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SYNTHESIS OF EXPERIENCES IN THE USE OF ULTRA INTELLIGENCE

BY U.S. ARMY FIELD COMMANDS IN THE

EUROPEAN THEATRE OF OPERATIONS

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A. Introduction:

1. History:

On 15 March 1944 General Marshall, U.S. Army Chief of Staff, sent to General Eisenhower a letter which set forth the basis upon which German Ultra intelligence was to be made available to U.S. Army field commands in the European Theatre of Operations. The following paragraphs are taken from that letter:

"7.D. The receipt and distribution, at the field commands, of messages containing or relating to Ultra intelligence, is handled by Special Liaison Units furnished and controlled by the Director General, G.C. & C.S. The personnel of these units includes American officers attached to MID, War Department, London.

"7.F. One or more American officers assigned to MID, War Department, London, will be detailed to each American field command which receives Ultra intelligence. These officers will be subject to the administration and discipline of the command to which they are detailed. They will work under the control of the G-2 or A-2 of the command as part of his staff. They will have had a period of training at G.C. & C.S., and, if possible, with operational commands in the Mediterranean Theatre, and this training will be directed toward equipping them to use Ultra intelligence effectively and securely. Their primary responsibility will be to evaluate Ultra intelligence, present it in useable form to the Commanding Officer and to such of his senior staff officers as are authorized Ultra recipients, assist in fusing Ultra intelligence with intelligence derived from other sources, and give advice in connection with making operational use of Ultra intelligence in such fashion that the security of the source is not endangered. If at any time the flow of Ultra intelligence is not sufficient to occupy fully the time of these officers, they may be used for other related intelligence assignments."

2. Definitions:

Throughout this paper, which describes the experiences in the use of Ultra intelligence by U.S. Army commands operating under SHAEP and pursuant to the provisions of the Marshall letter, the following definitions have been observed:

SLU/SCU Detachments: The Special Liaison Units present at the commands to handle the receipt and distribution of messages in accordance with the quoted paragraph 7.D. above.

Representatives: The Ultra intelligence officers detailed to the field commands in accordance with the quoted paragraph 7.F. above.

Recipients: All persons at the commands who had been indoctrinated and were authorized to receive Ultra intelligence pursuant to security regulations of 1 April 1944, approved by the U.S. War Department and the British.

Non-recipients: All persons at American field commands outside the three categories listed above.

3. Scope:

This paper is based primarily upon informal reports submitted by representatives upon completion, after VE-day, of their tours of duty with U.S. Army commands in the European Theatre of Operations. A few of the ideas expressed herein were obtained from interviews with several of the representatives, with a group of SLU officers and with some of the officers in Hut 3 who serviced the commands. Brief reports submitted by six of the American SLU officers also have been considered.

The scope of this synthesis is limited to a summary of the experiences and views of representatives who served with army groups or armies (or with their air counterparts: air forces or TACs).⁽¹⁾

The following additional restrictions should be borne in mind:

- (1) Some conclusions have been based on statements by one or a few representatives.
- (2) The handling of high-level counterintelligence information, which was passed over the SLU/SCU link, has not been included.
- (3) The over-all question of which steps in the intelligence process should have been performed at Hut 3, which at the Ministries, and which at the field commands has been omitted.
- (4) No attempt has been made to judge the relative merits of the American system of having a specially appointed representative to handle Ultra material and the British system having the regular intelligence staff of the command process Ultra.

B. Special Liaison Units.

The SLU/SCU detachments were composed largely of British officers and other ranks, although a number of American officers participated in the work and, in a few cases, commanded the detachments. The detachments were controlled by SLU 8, at SHAEF, and were attached to the U.S. field commands. Most of the detachments served the G-2 (or A-2) section but their anomalous administrative position led to a repeated and important recommendation for an organizational change.

(1) The synthesis does not cover experiences of U.S. Army officers at Air Ministry (where the representative served as Special Adviser on Tactical Air Force Targets in Western Europe), at USSTAF (where the representative worked in, and for a considerable time acted as chief of, the Operational Intelligence Division of the Directorate of Intelligence),

and at ETOUSA and SHAEF. Some of those experiences are summarised in Appendix I to the paper entitled, Use of CX/MSS Ultra by The United States War Department.

1. Position in the chain of commands:

The centralized control of SLU/SCU detachments, as prescribed in the Marshall letter, was recognized as valuable because it gave the elasticity necessary to shift personnel and equipment according to the burdens imposed by changes in the volume of traffic, and the freedom from control necessary to preserve security and to avoid time-consuming duties of a less important nature. Unfortunately, however, the relations between the detachments and the commands to which they were attached were not always satisfactory. This condition was caused primarily by the fact that SLU officers were inadequately instructed on their position in the chain of command and were given no uniform suggestions on operating procedures. A number of representatives suggested that each SLU/SCU detachment be subordinated to the representative in order to clarify the control of administrative and security problems and to facilitate the obtaining of supplies and transportation for both representative and detachment. A further advantage of such an arrangement to the representative would be the possibility of using a non-commissioned member of the detachment as a part-time assistant to keep records, post maps and perform other clerical functions. The administrative details which would fall on the representative as commanding officer of the detachment would not be very onerous and, in any event, could be largely delegated to a junior officer so that they would not interfere unduly with the representative's primary duties as an intelligence officer.

Most of the American SLU officers interviewed were not strongly opposed to this suggestion but they stated clearly that the representative must have an understanding of the problems (particularly the technical ones) faced by the detachment. On the other hand, the author of The History of the Special Liaison Units (Europe and the Mediterranean) cites (pp. 17-18) "grave objections" to this suggestion

that the representative be commanding officer of the SLU/SCU detachment at his command. The author argues that the representative's knowledge of cyphering would be insufficient to enable him to check on the primary object of the unit--the decyphering of messages. It seems a ready answer that the senior officer of the SLU/SCU detachment could continue to exercise this function, subject to the administrative control of the representative. The author's "even more telling objection"--namely, the importance for complete mobility of the unit and its personnel-- also does not appear determinative. There were few instances of commands which were out of action and could afford to relinquish their SLU/SCU detachments; moreover, the representative himself would not have to move and a turnover in personnel would be no more of an unsurmountable problem for him as detachment commanding officer than for any other unit commander.

2. Necessity for separate SLU/SCU detachment at each command:

Early efforts to have air and ground HQs at the army- TAC level serviced by the same SLU/SCU detachment presented serious difficulties in a fast moving situation in the field, where the two HQs were often many miles apart. Some representatives lost much time in daily trips to the detachment in order to pick up and return the material, and of necessity deliveries were limited to one per day. These delays lessened the value of the Ultra information and, in some cases, may have prevented its being put to operational use. The presence of a separate SLU/SCU detachment at each command which has a representative is highly desirable. Even in cases where commands are certain to remain physically adjacent to each other, separate detachments may simplify routing problems and avoid jurisdictional difficulties.

3. Other problems:

Although no technical difficulties seriously impeded intelligence work at the commands, several representatives at the army-TAC level found fault with the timeliness and accuracy with which the signals reached them. These complaints concerned primarily stations using the one time pad system rather than those where typex machines were employed. The pad method, while admittedly more secure than the machine cypher system, has two drawbacks. The process is much more laborious; SLU personnel at a machine station can handle at least three times the volume of traffic that can be handled by a like number at a pad station. Secondly, the corruptions caused by weather interference with transmission and reception are more extensive and more difficult to emend at a pad station. The rule of pad-for-army was inaugurated during the North African campaign when there was some danger of an army HQ being overrun by the enemy. At the time of the European campaign, however, the original need for so stringent a security measure had largely evaporated. The warfare was less fluid on the Western Front and there was very little danger of an army HQ being overrun so quickly that machines could not have been removed or destroyed. A more flexible analysis of the operational system should have permitted an elimination of the costly pad system. Indeed, on several occasions both the Sixth and Twelfth Army Group HQs found themselves either in advance of or in the same area as army HQs. The pad-for-army rule in such cases was, of course, entirely arbitrary. One SLU officer who had worked with both methods made the following statement:

"The necessity for speed and accuracy is more apparent in organizations such as armies and tactical air commands than at larger headquarters. Nevertheless, the forward stations were equipped with a much slower system and many times it was necessary

to hold up important items for corrections that would not have been necessary with a machine cypher system.....In my opinion speed and accuracy were more important at the forward stations and therefore they should have been given a faster system of high security value."

No other unsolved problems bulked large in the work of SLU/SCU detachments, but the following suggestions were made in several reports:

- (1) Personnel of the detachment should be trained together.
- (2) At least one member of the detachment should be trained in servicing the typex machine.
- (3) A trailer equipped with its own generator makes the service more reliable by emancipating the detachment from undependable local power supplies.
- (4) The enlisted men in the detachment should be able to operate a typewriter.
- (5) Representatives and others using the link should be instructed in the use of signals language to conserve groups and eliminate superfluous phrases.
- (6) Arrangements should be made to avoid interference between SCU signals and those of the regular signal unit at the command.

C. Representatives:

1. Background and training:

Some 28 officers served, at one time or another, as Ultra representatives with the commands in the European Theatre. Of these only two were regular army men with military backgrounds; the remainder were carefully chosen reserve officers. By far the largest proportion of this group were lawyers in civilian life, but the list included teachers, reporters, an engineer and a corporate executive. Almost all the men were recruited by Special Branch in the War Department after personal interviews and extensive investigation, without much reliance

on the Army's formalized classification records. Some were chosen particularly for positions with commands; others were selected for intelligence work in general and later allocated to the jobs for which they seemed best fitted.

After they were selected but before they joined their respective commands, the representatives received training at G.C. & C.S., in accordance with paragraph 7.f of the Marshall letter. Some of them had experience with Ultra in the War Department before being shipped to England. In Hut 3 a programme was worked out by _____ to teach all the representatives the conventions, methods and capabilities of the Hut, and especially to give them an understanding of the work of the Watch. Although all the specialists in Hut 3 co-operated generously and completely, the time allotted was not always sufficient for adequate background training. A few of the representatives also visited commands in the Mediterranean Theatre to learn how Ultra was being used operationally.

There is a divergence of opinion among the representatives concerning the necessity for a military background or specialized training. Some of the representatives felt that the method of selecting and training representatives was entirely satisfactory. On the other hand, several considered their background and training to have been definitely deficient. One recommended a background in general intelligence and an understanding of the values and limitations of the various intelligence sources; he also advocated a basic knowledge of army procedure, proper channels and chain of command. Another emphasized that a more thorough prior training in enemy order of battle was required, that an understanding of tactics and strategy would have been very helpful, and that some experience as a "soldier" would have been a benefit. A third felt that Command and General Staff School training or combat experience would have been invaluable. Several of the representatives who had served with

air commands regretted their scanty training in ground order of battle.

Because of the unique position of the representative, the innovations which constantly had to be made and the personality problems which varied from command to command, no inelastic recommendations as to character, background or training can be made. To supplement the basic prerequisites of intellect, quick perception and diplomacy, a thorough understanding of the nature and content of both Ultra intelligence and intelligence from other sources appears to be the most useful contribution which can be made by prior training.

2. Physical setup:

All agreed that the representative should have a private, independent Ultra "office", entrance to which should be restricted to indoctrinated personnel and from which no Ultra material could be taken. In the field, this was frequently a guarded tent, or better, an office van or trailer. Close proximity to the offices of the G-2 (or A-2) and of the SLU/SCU detachment is desirable. Maps were usually mounted on folding plywood boards which could be locked together; Ultra material was kept in a small safe and other papers in a transportable box. One representative stated that a roll of acetate would have been of greater help to him than any average day's flow of material.

3. Position in chain of command:

The independence of the representative by reason of his detached service status was stressed as an advantage in most of the reports. The representative was in a better position to enforce security measures in dealing with officers of higher rank than he would have been in had he been an integral part of the command. Secondly, those

representatives who served with commands whose G-2 sections were inefficient and incompetent valued their semi-independent status highly. That status also resulted in an esprit between the various representatives which was of benefit in their relations with Hut 3 and with each other. Additionally, it afforded security cover within the command and decreased the possibility of local curiosities and jealousies.

Despite the fact they were on detached service, representatives at several of the commands were called upon to perform various duties within the G-2 section which seriously encroached upon the time devoted to their normal functions as Ultra specialists. At least one representative, assuming that World War III's top-ranking officers will be more security-minded and its G-2 sections more competent, stated his belief that the advantages of having the Ultra operation completely integrated with the general work of the G-2 section outweighed the advantages of independence, and recommended that the representative should be assigned to that section. ⁽¹⁾ Such a procedure would go far to eliminate whatever tendencies there may be for the Ultra representative to be isolated both in function and in his intelligence perspective from the rest of the G-2 section. Without regard to the special demands of security, it seems, in theory, a drag on progress in intelligence generally to continue treating Ultra as a separate profession.

4. Deliveries of material from SLU/SCU detachment:

It was common practice for regular SLU deliveries to be made four times daily. During operations, ZZZZ and ZZZZZ signals were delivered to the representative in most commands as soon as they were

(1) Even this view does not apparently go so far as the British method of having Ultra processed by the regular intelligence staff of the command, with no representative as its special custodian and disseminator.

received. In addition, during certain phases, the representative would instruct the SLU to deliver immediately certain types of messages, regardless of priority. Each message was signed for by the representative and, after being used, was either destroyed by the representative or returned to the SLU/SCU detachment for destruction. These obvious demands for a time-saving and efficient working arrangement made clear the necessity for physical proximity of the representative to the detachment.

5. Handling of material:

a. Files, indices, maps:

The maintenance of records largely depended on the personality and mentality of the individual representative. Although it proved to be a none-too-agreeable chore, most felt obliged to keep fairly extensive records in order to be in a position where they could, whenever necessary, lay their hands on any Ultra intelligence which might prove of value. One ground representative (with an army group) maintained full Ultra records on all units in his command's own area and on all units from divisions up on the entire Western Front, together with items of general interest and notes on the German knowledge of Allied forces. Notes were also kept on the more important items of intelligence from other sources. One air representative (with a TAC) maintained two main files: (1) a card index system for airfields, with a separate card for each airfield listing all information received on that airfield, including units located thereon, and (2) an order of battle notebook, with a separate sheet for each unit down to individual Gruppen. Most of the prodigious effort was wasted in the sense that not more than 5-10% of the entries were ever used, but it was an inevitable waste since, even though Hut 3 could be queried as to past intelligence, the information was almost invariably needed at once to illuminate a current message or answer a question.

All ground representatives maintained enemy order of battle maps, generally one for the command area and a smaller-scale one for the Western Front. At some commands it was found desirable to show front lines and Allied units and boundaries, since the briefing sessions frequently changed into discussion and planning conferences. Both army group Ultra rooms maintained special maps portraying the disposition of Allied forces as known to the enemy and revealed in enemy estimates of Allied dispositions and intentions. Since that type of material usually went to army groups only, the army representatives did not receive sufficient information to justify such a map. In addition to aiding G-3 Special Plans in formulating cover plans, these maps provided a ready means of determining which Allied units had been identified by the enemy, and consequently which units could be released to the press. Various air representatives kept situation maps, order of battle charts and maps, potential targets charts, and maps portraying airfield activity by type of aircraft.

b. Desirability of assistance:

The representative bore heavy responsibilities, worked long hours seven days per week, and was practically the only man on the staff who had no one to relieve him. It was unanimously recommended that in order for him to function effectively, he should have received more assistance, in one form or another, than was the case during the Western Front campaign. Three solutions were suggested: (1) a more effective system of periodic temporary relief for single representatives; (2) indoctrination of an enlisted man to keep records, post maps and perform various time-consuming administrative tasks (for one means of meeting this suggestion, see item B.1. above); and (3) assignment of a junior officer to aid the representative (in fact, this was done at several commands). One report concluded:

"Based on traffic in the European Theatre, at least two men should be attached to an army and three to an army group.... Personal liaison with higher and lower commands is invaluable but cannot be accomplished without an available relief officer."

c. Examination of intelligence from other sources:

The need for careful study of all sources of intelligence was stressed by most of the representatives. All papers passing through the G-2 situation room were read, and there were frequent consultations with members of the G-2 section and with attached personnel such as P/W interrogation, P/R and Sigint teams. Such activities not only provided the representative with a more complete intelligence picture but also enabled him to fuse Ultra with open intelligence (see items 6.a. and 7.a. below). One representative wrote:

"It is most easy for the Ultra representative to allow himself to become isolated from the main stream of the intelligence section, so that he loses awareness of what other sources are producing. Another facile error, induced by inertia, is to permit Ultra to become a substitute for analysis and evaluation of other intelligence. The two easy errors, isolation from other sources and the conviction that Ultra will provide all needed intelligence, are indeed the Scylla and Charybdis of the representative. Ultra must be looked on as one of a number of sources; it must not be taken as a neatly packaged replacement for tedious work with other evidence."

6. Dissemination to recipients:

a. Purposes: All of the reports showed that the representatives recognized their primary responsibility as defined in the Marshall letter insofar as it pertained to recipients at their own commands. One ground representative sought "to give the commanding

general and all indoctrinated members of the staff a clear understanding of how each item could be used without loss of security." An air representative (who performed at his command most of the functions of an A-2) stated that his real mission was "to bring together all information concerning the enemy and grind it into meaningful intelligence." He described his office as the assembly room where an effort was made to build up the general intelligence picture to the Ultra level by ascertaining the extent to which Ultra items had been securely revealed by other sources. The major uses of Ultra at one army group were described as:

- (1) educating the commanding general as to the value of intelligence;
- (2) affording him a general background as to the state and disposition of the enemy forces;
- (3) serving as a control to the intelligence from other sources; and
- (4) offering otherwise unavailable knowledge of major enemy operations.

b. Methods:

At most commands, the heart of the Ultra operation was the daily briefing of recipients; this generally took place at a regular hour each morning, either preceding or following the intelligence briefing based on lower classified sources. The briefing, ordinarily lasting from 15 to 30 minutes, covered the salient intelligence received during the past 24 hours, plus an occasional special study or summary. The methods of presentation varied considerably, depending upon the personalities of the representative and his recipients. A few of the representatives found it advisable to stage a "show" in order to win and maintain the interest of their recipients. The necessity for this lessened, however, as the true value of Ultra became recognized.

In addition to attending the briefings, recipients visited the representative's office throughout the day to review the messages in

detail and to discuss with the representative messages of special interest. Messages requiring immediate attention were brought to the attention of the G-2 (or A-2) and, less frequently, of the commanding general upon receipt.

One of the air representatives prepared a daily written report based solely upon Ultra; he also submitted periodical resumes of Ultra information, showing recent changes in the enemy picture and concluding with an estimate of GAF capabilities. Another air representative prepared weekly Ultra reports summarizing GAF activities, together with special papers on such subjects as V-Weapons, the development of jet-propelled aircraft, etc.

c. Number and types of recipients:

Most of the representatives experienced considerable difficulty which originated in the fact that some of the individuals indoctrinated prior to the arrival of the representative at the command were less useful as recipients than others in the command would have been. Because titles in operational intelligence staffs bore no absolute relation to functions, it was recommended that initially only the commanding general and the G-2 (or A-2) be indoctrinated and that further recommendations for indoctrination be made only after the representative had spent a period of time at the command and had an opportunity to observe the de facto functions of the various members of the staff. One representative suggested universal adoption of the practice that the actual indoctrination should be performed by the representative after he had secured approval of his recommendations; it was argued that this course of action would have the incidental value of enhancing the prestige of the representative at his command.

Recommendations for the indoctrination of specific officers varied from one command to another because of differences in titles and duties performed. The officers who were most frequently suggested for

indoctrination were the Chief Target Officer, the head of the Order of Battle Section and the chief of Sigint, because they were in the best position to fuse and make use of Ultra intelligence.

7. Dissemination to non-recipients at own and lower commands:

a. Purposes:

It was important for the representative to give non-recipients at his own and subordinated commands as much of the situation in the light of Ultra as could be accomplished with appropriate cover, and to kill, so far as possible, items of information known, through Ultra, to be in error. This duty was implicit in the quoted provision of the Marshall letter which made it a responsibility of the representative to "assist in fusing Ultra intelligence with intelligence derived from other sources....". The representatives discovered that although it was not always possible to "float" Ultra items, it was possible to minimize errors from other sources.

b. Methods:

Whereas it was comparatively easy for a representative serving with an army to keep recipients advised on the enemy situation as it appeared from all sources, including Ultra, it was more difficult to accomplish that end with respect to non-recipients at that command and still more difficult to do so with respect to subordinate corps staffs. In order to accomplish either, the representative had first to establish his position within his own command, and particularly within the G-2 (or A-2) section. By means of friendly cooperation and frequent consultation with non-recipients, together with the monitoring of lower-classified intelligence summaries to prevent the inclusion of items shown by Ultra to be erroneous, he could contribute to the building up of the general intelligence picture to the Ultra level. To assist

the corps staff, it was his function to veto or amend incorrect passages in publications prepared by unindoctrinated members of his command for distribution to the corps, and to publish appreciations or estimates to advise the corps of the true picture, with appropriate cover.

The experience of one representative, whose army was for a time under the Twenty-First Army Group, demonstrated that the forms of appreciations and periodic reports prescribed by American manuals were not so well adapted to this task as were the more informal type of notes used by the British. It was his practice to prepare annexes to Periodic Reports or Spot Intelligence Reports in which he reviewed the enemy situation using information from all other sources which was known to be correct (from Ultra or otherwise); bits of Ultra information were filled in by way of speculation or reasoning.

8. Relations with Hut 3:

There was disagreement among the representatives at the army-TAC level as to the adequacy of the coverage of the material sent by G.C. & C.S. to such commands. Some expressed themselves completely satisfied with the general principles of selection which denied certain types of material to those commands; (it should be noted that those same representatives invariably considered adequate the summaries and appreciations furnished them by their army group - air force representative). On the other hand, at least one TAC representative, who was dissatisfied with the service from his air force equivalent, strongly recommended a wider selection of items by Hut 3 which would include "strategic" information. He stated that not only was his commanding general always interested in the "big picture"--"his local thoughts and actions were dictated by what was going on strategic-wise"-- but also

the representative himself could have performed his services with greater self-confidence and increased value had he been more fully informed on the over-all situation. The junior representative at the same command, however, found the scope of the Hut 3 service "more than adequate" as an aid to the TAC in executing its assigned missions.

Only one representative criticized the Hut 3 practice of confining itself to the job of factual reporting, leaving estimates and appreciations to others. (1) Two other Hut 3 practices caused some minor difficulties at the commands. One was the occasional use of terms of art and Britishisms the meaning of which was not clear to the representatives. In one case a British military adviser on the Watch stated that a fuel depot "disposed of" a certain amount of fuel; his meaning-- that the specified amount of fuel was on hand and available-- escaped some of the representatives. The other practice was the insertion of grid references in the text of a message. Lacking an explanation of whether a grid reference was a translation or transliteration from an identification in the original German text or merely an informed guess by a Hut 3 adviser, the representative did not know whether to accept it unreservedly or to view it critically and apply his knowledge of local geography. The first of these difficulties was probably inevitable; the second was a very minor criticism of an organization which corrected most ambiguities before commands were aware of the possibility of their existence.

Paragraph 9.C. of the Marshall letter stated:

"The Commanding Officer, MID, War Department, London, and his principal assistants, will visit the field commands as occasion requires to consult with the G-2's or A-2's on methods of handling and using Ultra intelligence and on the scope and method of servicing Ultra intelligence from G.C. & C.S. to the field commands."

(1) The reasons for that limitation and the theoretical and practical function of the Ministries are not within the scope of this paper.

It was the consensus of the representatives interviewed that supervisory and liaison visits from Hut 3 officers were an important aid to the efficient and uniform operations of representatives in the field, and that more frequent trips would have been helpful. Visits from junior members of Hut 3 were useful primarily in providing relief for representatives.

Conversely, in order to be of service, an intelligence center such as G.C. & C.S. must have an up-to-date picture of the commands' operations and their spheres of concern. The visits from Hut 3 officers helped to give this picture. In addition, each representative should have kept the "home office" advised more conscientiously on operational plans and priorities, new or unusual developments which were not apparent from Ultra, etc; adherence to this practice would have permitted a more intelligent processing and choice of Ultra material to be signalled by those who had the power of selection.

9. Relations with Ultra representatives at higher, lower and parallel commands:

a. Personal contact with them: Daily liaison between the representatives serving with an army and with its supporting TAC was not uncommon; most of the air representatives relied largely upon the army representative for information concerning the ground situation, in which the TAC HQ had a keen interest. Frequently the two would hold a joint air-ground briefing of their recipients. The frequency of the visits exchanged with representatives at higher, lower and parallel commands varied with the situation and the personalities involved. All agreed that frequent personal visits with the other representatives, at which common problems could be discussed, ideas exchanged, and coordination effected, were extremely beneficial.

b. Dissemination of material: Since the routing policy of Hut 3 left the commands at the army-TAC level with a chronic hunger (justified or not) for intelligence of other fronts or of general interest, most of the representatives at the army group-air force level passed down informal daily summaries of that type of intelligence. Weekly appreciations, target information and special summaries were also sent down by some commands. Only one of the representatives at the army - TAC level complained strongly of the inadequacy of the service given him by the representative at the army group - air force level. He felt his lack of information on the "strategic" picture should have been met by summaries of messages not sent direct to the army-TAC level and by appreciations of current and future enemy dispositions. Such a desire must, however, be tempered by the capacity of the army-TAC SLU/SCU detachment; otherwise the army-TAC channels might easily become overtaxed with this material to the impairment of the flow of current information from Hut 3.

D. Security:

1. Representative's title:

The problem of satisfying the curiosity of non-recipients, particularly in the G-2 (or A-2) section, was a difficult one. Some of the camouflage titles assigned to representatives were SLU Liaison Officer, GAF Specialist, Russian Liaison, Estimates and Appreciations Group, and Air Intelligence - Order of Battle. Much of the difficulty could have been avoided, it is believed, if the G-2 (or A-2) had laid all rumours at the outset by stating to the curious as a group that intelligence of a special character which did not concern them was being received and that speculation was expressly forbidden. Because

the problem was inadequately handled at several commands, there were jealousies and hard feelings which hampered the representatives' activities.

2. Security measures:

Most of the representatives found that substantial security was rather easily attained and that perfect security was an impossibility. The representative's most difficult job was to make certain that recipients did not make direct operational use of Ultra without appropriate cover. Charged with responsibility for success or failure in battle, any commander would find the temptation to employ Ultra improperly was well-nigh irresistible at times. Even daily security reminders by the representative and periodic directives from higher authority were tried and found somewhat inadequate. One representative placed on the wall of his Ultra room a poster reducing the Ultra regulations to five rather simple precepts.

Actually there was no method by which the representative could censor all tactical orders and discussions, but by monitoring summaries, appreciations and publications, based on other intelligence sources, he could largely safeguard against a written break of Ultra security. Physical security and the protection of the Ultra signals presented no serious problems.

E. Instances of the Use of Ultra in Operations;

Paragraph 7.F. of the Marshall letter charged the representatives with presenting Ultra intelligence "in useable form" and with giving advice in connection with the operational use of it. The experience of

the representatives shows that the reliable guiding influence of Ultra in working with other intelligence outweighed its value as a separate and distinct source of operational information. Its normal function was to enable the representative and his recipients to select the correct information from the huge mass of P/W, agent, reconnaissance, and photographic reports. Ultra was the guide and the censor to conclusions arrived at by means of other intelligence; at the same time the latter was a secure vehicle by which Ultra could be disseminated under cover.

The representatives, who worked and lived with Ultra in the field, were aware that it often had a direct operational value; one stated: "It was important to protect Source, but it was also important to get the last bit of exploitation, the ultimate from Ultra consistent with security." The reports list many examples of Ultra's operational use. Of them, the following ten are typical:

1. There were times when Ultra information was of such immediate value that the shortest possible steps were taken to find the same intelligence from another source so that operational action could be taken. A good example was the signal received early one morning that the Germans had a strong concentration of motor transport in woods near Marburg. This was immediately passed to the Chief of Staff and the A-2 of the relevant TAC; they ordered a visual reconnaissance to include this area. The reconnaissance pilot returned with a report of a huge concentration of motor transport in the designated woods, and a squadron of fighter-bombers in the vicinity were redirected to the attack. At the close of the day, more than 400 vehicles, including tanks and armored cars, were claimed destroyed.

2. Another example of direct results obtained through Ultra information came at the time the U.S. Third Army was preparing to attack

through the Siegfried Line. Air - ground plans included an advance air attack on German battle HQs to disrupt communications and direction of defense. A careful collection of battle HQ locations was made from Ultra, and pinpoint locations were confirmed by P/W interrogation and aerial photographs. The attacks were successfully made, and German signals citing damages confirmed the decisive influence of the information.

3. Two days after the Allied landing in South France, Ultra indicated that the Germans were withdrawing from southern and south western France. The commanding general of the U.S. Seventh Army was faced with a major decision involving two factors:

- a. To what extent could the enemy be pursued and outflanked?
- b. Would the enemy counterattack on the right flank, from the Maritime Alps, and so endanger rear communications?

Ultra provided no indication that the enemy would adopt an attitude other than defensive on the flank. Accordingly it was decided to pursue; all unloading priorities were altered (with the whole emphasis given to fuel and vehicles) and Task Force Butler, which had penetrated deep into the enemy's rear, was reinforced with the U.S. 36th Inf Div. Together the two formations established a road block at Montelimar, cutting the enemy escape route. Although the retreating 19 Army succeeded in fighting its way out, all heavy equipment was lost in the process. Ultra also guided public relations during this phase of the campaign, for it was clear from Source that the Germans were not aware of the character of the forces operating in their rear. They apparently believed that only guerrilla forces were endangering their lines of communication; consequently the existence and operations of Task Force Butler were not disclosed to the press.

4. In March 1945 C. in C. West, refusing an Army Group H request that it be allocated all the ammunition from two factories in the northern sector of the Western Front, stated that those two installations were producing all of the medium field howitzer ammunition for the West. Neither factory had ever been attacked by the Allied air forces, who had known of their existence but had not realized their significance. When the message was received at the U.S. 9th Air Force, the Ultra representative brought it to the attention of the Director of Operations, who immediately decided that the factories should be levelled. Their destruction followed in a matter of hours; as cover the Air Force bombed two or more similar targets nearby.

5. During the Normandy campaign a Wing HQ of 9th TAC reported the capture and interrogation of an FW-190 pilot who stated that his unit was based near a town called Essay. The Wing A-2 (not a recipient), knowing of an airfield called Lessay but none called Essay, recommended the immediate bombing of Lessay. This recommendation was passed on to 9th TAC, where the representative recalled an Ultra message revealing a fighter Gruppe occupying landing grounds at Essay and Lonrai; this information had not been established in the general intelligence picture. On the other hand, Ultra had revealed Lessay to be trenched and ploughed. The Wing was advised to pass up the chance to bomb Lessay, and reconnaissance was ordered to photograph the area described by the P/W. This reconnaissance produced pictures of both Essay and Lonrai and also of Barville, a third strip in the area which had not even been mentioned by Source at that time. The next day all three fields were attacked simultaneously with success.

6. Ultra was employed to combat aerial supply of the Atlantic Fortresses. For weeks the traffic was studied in coordination with other evidence; bases, routes, times, numbers, etc., were determined. It was

decided that route interception was virtually impossible but that, based on flying times between dropping points and bases, the approximate hour of return of the transport aircraft could be estimated. Thereupon intruder operations were laid on over the Frankfurt and Zellhausen areas to attack aircraft returning from these supply missions.

7. When the Ultra representative joined the U.S. 9th Army near Rennes, the Army had the mission of reducing Brest and containing the other French coastal fortresses held by the Germans. An examination of Ultra messages soon enabled the representative to advise the G-2 and the commanding general estimates of the strength of enemy forces in Brest based on other intelligence sources were 50% too low, and the point was proved within a week by the prisoner count. Thereafter Ultra always had a receptive audience at 9th Army.

8. Immediately after the enemy was driven from the Saar triangle, the general belief from open sources was that the German 1 and 7 Armies had been substantially eliminated. Ultra served to temper that over-optimism and to prepare the American commanding general of the Sixth Army Group for the rather quick formation of organized German lines of resistance which followed.

9. The eventual elimination of the Colmar pocket by the French Army and the U.S. XXI Corps would have proceeded without Ultra, but only with the expenditure of disproportionate forces in view of the persistent reports from agents of large German forces in the pocket and across the Rhine. In contradicting those reports, Ultra served to leave the U.S. 7th Army largely intact and to gain time in preparation for its subsequent offensive.

10. Ultra was indirectly responsible for having saved a number of 9th TAC aircraft in the German operation JEREMY on New Year's morning, 1945. Although there were many indications of this potential threat

from other sources, the policy of the commanding general was a purely offensive one; he strongly urged execution of Allied operation RIPTIDE as a means of neutralizing the GAF capabilities. In view of the serious indications from Ultra, however, he was persuaded to take precautionary defensive measures in the form of dawn alert flights over 9th TAC bases and the assignment of combat pilots to anti-aircraft units around the airfields to aid in recognition in the event of air attacks. Consequently, when German fighters came over two 9th TAC airfields early on 1st January, there were Allied planes in the air to engage them and keep them occupied until other squadrons could take off and participate in the encounter. The sizeable German losses and the scarcity of Allied casualties were a clear result of the defensive employment of Ultra information.