

Research Study 69-11

4

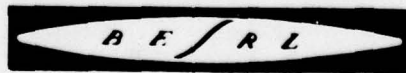
LEVEL III

1-A07774X

**STUDIES OF TACTICAL MILITARY DECISION MAKING:
II. AN INFORMATION NETWORK AID
TO SCENARIO DEVELOPMENT**

AD A 072747

DDC FILE COPY



U. S. Army

Behavioral Science Research Laboratory

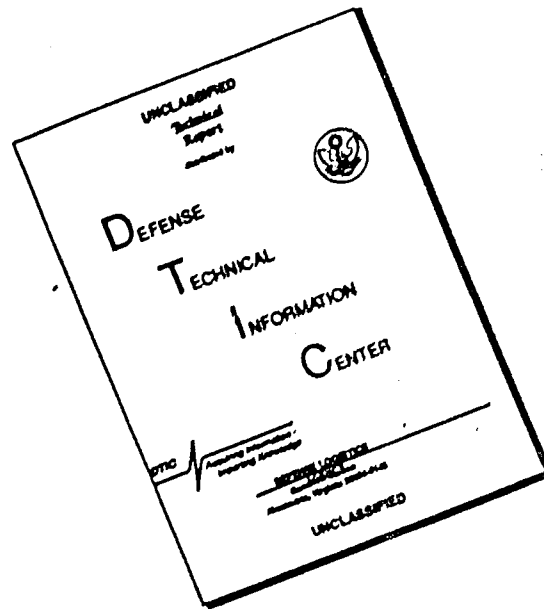
September 1969

DDC
RECEIVED
DEC 7 1979
A

DISTRIBUTION STATEMENT A
Approved for public release
Distribution Unlimited

79 22 5 066

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

BEHAVIORAL SCIENCE RESEARCH LABORATORY
An activity of the Chief, Research and Development

J. E. UHLANER
Director

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced Justification	<input type="checkbox"/>
By _____	
Distribution/	
Availability Codes	
Dist	Availability or Special
A	

NOTICES

DISTRIBUTION: Primary distribution of this report has been made by BESRL. Please address correspondence concerning distribution of reports to: U. S. Army Behavioral Science Research Laboratory, Attn: CRDBSRL, Room 239, Commonwealth Building, 1320 Wilson Blvd., Arlington, Virginia 22209.

FINAL DISPOSITION: This report may be destroyed when it is no longer needed. Please do not return it to the U. S. Army Behavioral Science Research Laboratory.

NOTE: The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Army Project Number

20062106A723

TOS b-13

Contract No. DA-HC-19-68-C-0013 *new*

16

14

BESRL-Research Study 69-11

6

STUDIES OF TACTICAL MILITARY DECISION MAKING:
II. AN INFORMATION NETWORK AID TO SCENARIO DEVELOPMENT,

10

Thomas G. Ryan
The Bunker-Ramo Corporation

Seymour Ringel, Task Leader

12

67

Submitted by:
Joseph Zeidner, Chief
Support Systems
Research Division

Approved by:
J. E. Uhlener, Director
Behavioral Science
Research Laboratory

11

Sept 69

Research Studies are special reports to military management. They are usually prepared to meet requests for research results bearing on specific management problems. A limited distribution is made--primarily to the operating agencies directly involved.

-402 797

alb

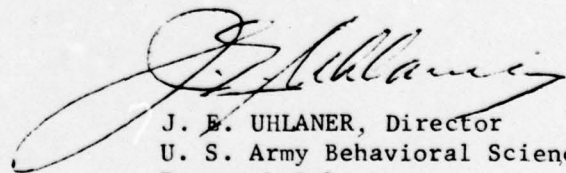
FOREWORD

The Command Systems program within the U. S. Army Behavioral Science Research Laboratory (BESRL) is concerned with human factors problems of information presentation, processing, and utilization in command and control systems. One major objective is to provide research findings by which information assimilation and decision making may be facilitated. There is a concomitant requirement for research to determine how human abilities can be utilized to enable the command information processing system to function with enhanced effectiveness. The entire research effort is responsive to requirements of RDT&E Project 2Q062106A723, "Human Performance in Military Systems", FY 1970 Work Program, and to special requirements of the Assistant Chief of Staff for Force Development, the Assistant Chief of Staff for Intelligence, and the U. S. Army Computer Systems Command.

The U. S. Army Computer Systems Command (USACSC), Headquarters, United States Army Europe (USAREUR), and Seventh Army have initiated plans for the design verification testing of an automated Tactical Operations System (TOS). The TOS program is aimed toward verifying the efficacy of the design of a field system conceptually representative of the operations and intelligence aspects of the Automatic Data Systems within the Army in the Field (ADSAF) master plan.

Basic to research on command information systems are relevant and objective performance measures for use in identifying factors contributing to the overall success or failure of the system and in assessing the capabilities of system or subsystem. The present Research Study describes an information network developed as an aid to preparation of scenarios for use in simulated performance measures for such evaluations. A companion publication, "Studies of Tactical Military Decision Making: I. Design of a Simulated Tactical Operations System (SIMTOS)", reports on the design of a simulated tactical operations system (TOS). Subsequent reports in the series of studies will deal with the development and tryouts of scenarios for operations planning.

ADTT
744


J. E. UHLANER, Director
U. S. Army Behavioral Science
Research Laboratory

STUDIES OF TACTICAL MILITARY DECISION MAKING: II. AN INFORMATION NETWORK AID TO SCENARIO DEVELOPMENT

BRIEF

Requirement:

To develop a Tactical Decision Information Network to aid in the preparation of test scenarios to support research concerned with the flow of tactical information and its relationship to decision making behavior in the Army's tactical operations systems.

Procedure:

Current military field manuals and military information system reports were used to develop the Network. From these official sources, command unit organization, command decision-making responsibilities, and information requirements of staff elements were defined. Within the sequence of actions in developing and executing a course of action, decision points were defined, decision makers were specified, and information categories were delineated. These data were then organized in the form of function flow block diagrams and associated data input sheets which, collectively, constitute the Network.

Research Product:

The Network provides a framework of checklists for information inputs and flow diagrams encompassing the total information analysis and decision-making sequence. Sections of the Network can be delimited according to requirements of the problem to be studied experimentally.

Utilization of Product:

The Network facilitates the preparation of scenarios for simulations of operations in command information processing systems. The simulations are the basis for situation tests used in manned systems research involving tactical decision making as affected by information flow and display standards.

STUDIES OF TACTICAL MILITARY DECISION MAKING: II. AN INFORMATION
NETWORK AID TO SCENARIO DEVELOPMENT

CONTENTS

	Page
INTRODUCTION	1
COMMAND AND STAFF RESPONSIBILITIES	3
Responsibilities of General Staff Elements	4
Responsibilities of Special Staff Elements	4
NETWORK DEVELOPMENT AND ORGANIZATION	5
Tactical Decision Sequence (Para. 1.0 - 3.0)	5
G1 Personnel Information Available	6
G4 Logistics/G5 Civil Affairs Information Available	6
G2 Intelligence Information Available	7
G3 Operations Information Available	7
Operations Recommendation and Commander's Guidance	7
Tactical Decision Sequence (Para. 4.0 - 10.0)	7
G1 Estimate of Capability	8
G4 and G5 Estimates of Capability	8
G2 Estimate of Capability	8
G3 Estimate of Capability and Course of Action Recommendation	9
Concept of Operations, Interpretation, and OPLAN Approval (Para. 5.0 - 7.0)	9
OPORD Execution and Mission Completion (Para. 8.0 - 10.0)	10
USE OF THE TACTICAL DECISION INFORMATION NETWORK	10
CURRENT STATUS	11
REFERENCES	13
APPENDIX	15

STUDIES OF TACTICAL MILITARY DECISION MAKING: II. AN INFORMATION NETWORK AID TO SCENARIO DEVELOPMENT

INTRODUCTION

~~In conducting manned systems research~~ in command and control operations, measures of systems and individual performance are essential. Realistic situations involving information flow and military decisions are constructed and tests devised to provide criterion measures for use in analysis of the systems.

The Tactical Decision Information Network described herein is a framework of interacting information categories to support the development of situation tests which satisfy information needs of the commander and general staff elements at army, corps, or division levels. The Network is intended to assist in constructing realistic military decision situations for purposes of analysis or experimentation.

The Network is presented in the form of function flow block diagrams and associated data input sheets. These materials permit the user to trace the temporal flow of tactical information (by category and level of detail) through the decision making sequence involved in developing an Operations Plan. The Network helps clarify the complex interactions among categories of tactical information which may be called for by the decision maker(s).

The present research study describes the rationale on which the Network is based, its organization, procedures for its use, and present and potential applications. Information input checklists and flow charts constituting the Network are presented consecutively as the Appendix.

The Network was developed as part of a study to develop a criterion of tactical decision making behavior. The larger study had as its goals the prediction of decision quality from knowledge of behavior exhibited during the decision making process and the development of a reliable measure of decision quality. The larger study was based on a lesson plan and associated test materials developed by the U. S. Army Command and General Staff College (CGSC) at Fort Leavenworth, Kansas. These materials presented a defensive planning situation at division level, and various considerations in selecting an appropriate solution. These considerations provided a basis for developing objective scoring standards. The rationale in the CGSC lesson plan also appeared to provide a basis for assessing the relative merits of alternative decisions.

In adapting the CGSC materials to current research plans, it was evident that at least some of the information necessary to support certain decisions was not included in the lesson plans but was apparently provided during classroom discussions at CGSC. Thus, it became necessary to generate additional data which would be needed in the scenario.

In addition, research plans proposed for a sequence of decision making studies included eventual development of test scenarios for which CGSC lesson plans would not be available. Data would have to be generated to develop realistic and comprehensive scenarios involving general staff elements.

A comprehensive understanding of the military tactical operations system was essential to support further investigation of the command function in a field environment. Extensive study of applicable military manuals and documents was initiated to understand the organization of the army in the field, to itemize command information requirements, and to identify decision making responsibilities at division, corps, and army levels.

Military field manuals indicate that, regardless of the mission assigned to a tactical military unit, its information needs can be divided into five broad categories: Personnel, Intelligence, Operations, Logistics, and Civil Affairs. The relative emphasis given each of these varies according to the mission and the action sequence required to accomplish the mission. To identify the information processing responsibilities of each general staff element, the sequence of actions of the commander and his staff in making and executing military decisions leading to development of an operations plan was outlined.

The recommended Sequence of Actions in Making and Executing a Military Decision (Figure A-1)¹ which appears in military manuals begins when a mission assignment is received from higher headquarters. At that time, the commander either puts into operation a previously developed Operations Plan or proceeds to develop a course of action which will satisfy the objectives of the assigned mission. In developing such a course of action, each general staff element is to organize available information in its area of interest relevant to the problem and make the information available to other staff elements and to the commander. Based on this information, the commander provides planning guidance on the basis of which the staff develops an appropriate course of action. Using the mission statement and the commander's guidance, each general staff element prepares an estimate of its own capability. Coordination of these estimates with the general staff elements results in a recommended course of action to accomplish the mission. The commander considers the recommendation, completes his own estimate, and expresses his decision and his overall concept of operation to the general staff. Members of the general staff then analyze the commander's decision and his concept of operation to determine the actions required to complete the mission successfully. These actions are organized into an Operations Plan (OPLAN) which is submitted to the commander for his approval. When approved, the OPLAN becomes eligible to function as an Operations Order (OPORD). Specific tasks are assigned to subordinate units, and the course

¹ All figures appear in the Appendix in the order cited in the text.

of action identified in the OPLAN is initiated. The responsibility of the commander and his general staff then turns to supervising execution of the OPORD until the objectives of the mission have been achieved.

It is recognized that the sequence discussed here is not always followed in practice. Estimates of the Situation, for example, are rarely prepared in written form at or below division level. Personnel skill levels and manning levels within staff elements frequently reduce the interactions and information exchanges referenced in this report. Tactical decision situations arise which do not require such an elaborate procedure for their resolution. However, these considerations are beyond the province of Network development. The intention was to provide a fairly comprehensive base of relevant tactical information to support studies in general. For problems involving specific segments of the system, appropriate parts of the Network can be used in developing the scenario.

COMMAND AND STAFF RESPONSIBILITIES

Based on the decision making sequence, a general structure of the Network was developed. The decision making responsibilities of the commander and general staff elements throughout the decision making sequence were identified, and the categories of tactical information which are compiled and reported by each staff element were outlined. The decision making responsibilities and categories of tactical information were then correlated at appropriate "decision points".

These "decision points" refer to the intermediate decisions made by the commander and his staff during the decision making sequence. They are defined as "those junctures in the decision making sequence beyond which no actions can proceed without evaluation of, and concurrence with, all prior planning or operations activities".

Five decision points were identified as the responsibility of the commander. These are termed major decision points:

- Mission Interpretation
- Planning Guidance
- Concept of Operation
- Operations Plan Approval
- Mission Completion

Seven decision points were identified as the responsibility of one or more general staff elements. These are termed minor decision points:

- Task Interpretation
- Assessment of Available Information
- Operations Recommendation
- Estimate of Capability
- Course of Action Recommendation
- Concept of Operation Interpretation
- Operations Order Execution

In order to identify in detail the decision responsibilities, it was necessary to identify specific topics of information germane to each general staff element. Also, in order that the Network not be unwieldy, it was necessary to resolve the problem of accounting for topics of information germane to special staff elements.

RESPONSIBILITIES OF GENERAL STAFF ELEMENTS

The G1 element is responsible for collecting, processing, and disseminating information concerning the administration and management of individuals under the control of the command unit. This responsibility involves information relevant to maintenance of unit strength, personnel management, manpower management, development and maintenance of morale, health services, maintenance of discipline, law and order, and headquarters management.

The G2 element is responsible for collecting, processing, and disseminating information concerning intelligence and counterintelligence matters. Information categories are production of intelligence, use of intelligence and information, and counterintelligence activities.

The G3 element is responsible for collecting, processing, and disseminating information concerning organization, training, and primary mission operations. Information categories are organization and equipment of command units, training requirements of command units, operations involving command units, and planning based on overall mission of the command unit.

The G4 element is responsible for collecting, processing, and disseminating information concerning supply, maintenance, transportation, and miscellaneous logistics support. Information categories are supply requirements, requisitions and distribution, maintenance of command materials, planning and coordination of transportation, and other logistic services.

The G5 element is responsible for collecting, processing, and disseminating information concerning the relationship of the command unit with the civilian population, including its government, economy, and institutions.

RESPONSIBILITIES OF SPECIAL STAFF ELEMENTS

The designation of special staff elements to serve during field operations is made by the commander in light of the overall mission of the unit. A matrix was constructed to relate special staff elements to the general staff element(s) through which information might logically be routed (Figure A-2). This matrix incorporates into the Tactical Decision Information Network any command unit configuration desired for study.

The major and minor tactical decision points were then related to the general staff information handling responsibilities to match decisions with general information categories of interest. Decision points, decision makers, and information needs are depicted in Figure A-3.

NETWORK DEVELOPMENT AND ORGANIZATION

In developing the Network the general staff information categories were expanded and organized in terms of decision points throughout the tactical decision sequence. This organization permits specific scenario situations to be traced through the Network. Four objectives guided this effort:

Inclusion of all general staff information categories

Presentation of tactical information in a format familiar to prospective test subjects

Facilitation of data input (scenario materials) at any point in the tactical decision sequence

Provision of input information at various levels of detail

The following discussion of the expansion and organization of general staff element information categories involves reference to the Sequence of Actions in Making and Executing a Military Decision, Figure A-1, and the Matrix of Decision Making Responsibilities, Figure A-3.

Throughout this discussion, references to the sequence of actions shown in Figure A-1 are by paragraph number only.

TACTICAL DECISION SEQUENCE (Paragraphs 1.0 through 3.0)

During the processes of Mission Interpretation, Task Interpretation, Assessment of Available Information, Operations Recommendations and Planning Guidance, the decision makers rely on information maintained by the general staff elements. The information contained in this data base at this time may or may not be relevant to specific mission requirements.

A tactical mission can originate at higher headquarters or at the command unit under study. Those originating at higher headquarters are interpreted (Paragraph 1.0) to determine their specified and implied tasks. Specified tasks are explicit in the mission statement. The mission statement is interpreted to identify the implied tasks. Figure A-4 depicts the Mission Interpretation sequence. During this sequence, the commander has available the data base from the general staff elements.

Task Interpretation and Assessment of Available Information (Paragraph 2.0) is a continuing general staff activity, whether in support of a specific mission or at the direction of the unit's Standing Operating

Procedure (SOP). To include all general staff categories of information, and to retain a reasonably familiar information format, the periodic report is generated every eight hours by each general staff element and includes a compilation and assessment of status in each area of responsibility and for each attached or assigned subordinate unit. This report represents a chronology of data compilation and processing actions by staff elements. To facilitate data input and to specify handling of information at the lowest level of detail, subordinate units reporting formats specific to each staff element were used in the present study.

G1 PERSONNEL INFORMATION AVAILABLE

Current G1 tactical information is compiled and assessed using the Periodic Personnel Report (Figure A-5). This report does not necessarily reflect the status of individual subordinate echelons. Rather, it represents the command-wide personnel situation in the format and at the level of detail usually acted on by other general staff elements and the commander. To provide detailed information input to the Periodic Personnel Report and to introduce data in the form that it would most likely be reported to the G1 element from subordinate units, the Personnel Daily Summary (Figure A-6) was used. For information not covered on these two forms, the unstructured format of the Spot Report (Figure A-7) was used, even though it would not normally be the means of introducing information to the G1 data base. The interfaces between G1 information categories and data input formats (Personnel Daily Summaries and Spot Reports) are apparent in the function flow block sequence (Figure A-8). Some categories of information such as Manpower Management Status are generated by the general staff element and are therefore not directly traceable to specific data inputs.

Normally, the personnel status of a subordinate unit is reported on a daily basis. In addition, personnel management and morale information is transmitted to the G1 element as deemed appropriate by the subordinate echelons, or on a schedule established by SOP. The G1 assessment of the personnel situation is made available to the commander and other decision makers in a periodic report. If the decision maker has reason to doubt the information assessment, he has available in the data base the information on which the periodic report was based.

G4 LOGISTICS/G5 CIVIL AFFAIRS INFORMATION AVAILABLE

Logistics and Civil Affairs information is compiled and assessed in the Periodic Logistics Report (Figure A-9) and the Periodic Civil Affairs Report (Figure A-10), respectively. In practice, the formatting of data input to each of these staff elements varies among commands and among subordinate echelons. In the interest of standardization and experimental control in the present study, the Spot Report format was used to represent data input to these staff elements. Unlike the G1 input data, all G4 and G5 input data are generated at subordinate echelons. Consequently, each

of the information categories specified (Figure A-11 and Figure A-12) is supported by Spot Reports as appropriate or as specified by SOP. Spot Report notations are not included in the referenced figures since they apply to each information category.

G2 INTELLIGENCE INFORMATION AVAILABLE

Intelligence information is compiled and assessed using the Periodic Intelligence Report (Figure A-13). Formatted for use by the commander and general staff elements, the report is based on data in the Intelligence Summary (Figure A-14), and Spot Reports. In developing intelligence information, the G2 staff uses inputs from the other general staff elements as well as data from subordinate, lateral, and supraordinate sources (Figure A-15).

G3 OPERATIONS INFORMATION AVAILABLE

Planning, training, and operations information is compiled and assessed using the Periodic Operations Report (Figure A-16). Input data are sent to the G3 element in various formats and categorizations (Figure A-17). To standardize and permit experimental control in the present study, the Spot Report was again used to simulate such input. As the G2 element, the G3 element uses information generated by all the other staff elements.

OPERATIONS RECOMMENDATION AND COMMANDER'S GUIDANCE

During the tactical decision sequence, the G3 element provides the commander with the command-wide situation assessment and Operations Recommendation(s) by means of which he can fulfill the specified and implied mission tasks. The commander's acceptance of the Operations Recommendation and the guidance he provides the staff may or may not be based on current command unit status reflected in the data base. Guidance is depicted in the form of the function flow block sequence (Figure A-18).

TACTICAL DECISION SEQUENCE (Paragraphs 4.0 through 10.0)

In preparing the Estimate of Capability, Course of Action Recommendation, Concept of Operation, Concept of Operation Interpretation, and Operations Plan Approval, the decision makers are dependent on general staff estimates indicating each element's ability to support the specified and implied mission tasks, particularized by the Operations Recommendation and the commander's Planning Guidance.

Attention is again drawn to the Sequence of Actions Making and Executing a Military Decision (Figure A-1), Paragraph 4.0, which details the process of developing a course of action. Each general staff element

prepares an Estimate of Capability based on current information and guidance from the unit commander. The compilation and assessment of information by each staff element involves interactions with all other staff elements during this portion of the decision sequence. To facilitate development of the information network the individual staff periodic report and staff estimate formats were used as inputs to this process.

G1 ESTIMATE OF CAPABILITY

Preparation of the G1 Estimate of Capability is a two-step process (Figure A-19). During step one, depicted in Paragraph 4.1, a reassessment of the personnel situation is concluded by referencing the current data base (Paragraph 2.1). This reassessment is made in light of the commander's planning guidance (Paragraph 3.0). The Periodic Personnel Report is again used.

Prior to step two (Paragraph 4.8), the G2 element defines enemy capabilities and the G3 element identifies potential courses of action. During step two, the G1 element develops an Estimate of Capability based on the identified Courses of Action. The G1 Staff Estimate format (Figure A-20) was used to depict G1 information assessment. This estimate, based on the reassessment of available G1 information which in turn is based on input data, gives the experimenter the same flexibility to alter the scenario that he has during establishment and maintenance of the data base.

G4 AND G5 ESTIMATES OF CAPABILITY

The G4 and G5 Estimates of Capability also involve a two-step process, the steps being separated by a definition of Enemy Capability and identification of possible Courses of Action by friendly forces (Figures A-21 and A-22). To reassess individual staff element situations (Paragraphs 4.4 and 4.5), the Logistics and Civil Affairs Periodic Reports were used, referencing the G4 and G5 portions of the data base established and maintained in Paragraphs 2.4 and 2.5. Staff Estimates of Capability (Paragraphs 4.11 and 4.12) use the formats for the Logistics and Civil Affairs Staff Estimate detailed in Figures A-23 and A-24. By tracing the function flow block sequence (Figures A-21 and A-22), the reader can conceptualize the production of a G4 or G5 Estimate of Capability based on reassessment of the situation and reference to the Periodic Report and subsequent inputs to the data base.

G2 ESTIMATE OF CAPABILITY

The G2 Estimate of Capability function flow block sequence is depicted in Figure A-25. As in the original assessment of the intelligence situation, the intelligence reassessment (Paragraph 4.2) involves use of G1, G4 and G5 Periodic Reports. This reassessment, in the form of a Periodic

Intelligence Report, uses all general staff information available in the original data base plus subsequent data inputs. After completion of the intelligence reassessment, the G2 element prepares a definition of Enemy Capability (Paragraph 4.6 and Figure A-26) for use by the G3 element in identifying and evaluating possible Courses of Action, and by the other general staff elements in preparation of their Estimates of Capability. The Intelligence Estimate of Capability (Paragraph 4.9) uses the Intelligence Staff Estimate format depicted in Figure A-27.

G3 ESTIMATE OF CAPABILITY AND COURSE OF ACTION RECOMMENDATION

In developing an estimate and a course of action (Figure A-28), the G3 element goes through somewhat the same sequence of operations as the G2 staff. A reassessment of the situation is made using the Periodic Operations Report (Paragraph 4.3). Using other staff element reassessments and the G2 Definition of Enemy Capabilities, the G3 staff develops possible Courses of Action (Paragraph 4.7), using the format depicted in Figure A-29. These Courses of Action are individually responded to by the other staff elements in their Estimates of Capability.

Based on the various estimates, the G3 recommends to the commander the course of action deemed most feasible. The G3 Operations Estimate, which includes the Course of Action Recommendation, is depicted in Figure A-30.

CONCEPT OF OPERATIONS, INTERPRETATION, AND OPLAN APPROVAL (Paragraphs 5.0 through 7.0)

During this portion of the sequence, the commander receives for approval the Course of Action Recommendation. If he approves it, he outlines to the staff his concept for its implementation. The course of action is then developed into a plan of operation which in turn is presented to the commander for his approval. With the exception of actions involved in preparing the OPLAN, the decision maker in each case is the commander.

Upon receipt of the Course of Action Recommendation from the G3, the commander may accept the recommendation, accept the recommendation with modifications, accept an alternative course of action, or reject the recommended course of action and recycle the staff estimate process (Figure A-31). If the course of action is accepted either outright or conditionally, the commander outlines his Concept of Operation (Paragraph 5.1).

The G3, assisted by other general staff elements, further delineates the approved course of action (Paragraph 6.0) in accordance with the commander's Concept of Operation and the staff estimates developed in Paragraph 4.0. The Operations Plan format is used (Figure A-32). As at all other previous points during the sequence, new data can now be introduced in the scenario by means of such input formats as the Personnel Daily Summary, Intelligence Summary, and Spot Report.

Upon receipt of the Operations Plan, the commander again may accept, accept with modifications, or reject the plan (Paragraph 7.0). If the plan is approved with modifications or is rejected, the cycle outlined above is repeated, based on the commander's conditions or on a re-emphasis of his Concept of Operation. If approved, the plan becomes eligible to be executed as an Operations Order (OPORD). Execution may be immediate or months after approval.

OPORD EXECUTION AND MISSION COMPLETION (Paragraphs 9.0 through 10.0)

Upon receipt of the command to execute the Operations Plan, the plan becomes the Operations Order. It is implemented until the commander determines the mission has been accomplished. During this implementation (Paragraphs 8.0 through 9.0), general staff information compilation and assessment activities revert to those outlined in Paragraph 2.0 (see also Figure A-33). If circumstances require, a recycling of the entire decision sequence can be initiated by a new mission statement. When the mission has been accomplished (Paragraph 10.0) execution of the OPORD is terminated. The command units revert to pre-mission status or receive new mission assignments.

USE OF THE TACTICAL DECISION INFORMATION NETWORK

The Network was designed to structure a comprehensive data base which would support a variety of research studies of tactical military decision making. To this end, successively detailed categories of information were organized in terms of their primary relevance to the five general staff elements in military field commands.

This organization of the Network permits study of certain command decisions as well as decisions by participating staff elements. Using the Network, test scenarios may be developed to support decision making research for a single staff element, a single command supported by several staff elements, or several command levels with several staff elements in support. The Network does not provide the substance of the various scenarios, but rather a systematic means of organizing data for studies ranging from those dealing with an elementary man-machine information system to a multi-level, multi-goal system.

The Network is organized also in terms of command and staff interactions. Obviously, portions of the decision sequence and development of the OPLAN may be circumvented, depending on the tactical situation being studied. In using the Network to prepare a test scenario, therefore, both the decision maker and his desired output must first be identified. Figure A-3 may help in this regard.

Once the decision maker and his desired output are selected, the relevant box is located in the Network. Reference is then made to successively adjacent boxes in the Network. Subordinate box headings indicate

successively detailed categories of information (or sources of information) to support the desired output. Lateral box headings indicate interacting categories of information or interacting military staff elements). Supra-ordinate box headings indicate categories of information (or military staff users) which are supported by the desired output.

Each interacting box in the Network is coded to a respective data input sheet which is to be completed by the experimenter. Collectively these completed charts and sheets will comprise the initial data base for the research study. Once the relevant boxes in the Network have been selected, their respective data input forms can be completed.

The substantive data necessary to complete the selected data input forms can be drawn from a variety of sources, depending on the materials available to the experimenter. In the present series of studies, heavy use was made of scenarios and lesson plans from the U. S. Army Command and General Staff College. These were supplemented by data extracted from Army field manuals. Other sources of such data might be scenarios of previously developed war games or scenarios from command post or field training exercises.

After the relevant substantive data have been extracted from the source materials and entered on the Network data input forms, the aggregation of forms is checked for internal consistency. It is particularly important that unit designations, task organization, unit locations, personnel complements, logistics situation, weather data, and unit activities be consistent.

The input data are then organized into display formats. Depending on the purposes of the particular study, this formatting may be accomplished in terms of level of specificity of the input data or in terms of such information display variables as color, type size, or display clutter.

The developed display formats are then prepared for the particular display equipments available to the experimenters. In the current experimental application, cathode ray tube (CRT) displays and random access slide projectors were used in conjunction with standard military map displays and graphic overlays.

The final recommended step is to conduct a pilot study, administering the scenario to a small group representative of the subject population. The purpose of such a tryout is to test the completeness with which the Network-developed data base provides information to support the decision situation being studied.

CURRENT STATUS

The Network in its present form is undergoing testing to assure that it is sufficiently comprehensive for the planning situation of interest in BESRL's TOS research studies. The results of this testing will appear in the third report of this series.

If this usefulness of the Network is verified, modifications will be made in the Network so that it more closely approximates the functional areas planned for inclusion in the TOS-75 information system. This modification will involve incorporating data source identification, input format, and detailed content categories for the following Functional Area Descriptions:

- Nuclear Strike Effects
- Tactical Gap Crossing Status
- Airfield/Heliport Location and Status
- Friendly Unit Information
- Tactical Troop Movement
- Weather Data
- Enemy Situation Information
- Terrain Intelligence
- Army Air Operations
- Air Space Coordination
- Air Defense Information
- Order of Battle
- Barrier and Denial Plan and Status
- Chemical Contamination
- Electronic Warfare
- Target Intelligence
- Counterintelligence
- Tactical Air Support: Close Air Support
- Tactical Air Support: MATS Air Movements
- Communications Planning
- Internal Defense and Internal Development Operations
- Hostile Air Defense
- Strategic Intelligence
- Intelligence Collection Management

In addition to the planned expansion to include the above categories, consideration will be given to incorporation of similar information obtainable for the TACFIRE and Combat Services Support System.

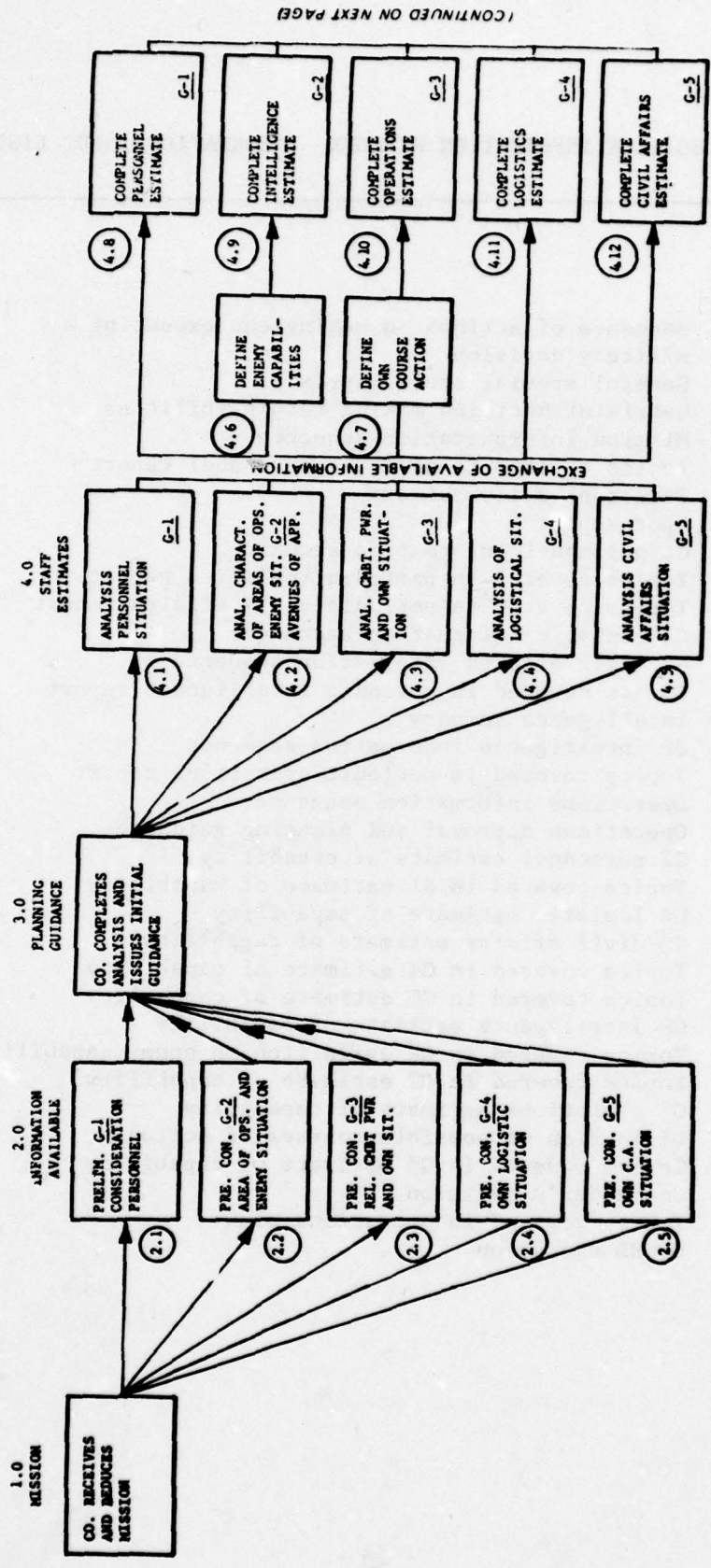
ARMY PUBLICATIONS USED IN DEVELOPING THE TACTICAL DECISION INFORMATION NETWORK

1. Field Manual 30-5. Combat intelligence. Headquarters, Department of the Army, 1960.
2. Field Manual 30-102. Handbook on aggressor military forces. Headquarters, Department of the Army, 1966.
3. Field Manual 30-103. Aggressor order of battle book. Headquarters, Department of the Army, 1966.
4. Field Manual 100-5. Field service regulations operations. Headquarters, Department of the Army, 1962.
5. Field Manual 100-10. Field service regulations administration. Headquarters, Department of the Army, 1963.
6. Field Manual 100-15. Field service regulations larger unit operations. Headquarters, Department of the Army, 1965.
7. Field Manual 101-5. Staff organization and procedures. Headquarters, Department of the Army, 1968.
8. Field Manual 101-10. Organization, technical and logistical data. Headquarters, Department of the Army, 1966.
9. Initial system description for the provisional automated Tactical Operations System. Automatic Data Field Systems Command. August 1968.
10. Technical development plan for tactical fire direction system (TACFIRE). Automatic Data Field Systems Command. July 1968.
11. Combat service support systems description. Automatic Data Field Systems Command. August 1965.
12. Preliminary TOS-75 system description. Automatic Data Field Systems Command. August 1967.

APPENDIX

THE TACTICAL DECISION INFORMATION NETWORK--INFORMATION INPUT LISTS AND FLOW DIAGRAMS

FIGURES	Page
Figure 1. Sequence of actions in making and executing a military decision	16
2. General special staff matrix	18
3. Matrix of decision making responsibilities	19
4. Mission interpretation sequence	20
5. Topics covered in periodic personnel report	21
6. Personnel daily summary	23
7. Spot report	24
8. G1 personnel information sequence	25
9. Topics covered in periodic logistics report	27
10. Topics covered in periodic civil affairs report	31
11. G4 logistic information sequence	32
12. G5 civil affairs information sequence	34
13. Topics covered in periodic intelligence report	36
14. Intelligence summary	38
15. G2 intelligence information sequence	39
16. Topics covered in periodic operations report	41
17. Operations information sequence	42
18. Operations approval and planning guidance	44
19. G1 personnel estimate of capability	45
20. Topics covered in G1 estimate of capability	46
21. G4 logistic estimate of capability	48
22. G5 civil affairs estimate of capability	49
23. Topics covered in G4 estimate of capability	50
24. Topics covered in G5 estimate of capability	52
25. G2 intelligence estimate of capability	53
26. Topics covered in G2 definition on enemy capability	54
27. Topics covered in G2 estimate of capability	55
28. G3 operations estimate of capability	56
29. Definition of possible courses of action	57
30. Topics covered in G3 estimate of capability	58
31. Commander's decision	60
32. Topics covered in operations plan	61
33. OPORD execution	62



(CONTINUED ON NEXT PAGE)

Figure A-1. Sequence of Actions in Making and Executing a Military Decision

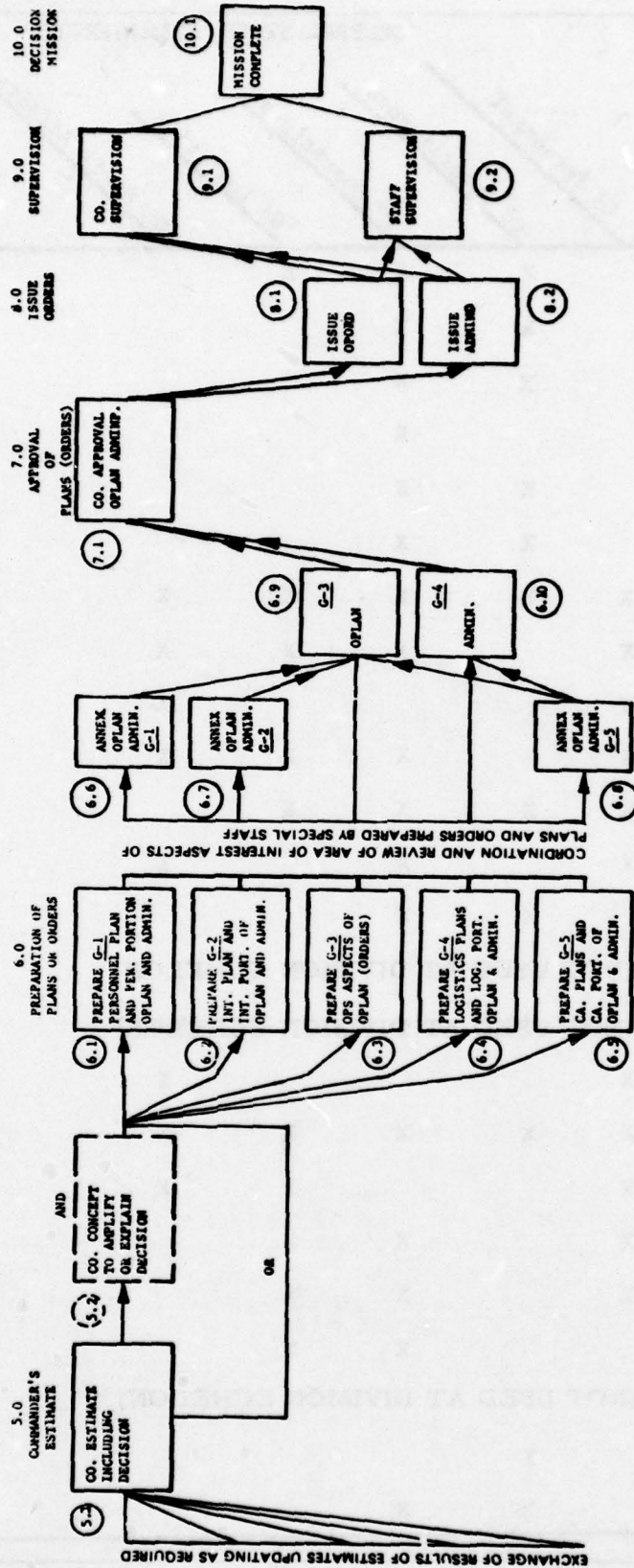


Figure A-1 - Continued

SPECIAL STAFF ELEMENTS	GENERAL STAFF ELEMENTS				
	G1 Personnel	G2 Intelligence	G3 Operations	G4 Logistics	G5 Civil Affairs
Artillery	X	X	X		
Air Defense	X	X			
Aviation	X	X			
Signal		X			
Engineer	X	X			
Chemical, Biol, Rad	X	X			
Adjutant General	X	X	X	X	X
Provost Marshal	X		X	X	X
Finance	X				X
Surgeon	X		X	X	X
Hq Commandant	X	X	X	X	
Chaplain	X		X		X
Fire Support Coord		X	X		
Special Forces	(NOT USED AT DIVISION ECHELON)				
Psy War	(NOT USED AT DIVISION ECHELON)				
Information	X				X
Inspector General	X	X	X	X	X
Judge Advocate	X			X	X
Ordnance	X		X	X	
Quartermaster	X		X	X	
Transportation			X	X	
Unconv. Warfare	(NOT USED AT DIVISION ECHELON)				
USASA	X				
Weather	X	X			

Figure A-2. General/Special Staff Matrix

DECISION POINTS	INFORMATION									
	1.0 (Mission)	2.0 (Available Information)	3.0 (Planning Guidance)	4.0 (Staff Estimates)	5.0 (Commanders Estimates)	6.0 (Prep. Plans & Orders)	7.0 (Plan Approval)	8.0 (Issue Orders)	9.0 (Supervision)	10.0 (Decision Mission)
1. Mission Interpretation	CO									
2. Task Interpretation	G 3									
3. Assessment Available Info		(G 1 Thru G 5)								
4. Operations Recommendation			G 3							
5. Planning Guidance										
6. Estimate of Capability					(G 1 Thru G 5)					
7. C/A Recommendation										
8. Concept of Operation										
9. Concept of Operations Interp.										
10. Operations Plan Approval										
11. OPORD Execution										
12. Mission Completion										

DECISION MAKER

(G 1 Thru G 5)

G 3

CO

(G 1 Thru G 5)

CO

(G 1 Thru G 5)

CO

Figure A-3. Matrix of Decision Making Responsibilities

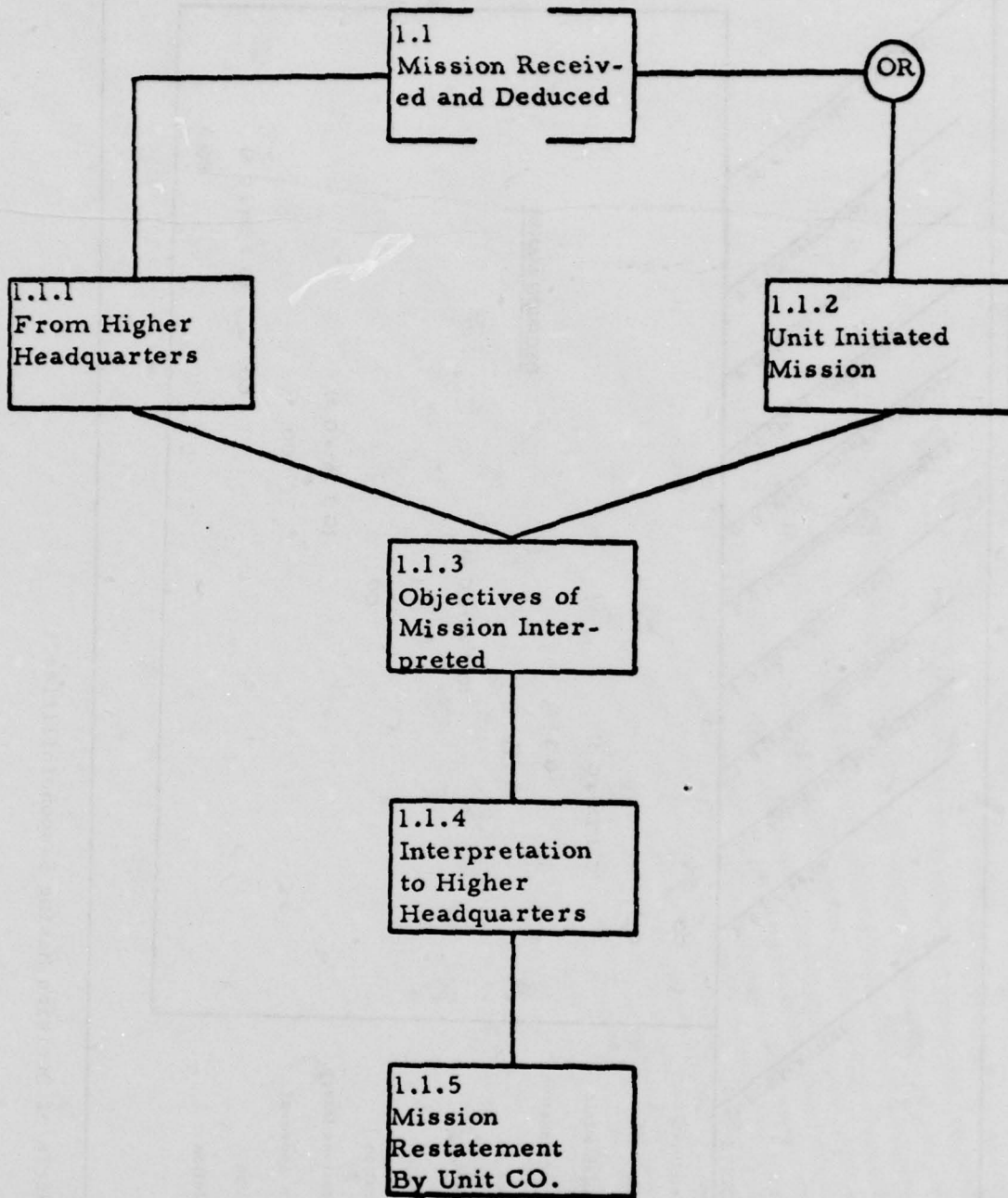


Figure A-4. Mission Interpretation Sequence

1. MAINTENANCE OF UNIT STRENGTH

a. Strengths:

- (1) Authorized and Assigned Units
 - (a) Assigned Units
 - (b) Attached Units
- (2) Gains During Period
 - (a) Assigned Units
 - (b) Attached Units
- (3) Losses During Period
 - (a) Assigned Units
 - 1 Battle Losses
 - 2 Nonbattle Losses
 - 3 Administrative Losses
 - 4 Key Personnel Losses
 - (b) Attached Units
 - 1 Battle Losses
 - 2 Nonbattle Losses
 - 3 Administrative Losses
 - 4 Key Personnel Losses

b. Replacements:

- (1) Requisitions Outstanding
- (2) Comments

2. PERSONNEL MANAGEMENT

a. Military Personnel:

- (1) Personnel Unfit for Duty
- (2) Officer Promotion and Appointment
- (3) Enlisted Personnel Promotion and Appointment

b. Civilian Personnel:

- (1) Employed by Unit
- (2) Utilization by Unit

c. Prisoners of War:

- (1) Number Captured During Period
- (2) Comments

d. Civilian Internees:

- (1) Number
- (2) Disposition
- (3) Unusual Events or Conditions

Figure A-5. Topics Covered in Periodic Personnel Report

3. DEVELOPMENT AND MAINTENANCE OF MORALE
 - a. Morale and Personnel Services:
 - (1) Status of Morale Within Each Unit
 - (2) Personnel on Leave
 - (3) Decorations Awarded
 - (4) Postal Service
 - (5) Others Including Bath, Laundry, and Clothing
 - b. Medical Service:
 - (1) General
 - (2) Evacuation
 - (3) Hospitalization
 - c. Graves Registration:
 - (1) Recapitulation by Unit
 - (2) Individual Names of Deceased
 - (3) Burials
4. MAINTENANCE OF DISCIPLINE, LAW AND ORDER
 - a. Discipline
 - b. Military Justice
 - (1) Courts Martial
 - (2) Charges Preferred
 - c. Comments
5. HEADQUARTERS MANAGEMENT
 - a. Displacements
 - b. Shelter Standards
 - c. Non-Military Public Buildings
6. MISCELLANEOUS

Figure A-5 - Continued

(a) UNIT	STRENGTHS			DAILY LOSSES						(j) Gains	(k) Misc	(x) Remarks
	(b) Authorized	(c) Assigned	Present Duty (d)	(e) KIA	(f) WIA	(g) MIA	(h) ADMIN	(i) TOTAL				

Figure A-6. Personnel Daily Summary

ISSUING UNIT _____

DATE/TIME GROUP _____

FROM:

TO:

TEXT:

Figure A-7. Spot Report

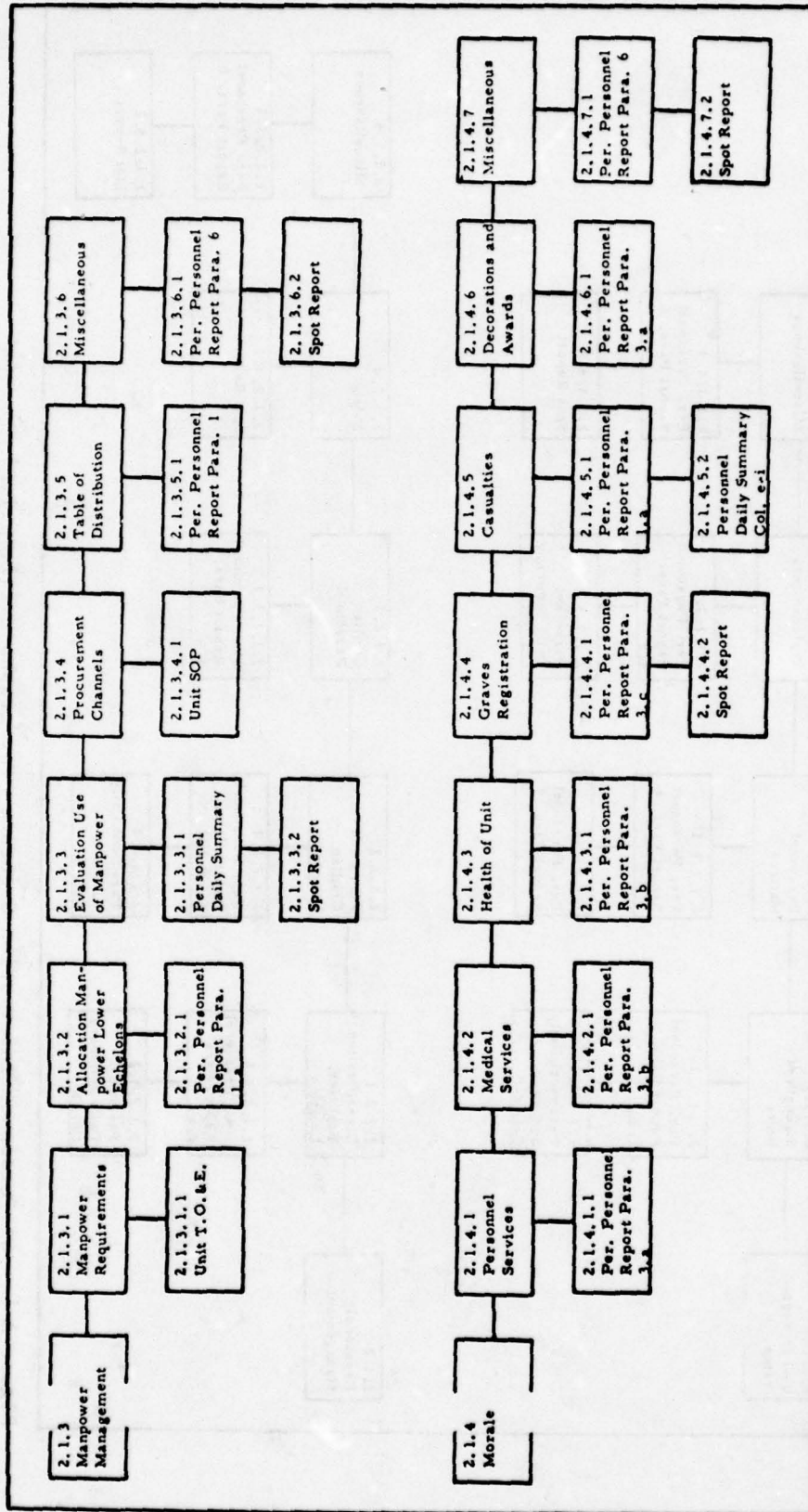


Figure A-8 - Continued (Paragraphs 2.1.3, 2.1.4)

1. LOGISTICS SITUATION AT END OF PERIOD

- a. Location of Boundaries
- b. Location of Installations
- c. Location of Troops
- d. Transportation
- e. Service
- f. Miscellaneous

2. SUPPLY

- a. Supported Strength
 - (1) Military Personnel
 - (2) Prisoners of War
 - (3) Civilians
- b. Status of Supply
 - (1) Levels
 - (a) Class of Supply
 - (b) Authorized
 - (c) Issued
 - (d) On-hand
 - (2) Short Supply Items
 - (a) Class of Supply
 - (b) Authorized
 - (c) Issued
 - (d) On-hand
- c. Local Procurement
 - (1) Quantity
 - (2) Value
- d. Miscellaneous
 - (1) Excess
 - (2) Salvage
 - (3) Captured Materials
 - (4) Supplies
 - (5) Special
 - (a) Publications
 - (b) Exchange Items
 - (c) Civil Affairs

Figure A-3. Topics Covered in Periodic Logistics Report

3. SERVICE

a. Transportation

(1) Highway

(a) Transport Vehicles

- 1 Type
- 2 Total Available
- 3 Total Operating
- 4 Total Deadlined
- 5 Categories of Maintenance

(b) Tonnages of Supplies

- 1 Number of Vehicles
- 2 Number of People
- 3 Run (local, long range)

(c) Terminal Operations

- 1 Tonnage of Supplies
- 2 Number of Vehicles
- 3 Number of Persons loading and unloading
- 4 Terminal equipment used

(2) Air

(a) Transport Vehicles

- 1 Type
- 2 Total Available
- 3 Total Operating
- 4 Total Deadlined
- 5 Categories of Maintenance

(b) Tonnages of Supplies

- 1 Number of Vehicles
- 2 Number of People
- 3 Run (local, long range)

(c) Terminal Operations

- 1 Tonnages of Supplies
- 2 Number of Vehicles
- 3 Number of Persons loading and unloading
- 4 Terminal equipment used

(3) Rail

(a) Transport Vehicles

- 1 Type
- 2 Total Available
- 3 Total Operating
- 4 Total Deadlined
- 5 Categories of Maintenance

Figure A-3 - Continued

- (b) Tonnages of Supplies
 - $\frac{1}{2}$ Number of Vehicles
 - $\frac{2}{2}$ Number of People
 - $\frac{3}{3}$ Run (local, long range)
- (c) Terminal Operations
 - $\frac{1}{2}$ Tonnages of Supplies
 - $\frac{2}{2}$ Number of Vehicles
 - $\frac{3}{3}$ Number of Persons loading and unloading
 - $\frac{4}{4}$ Terminal equipment used
- (4) Water
- (5) Pipeline
- (6) Supply Movement
 - (a) Tonnage
 - (b) Location
 - (c) Destination
- (7) Personnel Movement
 - (a) Number
 - (b) Location
 - (c) Destination
- b. Construction
 - (1) Project
 - (2) Percentage of Completion
 - (3) Projected Operational
 - (4) Completion date
- c. Installations
 - (1) Installations not covered above
 - (2) Work load
 - (3) Classification of Work
- d. Miscellaneous
 - (1) Real Estate
 - (2) Laundry
 - (3) Bath
 - (4) Clothing Exchange
 - (5) Decontamination

4. MAINTENANCE

- a. Class of equipment awaiting maintenance
- b. Received during Period
- c. Completed during Period
- d. On hand at beginning and end of Period

Figure A-9 - Continued

5. MISCELLANEOUS

- a. Boundaries**
 - (1) Changes
 - (2) Anticipated Changes
- b. Headquarters**
 - (1) Locations
 - (2) Displacements
 - (3) Anticipated Displacements
- c. Changes in Assignment**
 - (1) Assigned
 - (2) Relieved
- d. Protection**
 - (1) Losses
 - (a) Enemy
 - (b) Subversion
 - (c) Natural causes
 - (d) Corrective action
 - (1) Damage
 - (a) Enemy
 - (b) Subversion
 - (c) Natural causes
 - (d) Corrective action
- e. Plans and Orders**
 - (1) Logistics Plans
 - (2) Logistics Orders
 - (3) Administrative Orders
- f. Other Administrative Matters**

Figure A-9 - Continued

1. CIVIL AFFAIRS SITUATION
 - a. Location of Civil Affairs Units
 - b. Activities of Each Unit
 - c. Changes in Operational Zone
 - d. Principal Incidents

2. GOVERNMENT AFFAIRS
 - a. Civil Government
 - (1) Civil Administration
 - (2) Screening, Removal, and Appointment of Officials
 - (3) Political Intelligence Activities
 - (4) Pre-election Planning
 - b. Public Law
 - c. Public Safety
 - d. Public Health
 - e. Public Welfare
 - f. Public Education
 - g. Labor
 - h. Civil Defense

3. ECONOMICS
 - a. Economics and Commerce
 - b. Food and Agriculture
 - c. Property Control
 - d. Public Finance
 - e. Civilian Supply

4. PUBLIC FACILITIES
 - a. Public Works and Utilities
 - b. Public Transportation
 - c. Public Communications

5. SPECIAL FUNCTIONS
 - a. Civil Information
 - b. Displaced Persons
 - c. Fine Arts, Monuments, and Archives
 - d. Religious Relations

6. MISCELLANEOUS
 - a. Recommendations
 - b. Requests

Figure A-10. Topics Covered in Periodic Civil Affairs Report

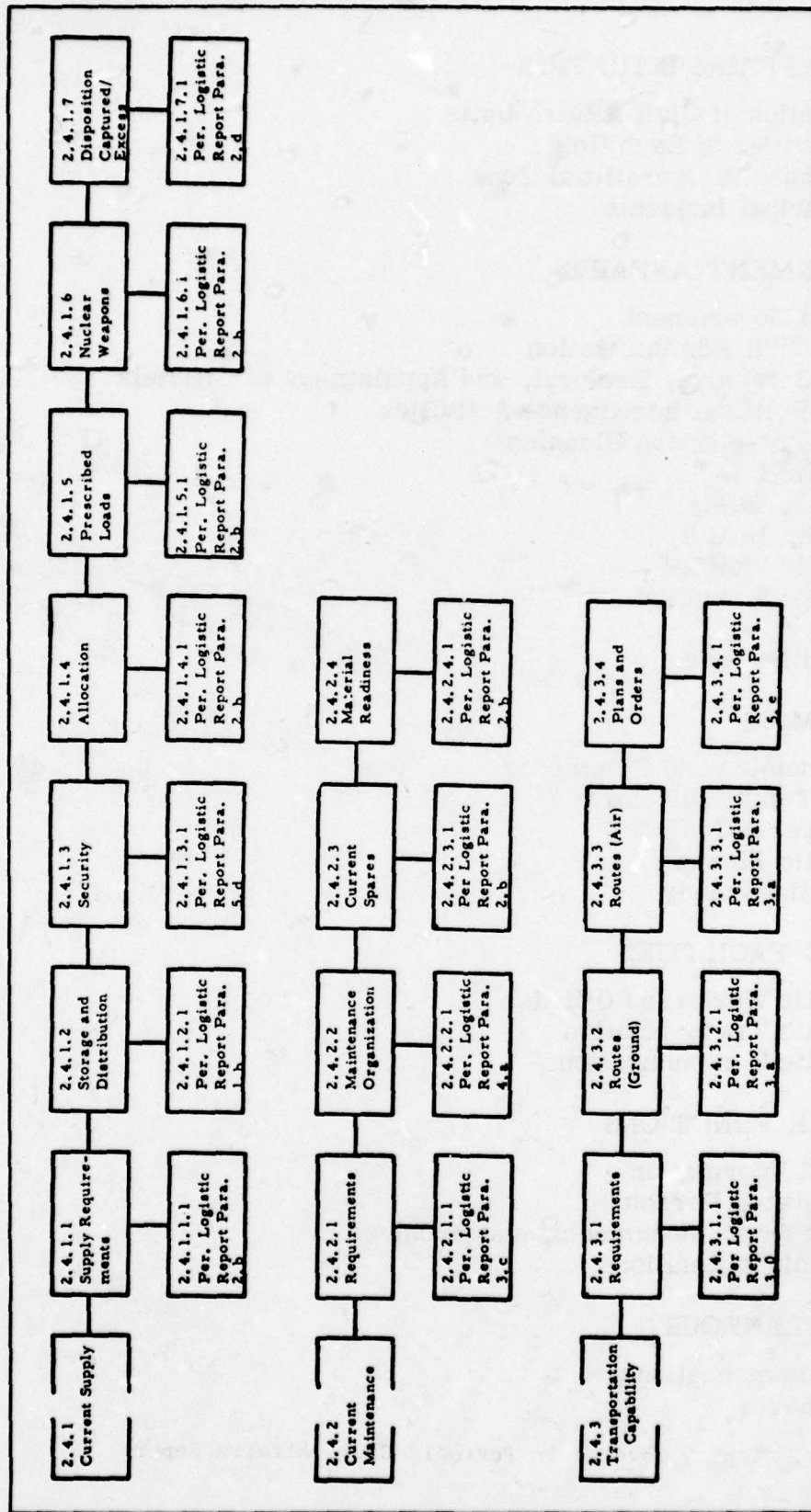


Figure A-11. G4 Logistic Information Sequence (Paragraphs 2.4.1 - 2.4.3)

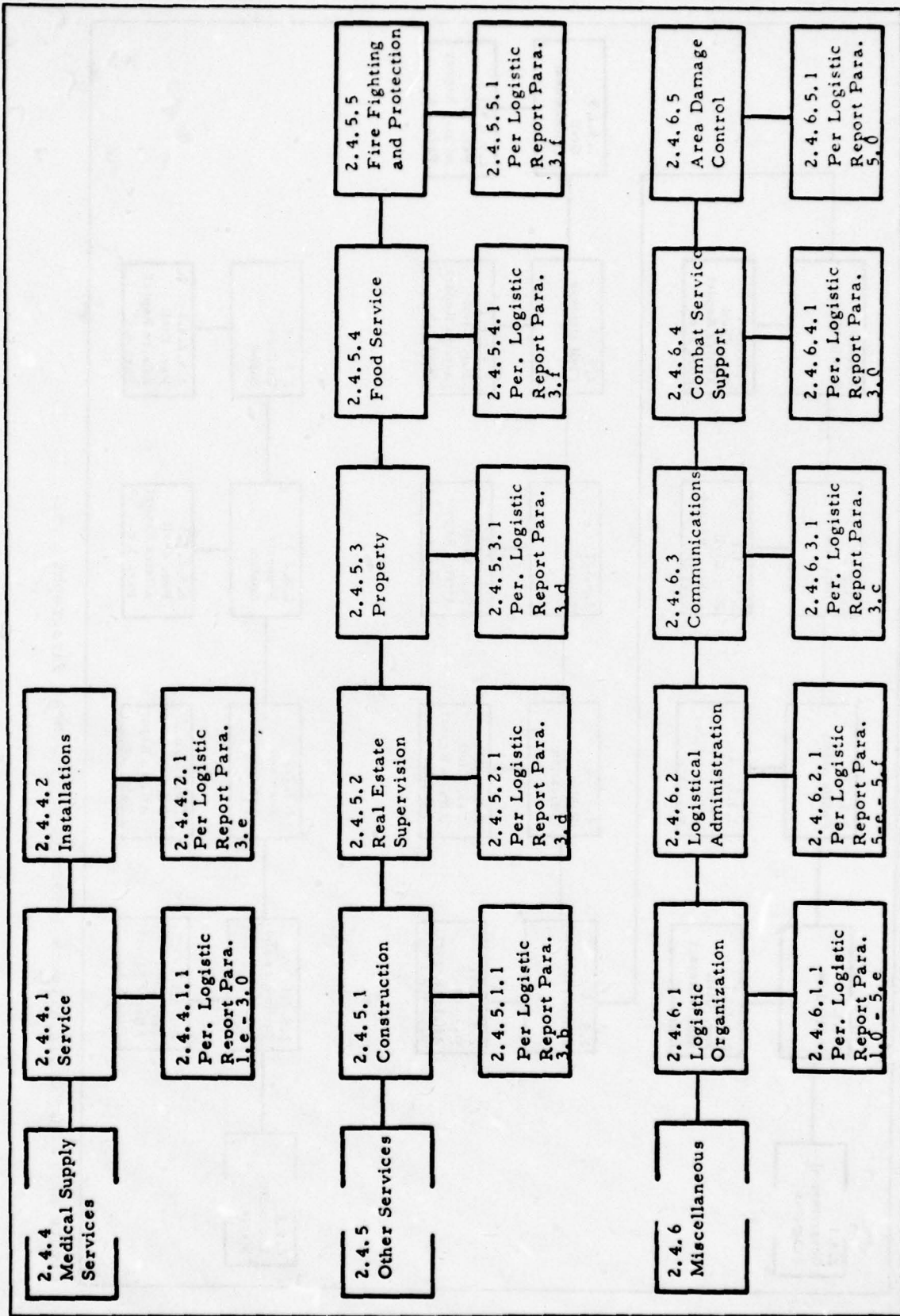


Figure A-11 - Continued (Paragraphs 2.4.4 - 2.4.6)

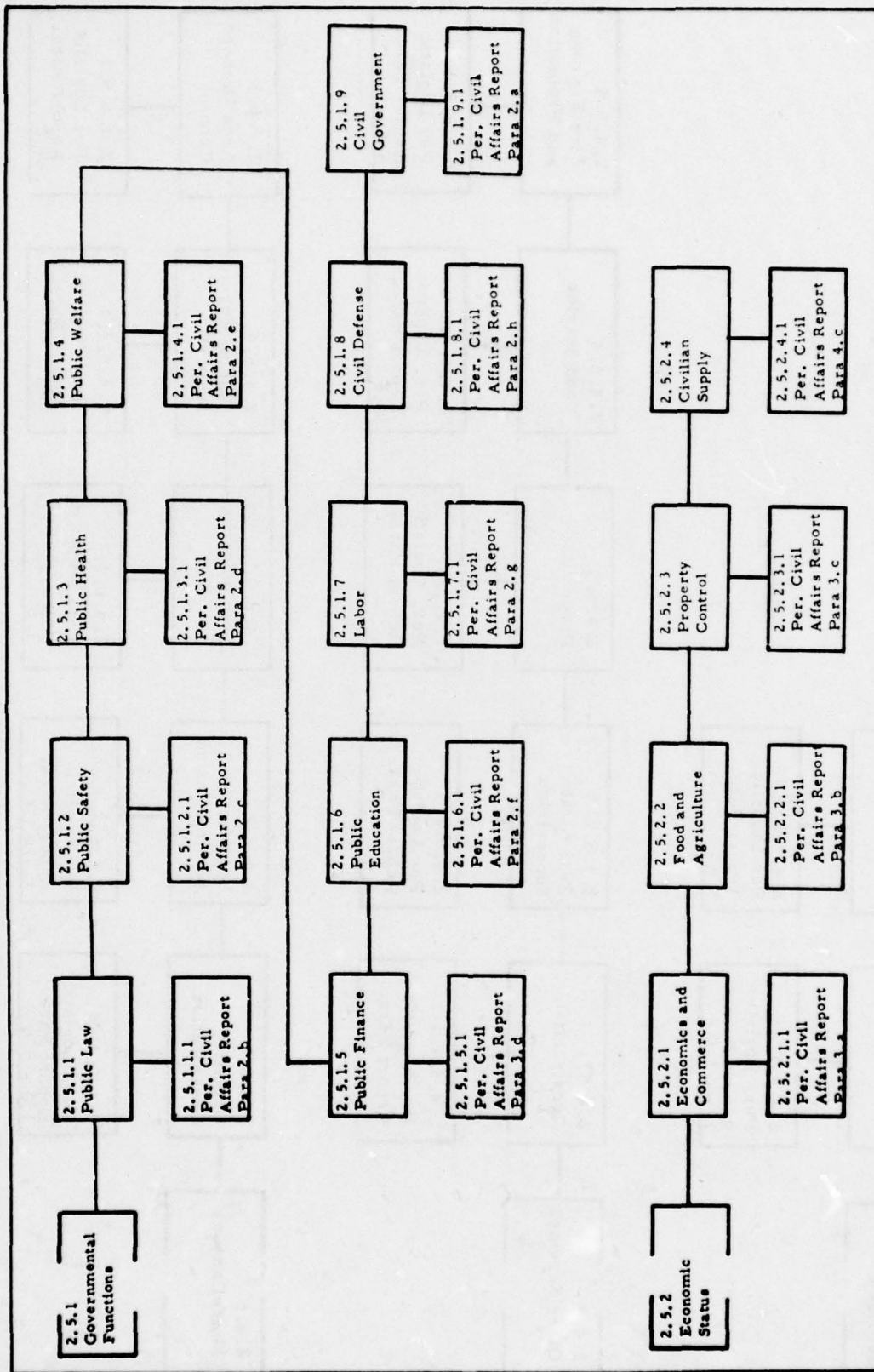


Figure A-12. G5 Civil Affairs Information Sequence (Paragraphs 2.5.1, 2.5.2)

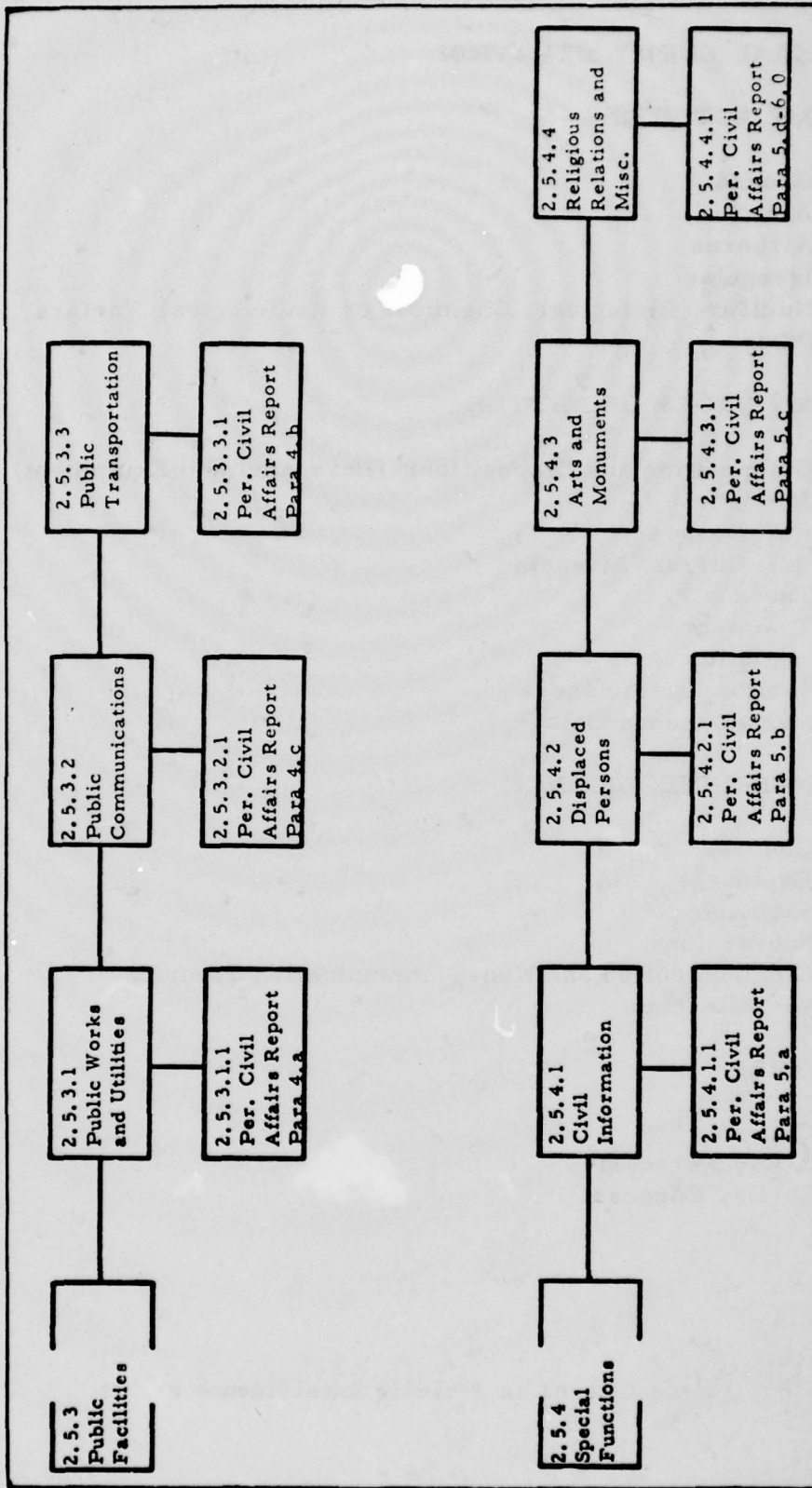


Figure A-12 - Continued (Paragraphs 2.5.2, 2.5.4)

1. GENERAL ENEMY SITUATION
2. ENEMY ACTIVITIES
 - a. Ground
 - b. Air
 - c. Airborne
 - d. Irregular
 - e. Nuclear, Biological, Chemical or Radiological Warfare
 - f. Other
3. ENEMY ORDER OF BATTLE
 - a. Composition and Disposition: (Personnel and Equipment)
 - b. Strengths
 - (1) Losses
 - (2) Current Strength
 - c. Tactics
 - d. Training
 - e. Logistics
 - f. Combat Effectiveness
 - g. Miscellaneous Data
4. COUNTERINTELLIGENCE
 - a. General
 - b. Espionage
 - c. Sabotage
 - d. Subversion
 - e. Communication and Non-Communication Security
 - f. Miscellaneous
5. WEATHER
 - a. Current
 - b. 3-Day Forecast
 - c. 30-Day Forecast

Figure A-13. Topics Covered in Periodic Intelligence Report

6. TERRAIN

- a. Relief and Drainage Systems
- b. Vegetation
- c. Surface Materials
- d. Man-Made Features
- e. Other Characteristics
- f. Military Aspects
- g. Observation and Fire
- h. Concealment and Cover
- i. Obstacles
- j. Key Terrain Features
- k. Avenues of Approach
- l. Air Avenues of Approach
- m. Administrative Aspects

7. ANALYSIS AND DISCUSSION

- a. Enemy Capabilities
- b. Enemy Vulnerabilities
- c. Conclusions

Figure A-13 - Continued

ISSUING UNIT _____

DATE/TIME GROUP _____

REF. PERIODIC REPORT NO. _____

FROM:

TO:

INSUM FOR PERIOD ENDING: _____

TEXT:

Figure A-14. Intelligence Summary

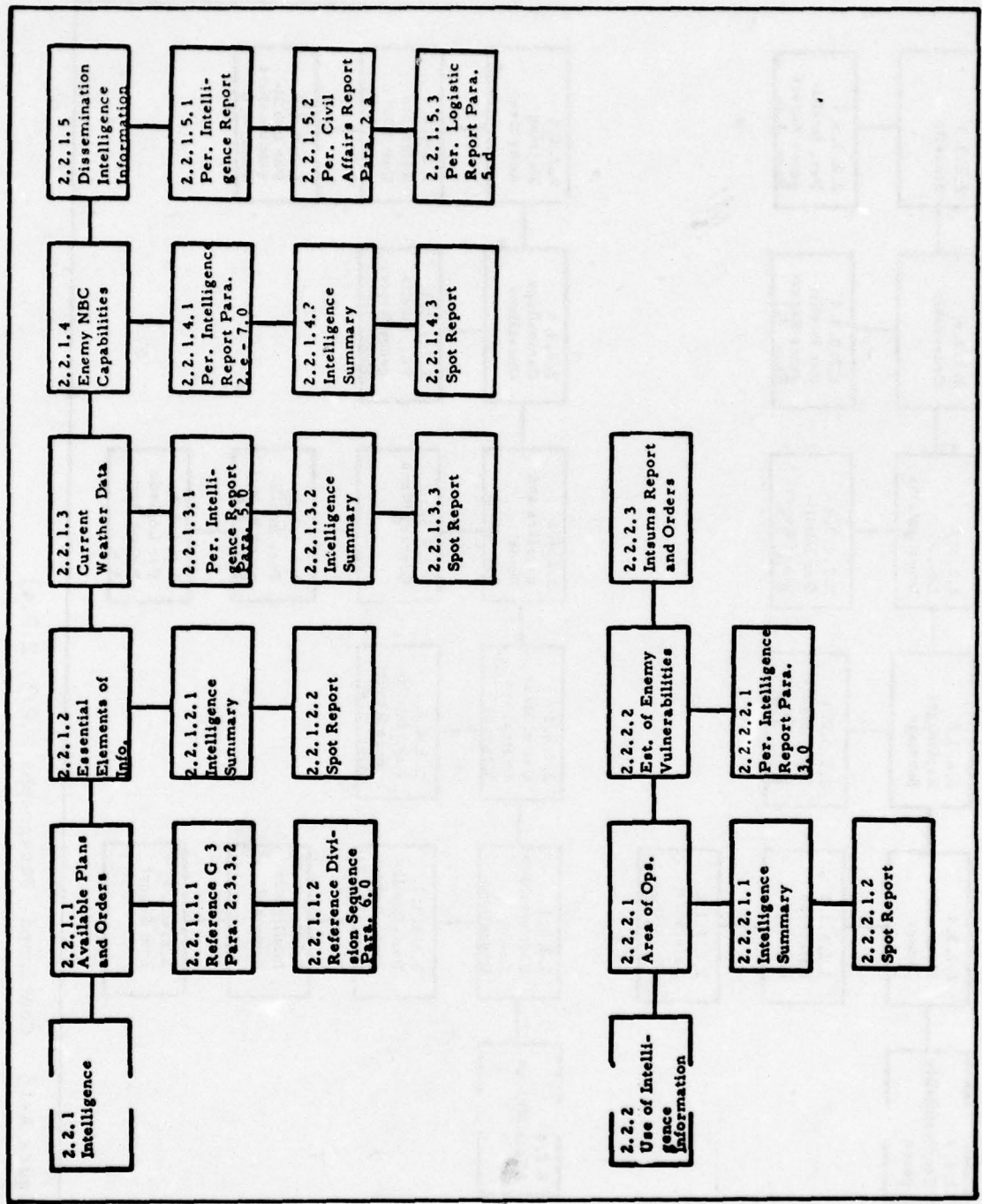


Figure A-15. G2 Intelligence Information Sequence (Paragraphs 2.2.1, 2.2.2)

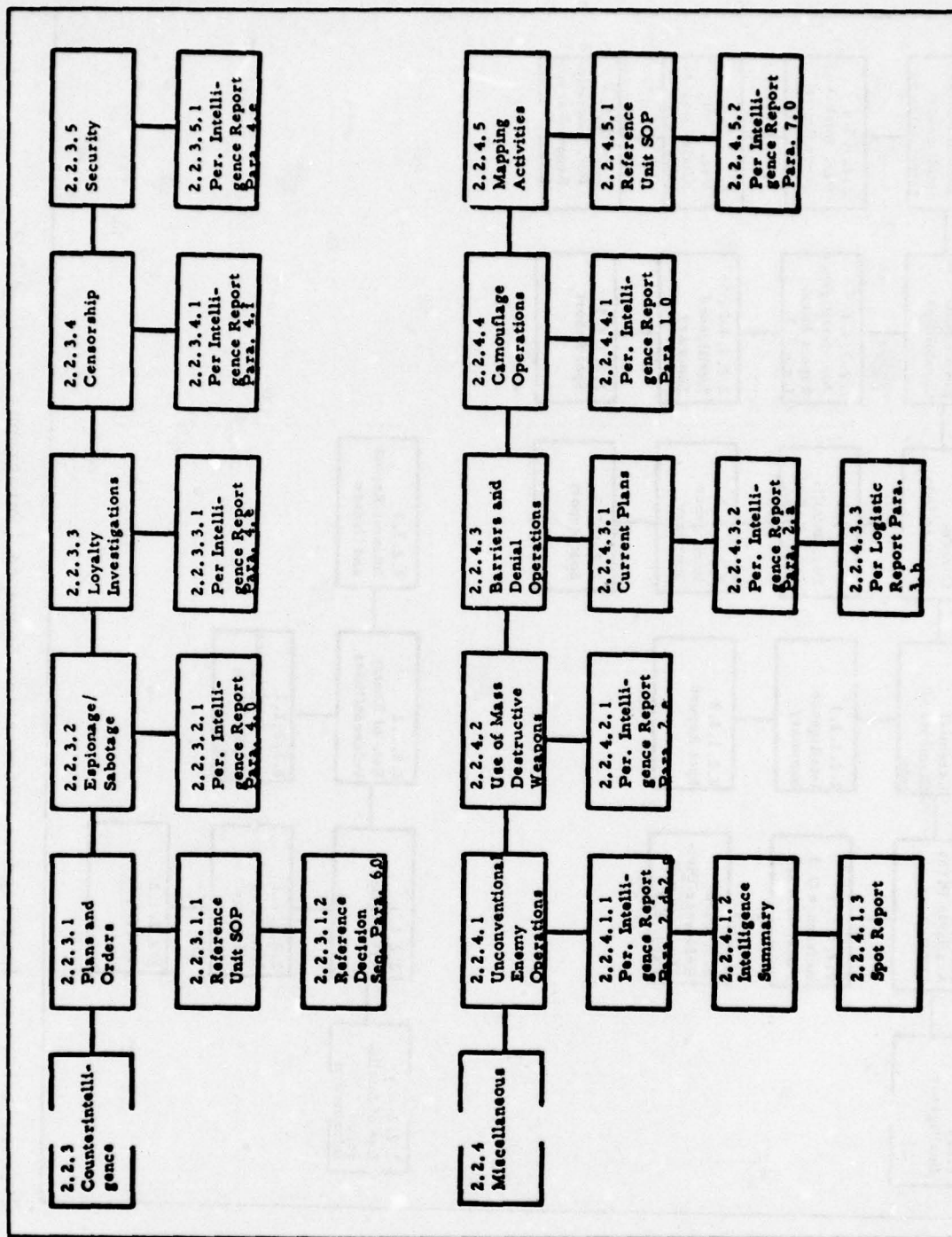


Figure A-15 - Continued (Paragraphs 2.2.3, 2.2.4)

1. OWN SITUATION

- a. Special Conditions
- b. Location of Major Troop Units
- c. Activities of Each Unit

2. INFORMATION OF ADJACENT UNITS AND SUPPORTING TROOPS

- a. Air
- b. Naval
- c. Ground

3. OWN OPERATIONS

- a. Own Combat Units
 - (1) Infantry
 - (2) Armor
 - (3) Artillery
 - (4) Support
- b. Major Subordinate Units
 - (1) Infantry
 - (2) Armor
 - (3) Artillery
 - (4) Support

4. COMBAT EFFICIENCY

- a. Morale
- b. Strength
- c. Training
- d. Health
- e. Supplies and Equipment
- f. Units in Contact

5. RESULTS OF OPERATIONS

- a. Operations Conducted by the Command
 - (1) Command Unit
 - (2) Major Subordinate Units
- b. Successes and Failures
- c. Recommendations for Future Operations

6. MISCELLANEOUS

Factors Having a Bearing on Operations of the Command Unit

Figure A-10. Topics Covered in Periodic Operations Report

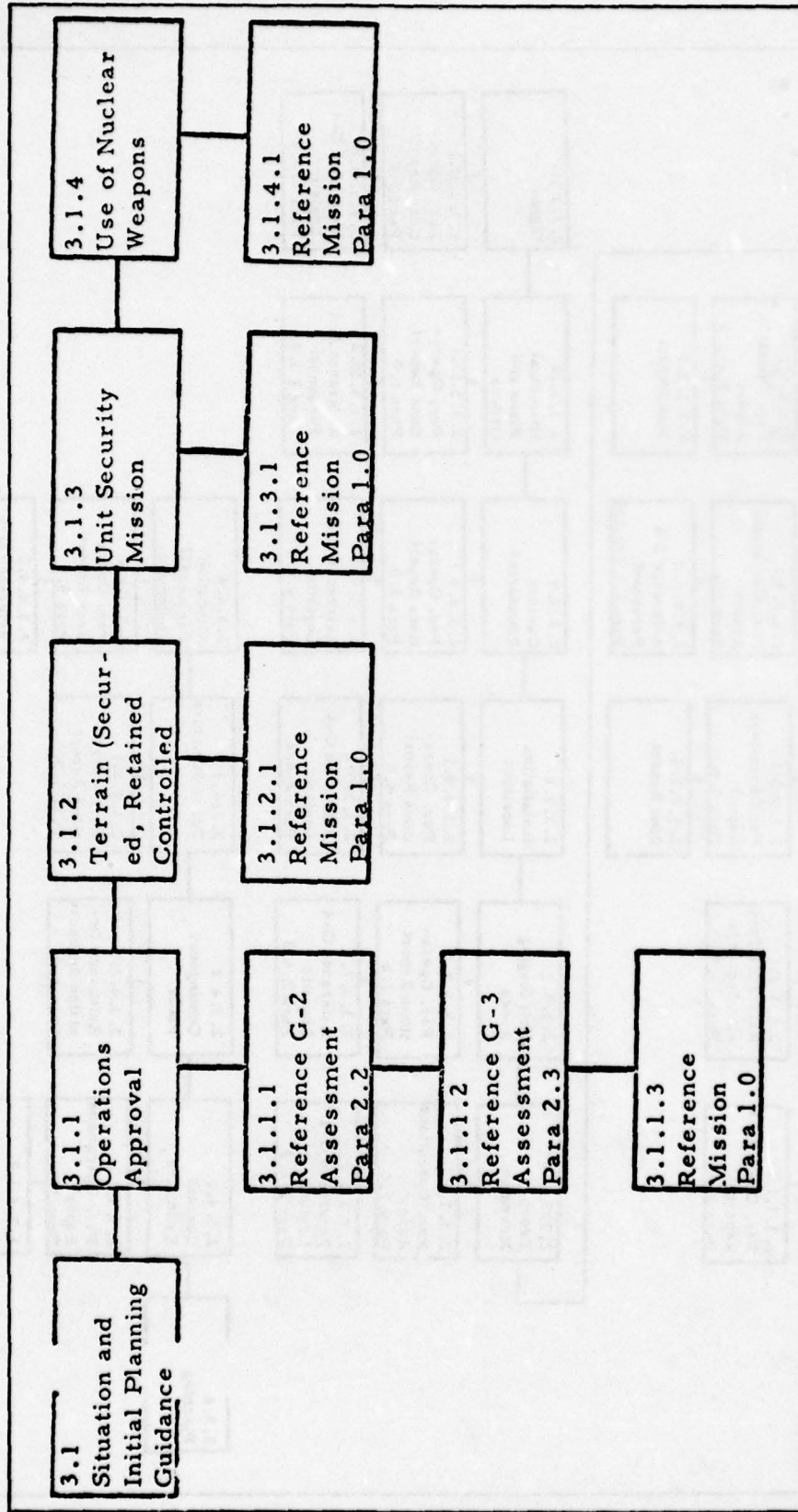


Figure A-18. Operations Approval and Planning Guidance

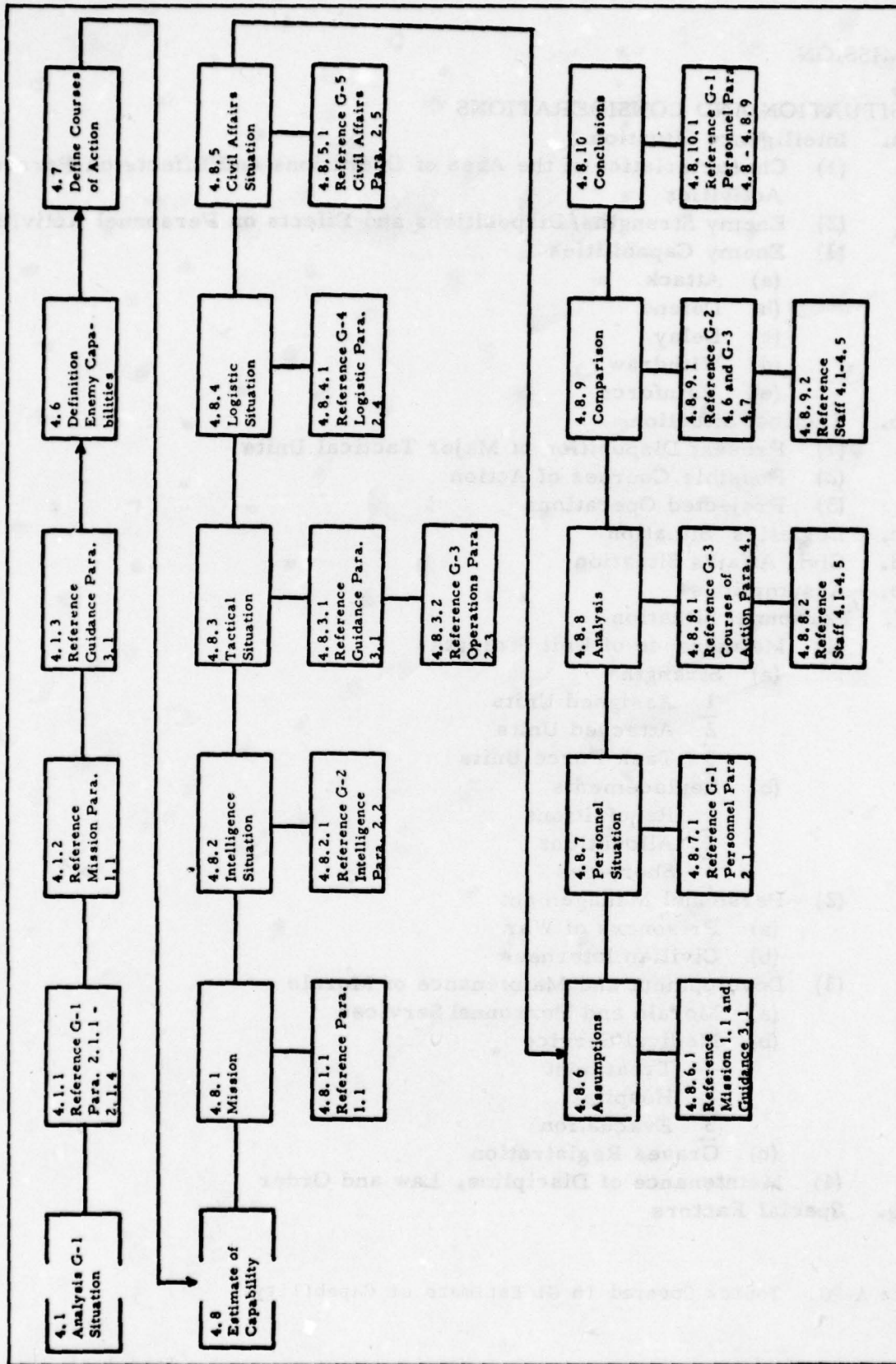


Figure A-19. G1 Personnel Estimate of Capability

1. MISSION
2. SITUATION AND CONSIDERATIONS
 - a. Intelligence Situation
 - (1) Characteristics of the Area of Operations and Effects on Personnel Activities
 - (2) Enemy Strengths/Dispositions and Effects on Personnel Activities
 - (3) Enemy Capabilities
 - (a) Attack
 - (b) Defend
 - (c) Delay
 - (d) Withdraw
 - (e) Reinforce
 - b. Tactical Situation
 - (1) Present Disposition of Major Tactical Units
 - (2) Possible Courses of Action
 - (3) Projected Operations
 - c. Logistics Situation
 - d. Civil Affairs Situation
 - e. Assumptions
 - i. Personnel Situation
 - (1) Maintenance of Unit Strength
 - (a) Strengths
 - 1 Assigned Units
 - 2 Attached Units
 - 3 Task Force Units
 - (b) Replacements
 - 1 Requisitions
 - 2 Allocations
 - 3 Shortages
 - (2) Personnel Management
 - (a) Prisoners of War
 - (b) Civilian Internees
 - (3) Development and Maintenance of Morale
 - (a) Morale and Personnel Services
 - (b) Medical Service
 - 1 Treatment
 - 2 Hospital
 - 3 Evacuation
 - (c) Graves Registration
 - (4) Maintenance of Discipline, Law and Order
 - g. Special Factors

Figure A-20. Topics Covered in G1 Estimate of Capability

3. ANALYSIS

- a. Maintenance of Unit Strength
 - (1) Strengths Based on Possible Courses of Action
 - (2) Replacements Based on Possible Courses of Action
- b. Personnel Management (Courses of Action)
 - (1) Morale and Personnel Services
 - (2) Graves Registration
- c. Development and Maintenance of Morale (Courses of Action)
 - (1) Morale and Personnel Services
 - (2) Graves Registration
- d. Maintenance of Discipline Law and Order (Courses of Action)

4. COMPARISON

- a. Dominant Factors
- b. Comparison (Courses of Action)
 - (1) Maintenance of Unit Strength
 - (a) Strengths
 - (b) Replacements
 - (2) Personnel Management
 - (3) Maintenance of Discipline, Law and Order

5. CONCLUSIONS

- a. Mission Support
- b. Best Course of Action
- c. Statement about each Possible Course
- d. Recommendations

Figure A-20 - Continued

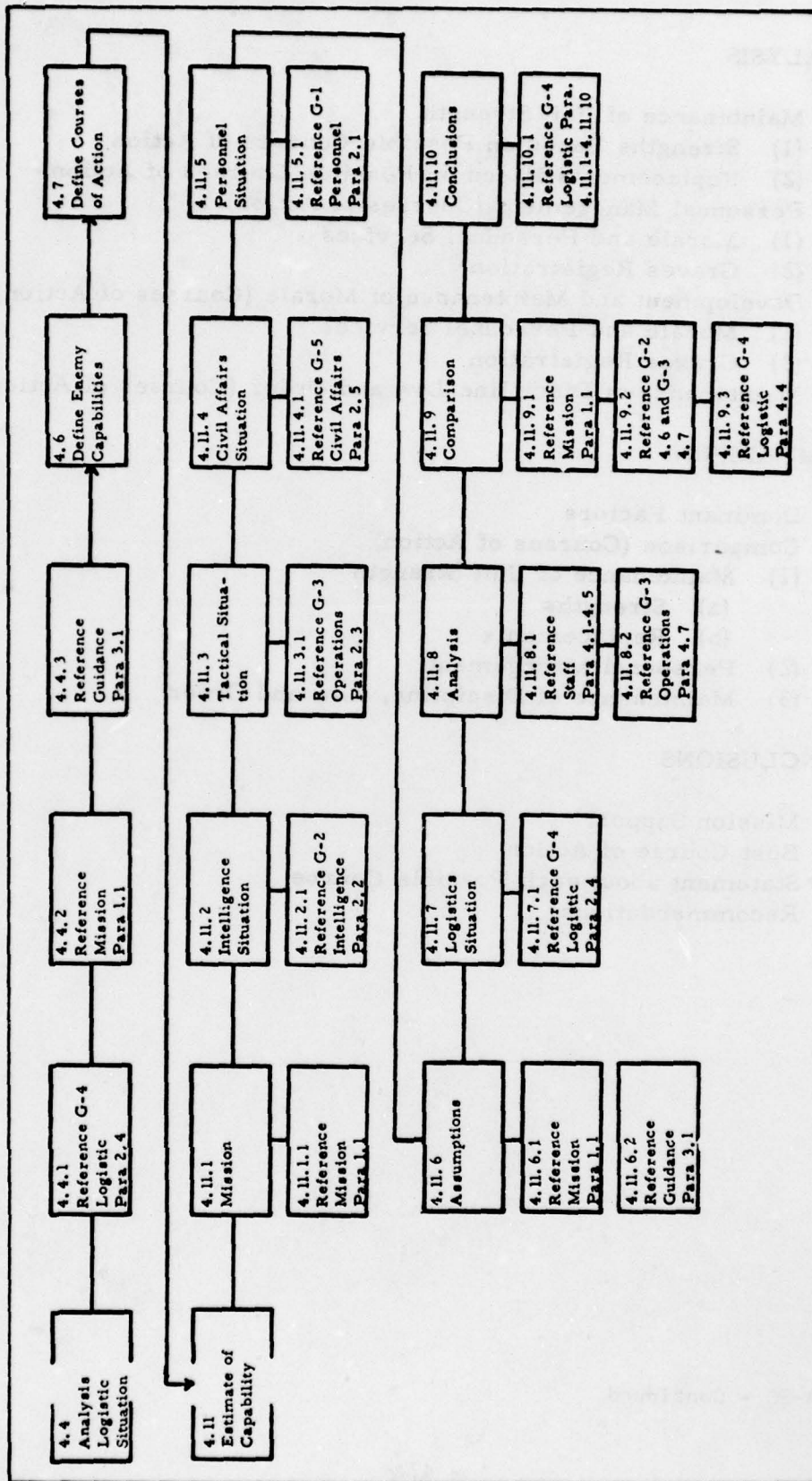


Figure A-21. G4 Logistic Estimate of Capability

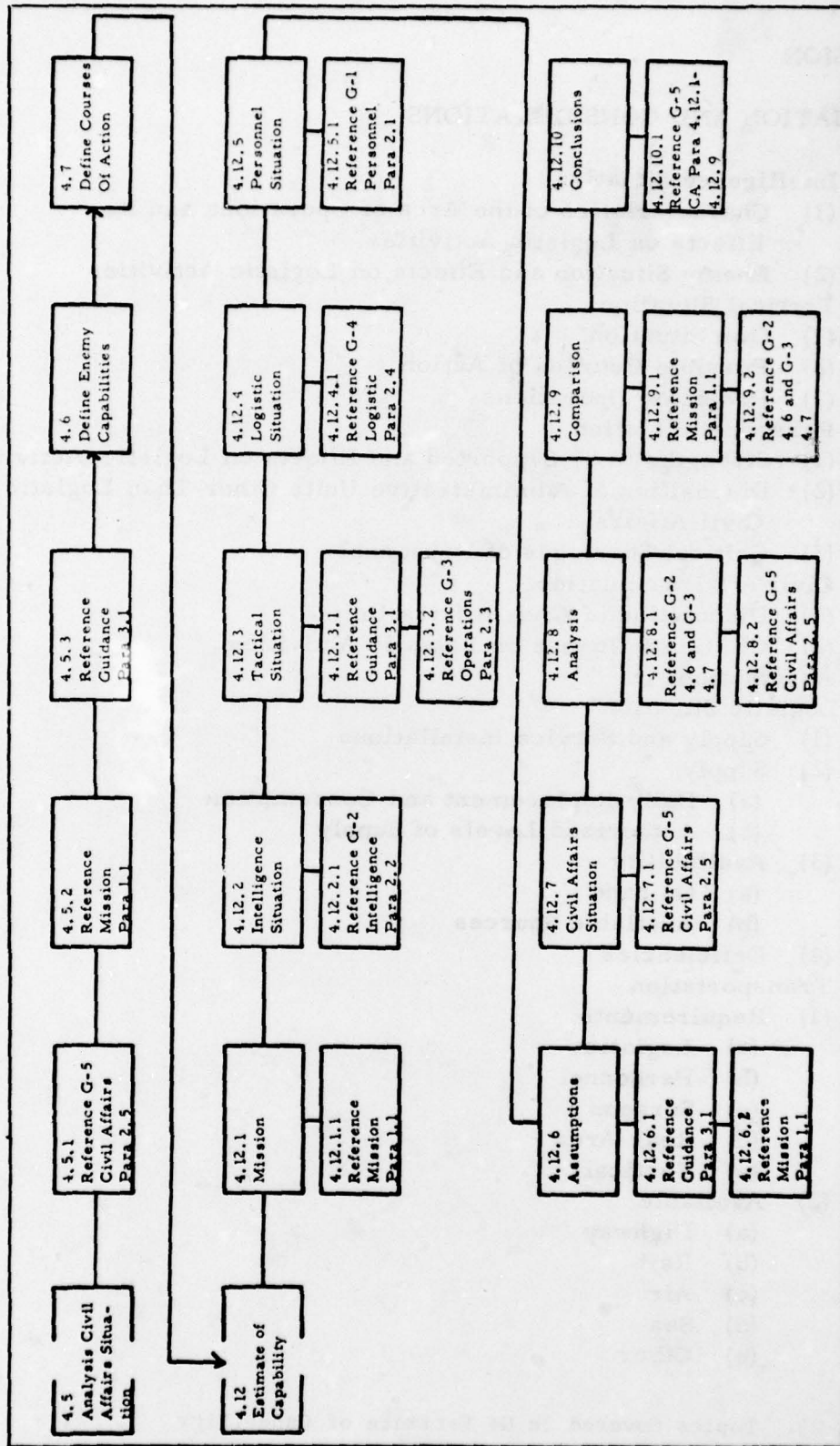


Figure A-22. G5 Civil Affairs Estimate of Capability

1. MISSION
2. SITUATION AND CONSIDERATIONS
 - a. Intelligence Situation
 - (1) Characteristics of the Area of Operations and Its Effects on Logistic Activities
 - (2) Enemy Situation and Effects on Logistic Activities
 - b. Tactical Situation
 - (1) Own Situation
 - (2) Possible Courses of Action
 - (3) Projected Operations
 - c. Personnel Situation
 - (1) Strengths to be Supported and Effects on Logistic Activities
 - (2) Disposition of Administrative Units Other Than Logistic and Civil Affairs
 - (3) Critical Shortages of Personnel
 - d. Civil Affairs Situation
 - (1) Disposition of Civil Affairs Units
 - (2) Civilian Influence on Logistic Activities
 - e. Assumptions
 - f. Logistic Situation
 - (1) Supply and Service Installations
 - (2) Supply
 - (a) Daily Replacement and Consumption
 - (b) Authorized Levels of Supply
 - (3) Availability
 - (a) On hand
 - (b) Available Sources
 - (4) Deficiencies
 - g. Transportation
 - (1) Requirements
 - (a) Logistic
 - (b) Personnel
 - (c) Surgeon
 - (d) Rear Area
 - (e) Tactical
 - (2) Available
 - (a) Highway
 - (b) Rail
 - (c) Air
 - (d) Sea
 - (e) Other

Figure A-23. Topics Covered in G4 Estimate of Capability

- (3) Deficiencies
 - h. Service
 - (1) Requirements and Availability
 - (2) Deficiencies
 - i. Miscellaneous
 - j. Special Factors
- 3. ANALYSIS
 - a. Supply
 - (1) Stock Levels Requirements for Each Course of Action
 - (2) Availability
 - b. Transportation Ability to Support Each Course of Action
 - c. Miscellaneous
- 4. COMPARISON
 - a. Logistic Deficiencies
 - (1) Supply
 - (2) Transportation
 - (3) Rear Area Security
 - b. Tactical Courses of Action
 - (1) Supply
 - (2) Transportation
 - (3) Rear Area Security
- 5. CONCLUSION
 - a. Logistic Support
 - b. Tactical Course of Action Recommendation
 - c. Deficiencies Requiring the Commander's Attention

Figure A-23 - Continued

1. MISSION
2. SITUATION AND CONSIDERATIONS
 - a. Intelligence Situation
 - (1) Characteristics of the Area of Operations and its Effect on Civil Affairs Activities
 - (2) Enemy Strengths/Dispositions and Their Effect on Civil Affairs Activities
 - (3) Enemy Capabilities
 - b. Tactical Situation
 - (1) Own Situation
 - (2) Possible Courses of Action
 - c. Personnel Situation
 - d. Logistic Situation
 - e. Assumptions
 - f. Civil Affairs Situation and Nature of Operations to be Supported
 - g. Special Factors
3. ANALYSIS
 - a. Governmental Functions
 - (1) Civil Government
 - (2) Public Safety
 - (3) Public Health
 - (4) Labor
 - b. Economic Functions
 - (1) Commerce and Industry
 - (2) Food and Agriculture
 - (3) Civilian Supply
 - c. Public Facilities
 - d. Special Functions
4. COMPARISON
 - a. Courses of Action
 - (1) Advantages
 - (2) Disadvantages
 - b. Discussion
5. CONCLUSION
 - a. Civil Affairs Support
 - b. Tactical Course of Action Recommendation
 - c. Deficiencies Requiring the Commander's Attention

Figure A-24. Topics Covered in G5 Estimate of Capability

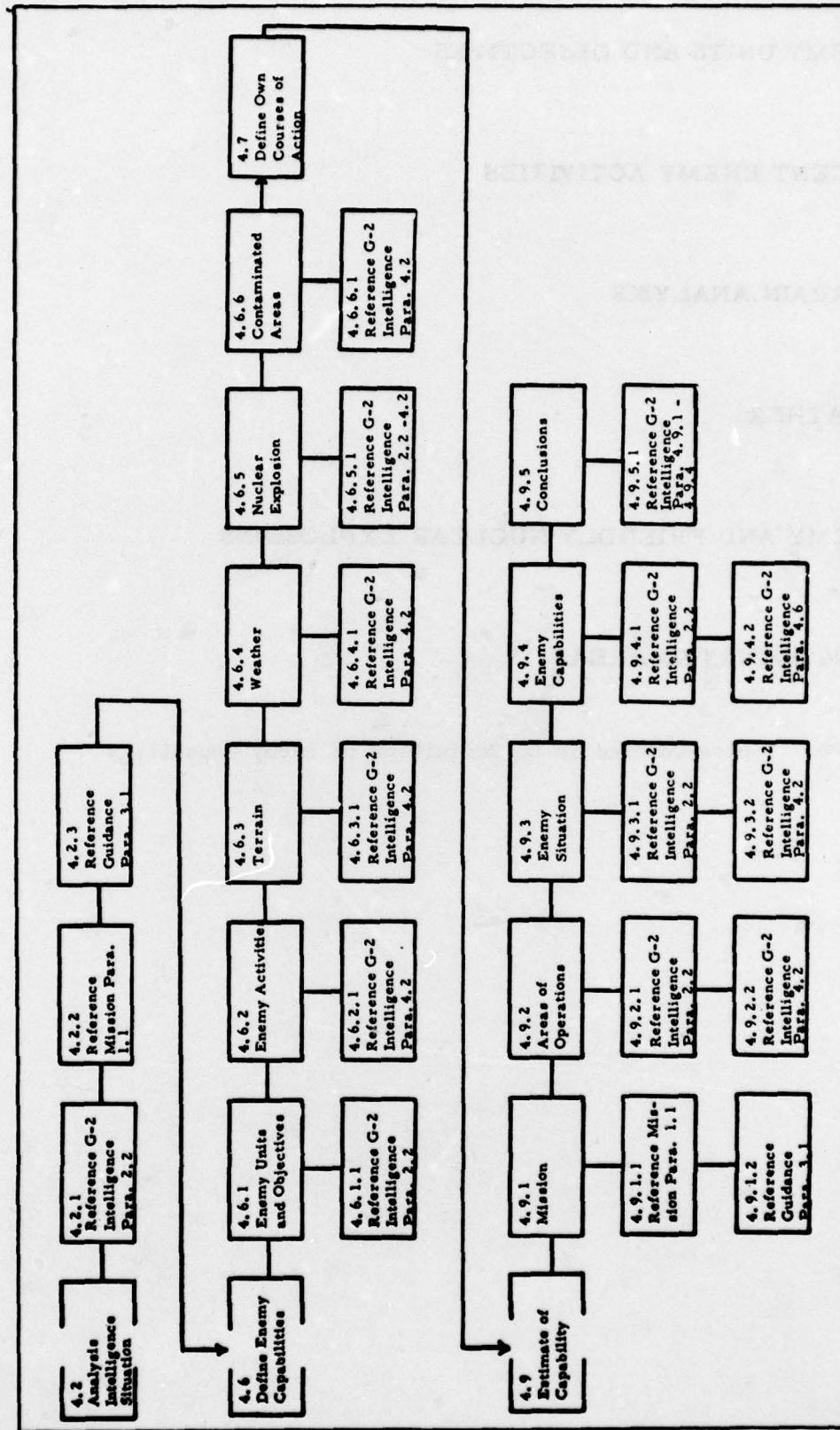


Figure A-25. G2 Intelligence Estimate of Capability

1. ENEMY UNITS AND OBJECTIVES
2. RECENT ENEMY ACTIVITIES
3. TERRAIN ANALYSIS
4. WEATHER
5. ENEMY AND FRIENDLY NUCLEAR EXPLOSIONS
6. CONTAMINATED AREAS

Figure A-26. Topics Covered in G2 Definition of Enemy Capability

1. MISSION
2. AREA OF OPERATIONS
 - a. Weather
 - (1) Existing Situation
 - (2) Effect on Enemy Courses of Action
 - (3) Effect on Friendly Courses of Action
 - b. Terrain
 - (1) Existing Situation
 - (2) Effect on Enemy Courses of Action
 - (3) Effect on Friendly Courses of Action
 - c. Other Characteristics
3. ENEMY SITUATION
 - a. Disposition
 - b. Composition
 - c. Strength
 - (1) Committed Forces
 - (2) Reinforcements
 - (3) Air
 - (4) Nuclear, Biological, and Chemical Operations
 - d. Recent and Present Significant Activities
 - e. Peculiarities and Weaknesses
 - (1) Personnel
 - (2) Intelligence
 - (3) Operations
 - (4) Logistics
 - (5) Civil Affairs
 - (6) Personalities
4. ENEMY CAPABILITIES
 - a. Enumeration
 - b. Analysis and Discussion
5. CONCLUSION
 - a. Effects of Area of Operations on Probable Enemy Courses of Action
 - b. Effects of Area of Operations on Possible Friendly Courses of Action
 - c. Tactical Course of Action Recommendation
 - d. Enemy Vulnerabilities

Figure A-27. Topics Covered in G2 Estimate of Capability

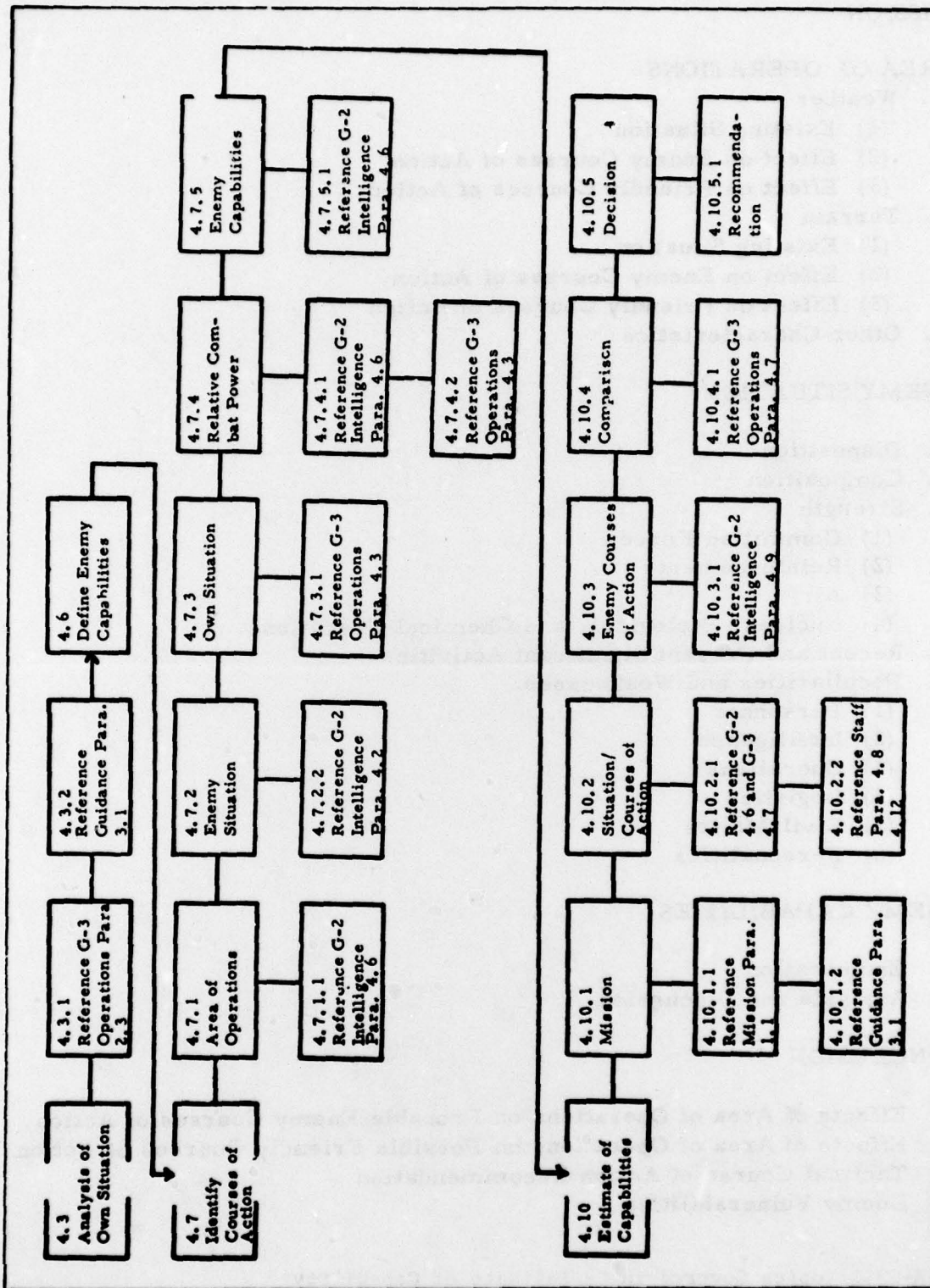


Figure A-28. G3 Operations Estimate of Capability

1. CHARACTERISTICS OF AREA OF OPERATIONS

2. ENEMY SITUATION

3. OWN SITUATION

4. RELATIVE COMBAT POWER

5. ENEMY CAPABILITIES

Figure A-29. Definition of Possible Courses of Action

1. MISSION

2. SITUATION AND COURSES OF ACTION

a. Considerations Affecting the Possible Courses of Action

(1) Characteristics of the Area of Operations

(a) Weather

1 Effect on Enemy Operations

2 Effect on Friendly Operations

(b) Terrain

1 Effects on Enemy Operations

2 Effects on Friendly Operations

(c) Other Pertinent Factors

(2) Enemy Situation

(3) Own Situation

(a) Strength

(b) Composition

(c) Dispositions

(d) Logistics

(e) Morale

(f) Status of Training

(g) Combat Efficiency

(h) Reinforcements

(4) Relative Combat Power

b. Enemy Capabilities

(1) Enumeration

(a) Attack

(b) Defend

(c) Reinforce

(d) Delay

(e) Withdraw

(2) Probable Courses of Action

(3) Vulnerabilities

c. Own Courses of Action

Figure A-30. Topics Covered in G3 Estimate of Capability

3. ANALYSIS OF OPPOSING COURSES OF ACTION

- a. Aggressor Courses of Action
- b. Friendly Courses of Action

4. COMPARISON OF OWN COURSES OF ACTION

- a. Courses of Action
 - (1) Advantages
 - (2) Disadvantages
- b. Discussion
- c. Employment of Nuclear Weapons
- d. Conclusion

5. RECOMMENDATION

Figure A-30 - Continued

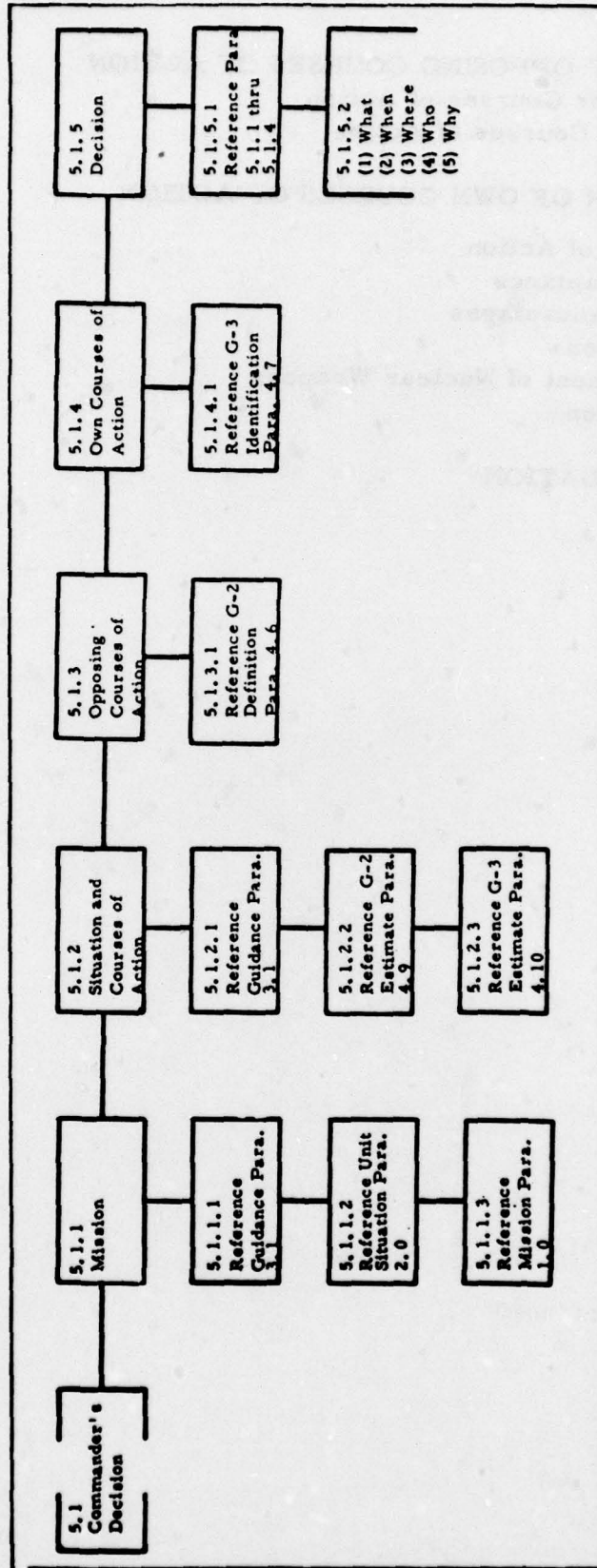


Figure A-31. Commander's Decision

TASK ORGANIZATION

1. SITUATION

- a. Enemy Forces
- b. Friendly Forces
- c. Attachments and Detachments
- d. Assumptions

2. MISSION

3. EXECUTION

- a. Concept of Operations
 - (1) Maneuver
 - (2) Fire Support
 - (a) Air
 - (b) Artillery
 - (c) Naval Gunfire
 - (d) Nuclear, Chemical, and Biological
 - (3) Reserve
 - (4) Coordinating Instructions

4. ADMINISTRATION AND LOGISTICS

5. COMMAND AND SIGNAL

Figure A-32. Topics Covered in Operations Plan

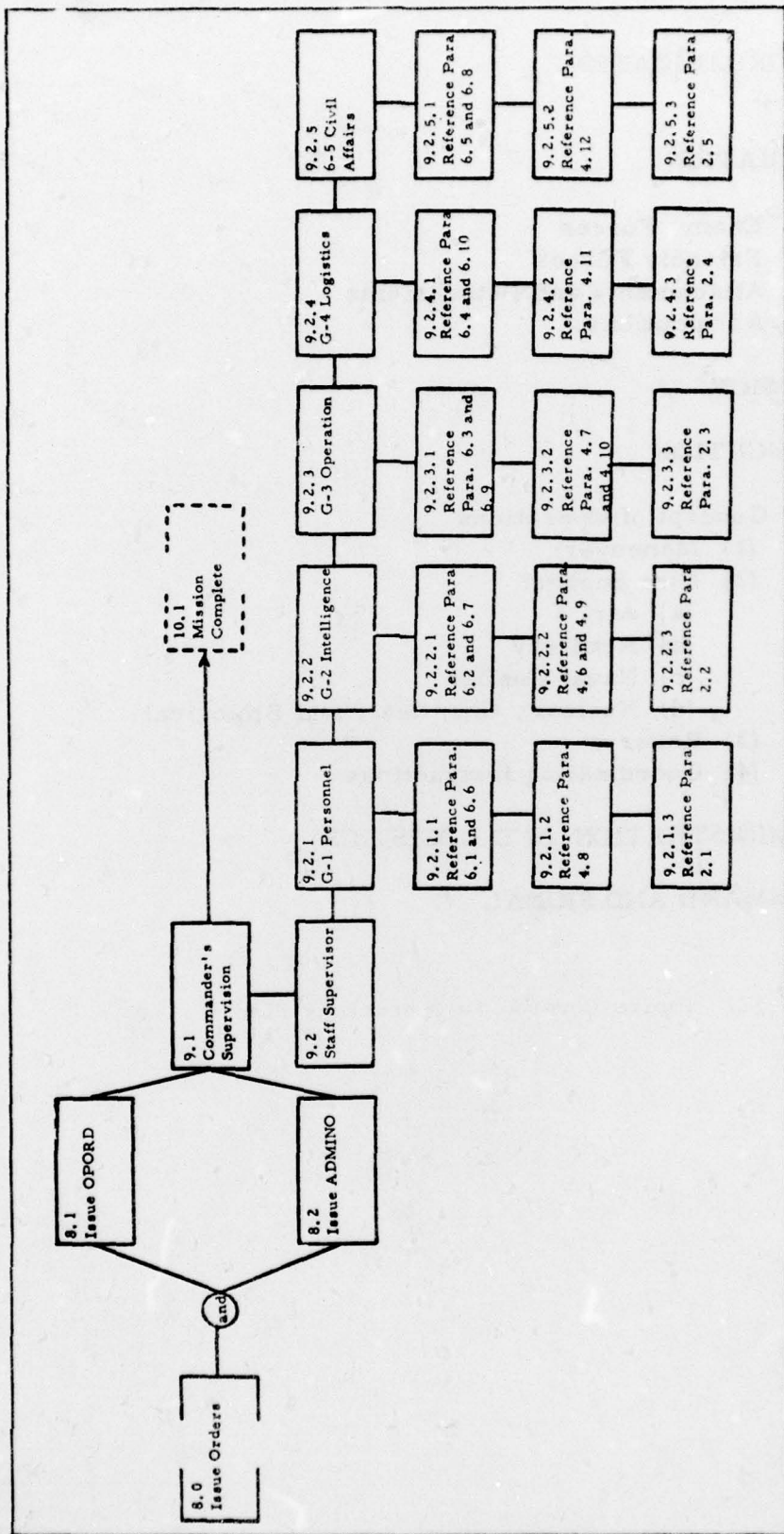


Figure A-33. OPORD Execution