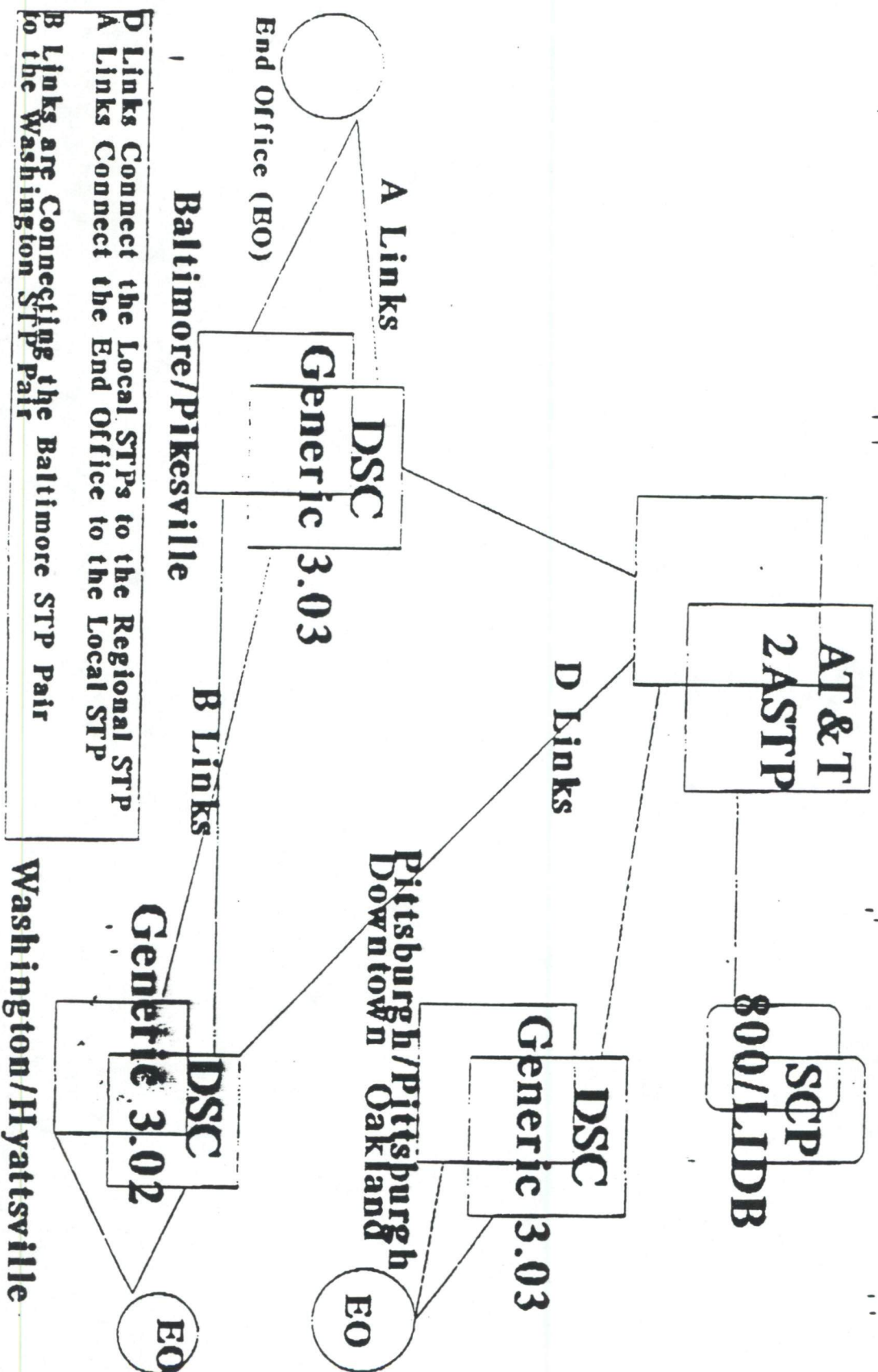
To restore service, Bell Atlantic technicians and engineers began disconnecting the links between the four STPs to halt the overflow of maintenance messages. Once the STPs were isolated, no signalling messages were processed. Then, Bell Atlantic cleared each STP and restored them, one-by-one, to service on a stand-alone basis. The links between the STPs and the associated end offices were disconnected temporarily so that the STPs could be brought back on line gradually. Bell Atlantic states that it was able to shut down and bring back up the end offices and access tandems manufactured by AT&T (i.e., the digital 5ESS end offices, the analog 1A end offices, and the 4ESS access tandems) with little trouble. The Northern Telecom end office (i.e., the digital DMS 100 switches) did not come back up as easily. Once Bell Atlantic was able to stop the end offices from bringing the A links down, it was able to bring up the STPs. This involved "rebooting" the switch, which means you take it down to a "cold start" and "reinitialize" the software, a process which takes about 3 hours. That procedure involves reloading the software in the STP memory (RAM) from the permanent software copy stored on the hard disk drives. This is the same software, however, and it is possible that the copy stored in the RAM memory may have become scrambled.

Preventative Measures:

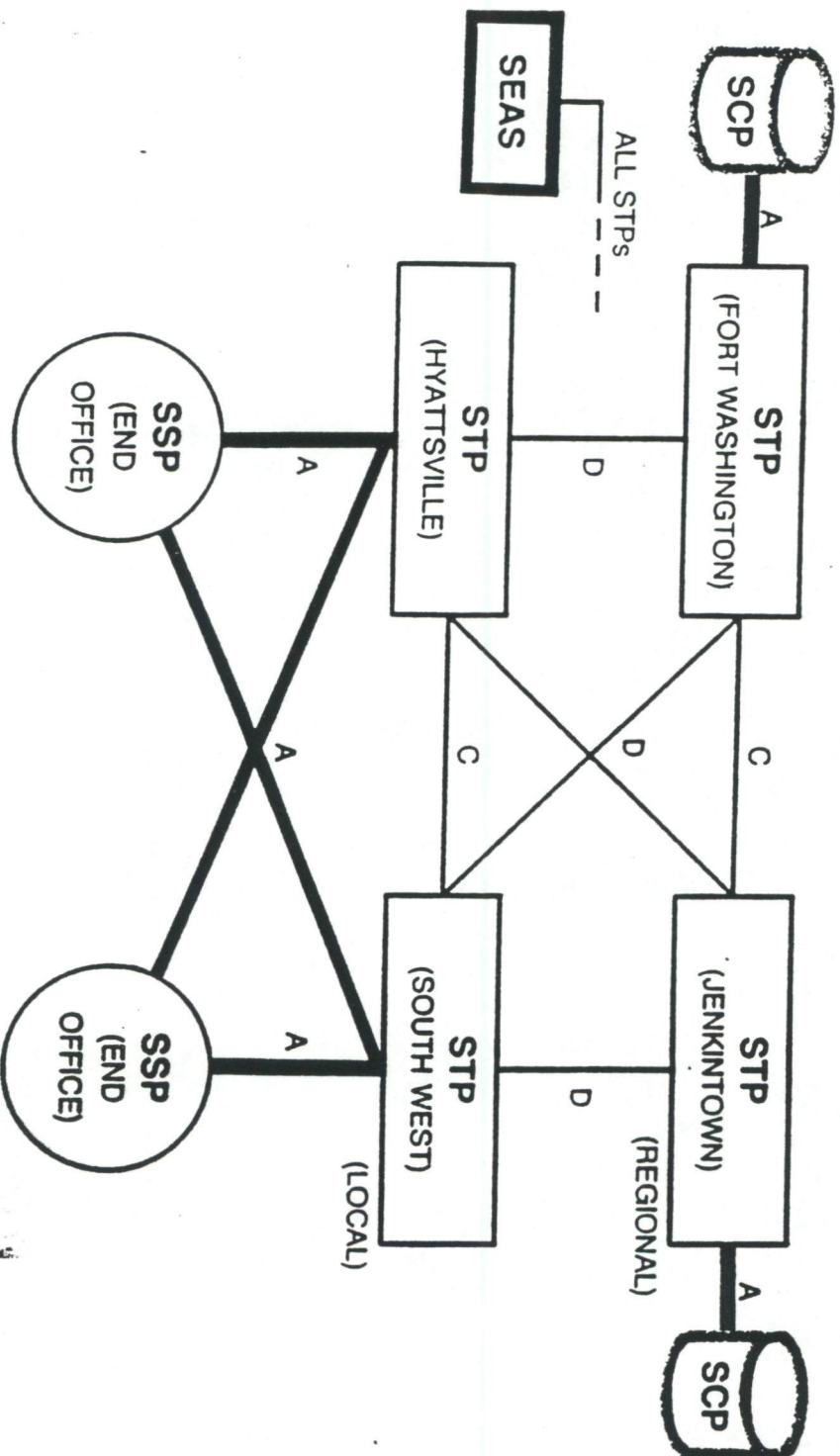
Bell Atlantic has made several changes and put patches in all the STPs. It has extended some of the idling timers, which take care of "normal hits" on the STP by sending out periodic diagnostic tests on each link. In addition, Bell Atlantic turned off all SLTMs in all end offices.

Bell Atlantic states that it has been working with technical experts from Bellcore and DSC to assess the events and find the "root causes" of the outages. Bell Atlantic has installed revised software in all DSC equipment in its region that is operating on the same software or a later version of the software involved in the outages. Bell Atlantic expects that this reprogramming will stop these STPs from processing the maintenance messages that aggravated the congestion problem. Bell Atlantic intends to submit a full report as soon as its investigations of all outages in its region are completed.

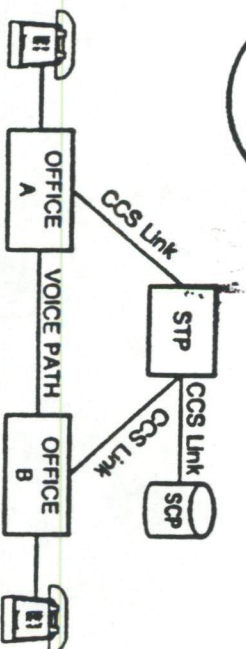
Bell Atlantic Regional STP Pair Fort Washington PA/Jenkintown PA



SPP - SERVICE SWITCHING POINT
STP - SIGNAL TRANSFER POINT
SCP - SERVICE CONTROL POINT
SEAS - SIGNALING ENGINEERING AND ADMINISTRATION SYSTEM
DATA - LINK 56KBPS



SSP - SERVICE SWITCHING POINT
STP - SIGNAL TRANSFER POINT
SCP - SERVICE CONTROL POINT
SEAS - SIGNALING ENGINEERING AND ADMINISTRATION SYSTEM
DATA - LINK 56KBPS



APPENDIX D

Outage Incident Number 4

Date of Occurrence: July 1, 1991

Operating Company: Pacific Bell

Location:

City and State: San Francisco bay area, California

LATA: San Francisco bay area

Description of Facilities: In the bay area, PacBell has two sets of mated STPs pairs. One pair has an STP in Oakland and an STP in San Francisco (the Bay Area pair). The other pair has one STP in Walnut Creek and one in Santa Clara.

Diagram of area showing deployment of signalling and transmission network

Time Series of Event:

Time triggering event began: approximately 10:30 a.m. Pacific time, first indication of trouble

Time service outage began: immediately

Time service began to be restored: within one hour

Time fully operational again: 2:45 p.m.

Time of any further trouble: July 2 -- a unrelated problem occurred in the Santa Clara access tandem. The Santa Clara and Walnut Creek STPs recognized the short interrupt in the tandem and began to send link management messages to the San Francisco and Oakland STPs. These messages triggered the congestion problem at the San Francisco and Walnut Creek STPs, PacBell removed the San Francisco and Walnut Creek STPs from the network to alleviate the congestion. Customer impact appears to have been minimal. The San Francisco STP was restored by 2:30 p.m. and the Walnut Creek STP was restored by 3:00 p.m.

Hardware Involved: (manufacturer and type)

STP: DSC

End offices switches: AT&T and Northern Telecom

Access tandems: AT&T and Northern Telecom

Software Involved: (manufacturer and type)

Number of software upgrade in operation: 03.01, 03.03, and 03.07

When upgrade was installed in each STP: 03.01 installed in the Oakland STP in October 1990; 03.03 installed in the Santa Clara STP in November 1990; 03.07 installed in the San Francisco STP in June 1991; 03.07 installed in the Walnut Creek STP in May 1991.

What Happened:

The T-carrier network (56 kbps transmission system) is run by a cesium clock that controls the timing of the entire packet switched network, including the STPs. Because the network transmits messages at such high speeds, the clock must be extremely precise. At 10:30 a.m. on July 1, a switch in the digital clock source serving the San Francisco STP caused multiple link failures. This event caused the San Francisco STP to experience congestion.

PacBell removed the San Francisco STP from the network to alleviate congestion and restored that STP by 2:45 p.m. PacBell states that this interruption resulted in minimal customer impact since the Oakland STP was running normally.

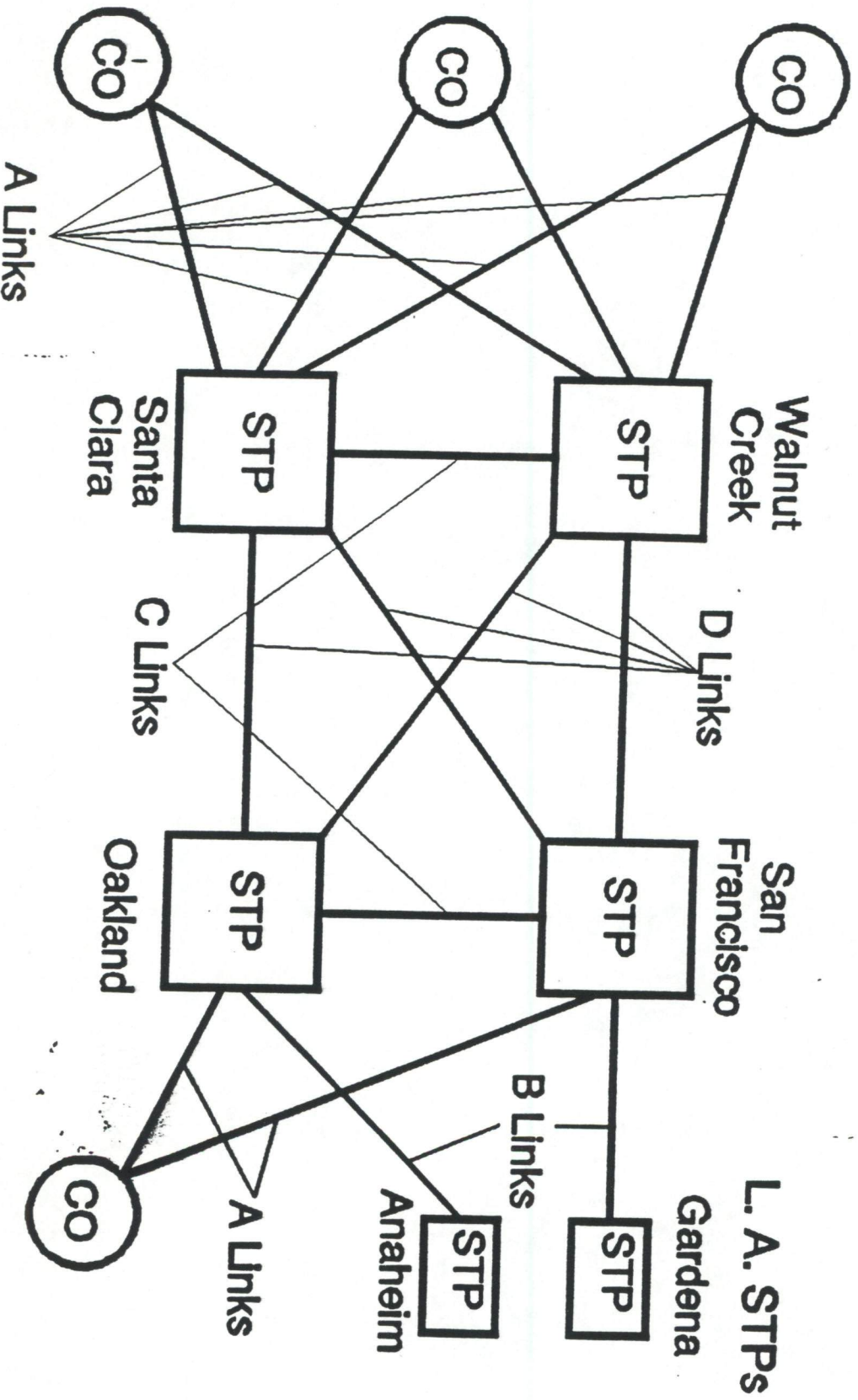
Effect of Outage:

Population Affected: no significant customer impact

Preventative Measures:

PacBell is relying on the replication of these events in DSC's lab to identify the cause and solution to this problem. In the long term, PacBell is concerned about the impact of plans to interconnect the various existing SS7 networks, i.e., connecting the seven BOC networks to the various ICs' SS7 networks. PacBell believes that its SS7 network has more than sufficient (even excessive) redundancy in hardware, but that the issue of software redundancy has yet to be fully understood and addressed. PacBell also believes that its hardware redundancy has brought to nearly 0% the threat of hardware failures causing the isolation of a particular end office from the network. In fact, PacBell states that it spent many times the cost of each STP to install redundant A links to the end offices and access tandems to ensure reliability and to protect against vulnerability.

San Francisco Area STPs



APPENDIX E

Outage Incident Number 5

Date of Occurrence: July 1, 1991

Operating Company: Bell Atlantic

Location:

City and State: Pittsburgh, Pennsylvania

LATA: Western Pennsylvania

Description of facilities: one mated pair of STPs, one located in Pittsburgh and one in Oakland, Pennsylvania.

Diagram attached

Time Series of Event:

Time triggering event began: approx. 11:00 a.m. EDT

Time service outage began: 11:00 a.m.

Time service began to be restored: by 1:10 p.m., 48 of the 57 affected end offices were restored; outage still ongoing at 2:00 p.m.

Time fully operational again: 5:15 p.m.

Time of any further trouble: approximately 24 hours later on July 2

Hardware Involved: (manufacturer and type)

STP: DSC (in place in the Bell Atlantic region since 1988).

End offices switches: Northern Telecom, AT&T, and Siemens

Access tandems: AT&T

Software Involved: (manufacturer and type)

Number of software upgrade in operation: 03.02

When upgrade was installed in each STP: May 1991

What Happened:

At approximately 11:04 a.m., an access tandem connected to Bell Atlantic's STP mated pairs in the Pittsburgh area went down. Immediately, Bell Atlantic noticed significant congestion on those STPs. It tried to restore congested STPs, but both went down. The problem apparently started in the access tandem (unlike the June 26 incidents in both Baltimore and Los Angeles, in which the problem apparently started in the STP). Although the cause appears to be different, Bell Atlantic believes that the symptoms of the outage in Pittsburgh on July 1 and July 2 were similar to those that occurred in Baltimore on June 26.

On July 1, the triggering event appears to have been a brief interruption of a master timing clock circuit, which also interrupted several signalling links, resulting in congestion. The Pittsburgh STP began to flood the SS7 network with maintenance messages. This congestion prevented the STPs from processing signalling messages. Within one day of the incident, the carrier began to restore all the lines to its access tandems in the Pittsburgh area and slowly bring back up the A links and then the C links. The next outage in this area occurred approximately 24 hours later on July 2.

Effect of Outage:

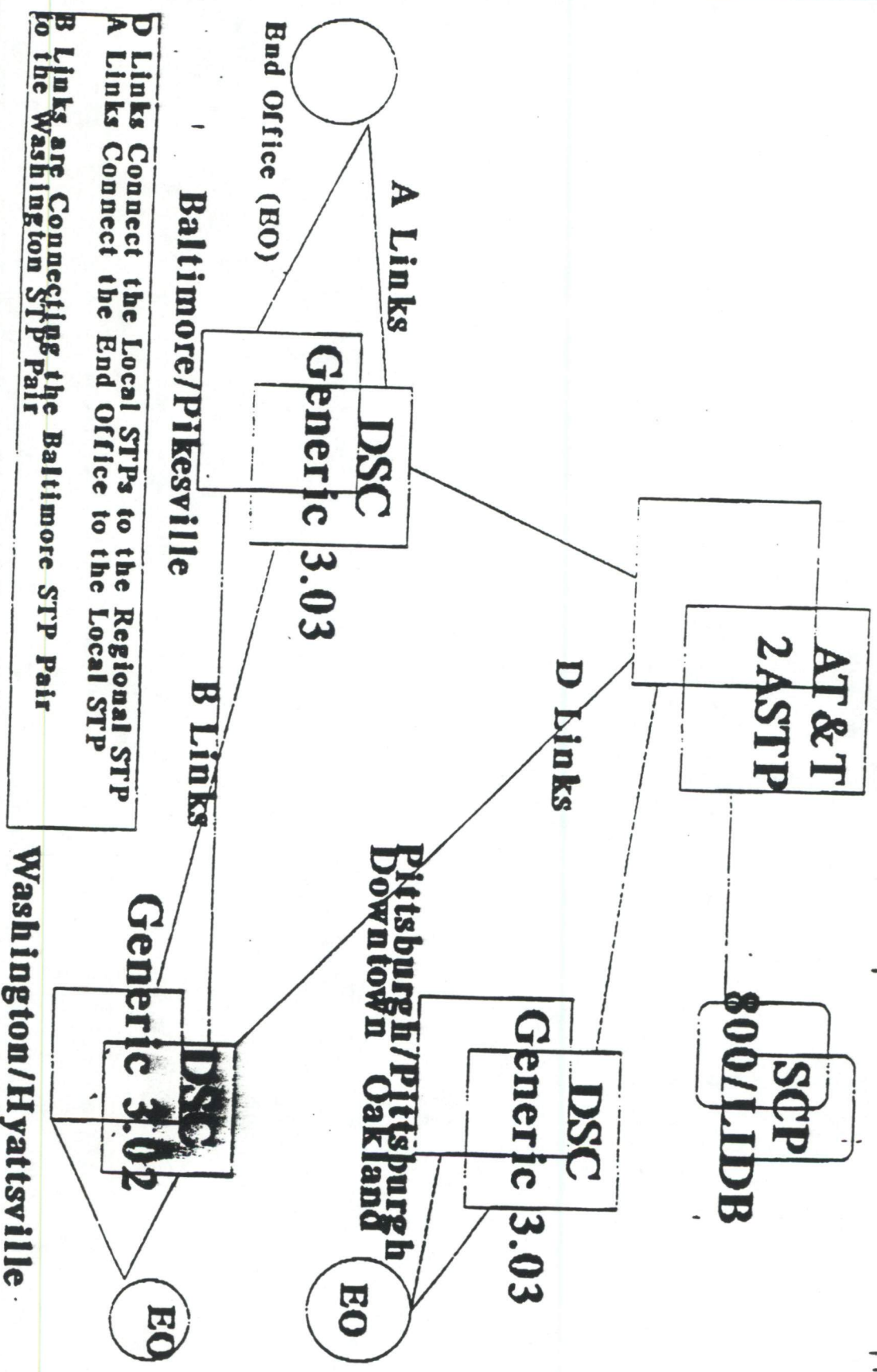
Population Affected: 57 end offices serving 1.3 million customers in western part of Pennsylvania

Types of services affected: all services were disrupted except: private line, 911-emergency services, and interexchange (interLATA) services. Although those services were not disrupted directly, they were overloaded due to the outages for the other services.

Preventative measures:

Bell Atlantic has installed two STP pairs that were not manufactured by DSC in Washington and Pittsburgh.

Bell Atlantic Regional STP Pair Fort Washington PA/Jenkintown PA



D Links Connect the Local STPs to the Regional STP
A Links Connect the End Office to the Local STP
B Links are Connecting the Baltimore STP Pair to the Washington STP Pair

Washington/Hyattsville

APPENDIX F

Outage Incident Number 6

Date of Occurrence: July 2, 1991

Operating Company: Bell Atlantic

Location:

City and State: Pittsburgh, Pennsylvania

LATA: Western Pennsylvania

Description of facilities: one mated pair of STPs, with one in Pittsburgh and one in Oakland, Pennsylvania

Diagram attached

Time Series of Event:

Time triggering event began: approx. 10:20 a.m. EDT

Time service outage began: approx. 10:30 a.m.

Time service began to be restored: approx. 12:00 noon

Time fully operational again: approx. 12:30 p.m.

Time of any further trouble: none

Hardware Involved: (manufacturer and type)

STP: DSC

End offices switches: Northern Telecom and AT&T

Access tandems: AT&T

Software Involved: (manufacturer and type)

Number of software upgrade in operation: 03.02

When upgrade was installed in each STP: May 1991

Apparent Cause:

The "fix" Bell Atlantic put in place after the July 1 outage did not work. Bell Atlantic believes that the cause of this outage was similar to the July 1 outage, but on July 2, problems appeared to be more isolated than on July 1. The triggering event for the July 2 outage was a brief interruption of a master timing clock, which also interrupted several signalling links and caused congestion problems that flooded the Pittsburgh STP with network maintenance messages. As a result, the STPs could not process signalling or call messages.

Effect of Outage:

Population Affected: 1.3 million customers served by 57 end offices

Types of services affected: all services were affected except: 911 emergency services, interexchange (interLATA) services, and private line services. Those services were not disrupted but they did experience an overload due to the outages for the other services.

Restorative Measures: Once the outage began, Bell Atlantic tried to restore service by temporarily isolating the STP that was sending multiple messages to the other switches and causing congestion. Once put into service, however, the STP again indicated that it was congested and shut itself down.

Document Originally
Attached to
Following Page

1
John O'Neal

THE WHITE HOUSE

WASHINGTON

0138

January 12, 1989

MEMORANDUM FOR THE HONORABLE FRANK C. CARLUCCI
Executive Agent, National Communications System

SUBJECT: US Co-Chairman of the US/Canada Civil
Emergency Planning Committee for
Telecommunications

The US/Canada Civil Emergency Planning Committee for Telecommunications is a standing committee of the US/Canada Civil Emergency Planning Consultative Group (US/Canadian bilateral agreement, April 28, 1986). The Committee for Telecommunications is co-chaired by a representative of the Canadian Department of Communications and the US National Security Council. The responsibilities and functions of the Committee are outlined in the Terms of Reference, May 27, 1988, at the attachment.

Pursuant to EO 12472, it is requested that you have the Manager, National Communications System (NCS), or his designee, assume the US co-chairmanship of the Committee. The Office of the Manager, NCS, should become the office of record (US Secretariat) for the Committee's activities. The co-chairman is also a member of the US Consultative Group chaired by the Director, Federal Emergency Management Agency (FEMA). The US Committee's Interagency Working Group consisting of the Department of Defense (ASDC³I), Department of State (OC), Department of Commerce (NTIA), Federal Communications Commission, Federal Emergency Management Agency, and the National Communications System (NCS/NCC) provides the interagency planning and coordination for the Committee's activities as outlined in the attachment and as tasked by the US Consultative Group. The activities of the Committee will be reported in the NCS Annual Report to the Executive Office of the President.

The Committee should continue to emphasize the coordination of planning activities with the NATO Civil Communications Planning Committee (CCPC) for the establishment of a US/Canada/NATO joint telecommunications service priority (TSP) system. The management and coordination of US/Canada emergency communications resources should use the robust capabilities of the National Telecommunications Management Structure (NTMS) to the maximum extent

practical, i.e., the Nationwide Emergency Telecommunications Service (NETS) and the NCS SHARES (HF Radio). US/Canada emergency cross-border communications operations and exercises coordination functions are assigned to the NCS National Coordinating Center (NCC) for Telecommunications. The Joint Telecommunications Resource Board's (JTRB) Standing Operating Procedures will be used for resolving US telecommunications resource issues. The US/Canada emergency preparedness communications coordination arrangements/procedures should be contained in the US National Plan for Telecommunications support for Non-Wartime Emergencies.



Colin L. Powell

Attachment

cc: Secretary of State (OC)
Secretary of Defense (ASDC³I)
Secretary of Commerce (NTIA)
Director, Office of Science and Technology Policy
Director, Federal Emergency Management Agency
Chairman, Federal Communication Commission
✓ Manager, National Communication System
Director, White House Situation Support Staff

TAB A

- UNITED STATES/CANADA

: CIVIL EMERGENCY PLANNING COMMITTEE

FOR TELECOMMUNICATIONS

TERMS OF REFERENCE

1. Authority and Responsibility:

The authority for the establishment of a permanent United States/Canada Civil Emergency Planning Committee for Telecommunications is based on the decision of the United States/Canada Civil Emergency Planning Committee dated September 17, 1970 and the "Agreement Between the Government of Canada and the United States of America on Cooperation in Comprehensive Civil Emergency Planning and Management," dated April 28, 1986.

The United States/Canada Civil Emergency Planning Committee for Telecommunications is responsible for providing advice and assistance to the U.S./Canada Civil Emergency Planning Consultative Group on all telecommunications matters concerning U.S./Canada Civil Emergency Planning. The Committee will, on a continuing basis, work with the various U.S./Canada emergency planning committees and working groups to assist them in determining their cross-border communications requirements and provide, as necessary, a coordinating mechanism for meeting them.

2. Functions:

- (a) Provide advice and assistance to other specialized U.S./Canada Emergency Planning Committees and Working Groups in formulating estimated various cross-border communications requirements for the functional areas for which they have planning responsibility.
- (b) Study the cross-border communications requirements as stated by the other specialized U.S./Canada Emergency Planning Committees and Working Groups and evaluate the capability of existing and planned facilities to meet them.
- (c) Act generally as a consultant body in telecommunications matters to all U.S./Canada Emergency Planning Committees and Working Groups.
- (d) Keep under continued review the arrangements and capabilities of cross-border communications to meet the requirements for civil emergency purposes.

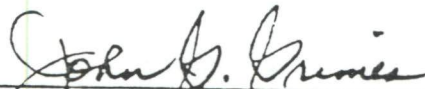
- (e) Exchange views on U.S./Canada position on matters under consideration by the Civil Communications Planning Committee of the North Atlantic Treaty Organizations and/or other planning boards and committees as appropriate.

3. Composition:

- (a) Co-Chairmen of the U.S./Canada Civil Emergency Planning Committee for Telecommunications shall consist of nominees of the U.S. National Security Council, Executive Office of the President, and of the Canadian Department of Communications.
- (b) Representatives from departments or agencies of each government as appropriate.
- (c) The process of the committee would admit of observers subject to the prior concurrence of the co-chairmen.

4. Administrative Arrangements:

- (a) The Civil Emergency Planning Committee for Telecommunications will report annually, or as appropriate, to the Civil Emergency Planning Consultative Group.
- (b) Meetings will be held on a scheduled basis and normally alternatively in Canada and the United States by mutual agreement of the co-chairmen. The host co-chairman will preside at the meeting.
- (c) The Civil Emergency Planning Committee for Telecommunications will be served by a secretariat selected by the co-chairmen.


 John G. Grimes
 Co-Chairman


 R. A. Gordon
 Co-Chairman

May 27, 1988
 Date

27 May 1988
 Date

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20500

September 6, 1983

MEMORANDUM FOR THE SECRETARY OF STATE
THE SECRETARY OF THE TREASURY
THE SECRETARY OF DEFENSE
THE ATTORNEY GENERAL
THE SECRETARY OF COMMERCE
THE SECRETARY OF TRANSPORTATION
THE SECRETARY OF ENERGY
THE DIRECTOR, OFFICE OF MANAGEMENT AND
BUDGET
THE DIRECTOR OF CENTRAL INTELLIGENCE
ASSISTANT TO THE PRESIDENT FOR NATIONAL
SECURITY AFFAIRS
ASSISTANT TO THE PRESIDENT FOR POLICY
DEVELOPMENT
THE CHAIRMAN, JOINT CHIEFS OF STAFF
THE ADMINISTRATOR, GENERAL SERVICES
ADMINISTRATION
THE DIRECTOR, FEDERAL EMERGENCY MANAGE-
MENT AGENCY
THE CHAIRMAN, FEDERAL COMMUNICATIONS
COMMISSION
THE DIRECTOR, NATIONAL SECURITY AGENCY

SUBJECT: Telecommunications Activities

OSTP has recently concluded a thorough review of certain functional areas, issues, and programs in which this office is involved.

Based upon that review, we are now in the process of redefining selected issues and programs in which we intend to continue a presence as well as readjusting our overall level of effort within the remaining areas.

Specifically, with regard to telecommunications, this office will continue to fulfill its responsibilities and maintain its high level of effort pertaining to national resource management under the provisions of the Communications Act, As Amended; Executive Order 12046; Federal Plan D; Executive Order 11490, NSDD-47;

and other relevant authorities directly applicable to national emergency conditions and as delegated to this office by the President. Thus, in these particular matters, the OSTP will continue to be the office of primary responsibility.

In other telecommunications areas, however, effective October 1, 1983, OSTP will either no longer have responsibility or play a major lead role.

So that issue or program continuity will be maintained, arrangements have been made to transfer each function and lead role to a new or original office of primary responsibility and to identify a specific individual as point of contact. As indicated below, we have listed the agency, the designated point of contact, and the functional area:

Office Point of Contact

NSC	Mr. Ken deGraffenreid	PD/NSC-24 National Telecommunications Protection Policy STU-II Oversight Working Group Interagency Committee on Real Estate Acquisition COMSEC (as a general subject)
NSC	Mr. Robert Helm	NSDD-97 National Security Telecommunications Policy Federal Telecommunications Standards Deregulation/Divestiture (as a general subject) Emergency Communications Working Group (EMPB) International Telecommunications Legislation White House Military Office Airlift Validation Joint U.S./Canada Civil Emergency Planning Committee, Telecommunications Telecommunications Legislation/Testimony (National Security Aspects)
NSC	BGen Horace Russell	Mobilization Planning
NSC	LtCol Oliver North	Continuity of Government

Office Point of Contact

NSC Mr. Carnes Lord

SIG for International Com-
munications
International Broadcasting/
ICA

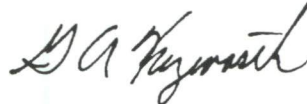
In addition, we have transferred responsibility or terminated our involvement with the following as indicated:

FEMA Mr. David McLoughlin Earthquakes Working Group
(EMPB)

Terminate

Transborder Data Flows

Please give this widest possible dissemination within your organization so as to facilitate this transition. In the interim, until October 1, questions or requests for additional information may be referred to Wayne Kay, at 395-5052.

G. A. Keyworth
Director

cc: WHCA
WHMO
OMB (Mr. Bedell)
NTIA
NASA
USGS

John - FYI

REQUEST FOR APPOINTMENTS

WAVES
X5349
Sent 8/9/91

To: Officer-in-charge
Appointments Center
Room 060, OE08

Please admit the following appointments on Monday, August 12, 19 91
for D. Allan Bromley of OSTP
(NAME OF PERSON TO BE VISITED) (AGENCY)

ANDERSON, John Robert	07/19/40
ANDREWS, Duane P.	01/19/45
BARRETT, Andrew C.	04/14/40
BELFORD, William B.	08/12/33
BERENSON, Lawrence	11/17/41
BUCKHOLTZ, Thomas	09/19/45
CAMPBELL, Bruce C.	09/10/40
CHAMBLESS, Valerie	01/23/63
CHRISTENSEN, John E.	12/03/31
FICRITO, Jack	05/08/37
FLYNN, George	12/25/33
GRIMES, John	10/29/35
MC KIE, Alan R.	03/23/33
MORRIS, Benham E.	02/20/28
OBUCHOWSKI, Janice	07/20/51
O'ROURKE, John	05/19/44
OSTERHOLZ, John	05/08/47
PARLOW, Richard	11/16/34
POST, Robert	12/23/54
REINKE, Roger	02/13/31
SHORT, Alonzo E., Jr.	01/27/39
SUGRUE, Thomas	02/09/47
TASSIE, James	09/22/39

MEETING LOCATION

Building OE08
Room No. 208
Time of Meeting 3 P.M. - 5 P.M.

Requested by John F. O'Neill
Room No. 572 Telephone X3272
Date of request August 9, 91

Additions and/or changes made by telephone should be limited to five (5) names or less.

APPOINTMENTS CENTER: SIG/OE08 - 395-6046 or WHITE HOUSE - 456-6742

UNITED STATES SECRET SERVICE

SSF 2037 (03-61)

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE)
WAS SENT

**** COUNT ****
1

*I still need DOB for
Herb Bennington - have called
him (recorder).*

*** SEND ***

NO	REMOTE STATION I. D.	START TIME	DURATION	#PAGES	COMMENT
1	202 3955349	8- 9-91 2:46PM	0'39"	1	

TOTAL 0:00'39" 1

XEROX TELECOPIER 7021

Maj Gordon Powell

Capt Dennis Parsons

*Plan CA Message
12/18/91*

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

December 17, 1991

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE FOR COMMAND,
CONTROL, COMMUNICATIONS AND INTELLIGENCE
ASSISTANT SECRETARY FOR COMMUNICATIONS AND
INFORMATION, DEPARTMENT OF COMMERCE
DEFENSE COMMISSIONER, FEDERAL
COMMUNICATIONS COMMISSION
COMMISSIONER, INFORMATION RESOURCES
MANAGEMENT SERVICE, GENERAL SERVICES
ADMINISTRATION
MANAGER, NATIONAL COMMUNICATIONS SYSTEM
ASSISTANT ASSOCIATE DIRECTOR FOR INFORMATION
RESOURCES MANAGEMENT, FEDERAL EMERGENCY
MANAGEMENT AGENCY

SUBJECT: AUGUST 12, 1991, MEETING OF THE JOINT
TELECOMMUNICATIONS RESOURCES BOARD

Attached please find the minutes of the August 12, 1991, meeting of the Joint Telecommunications Resources Board (JTRB).

A copy of the National Plan for Telecommunications Support in Non-Wartime Emergencies is also provided. This draft was briefed at the meeting and the Board approved it, pending final resolution of the issue of the United States/Canada Civil Emergency Planning Committee for Telecommunications. The National Security Council has directed the Federal Emergency Management Agency to draft procedures for all functional areas of the United States/Canada Civil Emergency Planning Committee, including Telecommunications. Therefore, the National Plan will be published absent those procedures, as briefed at the meeting. This memorandum solicits your concurrence prior to publication. For consistency, editorial changes appear in this draft. Please respond by December 30, 1991.

Work continues on the Action Plan developed to accomplish tasks identified following the JTRB exercise on March 1, 1991. The results of this work are scheduled for completion in preparation for a Spring 1992 JTRB Meeting.

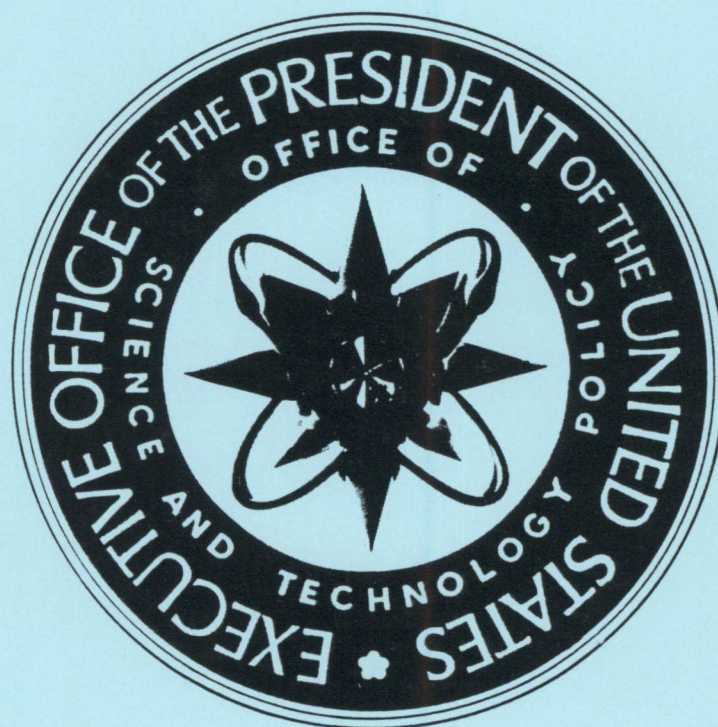


John F. O'Neil
Executive Secretary

Attachments

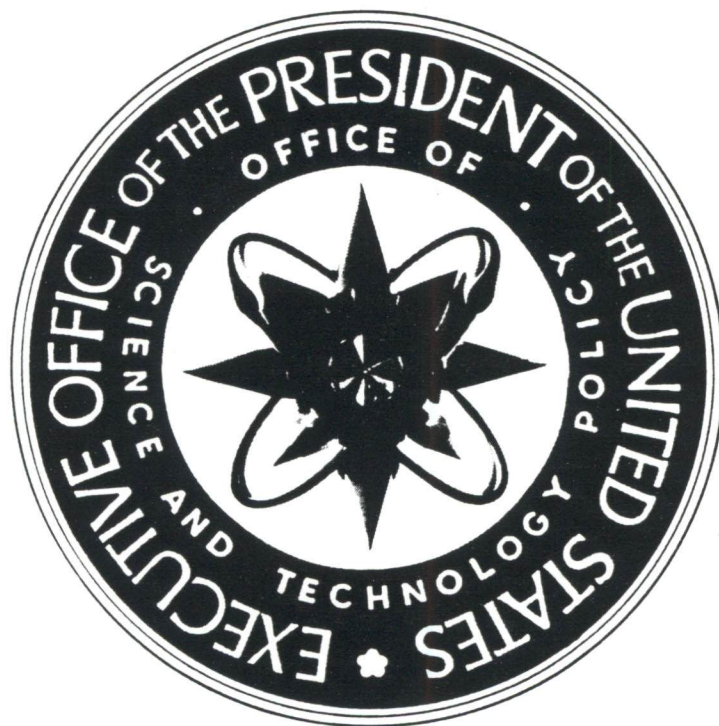
cc: **Director for Defense Policy, National Security Council**

***National Plan For
Telecommunications
Support in Non-Wartime
Emergencies
(Final Draft)***



December 1991

***National Plan For
Telecommunications
Support in Non-Wartime
Emergencies
(Final Draft)***



December 1991

NATIONAL PLAN FOR TELECOMMUNICATIONS SUPPORT IN NON-WARTIME EMERGENCIES

TABLE OF CONTENTS

	<u>Page No.</u>
1.0 INTRODUCTION	1
1.1 PURPOSE	1
1.2 SCOPE	1
1.3 APPLICABILITY	1
1.4 AUTHORITY	1
1.5 REFERENCES	1
1.6 SUPERSESSION	3
2.0 CONCEPT OF OPERATIONS	4
2.1 GENERAL	4
2.2 PRESIDENTIALLY DECLARED MAJOR DISASTERS AND EMERGENCIES	4
2.3 EXTRAORDINARY SITUATIONS	7
2.4 OTHER EMERGENCIES	9
3.0 ROLES AND RESPONSIBILITIES	10
3.1 JOINT TELECOMMUNICATIONS RESOURCES BOARD	10
3.2 DIRECTOR, FEDERAL EMERGENCY MANAGEMENT AGENCY	11
3.3 FEMA REGIONAL DIRECTOR	12
3.4 FEDERAL COORDINATING OFFICER	13
3.5 SENIOR FEMA OFFICIAL	13
3.6 DISASTER RECOVERY MANAGER	13
3.7 FEMA REGIONAL COMMUNICATIONS MANAGER	13
3.8 MANAGER, NATIONAL COMMUNICATIONS SYSTEM	15
3.9 MANAGER, NATIONAL COORDINATING CENTER	16
3.10 NCS COMMUNICATIONS RESOURCE MANAGER	16
3.11 ADMINISTRATOR, GENERAL SERVICES ADMINISTRATION	17
3.12 NATIONAL COMMUNICATIONS SYSTEM REGIONAL MANAGER/GSA ZONAL EMERGENCY COMMUNICATIONS PLANNER	18
3.13 FEDERAL EMERGENCY COMMUNICATIONS COORDINATOR	19
3.14 NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION	21
3.15 FEDERAL COMMUNICATIONS COMMISSION	21

Page No.

3.16	SECRETARY OF DEFENSE	21
3.17	OTHER FEDERAL ORGANIZATIONS	22
3.18	TELECOMMUNICATION INDUSTRY	23
3.19	AMATEUR RADIO	23
ANNEX A:	REPORT FORMATS	
ANNEX B:	ACRONYM LIST	
ANNEX C:	DEFINITIONS	

NATIONAL PLAN FOR TELECOMMUNICATIONS
SUPPORT IN NON-WARTIME EMERGENCIES

TABLE OF EXHIBITS

	<u>Page No.</u>
Exhibit 2-1: Major Disaster and Emergency Response Sequence	6
Exhibit 2-2: Extraordinary Situation Response Sequence	8

NATIONAL PLAN FOR TELECOMMUNICATIONS SUPPORT IN NON-WARTIME EMERGENCIES

1.0 INTRODUCTION

1.1 PURPOSE

This National Plan establishes procedures for planning and using National telecommunication assets and resources in support of non-wartime emergencies, including Presidentially declared Emergencies and Major Disasters, Extraordinary Situations, and other emergencies. It establishes responsibilities, outlines missions, and identifies functions in support of the Federal official exercising the authorities of Public Law (PL) 93-288, as amended, Executive Order (E.O.) 12472, and other applicable authorities. It provides for telecommunications staff support for the Federal Emergency Management Agency (FEMA) Regional Director (RD), the Federal Coordinating Officer (FCO), and/or the Senior FEMA Official (SFO).

1.2 SCOPE

This plan provides guidance for planning and providing telecommunications support for Federal activities involved in non-wartime emergencies as provided for in the references cited in Section 1.5.

1.3 APPLICABILITY

This plan is applicable to all Federal Executive departments, agencies, and organizations.

1.4 AUTHORITY

The authority for the Office of Science and Technology Policy (OSTP), assisted by the National Communications System (NCS), to develop plans to coordinate and manage telecommunications support for Federal organizations in non-wartime emergencies is derived from E.O. 12472, "Assignment of National Security Emergency Preparedness Telecommunications Functions," April 3, 1984.

1.5 REFERENCES

In addition to E.O. 12472, the following references are applicable:

- Public Law 93-288, as amended by Public Law 100-707, "Robert T. Stafford Disaster Relief and Emergency Assistance Act"
- Communications Act of 1934, 47 U.S.C. 151 et seq as amended

- E.O. 12673, "Delegation of Disaster Relief and Emergency Assistance Functions," March 23, 1989
- E.O. 12656, "Assignment of Emergency Preparedness Responsibilities," November 18, 1988
- E.O. 12148, "Federal Emergency Management," July 20, 1979
- Title 47, Code of Federal Regulations, Part 64, Appendix A, "Telecommunications Service Priority (TSP) System for National Security Emergency Preparedness"
- National Security Emergency Preparedness Telecommunications Procedures Manual, July 1, 1985, as amended by FCC Memorandum and Opinion Order (CCB-DFD-85-36), released January 3, 1987
- Department of Defense (DoD) Directive 3025.1, "Use of Military Resources During Peacetime Civil Emergencies within the United States, its Territories, and Possessions," May 23, 1980
- Army Regulation 500-60, "Disaster Relief", September 1, 1981
- "Plan for Federal Response to a Catastrophic Earthquake," April 15, 1987
- "Federal Radiological Emergency Response Plan (FRERP)," Federal Register, Vol. 50, No. 217, November 8, 1985
- "Headquarters, U.S. Forces Command (FORSCOM) Military Assistance to Civil Authority Plan (MACAP), Annex G, (Communications)," April 28, 1987, with Change 1, March 13, 1980
- "Standard Operating Procedures for Joint Telecommunications Resources Board," January 18, 1989
- White House Memorandum, Subject: "National System for Emergency Coordination (NSEC)," January 19, 1989
- FEMA/General Services Administration (GSA) Memorandum of Understanding (MOU), February 2, 1989
- FEMA Instruction 9360.1, "National Network Operations Center," June 5, 1989
- FEMA Manual 8720.1, "Guidance for Emergency Response Team Planning," July 1985

- FEMA Manual, "Headquarters Plan for Emergency Support Teams," February 8, 1984.

1.6 SUPERSESSION

This plan supersedes the National Plan for Telecommunications Support in Non-Wartime Emergencies dated September 1987.

2.0 CONCEPT OF OPERATIONS

Telecommunications support is provided on a management by exception basis. Requirements are satisfied at the lowest level possible. Only situations which are beyond the response element capabilities will be referred to higher levels for resolution.

The concept of operations is to establish, to the extent possible, emergency management centers in, or near, the affected areas and to support field operations with existing Emergency Operation Centers and information systems.

2.1 GENERAL

The Federal Emergency Management Agency (FEMA) Integrated Emergency Management System (IEMS) calls for the cooperative efforts of Federal, State, and local governments with the private sector in preparing for, mitigating, responding to, and recovering from the continuum of possible disasters, emergencies, and Extraordinary Situations. Planning for regional emergency telecommunications support for the FEMA Regional Director (RD), Federal Coordinating Officer (FCO), and Senior FEMA Official (SFO) is the responsibility of the NCS Regional Manager/GSA Zonal or Regional Emergency Communications Planner (NCSRM/GSA ZECP or RECP). Coordination between FEMA and GSA will be made at all levels of planning and response pursuant to the FEMA/GSA Memorandum of Understanding, dated February 2, 1989. Emergency management for a specific event begins with an incident assessment managed by the FEMA RD. If a Presidential disaster is declared under Public Law (P.L.) 93-288, as amended, an FCO is appointed by the Director, FEMA, on behalf of the President. If the incident is evaluated as an Extraordinary Situation, the Director, FEMA, will appoint an SFO. Federal telecommunications support for those emergency situations not declared under P.L. 93-288, as amended, or are not considered an Extraordinary Situation, will be provided as specified in Section 2.4.

2.2 PRESIDENTIALLY DECLARED MAJOR DISASTERS AND EMERGENCIES

The intent of P.L. 93-288, as amended, is to provide, at the request of a State Governor, orderly and continuing supplemental assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from disasters. Section 418 of P.L. 93-288, as amended, states, "The President is authorized during, or in anticipation of, an emergency or major disaster, to establish temporary communications systems and to make such communications available to State and local government officials and other persons as he deems appropriate."

Immediately after the declaration of a Major Disaster or Emergency by the President, an FCO is designated by the Director, FEMA, on behalf of the President, to coordinate Federal assistance in the disaster area. The FEMA RD will appoint a Disaster Recovery Manager (DRM) to control and approve the expenditure of FEMA funds. To enhance the effectiveness of recovery operations, the FCO and DRM are usually the same individual. The FCO normally

establishes a Disaster Field Office (DFO) in the affected area. After completion of a survey of the disaster area, the FCO may direct establishment of one or more Disaster Application Centers (DAC).

2.2.1 Telecommunications Support. The FCO may assign telecommunications management responsibility to the FEMA Regional Communications Manager (FRCM) or, if the situation requires, requests GSA to assign a Federal Emergency Communications Coordinator (FECC). At the request of the FCO, the NCSRM/GSA ZECP or RECP may become, or the GSA Regional Office of Information Resources Management may appoint, a representative to become the FECC on the FCO's staff. The FECC is responsible for coordinating the entire Federal emergency telecommunications response in the disaster area.

The status of telecommunications in the disaster area is evaluated by the FECC. Telecommunications deemed necessary to support the disaster response and recovery activities are established utilizing surviving commercial capabilities. In establishing communications, the Telecommunications Service Priority (TSP) System rules and procedures may be applied. If required, commercial carrier resources may be supplemented, as required, by other available emergency telecommunication resources. Emphasis will be placed on the use of commercial resources as they become available. Emergency resources obtained from other sources are to be promptly released as adequate commercial capabilities are reestablished. Every effort should be made to ensure the release of emergency resources within 30 days of the Major Disaster or Emergency declaration.

The Director, FEMA, or the FCO generally directs that emergency support teams of Federal personnel be deployed to the emergency or disaster area. One such support team may be a telecommunications team which will constitute the Emergency Communications Staff (ECS), headed by either the FRCM or the FECC. The size and composition of the ECS may vary depending upon the magnitude and severity of the Major Disaster or Emergency. It may range from one person to a team of several telecommunication specialists drawn from GSA, DoD, FEMA, other Federal organizations, and the telecommunications industry. As the Chief of the ECS, the FRCM or the FECC must ensure that the FCO and other FCO staff elements have access to telecommunications.

The FRCM or the FECC, assisted by the members of the ECS, will advise the FCO on all telecommunication matters, and take action to ensure that required services are provided in support of the Federal disaster response and recovery effort. The FECC should coordinate with Federal, State, and local organizations and the major private relief organizations involved with disaster recovery to ascertain their telecommunications requirements. The FRCM or the FECC will process them in the order of priority established by the FCO, consistent with the provisions of the TSP System rules and regulations.

In cases where simultaneous Major Disasters or Emergencies encompass two or more standard Federal regions, the Manager, NCS, will identify a Communications Resource Manager (CRM) from the NCS staff. The function of the CRM is to assist the FECC. The CRM will

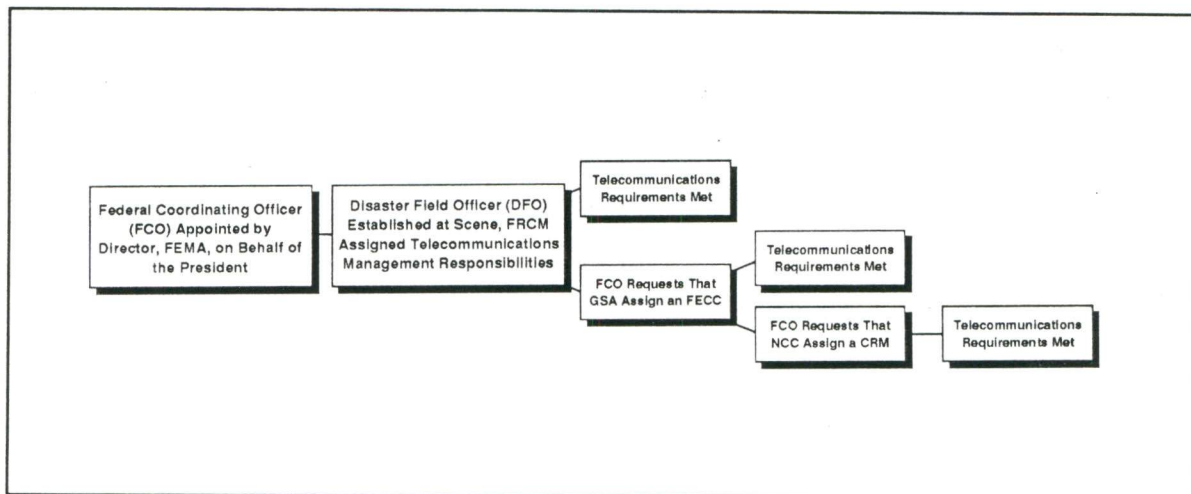
function from within the National Coordinating Center for Telecommunications (NCC), coordinating efforts with the FEMA National Network Operations Center (NNOC). The CRM will be deployed to the field if requested by an FCO.

In the exercise of these responsibilities, the CRM will be guided by direction provided by the Manager, NCS, and the JTRB. The Manager, NCS, the Manager, NCC, the Defense Commissioner, Federal Communications Commission (FCC), and the Director, FEMA, will ensure that all information regarding potential and/or actual emergency situations with significant telecommunication implications is brought to the attention of the Chairman, JTRB. This will facilitate the undertaking of any Federal emergency response activities required beyond those already being executed by responsible agencies as part of their established emergency response procedures, and in support of the priorities established by the FCO.

When the allocation of telecommunication resources cannot be resolved by the CRM, the matter will be presented to the Manager, NCS. If the matter cannot be resolved by the Manager to the satisfaction of the parties involved, it will be presented to the JTRB for resolution.

Exhibit 2-1 shows the response sequence for presidentially declared Major Disasters and Emergencies.

EXHIBIT 2-1 MAJOR DISASTER AND EMERGENCY RESPONSE SEQUENCE



2.3 EXTRAORDINARY SITUATIONS

In some situations requiring Federal Government involvement, individual Federal organizations will respond under their own authorities, and no "on-scene" coordination among organizations will be required. In other situations, there may be a need for FEMA to provide a clearinghouse function and common point-of-contact for the responding State and local jurisdictions and Federal organizations. A situation or event that has significant national impact or one that requires a significant Federal Government presence, but does not meet the criteria of P.L. 93-288, as amended, is considered an Extraordinary Situation.

When an Extraordinary Situation occurs that requires a Federal Government response, the cognizant Federal agency will have the lead responsibility for the majority of "on site" functions during the initial response. FEMA will have the lead in coordinating assistance to State and local governments and other responding Federal organizations, and will help to develop and present recommended protective or support measures. FEMA is also responsible for providing information on the off-site Federal response to the Executive Office of the President and the U.S. Congress.

The FEMA coordination in an Extraordinary Situation will be accomplished by an Emergency Response Team (ERT) at the scene. The ERT will normally be led by an SFO, appointed by the Director, FEMA, or a senior official authorized or appointed to act for the Director, FEMA. An ERT will be deployed to the scene of an Extraordinary Situation when: (1) The Director, FEMA, concurs with a Governor's request for assistance; or (2) the Director, FEMA, feels that the requirement or potential exists for a significant Federal presence. A requirement for a Federal presence can exist in the absence of a Governor's request for assistance when a situation occurs that is wholly or partially the responsibility of the Federal Government or when Federal statutes require the involvement of more than one Federal organization.

The ERT will be supported by an Emergency Support Team (EST), headed by an EST Director. The EST will operate from the FEMA Emergency Information and Coordination Center (EICC) in the FEMA Headquarters in Washington, DC. The SFO will report to the Director, FEMA, and will communicate and provide information and reports through the EST using the operational facilities of FEMA and the EICC.

2.3.1 Telecommunications Support. Telecommunications support for Extraordinary Situations is accomplished on a management by exception basis within the context of the FEMA ERT/EST concept as contained in FEMA Manual 8720.1, "Guidance for Emergency Response Team Planning," July 1985. The initial telecommunications support for the ERT will be the responsibility of the FRCM, utilizing existing fixed and mobile capabilities of the FEMA National Emergency Management System (NEMS). When these resources are inadequate to meet the support requirements of the ERT and Federal organizations, the SFO will request GSA to assign an FECC. If activated, the FECC will report to the SFO and assume the functions of principal Federal manager for emergency telecommunications. To ensure that

telecommunication requirements are met, the FECC may use TSP System rules and procedures to request priority provisioning and restoration of telecommunication services.

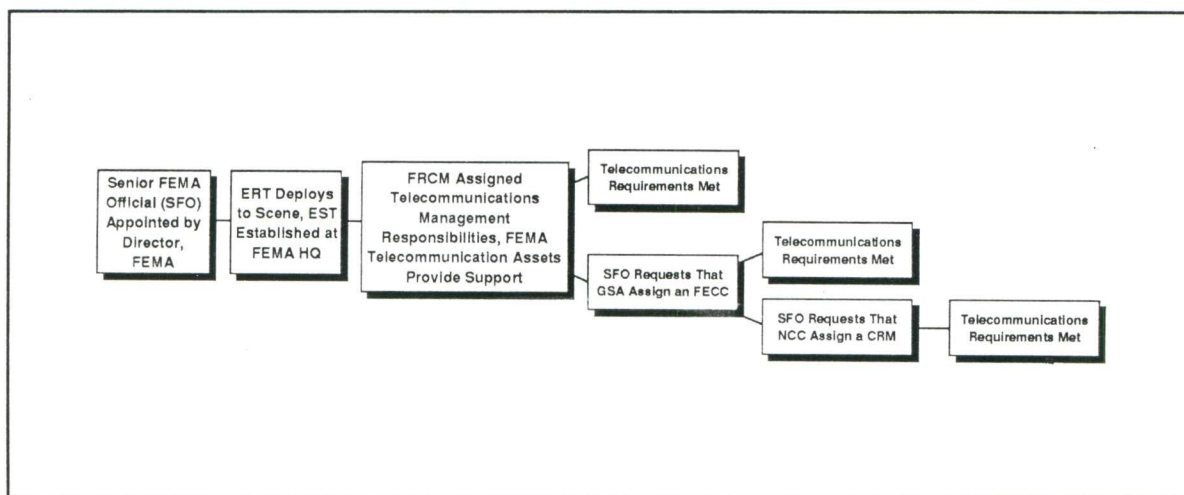
In cases where the Extraordinary Situation encompasses two or more standard Federal regions, the Manager, NCS, will identify a CRM from the NCS staff. The function of the CRM is to assist the FECC. The CRM will function from within the NCC, coordinating efforts with the FEMA NNOC. The CRM will be deployed to the field if requested by an SFO.

The CRM will be guided by direction provided by the Manager, NCS, and the JTRB, and will apply TSP System rules and regulations. The CRM will also coordinate with the FEMA NNOC. The Manager, NCS, the Manager, NCC, the Defense Commissioner, FCC, and the Director, FEMA will keep the Chairman, JTRB, informed as prescribed in the "JTRB Standard Operating Procedures" issued by the Director, OSTP.

When the allocation of telecommunication resources cannot be resolved by the CRM, the matter will be presented to the Manager, NCS. If the matter cannot be resolved by the Manager to the satisfaction of the parties involved, it will be presented to the JTRB for resolution.

Exhibit 2-2 shows the response sequence for Extraordinary Situations.

EXHIBIT 2-2 EXTRAORDINARY SITUATION RESPONSE SEQUENCE



2.4 OTHER EMERGENCIES

Telecommunications support for emergency situations which are not declared under P.L. 93-288, as amended, and are not considered Extraordinary Situations, will normally be independently accomplished by the involved Federal organization(s). When telecommunication service providers are unable to satisfy all telecommunication service requirements, or when there are conflicts between multiple Federal organizations, the matter should be brought to the attention of the NCC.

3.0 ROLES AND RESPONSIBILITIES

This section defines the roles and responsibilities of all organizations and individuals involved in telecommunications support in non-wartime emergencies. These roles and responsibilities are addressed for each major phase of emergency response (predeployment, deployment, and postdeployment).

3.1 JOINT TELECOMMUNICATIONS RESOURCES BOARD

The JTRB will provide assistance to the Director, Office of Science and Technology Policy (OSTP) in the exercise of those non-wartime emergency telecommunication functions assigned by Executive Order (E.O.) 12472. The JTRB's role is to monitor potential or actual telecommunication emergency situations that pose significant threats to telecommunication facilities or services, and situations that may create the need for extraordinary telecommunications support. During Emergencies, Major Disasters, or Extraordinary Situations, the JTRB will be supported by the National Communication System (NCS) organizational structure utilizing the resources of the National Coordinating Center for Telecommunications (NCC), the Defense Information Systems Agency (DISA) Network Management Operations Center (NMOC), the Federal Emergency Management Agency (FEMA) Emergency Information and Coordination Center (EICC) and National Network Operations Center (NNOC), and other Federal agency operation centers as necessary. When the President activates the National System for Emergency Coordination (NSEC), the JTRB will function as the Telecommunications Functional Group to support and coordinate relief operations, assess problems, propose solutions, and facilitate resolution of specific emergency functional needs.

3.1.1 Predeployment Phase. The JTRB is responsible for the periodic review and approval of updated versions of this plan.

3.1.2 Deployment Phase. The JTRB is responsible for:

- Reviewing information submitted to the Chairman, JTRB, evaluating response and support requirements, and providing recommendations to appropriate officials of the Executive Office of the President
- Facilitating the concerted exercise of non-wartime emergency telecommunication authorities and responsibilities by individual Federal entities
- Advising and assisting the Chairman, JTRB in the resolution of competing demands for telecommunication services, and determining necessary service priorities resulting from non-wartime emergency situations.

3.1.3 Postdeployment Phase. The JTRB has no specified roles and responsibilities during this phase.

3.2 DIRECTOR, FEDERAL EMERGENCY MANAGEMENT AGENCY

The Director, FEMA, will keep all concerned Federal organizations informed of potential, developing, and existing Emergencies, Major Disasters, and Extraordinary Situations. Upon presidential declaration of an Emergency or a Major Disaster, the Director will appoint a Federal Coordinating Officer (FCO) on behalf of the President. When an Extraordinary Situation has significant national impact or requires a significant Federal Government presence, the Director will appoint a Senior FEMA Official (SFO). The Director will provide overall guidance and direction to the Federal recovery efforts. The Director, FEMA, is responsible for performing the Civil Defense functions delegated under E.O 12148, and for providing disaster preparedness planning, mitigation, response, and recovery assistance to State and local governments pursuant to Public Law (P.L.) 93-288, as amended.

3.2.1 Predeployment Phase. The Director, FEMA, is responsible for:

- Reviewing the ten standard Federal regional plans developed in support of this National Plan, and coordinating them with the Manager, NCS, and the Administrator, General Services Administration (GSA)
- Supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP
- Ensuring that all information regarding potential and/or actual emergency situations with significant telecommunication implications is brought to the attention of the Chairman, JTRB
- Directing establishment of Disaster Field Offices (DFOs) and Disaster Application Centers (DACs), if deemed necessary.

3.2.2 Deployment Phase. The Director, FEMA, is responsible for:

- Monitoring the provision of telecommunication services to support the Federal response, by use of reports from the Administrator, GSA, and other sources
- Deploying Federal response teams to the affected area
- Supporting the JTRB as required.

3.2.3 Postdeployment Phase. The Director, FEMA, has no specified roles or responsibilities during this phase.

3.3 FEMA REGIONAL DIRECTOR

The FEMA Regional Director (RD) provides policy and procedural guidance to the NCS Regional Manager/GSA Zonal or Regional Emergency Communications Planner (NCSRM/GSA ZECP or RECP) during the predeployment phase, and facilitates coordination between the NCSRM/GSA ZECP or RECP and officials of Federal, State, and local government agencies which may be involved in recovery operations within the region.

3.3.1 Predeployment Phase. The FEMA RD is responsible for:

- Advising the NCSRM/GSA ZECP or RECP of developing situations which may result in an Emergency or Major Disaster, or that may require a Federal Government presence
- Actively supporting the coordination activities of the NCSRM/GSA ZECP or RECP in gathering data from Federal, State, and local government agencies in the region
- Ensuring the development of a Regional Emergency Communications Plan in support of this National Plan
- Assigning a FEMA Regional Communications Manager (FRCM) to the staff of the Federal Emergency Communications Coordinator (FECC) to coordinate telecommunication actions with the NCSRM/GSA ZECP or RECP, and providing guidance and assistance in fulfillment of the assigned mission
- Surveying the disaster area to identify potential DFO and DAC locations. The survey team may include the NCSRM/GSA ZECP or RECP or an FECC, and telecommunication industry representatives
- Authorizing the FRCM to assist in developing, preparing, and publishing the Regional Emergency Communications Support Plan.

3.3.2 Deployment Phase. The FEMA RD is responsible for:

- Providing an FRCM to perform FEMA assigned duties, and if implemented, serving on the Emergency Communications Staff
- Providing the capability to interface with Federal, State, and local Civil Defense Communications Systems, and coordinating with the Radio Amateur Civil Emergency Service (RACES), Military Affiliate Radio System (MARS), Amateur Radio Emergency Services (ARES), other amateur radio organizations, and organized Personal Service Radio (PSR) groups to provide reliable radio communications in support of the FCO or SFO mission.

3.3.3 Postdeployment Phase. The FEMA RD has no specified roles or responsibilities during this phase.

3.4 FEDERAL COORDINATING OFFICER

The FCO is appointed by the Director, FEMA, on behalf of the President to coordinate Federal disaster relief efforts during an Emergency or Major Disaster. The FCO is responsible for making an immediate appraisal of the types of relief most urgently needed; establishing Disaster Field Offices and Disaster Application Centers as necessary; coordinating the administration of recovery activities of other Federal organizations and private relief organizations which have agreed to operate under FCO supervision. The FCO will determine, in coordination with the State Coordinating Officer (SCO), the type, quantity, and priority of relief required.

3.5 SENIOR FEMA OFFICIAL

The SFO is appointed by the Director, FEMA, to coordinate overall Federal response during an Extraordinary Situation. The SFO is responsible for the effective coordination of the overall Federal response at the scene of the Extraordinary Situation. This includes directing the Emergency Response Team, establishing emergency response facilities, assessing on-scene telecommunication needs to meet Federal telecommunication requirements, coordinating with Federal, State, local, and volunteer agencies to ensure proper and timely response, and encouraging and assisting all Federal organizations responding to the Extraordinary Situation to employ their resources with maximum effectiveness. The SFO will provide the FEMA Regional Communications Manager with the requirements and priorities for establishing emergency telecommunications support.

3.6 DISASTER RECOVERY MANAGER

Upon the declaration of a Major Disaster or Emergency, the FEMA RD will appoint a DRM to administer/manage disaster relief and recovery programs authorized by P.L. 93-288, as amended. The expenditure of FEMA funds will be controlled, approved, and managed by the DRM.

3.7 FEMA REGIONAL COMMUNICATIONS MANAGER

The FRCM will provide telecommunications support to the FCO and the SFO. The FRCM will recommend the activation of an FECC when circumstances warrant. The FRCM will then serve on the Emergency Communications Staff. The FRCM will coordinate with the Emergency Support Team (EST) through the FEMA NNOC.

3.7.1 Predeployment Phase. The FRCM is responsible for:

- Planning for the provisioning of telecommunications support to the FCO, the SFO, and, if activated, the FECC for declared Emergencies, Major Disasters, and Extraordinary Situations
- Planning for the provisioning of telecommunications support to ERT activities in Extraordinary Situations utilizing primarily the fixed and mobile FEMA NEMS capabilities
- Supporting the NCSRM/GSA ZECF or RECF in developing the Regional Plan, with emphasis on State annexes.

3.7.2 Deployment Phase. The FRCM is responsible for:

- Ensuring that telecommunications support, as requested by the FCO or SFO, is provided in the affected area
- Coordinating deployment of National Emergency Management System (NEMS) assets
- Recommending the activation of an FECC to the FCO or SFO when circumstances warrant
- Reporting the status of FEMA mobile and/or transportable assets to the NNOC
- Preparing and forwarding status reports as required
- Recommending the services of a CRM to the FCO or SFO, if warranted.

3.7.3 Postdeployment Phase. The FRCM (if no FECC has been activated) is responsible for:

- Determining which portions of temporarily established disaster support telecommunications are no longer required
- Recommending to the FCO or SFO, as appropriate, the release of those telecommunication assets which are no longer required
- Taking the required steps to discontinue those services and effect the release of telecommunication personnel and assets that are no longer required, when approved by the FCO or SFO
- Monitoring the post deployment telecommunications situation

- Preparing an after-action report.

3.8 MANAGER, NCS

The Manager, NCS, will ensure the provision of adequate telecommunications support to Federal recovery operations. The Manager, NCS, through the NCC, will provide information and assistance to the JTRB as required.

3.8.1 Predeployment Phase. The Manager, NCS, is responsible for:

- Supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP
- Ensuring that all information regarding potential and/or actual emergency situations with significant telecommunication implications is brought to the attention of the Chairman, JTRB
- Coordinating response activities with FEMA, GSA, and other JTRB member organizations
- Supporting maintenance of this plan
- Reviewing all Regional Emergency Telecommunications Support Plans developed in support of this plan
- Providing advice and assistance to the NCSRM/GSA ZECs or RECs
- Monitoring the status of critical situations which have the potential of developing into Emergencies, Major Disasters, or Extraordinary Situations, and those that may require emergency telecommunications support
- Maintaining working relationships with the telecommunications industry at the national level through the joint industry-government NCC which is capable of assisting in the initiation, coordination, restoration, and reconstitution of NS/EP telecommunication services and facilities. Insofar as these relationships are concerned, they shall be in accordance with the requirements of law and the applicable rules of the Federal Communications Commission (FCC)
- Establishing within the NCC all necessary procedures for facilitating the collection and dissemination of information required to support the JTRB
- Having the capability to conduct periodic tests and exercises of this Plan on a regional basis in coordination with FEMA and GSA.

3.8.2 Deployment Phase. The Manager, NCS, is responsible for:

- Monitoring the recovery efforts and, as required, coordinating the provision of telecommunications needed by the Federal Government
- Appointing a CRM, if requested by the FCO or SFO, to assist the FECC in those instances where telecommunication service vendors are unable to satisfy all requirements, when there are conflicts between multiple FECCs, or when the allocation of available resources cannot be fully accomplished at the field level
- Coordinating, when requested by the FECC, with NCS member organizations to obtain additional telecommunication specialists to augment the Emergency Communications Staff
- Providing a 24-hour a day point of contact
- Supporting the JTRB as required.

3.8.3 Postdeployment Phase. The Manager, NCS, is responsible for:

- Monitoring progress in reconstitution of telecommunication services and facilities
- Monitoring the release and return of emergency telecommunication assets
- Reviewing reports and analyzing lessons learned for incorporation into policies and plans.

3.9 MANAGER, NATIONAL COORDINATING CENTER FOR TELECOMMUNICATIONS

The Manager, NCC, will monitor all Emergencies, Major Disasters, and Extraordinary Situations to determine that adequate NS/EP telecommunication services are being provided to support recovery operations. Further, the Manager will assess the impact upon existing Federal government NS/EP telecommunication services and, if necessary, coordinate the restoration and/or rerouting of such services with the appropriate service providers. The Manager will provide additional information on the situation to the JTRB as circumstances require. When required, the Manager, NCC will execute the functions and responsibilities of the CRM.

3.10 NCS COMMUNICATIONS RESOURCE MANAGER

The CRM will, when activated, function from the NCC or, when requested by the FCO or SFO, deploy to the scene of the Emergency, Major Disaster, or Extraordinary Situation. The primary role of the CRM will be one of coordination among service providers and standard Federal region personnel during concurrent regional emergencies.

3.10.1 Predeployment Phase. The NCS CRM has no specified roles or responsibilities during this phase.

3.10.2 Deployment Phase. The NCS CRM is responsible for:

- Coordinating with telecommunication service providers when they are unable to satisfy all telecommunication service requirements, when there are conflicts between multiple FECCs, or when the allocation of available resources cannot be fully accomplished at the field level
- Deploying to the field, upon the request of the FCO or SFO, to perform assigned responsibilities with the support of the FEMA NNOC and the NCS NCC
- Preparing a "decision" package for the Manager, NCS, if required.

3.10.3 Postdeployment Phase. The NCS CRM has no specified roles or responsibilities during this phase.

3.11 ADMINISTRATOR, GENERAL SERVICES ADMINISTRATION

The Administrator, GSA, will ensure that an NCSRM/GSA ZECP or RECP and FECC are identified for each of the ten standard Federal regions. The Administrator will authorize the NCSRM/GSA ZECP or RECP to accept guidance from the FEMA RD during the predeployment phase of a telecommunications emergency. National level guidance will be provided by the GSA Information Resources Management Service (IRMS) Emergency Communications Coordinator. The Administrator will authorize the NCSRM/GSA ZECP or RECP or designated alternates to perform the function of the FECC upon request by the FCO or SFO.

3.11.1 Predeployment Phase. The Administrator, GSA, is responsible for:

- Reviewing all GSA Regional Emergency Telecommunication Plans developed in support of this plan and coordinating such plans with the Manager, NCS
- Assigning an NCSRM/GSA ZECP or RECP in each of the standard Federal regions and providing guidance and assistance to them in the fulfillment of their assigned missions
- Supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP.

3.11.2 Deployment Phase. The Administrator, GSA, is responsible for:

- Appointing the FECC to function on the staff of the FCO or SFO and notifying the FCO or SFO of the appointment

- Providing one or more GSA representatives to augment the Emergency Communications Staff so that the FECC may perform assigned FCO or SFO staff actions
- Supporting the JTRB, as required
- Providing for a 24-hour a day point of contact.

3.11.3 Postdeployment Phase. The Administrator, GSA, is responsible for coordinating the phaseout of any emergency telecommunications support provided.

3.12 NATIONAL COMMUNICATIONS SYSTEM REGIONAL MANAGER/GENERAL SERVICES ADMINISTRATION ZONAL OR REGIONAL EMERGENCY COMMUNICATIONS PLANNER

The NCSRM/GSA ZECF or RECF will prepare and maintain a Regional Support Plan for each designated standard Federal region, coordinating plan development with counterpart NCSRM/GSA ZECFs or RECFs in contiguous regions. The NCSRM/GSA ZECF or RECF will supervise the training of potential FECCs within the assigned region.

3.12.1 Predeployment Phase. The NCSRM/GSA ZECF or RECF is responsible for:

- Maintaining liaison with telecommunication service providers within their respective regions
- Developing mutually acceptable working arrangements with the FEMA RD for the performance of assigned functions
- Providing staff telecommunications planning support to the FEMA RD relative to emergency and disaster preparedness functions
- Performing assigned duties under the staff supervision of the parent agency (GSA)
- Preparing and maintaining a Regional Emergency Communications Support Plan. This plan is subject to review by the Administrator, GSA, the Manager NCS, and approval by the Regional Administrator, GSA and the FEMA RD
- Establishing coordination channels with the NCSRM/GSA ZECFs or RECFs of adjoining regions to ensure proper coordination of telecommunication support requirements between and among standard Federal regions

- Establishing relationships and points of contact with other Federal regional elements, numbered Army emergency operation centers, telecommunication service providers, State and local government representatives, and other organizations having control over telecommunication resources within the regions
- Performing such other tasks related to emergency telecommunications support planning as may be required by the FEMA RD.

3.12.2 Deployment Phase. The NCSRM/GSA ZECP or RECP has no specified roles or responsibilities during this phase.

3.12.3 Postdeployment Phase. The NCSRM/GSA ZECP or RECP has no specified roles or responsibilities during this phase.

3.13 FEDERAL EMERGENCY COMMUNICATIONS COORDINATOR

When requested, the FECC will deploy to the scene of a Presidentially declared Emergency or Major Disaster, or an Extraordinary Situation to survey the status of telecommunications and to determine surviving capabilities and the extent of damage within the impacted area. The FECC will coordinate with other Federal organizations to determine their emergency telecommunication service requirements and will convene and chair the Emergency Communications Staff.

3.13.1 Predeployment Phase. The FECC has no specified roles or responsibilities during this phase.

3.13.2 Deployment Phase. The FECC is responsible for:

- Surveying and reporting to the NCC and NNOC the status of telecommunications to determine the surviving capabilities within the area of the disaster, emergency, or extraordinary situation
- Determining, in coordination with the FCO/DRM or the SFO, and other Federal organizations, the emergency telecommunications required to efficiently control and conduct the recovery operations
- Identifying the NSEP telecommunication service requirements that need to be provided or restored, and using Telecommunications Service Priority (TSP) System rules and procedures as needed for emergency and essential services
- Coordinating with the FEMA RD and staff, if a separate office is established, to determine telecommunication requirements needed to support that function
- Serving as the Chief of the Emergency Communications Staff

- Consulting with telecommunication industry representatives and advising the FCO or SFO on the supportability, from a telecommunications standpoint, of locations being considered for DFOs and DACs
- Ensuring the prompt establishment of telecommunications in the disaster area in accordance with the priorities established by the FCO or SFO, consistent with the provisions of the TSP System rules and regulations
- Serving as the sole central telecommunications coordinating point to receive and process requests for emergency telecommunication services from all Federal and major private relief organizations involved with recovery operations. Actions shall be taken on such requests in accordance with priorities established by the FCO or SFO, consistent with applicable laws and regulations
- Requesting assistance from the Administrator, GSA, the Manager, NCS, points of contact for other NCS member organization regional elements, the NCC, and the telecommunications service providers, as necessary, to satisfy requirements
- Coordinating the installation of all Federal Government telecommunication services area of the disaster, emergency, or extraordinary situation
- Requesting deployment of Department of Defense (DoD) controlled resources, through the Disaster Control Officer (DCO) on site or through the cognizant CONUS Army emergency operations center. Specify whether operators, maintenance personnel, or technicians are required to be deployed with any requested equipment
- Maintaining constant surveillance of the operational status of telecommunications within the area
- Establishing control procedures for reissuance of any mobile or portable equipment brought into the area
- Preparing and forwarding periodic telecommunications status reports to the GSA Emergency Operation Facility (EOF).

3.13.3 Postdeployment Phase. The FECC (if activated) is responsible for:

- Determining which portions of temporarily established support telecommunications are no longer required
- Recommending to the FCO or SFO the release of those telecommunication assets which are no longer required

- Taking necessary steps to discontinue those services and effect the release of personnel and assets that are no longer required, when directed by the FCO or SFO
- Continuing to monitor the postdeployment telecommunications situation
- Preparing an after-action report.

3.14 NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

The National Telecommunications and Information Administration (NTIA) will provide policy and procedural guidance concerning the control and allocation of radio frequency assignments in those parts of the electromagnetic spectrum assigned to the Federal Government. The NTIA shall amend, modify, or revoke such assignments as necessary and will develop plans and procedures for spectrum priorities, including a system for radio spectrum management. NTIA will also assist the Director of the OSTP in the implementation of these plans and procedures in non-wartime emergencies, including the resolution of any conflicts in or among such priorities. The NTIA will maintain and publish the NTIA Emergency Readiness Plan for Use of the Radio Spectrum. The NTIA will support the JTRB as required.

3.15 FEDERAL COMMUNICATIONS COMMISSION

The FCC has the responsibility for reviewing the policies, plans, and procedures that are developed by all entities licensed or regulated by the Commission to provide national security and emergency preparedness telecommunication services, in order to ensure that such policies, plans and procedures are consistent with the public interest, convenience, and necessity. The FCC shall perform such functions as required by law with respect to all entities licensed or regulated by the Commission, including (but not limited to) the extension, discontinuance, or reduction of common carrier facilities or services; the control of common carrier rates, charges, practices, and classifications; the construction authorization, activation, deactivation, or closing of radio stations, services, and facilities; the assignment of radio frequencies to Commission licensees; the investigation of violations of pertinent law and regulation; and the initiation of appropriate enforcement actions. The FCC will support the JTRB as required.

3.16 SECRETARY OF DEFENSE

The Secretary of Defense shall provide assistance in civil emergencies in accordance with national policies, consistent with defense priorities as set forth in DoD Directive 3025.1. The Secretary of Defense has designated the Secretary of the Army as the DoD Executive Agent for DoD support to civil emergencies.

3.16.1 Predeployment Phase. The Secretary of Defense is responsible for supporting the JTRB in accordance with Standard Operating Procedures issued by the Director, OSTP.

3.16.2 Deployment Phase. The Secretary of Defense, through the Secretary of the Army (Directorate of Military Support), is responsible for:

- Ensuring the deployment of resources as requested by the FECC acting on behalf of the FCO, in accordance with the provisions of DoD Directive 3025.1
- Ensuring deployed military personnel respond to the guidance of the FECC on the use of DoD assets committed to the affected area
- Ensuring the provision of minimum and critical telecommunications support at, or in the vicinity of, a disaster area pending the availability of normal telecommunication capabilities. Note: DoD telecommunications support rendered will supplement other resources or temporarily substitute for other support until such other support is available. DoD support is not rendered in lieu of other support
- Support the JTRB, as required.

3.16.3 Postdeployment Phase. The Secretary of Defense has no specified roles and responsibilities during this phase.

3.17 OTHER FEDERAL ORGANIZATIONS

Other Federal organizations will support the Federal response and recovery effort when requested by the FCO. The Federal organizations will provide an organizational representative to the Emergency Communications Staff when requested by the FECC.

3.17.1 Predeployment Phase. Other Federal organizations have no specified roles or responsibilities during this phase.

3.17.2 Deployment Phase. Other Federal organizations are responsible for:

- Supporting the Federal disaster recovery effort to the maximum extent possible with personnel and resources as the situation dictates, if the FCO or SFO requests their assistance
- Notifying the FECC when telecommunications support (other than that provided by the FECC) is supplied to a representative of the organization at an operational location. Notification will be made by the organization's senior representative on site as soon as the type, quantity, and nature of the support are known
- Using their organization's resources to meet their mission requirements before requesting the FECC to obtain emergency telecommunications support

- Notifying the FECC promptly of all telecommunication requirements and available assets. This will eliminate the possibility of service duplications and ensure prompt provision of needed services and facilities to the proper user
- Notifying the FECC promptly when their telecommunication resources are to be withdrawn or discontinued
- Notifying the FECC when telecommunication resources provided by the FECC are no longer required.

3.17.3 Postdeployment Phase. Other Federal organizations have no specified roles or responsibilities during this phase.

3.18 TELECOMMUNICATIONS INDUSTRY

The telecommunications industry in coordination with the NCS and NCC has developed emergency procedures and policies to assist the rapid restoration of existing telecommunication services and the initiation of new services. Some have 24-hour per day network operations centers or use pre-established Emergency Operations Centers to respond to major telecommunication outages. For the purpose of this plan, a contact list will be distributed separately through GSA, IRMS channels, for use by Government representatives required to contact the commercial service providers involved in responding to Emergencies, Major Disasters, and Extraordinary Situations.

3.19 AMATEUR RADIO

Amateur Radio operators and their networks/systems provide emergency public service communications during Emergencies and Major Disasters. The American Radio Relay League (ARRL) sponsors the combined facilities of the Amateur Radio Emergency Services (ARES) and the National Traffic System (NTS). The Radio Amateur Civil Emergency Services (RACES) and the Military Affiliate Radio System (MARS) also support emergency operations. Other licensed amateur activities and Personal Radio Service (PRS) groups also provide public communications during Emergencies and Major Disasters. Members of the Radio Emergency Associated Communication Teams (REACT) perform similar services utilizing Citizen Band radio equipment.

ANNEX A

REPORT FORMATS

1. GENERAL - Telecommunication status reports are necessary to keep all involved organizations informed of the activities and status of telecommunications support being provided to the FCO or SFO. These reports are to be prepared and submitted as indicated herein. Reports will be reviewed by the OMNCS, Emergency Preparedness staff and used as a basis for telecommunication summaries to the Manager, NCS and the Chairman, JTRB.

A. Reports by the FECC will be submitted by telephone or sent by facsimile to the GSA Emergency Operating Facility (EOF). The GSA EOF is responsible for proper format and further dissemination to the Manager NCS, GSA, FEMA and FCC.

B. Reports by the FRCM will be submitted in accordance with the above paragraph and the instructions contained in Chapter 7, FEMA Manual 8720.1, July 31, 1985.

2. TYPES OF REPORTS

A. INITIAL REPORT - This report concerns the initial assessment made by the FECC or FRCM after deployment, and is to be submitted as soon as possible. This report will be considered report number one (1). The following information should be included in the initial report.

(1) Name of Major Disaster or Emergency (declaration number), or Extraordinary Situation, and date declared

(2) Major city and geographical area(s) affected by the Major Disaster, Emergency, or Extraordinary Situation

(3) A summary of the extent of damage to existing telecommunications

(4) Contact on the scene (name and organization of individuals)

(5) Telecommunications service provider(s) on the scene (name and organization of individuals)

(6) Estimate of the telecommunications, by type, required to support the relief/recovery operations

(7) Assistance required from outside of the immediate area

(8) Miscellaneous

B. RECURRING STATUS REPORT - These reports concern the operational status of telecommunications and will be submitted periodically by the FECC or FRCM. They are a summary of the day-to-day events and are recommended for daily submissions. However, such daily submissions should not be at the expense of operational commitments. These reports shall be consecutively numbered beginning with two (2). The following information should be included in recurring status reports.

(1) Name of Major Disaster or Emergency (declaration number) or Extraordinary Situation and date declared

(2) Location

(3) Date of report

(4) Report Number

(5) Changes in telecommunication support requirements since the previous report

(6) Additional assistance required

(7) Problem area(s)

C. AFTER-ACTION REPORT - This report will be made within thirty days following the redeployment of the FECC or FRCM. After-Action reports should follow the following format:

SECTION 1.0 - General

This section should state the name of the Emergency or Major Disaster and provide the Declaration Number or Extraordinary Situation designation. It should provide the inclusive dates (beginning and termination) of telecommunication support operations.

SECTION 2.0 - Background

This section will be historical in nature and will contain a narrative of important activities beginning with the events precipitating the telecommunications involvement and including a detailed summary of the scope and impact of the particular emergency or disaster.

SECTION 3.0 - Significant Telecommunication Support Activities

This section will identify personnel involved and describe the type of supporting telecommunications provided FEMA and other Federal and State organizations. Problems encountered, actions taken, and the response by other organizations and the

U.S. telecommunications industry in providing support should be highlighted. This part may be expanded as necessary.

SECTION 4.0 - Discussion

This section should discuss all major problems encountered in providing telecommunications support, as well as lessons learned, to include recommendations.

3. DISTRIBUTION OF REPORTS.

TO: Associate Director
State and Local Programs and Support Directorate
Federal Emergency Management Agency
Washington, D.C. 20472-2199

INFO: Manager, NCS (NCS-NE-O), 701 South Courthouse Road,
Arlington, VA 22204
GSA, IRMS, NSEP Division, Washington, D.C. 20405
FEMA, NNOC, P.O. Box 129, Berryville, VA 22611
FCC, Managing Director, 1919 M St NW,
Washington, D.C. 20554

ANNEX B

ACRONYM LIST

ARES	Amateur Radio Emergency Services
ARRL	Amateur Radio Relay League
CFR	Code of Federal Regulations
CRM	Communications Resource Manager
DAC	Disaster Application Center
DCO	Disaster Control Officer
DFO	Disaster Field Office
DISA	Defense Information Systems Agency
DoD	Department of Defense
DRM	Disaster Recovery Manager
ECS	Emergency Communications Staff
EICC	Emergency Information and Coordination Center
E.O.	Executive Order
EOC	Emergency Operation Center
EOF	Emergency Operations Facility
ERT	Emergency Response Team
EST	Emergency Support Team
FCC	Federal Communications Commission
FCO	Federal Coordinating Officer
FECC	Federal Emergency Communications Coordinator

FEMA	Federal Emergency Management Agency
FORSCOM	U.S. Forces Command
FRCM	FEMA Regional Communications Manager
FRERP	Federal Radiological Emergency Response Plan
GSA	General Services Administration
IEMS	Integrated Emergency Management System
IRMS	Information Resources Management Service
JTRB	Joint Telecommunications Resources Board
MACAP	Military Assistance to Civil Authority Plan
MARS	Military Affiliate Radio System
MOU	Memorandum of Understanding
NCC	National Coordinating Center for Telecommunications
NCS	National Communications System
NCSRM/GSA ZECP or RECP	National Communications System Regional Manager/General Services Administration Zonal or Regional Emergency Communications Planner
NEMS	National Emergency Management System
NMOC	Network Management Operations Center
NNOC	National Network Operations Center
NSEC	National System for Emergency Coordination
NS/EP	National Security and Emergency Preparedness
NTIA	National Telecommunications and Information Administration
OC	Operations Center

OMNCS	Office of the Manager, NCS
OSTP	Office of Science and Technology Policy
P.L.	Public Law
PRS	Personal Radio Services
RACES	Radio Amateur Civil Emergency Service
RD	Regional Director
REACT	Radio Emergency Associated Communications Teams
RECP	Regional Emergency Communications Planner
RM	Regional Manager
SCO	State Coordinating Official
SFO	Senior FEMA Official
TSP	Telecommunications Service Priority
ZECP	Zonal Emergency Communications Planner

ANNEX C

DEFINITIONS

The definitions used herein are intended solely for use within the context of this plan to provide a common understanding by all recipients and users. These definitions do not necessarily apply to general usage, although some are published in the Code of Federal Regulations (CFR), implementing the Disaster Relief Act of 1988 (44 CFR Part 205).

1. AMATEUR RADIO COMMUNICATIONS - Noncommercial radio communication by or among amateur radio stations solely with a personal aim and without pecuniary or business interest.
2. COMMERCIAL SERVICE PROVIDER - Any person or firm engaged as a carrier for hire, in interstate, intrastate, or foreign communications by wire or radio.
3. COMMUNICATIONS EMERGENCY - A condition which results or threatens to result in extensive damage to, or degradation of, vital telecommunication services, systems and/or facilities in a disaster or Extraordinary Situation area; and/or one which creates an unusual Federal demand for telecommunication services which cannot be satisfied without extraordinary management action. This condition includes those situations where telecommunication requirements exceed the capabilities existing prior to an emergency as well as the capabilities remaining after the emergency occurs.
4. COMMUNICATIONS RESOURCE MANAGER - That person appointed by the Manager, NCS, to assist in resolving claims for telecommunication resources where telecommunication service providers are unable to satisfy all telecommunication service requirements, when there are conflicts among multiple Federal Emergency Communications Coordinators, or when the allocation of available resources cannot be fully accomplished at the field level.
5. DISASTER AREA - The area designated by FEMA, as a result of a Presidential declaration of an Emergency or a Major Disaster. Prior to a declaration, the FEMA Regional Director may identify a disaster area for the purpose of mobilizing emergency telecommunication resources in anticipation of a Presidential declaration of an Emergency or Major Disaster.
6. DISASTER APPLICATIONS CENTER - The temporary center or centers established in the disaster area at a location convenient to the affected population to provide a single place at which individuals may receive information on, and apply for, available assistance.
7. DISASTER CONTROL OFFICER - That DoD military representative appointed as the single point of contact for the Federal Coordinating Officer (FCO) during each declared emergency or disaster.
8. DISASTER FIELD OFFICE - The temporary office established in the disaster area, as close

as possible to available communications, from which the FCO and FEMA RD/DRM and staff administer the disaster relief program as defined in Public Law 93-288, as amended.

9. DISASTER RECOVERY MANAGER - That person appointed to exercise the authority of the FEMA Regional Director for a particular Emergency or Major Disaster.

10. EMERGENCY - As defined by P.L. 93-288, as amended, "Emergency" means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives; to protect property, public health, and safety; or to lessen or avert the threat of a catastrophe in any part of the United States.

11. EMERGENCY COMMUNICATIONS STAFF - Those regional telecommunications specialists of NCS member organizations plus representatives of the telecommunications industry, when required, who assist the Federal Emergency Communications Coordinator in carrying out assigned functions. This Emergency Communications Staff meets the criteria of the National System for Emergency Coordination as a regional telecommunications functional group.

12. EMERGENCY RESPONSE TEAM - The FEMA group composed of a headquarters element and a regional element, that is deployed to the scene of an Extraordinary Situation to coordinate the overall Federal response for which FEMA has been assigned responsibility.

13. EMERGENCY SUPPORT TEAM (EST):

a. For a Declared Major Disaster, Emergency Support Teams (ESTs) may be appointed by the President and deployed to a Major Disaster area to assist the FCO in carrying out responsibilities pursuant to Section 303, PL 100-707. Such ESTs will be composed of personnel detailed from Federal organizations as directed by the President.

b. For an Extraordinary Situation, an EST is a FEMA Headquarters group that coordinates program and administrative support for the FEMA Director and the SFO during the response and recovery phases of an Extraordinary Situation.

14. EXTRAORDINARY SITUATIONS - Any situation which, in the judgment of the FEMA Director, has unique national significance and requires coordination of the Federal presence. The term includes a radiological incident or disaster, catastrophic hazardous material situation, catastrophic manmade emergency, a major civil disturbance having national significance, and response to an incident associated with a special event such as a political, sports, or entertainment extravaganza.

15. FEDERAL COORDINATING OFFICER - That person appointed by the President to coordinate Federal disaster relief efforts with the disaster assistance activities of State and local governments and volunteer organizations.

16. FEDERAL EMERGENCY COMMUNICATIONS COORDINATOR - That person, assigned by the General Services Administration, who functions as the principal Federal manager for emergency telecommunication requirements in Major Disasters, Emergencies, and Extraordinary Situations, when requested by the FCO or SFO.
17. FEMA NATIONAL NETWORK OPERATIONS CENTER - The central point from which FEMA's National Emergency Management System can be directed, controlled, and restored in support of day-to-day and emergency requirements.
18. FEMA REGIONAL COMMUNICATIONS MANAGER - That person assigned by the Federal Emergency Management Agency to manage FEMA's telecommunication assets and to serve as a member of the Emergency Communications Staff.
19. JOINT TELECOMMUNICATIONS RESOURCES BOARD - That organization established to assist the Director of the Office of Science and Technology Policy in the exercise of assigned non-wartime emergency telecommunication management functions.
20. MAJOR DISASTER - As defined by P.L. 93-288, as amended, "Major Disaster" means any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under P.L. 93-288, as amended, to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.
21. NATIONAL COMMUNICATIONS SYSTEM - That organization established by Executive Order 12472 to assist the President, National Security Council, Director of the Office of Science and Technology Policy, and Director of the Office of Management and Budget in: (1) the exercise of their wartime and non-wartime emergency telecommunication functions, and (2) the coordination of the planning for and provision of national security emergency preparedness telecommunications for the Federal government under all circumstances, including crisis or emergency, attack, recovery, and reconstitution.
22. NATIONAL COORDINATING CENTER FOR TELECOMMUNICATIONS - A joint telecommunications industry-Federal government operation established to assist in the initiation, coordination, restoration, and reconstitution of national security and emergency preparedness telecommunication services and facilities.
23. NATIONAL SECURITY AND EMERGENCY PREPAREDNESS TELECOMMUNICATIONS - National Security and Emergency Preparedness telecommunication services are those which are used to maintain a state of readiness or to respond to and manage any event or crisis (local, national or international), which causes or could cause injury or harm to the population, damage to or loss of property, or degrade or

threaten the national security and emergency preparedness posture of the United States.

24. NATIONAL SYSTEM FOR EMERGENCY COORDINATION - A White House Memorandum, dated January 19, 1988, establishes Presidential approval of a system to provide timely, effective, and coordinated assistance to State and local governments in extreme catastrophic technological, natural, or other domestic emergencies of national significance. When the NSEC is activated, the Federal Government's response to major domestic crises will be consistent with current emergency plans, including this National Plan, and will use existing domestic and national security crisis information and management systems.

25. NETWORK MANAGEMENT OPERATIONS CENTER - The DISA 24-hour operations center that provides a point of contact for the NCS and NCC during non-duty hours.

26. NCS REGIONAL MANAGER/GSA ZONAL OR REGIONAL EMERGENCY COMMUNICATIONS PLANNER - That person, assigned by the GSA, to provide Federal regional planning for emergencies covered by this plan and other national telecommunication response plans.

27. SENIOR FEMA OFFICIAL - The senior staff person appointed by the Director, FEMA to coordinate the overall Federal response at the scene of an Extraordinary Situation.

28. TELECOMMUNICATIONS FUNCTIONAL GROUP - A Telecommunications Functional Group is one of the interagency functional groups which could be activated under the NSEC.

29. TELECOMMUNICATIONS SERVICE PRIORITY SYSTEM - The NSEP TSP System is the regulatory, administrative, and operational system authorizing and providing for priority treatment (i.e., provisioning and restoration) of NSEP Telecommunication services. As such, it establishes the framework for NSEP telecommunication service vendors to provision, restore, or otherwise act on a priority basis to ensure effective NSEP telecommunication services.

30. UNITED STATES - The fifty States, District of Columbia, Puerto Rico, Virgin Islands, Guam, American Samoa, Palau, the Marshall Islands, Federated States of Micronesia, and the Northern Mariana Islands. "State" means any of the foregoing individually.

USAISC

Lieutenant General Alonzo E. Short, Jr.

Commanding General
US Army Information Systems Command
Fort Huachuca, Arizona

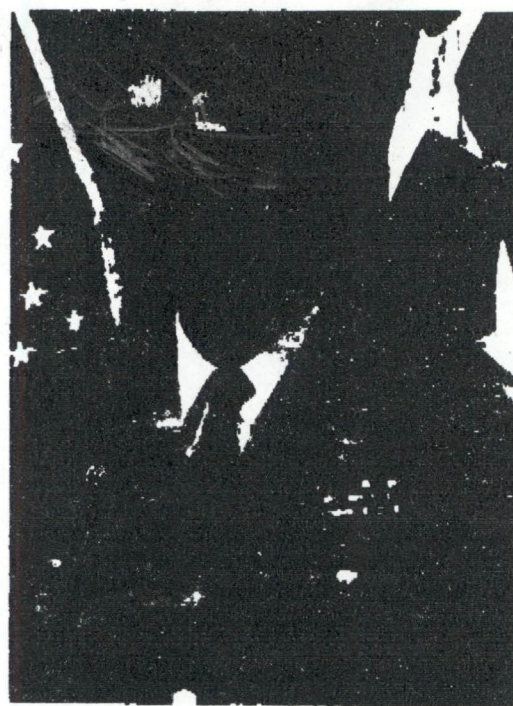
Lieutenant General Alonzo E. Short, Jr., is the commanding general of the Army's worldwide Information Systems Command (ISC), headquartered at Fort Huachuca, Arizona.

General Short, ISC's former deputy Commanding General, assumed his current position in June of 1990—winning his promotion to lieutenant general at the same time.

Born in Greenville, North Carolina, on 27 January 1939, General Short holds a bachelor of science degree in education from Virginia State College and a masters degree in business management from the New York Institute of Technology, Long Island, New York. His military education includes completion of the Signal School Officer Basic and Advanced Courses, the Armed Forces Staff College, the Communications-Electronics Systems Engineer Course, and the United States Army War College.

Since entering the Army in June of 1962, General Short has held a variety of assignments with progressively increasing responsibility throughout his career. He was a platoon leader and staff officer at Fort Riley, Kansas. From 1966 to 1967, he had assignments as a staff officer, company commander and an executive officer of a signal battalion in Europe. In 1967, the general was assigned as a staff planning and engineering officer in the Republic of Vietnam, followed by assignment to Okinawa first as battalion S-3, then executive officer and finally battalion commander in the Strategic Communications Command-Okinawa Signal Group. He also served a second tour in Vietnam in 1972-73 as an advisor.

In 1975, General Short was assigned as a staff officer in the Defense Communications Agency. Following that assignment, General Short was a battalion commander in the 101st Airborne (Air Assault) Division at Fort Campbell, Kentucky.



In 1979, he began a tour as a staff planner with the Army Communications Command at Fort Huachuca. He then served as commander of the 3d Signal Brigade at Fort Hood, Texas.

The general was then assigned as the deputy commander of the Army Electronics Research and Development Command (ERADCOM), Adelphi, Maryland, from July 1984 to October 1984.

General Short was promoted to brigadier general concurrent with assuming command of the Information Systems Management Activity (ISMA) while at the same time taking over as Program Manager for Army Information Systems, all at Fort Monmouth, New Jersey. In July of 1988, he became deputy commander of the Information Systems Engineering Command (ISEC), and became commander in September, 1987.

General Short was promoted to major general when he became ISC deputy commander on 7 September 1988.

His awards and decorations include: the Legion of Merit; two awards of the Bronze Star Medal; Meritorious Service Medal with two oak leaf clusters; National Defense Service Medal; the Republic of Vietnam Ground Combat Medal; and the Parachutist and Air Assault Badges.

General Short and his wife, the former Rosalind Reid of Orange, New Jersey, have one son, Stanley, and one daughter, Daniela.



RESUME OF SERVICE CAREER

of

ALONZO EARL SHORT, JR., Lieutenant General

DATE AND PLACE OF BIRTH 27 January 1939, Greenville, North CarolinaYEARS OF ACTIVE COMMISSIONED SERVICE Over 28PRESENT ASSIGNMENT Commanding General, United States Army Information Systems Command, Fort Huachuca, Arizona 85613-5000, since July 1990MILITARY SCHOOLS ATTENDEDThe Signal School, Basic and Advanced Courses
Armed Forces Staff College
United States Army War CollegeEDUCATIONAL DEGREESVirginia State College - BS Degree - Industrial Arts
New York Institute of Technology - MBA Degree - Business AdministrationFOREIGN LANGUAGE(S) None recordedMAJOR DUTY ASSIGNMENTS

<u>FROM</u>	<u>TO</u>	<u>ASSIGNMENT</u>
Jun 62	Oct 62	Student, Signal Officer Orientation Course, United States Army Signal School, Fort Gordon, Georgia
Dec 62	Apr 64	Platoon Leader, Company B, later Company A, 121st Signal Battalion, 1st Infantry Division, Fort Riley, Kansas
Apr 64	Nov 64	Motor Officer, later Assistant Adjutant, Headquarters and Headquarters Detachment, 121st Signal Battalion, 1st Infantry Division, Fort Riley, Kansas
Dec 64	Apr 65	Division Telephone and Teletype Officer, 121st Signal Battalion, 1st Infantry Division, Fort Riley, Kansas
Apr 65	Feb 66	Commander, Headquarters Detachment, 102d Signal Battalion, United States Army Europe
Feb 66	Sep 66	Commander, 510th Signal Company, 22d Signal Group, United States Army Europe
Sep 66	Sep 67	S-4, later Executive Officer, 102d Signal Battalion, United States Army Europe
Sep 67	Nov 68	Telephone Officer, later Engineer Officer, 160th Signal Group, United States Army Strategic Communications Command, Vietnam
Nov 68	Oct 69	Student, Signal Officer Advanced Course, United States Army Signal Center and School, Fort Monmouth, New Jersey
Nov 69	Nov 70	Executive Officer, United States Army Strategic Communications Command Long Lines Battalion, Okinawa
Jan 71	Jan 72	Commander, United States Army Strategic Communications Command Operations Battalion, Okinawa
Jan 72	Mar 73	Deputy G-6 Advisor, First Regional Assistance Command, United States Military Assistance Command, Vietnam
May 73	Jan 74	Student, Armed Forces Staff College, Norfolk, Virginia

ALONZO EARL SHORT, JR., Lieutenant General

MAJOR DUTY ASSIGNMENTS

<u>FROM</u>	<u>TO</u>	<u>ASSIGNMENT</u>
Jan 74	Jun 74	Academic Plans Officer, Armed Forces Staff College, Norfolk, Virginia
Jun 74	Jul 75	Student, Systems Engineering, Fort Monmouth, New Jersey
Jul 75	Nov 75	Student, New York Institute of Technology, Old Westbury, New York
Nov 75	Apr 76	Deputy Program Manager, Secure Voice Division, Defense Communications Agency, Washington, DC
Apr 76	Feb 78	Commander, 501st Signal Battalion, 101st Airborne Division (Air Assault), Fort Campbell, Kentucky
Feb 78	Jun 78	Special Assistant to the Chief of Staff for Reforger Operations Planning, 101st Airborne Division (Air Assault), Fort Campbell, Kentucky
Jun 78	Jun 79	Student, United States Army War College, Carlisle Barracks, Pennsylvania
Jun 79	May 81	Chief, Plans Branch, Operations Division, later Chief, Plans and Requirements Branch, Plans Division, Office of the Deputy Chief of Staff for Operations and Plans, United States Army Communications Command, Fort Huachuca, Arizona
Jun 81	May 82	Assistant Corps Communications and Electronics Officer, III Corps and Fort Hood, Fort Hood, Texas
May 82	May 84	Commander, 3d Signal Brigade, Fort Hood, Texas
Jul 84	Sep 84	Chief of Staff, 7th Signal Command, Fort Ritchie, Maryland
Sep 84	Oct 86	Commander, United States Army Information Systems Management Agency/United States Army Electronics Systems Engineering Installation Activity/Project Manager, Defense Communications Systems, Army, Fort Monmouth, New Jersey
Oct 86	Oct 87	Deputy Commanding General/Deputy Program Manager, Army Information Systems, United States Army Information Systems Engineering Command, Fort Belvoir, Virginia
Oct 87	Sep 88	Commanding General United States Army Information Systems Engineering Command/Program Manager, Army Information Systems, Fort Huachuca, Arizona
Sep 88	Jun 90	Deputy Commanding General, United States Army Information Systems Command, Fort Huachuca, Arizona

PROMOTIONS

DATES OF APPOINTMENT

	<u>Temporary</u>	<u>Permanent</u>
2LT		28 May 62
1LT	28 Nov 63	28 May 65
CPT	8 Oct 65	28 May 69
MAJ	27 Nov 66	28 May 76
LTC	1 Jul 76	
COL	1 Aug 81	15 Mar 82
EG		1 Jun 86
MG		1 Aug 89
LTC	1 Jul 90	

ALONZO EARL SHORT, JR., Lieutenant General

SOURCE OF COMMISSION ROTC

US DECORATIONS AND BADGES

Legion of Merit

Bronze Star Medal (with Oak Leaf Cluster)

Meritorious Service Medal (with Oak Leaf Cluster)

Parachutist Badge

Air Assault Badge

SUMMARY OF JOINT DUTY ASSIGNMENTS

<u>Assignment</u>	<u>Dates</u>	<u>Rank</u>
Deputy G-6 Advisor, First Regional Assistance Command, United States Military Assistance Command, Vietnam	Jan 72-Mar 73	Major
Academic Plans Officer, Armed Forces Staff College, Norfolk, Virginia	Jan 74-Jun 74	Major
Deputy Program Manager, Secure Voice Division, Defense Communications Agency, Washington, DC	Nov 75-Apr 76	Major

Joint Telecommunications Resources Board - August 12, 1991

Chairman:

The Honorable D. Allan Bromley (Dr.)
Director
Office of Science and Technology Policy

The Honorable Duane P. Andrews
Assistant Secretary of Defense (Command, Control, Communications
and Intelligence)

The Honorable Janice Obuchowski (Ms.)
Assistant Secretary of Commerce (Communications and Information)
and Administrator, National Telecommunications and Information
Administration

Andrew C. Barrett
Defense Commissioner
Federal Communications Commission

Thomas G. Buckholtz
Commissioner
Information Resources Management Service
General Services Administration

LTG Alonzo E. Short, Jr., USA
Manager
National Communications System

Bruce J. Campbell
Assistant Associate Director for Information Resources Management
Federal Emergency Management Agency

Joint Telecommunications Resources Board Meeting
Room 208, Old Executive Office Building
Monday, August 12, 1991
3 P.M.

Seating Arrangement

Screen

John Osterholz
OEO

Ben Morriss
NCS

LTG Al Short
NCS

Tom Buckholts²
GSA

Duane Andrews
OSD

John O'Neil
OSTP

Bill Belford
NCS

Pat Linhares
NSC

Bruce Campbell
FEMA

Janice Obuchowski
DoC

Alan McKie
FCC

Michelle Van Cleave
OSTP

Dr. Bromley
OSTP
Chairman