Department of Defense Directive

SUBJECT Concept of Operations of the World-Wide Military Command and Control System (U)

I. PURPOSE

This directive promulgates the attached "Concept of Operations of the World-Wide Military Command and Control System" for the information and guidance of all components of the Department of Defense.

II. RESPONSIBILITIES

A. All Department of Defense components will be governed by the provisions of the Concept in carrying out assignments in support of the establishment and operation of the World-Wide Military Command and Control System.

B. The Joint Chiefs of Staff will periodically review and recommend appropriate amendment to the Concept as experience is gained and as technological developments take place.

III. EFFECTIVE DATE

This directive is effective upon publication.

Inclosure - 1
Concept of Operations of the World-Wide Military Command and Control System

Upon Removal of attachment this document becomes Unclassified.
CONCEPT OF OPERATIONS OF THE WORLD-WIDE MILITARY COMMAND AND CONTROL SYSTEM

PART I

INTRODUCTION

1. General.

Outlined herein is the Concept of Operations of the World-Wide Military Command and Control System.

2. Purpose.

To define the functional, organizational, and operational relationships between all elements of the World-Wide Military Command and Control System (WWMCCS), and to provide expanded policy guidance for the operation and development of the System.


The WWMCCS provides National Command Authorities with the information on world situations needed for accurate and timely decisions, to include the communications required for reliable transmission of those decisions with a minimum of delay under all conditions of peace and war for the national direction of U.S. military forces.

4. Composition.

The WWMCCS consists of the facilities, equipment, communications, procedures, and personnel that provide the technical and operational support involved in the function of command and control of U.S. military forces. The System is comprised of:

a. The National Military Command System (NMCS). The NMCS consists of the facilities, equipment, doctrine, procedures, and
communications provided specifically for use by the National Command Authorities which include the President, Secretary of Defense, the Joint Chiefs of Staff, and their authorized successors and alternates in providing national strategic direction of the Armed Forces of the United States. The national complex provides for the strategic direction of operations conducted by the Commanders of the Unified and Specified Commands, and interfaces with the sub-systems of the Unified and Specified Commands and the Service Headquarters and other associated and supporting systems. The NMCS includes:

1. The National Military Command Center (NMCC). (See Part II, paragraph 7.a.)

2. The Alternate National Military Command Center (ANMCC). (See Part II, paragraph 7.b.(2))

3. The National Emergency Command Post Afloat (NECPA). (See Part II, paragraph 7.b.(3))

4. The National Emergency Airborne Command Post (NEACP). (See Part II, paragraph 7.b.(4))

5. Such other alternates to the NMCC as may be established.

6. Survivable communications among the foregoing command facilities, and to the Unified and Specified Commands, and the Service Headquarters sub-systems. In addition to supporting the purely military command activities just described, the communications element of the NMCS will be recognized and designed to be the basis for a unified survivable national communications system. This national system must satisfy the emergency communications needs of the President and other national leaders and must fulfill diplomatic and intelligence communications requirements under emergency conditions including but not limited to nuclear attack.

b. The sub-systems of the Commanders of Unified and Specified Commands.
c. The sub-systems of the Service Headquarters.

d. The sub-systems of the Commanders of Component Commands.

e. Those elements of the sub-systems of other Department of Defense agencies and offices, which directly support the command and control function, e.g., DASA/DODDAC, DIA, DCA.

5. Characteristics.

The characteristics set forth herein are intended as broad guidelines for the development of all facets and elements of the WWMCCS.

a. Evolutionary - Although most of the essential elements of the world-wide system exist now in one form or another, much improvement is necessary to integrate these elements into an effective overall system. As the users of the system gain experience, established requirements for the effective exercise of command may change or disappear while new ones emerge and crystallize. It is essential, therefore, that the world-wide system and all elements thereof be developed along evolutionary lines, exploiting technological advances as they appear and utilizing experience gained to guide future development and meet changing requirements.

b. Survivable - A high degree of assurance of survival of a national command and control capability is required. The provision of such assurance, in view of the wide latitude of situations to be covered, which vary from peace to general war which might start after long-term tensions or with no warning, dictates that combinations of hardening, multiplicity, and mobility must be employed in developing the facilities and communications required to support the National Command Authorities in establishing a non-interruptable command capability.

c. Flexible - Flexibility of design is essential to provide National Command Authority with alternative modes of operation for the execution of the command function and to permit the system to adapt to future changes in requirements for functional capabilities without costly major redesign.
d. **Compatible** - The NMCS is the primary element of the WWMCCS; other supporting or associated systems shall be compatible with it to the degree necessary to assure effective responsiveness to the needs of the President, Secretary of Defense, and Joint Chiefs of Staff.

e. **Standardized** - The system must be standardized to the degree necessary for rapid interchange of information. Each sub-system, and the elements within the sub-systems should follow a logical functional process of handling information, which commences with receipt, storage, grading, and indexing of information on our own and enemy forces, net capabilities, positions and movement of forces, surveillance data, and processed intelligence. Uniform terminology and standardized data formats will be used to the maximum extent practicable to facilitate the rapid transmission and handling of information in the system.

f. **Economical** - The system should be economical. The application of automation to command and control staff functions shall be based on their importance to accomplishment of the mission, and the inability of manual procedures and methods to meet command requirements.

PART II

CONCEPT OF OPERATIONS


The WWMCCS will provide the means by which the President and the Secretary of Defense can apply the resources of the Military Departments and, through the Joint Chiefs of Staff, exercise strategic and broad operational direction of the Unified and Specified Commanders. The WWMCCS is basically designed to operate in the normal chain-of-command manner wherein the commanders of Unified and Specified Commands are provided only broad, strategic direction for application of military forces.
However, in consideration of the many ramifications introduced by the variety of situations that can arise, and the wide range of responses available, the WWMCCS must provide the highest command levels with sufficient information on the operational situation so that appropriate responses may be selected in full consideration of the political as well as military aspects involved.

7. **National Military Command System (NMCS).**

The NMCS is that complex of the WWMCCS which directly supports the National Command Authorities in execution of their operational command function. The communications element of the system must support the President in his role as Commander-in-Chief and must provide the basis for supporting his broader role of National leader. It provides the National Command Authorities with an integrated, survivable, and jointly manned system which contains all of the elements required for command and control of military forces and appropriate supporting national resources. Since survival of a command and control capability is mandatory for continuity of operations, a composite or coupled command structure is required wherein the primary command center (NMCC), the fixed alternate (ANMCC), and the mobile alternates (NECPA, NEACP) are linked by reliable communications, warning and sensor systems, and are continuously manned and ready for use by National Command Authorities or their alternates or successors. The order of succession due to incapacity of any of the centers is established by the rank of the National Command Authority present in the surviving command facilities and provision will be made for operational command to be exercised from any one of the surviving facilities. Consideration must also be given the requirements that the President and his legal successors be capable of exercising command authority from points external to the NMCS. The NMCS relies mainly on the Defense Intelligence Agency (DIA) for intelligence, the Defense Communications Agency (DCA) for long-line communications status and support, the Services for information relative to the organization, training and equipping of their forces including those assigned to Unified and Specified Commands, and administrative and logistic support of these forces, and the Commanders of Unified and Specified Commands for information relative to the operation of the forces, command execution and results. In addition, political information inputs from the Department of State and other sources are utilized.
for evaluation of the politico-military situations. The NMCS will be managed and operated under the policy guidance of the Joint Chiefs of Staff, and under the supervision of the Director for Operations (J-3). The major command facilities of the NMCS are:


The NMCC is the Pentagon facility which serves as the center of command for the highest levels of military authority - i.e., the President, the Secretary of Defense, and the Joint Chiefs of Staff. The NMCC includes the equipment, communications, and procedures needed to support the command function. This facility is manned by personnel from appropriate staffs and agencies. It will operate on a continuous and highly secure basis as an operational center in which politico-military situations will be reviewed and from which all necessary actions attendant to the national military decision-making process can be taken. Synthesis of the information for presentation to the decision makers and the preparation and dissemination of orders necessary for implementation of decisions made by the National Command Authorities will be accomplished within the NMCC until its destruction or its evacuation and from then on within the appropriate alternate center on the basis of authorized SOP's, doctrine, strategy, and National Command Authority present therein. The NMCC will have an in-house capability for data processing to permit direct access to critical information and provide for the collation and synthesis of data from several sources. Included in the overall capability will be a backup capability for manual data handling. The NMCC should also have the capability for rapid call-up of information from other sources. In determining the specific requirements for data processing capability in the NMCC, full consideration will be given to the existing capabilities of other activities and the accessibility of information from these sources. The present communications facilities of the Washington area will be reorganized by the DCA so as to satisfy the requirements of the NMCS. The NMCC and its alternates, will have sufficient communication capability for the direct handling of all emergency actions.

The NMCC will be located physically in or near the Pentagon in order that the supporting activities and the Joint Staff operational personnel and facilities can be used to the maximum
extent possible for direct support. The central display area of the NMCC will operate security-wise, as a fully cleared facility so that access to all information necessary for military operations at the national level can be obtained in one location. In addition, staff support rooms will operate as fully cleared facilities to the maximum extent possible. As the senior element of the coupled command structure of the NMCS, the NMCC has certain functions not required of its alternates: (1) it is the focal point for matters pertaining to overall system exercise planning, training and management, and (2) it must be capable of performing those functions which are required to support cold war and limited war operations.

The tasks of the alternates, on the other hand are essentially keyed to those relating to general war. Specifically, the tasks to be performed within the NMCC include:

1. Maintaining a complete and current status of U.S. and friendly operational forces and plans to include disposition, readiness posture, force generation factors, overflight and base rights, and major limitations (e.g., personnel, logistic, communications and transportation), at a level of detail commensurate with the mission and function of the Joint Chiefs of Staff to provide strategic direction of the armed forces.

2. Maintaining a complete and current status of neutral, potentially hostile and hostile operational forces to include disposition, readiness posture, major limitations, vulnerabilities, capabilities, and probable intentions at a level of detail commensurate with the mission and function of the Joint Chiefs of Staff to provide strategic direction of the armed forces.

3. Maintaining a complete and current status of U.S. nuclear weapons to include location of CINC-assigned and reserve weapons, as well as the number, type, location, and carrier of weapons assigned to alert forces at a level of detail commensurate with the mission and function of the Joint Chiefs of Staff to provide strategic direction of the armed forces.

4. Maintaining a current operational capability to cope with everyday activities of a routine and recurring nature involving forces and agencies responsive to the Joint Chiefs of Staff and/or of interest to the Joint Staff.
(5) Maintaining all facilities and capabilities operational on a 24-hour basis, using the qualified Watch Team procedure for continuity, to assure that the Joint Chiefs of Staff alerting and command-communications network is completely responsive and capable of effective operation at all times.

(6) Continuously monitoring world-wide politico-military situations and evaluate the conditions reflected as they influence or may influence U.S. response with particular reference to the DEFCON status, SIOP implementation, controlled-response considerations, and implementation of relocation/reconstitution plans.

(7) Coordinating the operation of other NMCS joint watch teams, and/or operational command and control facilities which serve as stand-bys for, alternates to, relocation sites for, or extension of the NMCC.

(8) Serving as the central Joint Chiefs of Staff point of contact for the exchange of pertinent information with collateral or subordinate activities such as the President's situation room, the OEP, the Service and CINC War Rooms, and other appropriate agencies.

(9) Serving as the Joint Chiefs of Staff and DoD focal point for monitorship and necessary control by the Joint Chiefs of Staff of all sensitive military peacetime reconnaissance operations. In addition serve as the focal point for necessary coordination and liaison with other appropriate government agencies concerned with such activities.

(10) Serving as the command post for national and U.S./Allied exercises and tests conducted to train and determine the readiness status of U.S. and Allied combatant forces, supporting elements, and the command and control systems involved.

(11) Maintaining the capability for receiving, processing, displaying, and/or systematically storing and retrieving that information found necessary to support the National Command Authorities to include the development of plans for the integration of advanced capabilities as the state-of-the-arts permits.
b. Alternate Command and Control Facilities.

(1) General: Alternate operating facilities are required to assure the survival of a command capability for carrying out national policy under conditions of general war. The NMCS presently has three such alternates - a fixed, a shipboard, and an airborne, each of which is discussed individually below. Although the physical size of these facilities influences to some extent the degree of capability that can be incorporated into each, they must all meet certain basic operating requirements. Specifically, they must have a capability:

(a) To operate continuously with qualified watch teams, maintaining a readiness to support the general war command function at any time it is determined to be impossible, impractical, or undesirable to continue operations from the NMCC.

(b) To provide immediate access to a continuously up-dated data base of that information required for the trans-attack and post-attack direction of the U.S. military effort.

(c) Of rapid transition without prior warning from a standby facility to the primary military control point where the National Command Authorities, their alternates or successors are present. When one of the alternates becomes the primary control point, the other surviving alternates will continue to maintain their capability to assume the primary control support function on a no-notice basis.

(d) To communicate continuously with other major elements of the WWMCCS, including national warning and sensor systems.

(e) To utilize information from the NMCC up to the moment of the NMCC's destruction, disruption, or evacuation. However, this capability should not limit or degrade the capability to operate independently with data received directly from sources external to the Washington complex.
(2) **Alternate National Military Command Center (ANMCC).**

The ANMCC is the fixed, hardened, alternate for the NMCC located at Site R of the Alternate Joint Communications Center (AJCC) complex at Fort Ritchie, Md. The ANMCC is specifically intended for general war operations and will operate as the primary control center of the NMCS when National Command Authority is present therein.

(3) **National Emergency Command Post Afloat (NECPA).**

The concept providing for survival of the national command function within the NMCS includes the continuous availability at sea or in coastal waters of a ship-based emergency command post as an alternate to the NMCC to operate as the primary control center when the National Command Authority is on board. A minimum of two ships will be available for designation as NECPA. These ships will be capable of rapid embarkation at sea of the highest National Command Authorities and elements of their staffs and accommodations will be provided on board for such personnel for protracted operating periods.

(4) **National Emergency Airborne Command Post (NEACP).**

The NMCS survivability concept provides for an aircraft-based emergency command post to serve as an alternate to the NMCC and which will operate as the primary control center when National Command Authority is on board. Communications, (including the ground environment) will be provided to permit the National Command Authority on board to exercise strategic control of the U.S. military forces while airborne under pre-attack, trans-attack, and post-attack general war conditions. Sufficient aircraft should be provided to maintain one continuously airborne for protracted periods when necessary. Adequate ground support facilities will be provided at several dispersed locations to permit continuous ground alert and embarkation of the highest National Command Authorities and supporting staff personnel at such locations. In addition, provision should be made for NEACP aircraft to transport or accompany designated authorities on trips outside the Washington area.
8. **Military Sub-Systems.**

The sub-systems of the Unified and Specified Commanders, the Component Commanders, and the Service Headquarters will be internally configured and operated in accordance with the prerogatives and policies of the commanders or headquarters which they serve. However, the concepts for each of these sub-systems must be in consonance with the principles outlined herein. To this end, such systems will be required to conform in their direct connections with the NMCS to specified standards of format, data rate, updating times, etc. In this regard, requisite compatibility guidance will be issued by the Joint Chiefs of Staff.

9. **Other DoD Agency Systems.**

All DoD agencies involved in direct support of the WWMCCS, e.g., DIA, DCA, and DASA, will be guided by the principles outlined herein.

10. **Associated Systems.**

Effective coordination and liaison must be established and maintained with those agencies of the U.S. Government outside the Department of Defense which have functions associated with the NMCS, e.g., White House Situation Room, State Department, CIA, NSA, and OEP. Military information will be provided to these associated systems through the NMCC, utilizing direct, secure, and reliable methods of communication. Political input to the NMCC will be provided to enable the National Command Authorities to consider all aspects of the situation in one facility prior to making and promulgating decisions concerning strategic direction of U.S. Forces.

**PART III**

**DEVELOPMENT AND IMPLEMENTATION**

11. **WWMCCS DEVELOPMENT**

The WWMCCS, and the sub-systems thereof, will be developed, implemented, operated, and improved in accordance with
policy guidance issued by the Secretary of Defense and the Joint Chiefs of Staff. In addition, the Joint Chiefs of Staff are responsible for the development of requirements, for review and monitoring of implementation activities, and for the operation of the NMCS; and for effecting coordination and/or providing guidance as appropriate to associated and subordinate agencies and commands to assure the necessary degree of compatibility and effective interface. The Joint Command and Control Requirements Group (JCCRG) is the central point of contact within the Organization of the Joint Chiefs of Staff for all matters concerning command and control systems. This Group, under the supervision of the Director, Joint Staff, will be responsible for the functional design which governs the evolutionary improvement of the NMCS and the interface of the NMCS with other sub-systems and associated systems. As such, they will have access to and will analyze all pertinent operational procedures in the NMCS, assist in the formulation of exercises to test those procedures, and participate in the analysis of data received from such exercises.

12. NMCS DEVELOPMENT

a. Subsequent to approval of the concepts contained herein, the policies, concepts, and requirements of the Joint Chiefs of Staff and the Secretary of Defense will be translated into a functional system design, including but not necessarily limited to explicit requirements for data inputs, format, up-dating frequency; analysis capability including storage and retrieval facilities with recall timing and display type, etc. These plans will also be interpreted in terms of requirements to be levied on subordinate agencies, Services, and commands for compatibility within the NMCS and with the balance of the WWMCCS.

b. These concepts do not envision any change in the functions and responsibilities of the Secretary of Defense, the Joint Chiefs of Staff, the Commanders-in-Chief of the Unified and Specified Commands, etc. Moreover, it is not intended to increase the centralization of command at national level but rather to make the handling of present functions at national level more effective.

c. The development concept for the NMCS is predicated on an evolutionary process of integrating pertinent functions and capabilities into an effective national command and
control system. In order to provide for logical progression toward the ultimate system, and at the same time, permit early improvement over the capability as it exists today, a phased program will be implemented. The timetable for development is based on a sense of urgency tempered by realization that time is required to permit proper evaluation of requirements and organizational relationships, and for the determination of realistic and attainable goals toward which the phased program is to be directed.

d. Because of the number of actions and activities involved in the various stages of development and implementation of such a program, close coordination and cooperation between agencies is mandatory. To assure maximum return for efforts expended and unity of purpose among the agencies and personnel involved, a single office must be assigned specific responsibility to oversee and coordinate the activities of the entire program. Since the NMCS is specifically intended to support military operations of the Joint Chiefs of Staff and higher authority, it is appropriate that an activity within the Joint Chiefs of Staff be designated to act as the focal point for Joint Chiefs of Staff actions and to represent the users of the system. Accordingly, the JCCRG is designated as the activity exercising coordination and control of Joint Chiefs of Staff responsibilities connected with improvements in the NMCS. To effect this control, the JCCRG must continuously monitor, evaluate and, where appropriate, guide all activities associated with operation, exercise, evaluation, development and implementation which fall into these broad categories:

1. Functional System Design – This is the process of converting broad policy, strategic, and doctrinal guidance from the Joint Chiefs of Staff and the Secretary of Defense into functional specifications of operational requirements, completely enough and explicitly enough to provide an appropriate point of departure for technicians to assume primary responsibility for carrying forward the work. This functional system design will be the responsibility of the JCCRG within the Organization of the Joint Chiefs of Staff. This group will evolve the functional system design of the kind described, along with continuing improvements and refinement in operational concepts, command doctrine, and procedures, on the basis of continuing analyses, exercises, evaluation, and studies aimed at determining the capability of the system and determining the best method of improving that capability. Insofar as the
communications element of the NMCS is concerned, the military elements of the functional system design will have to be supplemented by provision of requirements for the other survivable communications needs of the President, other national leaders, and essential diplomatic and intelligence activities. These non-military requirements will be provided through the Secretary of Defense for incorporation into the functional system design by the JCCRG. Thereafter, they will be processed for technical support in the same manner as other requirements contained in the functional system design.

(2) Technical System Design - This is the process by which functional system design is converted into a detailed and specific description of sub-systems; specifying exactly the elements to be developed and how they are to be electrically and physically interconnected. The Director, DCA, will be responsible for systems engineering and technical supervision of the implementation of technical support for the NMCS and of such related systems as may be further assigned. For these responsibilities, the Director, DCA, will operate under the functional supervision of the Director, Defense Research and Engineering.

(3) Implementation - The JCCRG will provide consultation and assistance to DCA in the preparation of the technical plans, and maintain close and continuous coordination with the DCA, the DDR&E, the Services, the Unified and Specified Commands and their subordinate commands throughout the implementation phase of each component of the system. In addition, the JCCRG will continuously monitor and review the implementation of the NMCS technical support so as to determine its responsiveness to the approved functional system design. The JCCRG will monitor the following sequence of events to be followed in the implementation of a phased program leading to:

(a) An interim improvement in existing command and control capabilities at an early date.

(b) An advanced system to satisfy long-range requirements for command and control at the national level.
e. System implementation will be carried out in two phases as follows:

(1) Phase I - This phase of the program involves utilization of presently available personnel, equipment, and facilities and aligning them into a first-generation NMCS. This includes:

(a) The designation of the present Joint War Room (JWR), Joint War Room Annex (JWRA), and the Joint Reconnaissance Center (JRC), plus certain elements of the DIA, to include the current Intelligence and Indications Center, as the NMCC, with their facilities, personnel and areas being identified as initial resources of the NMCC.

(b) The designation of appropriate parts of the present Alternate Joint Communications Center (AJCC) as the ANMCC utilizing appropriate resources presently assigned to the Joint Alternate Command Element (JACE).

(c) The assignment of responsibility for analysis, evaluation, planning, manning, management, and development of operational procedures for the NMCS, to the Director, Joint Staff.

(d) Modest expansion of the present JWR/JWRA area to permit initial improvement in the capability of the NMCC.

(e) Designation and integration of the Mobile National Emergency Command Posts (MNECP's) as operating elements of the NMCS.

(2) Phase II - During this phase, plans for the development of an advanced NMCS will be implemented. It is to be noted that initial planning for this stage should start concurrently with Phase I in order to provide a significant improvement in command and control capability at the earliest practicable date.

(a) The configuration of the advanced NMCC in or near the Pentagon is not known at this time. Studies are presently being conducted to determine this configuration including studies of the
feasibility of a hardened site. It should be noted however, that system development need not be delayed pending this determination. The NMCC operational functions will be approximately the same regardless of its location.

(b) The ANMCC, the NECPA, the NEACP, and any other similar facilities as may be in being, will be improved to satisfy the Joint Chiefs of Staff requirements for advanced operational capabilities.

PART IV

COMMUNICATIONS

13. General

The WWMCCS requires fast, reliable, secure, and survivable communications. Information from both overseas and CONUS locations must be exchanged between all military switching centers, and any combination of CINCs and NMCS centers. The primary channels of command communications shall connect the NMCC and its alternates with the Unified and Specified Commands, Service Headquarters, and their alternates. Adequate alternate routes must be provided to insure flexibility. In accordance with the present assignment of telecommunications responsibilities within the Department of Defense, those elements of the WWMCCS which are a part of the DCS will continue to be considered a part of the DCS.

14. NMCS Communications

a. That portion of the DCS provided for the NMCS will constitute a communications network employing suitable communications modes and means intercommunicating the various command centers of the NMCS with the Military Service Centers in the Washington, D. C. area (Army War Room, Navy Flag Plot, Air Force Command Post, and Marine Corps Emergency Action
Center), and will provide communications between U.S. commands whose headquarters and functions will be provided with survivability to the degree consistent with their assigned mission.

b. The general functions of the Washington area command center complex are:

(1) To allow a flow of information from sources external to the complex, both from overseas and from CONUS locations to be transmitted to any of the centers, e.g., the NMCC, the ANMCC, the NECPA, and NEACP.

(2) To allow a flow of communications between all elements of the complex for the purpose of:

(a) Continuously updating necessary files in each center.

(b) Providing advice when required on policy and strategy.

(c) Providing simultaneously not only command traffic (such as operational instructions, intelligence reports, and the like) but also information from the Ballistic Missile Early Warning System (BMEWS), Nuclear Detonation Systems (NUDETS), Bomb Alarm Systems (COMAL), and from all appropriate command posts regardless of locations.

(3) Survivability of communications will be achieved on the basis of multiplicity, dispersal, hardening, mobility, and any combination thereof, such survivability of terminal communications to be commensurate with the survivability of the centers themselves. A communications network is necessary to provide for the exchange of essential information between any combination of command posts. This exchange shall be possible even with the disruption of certain switching centers and interconnecting surviving trunks. Sufficient multiple connections to command centers must be provided to make the cost of any enemy attack on communications comparable or more expensive than the cost of an attack on command center or weapon targets.
In addition to these strictly military command-related functions, the NMCS communications network must also be designed to satisfy other national requirements for survivable essential communications.

c. Concept - The above characteristics of the communication system can be satisfied by a survivable interconnected, multiple type node network to serve the fixed and mobile command facilities of the NMCS; and by also providing additional capability to permit the MNECP's to operate independently of the Washington complex, including the NMCC and the ANMCC, all based on the following concepts.

(1) Switching centers will be located at military and commercial communication nodal points located outside target areas and interconnected by wire line, cable, and radio including microwave, troposcatter, and LF/VLF systems; and not subject to bonus disruption as a result of an attack on other nearby targets. These switching center locations will interconnect all command posts, including the mobile alternates. Interconnections with the units afloat should be provided where feasible by direct ship-to-shore troposcatter circuits and with aircraft by air-ground circuits. The objective is to interconnect all elements of the NMCS, both mobile and fixed, through the switched network.

(2) High priority subscribers (such as Command Posts likely to house the Secretary of Defense, the Joint Chiefs of Staff, or others at the National level) will be served from at least two dispersed switching centers over physically diverse routes. The loss of one will not, therefore, disrupt essential communications.

(3) Switching center connections between the military and other executive departments of the government will be provided through all diverse means practicable, and over routes which by-pass target areas. Interconnections will be engineered so that major communication disasters will not interrupt the flow of high priority traffic.

(4) Additionally, the communication system must be designed to utilize an airborne relay network directly or
through selected switching centers. This will ensure full exploitation of the capabilities of selected commands within North America.

(5) The NMCC and its fixed and mobile alternates will be provided access to Post-Attack Command and Control System, Survivable Flow-Frequency Radio Systems, Very Low-Frequency Radio Systems, Trans-Atlantic Rocket Relay (if activated), and other survivable communications systems. The MNECP's will also be provided a communications capability for the strategic control of U.S. military forces which is independent of the Washington complex, and the fixed switching centers that serve it.