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12

GUIDELINE DEVELOPMENT FOR SUMMARIZATION OF TACTICAL DATA

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U. S. Army
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The present study was conducted to validate and expand the generalizability of a set of guidelines for summarizing tactical message content, and to develop guidelines for conducting a manual purge of a message file. Thirty-two Army staff officers studied a scenario and 30 enemy-situation-data (ESD) messages describing an enemy defensive operation. Their task was to summarize the tactical information in the form of an intelligence briefing. Half the officers were supplied with three general guidelines to follow

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in preparing the summary: "(1) provide an interpretation of the data, (2) give a dynamic portrayal, and (3) use conversational style." After the summarization task, the participants were asked to delete 15 of the 30 messages and to rank-order the rest on the basis of importance. The 32 summaries were evaluated by seven military raters in terms of quality of content, interpretation, accuracy, organization, and style.

The raters judged the summaries prepared with the aid of the guidelines to be significantly "better" summaries on an overall evaluation scale and on four of five qualitative scales. Potent positive effects were revealed for all three guidelines. The ten summaries that received the highest overall evaluations were used to derive a general suggested outline for describing the message content. The outline structures information according to levels of importance, from a description of immediate enemy threat to details about support units. The purging-task data also revealed general levels or clusters of messages on which to base guidelines for reducing the size of ESD files by different amounts. Future research needs to explore the development and usefulness of task-related schematic aids for supporting information management, utilization, and presentation.

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Information Systems

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FOREWORD

The Human Factors Technical Area of the Army Research Institute is concerned with aiding users and operators to cope with the ever-increasing complexity of the man-machine systems being designed to acquire, transmit, process, disseminate, and utilize tactical information on the battlefield. The research focuses on the interface problems and interactions within command and control centers and is concerned with such areas as tactical symbology, user-oriented systems, information management, staff operations and procedures, systems integration and utilization, as well as issues of system development.

An area of special concern is the development of procedures for effective system control and utilization. The inevitable need for engineering tradeoffs during system design often results in systems which are unmanageable or which at best achieve only a small portion of their potential. Explicit attention to the procedures to be followed by the user can compensate for some of these problems, particularly if accomplished early enough in the development cycle.

The present publication is one of several from a project that initially focused on the Tactical Operations Systems (TOS) to develop procedures for managing the flow of information in TOS. Work in the second phase of this project focused on issues of general concern in any type of automated command and control system. This report describes research on the particular problem of summarizing tactical data to ease the data input burden and improve the usefulness of data base contents.

Research in the area of information management is conducted as an in-house effort augmented through contracts with organizations selected for their unique capabilities and facilities for research in this area. The present study was conducted by personnel from Vector Research Inc. under DAHC19-78-C-0027 with program direction from Dr. Stanley M. Halpin and Mr. Robert S. Andrews. This effort is responsive to requirements of Army Project 2Q163739A793 and to the Combined Arms Combat Development Activity, Fort Leavenworth, Kans., and Communications R&D Command (CORADOCOM), Fort Monmouth, N.J. Special requirements are contained in Human Resource Need 80-305, Information Management Within the Tactical Operations System.

JOSEPH ZEIDNER
Technical Director

GUIDELINE DEVELOPMENT FOR SUMMARIZATION OF TACTICAL DATA

BRIEF

Requirement:

Automated information systems are capable of supplying intelligence from a battlefield faster than the staff of a command and control center can organize and use the data. Therefore, the development and validation of methods for summarization and condensation of tactical intelligence data can enable users to derive greater benefit from automated systems. The present study was conducted to test the validity and generalizability of a set of guidelines for summarizing military message content and to develop useful guidelines for conducting a manual purge of certain message files.

Procedure:

Thirty-two Army staff officers were asked to read a description of a tactical scenario in which the enemy was engaged in a defensive operation, and to examine 30 enemy-situation messages. Each officers' task was to rate each message in terms of its importance to the understanding of the situation and to summarize the tactical information provided in preparation for a 3-minute briefing to the Corps G-2. Sixteen officers were supplied with three general guidelines to follow in preparing the summary: "(1) provide an interpretation of the data, (2) give a dynamic portrayal, and (3) use conversational style." The other 16 were not supplied with any guidelines and served as a control group. After the summarization task, the participants were asked to delete 15 of the 30 messages and to rank-order those retained on the basis of importance. The 32 summaries were rated by seven military raters in terms of the quality of content, interpretation, accuracy, organization, and style. Each summary also received an overall numerical evaluation.

Findings:

An analysis of the contents of the summaries revealed potent, positive effects for all three guidelines. Furthermore, the military raters judged the individual summaries prepared with the aid of the guidelines to be significantly "better" summaries (than those prepared without guidelines) on the overall evaluation scale and on four of five qualitative scales.

The ten summaries that received the highest overall evaluations were used to derive a general suggested outline for describing the message content. This outline was found to differ from that derived using a different scenario during an earlier phase of this research only in terms of the inferences drawn from the intelligence data. That is, the types of "hard facts" considered to be most important did not vary as a function of scenario (in this case, whether the enemy was portrayed as being in an offensive or defensive posture). In addition, the data collected from the purging task revealed three general levels of clusters of messages upon which guidelines could be based for reducing the size of enemy situation data files by different amounts.

Utilization of Findings:

The results suggest that a relatively small number of schemata, corresponding to standard tactical situations, may be sufficient to effectively present the "hard facts" contained in a file of intelligence messages. Based on these schemata, potentially successful training programs and performance aids could be developed to improve the ability of staff officers to manage large intelligence data files. These techniques would rely on guidelines for retaining/deleting and organizing information derived from pre-established hierarchical levels of information importance. However, future work is necessary toward the development of rules for understanding information integration and the interpretation of battlefield indicators.

GUIDELINE DEVELOPMENT FOR
SUMMARIZATION OF TACTICAL DATA

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INTRODUCTION

The technical capability of computer-based military systems will most likely increase the density of information to the point where it will overwhelm the users. Therefore, appropriate procedures must be developed for use within the framework of a computer-based system to condense and to organize the volume of information into a form that can be managed in an efficient manner. For example, manual summarization procedures can be employed when the computerized system is operative to prevent overloads on hardware and software, and to provide hardcopy backup information if the computer-based system should go down. Once such manual procedures have been developed and validated, summarization routines sensitive only to the tactical situation could conceivably be operationalized within the software to support a user's summarization efforts.

The general approach taken in this project was to: (a) determine the "natural" existing procedures used by typical users of automated systems (i.e., those personnel assigned to Division Staff positions) in condensing and summarizing military information; (b) suggest variations in those procedures which might be more effective; and (c) evaluate the suggested variations. The initial step represents a research challenge.

The problem of understanding and modeling the thought processes of persons engaged in complex tasks has long been a focus on cognitive psychology. One theoretical structure of the thought process is offered by schema theory. Schema theory holds that the comprehension of any type of meaningful information is affected by knowledge gained in the past. This knowledge is said to be organized as a structured mental representation of the learner's general knowledge of a topic, commonly referred to as a "schema." The underlying logical structure, or "schema," representing a person's general knowledge of a topic, provides a mental outline that can be used

to organize and interpret new material to be learned. Thus, a schema constitutes a basis for categorization, selection, deletion, abstraction, consolidation and organization of information.

With the refinement of "schema theory" within the domain of cognitive psychology (see Kintsch, 1978; Thorndyke, 1977), it is now possible to describe underlying logical information structures, from which guidelines for condensing and summarizing the information can be developed. A schema can be portrayed by a two-dimensional plot of pertinent elements or categories of information, with the dimensions being "importance" and "preferred sequence of presentation." Such schemata are easy to derive, easy to interpret, and can be usefully applied in a variety of information-driven situations. Each empirically derived schema can be employed to provide an organizational framework for certain sets of information as well as to generate specific guidelines (which are easy to follow by users) such that the task-related processing of relevant information can be normatively structured and thereby facilitated; a family of such schemata could form an important part of a manual or computer-based decision support system. It is conceivable that a small set of schemata exists for the comprehension of certain types of military data by highly skilled staff officers. Schemata, then, could provide part of the basis for developing guidelines for the management of military information.

To obtain data to support the development of useful guidelines for the summarization of message content, particularly tactical intelligence data, an initial experimental investigation was conducted by Geiselman and Samet (1979). In their experiment, an attempt was made to first identify "good" summaries, and then to analyze their properties and structural characteristics. In this manner, the essence of what makes an effective summary was used to suggest guidelines for summarizing tactical data. In brief, sixteen Army staff officers were asked to examine a description of a tactical scenario and 30 enemy-situation-data (ESD) messages. The messages, presented in computer printout format, described the beginning

of an enemy border crossing and attack. The task was to rate each message in terms of how essential it was to the understanding of the situation at hand, and to summarize the tactical information contained in the messages in preparation for a three-minute briefing to the Corps G-2. The 16 handwritten summaries were subsequently typed to improve legibility, and were then rated by five experienced military personnel in terms of content, accuracy and organization. For each summary, an overall numerical evaluation, as well as specific critical comments concerning positive and negative qualities, were also collected.

These early results provided valuable information concerning the content and structure of those summaries that are likely to be judged most effective in the communication of information contained in a file of messages about enemy offensive activity. For the present study, such behavioral norms for "good" summaries were translated into specific guidelines to support the generation of more useful and effective intelligence-message summaries. One purpose was to investigate the effects of those guidelines upon summarization performance. A second purpose was to compare and contrast the guidelines with others developed for the summarization of military messages reflecting different tactical situations. In particular, if differences in preferences for information or organization were found across different scenarios, this would imply that different priorities should be given for various aspects of intelligence information under different conditions. These priorities for information management could conceivably be incorporated into standard operating procedures or into training programs. Given that the scenario examined by Geiselman and Samet was an enemy-offensive scenario, it seems appropriate to now examine summaries of ESD messages received in an enemy-defensive scenario.

The Enemy-Situation-Data (ESD) file is likely to be one of the largest files, and it is likely to grow at a rapid rate in critical periods, such as during attacks. Therefore careful information management of this file is essential (Blum, Callahan, Graulich, Kinley, and Witus, 1979). One procedure that is sometimes used to achieve this aim is purging, which

can be accomplished in a number of ways. However, to date there has been no systematic investigation of the substantive criteria to be used to conduct a purge. Thus, a third purpose of the present research was to collect data to support the development of guidelines for conducting a purge of ESD files. It seems reasonable that a schema of the purging process should resemble a schema derived for summarizing the ESD messages. If so, discriminable levels of purging could be identified, such that guidelines could be developed for reducing the size of ESD files by varing amounts.

Thus, three objectives for additional research follow logically from the previous phase of work by Geiselman and Samet (1979). These objectives are:

(1) To determine whether military personnel using summarization guidelines produce "better" summaries that do personnel working without the aid of guidelines.
(2) To test the generalizability of the guidelines for summarizing ESD messages by examining their applicability in a second basic tactical scenario, specifically a defensive posture by enemy forces.
(3) To obtain data to support the development of guidelines for conducting a purge of ESD files.

The present research addressed each of these three objectives with a single experiment. Firstly, 32 staff officers were asked to summarize a set of intelligence messages with 16 being supplied with general guidelines for constructing the summary, and 16 not being supplied with such guidelines. Secondly, the enemy-offensive scenario used in the previous research was modified such that the enemy would be engaged in a defensive maneuver. The summaries generated in this context were analyzed to derive a schema for summarization that could be compared with that derived using the enemy-

offensive-scenario. Thirdly, during a final segment of the experiment, the participants were asked to purge half of the set of intelligence messages (eliminating those that were least important) and to rank-order the remaining messages on the basis of the importance of retaining them. These behavioral data allowed for the derivation of a schema for reducing the size of ESD message files by varying amounts.

METHOD

Participants

The participants were 32 staff officers, with a minumum rank of major, at the Command and General Staff College at Fort Leavenworth. The primary specialities of the participants were varied as follows: intelligence (7), infantry (6), artillery (6) aviation (5), armor (4), electronic warfare (2), air defense (1), and operations research (1). These officers participated in two groups of 16 each.

Materials and Procedure

The general procedure is illustrated in Figure 1. In a classroom setting, each participant was given a booklet that contained a short tactical scenario in which Warsaw Pack forces are said to have attacked U.S. forces in Germany. This scenario, which was used by Geiselman and Samet (1979), was taken from materials used in a standard course ("Forward Deployed Force Operations") at the Command and General Staff College. This scenario was modified and extended using other course materials ("Offensive Operations") such that the U.S. Forces are said to be engaged in a counter-attack maneuver against the enemy forces. The scenario included a description of (a) the strategic environment (with background map), (b) strategic developments during several days

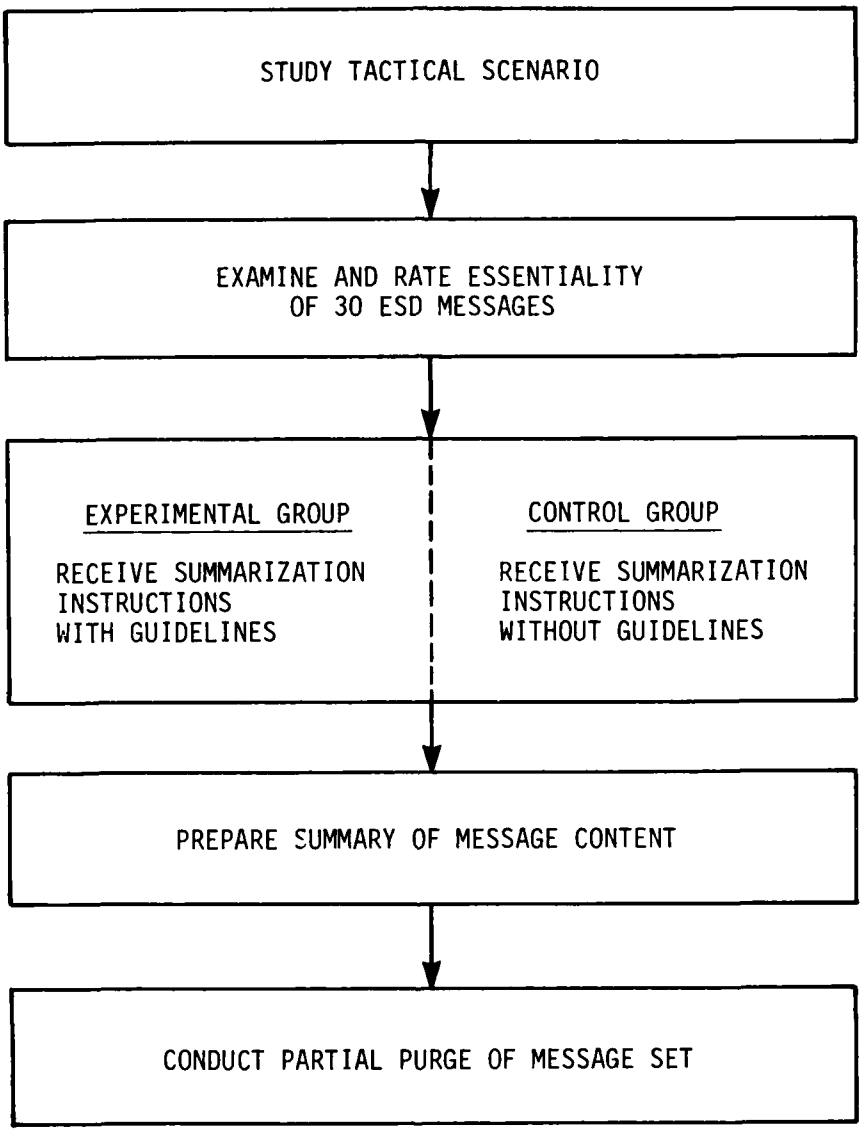

FIGURE 1
TASK SEQUENCE

immediately preceding the day at hand, (c) the known composition and position of enemy forces at the beginning of the day at hand (with a tactical situation map), and (d) task instructions. These materials are presented in Appendix A-1. The participants were told that,

> *"The general purpose of this study is to determine plausible ways of summarizing battlefield intelligence information, such that the important aspects of the current situation can be understood by a commander within a very brief period of time. Later on, our procedure will be to have you role-play the G-2 section TOC duty officer."*

After having sufficient time to review the scenario and the task requirements, each participant was given 45 minutes to study a set of 30 enemy-situation-data (ESD) messages. These messages were obtained by modifying the 30 messages used previously by Geiselman and Samet to coincide with the modified scenario. Each message was typed on a separate sheet of paper and was presented in a standard format which provided for the following types of information: a precedence code (supplied by the intelligence source to indicate the urgency of the information), the subject of the message, the size and type of the enemy unit detected, the activity observed, the time of occurrence, the estimated location of the subject and the probable error of this estimate, the intelligence source and its reliability, and free-text remarks supplied by the source. Several aspects of the original messages were preserved so that the results of the present experiment could be compared with those obtained earlier. The properties that were preserved are: (a) the subject matter (e.g., the type and size of unit), (b) the proximity of the reported activity to the FEBA, and (c) whether or not free-text remarks were included. In addition to the messages, each participant was given a key to terms used in the ESD format, and a key to abbreviations used in the messages. These keys, along with the instructions and messages, are presented as a message booklet in Appendix A-2.

During the second phase of the experiment, the participants were told to:

> *"Study the 30 messages and, from them, try to comprehend the enemy situation. As you work, please keep in mind that you may be subsequently called upon to summarize the enemy situation data."*

As the participants studied the messages, they rated how essential each message was to the understanding of the entire tactical picture. These ratings were based upon the following 1-5 scale, which was used by Geiselman and Samet and also by Coates and McCourt (1976) for a similar task:

5 - essential
4 - important
3 - useful
2 - of some use
1 - of little use

For each message, the subject placed his rating in a blank corresponding to the message number on a rating sheet provided.

In the third phase of the procedure, the participants were given typed instructions that asked them each to compose a summary of the 30 messages within 20 minutes in preparation for a three-minute briefing of the G-2. The rationale given for the summary task was that the G-2 and Corps commander had been absent during the half-hour period when the 30 messages had arrived. The purpose of the summary was to inform the G-2 of the enemy situation, rather than to make tactical recommendations regarding possible courses of action. They were asked not to draw pictures as part of their summaries, but they were allowed to refer to map coordinates. In brief, they were instructed to write their summaries as they would say them, given only three minutes with the G-2.

In addition, 16 of the participants were given three guidelines for constructing the summary. These guidelines were derived from the results of Geiselman and Samet (1979) and appeared in the instructions as follows:

(1) *Prepare the intelligence summary in a conversational style. Do not present information in the form of lists alone since this makes understanding the information time-consuming and difficult.*

(2) *Provide an interpretation of the intelligence information if that is possible. In other words, in addition to the "hard facts," try to state what the intelligence means in terms of the enemy situation. However, these statements must be well-founded.*

(3) *Provide a dynamic portrayal of the enemy situation. That is, emphasize the speed and direction of enemy movement, rather than merely the current static position of enemy units.*

The 16 participants in the control group were not given any guidelines in their instructions. After 20 minutes, all of the participants were asked to re-copy their summaries in legible form. Appendix A-3 contains the complete instructions for this summarization phase of the experimental session.

Prior to the final phase of the experiment, the summaries were collected. Then, the participants were told that,

"It might sometimes be the case that too many messages are received such that the task of maintaining an ongoing record of them is overwhelming. In order to determine the kinds

of messages that need not be retained, please examine the 30 messages again and, this time, put an 'X' through any message that you feel can be deleted from the message set. Please continue to examine the messages in this manner until you have deleted 15 of the messages. When you have finished deleting 15 messages, please gather together the 15 messages that you feel should be retained and rank order them on the basis of how important they are to keep. Give the most important message a '1', the next most important message a '2', and so on."

The participants were each asked to make a 50% reduction in the number of messages in order to maximize the likelihood that interpretable results would be obtained; that is, most messages should be included by at least one participant, yet there should be few specific messages that would be included by every participant. Without specification of the number of items to be deleted, McKendry, Wilson, Mace, and Baker (1973) found that most officers chose to delete very few messages. The instructions for the purging task are presented in Appendix A-4.

Evaluation

The first step in analyzing the summaries was to obtain ratings of the quality of the summaries from experienced military analysts to identify "good" and "poor" summaries. Seven highly qualified judges were used for the evaluation task. On average, these individuals have had 20 years of experience covering various combat specialty areas including tactics, intelligence, and operations. All of the judges were thoroughly familiar with the doctrinal procedures taught at the Command and General Staff College, and with the objectives of this study of summarization as well as the specific tactical scenario and message file employed. Each judge received the evaluation package by mail and returned the completed material within about a week.

Each evaluator was provided the tactical scenario, the ESD messages with accompanying keys, a detailed description of the instructions given to the participants (except the guidelines and discussion of them), and the summaries generated by each of the participants. The summaries were typed on separate sheets of paper with a structured rating sheet attached to each one. The summaries from the 32 officers (who worked with either guidelines or no guidelines) were intermixed. The raters were asked to first review the scenario and messages, and then to read through all of the summaries. When fully familiar with these materials, the raters evaluated the quality of each summary on each of five dimensions using the following 1-5 scale: "very good" (5), "good" (4), "borderline" (3) "poor" (2), and "very poor" (1).

The five evaluative dimensions were: (a) content (to what degree does the summary include what the G-2 should know, yet exclude what the G-2 does not need to know?); (b) interpretation (how meaningful and useful is the integration of information contained in the messages?); (c) accuracy (how true or plausible is the information presented in the summary in light of the detailed message content?); (d) organization (to what extent is the important information presented in an order that would facilitate understanding of the tactical situation?); and (e) style (how effective is the manner in which the information in the summary is communicated?). Finally, a single numerical rating (on a 0-100 scale) was requested as the overall quality assessment for each summary. The complete set of instructions for the raters, including the evaluation form, is presented in Appendix B.

Analysis

To determine whether the three guidelines given to half of the participants aided those officers in producing "better" summaries, a multivariate analysis of variance (Hotellings T^2, Morrison, 1967) was conducted using the five dependent variables corresponding to the average ratings given on the five evaluation scales (content, interpretation, accuracy, organization,

and style). In addition, comparisons were made of the specific contents of the summaries generated with and without guidelines. These comparisons involved the computation of the proportion of officers including certain types of information in their summaries.

The summaries were analyzed toward the development of summarization guidelines using the basic procedure developed by Geiselman and Samet (1979). First, the 10 summaries that received the highest average overall evaluations (i.e., top third) were identified as "good" summaries. Then, these summaries were used to derive a schema for summarizing the intelligence information. Operationally, a schema can be defined as a two-dimensional, or hierarchical outline with the dimensions being subordination (importance) and sequential order.

Subordination or importance was determined for each idea included in a summary in terms of the percentage of the staff officers who included some aspect of that idea in their summaries. That is, an idea with a higher inclusion percentage was assigned a higher position in the structure. A list of general ideas or topics was extracted systematically from the "good" summaries such that the list exhausted the summary contents. The topics were identified by noting the authors' syntactical divisions (e.g., paragraphs, listings) and transitions in subject matter within these divisions. The topic labels were then taken verbatim from the identified summary segments.

Sequential order was assessed by deriving an output-position percentile for each topic included in each staff officer's summary. The output-position percentile [(sequential position of a topic in a summary/total number of topics included in the summary) X 100] is a measure of output position where the derived value is standardized with respect to the number of ideas in the respective output.

To derive a schema from the ten "good" summaries, the percentage of the ten staff officers who included a given topic in their summaries was noted, and a corresponding median output-position percentile was computed for each topic that was included in at least one of the ten summaries. The schema generated form the "good" summaries obtained in the present experiment, involving an enemy-defensive scenario, was compared to the schema derived by Geiselman and Samet (1979) for an enemy-offensive scenario. The essentiality ratings given by the present subjects were also compared to those obtained in the previous experiment.

In addition, a schema of the purging process was derived from the data collected during the final phase of the experiment in which the participants were asked to delete 15 of the 30 messages and to rank-order the remaining 15 messages on the basis of the importance of retaining them. To derive the schema, an inclusion percentage and a median rank order were computed for each of the 30 messages that were retained by at least one participant. A number, representing each of the 30 messages, was then plotted in the two-dimensional space (inclusion percentage by median rank order). Since each subject was instructed to retain the same number of messages (15), the median rank orderings were analogous to median output-position percentiles.

RESULTS AND DISCUSSION

Judges' Ratings of the Summaries

The initial step in considering the ratings was to determine the extent to which the raters agreed with one another. The coefficient of concordance (Kendall's W) for the ratings made on the five qualitative dimensions and on the overall evaluation scale were: content, .38, $p < .001$; interpretation, .33, $p < .001$; accuracy, .18, $p > .10$; organization, .31, $p < .001$; style, .30, $p < .001$; and overall evaluation, .28, $p < .005$. Thus, accuracy was the only scale upon which there was not significant agreement among judges.

To examine the overall evaluations of the summaries more closely, the ratings made by each of the seven raters on each of the six scales were standardized (within each scale) and five beta weights were from a regression of the five qualitative dimensions on the overall evaluation ratings. These standardized beta weights and the associated multiple R^2, along with those ratings of the summaries on the five scales, are shown in Table 1. In assigning the overall evaluations, it appears from the table that the raters weighted the interpretation and accuracy dimensions most heavily. This illustrates the importance placed upon providing an adequate interpretation of the intelligence data, and also suggests a paradox concerning the accuracy dimension. Most raters weighted accuracy heavily in their assignment of the overall evaluations; but from the interrater correlations, the raters did not agree upon which summaries were accurate. The latter result was obtained possibly because of differences in the degree to which each judge actually matched the summary contents with the message data. Thus, in future studies, measures will be required to determine the specific points of disagreement regarding accuracy.

The average ratings given by each rater to the summaries prepared with guidelines and without guidelines are presented in Table 2, and all 32 summaries are included in Appendix C. To determine whether the three guidelines given to some participants affected their performance, a multivariate analysis of variance (Hotellings T^2) was conducted using the average ratings given on each of the five independent evaluation scales. This analysis demonstrated that the guidelines treatment was, in fact, effective in discriminating the two groups, $\underline{F}(5,26) = 7.87$, $p < .001$; and therefore, an examination of the univariate analyses is warranted. Univariate $\underline{t}$ tests showed that summaries written with the aid of guidelines were considered to be "better" on all scales except accuracy: content, $\underline{t}(30) = 3.83$, $\underline{p} < .001$; interpretation, $\underline{t}(30) = 4.31$, $\underline{p} < .001$; accuracy, $\underline{t}(30) = 0.81$, $\underline{p} > .05$; organization, $\underline{t}(30) = 4.48$, $\underline{p} < .001$; and style, $\underline{t}(30) = 3.92$, $\underline{p} < .001$.

TABLE 1

BETA WEIGHTS OBTAINED FROM JUDGES' STANDARDIZED RATINGS

	RATING SCALE					
RATER	CONTENT	INTERPRETATION	ACCURACY	ORGANIZATION	STYLE	R^2
A	+.12	+.18	+.37***	+.16	+.33*	.91***
B	+.20	+.10	+.19	+.47*	-.28	.60*
C	+.29*	+.44***	+.38***	+.05	-.02	.89***
D	+.24***	+.31**	+.57***	-.12	+.13	.97***
E	+.12	+.24*	+.37***	+.15	+.22	.96***
F	+.21*	+.37***	+.09	+.06	+.37**	.94***
G	+.14	+.43***	+.17*	+.13	+.26*	.94***
AVERAGE RATINGS	+.18	+.47***	+.35***	-.05	+.12	.93***

Note: ***$p < .001$, **$p < .01$, *$p < .05$.

TABLE 2

AVERAGE RATINGS FOR SUMMARIES PREPARED
WITH GUIDELINES (G) AND WITHOUT GUIDELINES (NG)

	RATING SCALE											
RATER	CONTENT		INTERPRETATION		ACCURACY		ORGANIZATION		STYLE		OVERALL	
	G	NG	G	NG	G	NG	G	NG	G	NG	G	NG
A	3.9	3.4	3.8	2.6	2.6	3.0	3.5	2.4	3.9	2.6	49.4	45.3
B	3.9	3.3	3.9	3.1	2.7	3.0	3.9	3.2	3.8	3.2	59.3	48.3
C	3.8	2.5	3.3	2.1	3.8	3.2	3.7	2.8	3.5	2.4	56.1	42.9
D	3.8	2.8	3.6	2.5	2.7	2.4	3.8	2.7	4.0	3.1	48.4	40.3
E	4.1	3.3	4.1	3.1	3.4	3.5	4.3	2.9	4.3	3.1	69.9	53.1
F	2.9	2.6	2.8	2.4	3.2	2.8	3.3	2.6	3.3	2.4	54.1	43.4
G	3.6	2.7	3.0	2.6	3.4	2.8	3.1	2.7	3.0	2.6	55.3	43.8
AVERAGE RATINGS	3.7	2.9	3.5	2.6	3.1	3.0	3.7	2.8	3.7	2.8	55.4	45.3

The lack of a significant difference on the accuracy dimension is understandable given that none of the three guidelines addressed procedures for improving accuracy. A separate test on the overall evaluation showed a significant between-group difference, $t(30) = 2.18$, $p < .04$, in spite of the fact that the accuracy scale was weighted heavily in those evaluations.

These results serve as validation both for the three general guidelines used here and for the basic experimental methodology developed by Geiselman and Samet (1979). In addition, the fact that three simple guidelines can be used to improve the summarization of intelligence information has promising implications for the potential success of training programs and job-performance aids in the area of tactical information management.

Effects of Guidelines on Summary Content

Since the participants rated the essentiality of each message before receiving the summarization instructions, one way of demonstrating the influence of the guidelines on summarization behavior would be to determine the extent to which the staff officers in each group chose to include information that they had previously rated to be most essential. Thus, for each participant, a point-biserial correlation coefficient was computed between the essentiality ratings for each of the messages and whether or not information related to each message was included in that participant's summary (yes = 1, no = 0). A message was considered to be included when a statement in the summary contained a direct reference to information or combinations of information specific to that message (e.g., grid coordinates, time of occurrence, subject matter, direction of movement, intelligence source). The extent of detail was not considered as a criterion for inclusion. These correlations were standardized with a

Fisher's z transformation. Without guidelines, the participants did tend to include information associated with the messages that they considered most essential [$r(14) = .63$, $p < .01$], as would be expected. In contrast, the participants who received the guidelines were much less likely to include in their summaries what they had initially considered to be the most essential information [$r(14) = .12$, $p > .05$]. It should be noted that the two groups did not differ initially in terms of which messages they considered to be essential, $F(1, 30) < 1$. Thus, the guidelines did appear to have a potent effect on the participants' summarization behavior.

Specific differences in summary content were observed between groups corresponding to each of the three guidelines. First, regarding interpretation, the participants with guidelines were more than twice as likely to include a statement at the beginning of their summaries about the overall strength of the enemy forces (63% versus 31%, $z = 1.91$, $p < .03$). In addition, these participants were somewhat more likely to include a statement of inference concerning the enemy's intentions (retreat, delay, counter-attack, etc.) at the end of their summaries (68% versus 58%), but this difference was not significant. Regarding style, the participants with guidelines were significantly less likely to present information in the form of a list (13% versus 44%, $z = 2.07$, $p < .02$). Regarding a dynamic portrayal of the enemy situation, the participants with guidelines were considered somewhat more likely to discuss enemy movement away from the FEBA (50% versus 30%, $p < .12$) as either a retreat or re-supply effort; and they were slightly more likely to discuss enemy movement toward the FEBA (81% versus 75%). The lack of significance in the latter comparison is probably misleading since enemy movement toward the FEBA is an obvious threat to an ensuing counter-attack by friendly forces; and therefore, even participants without guidelines would be expected to note the importance of such movement. Overall then, the guideline manipulation did affect the content of the summaries, and the specific effects were in agreement with the spirit of the guidelines.

Derivation of a Schema

To derive a schema for summarizing the intelligence information as outlined in the analysis section, the ten summaries that received the highest average overall evaluations from the judges were selected as "good" summaries. Six of these summaries (1, 3, 4, 5, 7, and 9) with an average overall evaluation of 67.6 were from the group that received summarization guidelines; the other four summaries (2, 6, 8, and 10) with an average overall evaluation of 64.3 were from the no guidelines group. A list of topics included in these ten summaries was generated to replace the 30 messages as the units of analysis. As described in the method section, the topics were extracted systematically from the summaries such that all components of all the "good" summaries were represented in the list.

Only ten general topics were necessary to describe all of the contents of the ten "good" summaries. These ten topics are plotted in Figure 2 as a function of inclusion percentage and median output-position percentile. The nature and location of the topics can be interpreted by proceeding in left-to-right, top-to-bottom fashion. The higher the vertical position of a topic in the plot, the more superordinate or important it is perceived to be. Thus, "unit movement toward the FEBA," "engagements," and an inference concerning "enemy intentions" appear to be the most important considerations with 100%, 90%, and 80% of the ten staff officers including some reference to these topics in their summaries. In contrast, "command posts," "radio jamming," and the "location of the second defensive belt" were topics that came out lowest in importance with 30%, 20%, and 10% selection percentages, respectively. The other four topics fell into the mid-importance range with selection percentages of either 60% or 50%. Shifting now to the horizontal dimension, the closer the proximity of the topic to the ordinate, the earlier it should be discussed in the summary. According to the schema shown, an assessment of "overall enemy strength"

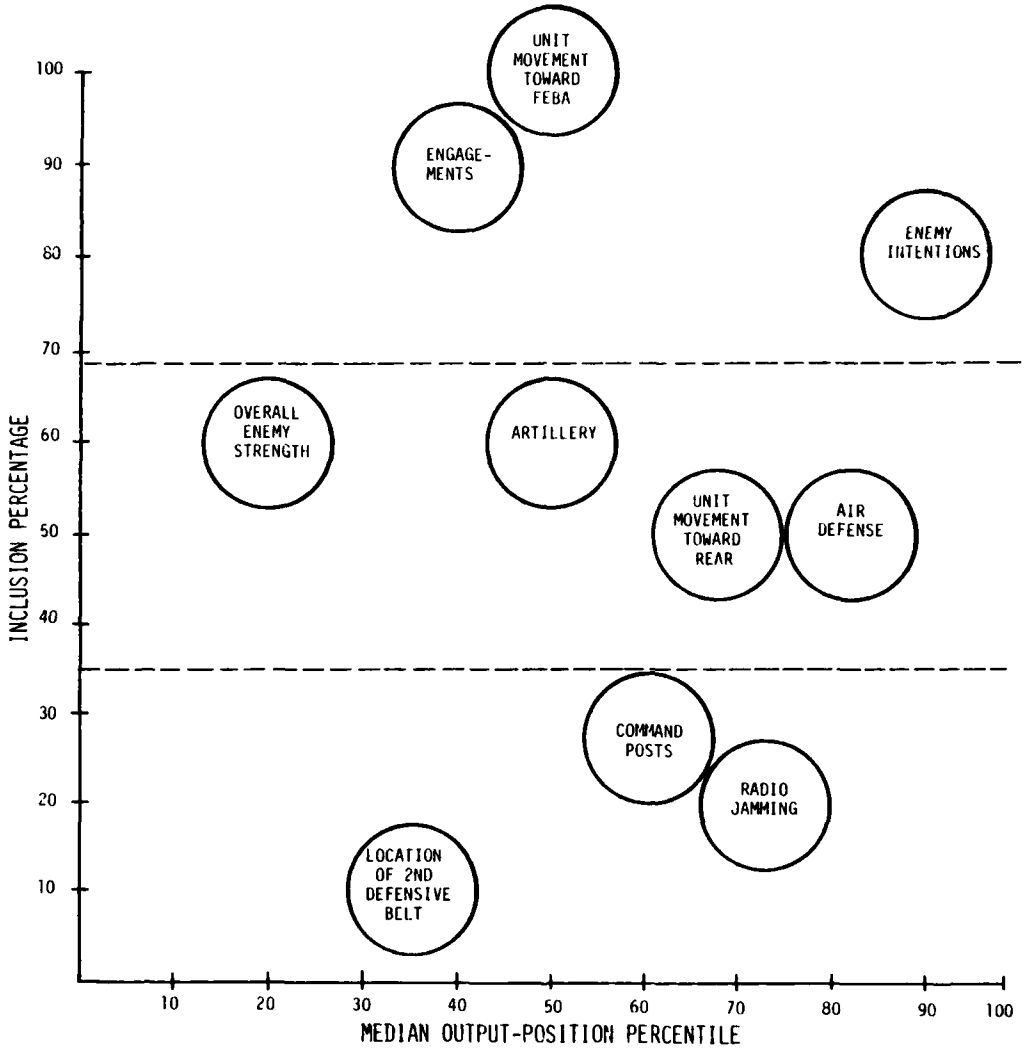

FIGURE 2
A SCHEMA OF GENERAL TOPICS INCLUDED
IN THE TEN "GOOD" SUMMARIES

should be presented first, whereas an assessment of "enemy intentions" should be given last. Note that "unit movement toward the FEBA" and "artillery" are equivalent in where they were discussed in the summary although the former is considered to be a more important topic.

Three different levels of abstraction (top to bottom) are indicated in the figure by dashed lines, and these three levels could be used to extract guidelines to generate summaries of three different levels of detail. At the most general level, the "good" summaries included information of immediate threat to friendly forces, such as engagements and enemy movement toward the FEBA, plus an inference regarding the enemy's immediate intentions. At the next level of detail, the "good" summaries further included an introductory summary statement concerning overall enemy strength plus a discussion of enemy units of less importance behind the FEBA (e.g., support units, unit movement toward the rear, air defense). At the most detailed, level the "good" summaries further included ancillary information such as the location of the second defensive belt, locations of command posts as targeting information, and instances of radio jamming.

Comparisons Between Scenarios

One important purpose of the present investigation was to extend the findings of Geiselman and Samet (1979) regarding summarization of ESD messages at the Corps-level in an enemy-offensive scenario to encompass the enemy-defensive situation. Therefore, it would be helpful to determine major points of departure in information management between scenarios. Of course, the implementation of procedures for summarizing ESD files would be more simplified the more minor the differences. The reader is reminded that only minor changes were made in the 30 messages to adapt them to the new scenario (see the Method section for a description of the changes).

First, an analysis of variance was conducted to determine whether certain types of messages were seen to be more or less essential as a function of scenario. In this analysis, the 32 summaries from the present experiment (those prepared with guidelines and those prepared without guidelines) were compared with the 16 summaries from the previous experiment, with the dependent variable being the essentiality ratings given to each of the 30 messages. The analyses showed that the Scenario X Message interaction effect was not significant $F(2, 45) = 1.98$, $p > .05$. This indicates that the 30 messages were perceived to be of the same relative importance irrespective of the scenario. In each case, information concerning nuclear weapons, engagements, movement toward the FEBA, and locations of regimental command posts were seen as most important; whereas locations of enemy radar, jamming efforts, battalion command posts, and movement away from or far behind the FEBA were rated as being least important. Thus, with respect to the selection of "hard facts" to present or retain, it does not appear that the enemy's presumed posture (defensive, offensive) is a crucial factor. This is an important result since it suggests that officers maintain a hierarchy of information priorities that may be somewhat generalizable across different tactical situations.

However, as noted by Geiselman and Samet (1979), not all useful information is contained in isolated "hard facts" or in independent messages. That is, the interpretation or integration of the "hard facts" in the form of overall assessments and inferences of battlefield indicators (Johnson, 1977) is a process that would likely be affected by the nature of the scenario. The fact that information integration, that is the drawing of conclusions or summary statements not stated explicitly in the messages, was influenced by the scenario was apparent in a comparison of the schema derived by Geiselman and Samet. With an enemy-offensive scenario, inferences concerning the location of the probable point of main thrust and the location of the second echelon were prevalent in the summaries. With an enemy-defensive scenario, other inferences included the enemy's likely

intentions (retreat, delay, attack, etc.) and an introductory summary statement concerning the overall strength of the enemy forces. Such statements did not, however, appear in the summaries generated with the enemy-offensive scenario. Therefore, given different tactical situations, different inferences appear necessary. Thus, further work in the area of battlefield indications is crucial for the development of training programs toward the generation of effective intelligence summaries that take into account situational requirements.

Aside from differences in the inferences made in the context of each scenario, the schemata were quite similar. Three levels of detail (subordination) could be clearly discriminated within the schema in each case, and these three levels could provide a basis for specific guidelines regarding content and order of presentation for general and more detailed summaries. Thus, if the inferential process were either left to the commander or automated through further work on battlefield indicators, then the number of schemata needed to derive algorithms for describing ESD information may be relatively small.

Purging

A two-dimensional schema of the results from the purging task was derived by plotting a number corresponding to each message as a function of (a) the percentage of staff officers that retained the message, and (b) the median rank assigned the message by officers who retained it. This representation is shown in Figure 3. It is apparent that the schema is linear in form rather than hierarchical; that is, only one dimension is necessary to adequately describe the purging-task results. In fact, the correlation between the two dimensions used to derive the schema in Figure 3 is -.84, $p < .001$. Further, across participants, the essentiality ratings collected at the beginning of the experiment account for 80% of the variance, on average, in the inclusion data from the purging task

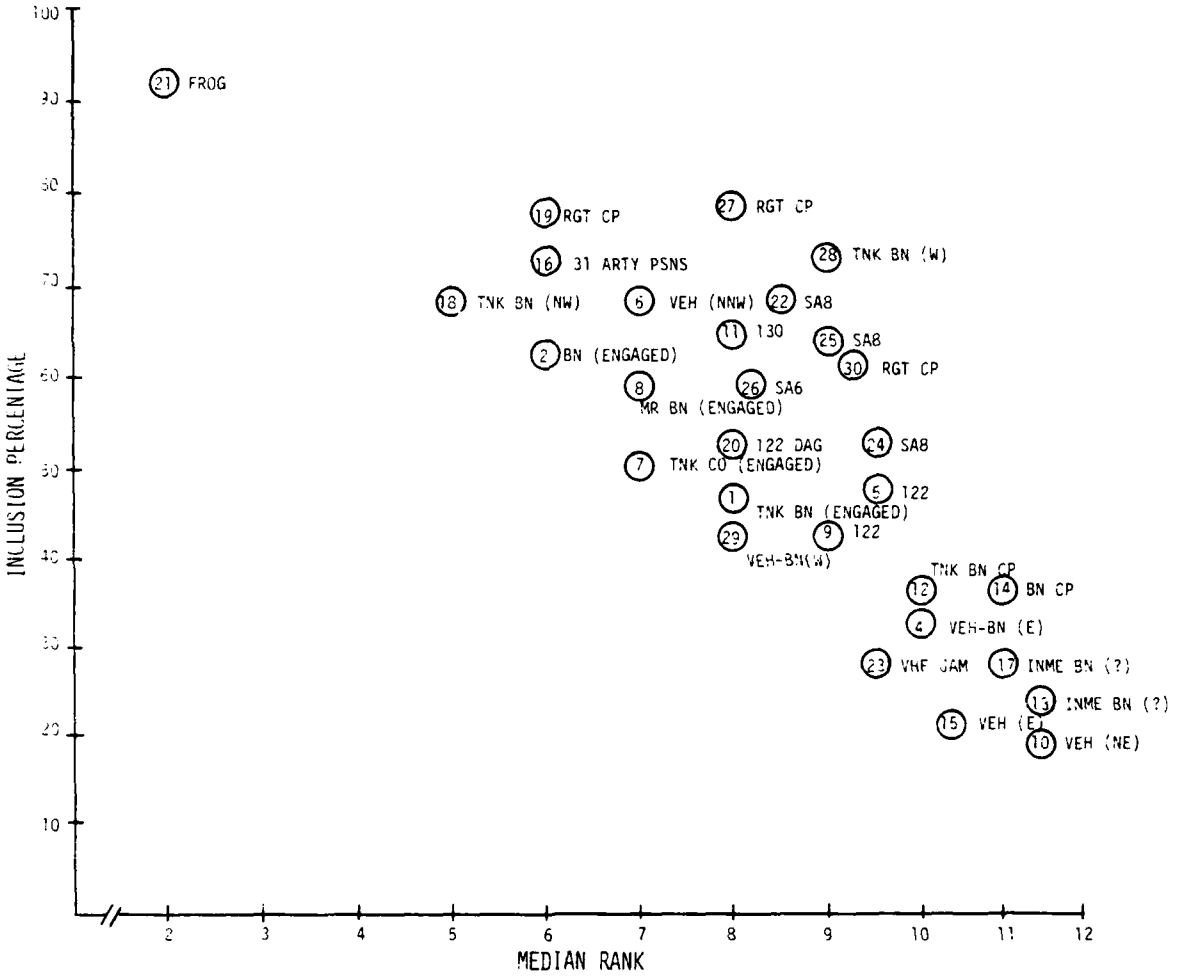

FIGURE 3
A SCHEMA OF MESSAGES BASED
ON PURGING-TASK DATA

[$r(30) = .89$, $p < .001$]. Thus, for the most part, it appears that the participants based their decisions regarding the purging of the ESD file almost exclusively upon their perceptions of the essentiality of the messages. This was true even though the essentiality ratings were collected by the experimenter early in the procedure, prior to the summarization and purging tasks.

What is particularly striking about this finding is that the high degree of correlation between the essentiality ratings and the probability of retention of a message in the purging task was obtained regardless of whether a participant was given guidelines in the preceding summarization task or not [$t(30) < 1$], or whether the participant was above or below the 50th percentile on the judges' overall evaluations of the summaries [$t(30) < 1$]. Thus, certain ESD messages are perceived to be essential to the comprehension of a tactical situation, and there is considerable agreement among staff officers concerning these perceptions. As noted by Geiselman and Samet (1979), who also found substantial agreement among officers on ratings of the essentiality of messages, the Army appears to be imparting a common core of knowledge to its officers about the need for information of various types. In this context, therefore, the tasks of information organization and integration, rather than selection, should be emphasized in future research efforts.

Concerning recommendations for guidelines for purging an ESD file at the Corps level, the staff officers ordered the messages such that three clusters were evident as can be seen in Figure 3. With a requirement for an extensive purge, it appears that the officers would retain only messages concerning the enemy's nuclear capability. With a less extensive purge, the officers would also retain messages pertaining to conventional enemy threats (engagings with the enemy, movement toward the FEBA, artillery and rocket installations) and the locations of regimental command posts. With a minimal purge, only messages that describe enemy

movement away from the FEBA or battalion command posts would be deleted. These three divisions could be used as a basis for developing guidelines for reducing the size of ESD files by different amounts, depending upon the requirements of the situation at hand.

Finally, whether or not a given message contained free-text remarks (see Appendix A-2 for examples) was a powerful indicator of whether that message was retained [65% versus 39%, $t(28) = 2.94$, $p < .01$]. That is, messages without free-text remarks were more likely to be purged. Thus, as noted by Geiselman and Samet (1979), the participants' perceptions of the relative importance of the messages were influenced markedly by the descriptive remarks previously provided by other intelligence personnel. This implies that greater attention should be given to the prospect of describing intelligence information in the form of text, rather than in formats more suitable for cataloging than for comprehending.

CONCLUSIONS AND IMPLICATIONS

The present results provide valuable insight concerning the content and structure of those summaries which are likely to be judged most effective in the communication of information contained in a file of messages about enemy offensive activity. Such prescriptive norms for "good" summaries can be translated into guidelines, and possibly formats, for staff officers to enable them to produce better intelligence-message summaries. Quality summaries can be extremely useful in the communication of intelligence information, as previous research has shown that carefully-prepared summaries can be more effective than extended texts in promoting the comprehension and retention of main points (Reder and Anderson, 1980).

Staff officers utilized three general guidelines developed in the first of this series of studies to produce "better" summaries of intelligence messages, thus lending validity to the guidelines. The effects of

the guidelines on overall summary quality, although reliable, were not very large (i.e., the guidelines group's summaries were judged to be about 25% better than those of the no-guidelines group). This is understandable considering that the present staff officers were given very little exposure to the guidelines, which were stated only in general form, and they were not given any training with regard to the use or effect of the guidelines. Further, the summary evaluators were found to place substantial emphasis on the accuracy dimension, an attribute that was not addressed by any of the guidelines. Additional research is now called for to assess the impact of these management information guidelines on tactical decision making, and to investigate the degree to which these guidelines can be generalized to the summarization of other forms of military messages (e.g., friendly situation data).

For the enemy-defensive scenario studied here, three levels of detail were extracted from the schema portrayed in Figure 2; namely, one referring to elements of immediate threat to friendly forces, such as engagements and enemy movement toward the FEBA, followed by an inference regarding the enemy's immediate intentions. At the next level of detail, the summary should further include an introductory summary statement concerning overall enemy strength plus a discussion of enemy units of less importance behind the FEBA (e.g., support units, unit movement toward the rear, air defense). At the most detailed level, a summary could further include ancillary information such as the location of the second defensive belt, locations of command posts as targeting information, and instances of radio jamming. Whether a schematic aid such as this can be utilized effectively by staff officers to summarize ESD messages must be assessed in future experiments.

It is reasonable to assume that different, meaningful schemata can be developed for appropriately representing information for planning and decision making in a manageable number of recognizable tactical scenario.

The content and organization of the schema derived from summaries judged to be "good" in the present experiment were found to be basically the same as that observed by Geiselman and Samet (1979) even though the posture of the enemy was changed from offensive to defensive. This implies that the number of variations of schemata, and thus specific guidelines needed to describe ESD files might be relatively small such that message-file summarization routines could eventually become operative. However, differences between scenarios were identified in terms of information integration and inferences (i.e., analysis). Therefore, further research on battlefield indicators seems warranted, especially in light of the pressing need to support human performance in intelligence analysis (see Fulcher, 1979).

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APPENDIXES

APPENDIX A-1

PARTICIPANT MATERIAL: SCENARIO AND TASK INSTRUCTIONS

INFORMATION SUMMARIZATION EXPERIMENT
AUGUST 1980

- -

SUMMARIZATION OF ENEMY SITUATION DATA

1. Introduction

2. Strategic Scenario

   2.1 Strategic Environment
   2.2 Strategic Developments
   2.3 Comparison of Forces

3. Task Instructions

No.: _____

1. SUMMARIZATION OF ENEMY SITUATION DATA

1.1 Introduction

The general purpose of this study is to determine plausible ways of summarizing battlefield intelligence information, such that the important aspects of the current situation can be understood by a Corps Commander within a very brief period of time. A brief tactical scenario involving a conflict in a European setting is provided here to give you an overview of the present tactical environment. Later on, our procedure will be to have you role play the G2 section TOC duty officer of the 10th Corps. Detailed instructions will be given after you have had a chance to read the scenario. At this time, please begin to study the scenario on the pages that follow.

2. STRATEGIC SCENARIO

2.1 Strategic Environment

The reality of deployed NATO and Warsaw Pact forces in Northern and Central Europe inexorably poses the threat of tension and crisis escalating to war. Both the United States and the Soviet Union have vital national security interests in Europe that are dramatically reflected in their military contributions in the two opposing alliances. Combined with military forces of other alliance/pact members, the European theater is composed of large, modern, and potentially destructive forces unparalleled in the history of warfare.

NORTHERN AND CENTRAL EUROPE	NATO	WARSAW PACT
Combat and direct support troops available	625,000	895,000
Tanks	7,000	19,000
Tactical aircraft	2,050	4,025
Nuclear weapons	7,000	3,500

2.2 Strategic Developments

2.2.1 On 6 August 1980, amid a background of steadily deteriorating relations between NATO and the Communist powers and increasing global tension, ministers of the Warsaw Pack nations met with the Politburo and agreed to attack West Germany. East Germany, Poland, and Czechoslovakia were most receptive, and their forces were called on to participate in the offensive. Hungary, Bulgaria, and Romania moved forces to the borders of the southern NATO countries to prevent NATO from reinforcing central Europe. Covert preparations were initiated, to include the assembly of rolling stock and increasing units to full strength.

2.2.2 Subsequent chronological events are:

(1) On 21 August 1980, armed forces of the Warsaw Pact launched a nonnuclear attack against NATO forces in the Federal Republic of Germany.

(2) Central Army Group (CENTAG) conducted a successful active defense, severely punishing the leading divisions and preventing commitment of the divisions of the opposing armies' second echelons. Forces in Northern Army Group (NORTHAG) were not as successful, however, and CENTAG was ordered to delay east of the Rhine commencing on 26 August. The entry of French forces into the conflict at this time, combined with increasingly effective air interdiction of bridges and highways, immobilized the fronts' second-echelon tank Army east of the international boundary and south of the 10th (U.S.) Corps sector.

(3) The opposing force developed two salients in NORTHAG (a sketch map showing CENTAG and NORTHAG dispositions is attached). One, south of Hamburg, threatened Bremen and another, just north of the CENTAG boundary threatened Munster. To reinforce these more successful attacks, the commander of the Warsaw Pact forces stripped three second-echelon divisions from the armies opposing the 10th (U.S.) Corps for commitment against Munster and ordered the northern front second-echelon army committed against Bremen.

(4) On 28 August, Supreme Allied Commander, Europe (SACEUR) ordered CENTAG to terminate the delay and occupy defensive positions farther to the east than previously planned. All

units of the 10th Corps were alerted for imminent counter-offensive operations to relieve pressure on NORTHAG.

(5) At 0400 Hrs on 29 August 1980, the 10th Corps launched a counterattack operation in its sector. The Commander in Chief, Allied Forces, Central Europe (CINAFCENT) gave the following guidance:

"We will attack to restore the international boundary from Kassel southward."

The 10th (U.S.) Corps Commander gave the following guidance:

"This will be a two-phase operation--penetration of the main and second defensive belts and an exploitation to the international boundary. Speed will mean everything --to both insure our immediate success and to convince the other side to divert major forces against us. Assume 95-percent friendly strength, support available, and air parity with local air superiority when needed. Also, assume that the battle will be nonnuclear."

2.3 Comparison of Forces

2.3.1 NATO forces

(1) 10th (U.S.) Corps: Assigned sector is depicted in the sketch map. The early declaration of a state of emergency by the U.S. Congress on 14 August greatly facilitated the reinforcement of Europe. The President immediately ordered the deployment of the dual-based 53rd and 54th Mech Div and the 25th Armd Div and called the Ready Reserve and Standby Reserve to active duty. By 25 August, these three units and other service support units were available for commitment to the counteroffensive.

(2) 8 (Allied) TAF: Elements of the 8th (Allied) TAF is supporting the Corps. Estimates indicate that the friendly air forces will be able to achieve local air superiority for limited periods of time.

2.3.2 Enemy forces:

(1) The forces opposing the 10th (U.S.) Corps are elements of the enemy First Zapadnian Front. When the enemy attacked on 21 August, nine divisions (three motorized rifle and six tank) were employed against the 10th (U.S.) Corps. At present, the first echelon consists of three motorized rifle and two tank divisions, with one tank division remaining in the second echelon.

The attached enemy situation map depicts the known positions of some enemy units as of 0400 Hrs, 29 August 1980 (D-day, H-hour).

(2) As part of the enemy's strategic reserve, two airborne divisions could be employed by the central front against the 10th Corps sector.

3. TASK INSTRUCTIONS

It is now 0430 on 29 August 1980 (D-day, H-hour plus 30 minutes). You have been involved in activities which have prevented you from reading messages received between 0400 and 0430. Shortly, you will be given a series of enemy situation data (ESD) messages received by the 10th Corps HQ between 0400 and 0430 Hrs. The messages will be presented in the order received.

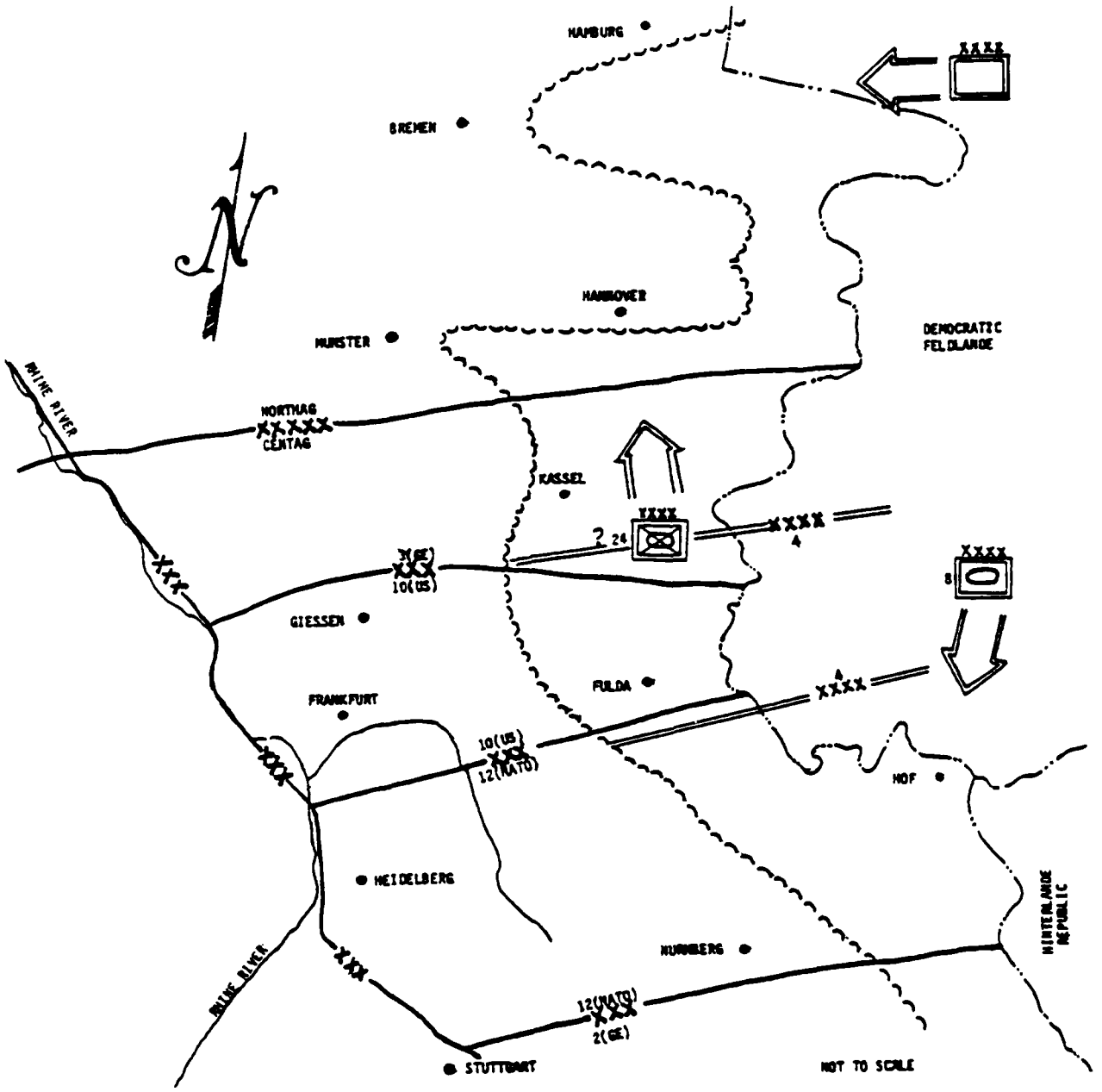
Currently, the 10th Corps Commander and the Corps G2 are out of the TOC at the 52nd Division CP. As the Corps G2 section TOC duty officer, it is your responsibility to be prepared to provide a summary of the enemy situation upon request. Therefore, as you study the messages, please keep this responsibility in mind. Please feel free to make marks upon the messages.

In addition, as you read each message, we would like you to rate how essential it is to the understanding of the enemy situation between 0400 and 0430 Hrs. at the Corps level. Please indicate the ratings on the rating sheet provided with the messages using the following 5-point scale:

1 - of little use
2 - of some use
3 - useful
4 - important
5 - essential

This essentiality rating reflects message <u>importance</u> which may have nothing to do with the evaluation (reliability and accuracy ratings) provided with each message.

You will be given the 30 messages as soon as everyone has had an adequate opportunity to examine the tactical scenario that you now have.



Sketch Map. Situation as of 29 August 1980.

APPENDIX A-2

PARTICIPANT MATERIAL: MESSAGE BOOKLET

MESSAGE
BOOKLET

NO.: _____

PRIMARY SPECIALTY: _____

Instructions

The series of enemy situation data (ESD) messages is presented on the following pages in the order in which they were received at the HQ of the 10th Corps. First, however, the format in which the messages are presented is described briefly for your information, and a key to abbreviations is included. (The format descriptions and key are presented on the yellow sheets of paper.) Of course, some of the entries provided for in the message format are left blank; this is because the associated information is either unknown or irrelevant to your task.

As you examine the messages, one at a time, please be sure to rate each message for its essentiality in understanding the enemy situation between 0400 and 0430 at the Corps level. Your ratings for the 30 messages should be made on the sheet provided in this booklet for the ratings, not on the messages themselves. Please make the ratings using the following 5-point scale:

1 - of little use
2 - of some use
3 - useful
4 - important
5 - essential

Please feel free to make notes upon any of the messages, either of the two maps, or on the scrap paper provided.

You will be given 45 minutes to study the messages and make your essentiality ratings. As you work, please bear in mind that you may be subsequently called upon to summarize the enemy situation data, at the Corps level. You will be told when there are 10 minutes remaining so that you can verify that you have rated each and every message for essentiality. Please begin your examination of the messages.

No.: _____

ESSENTIALITY RATING SHEET

Please rate each of the 30 messages for their essentiality in understanding the enemy situation between 0400 and 0430 at the Corps level. Please do so by putting one rating in each of the 30 blanks below corresponding to the messages numbered 1 to 30. Please use the following scale.

1 - of little use
2 - of some use
3 - useful
4 - important
5 - essential

1. _____	11. _____	21. _____
2. _____	12. _____	22. _____
3. _____	13. _____	23. _____
4. _____	14. _____	24. _____
5. _____	15. _____	25. _____
6. _____	16. _____	26. _____
7. _____	17. _____	27. _____
8. _____	18. _____	28. _____
9. _____	19. _____	29. _____
10. _____	20. _____	30. _____

The General Format for ESD Messages

```
ORIG/MSG NO:                FILE:     ACTION:    FILE-NAME:                PREC:

SCTY:          RESTR:          DISTR:

SUBJ:                          UNIT:
  LABEL:                         ECH    :                          LOC:
  SIG-EVENT?:                    TYPE   :                             :
                                 EMPL   :                             :
  ACTV:                          NATION:                              :
    SPEED:                                                            :
    DIR  :                     TGT?:                                  :
  ACTV-TIME:                     TGT-NO :                             :
  QTY:                           ALT    :                             :
                                 LOC-ERR:                             :
SOURCE:
AGENCY:                        CH-TO-MSG:                  REF     :
EVAL   :                                                   TASK NO:

REMARKS:
```

Key:

Identifier	Purpose
ORIG/MSG NO	To provide a unique identifier for each TOS message. Terminal assigns the value entered in MSG-NO.
FILE	To specify the TOS file that a message will affect.
ACTION	To specify the type of transaction. A=add, C=change, D=delete.
FILE-NAME	Ignored.
PREC	To specify the communications precedence of the message.
SCTY	To specify the security attributes of the message.
RESTR	To specify the restriction of access to data contained in the message.

Key (continued):

Identifier	Purpose
DISTR	To specify the distribution of the message.
SUBJ	To specify the Subject of an ESD intelligence report.
LABEL	To provide a label for a graphic symbol.
SIG-EVENT?	To indicate that an ESD record concerns a significant event or item. (This has been ignored for this experiment.)
ACTV	To specify the activity associated with subject of an intelligence report.
SPEED	To specify the speed of movement in kilometers per hour.
DIR	To specify the direction of movement in either degrees or mils measured from grid north.
ACTV-TIME	To specify the time when an activity took place.
QTY	To specify the quantity of items identified in the subject of a report.
SOURCE	To specify the source of information.
AGENCY	To specify the category of Agency that has received or gathered intelligence information and has reported on the information.
EVAL	To specify an evaluation of reliability and the accuracy of the information.
UNIT	To specify an enemy unit identification.

Key (continued):

Identifier	Purpose
ECH	To specify either the echelon level or the echelon size of a unit that could occupy a terrain feature.
TYPE	To specify the principal and/special organizational type of the enemy unit.
EMPL	To specify how a unit is employed.
NATION	To specify a country of the world from which an enemy unit derives its origin.
TGT?	To indicate if the contents of an ESD message identify a potential target.
TGT-NO	To specify the American, British, Canadian, Austrailian target identifiers assigned to a potential target.
ALT	To specify the altitude above or below mean sea level of a target measured in meters.
LOC-ERR	To specify the probable error in meters of the locating source.
CH-TO-MSG	Ignored.
LOC	To specify a location.
REF	To allow the user to reference another ESD record by its ORIG/MSG-NO.
TASK-NO	To specify the identification number assigned to an intelligence collection task.
REMARKS	To provide for entry of amplifying or clarifying remarks.

KEY TO MESSAGE ABBREVIATIONS

PRECEDENCE:

Z = flash
I = immediate
P = priority
R = routine

SUBJECT:

RDRACQ = radar acquisition
122 = Howitzer
130 = field gun
SA8 = short range SAM
SA6 = low/medium altitude SAM (GAINFUL)

SOURCE:

SLAR = Side Locking Airborne Radar
CEINT = Communications Intelligence
TACFIR = Artillery (computerized)
RECNGE = Recon (ground)
RECNAV = Aerial Visual Recon
RDRCM = Radar Communications
RPV = Remotely Piloted Vehicle
IR = Infra red

EVALUATION (reliability and accuracy):

A = completely reliable
B = usually reliable
1 = confirmed by other sources
2 = probably true

#1

ORIG/MSG NO: 23/208 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY:

UNIT:
ECH : BN
TYPE : TANK
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 100

LOC: NB050010

SOURCE: SLAR CH TO MSG: REF :
AGENCY: TASK NO:
EVAL:

REMARKS: LEAD ELEMENTS ENGAGED.

If desired, use this space for notes.

ORIG/MSG NO: 11/203 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV:
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY:

UNIT: UNK
ECH : BN
TYPE : AR
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 100

LOC: NA150950

SOURCE: SLAR
AGENCY:
EVAL: A1

CH TO MSG:

REF :
TASK NO:

REMARKS: IN CONTACT

If desired, use this space for notes.

#3

ORIG/MSG NO: 3/7044 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: RDRACQ
LABEL:
SIG-EVENT?:

ACTV: DETECT
SPEED:
DIR:

ACTV-TIME: 290350AAUG80
QTY:

SOURCE: CEINT/20
AGENCY:
EVAL: B2

UNIT:
ECH :
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 1000

LOC: NA390800

CH TO MSG:

REF :
TASK NO:

REMARKS:

If desired, use this space for notes.

ORIG/MSG NO: 201 FILE: ESD ACTION: A FILE NAME: PREC: I

SCTY: U RESTR: DISTR:

SUBJ: VEH
LABEL:
SIG-EVENT?:

ACTV: MOV
SPEED: 25 MPH
DIR: EAST

ACTV-TIME: 290405AAUG80
QTY:

UNIT: UNK
ECH : BN
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 700

LOC: NA190900

SOURCE: SLAR
AGENCY:
EVAL: A1

CH TO MSG: REF :
TASK NO:

REMARKS: ENEMY COLUMNS MOVING FROM GRID COORDINATES NOTED.

If desired, use this space for notes.

#5

ORIG/MSG NO: 20CEWI FILE: ESD ACTION: A FILE NAME: PREC: P

SCTY: U RESTR: DISTR:

SUBJ: 122
LABEL:
SIG-EVENT?:

ACTV: DELAYING
SPEED:
DIR:

ACTV-TIME: 290405AAUG80
QTY: 5

UNIT:
ECH : BTRY LOC: NA210900
TYPE : ARTY :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 90 :

SOURCE: SLAR CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: A2

REMARKS:

If desired, use this space for notes.

#6

ORIG/MSG NO: 2BDE/52 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: MECH VEH
LABEL:
SIG-EVENT?:

ACTV: MOVING
SPEED: 15 MPH
DIR: NNW

ACTV-TIME: 290400AAUG80
QTY: 45-60

UNIT:
ECH :
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 50

LOC: MB950100

SOURCE: RDRCM
AGENCY:
EVAL: A2

CH TO MSG:

REF :
TASK NO:

REMARKS: LARGE NUMBER OF TRACKED VEHICLES MOVING ON ROADS THROUGH LOCATION NOTED.

If desired, use this space for notes.

#7

ORIG/MSG NO: SZD FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: TANK CO
LABEL:
SIG-EVENT?:

ACTV: DEFENDING
SPEED:
DIR

ACTV-TIME: 290400AAUG80
QTY: 15

UNIT:
ECH : CO
TYPE : TANK
EMPL : DEFEND
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 50

LOC: MB880190

SOURCE: RECNGE
AGENCY:
EVAL: A1

CH TO MSG:

REF :
TASK NO:

REMARKS: ENEMY TANKS ENGAGED.

If desired, use this space for notes.

#8

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY:

UNIT:
ECH :
TYPE : MRR
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 50

LOC: MB990080

SOURCE: RECNGE
AGENCY: 2B
EVAL:

CH TO MSG: REF :
TASK NO:

REMARKS: LEAD ELEMENTS ARE ENGAGED.

If desired, use this space for notes.

#9

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: 122
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY:

UNIT:
ECH :
TYPE : FA
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 50

LOC: MB990190

SOURCE: TACFIR/52
AGENCY:
EVAL:

CH TO MSG: REF :
TASK NO:

REMARKS: CM/CB RDR LOCD ENEMY ARTY - CB FIRES LEVIED AS PERMITTED.

If desired, use this space for notes.

#10

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: I

SCTY: U RESTR: DISTR:

SUBJ: VEH
LABEL:
SIG-EVENT?:

ACTV: MOV
SPEED: 20 MPH
DIR: NE

ACTV-TIME: 290355AAUG80
QTY:

UNIT:
ECH :
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 100

LOC: NB150200

SOURCE: IR/10
AGENCY:
EVAL:

CH TO MSG: REF :
TASK NO:

REMARKS:

If desired, use this space for notes.

#11

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: I

SCTY: U RESTR: DISTR:

SUBJ: 130
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290355AAUG80
QTY:

UNIT:
ECH : BTY LOC: NB300080
TYPE : FA :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 1000 :

SOURCE: CEINT CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: B2

REMARKS: DIV ARTY GP (DAG).

If desired, use this space for notes.

#12

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: CP
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290351AAUG80
QTY:

UNIT:
ECH : BN LOC: NB040020
TYPE : TANK :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 1000 :

SOURCE: CH TO MSG: REF :
AGENCY: TASK NO:
EVAL:

REMARKS:

If desired, use this space for notes.

#13

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV:
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY:

UNIT:
ECH : BN LOC: NB110150
TYPE : INME :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 1000 :

SOURCE: CEINT/10 CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: B2

REMARKS:

If desired, use this space for notes.

#14

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: P

SCTY: U RESTR: DISTR:

SUBJ: CP
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290357AAUG80
QTY:

UNIT:
ECH : BN LOC: NB055149
TYPE : INME :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 1000 :

SOURCE: CEINT/10 CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: B2

REMARKS:

If desired, use this space for notes.

#15

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: R

SCTY: U RESTR: DISTR:

SUBJ: VEH
LABEL:
SIG-EVENT?:

ACTV: MOV
SPEED: 35 MPH
DIR: EAST

ACTV-TIME: 290403AAUG80
QTY: 20

UNIT:
ECH :
TYPE : WHEEL
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 150

LOC: NB300020

SOURCE: IR
AGENCY:
EVAL:

CH TO MSG:

REF :
TASK NO:

REMARKS: TRUCKS HIGH SPEED, PROBABLY EMPTY.

If desired, use this space for notes.

#16

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC:

SCTY: U RESTR: DISTR:

SUBJ: ARTY
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY:

UNIT:
ECH : BTRY LOC: NA290910
TYPE : FA :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 100 :

SOURCE: RDRCM
AGENCY:
EVAL: A2

CH TO MSG: REF :
TASK NO:

REMARKS: DIV ARTY HAS LOCATED 31 EN ARTY PSNS (CONFIRMED) 122 MM-12, 130 MM-4, 152 MM-2, 122 MRL-1

If desired, use this space for notes.

#17

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: I

SCTY: U RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290345AAUG80
QTY:

UNIT:
ECH : BN
TYPE : INME
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 1000

LOC: NB210060

SOURCE: VR
AGENCY: 23
EVAL:

CH TO MSG: REF :
TASK NO:

REMARKS:

If desired, use this space for notes.

#18

ORIG/MSG NO: 11/0858 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV: MOV
SPEED: 20 MPH
DIR: NW

ACTV-TIME: 290345AAUG80
QTY:

UNIT:
ECH : BN LOC: NB290100
TYPE : TANK :
EMPL : :
NATION: :
:
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 500 :

SOURCE: RPV/10 CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: B2

REMARKS:

If desired, use this space for notes.

#19

ORIG/MSG NO: 3/0876 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: RGT
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290400AUG80
QTY:

UNIT: UNK
ECH : RGT
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR: 700

LOC: MB910260

SOURCE: CEINT/13
AGENCY:
EVAL: B2

CH TO MSG:

REF :
TASK NO:

REMARKS: RGT CP.

If desired, use this space for notes.

#20

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: P

SCTY: U RESTR: DISTR:

SUBJ: 122
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290359AAUG80
QTY:

UNIT:
ECH : BTY LOC: NA350790
TYPE : FA :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: :

SOURCE: RADAR/54 CH TO MSG: REF :
AGENCY: TASK NO:
EVAL:

REMARKS: DIV ARTY GP (DAG).

If desired, use this space for notes.

#21

ORIG/MSG NO: 3/0895 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: FROG
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY:

UNIT:
ECH : BTY LOC: NB190090
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR:

SOURCE: SLAR
AGENCY:
EVAL: B2

CH TO MSG: REF :
TASK NO:

REMARKS:

If desired, use this space for notes.

ORIG/MSG NO: 201 FILE: ESD ACTION: A FILE NAME: PREC: I

SCTY: U RESTR: DISTR:

SUBJ: SA8
LABEL:
SIG-EVENT?:

ACTV: MOVING
SPEED: 20 MPH
DIR: W

ACTV-TIME: 290400AAUG80
QTY: 4

UNIT:
ECH : BTRY LOC: NB120010
TYPE : ADSA :
EMPL : :
NATION: :
:
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: :

SOURCE: 201 CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: A2

REMARKS: SA8 BTRY ADVANCING.

If desired, use this space for notes.

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: JAMR
LABEL:
SIG-EVENT?:

ACTV: DETECT
SPEED:
DIR:

ACTV-TIME: 290352AAUG80
QTY:

UNIT:
ECH :
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR:

LOC: NA490820
:
:
:
:
:
:
:

SOURCE: CEINT
AGENCY: TAF
EVAL: B2

CH TO MSG:

REF :
TASK NO:

REMARKS: VHF JAMMERS LOCATED.

If desired, use this space for notes.

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: P

SCTY: U RESTR: DISTR:

SUBJ: SA8
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290401AAUG80
QTY:

UNIT:
ECH : BTY LOC: MB960210
TYPE : FA :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: :

SOURCE: IR/10 CH TO MSG: REF :
AGENCY: I TASK NO:
EVAL:

REMARKS:

If desired, use this space for notes.

ORIG/MSG NO: 6/08123 FILE: ESD ACTION: A FILE NAME: PREC: R

SCTY: RESTR: DISTR:

SUBJ: SA8
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290400AAUG80
QTY: 4

UNIT:
ECH : BTY LOC: NA210880
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR:

SOURCE: IR CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: B1

REMARKS: UNIT ACTIVATED RADAR IN RESPONSE TO RPV FLIGHT.

If desired, use this space for notes.

#26

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: SA6
LABEL:
SIG-EVENT?:

ACTV:
SPEED:
DIR:

ACTV-TIME: 290401AAUG80
QTY: 2

UNIT:
ECH : BTRY LOC: NA240810
TYPE :
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR:

SOURCE: TACFIRE/54 CH TO MSG: REF :
AGENCY: TASK NO:
EVAL:

REMARKS:

If desired, use this space for notes.

#27

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR:

SUBJ: CP
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290359AAUG80
QTY:

UNIT: 177
ECH : REGT
TYPE : INME
EMPL :
NATION:

TGT?:
TGT-NO :
ALT :
LOC-ERR:

LOC: NA310820

SOURCE: CEINT
AGENCY:
EVAL: B2

CH TO MSG: REF :
TASK NO:

REMARKS:

If desired, use this space for notes.

ORIG/MSG NO: FILE: ESD ACTION: A FILE NAME: PREC: P

SCTY: U RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV: MOV
SPEED: 20MPH
DIR: W

ACTV-TIME: 290410AAUG80
QTY:

UNIT:
ECH : BN LOC: NA350710
TYPE : TANK :
EMPL : :
NATION: :
:
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: :

SOURCE: RECNAV CH TO MSG: REF :
AGENCY: TASK NO:
EVAL:

REMARKS:

If desired, use this space for notes.

ORIG/MSG NO: 54 FILE: ESD ACTION: A FILE NAME: PREC: P

SCTY: U RESTR: DISTR:

SUBJ: BN
LABEL:
SIG-EVENT?:

ACTV: MOVING
SPEED: 10 MPH
DIR: WEST 55

ACTV-TIME: 290355AAUG80
QTY: 10-15

UNIT: UNK
ECH : BN LOC: NA290750
TYPE : WHEEL :
EMPL : :
NATION: :
:
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: :

SOURCE: RECNAV CH TO MSG: REF :
AGENCY: DI AVN TASK NO:
EVAL: A2

REMARKS:

If desired, use this space for notes.

#30

ORIG/MSG NO: 52 FILE: ESD ACTION: A FILE NAME: PREC: I

SCTY: RESTR: DISTR:

SUBJ: RGT
LABEL:
SIG-EVENT?:

ACTV: LOCD
SPEED:
DIR:

ACTV-TIME: 290359AAUG80
QTY:

UNIT:
ECH : RGT LOC: NB030220
TYPE : MR :
EMPL : :
NATION: :
: :
TGT?: :
TGT-NO : :
ALT : :
LOC-ERR: 1000 :

SOURCE: CEINT CH TO MSG: REF :
AGENCY: TASK NO:
EVAL: B2

REMARKS:

If desired, use this space for notes.

APPENDIX A-3

PARTICIPANT MATERIAL: INSTRUCTIONS FOR SUMMARIZATION PHASE

GUIDELINES GROUP

INSTRUCTIONS FOR SUMMARIZATION PHASE

To help us with the first of two tasks, which remain, we would now like you to do the following. Assume that the Corp G2 and Corp commander will be arriving at TOC momentarily. Your task is to prepare a summary or update briefing of the enemy situation for the G2. The summary should not be merely a listing of messages, but rather it should represent a well thought-out and well-organized description of the situation. This description should not include tactical recommendations. For our purposes, we ask that you write-out the summary as you would say it directly to the G2; blue scrap paper will be provided to you on which you are asked to work. With respect to length, assume that your summary would take about 3 minutes to present orally, and that in final written form it should take up no more than 3 pages. Your summary cannot contain any drawings or graphics, although you may refer to map coordinates.

You will be provided a list of three guidelines which we would like you to follow as closely as possible in preparing your summary. These guidelines were suggested from research conducted earlier this year here at the U. S. Army Command and General Staff College. The three guildelines are as follows:

(1) Prepare the intelligence summary in a conversational style. Do not present information in the form of lists alone since this makes understanding the information time consuming and difficult.

(2) Provide an interpretation of the intelligence information if that is possible. In other words, in addition to the "hard facts," try to state what the intelligence means in

terms of the enemy situation; however, these statements must be well founded.

(3) Provide a dynamic portrayal of the enemy situation. That is, emphasize the speed and direction of enemy movement, rather than merely the current static position of enemy units.

Shortly, you will be given up to 20 minutes to compose and draft your summary. Because this is a limited amount of time, we realize that you may not be able to provide a neat copy of the summary. However, since it is necessary that your summary be completely legible so we can analyze it, we must ask you to copy it over into final form. Thus, during the 20-minute period, all you need to do is to draft your summary on the blue scrap paper. Then, at the completion of that period, you will be given special sheets upon which to copy the final summary. You will be given only 5 minutes to copy your summary; and therefore, you should not plan to use this time to modify or expand your summary.

NO GUIDELINES GROUP

INSTRUCTIONS FOR SUMMARIZATION PHASE

To help us with the first of two tasks, which remain, we would now like you to do the following. Assume that the Corps G2 and Corps commander will be arriving at TOC momentarily. Your task is to prepare a summary or update briefing of the enemy situation for the G2. The summary should not be merely a listing of messages, but rather it should represent a thought-out and well-organized description of the situation. This description should not include tactical recommendations. For our purposes, we ask that you write out the summary as you would say it directly to the G2; blue scrap paper will be provided to you on which you are asked to work. With respect to length, assume that your summary would take about 3 minutes to present orally, and that in final written form it should take up no more than 3 pages. Your summary cannot contain any drawings or graphics, although you may refer to map coordinates.

Shortly, you will be given up to 20 minutes to compose and draft your summary. Because this is a limited amount of time, we realize that you may not be able to provide a neat copy of the summary. However, since it is necessary that your summary be completely legible so we can analyze it, we must ask you to copy it over into final form. Thus, during the 20-minute period, all you need to do is to draft your summary on the blue scrap paper. Then, at the completion of that period, you will be given special sheets upon which to copy the final summary. You will be given only 5 minutes to copy your summary, and therefore, you should not plan to use this time to modify or expand your summary.

APPENDIX A-4

PARTICIPANT MATERIAL: INSTRUCTIONS FOR THE PURGING TASK

Instructions For Purging Task

To complete this exercise, we would like you to participate in one final phase of the experiment. The rationale and procedure for the final task is as follows. It might sometimes be the case that too many messages are received by an intelligence staff such that the task of maintaining an ongoing record of them is overwhelming. In order to determine the kinds of messages that need not be retained about the enemy in the present situation, please examine the 30 messages again and, this time, put a large "X" through any message that you feel could be deleted permanently from the message set. Please continue to examine the messages in this manner until you have deleted exactly 15 of them. You should complete this task with the tactical scenario in mind, but you should consider this task to be independent of the summarization task that you have already completed. That is, assume that all that can and will be retained about the set of 30 messages for later reference by other members of the intelligence staff is 15 messages in their present form.

When you have finished deleting 15 messages, please gather together the 15 messages that you feel should be retained and rank-order them on the basis of how important they are to keep in the remaining message set. Give the most important message a "1," the next most important message a "2," and so on until you have rank-ordered all 15 of the messages you feed should be retained. You can put the numbers anywhere on the messages that you wish, but please be consistent and make the numbers large so they can be found easily.

APPENDIX B

INSTRUCTIONS FOR RATERS

Instructions for Evaluators

Perceptronics is currently engaged in an empirical study of the quality and structure of tactical-situation summaries prepared by staff officers. In this study, 32 advanced students at the U.S. Command and General Staff College at Forth Leavenworth were asked to role-play an intelligence-section TOC duty officer at the Corps level. After reading a tactical scenario of a developing conflict in Europe and reviewing an enemy situation map, the students were asked to study 30 Enemy Situation Data (ESD) messages said to have been received over a specific half-hour period. Their task was to summarize the information contained in the 30 messages in preparation for a three-minute briefing to the G2 on the events transpiring during the half-hour period. The students were told that their task was simply to inform the G2, who had been absent during the half-hour period, of the enemy situation; they were not to make tactical recommendations. The summaries were written out by the students; they were not allowed to draw pictures, but they were allowed to refer to map coordinates. In brief, they were to write the summary as they would say it given only three minutes with the G2.

Enclosed are:

(a) a description of the tactical scenario (excerpted from instructions to subjects)
(b) the 30 ESD messages as presented to the students in standard TOS format (keys to the format and abbreviations are included)
(c) typed copies of the 32 student-generated summaries of the messages, with an evaluation sheet attached to each

The first thing we would like you to do is to read through the scenario and messages. We realize that you may be overly familiar with this

scenario, but you should keep in mind that the summaries you are to judge were based only on the 30 messages included here. Then, after you have studied the scenario, please read each of the 32 summaries over once. This initial view of all summaries will help you to establish a framework for the individual summary evaluations we wish you to make.

An evaluation sheet has been attached to each of the 32 summaries. Using these forms, we would like you to judge the quality of each summary with respect to the following five general evaluative attributes: (1) content, which refers to the appropriateness of the scope of the factual information selected for inclusion in the summary, i.e., to what degree does the summary include facts that the G2 should know, yet exclude facts that the G2 does not need to know? (2) interpretation, which refers to the meaningfulness and usefulness of an integration of the information contained in the messages, including an assessment of the summarizer's use of references drawn from the available information; (3) accuracy, which indicates the degree to which the information presented in the summary correctly reflects the detailed information contained in the messages, i.e., is the information included in the summary true or plausible? (4) organization, which reflects how well the important bits of information are presented in an order that would facilitate understanding of the tactical situation by the G2, i.e., how adequate is the structure of the information presentation? (5) style, which refers to the effectiveness of the manner or format by which the information in the summary is communicated, i.e., how well does the presentation style facilitate understanding of the tactical situation by the G2. Your rating for each attribute is to be indicated on a five-point scale ranging from "very poor" to "very good"--please mark the appropriate box in each case.

Finally, for each summary, we need your single assessment of the overall quality of the entire summary; in other words, as expressed by the summary, how well did the student performing the summarization task role-play the duty of the G2-section TOC duty officer? This judgment is made in the form of a quantitative rating on a 0-to-100 quality scale, with the correspondence between some numerical anchors and their verbal tags shown as a guideline in the box in the lower left portion of the evaluation sheet. Your assigned overall rating for a summary, which can be any number between 0 and 100, should be recorded in the box provided in the lower right corner of the sheet.

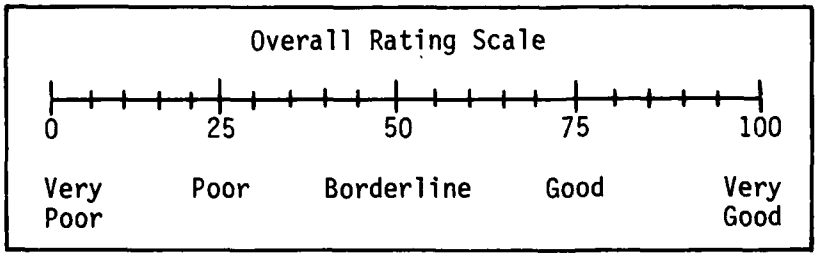
If you wish to make any additional comments about a summary, please feel free to do so on the back of the evaluation form for that summary.

We realize that the tasks we are asking you to do are somewhat time-consuming. However, we need your work returned within ten days in order to complete this phase of our program on schedule; for your convenience we have enclosed a return-mail envelope. Therefore, we would like to thank you in advance for your speedy cooperation.

SUMMARY EVALUATION SHEET

Summary No. _____ Rater _____

Attribute	Very Poor	Poor	Borderline	Good	Very Good
CONTENT --appropriateness of scope of factual information included.	☐	☐	☐	☐	☐
INTERPRETATION --meaningfulness and utility of information integration.	☐	☐	☐	☐	☐
ACCURACY --correctness of facts or plausiblility of inferences in light of message content.	☐	☐	☐	☐	☐
ORGANIZATION --logic of order of information presentation.	☐	☐	☐	☐	☐
STYLE --effectiveness of manner or format of information communication.	☐	☐	☐	☐	☐



Overall Rating ☐

APPENDIX C

THE PARTICIPANTS' SUMMARIES

[Summaries are presented in descending order of quality; the average overall evaluation and whether or not the summary was written from guidelines is provided with each summary]

SUMMARY NO. 1

Sir, while you were gone we received some updated reports which may be important.

Our most recent information indicates that we are in contact in the 201st area and that some air defense units in that are moving forward.

New artillery and air defense has been located in the 54th Div area and there is armored battalion movement toward the west in the 54th Div sector primarily in the south.

Northwest movement of armored and wheeled vehicles has been detected in the 23 DIV sector as well as in the rear of the 201st sector.

Division artillery has been located near NB30070 and a nuclear capable FROG BN has been located in that area.

Although enemy intentions are not clear at this time it is apparent that the heaviest contact is in the 201st area and the enemy is increasing pressure by moving to contact in the 54th Div area.

At the same time the enemy is moving units to beef up their capability in the 23rd Div sector or to cross the Corps boundary in the North.

Average Overall Evaluation = 78.3

Group: Guidelines

SUMMARY NO. 2

During the period 29 0400 to 29 0430 Aug 80, sporadic enemy activity occurred across the Corps front. The principal activity occurred in the center of the Corps sector. Several enemy armor battalions were engaged in the 201st ACR sector and in the Northern part of the 54th mech sector.

Small enemy units were reported delaying in the North while Battalion size units were reported moving North and Northwest, indicating a possible movement of large elements out of the Corps sector toward the North. Further, there were several reports of large numbers of wheeled vehicle convoys moving eastward toward the enemy rear. This could mean either a relatively large re-supply effort in this sector, or the impending move to the North.

Of some concern is the report that an enemy tank battalion is moving west and into the South of the 54th mech Div sector, perhaps from this 12th (NATO) corps area. This may indicate a limited attack along the Corps southern boundary though evidence of this is scarce.

Elements of DA6's were located at NB3088, and NA350790. A FROG Btry was located at NB190090. In all, Div. Arty. has confirmed 31 enemy arty PSNS. including 122 MRL's.

Three SA8 Btry's (one in each sector) were located and one SA6 Btry was found forward in the 54th mech sector.

Based upon the above, indications are that the enemy will conduct limited attacks across the Corps front to defend/delay while withdrawing the bulk of his forces to reinforce the Northern area.

Average Overall Evaluation = 73.9

Group: No Guidelines

SUMMARY NO. 3

Update briefing - Corps situtation as of 0400 hrs. Corps elements are opposed by elements of three enemy motorized rifle divisions and two tank divisions. On the Corps north flank, the 23d armored division appears to be opposed by elements of one MRD and one tank division. Movement in this sector shows a shifting of forces toward the northwest, vicinity MB920110. Vehicle movement toward the NNE in this sector could indicate resupply is taking place. In the Corps center sector, the 201 ACR is opposed by elements of a TK Div on the north and probably a motorized rifle division on the south. Activity has been heavy in the northern sector of the 201 ACR vic NB100050 with vehicle movement to the NW. Vehicle movement vic VN350050 could indicate additional replacements and/ or resupply to the MRD on the southern portions of the 201 ACR.

The 54th mech appears to be opposed by elements of an MRD on the north and a TK div on the south. Wheel and track vehicle movement in the southern portion of Corps area vic NA3070 indicate repositioning of units and possible supply locations of a jamming unit implies a potential area of attack on the boundary of the 10 and 12 Corps. Positioning of a DAC in the same area could provide fire support for any threat assaults.

We must continue to develop the situation on the south flank to preclude enemy from surprising us with a spoiling attack. If enemy chooses to attack, his main effort will probably be along 23AD/201ACR boundary with a secondary effort along 10 (US) and 12 (NATO) Corps flanks.

Average Overall Evaluation = 68.9

Group: Guidelines

SUMMARY NO. 4

Sir, the major activity in the 10th Corps sector is the movement of battalion size units away from us and toward the units to our North. All of this movement is being done by maneuver units with no supporting artillery going along. We have located one regimental artillery group and two DAG's. There are at least two or three air defense batteries moving well up to the enemy's front lines in our sector. A FROG battery has moved within 10 KM of the 201st ACR front. Two RGT CP's have been located as well as several BN CP's. No really heavy engagements appear to be going on in our sector; although units of battalion size are engaged in these locations aross the entire front.

My opinion is that the enemy is moving maneuver units from in front of us to reinforce his success against the units on our left flank. In order to deny us knowledge of these movements he has moved ADA forward to limit our air activity behind his lines. The FROG is probably part of a demonstration. I think he is conducting a holding action against us.

Average Overall Evaluation = 68.3

Group: Guidelines

SUMMARY NO. 5

Since we began our counter offensive we have met with immediate enemy resistance along only portions of our front. In the 23rd Div sector this has been strongest in the south and consists of mechanized forces although a tank Co from the MRB has been used in the 1st echelon defense (MB880190) and not as a C-ATK force. In the 54th sector arty has been used in direct fire roles to bolster the defensive/offensive effort there (NA210900). No other significant contact has been reported along the front.

We have detected a forward displacement/positioning of surface to air missile units, jammers, and other counter air elements. This seems a bit unusual but our reports are all from high quality sources. SA8's are at NB120010, MB960210, and NA210880. SA6's at NA240810. A jammer unit is at NA490820. The most significant unit identified however is a FROG Btry located by 8LAR at 0400 vic NB190090. From this it appears that the enemy is either unsuspecting of our plans to C-ATK and is currently preparing to continue his offensive to the west, or, he is prepared to cross the nuclear threshold (FROG) and strike deep. At the same time his AD coverage far forward can neutralize our own air threat and protect his key units.

A tank Bn, probably from a MRR or possibly Div Indep Bn, is moving NW rapidly vic NB290100.

Average Overall Evaluation = 67.4

Group: Guidelines

SUMMARY NO. 6

Current Situation 10th US Corps as of 290430A Aug 80:

General -- Front generally stable with minor enemy contact (battalion size). Possible probing attacks. (a) vic NB050010 at 290400A Aug 80 lead elements of an enemy tank battalion engaged (results unknown). (b) vic MB990080 at 290400A Aug 80 lead elements of enemy MRR engaged (results unknown). (c) vic NA150950 at 290400A Aug 80 enemy tank battalion in contact (results unknown).

Significant activity -- Vic MB950100 at 290400A Aug 80 45-60 enemy mech vehicles reported moving NNW at 15 MPH. Could be moving to stabalize line (grid MB890140) or could attempt limited objective attack (MB020760).

Confirmed major enemy locations -- (a) 177th INME Rgt CP vic NA310820. (b) MRR vic NB030220. (c) Rgt CP vic MB9102160. (d) DAG vic NB300080/ (e) DAG vic NA350790. (f) 31 arty pos. confirmed vic NA290910 (122, 120, 152, 122 MRL). (g) FROG Btry vic NB190090. (h) ADA Btry strength MB960210 (SA8) NA210880 (SA8) NA240810 (SA6) enemy appears to be building up to counter attack unit, can attack, defend, or withdraw. Will probably defend initially until buildup complete.

Average Overall Evaluation = 64.7

Group: No Guidelines

SUMMARY NO. 7

It appears that we are opposed by elements of 3 emeny divisions deployed in belts across the 10th Corps front. 2nd Echelon Divisions and enemy locations have not been identified.

Recent enemy activity indicates that the enemy will defend along the present LC. He has shifted, or is in the process of shifting, forces to the Northern sector along the E4/E70 autobahn which he no doubt considers his most dangerous avenue of approach. He appears to be spread thin throughout the Vogelsberg area which affords him the best defendable terrain.

Enemy forces in the vicinity of Landerback (positioned behind the Vogelsberg) are being moved to the North as was previously mentioned, probably to reinforce or counterattack in the Alsfeld area.

The enemy is defending in the sector south of the Vogelsberg with the majority of his forces along the Kinzig River Valley approach to Fulda.

The enemy is using REC and has AD elements well forward.

There has been no indication of NBC use or commitment of Airborne/Air Mobile Forces.

Average Overall Evaluation = 63.3

Group: Guidelines

SUMMARY NO. 8

During the last 30 minutes we have confirmed the locations of 11 previously known units and discovered 10 more previously unknown. The enemy is continuing to defend in sector with his artillery and SAMs far forward.

Significant activities are as follows:

In the 23AD area there is currently lateral movement by an enemy MR unit. It is moving NW along the FEBA. Its destination and mission are unknown. At MB990090 we have engaged a tank battalion. We don't know if they were in the process of following the MR unit or not. Immediately to the rear of the tank battalion we have located 2 MRBs - the 3rd echelon regt of the 1st echelon division. The only significant activity in the 201 ACR AD is the NW movement of a tank Bn on road 254 toward Alsfeld. This may indicate the enemy is expecting us to penetrate either in the 23AD or just across the Corps boundary. In the 54 mech AD the confirmation of one DAG at NB350790 and indications of another at NB290910 plus the confirmation of a number of mech, armor, RA and active ADA units far forward indicate the enemy will put up a stiff defense in this area

The most significant events in the 10 Corps AD are the 3 instances of lateral movement; the 1st on the FEBA and the 2nd to the center area of the AD. The significance is not known.

Average Overall Evaluation = 60.4

Group: No Guidelines

SUMMARY NO. 9

The intelligence summary for events reported 0345 hrs through 0415 hrs in the Corps zone:

In the northern area now occupied by the 23rd: At approximately 0400 hrs 45-60 mech vehicles reported moving NNW at 15 MPH vicinity MB950100. A Regt size unit was located approx MB910260. This unit has been on the intell summary and this is a confirmation. Ground recon has located approx 15 tanks vic MB880190. Unit was defending and targets were engaged. Recon elements located a MRR vic MB990080. Unit in a static area. 122 MM FA unit located MB990190 by the TAC FIR/52 target engaged.

In the center section now occupied by 201st ACR CEINT/10 has located a BN CP vic NB055149. An armored CP has been located vic BN0240020. Both units are not moving at the time reported. An MMR regt has been located at coord NB030220. A tank BN of unknown number has been located at coord NB290100 moving NW at 20 MPH. A tank BN, coord NB050010 and two INME BNs located at NB110150 and NB210060 respectively have been identified. The tank BN is a verification but the two INME BNs are new to the intell report. Several vehicles have been reported moving east from this area. Approx 20 wheeled vehicles from NB300020 and other single spotted reports.

Average Overall Evaluation = 59.1

Group: Guidelines

SUMMARY NO. 10

There has been significant activity between 290400-290430 aug 80 in the 10th Corps A.D. The most activity has occurred in the 201st sector. However contact is in progress in the 23rd sector. The 53rd sector is relatively quiet for the time being but numerous sightings indicate it will not stay that way.

In the center sector, the 201st engagements, vehicle sightings, regimental CP's, and regimental arty groups have been located. The 201st have engaged elements at NB050010, NA150950, and NA390800. Vehicles have been sighted at Grid NA190900 and moving east. A regimental CP, probably an MRR has also been located in the 201st area. The RAG is believed to be vicinity NB1505.

In the North, lead elements have made contact at MB990080, probably a MRR. In addition a tank company is in defensive position at MB880190. The RAG is vicinity MB990190. Numerous vehicles have been sighted moving east out of this area, probably re-supply vehicles.

The Southern AD, the 53rd has not had much activity but numerous sightings. The DAG has been located at NA2595 with 122, 130, and MRL's. Also, CP's have been located in the A.D.

Overall most activity is in 201st AD and we can expect most activity there.

Average Overall Evaluation = 58.1

Group: No Guidelines

SUMMARY NO. 11

Sir, the general situation has caused no movement of the FEBA/LOC. The enemy situation has solidified and is beginning to expose itself. He has anticipated our counter-attack and is preparing for it while also moving uncommitted or non-influential forces to reinforce the salients established earlier in NORTHAG.

Most of the reports received during your absence were timely and tended to confirm the locations of units already plotted and/or identified, or showed movement to the N and NW, especially from the northern sector. Also, movement to the west (i.e., to the FEBA) was noted in the southern sector. Identification of new units was key to the center sector. Enemy units in our area of responsibility are moving to establish better defensive positions to thwart our counter-attack at the least cost to themselves.

The enemy has placed emphasis on the center sector by his positioning of a FROG unit (battery) at this location (NB190090). This of course is a front asset and will be used once he has identified our assembly/massing areas, CP's, nuclear storage sites or logistics areas. (Beware that the FROG carries either a conventional, nuclear, or chem/bio warhead).

Our defense signatures also give away his intention. Though missions have been recorded across the front, the significance is again the center sector. He is protecting his own crucial area of defense from observations and close air strikes.

In summary, he has increased his ability to defend in our sector. though more so in the center. He retains the capability to employ mass-strike weapons and to conduct limited attacks against us.

Average Overall Evaluation = 57.6

Group: No Guidelines

SUMMARY NO. 12

Sir, 10th Corps has not met with any unexpected enemy resistance. 23 AD is opposed by two MRR in the 1st echelon with a possible composite TR/MRR in the 2nd defensive belt. 201 ACR is opposed by two TR in 1st belt, probably reinforced by an MRB each, and a TR with one MRB in 2nd Def Belt. 54 mech is opposed by two MRR in 1st Def Belt, one TR on its flank with 12 (NATO) Corps; and one MRR in 2nd defensive belt. Expect one TR and one MRR as OPFOF ARMY 2nd defensive belt between Alsfeld (NB22) and Fulda (NB4505).

Expect enemy to continue to defend in place.

No enemy reserves identified moving into area of operations.

Enemy has full air defense complement in each division defensive area.

Have located one FROG BN vic NB2010.

Enemy may be short on supporting field artillery, since we have located (and presumably shot) several RAG/DAG.

Average Overall Evaluation = 57.3

Group: Guidelines

SUMMARY NO. 13

The current tactical situation is as follows. The enemy defends in depth in the 23rd AR DIV's sector, and 201 ACR sector. The 54th DIV has experienced less tactical residence to the south. Enemy units encountered in the 54th DIV sector include 122 MM arty in direct fire role; 1 MRR defending vic NA3574. One Bn observed moving east vic NB1990 right on the 201ACR and 54th DW boundary. Numerous SAM systems were reported in the 54th DIV zone.

201ACR zone reflects the enemy deployed in zone with 3 BNs on line at the LD/LC. A FROG system was observed at NB1809. The 23 AR DIV has engaged tank units (unknown size) and 1 MRR in zone along the LD/LC; a 122 MM RAG at MB9518, 2 regts at NB0422 and MB9225 consist of the 2nd belt of defense.

A tank BN was spotted moving NNW at NB 2515 and could reinforce the LD/LC in the 23 or 201ACR zone of action.

The DAG appears to be located at NA2892; additionally BN MM arty is located vic NB3008.

Enemy is strongest and in depth the 201 and 23 DIV zone. 54 DIV has met with less maneuver force elements and has observed more combat supt elements.

Average Overall Evaluation = 57.1

Group: Guidelines

SUMMARY NO. 14

Our lead elements are engaged along the FEBA in the 23rd and 201st zones. Intel reports confirm enemy positions at MB910260 (RGT), MB880190 (TK CO), MB99080 (MRR), MB990190 (122 ARTY), and NA29010 (ARTY Positions all Calibers) the tank Co at MB880190 is now defending. 45-60 mech vehicles are moving from MB950100 toward this tank Co. possibly to assist by relieving pressure. This could indicate initial success of our counter-offensive in the north of 23rd zone. SA8 movement from NB120010 toward the FEBA was sighted. Also an MTB was reported moving east from NA190900. This can be interpreted as enemy preparation to secure better defensive position and counter our CAS. Enemy air defense and arty are located well forward and are capable of damaging our offensive. Enemy tank battalion has moved toward FEBA from NA350710. Also, an enemy Bn on wheels moved west from NA290750. This can be interpreted as a luck of success for our counter-offensive in 54 mech zone. Two incidents of enemy vehicles moving east were reported. This could be either routine movement or as a result of the enemy feeling our offensive pressure in 23rd and 201st zones.

Average Overall Evaluation = 55.9

Group: Guidelines

SUMMARY NO. 15

Summary of message traffic -- 0400-0430.

The En appears to be concentrating his efforts in the 23rd AR Div sector. It is estimated that within 1-2 hrs the 23rd AR will be opposed by an En force the size of 2 divisions plus. (Explain MVT of En units into 23rd sector.) This may indicate: 1st - an ATK in this sector or 2nd - the En expects a C/ATK in this area. Additionally, westward movement of Bn size elements in the 54th Div's sector has been reported.

Numerous arty and AD unit locations across the Corps front have been confirmed. Note that one AD unit was reported moving westward. Possibly, AD units moving forward all targeted (aimed at) preventing overflights; e.g., recon.

Note location of En's VHF Jammer (distance from FEBA) located out of the Corps sector.

Average Overall Evaluation = 51.9

Group: Guidelines

SUMMARY NO. 16

All source information received over the last few hours provides a mixed picture of static defense and shifts of maneuver units and artillery to support a possible counter-attack with a supporting attack potentially aided with the capability of a forward deployed FROG missile unit.

Starting up in the 23rd Div sector we see almost a doctrinal disposition of an MRR in the division southern boundary with the 201st whose northern boundary we see a correlating buildup with a possible tank regt. This places the center of a possible break thru attack vic MB9950 where engagements have already begun. These units are supported by normal artillery but there is an added threat with a FROG unit vic NB1505 covering ADA units in the area of the FROGs.

In the south, the 54th Div appear to be facing a support artillery on its southern boundary with the 12th Corps. Such an attack appears to be heavily supported by massed artillery directly opposite the 54th.

Average Overall Evaluation = 48.3

Group: No Guidelines

SUMMARY NO. 17

1) Enemy positions, size and type of units depicted prior to the attack have been confirmed as the results of engagements all along the Corps front.

2) Locations of unit CP's have been confirmed in the following locations: Tk Bn CP NB040020; Tk NB110150 INME CP NB055149.

3) Enemy resistance is strongest in the 23rd Div's sector.

4) Tank and mech units in the 54th Div and 201st ACR have been observed moving to the west and northwest toward the 23rd Div sector.

5) The enemy will continue to defend, and are moving tank and mech units into position for a counter ATK.

Average Overall Evaluation = 47.9

Group: Guidelines

SUMMARY NO. 18

Since the kick off of the operation, a number of previously located enemy units have been confirmed and new one identified along the FEBA. There is a general movement of some Bn and Co size units to the NW along the FEBA. While some deeper units seem to be moving west to fill the void.

A number of rgmt size units have been identified indicating the approximate trace of the second defensive belt along the FEBA. Movement of anti-aircraft missiles have been noted toward the FEBA. This could be an attempt to deny us the use of overflight to gain intelligence or to cover a shift in enemy forces or camouflage a withdrawal as indicated by eastward movement of forces in Bn strength vicinity of NA1990.

Individual events are posted on the intell situation map and coded to correspond to the ESD messages received since 0400.

Average Overall Evaluation = 47.3

Group: Guidelines

SUMMARY NO. 19

There has been sporadic activity along the Corps front from 0400 and 0430 hrs today. The attack was launched in the 201 ACR sector at 0400, causing the Tank Battalions at MB0000 and MB0100 to begin to delay East. The 23rd Div is encountering heavy resistance in the North, and it appears that enemy trains in our center sector are moving NNE, possibly to reinforce units in the 23rd Div sector. Elements of the DAG have been located in our southern sector at NA350790 in the 54th Div zone. There has been increased activity in this area as well, and it appears that the enemy plans to reinforce or counter attack in this area, while delaying in the center. Firing batteries of 130, 152, and 122 have been detected relocating in the North and South. Two tank battalions have been seen advancing west in the 54th Div sector and SA6s and SA8 missiles are being moved toward in both the 23rd and 54th Div sectors. We can conclude, therefore, that the enemy is planning for possible offensive actions against the 23rd and 54th Divs while delaying in the 201 ACR sector.

Average Overall Evaluation = 46.7

Group: No Guidelines

SUMMARY NO. 20

During my watch the enemy has continued to advance gradually as shown by the current location on the sit map.

The most potentially significant report was the SLAR report of a FROG (NB1909).

Other significant reports include:
- a probable RAG at NA2991
- a 130MM Batry at NB3008

I'd like you to note the forward deployment of this arty, which, when coupled with the maneuver unit deployment changes suggest the enemy will shortly (probably at first light) launch an attack.

Significant maneuver unit reports include:
- a U/I En Regt (MB9126)
- En Tank Bns at (NB2910; 0402)
- En MRB's at (NB2146) (NB055149) (NB1115)

Other items of interest include the close-in presence of an SA6 (NA2481).
A report of trucks moving east, empty at (NB3002) (Prob resupply).
An anonymous report of a tank Co, defending, as of 0400 at MB8819.

Average Overall Evaluation = 45.6

Group: No Guidelines

SUMMARY NO. 21

We are currently opposed by elmts of 3 MRD; 2 TK, all on 1st Ech; and one TK in 2nd Echl. There is one T and one RR div opposing the 23 and 201 and one MRD opposing the 54th. The other TD is in a pos to exploit success in either 23 or 201 area. The En is preparing to ATK with his main effort being in the north and a spotting ATK in the south. Currently elmts of 21 and 201st are in contact and other EN units are moving westerly. They have moved their arty up forward, especially the 130 MM and have positioned SA6's closer to the FEBA than normal. A large amount of trucks have been seen going east from vic 0220 and 0320 and is probably supply TRKS returning to the rear for more ammo. By going N the EN will avoid the Frankfurt mess and will facilitate his exploiting other success to the North of the 23rd sector

Average Overall Evaluation = 44.3

Group: Guidelines

SUMMARY NO. 22

General - The Corps is opposed by elements of at least 4 MRRs at present. The situation is very fluid. In the Northern Corps sector there is solid evidence of a move to the NNW by many track vehicles (and some wheels) which indicates an enemy move to reinforce their successes in the Northag area. Remaining units in the Corps northern area appear to be preparing to delay:

Units in the Corps center sector appear to be preparing to defend although their capability to do so seems slight. Additionally, there is significant ADA hardware and the possibility of an airborne assault by the enemy seems most likely in this sector.

In the Southern Corps sector there is strong evidence of the enemy moving forward with tanks and arty to the west. This suggests either an attack in this area or a buildup for a strong defense. Based on info reporting trucks moving to the east approx 20 Ks behind LD/LC, I feel that this is a feint operation (but it does appear to be strongest area in Corps).

Recommend priority attack in the North W/ support ATK in center.

Average Overall Evaluation = 42.9

Group: Guidelines

SUMMARY NO. 23

Lead elements of the 23rd AD have made contact along their front. Two BN's positions, one being an MRR, have been located at MB990190 and MB990080 respectively. 54th Div Arty has located enemy arty positions vicinity coordinates NA 290910.

An enemy tank Bn has detected moving NA towards 23rd AD sector vic NB290100.

Aerial visual recon reports another tank battalion moving W vic NA350710 generally parallel to the Corps southern boundary.

A FROG battery has been located vic NB190090; unit was in position, unknown if prepared or able to fire.

SAM sites have been reported in various locations.

Type WPN	Size unit	Position	Status
SA8	Battery	NB120010	Moving W
SA8	Battery	MB960210	Static
SA8	Battery	NA210880	Static-prepared to fire
SA6	Battery	NA240810	Unknown

SLAR reports indicate enemy column moving to the East from NA1909 in Bn strength.

A large number of tracked vehicles have been detected by radar communications moving NNW on the roads vic MB905100 in 23rd AD sector.

(continued)

Enemy CP locations have been identified at:

Size Unit	Location
Regt	MB910260
Regt	NA310820
Tank Bn	NB040020

Enemy Brty units have been reported at:

Type	Location
DAG, 122MM	NA350790
DAG, 130MM	NB300080

An enemy Bn has been located vic coord NB210060.

VHF jammers have been located at NA490820.

Average Overall Evaluation = 73.9

Group: No Guidelines

SUMMARY NO. 24

1) Confirmed FA locations in our zone depicted on map showing 5 FA batteries, 1 Frog Bn, 1 SA8 site, and a DAG.

2) One jammer located at NA490820.

3) In the 54 area we have a tank Bn moving to FEBA and a Bn of wheel vehicles also moving to the west.

4) In 201 ACR is still in contact with 2 TK Bns and a TK Bn moving to contact. A mech Bn and a TK Bn is on the move NW.

5) In the 23 area is a tank Bn and TK company in contact, and a mech unit moving NW along the FEBA. A mech regt and 2 TK Bns have been located.

6) Two large wheel convoys are moving NW at NB150200 and NB300020. Trucks appear to be empty.

Average Overall Evaluation = 40.0

Group: Guidelines

SUMMARY NO. 25

The enemy situation is as you can see on the map before you. Significant developments within the past hour are:

1) Location of possible DAG vic NB008
2) Location of FROG Btry vic NA1909.
3) MR Bn moving NW vic NA 1215.
4) Tank Bn moving NE vic NA2910.
5) Several AD units have been located along the FEBA.
6) Several artillery units have been located along the FEBA.

Summary:

The two Bn's reported moving may intend to link up vic Alsfeld and form a counter attack force or to provide security of Alsfeld.

The additional AD units would indicate the enemy is beefing up his air defense to oppose increased air attacks on our part.

Average Overall Evaluation = 39.0

Group: No Guidelines

SUMMARY NO. 26

Messages received indicate enemy is continuing to defend. Most significant movement/maneuver is in 23rd Div sector with new reports of contact with lead elements. Maneuver in 201st and 54th zones not reported - contact not reported. Absence of contact may imply economy of force measure with main defense in another part of Corps zone.

Movement to NW of BN-CO, size unit in 23rd Div sector suggests possible C-ATK or reinforcement in area. Location of several Bn size units and arty units to indicate a DAG will assist in templating the enemy.

Significant also is the presence of a FROG Btry well forward!

Significant enemy sightings include:

BN's located - NB050010
NA150950
NA190900

Enemy movement - MB950100

Average Overall Evaluation = 36.3

Group: No Guidelines

SUMMARY NO. 27

The information presented is based on 30 messages which have been received. Basically, at this time, the situation remains relatively stable or as expected in the very early stages of the attack. Messages have been received which are confirming enemy dispositions which have already been presented, in part G-2 updates. The situation appears to be developing which will permit a more indepth analysis probably within the next hour. Of significance is the location of 31 enemy artillery positions by one of the divisions. The origin of the message is being determined and all locations should be available within the next 30 minutes. SA6 and 8 batteries have been sighted in the vicinity of the FEBA which will effect close air support in the Corps sector. As stated earlier, data will continue to be analyzed and a clearer picture presented probably within one hour. At this time there is no indication of several echelon forces being moved or committed.

Average Overall Evaluation = 36.0

Group: Guidelines

SUMMARY NO. 28

Primary movement in 201st ACR and 23 AD sectors appears to be to the NNW, which tends to confirm reports of enemy attempts to exploit success in the North. Significant reports supporting this possibility: MB950100 45-60 mech vehicles NNW at 15 MPH, UNK BN NB290100 NW at 20 MPH. Movement in the 54th Div sector appears to be to the west, possibly to reinforce forward deployed units: Tank Bn NA350710 moving west at 20 MPH, Bn moving west at 10-15 MPH vic NA290750. There have been several reports of SA8s and SA6s moving or located forward in our position area. The pace of activity seems to be increasing in the 54th Div and southern 201 ACR sectors. There have been numerous reports confirming previously reported enemy units.

Average Overall Evaluation = 33.3

Group: No Guidelines

SUMMARY NO. 29

Sir, during your absense the following significant acty occurred:

FROG Bn LOC NB1909
Regt CP LOC MB9126
Regt CP LOC NA3182
BN CP LOC NB0514
BN CP LOC NB0402

DAG LOC NB9919
DAG LOC NB3007
DAG LOC NB2991
DAG LOC NB3579

En has been observed moving air def wpns fwd (SA6 and SA8).

There has been enemy contact in the 23rd armor and 201st ACR zones. No report of enemy arty in 54th mech zone.

An enemy jammer was loc just south of the Corps zone. 12 NATO Corps was informed.

It appears the enemy is preparing to defend in place and is shifting combat forces to the north as shown by the movement of tank forces (Bn in rpt #18) and mech forces (45-60 veh in rpt #6).

Average Overall Evaluation = 32.4

Group: No Guidelines

SUMMARY NO. 30

Enemy forces consisting of 6 TK Divisions and 3 MR Divisions of the 1st Zapadnian front conduct resupply operations in preparation to continue the attack. We have begun to identify elements of the Divisional 1st echelons along the 10th Corps front.

Of particular significance is the apparent resupply of forward units and rearward movement of resupply vehicles. The forward movement of enemy artillery units (probably divisional artillery groups) to locations vic NB3010, NA2900, and NA3577, and the location of a FROG unit vic NB1908 are particularly significant. ADA elements well forward in 54th Mech Div area, the position of VHF jammers just S. of the 10th Corps boundary and the positioning of BN sized elements on breakthrough frontages of 1 KM indicate a possible breakthrough attempt in the 54th Mech Div area, possibly along the 10th Corps/12 NATO Corps boundaries.

Average Overall Evaluation = 31.9

Group: No Guidelines

SUMMARY NO. 31

The total intel reports indicate there is considerable movement west on the right side of the FEBA with at least 2 Divs facing the 54th Div. Two DAG's are in position to support an attack by those 2 Div's. At least one Bn sized unit has been noted moving west.

The enemy facing the 201st in our center appear to be withdrawing and avoiding engagement. A FROG unit has been noted with a DAG to its rear.

There is definite indication of movement on our left front with at least one tank Co. defending. Movement along the FEBA noted thus far has been NNW. Army has been located in this area in position to support an attack.

It is possible that a pincher movement is contemplatable by the enemy closing on our center (the 201st).

Average Overall Evaluation = 29.3

Group: No Guidelines

SUMMARY NO. 32

There has been no significant change in enemy disposition since the last update. He continues to attack and is in contact with our forces along the FEBA.

It appears as if some of his second echelon forces are pulling out and moving NW towards the Hanover salient, but his 1st echelon is still attempting to advance.

Significant activities/reports since the last update include:

1) MRR located vic MB990080.
2) FA unit (size UNK) located MB990193.
3) 122MM, 130MM, 152MM and 122MM MRL located NA290910.
4) Regt CP (unit UNK) located MB910260.
5) DAG located NA350790.
6) SA8 battery moving west vic NB120010.
7) EN Rgt located NA310820.
8) EN Rgt located NB030220.

Average Overall Evaluation = 27.4

Group: No Guidelines

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