



THE JOINT CHIEFS OF STAFF
WASHINGTON, D.C. 20321

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13 December 1978

Released

MEMORANDUM FOR THE SECRETARY OF DEFENSE

Subject: Requirement for Survivable and Endurant Strategic Communications (U)

1. (U) The statement of requirement in the Appendix for a two-way survivable and endurant strategic communications capability has been approved by the Joint Chiefs of Staff. The needs of the unified and specified commands have been considered in its preparation.

2. (U) The Appendix is forwarded for use as an explicit statement of requirement for major survivable and endurant communications programs, such as VLF/LF anti-jam, adaptive HF, and the strategic satellite system. Although no single program will satisfy all aspects of the stated requirement, the contribution made by each should be appreciable when evaluated against feasibility and cost.

3. (U) Without attachment, this memorandum is downgraded to CONFIDENTIAL.

For the Joint Chiefs of Staff:

James E. Dalton
JAMES E. DALTON
Major General, USAF
Vice Director, Joint Staff

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Attachment

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APPENDIX

REQUIREMENT FOR SURVIVABLE AND
ENDURANT STRATEGIC COMMUNICATIONS (U)

SECTION I

STATEMENT OF NEED

1. ~~(S)~~ Purpose. The mission of the WWCSS is to provide the NCA and the Joint Chiefs of Staff with information and support necessary to assist them in the national decision-making process and to direct US military efforts. The overall mission requires the capability to receive and transmit information accurately and responsively. The need for this capability is particularly crucial during and after a general nuclear war wherein fixed and nonhardened communications are expected to be severely disrupted or nonexistent and the security of the United States is threatened. Communications capabilities surviving under these circumstances must be credible, flexible, responsive, and secure. Except in certain special cases, such as the Minimum Essential Emergency Communications Network, these capabilities must provide two-way information transfer.
2. ~~(S)~~ Introduction. The primary utility of the survivable communications capability will be during and immediately following a massive nuclear attack. Following this exchange, and until disrupted communications can be reconstituted, the two-way survivable and endurant communications capability may be used to direct and support the forces. The jam-resistant characteristics of survivable communications may be used to insure communications connectivity in a crisis or contingency where jamming or other localized disruption of normal service is prevalent.

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3. (U) <u>Background</u>	<u>1</u>
a. (U) <u>Postures</u> . The generic survivable communications support postures described below provide a reference for defining criteria for communications support systems:	<u>2</u> <u>3</u> <u>4</u>
(1) (U) <u>General Nuclear War Posture</u> . Defines the level of system survivability, endurance, capacity, credibility, flexibility, and responsiveness required to provide effective communications support of general nuclear war. The general nuclear war support posture does not need to be functional under routine, noncrisis conditions. When directed, the attainment of an increased posture must be a simple, rapid process, capable of 24-hour operations for a sustained period.	<u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>11</u> <u>12</u> <u>13</u>
(2) (U) <u>Crisis Support Posture</u> . Defines the level of system availability, reliability, and responsiveness required to insure communications effectiveness under conditions of significant electronic jamming or other disruption of normally used communications.	<u>14</u> <u>15</u> <u>16</u> <u>17</u> <u>18</u>
b. (U) The survivable communications resources must be responsive to the needs of the NCA, the Joint Chiefs of Staff, and the commanders of the unified and specified commands. Access to resources by other authorized users will be controlled and prioritized consistent with the availability of resources. Operational control of the survivable communications resources may transition to an operating element of the NMCS under general nuclear war or crisis support postures.	<u>19</u> <u>20</u> <u>21</u> <u>22</u> <u>23</u> <u>24</u> <u>25</u> <u>26</u> <u>27</u>

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c. (2) Continuity of communications support through all 1
levels of conflict and communications system utilization 2
should be maximized. The operator should have available 3
the same capabilities in a crisis involving jamming or 4
sabotage as are planned for use in support of general 5
nuclear war. The communications needs in support of 6
general nuclear war establish the upper limit on and 7
determine the criteria for systems. Priority access 8
must be provided to insure information is processed in 9
order of importance. The system must allow for graceful 10
degradation so that key information can be transmitted 11
short of total failure. Techniques for recovering from 12
system failure must insure minimum loss of communications. 13
The survivable communications capability must be reliable 14
and available to the extent that this key information can 15
be transmitted without delay. A sufficiently detailed 16
record copy is needed to facilitate manual (non-ADP) 17
operations. 18

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SECTION II

STATEMENT OF OPERATIONAL CAPABILITY (U)

4. ~~(S)~~ Functional Requirements and Operational Concept

a. ~~(S)~~ Survivable and Endurant Communications Support

Functions. Mission functions which may be supported by a two-way survivable and enduring communications capability are scenario dependent. The scenario situations are identified as follows:

(1) ~~(S)~~ Conduct of the SIOF under conditions of a massive nuclear exchange.

(2) ~~(S)~~ Force replanning and repositioning following a massive nuclear exchange.

(3) ~~(S)~~ Support of crisis activities wherein communications planned for use have been disrupted.

Vital communications to theater nuclear forces are not addressed here, but may be supported by the same resources. The communications functions described are related to worldwide strategic force management. Support in a crisis involving communications disruption is not a primary design requirement.

b. ~~(S)~~ Survivable and Endurant Communications Support

of the Strategic Forces. The NCA, through the Joint Chiefs of Staff, and the commanders of the unified and specified commands require two-way survivable and enduring communications to receive missile warning and attack assessment information, provide direction to strategic forces, and manage critical forces under

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their purview. Primary emphasis in this concept is given
to the secure, timely, and accurate dissemination of
execution and termination instructions. Two-way con-
ferencing voice communications will be used between the
Joint Chiefs of Staff and the commanders of the unified
and specified commands to exchange information necessary
to support decisionmaking. The Joint Chiefs of Staff will
use a two-way voice communications link with the NCA to
provide information, make recommendations, and receive
instructions. Additional communications from the Joint
Chiefs of Staff to unified and specified command headquarters
and direct to strategic forces are required to execute
or terminate actions by those forces. A two-way communi-
cations capability between strategic nuclear-capable
commanders and their forces could be used to transmit
additional instructions and receive status reports
and could be monitored by the Joint Chiefs of Staff. These
functions can be categorized as follows: (1) information
exchange, (2) decisionmaking, (3) force direction and
control, and (4) strategic force support and management.

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(1) ~~(1)~~ Information Exchange. This function is required
to provide conferencing communications between the
commanders of the unified and specified commands and the
Joint Chiefs of Staff to support the development of
recommendations to the NCA and to implement subsequent
NCA decisions. Two-way secure voice communications

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are required to facilitate conferencing, real-time response 1
to questions, situation discussions, determination of 2
status of forces, and making of recommendations. 3
Summary situation and status reports are required by 4
the Joint Chiefs of Staff. Secure record communi- 5
cations should be used as necessary to confirm voice 6
communications and if the voice capability is impaired 7
to the point where record communication would be more 8
expeditious. 9

(2) ~~(S)~~ Decisionmaking. This function is required to 10
provide situation information, status of forces, and 11
recommendations to the NCA from the Joint Chiefs of 12
Staff. Instructions and requests for information will 13
be sent by the NCA to the Joint Chiefs of Staff. 14
Record traffic on this net will be used as written 15
confirmation or as backup. 16

(3) ~~(S)~~ Force Direction and Control. A secure record/ 17
voice communications capability is required to 18
disseminate decisions in the form of execution/ 19
war termination messages from the Joint Chiefs of 20
Staff direct to the strategic forces, as well as to 21
the commanders of the unified and specified commands. 22
These initial Emergency Action Messages will normally 23
be preformatted and of a specified length. However, 24
later messages regarding retargeting and use of the 25
strategic reserve force will most likely be developed 26
based upon the current situation and may be as much 27

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as 10 times longer than previous Emergency Action
Messages. Acknowledgement of message receipt, if
required, will be accomplished by monitoring the force
management traffic described in subparagraph 4b(4) below.

(4) ~~(b)~~ Strategic Force Support and Management. A
two-way secure communications capability is required
between the commanders of the unified and specified
commands and their forces for the purpose of issuing
instructions and obtaining force status and situation
reports. These instructions and reports will be
relatively short, should lend themselves to being
preformatted, and should not degrade the covertness
of the SSBN forces. The Joint Chiefs of Staff
may use these reports to keep generally abreast of
the situation and to flag items for the NCA. In a
situation where communications between the Joint
Chiefs of Staff and a commander of a unified or
specified command are seriously impaired or
nonexistent, the Joint Chiefs of Staff will use
the monitored situation and status reports to
develop situation synopses and recommendations
normally made by that commander.

c. ~~(b)~~ Two-Way Survivable and Endurant Communications
Support of Strategic Force Replanning and Repositioning

(1) Subsequent to a massive nuclear attack, some replanning
of nuclear forces, repositioning of other forces, as
well as the ability to execute the strategic reserve
force and to effect war termination will be required.

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To maintain an effective battle posture, nuclear forces may be retargeted and other forces repositioned/reinforced. The communications required for decision-making and information exchange under paragraph 4b above could be used to lead up to a decision on what replanning and repositioning is required.

(2) CINCSAC has stated that communications are required to accomplish strategic force recovery and retargeting during the first 72 hours. CINCPAC has stated that force realignment and repositioning will require communications from 60 to 144 hours following the nuclear exchange, and the reserve force management requirement may extend for several months. Effective accomplishment of mission functions will depend upon the endurance of the same two-way survivable communications capability used during the conflict and US ability to restore communications (landline, radio, satellite, etc.).

(3) Record/voice two-way communications between the Joint Chiefs of Staff and the commander of an appropriate unified or specified command are required to provide directions for personnel or supply movement and to direct transportation arrangements as necessary. Two-way record/voice communications may be used by the appropriate commander and his ground, afloat, and airborne forces to coordinate and accomplish the required repositioning.

d. (6) Survivable Communications System Support of Crisis Involving Communications Disruption. A survivable communications capability designed to operate in the environment of a general nuclear war has an inherent

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utility in other scenarios. When a crisis or
contingency situation occurs and normal terrestrial
or satellite communications are degraded or negated by
electronic warfare or isolated sabotage, the survivable
communications system will provide an important capa-
bility. The Joint Chiefs of Staff and the appropriate
commanders of the unified and specified commands will
use the survivable communications capability to receive
situation reports from remote or joint task force
commanders or on-scene personnel in crisis
or contingency situations. The Joint Chiefs of Staff
will provide instructions to the appropriate commander
and, in some cases, directly to the commander on the scene.
The theater commander will coordinate the forces under
his command with the activity of the forces at the
crisis location. It is not intended that a survivable
communications capability be used in a crisis situa-
tion as the sole means of supporting the communi-
cations functions required. This concept specifically
capitalizes on the inherent capability of survivable
communications.

(1) ~~(a)~~ Situation Reporting. Situation and status of
forces information and recommendations will be
provided to the Joint Chiefs of Staff by the commander
on the scene, and by other appropriate military
commanders in response to questions from the Joint
Chiefs of Staff and developments at the scene.

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Secure voice command communications are required for person-to-person discussions by senior civilian and military officials. Secure voice communications are also required by operations personnel to relay information upward to the Joint Chiefs of Staff. A record confirmation of reports will be provided by a secure net which will also serve as an additional backup to the voice functions, if required.

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(2) ~~(S)~~ Force Direction. The secure voice command function identified above will also be used by senior officials for issuing orders, decisions, and instructions, in real time, with all appropriate command levels receiving the directives. The secure teletype capability will provide a record copy of directives issued and a backup to the voice capability.

(3) ~~(S)~~ Force Management. The theater commander will use an additional secure record traffic capability to coordinate the activities of the forces under his command with the situation at the scene of the crisis or contingency. This record capability will normally be supported by the existing Defense Communications System and tactical communications with an interface through the survivable communications system as necessary to penetrate the electronic warfare environment or circumvent the sabotage.

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