

MEMO ROUTING SLIP

NEVER USE FOR APPROVAL, DISAPPROVAL, CONCURRENCE, OR SIMILAR ACTIONS REF ID: A65642

1 NAME OR TITLE	INITIALS	CIRCULATE
ORGANIZATION AND LOCATION	DATE	COORDINATION
2 [MSA sent 26 Aug.]		FILE
		INFORMATION
3		NECESSARY ACTION
		NOTE AND RETURN
4 Joe Wenger;		SEE ME
		SIGNATURE

REMARKS

Reliability of
 Communications in Europe
 Briefing to
 CSM C - about
 June - July
 T/S - Study by
 Telecom Panel

Send this

FROM NAME OR TITLE	Suggested by	DATE
ORGANIZATION AND LOCATION	Wenger	TELEPHONE

CONF

Msg to Adm Wenger

Referring to message

which you gave in C

and on

have been unable to

locate in USA files

can we supply it.

CONF

CONF

~~TOP SECRET~~HEADQUARTERS
UNITED STATES EUROPEAN COMMAND

1144

TTD

APO 128, US Army
21 July 1954


SUBJECT: Reliability of Communications (UNCLASSIFIED)

TO: Chief
National Security Agency Europe
APO 757, US Army

1. The inclosed copy of the briefing presented at the Commander in Chiefs' conference held at this Headquarters on 24 June 1954, is forwarded for your information and retention. (UNCLASSIFIED)

2. The Joint Working Group, mentioned in Part VII, has been established by separate correspondence. (UNCLASSIFIED)

1 Incl:
Cpy 15 of Briefing on
Reliability of Communications,
dtd 24 Jun 54


J. N. WENGER
Rear Admiral, US Navy
Director, Communications-Electronics

Tp: des Loges 8271

~~TOP SECRET~~NSA EUR # 010882COPY 1 OF 3 COPIESPAGE 1 OF 1 PAGES

**REGRADED UNCLASSIFIED WHEN
SEPARATED FROM CLASSIFIED INCLOSURES.**

24 June 1954

PART I. INTRODUCTION:

In recent months, as you gentlemen are aware, there has been a growing concern about the dependability of certain U.S. and Allied Military Communications in War. The Soviet's success in jamming the VOA and other radio broadcasts has been well known for some time. But only lately has there been a proper appreciation of the military implications of Soviet Jamming Capabilities. We are now beginning to realize that they represent a serious danger in the approaching era of Atomic Warfare, when reliable communications will become more than ever a vital necessity. The menace of subversive actions is also looming larger, since not only may they disrupt our essential land line communications, but may also deny us the needed back-up for our vulnerable radio circuits. And in addition, the dispersal and mobility of forces necessary for defense against atomic attack can only further complicate the problem of maintaining communications. (~~SECRET~~)

We do not suggest that these dangers now in view are insurmountable. We are confident that in time adequate technical means for dealing with them will be found. But it is important to understand that such means are not available now, nor are they in early prospect. Until they are, the least that can be done is to recognize the threats and to prepare to deal with them as best we can. Accordingly, this briefing has been prepared, with three objectives in mind: (~~SECRET~~)

a. First, to review the factors which have raised concern as to the reliability of our military communications. (~~SECRET~~)

b. Second, to examine the various actions being taken to minimize the dangers. (~~SECRET~~)

c. Third, to consider what additional measures can now be taken. (~~SECRET~~)

PART II. BACKGROUND:

As a basis for considering the vulnerability of our communications, the following background information is significant: (~~TOP SECRET~~)

a. First, a study conducted for the Telecommunications Advisor to The President brought out the following facts: (~~TOP SECRET~~)

(1) The USSR and the Soviet Bloc has an efficient electronic jamming organization which can utilize a major portion of 9600 transmitters for jamming purposes. (~~TOP SECRET~~)

(2) Eight-hundred and eighty (880) electronic jammers are currently in use by the Soviet Bloc against the VOA, HBC, and other psychological warfare broadcasts. Some of these are reported to exceed a million watts in power. (~~TOP SECRET~~)

(3) US Military, commercial, and civil agencies currently employ approximately 400 radio transmitters in high frequency point-to-point international service. (~~TOP SECRET~~)

(4) The geography of the world makes the US particularly vulnerable to long-distance electromagnetic warfare with the Soviet Bloc. On the other hand, the Soviets can maintain essential communications entirely over land, using combinations of long and short length circuits and alternate routing. (~~TOP SECRET~~)

US EUCOM/54/SER: 000473

~~TOP SECRET~~Copy 15 of 17 Copies
Page 1 of 10 PagesNSA EUR # 010882

~~TOP SECRET~~

b. Second, a study of the vulnerability of U.S. Military communications equipment to jamming has recently been completed by a technical research organization, under an Air Force contract. As a result of the study, the general conclusion was reached that no communications circuit utilizing present day equipment is jamproof, and that there is no universal "black box" (or cure) which will alleviate this condition. Furthermore, there is a firm requirement to plan for future jamming by educating all personnel in the proper selection of type of transmissions, equipment to be used, and proper operating techniques. (~~TOP SECRET~~)

c. Third, intelligence estimates on Communist infiltration in the national communications monopolies (or PTTs) indicate that, particularly in France, the sabotage of the PTT system is well within the capability of the Communist Party. In France, reliable estimates indicate that an overall average of 19% of the personnel of the PTT is infiltrated by the Communist-dominated Labor Union, the CGT. In some departments of France, particularly in the Bordeaux area, the PTT is dominated by this Labor Union. The threat to communications is not necessarily limited to Communists with the PTT, of course. It is estimated that throughout France there are 50,000 to 100,000 Communist militants; additional support might be expected from among the 600,000 other Communist members and the approximately 5,000,000 French citizens who indorsed the Communist Party in the June 1951 elections. Many of our communications lines run through areas of high Communist density, where between 1/3 and 1/6 of the population voted Communist in 1951. (~~TOP SECRET~~)

d. Fourth, last year's general strikes in France resulted in serious disruption of communications. Land line facilities, where not lost due to the strikes, gradually deteriorated due to lack of maintenance, and it was necessary to establish military radio circuits across France to insure communications down the LOC. Under emergency conditions, the activation of large numbers of reserve circuits would greatly increase the difficulties in event of a walk-out. (~~TOP SECRET~~)

e. Fifth, the land line facilities in Western Russia and in certain satellite areas have undergone considerable development and extension since the end of World War II. Moreover, progressive introduction of VHF and UHF communications in those areas is making the Soviets less dependent on HF and MF radio and thus less vulnerable to retaliation in any jamming effort. (~~TOP SECRET~~)

PART III. JCS-SG ACTIONS:

Concern with reliability of communications by Senior Military authorities both of the US and of NATO, has been developing over the past three years. In late 1951, the JCS, in approving a report on safeguarding allied long-distance wireless communications, determined that positive steps had to be taken to minimize the effect of possible enemy jamming of strategic communications. In directives to the Services, the JCS requested early action on certain technical measures, on developing alternate routing for message communications, and in training programs. In addition, they directed joint service actions involving security measures, courier services, and the development of joint procedures for alternate routing of traffic over military circuits. And, based on the intelligence information at the time, the JCS concluded that the Russians had the capacity in trained personnel, equipment, and organization to jam certain long distance radio communications circuits as well as the capability to disrupt submarine cables either by sabotage or military operations. (~~SECRET~~)

By mid 1953, the JCS had re-assessed the Soviet Jamming Capability based on experience of Soviet jamming efforts against the VOA and similar activities as well as on intelligence and special studies. As a result, a JCS directive,

dated 28 July, was promulgated to Commanders of unified and JCS specified commands. This paper concluded, from a review of the Soviet Jamming Capability, that all U.S. long-range high frequency radio circuits are vulnerable to a dangerous degree. Therefore, the use of certain planning assumptions and certain planning items in current and future operational communications plans was directed. Specific assumptions to be utilized, in addition to that of the aforementioned Soviet capability are as follows: (~~TOP SECRET~~)

a. First, the geographical locations of all US vital communication terminals are known to the USSR. (~~TOP SECRET~~)

b. Second, the US capability of maintaining any HF radio communications to, from, and within overseas areas is considered negligible. (~~TOP SECRET~~)

c. Third, tactical radio communications, including VHF and UHF in geographical proximity to the Soviet Bloc Orbit, must be considered vulnerable. (~~TOP SECRET~~)

d. Fourth, until all-out war is imminent, the Soviets will not initiate large scale strategic communications or navigational aid jamming, unless this action can be cloaked by legal or quasi-legal justification. (~~TOP SECRET~~)

e. Fifth, The Soviets will initiate such jamming just prior to and during full-scale war.

Further, specific factors which must be considered in planning, are:

(1) First, the possibility that subordinate commands must be able to operate for extended periods in accordance with approved plans and doctrines without radio contact with higher authority. (~~TOP SECRET~~)

(2) Second, routing of important communications by messenger, helicopter, and aircraft. (~~TOP SECRET~~)

(3) Third, training of radio communication personnel in all phases of defense against jamming. (~~TOP SECRET~~)

Finally, in more recent JCS papers, we find that a European exercise, involving simulated jamming, was planned for June 1954, and was apparently intended as a part of an overall JCS program for extending anti-jamming training of command and communications personnel through periodic exercises on strategic inter-theater circuits. We are awaiting further information on this subject. (~~TOP SECRET~~)

On the NATO side, in a meeting of the Standing Group in January 1954, the US representative expressed himself at length on the weaknesses of NATO communications. Subsequently, a Standing Group Directive to SACEUR, SACLANT, and the Channel Committee was forwarded in February. Each addressee is required to review his military communications at all echelons, and consider all aspects and all defects, regardless of cause, or of the known possibility of elimination of the weaknesses. Speed, flexibility, security, reliability, and vulnerability, including vulnerability of communications systems operated by non-military organizations (in other words, the PTTs) are to be considered. (~~TOP SECRET~~)

PART IV. SACEUR ACTIONS:

Shifting to the European Theater, we note that SACEUR's Emergency Defense Plan, as well as his Atomic Strike Plan and SOP governing atomic strike requests, are dependent upon completely reliable communications for their implementation. As an International Commander, SACEUR is, of course, not obliged to accept the JCS planning assumptions and planning factors with respect to Soviet Jamming Capability. Nor can he openly question the reliability of specific national PTT facilities. Nevertheless, his actions have been

~~TOP SECRET~~

generally consistent with the JCS views. (~~SECRET~~)

First, Several pertinent Communications-Electronics Policy Directives and Instructions have been promulgated within Allied Command Europe. These point out the necessity for defense against enemy jamming, and lay down certain guiding principles. SACEUR's Subordinate Commanders, at all levels, have been directed to analyze the vulnerability of their communications systems to jamming, to reduce reliance on radio communications, and to provide for continued normal conduct of operations during periods when communications means are disrupted. Further, the Subordinate Commanders have been directed to emphasize training in all phases of defense against jamming. As to physical security, SHAPE has promulgated policy directives setting forth command responsibilities for establishment of safeguards for communications-electronics installations. All of these policy directives and instructions are, of course, currently applicable only within the NATO chain of command, but efforts are being made to obtain national approval and to broaden their applicability throughout NATO Europe. (~~SECRET~~)

Second, pursuant to the Standing Group review Directive, SACEUR has convened a Working Group of representatives of SHAPE and the NATO Subordinate Commands to make a comprehensive survey of SACEUR's communication situation. Each Subordinate Commander was requested to provide, by June 1st, an analysis of the capability of his assigned and earmarked communications elements to effectively implement the Emergency Defense Plan and to support active operations for the first 90 days of emergency. The reports were also to include studies for each country within the respective command areas, indicating major communications weaknesses. (~~SECRET~~)

Third, SACEUR has requested EMCCC to make a specific survey of the vulnerability to sabotage of communications systems controlled and/or operated by non-military organizations (i.e., the PTTs). The EMCCC report, when completed, will become a part of the SACEUR overall review of his communications system. (~~SECRET~~)

PART V: US CINCEUR ACTIONS:

The reliability of communications within the US EUCOM area has meanwhile received the attention of US CINCEUR, particularly in connection with assigned planning missions and implementation of JCS emergency planning directives. (~~SECRET~~)

The following specific actions have been taken:

a. First, in a policy directive to all Subordinate Commands, US CINCEUR summarized the situation, and in general, prescribed that the JCS planning assumptions and planning factors would govern current and future operational communications planning in the US EUCOM Area. This policy has been written into the Communications-Electronics Annexes to the US EUCOM Joint Emergency War Plan and to its supplementary US Contingency Plan. (~~TOP SECRET~~)

b. Second, Subordinate Command Communications-Electronics Plans, as well as other Communications-Electronics Plans, have been reviewed in terms of communications reliability provided, and in the light of the prescribed planning factors. To cite an example, the SACEUR Atomic Strike Plan, which requires the rapid and reliable transmission of a series of messages, would, in many cases, depend upon the availability of reliable high frequency radio. The effect of the new planning assumptions has been pointed out, and the plans have been modified in some respects. However, in our opinion, further communications planning is required to insure the reliable service needed. (~~TOP SECRET~~)

c. Third, US CINCEUR requested the Subordinate Commanders to forward reports on actions either taken or planned within their commands. US CINCEUR pointed to certain immediate and long-range measures which would minimize the effect of enemy jamming, and, in the light of prescribed planning

~~TOP SECRET~~

assumptions and factors, requested each Commander to make a survey of his communications situation. Specifically required were those operational, procedural, technical, and training measures which each Commander had taken, or had planned to minimize the susceptibility of his communications to enemy attack. In addition, each Commander was required to list those important radio communications which he regarded as vulnerable and for which adequate protection or reliable back-up communications had not been or could not be provided. Finally, in the light of this information, each Commander was asked to provide a general estimate of his present ability to maintain the essential communications required to carry out his assigned tasks in current emergency plans. (~~TOP SECRET~~)

d. Fourth, the JCEC of the JCS was asked to provide a summary of the latest information on Departmental actions in developing specific answers to the jamming threat, with particular reference to measures applicable to communications to and within the US EUCOM area. In response, the JCEC has provided the following information: (~~TOP SECRET~~)

(1) First, the Services are continuing efforts to provide alternate routes between given points so that essential services can be maintained even if one or more paths is lost. (~~TOP SECRET~~)

(2) Second, the application of new ionospheric and tropospheric scatter techniques to long-range communications is being exploited to the maximum extent practicable. Specifically, a circuit from Limestone, Maine, to Thule, Greenland, is working satisfactorily, and other experimental circuits from the U.S. to Great Britain by way of Iceland, and by way of the Azores, have been authorized. The usefulness of these new techniques, though limited, is promising. (~~TOP SECRET~~)

(3) Third, the US Military is supporting the installation of submarine cables by various commercial concerns. One high-capacity Trans-Atlantic cable from the U.S. to Great Britain is expected to be completed in 1956 and another in 1957. (~~TOP SECRET~~)

(4) Fourth, research and development projects directed at improvement of equipment design and more effective radio propagation are being pushed. (~~TOP SECRET~~)

(5) Fifth, in the related field of electronic warfare, JCS directives, which are long overdue, will soon be issued to develop capabilities to employ electronic countermeasures against all categories of Soviet Bloc electronic devices. Meanwhile, US CINCEUR has issued interim directives in the Joint Emergency War Plan. These will also be included in the Joint Capabilities Plan now under preparation at this headquarters. (~~TOP SECRET~~)

PART VI: SUBORDINATE COMMAND ACTIONS:

Reports on vulnerability to jamming have now been received from each of the Subordinate Commanders. As might be expected, the reports reflect the differences in the communications problems of each of the Services, which result from their respective missions. The following is a summary of the important sections of the individual service reports, with particular emphasis on the overall estimate of each service capability of maintaining essential communications required for emergency tasks: (~~TOP SECRET~~)

a. USAFEUR:

CINCUSAFEUR, in his report provides a detailed analysis of his essential communications, broken down into four categories, and indicates the various types of communications at his disposal for each category. These categories are: (~~TOP SECRET~~)

- (1) First - Communications along the LOC; (~~TOP SECRET~~)
- (2) Second - Army Group Command and lateral communications; (~~TOP SECRET~~)
- (3) Third - Seventh Army Command communications, including communications to the Area Commands until non-combatant evacuation is completed; (~~TOP SECRET~~)
- (4) Fourth - USAREUR communications, provided by the Army Command and Administrative Network (or ACAN), with the Dept of the Army, and principal US Commands in Europe, North Africa, and the Middle East. (~~TOP SECRET~~)

In general, except along the LOC, the CINCUSAREUR analysis indicates considerable dependence on HF radio. And particularly, for lower echelon Army units, both HF and VHF field radio play an essential role, especially when positions are rapidly changing. In the case of armored and air-ground operations, radio is the only means of electrical communications. (~~TOP SECRET~~)

Civil and land lines are extensively used at present, and war plans call for activation of numerous reserve circuits. Along the LOC, dependence on these lines will be somewhat lessened with the completion of the Army-Air Force radio relay system across France, the Army portion of which will be in limited operation next month and be completed by the end of 1954. Among the other protective measures being taken is the movement this year of the main tape relay center, with associated HF facilities, from Heidelberg to Pirmasens Area, west of the Rhine. Further, current plans call for the transfer of these activities to the Orleans area in time of emergency or war. (~~TOP SECRET~~)

CINCUSAREUR's conclusions with respect to maintaining essential communications are generally as follows: (~~TOP SECRET~~)

- a. With respect to the LOC, essential communications can be maintained under present conditions, only if sabotage to civil circuits is minor. On completion of the radio relay system across France, this system, with supporting military wire and cable, will provide essential LOC communications, unless there is considerable sabotage. Mail and messenger service will be used as required. (~~TOP SECRET~~)
- b. With respect to Army Group Command requirements, communications can be maintained, except to Berlin where, of course, no electrical communications can be assured. Lateral communications will be dependent upon civil land lines and messenger. (~~TOP SECRET~~)
- c. With respect to Seventh Army requirements, minimum essential communications to Seventh Army units can be maintained in forward areas by maximum utilization of available civil land lines and military wire, and in rear areas by both fixed and tactical radio relay systems, plus available land lines. In some cases, messenger service will be necessary. Air-ground communications cannot be assured in forward areas. For the critical period during non-combatant evacuation, CINCUSAREUR estimates that minimum essential communications to Area Commands can be maintained by use of the fixed radio relay system, available land line, and messenger. (~~TOP SECRET~~)
- d. With respect to the ACAN, essential communications to the United States can be maintained only if interruption of civil land lines and of submarine cables is minor. If these facilities are lost, courier service will be required from Tape Relay Centers either to cableheads or to the U.S. ACAN communications to Turkey, Greece, and North Africa are expected to be negligible. ACAN Communications to Continental European areas, in CINCUSAREUR's estimate, can be completely disrupted only by such wide-spread sabotage that re-routing is impossible. (~~TOP SECRET~~)

(2) How about a rapid microfilming system for bulk courier communications? Much volume could then be flown from point to point by jet fighter planes.

EACU

~~TOP SECRET~~

In this connection, CINCUSAMEUR, in his latest emergency Plan, assumes, for the first three months of the war, a 10% combat loss of civil communications used by the military, and a sabotage loss which varies from 20% in France and Italy to 10% in Germany and 5% in Spain and the U.K. A 10% loss of military wire facilities to sabotage is assumed throughout the Theater.

~~(TOP SECRET)~~

b. NELM:

CINCNELM's report is primarily concerned with HF radio communication, since Naval Forces necessarily place a higher degree of reliance on HF radio than do other Services. Naval Forces do not operate an extensive land line or radio relay network in overseas areas, but rely as necessary on lines leased from an Allied Government or used in conjunction with other US Services. Responsibility for protecting such lines is normally that of another agency. CINCNELM advises that study is continuing with a view to preparing his Forces for the conduct of operations without the high degree of reliance on HF radio heretofore employed. ~~(TOP SECRET)~~

Various other measures have been, or are being undertaken. Aside from technical actions, common to all the Services, such as insuring proper antennas, frequencies, optimum equipment operations, etc., the following items of more general interest reflect current thinking: ~~(TOP SECRET)~~

(1) First, training: CINCNELM reports some progress in anti-jamming training, which is to be expanded, particularly in manual CW operation. CINCNELM has recommended to NATO authorities that at least a portion of the next large NATO Naval Exercise in the Mediterranean be conducted entirely on manual CW to promote operator training and to evaluate ability to handle traffic by this method. In addition, CINCNELM has proposed that pre-arranged "Minimize" procedures to reduce electrical communications on short notice should be adequately tested during the next large NATO Naval Exercise.

~~(TOP SECRET)~~

(2) Second, mail and courier service: Considerable thought is being given to assuring adequate service for wartime, and in addition, the current CINCNELM war plan requires each Task Force Commander to set up a Task Force Courier Service. During the last NATO Naval Exercise in the Mediterranean, some message traffic was actually diverted from electrical means to mail and courier with at least acceptable results, and for the next NATO Naval Exercise, CINCNELM has recommended periods of enforced radio blackouts on all HF circuits. ~~(TOP SECRET)~~

In the light of the JCS directives, CINCNELM considers that all his HF radio circuits are vulnerable and lacking adequate protection. Sixteen of twenty-four circuits now in use are classed as essential. He considers the normal peacetime back-up of one HF circuit by another HF circuit to have been eliminated by the JCS directives. ~~(TOP SECRET)~~

CINCNELM has considered the JCS assumptions individually in developing a general estimate of his ability to maintain essential communications to carry out assigned emergency tasks. ~~(TOP SECRET)~~

a. The first JCS assumption, that HF communications in, to, or from overseas area cannot, for all practical purposes, be considered feasible in war, is considered by CINCNELM to lead logically to the third assumption, that contemplated operations should not rely on long-range radio communications. The effect of these two assumptions, says CINCNELM, is serious but not fatal, with a partial solution lying, at least initially, in the use of certain simple measures, coupled with moderately revised Command concepts. Among these measures is the implementation, in actual operations, of pre-arranged working procedures to reduce communications traffic by electrical means and to convert such traffic to mail and courier service. These procedures already exist and have actually been employed on one occasion or another; now, however, Naval Forces are faced with the possibility that such emergency measures will become

~~TOP SECRET~~

~~TOP SECRET~~

the modus operandi of a future war. In addition, Commanders of forces at sea and Commanders of other detached forces must be given increased latitude in day-to-day operations. Voluminous interchange of messages between afloat and ashore authorities must be discontinued, with a consequent lessening of the degree of control over the operating forces which has been normally vested in naval shore commanders. (~~TOP SECRET~~)

b. With respect to the JCS assumption that VHF and UHF near the Soviet Orbit must be considered vulnerable; while not questioning the validity of the assumption, CINCNELM does view the situation optimistically from the Naval point of view. Stations close enough to jam tactical circuits are in themselves prime targets for destruction, and one suggested solution is to insure that operational plans include provision for timely interdiction of Soviet Bloc communications stations capable of jamming short-range tactical communications. In any case, CINCNELM considers that though vulnerable, VHF/UHF will still be available to Naval Forces. (~~TOP SECRET~~)

c. Finally, CINCNELM considers that the availability of low frequency and medium frequency communications will enable Naval Forces to use radio for several types of operation. Two high-powered LF transmitters are currently being tested at Port Lyautey, and they should provide cover over most of the Mediterranean Area. In addition, two very low frequency transmitters are in operation in England, one in France and one is in prospect in Turkey. Although these facilities are not under US control, the countries concerned will probably make them available for NATO use. Thus, with continued effort in developing and training on pre-arranged procedures, with the continued use of frequencies lower than HF and of VHF/UHF, and with the possibility that all HF cannot be jammed all the time, the threat to Naval communications and operations may not, in CINCNELM's opinion, be as great as it would first seem. (~~TOP SECRET~~)

c. USAFE:

The current CINCUSAFE Operation Plan, for war or emergency, provides for expansion of existing communications facilities to cover Air Force requirements throughout the Theater, and, in Germany and France, the USAFE Plan parallels that of CINCUSALHEUR in many respects. However, under the Plan, the location of major Air Force Headquarters in the United Kingdom, in North Africa, in Spain, and Italy increases the problem of providing reliable communications. (~~TOP SECRET~~)

The CINCUSAFE policy provides that command communications will be routed over wire circuits, wherever available, and over radio circuits where wire circuits are not available. Radio back-up is provided for wire circuits where appropriate. Long-haul radio traffic utilizes the world-wide GLOBECOM system. New headquarters and facilities when established, will be tied by wire or radio to the nearest GLOBECOM radio station. The communications support for Strategic Air Command operations parallels the GLOBECOM system in most cases, with additional circuits to other locations uniquely required for SAC operations. (~~TOP SECRET~~)

CINCUSAFE's report to this headquarters indicates that anti-jamming measures and studies of vulnerability of forces are underway throughout the Command. Related training measures and technical actions are reported to be progressing satisfactorily, except for certain equipment deficiencies. (~~TOP SECRET~~)

As to vulnerability of radio, the reports of individual Air Force Commands, forwarded by CINCUSAFE, contribute to the general picture. The AACS Wing (which operates GLOBECOM) indicates that twelve essential HF radio circuits, linking the UK, Germany, North Africa, and the United States are highly vulnerable. The Air Force Security Service Unit, the 6900th Security Wing, concludes that that Command's capability of maintaining essential radio communications is almost negligible. The Twelfth Air Force, while not so pessimistic, in view of existing and planned VHF and UHF systems within its area, still expresses concern over HF radio operations. (~~TOP SECRET~~)

~~TOP SECRET~~

CINCUSAFE, in his planning, uses the following estimates on loss of essential civil land line circuits by sabotage during the first five days of hostilities: Within France, 50%; within Germany, 30%; between France and Germany, 65%; within England, 25%; and between France and England, 50%. Completion of the Army-Air Force microwave system across France will serve to maintain communications along the LOC, for CINCUSAFE as well as for CINCUSAREUR. The connecting microwave link across the English Channel, on which construction should begin this summer, will further reduce the effectiveness of Soviet jamming on the axis. In addition, a microwave radio relay system has been installed in North Africa, joining the Air Force installations in Morocco. The terminal of the system at Sidi Slimane is tied directly into the GLOBECOM system at that point. (~~TOP SECRET~~)

The CINCUSAFE Operation Plan also calls for the post D-Day installation of a 24-channel microwave system across Spain with connection links tying in both the French and North African systems. In the Madrid Area, it will connect with GLOBECOM for relay of communications to other headquarters. However, under current planning, the Spanish system will probably not be operational prior to D + 12 months. In this connection, Air Force Headquarters in Washington has not yet concurred in CINCUSAFE's proposal to implement the tie-in link during peacetime. (~~TOP SECRET~~)

Finally, CINCUSAFE has recently forwarded to the Chief of Staff of the Air Force a plan covering the communications means and personnel requirements to support a wide-scale dispersal of tactical aircraft. Approval of this plan by Washington will permit CINCUSAFE to commence implementation, and thereby to reduce the physical damage vulnerability of Air Force communications. (~~TOP SECRET~~)

d. USFA:

The communications situation of US Forces in Austria, as an Army Command, is similar to that of CINCUSAREUR, but modified by conditions peculiar to that area. HF radio, backed-up by Austrian and Italian land line facilities, is used as the primary means of communications along the LOC to Leghorn. HF radio alone is used for communications to Vienna. USFA's external communications are handled by the Army Command and Administrative Network, and appropriate SOPs have been promulgated in connection with anti-jamming measures and alternate routes. In addition, the Commanding General, USFA, reports that various training and technical measures to relieve jamming and to improve reliability are being carried out within his Command, and that adequate messenger and courier service is being provided. (~~TOP SECRET~~)

With regard to VHF back-up, preliminary tests have been conducted to determine the practicability of tactical radio link communications along the USFA LOC; negotiations are currently underway with the Italian Minister of Defense to conduct further tests in Italy. Should these tests prove successful, VHF communications would serve as an alternate emergency means of communications which would be less susceptible to jamming than HF circuits. (~~TOP SECRET~~)

In summary, the Commanding General, USFA, estimates that his essential communications are highly vulnerable, and that enemy-imposed restrictions on long-range electrical communications for logistical support will, as he says, hamper the Command. The Command may be without needed air support during critical periods. Contact with the US Element to Vienna would probably be lost, since such contact is maintained only by radio. However, the report goes on, it is believed that internal tactical communications, including all means, can be maintained to the minimum degree required to accomplish emergency operations. (~~TOP SECRET~~)

PART VII: THE PROBLEM:

It is evident from the foregoing reports that there is a general awareness of threats to the reliability of our communications, but that estimates as to vulnerability differ considerably. In any evaluation of the latter, it is important to recognize that: ~~(SECRET)~~

- a. First, jamming threats to radio are now more serious than ever before: ~~(SECRET)~~
- b. Second, resort to land lines may not be possible in many cases: ~~(SECRET)~~
- c. Third, any appreciable loss or disruption of electrical capacity to carry the heavy traffic loads of wartime can create great difficulties. ~~(SECRET)~~

It would appear, therefore, that much remains to be done within each Service. Energetic training programs and maximum diversification in the provision and use of communications offer, for the present, the most promising approaches. ~~(SECRET)~~

From the standpoint of the Joint Commander, the problem confronting US CINCEUR is to determine what additional measures in preparation for emergencies should be taken jointly within the European Command in order to ensure the best results through joint effort and mutual support, and to coordinate Uni-Service actions to ensure their compatibility and proper support of joint objectives. ~~(SECRET)~~

An Inter-Service Working Group, as proposed by CINCPAC, seems to be called for. Service planning must progress further, of course, before individual plans can be properly coordinated and joint plans formulated. There is a need, meanwhile, for constant liaison, in order to arrive at a sound basis for estimating vulnerability, to deal with joint matters as they arise, and to afford a means of exchanging pertinent ideas and information. ~~(SECRET)~~

Accordingly, US CINCEUR intends to establish this Working Group at the earliest practicable date. (UNCLASSIFIED)

Meanwhile, we hope that the comprehensive nature of this presentation will aid toward a better understanding by all concerned of our current situation in Europe. (UNCLASSIFIED)