STAFF ORGANIZATION AND PROCEDURES. PART I. EXECUTIVE SUMMARY AND MASTER EVALUATION. PART II. TEST AND FINDINGS. APPENDIXES A AND B

Donald D. Durr, et al

Modern Army Selected Systems Test, Evaluation, and Review
Fort Hood, Texas

10 May 1974

DEPARTMENT OF THE ARMY
HEADQUARTERS MODERN ARMY SELECTED SYSTEMS TEST EVALUATION AND REVIEW
(MASSTER)
FORT HOOD, TEXAS 76544

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SUBJECT: Staff Organization and Procedures, MASSTER Test FM 119

1. The Staff Organization and Procedures Test Report, Test Number 119, is submitted in accordance with instructions contained in letter, Office of The Adjutant General, AGDA (M) (19 Aug 71) FOR DC EXO, 2 September 1971, subject: Charter of the Commanding General, Modern Army Selected Systems Test, Evaluation, and Review (MASSTER).

2. The findings, conclusions, and recommendations contained in this document are those of the Commanding General and not necessarily those of the Department of the Army.

FOR THE COMMANDER:

Earl W. Fletcher
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Colonel, Armor
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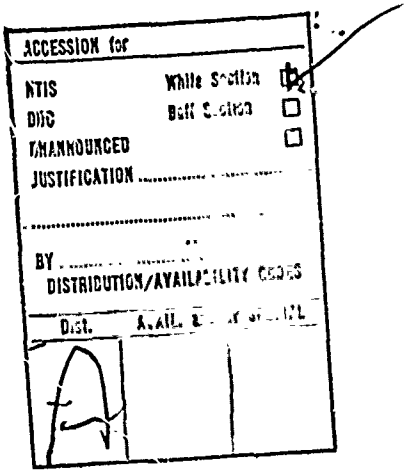

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13. ABSTRACT

The purpose of Test 119 was to experiment with and evaluate portions of the refinement of the baseline, Integrated Battlefield Control System, Division Level System Definition, Second Refinement. A secondary purpose was to develop baseline SOP's and provide them to active Army divisions pending TRADOC review and subsequent publication as doctrinal literature. The test consisted of a series of workshops and a field exercise. The report contains data on the performance of the baseline organization during normal, displacement, and destruction operations. In addition, the appendixes contain the baseline division and intelligence SOP's.

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Intelligence SOP						
SSE/EWE SOP						

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STAFF ORGANIZATION AND PROCEDURES
(MASSTER Test FM 119)

PART I - EXECUTIVE SUMMARY AND MASSTER EVALUATION

SECTION I - Summary

1. Background. Staff Organization and Procedures, MASSTER Test FM 119, was a large system test conducted at Fort Hood, Texas, from 12 through 16 November 1973. An intelligence processes workshop was conducted prior to the test to collect detailed time-related data for use in a computer simulation experiment and to develop baseline intelligence standing operating procedures (SOP's) for evaluation during the test. A continuity of operations seminar was also conducted to develop the procedures to be followed when the division main command post was displaced or destroyed during the test. Selected staff elements of a division, a brigade, a division artillery, a division support command, a signal battalion, and a maneuver battalion were fielded and evaluated in a command post experiment. Divisional elements not fielded were represented by a controller organization. Personnel of the staff elements responded to a European oriented mid-intensity conflict scenario executed by the controller organization.

2. Purpose.

a. Primary purpose. The primary purpose of test 119 was to experiment with and evaluate portions of the refinement of the baseline, *Integrated Battlefield Control System, Division Level System Definition, Second Refinement,* ACN 16881, February 1973.

b. Secondary purpose. The secondary purpose of test 119 was to develop baseline SOP's and provide them to active Army divisions pending Training and Doctrine Command (TRADOC) review and subsequent publication as doctrinal literature.

c. Scope. The test consisted of a series of workshops and a field exercise which were separate efforts that culminated in the attainment of the stated objectives.

3. Objectives and Findings. The objectives as stated were mission type objectives that required the generation, collection, and presentation of quantitative data for use during development of the IBCS Third Refinement study effort. Findings pertinent to the objectives are noted below. Subfindings pertinent to the information needs are contained in chapter 2 of this report.

a. Objective 1.

(1) Purpose. The purpose of this objective was to obtain performance data on the division staff in the refined organization.

(2) Finding. The data in part III of this report constitutes the performance data for the division staff during normal operating, displacement, and destruction conditions.

b. Objective 2.

(1) Purpose. The purpose of this objective was to obtain quantitative data for both the refined organization and the H-series TOE on the division command, control, and communications concepts and procedures when the Div Main CP is destroyed.

(2) Findings.

(a) The quantitative data collected subsequent to destruction of the Div Main CP is contained in part III.

(b) Staff elements were capable of maintaining continuity of operations subsequent to the destruction of the Div Main CP.

c. Objective 3.

(1) Purpose. The purpose of this objective was to obtain quantitative data for both the refined organization and the H-series TOE on the division command, control, and communications concepts and procedures when the Div Main CP is displaced.

(2) Findings.

(a) The data in part III of this report is the quantitative data that was collected during the periods when the Div Main CP was displacing or preparing to displace.

(b) Staff elements were capable of maintaining continuity of operations when the Div Main CP was displaced.

d. Objective 4.

(1) Purpose. The purpose of this objective was to obtain quantitative data on the performance of the organization and on the procedures used by those elements in the refined organization which differ from the H-series TOE.

(2) Findings.

(a) The SOP in appendix D of this report constitutes a definition of procedures used by those elements that differ from the H-series TOE.

(b) Quantitative data collected when staff elements were responding to a controlled density scenario in a field environment during conditions of displacement and/or destruction are furnished in response to objectives 1, 2, and 3.

SECTION II - Conclusions and Recommendations

4. Conclusions.

a. The alternate CP can effectively assume control of the division, if desired by the commander, during displacement of the division main CP.

b. Echelon displacement of the division main command post can best be achieved by transferring control of the division to the tactical command post while the main command post displaces.

c. For periods of less than 24-hours, the requirement for an alternate facility can best be realized by division artillery with no augmentation.

d. For periods in excess of 24-hours, the requirement for an alternate facility can best be realized by division artillery with a small (10-man) augmentation.

e. The 37-man augmentation concept tested is adequate to perform the mission of alternate if a separate, 24-hour facility is desired.

f. As demonstrated previously and confirmed during this test, combining the electronic warfare and signal intelligence support elements and collocating these elements within the all-source intelligence area improved the intelligence analysis effort.

g. The need for an electronic warfare cryptologic officer as a special staff officer was not demonstrated.

h. The SOP's appended to this report provide a practical solution to assure continuity of operations during CP displacement and/or destruction.

5. Recommendation. That the standing operating procedures appended to this report be provided to active Army divisions pending TRADOC review and subsequent publication as doctrinal literature.

10 May 1974

STAFF ORGANIZATION AND PROCEDURES,
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PART II - TEST AND FINDINGS

CHAPTER I - TEST

Section I - INTRODUCTION

I-1. Purpose.

a. Primary purpose. The primary purpose of test 119 was to experiment with and evaluate portions of the refinement of the baseline, *Integrated Battlefield Control System, Division Level System Definition, Second Refinement,* ACN 16881, February 1973.

b. Secondary purpose. The secondary purpose of test 119 was to develop baseline standing operating procedures (SOP's) and provide them to active Army divisions pending Training and Doctrine Command (TRADOC) review and subsequent publication as doctrinal literature.

c. Scope. The test consisted of a series of workshops and a field exercise which were separate efforts that culminated in the attainment of the stated objectives.

I-2. Background.

a. *The Integrated Battlefield Control System, Division Level System Definition, Second Refinement,* ACN 16881, dated February 1973, a 13 volume study, constituted the test support package (TSP) for test 119. The TSP identified in general the organizational and operational concepts to be tested. Additionally, the TSP identified in detail the personnel and major items of equipment authorized, the functions assigned, and the procedures to be followed by the staff sections. It also contained a listing of section files and reports. The TSP was used as the base document for designing the test. The refined baseline concept in the TSP resulted from a detailed functional analysis conducted by TRADOC of the H-series table of organization and equipment (TOE), staff organization and operating procedures. The results of this functional analysis were evaluated by TRADOC, and changes were identified that offered potential improvement to the baseline. The following recommended changes have been extracted from the TSP:

(1) The intelligence staff and the battlefield information coordination center (BICC) are reorganized to eliminate redundancy of functions and improve the processing and dissemination of intelligence.

(2) The electronic warfare (EW) and signal intelligence (SIGINT) support elements are combined and collocated.

(3) Liaison officers are placed under the supervision of the operations officer.

(4) A plans section is established in the division and brigade operations staff.

(5) An assistant operations officer is added to the battalion operations section.

(6) Enlisted liaison specialists are increased in the artillery maneuver battalion and brigade liaison sections.

b. Prior to the field phase of the test, an intelligence processes workshop and a continuity of operations (CONOPS) seminar were conducted as recommended in the TSP. These were conducted during the first quarter of fiscal year 1974.

(1) The intelligence processes workshop was conducted primarily to develop baseline data on the organizational concepts expressed in the Integrated Battlefield Control System (IBCS), Second Refinement, that differed from those organizational elements defined in current doctrine. Data developed as a result of this effort have previously been furnished to TRADOC for use in designing a computer simulation experiment. The secondary purpose of the intelligence processes workshop was to develop a baseline division intelligence SOP for use during the field phase of the test. The SOP was evaluated during the field phase of the test and was subsequently revised to correct deficiencies observed at that time. The revised SOP is contained in this report.

(2) The CONOPS seminar included consideration of refining concepts and procedures required to be performed by staff elements during normal operating conditions and periods of command post (CP) displacement and destruction. The seminar resulted in identification of procedures to be followed by personnel assigned to the Division Main (Div Main), Tactical Command Post (TAC CP), Division Artillery (Div Arty), and the Division Alternate (Div Alt) command posts. The procedures to be followed to maintain CONOPS were contained in an SOP used during the field phase of the test. During posttest analysis, the CONOPS SOP was revised to remove discrepancies. The revised SOP is contained in this report.

1-3. Organizations Evaluated.

a. The division, brigade, and battalion staff elements which the TSP defined for testing are shown in figures 1-1, 1-2, and 1-3.

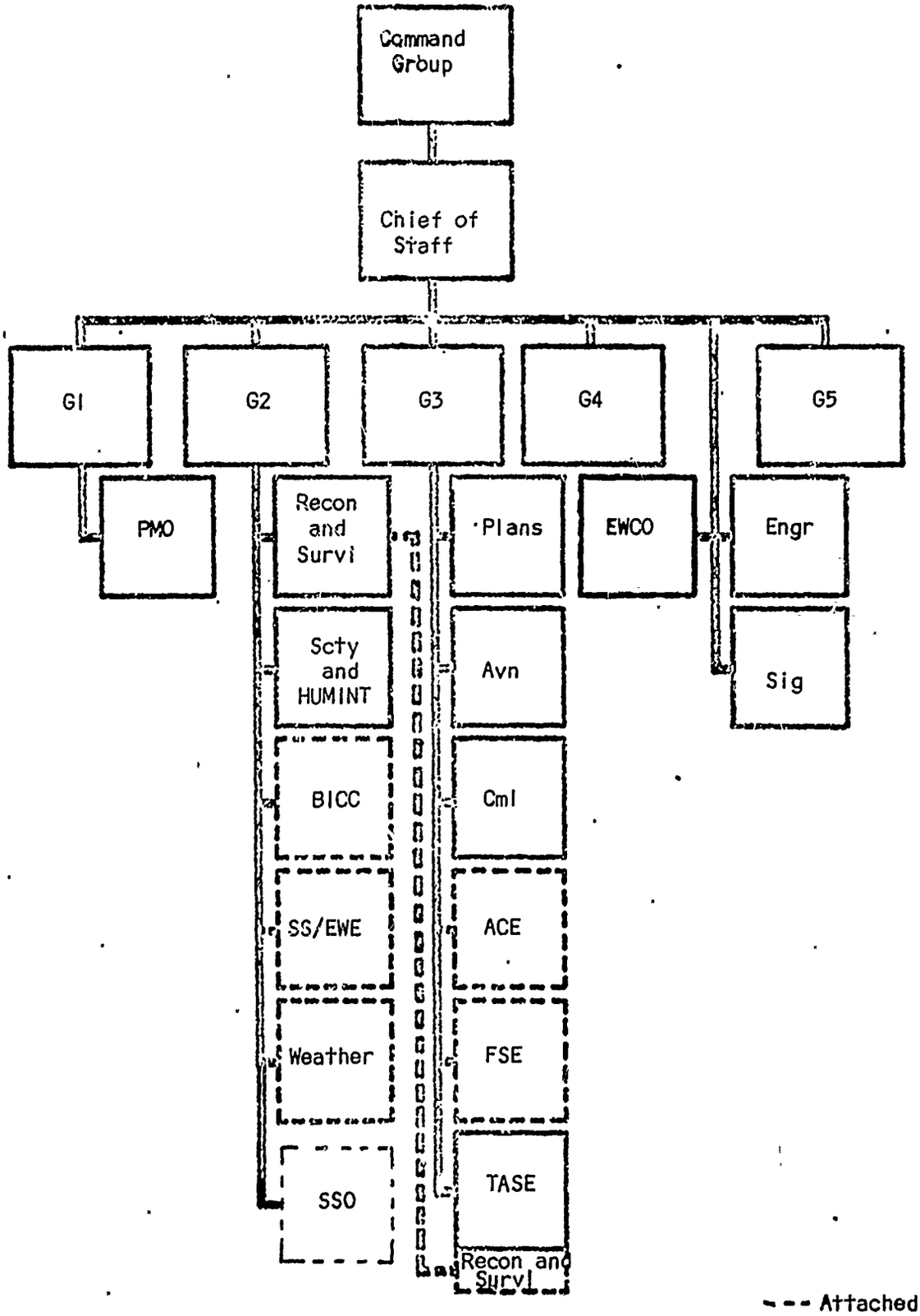


Figure 1-1. Division staff organization.

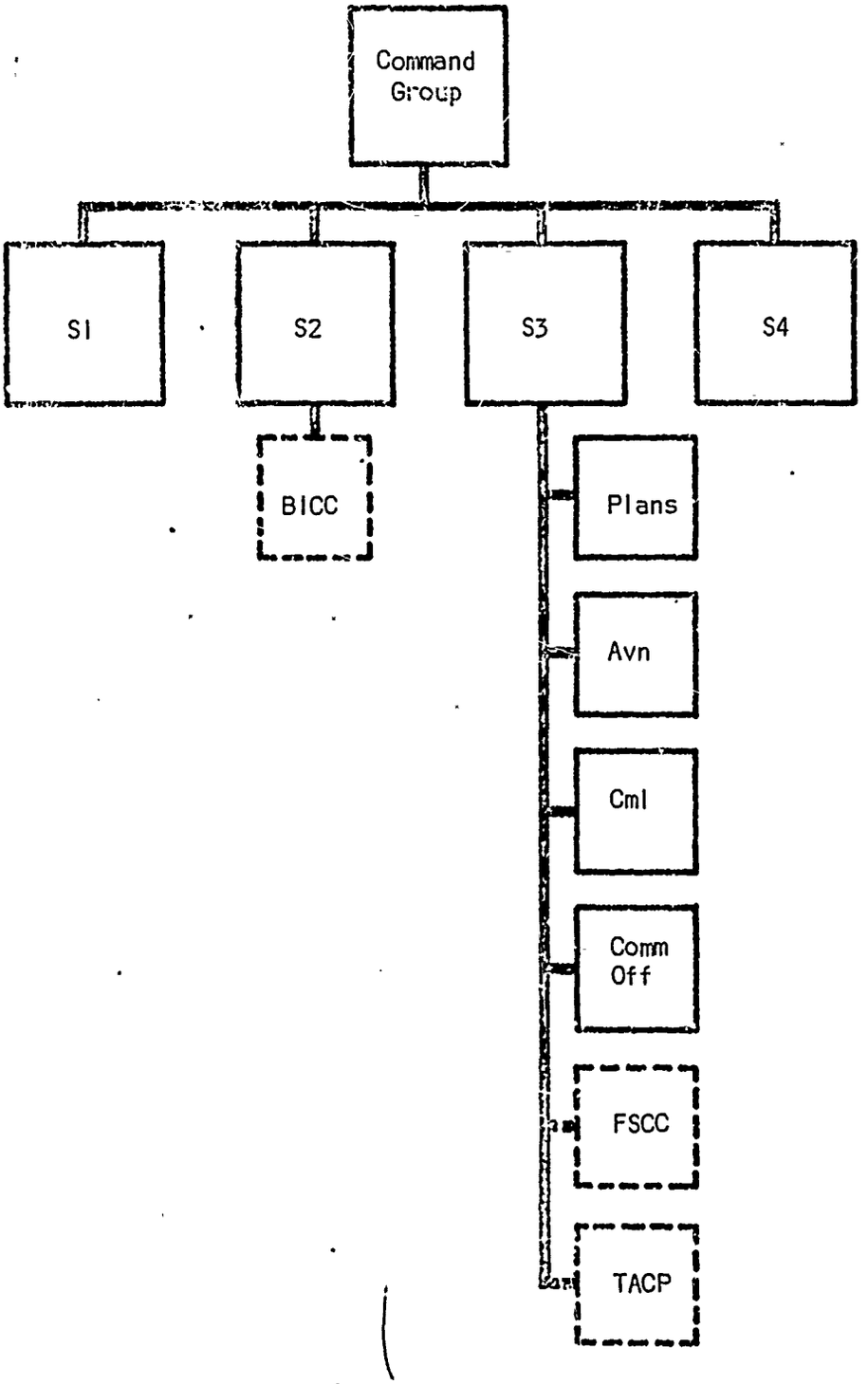


Figure 1-2. Brigade staff organization.

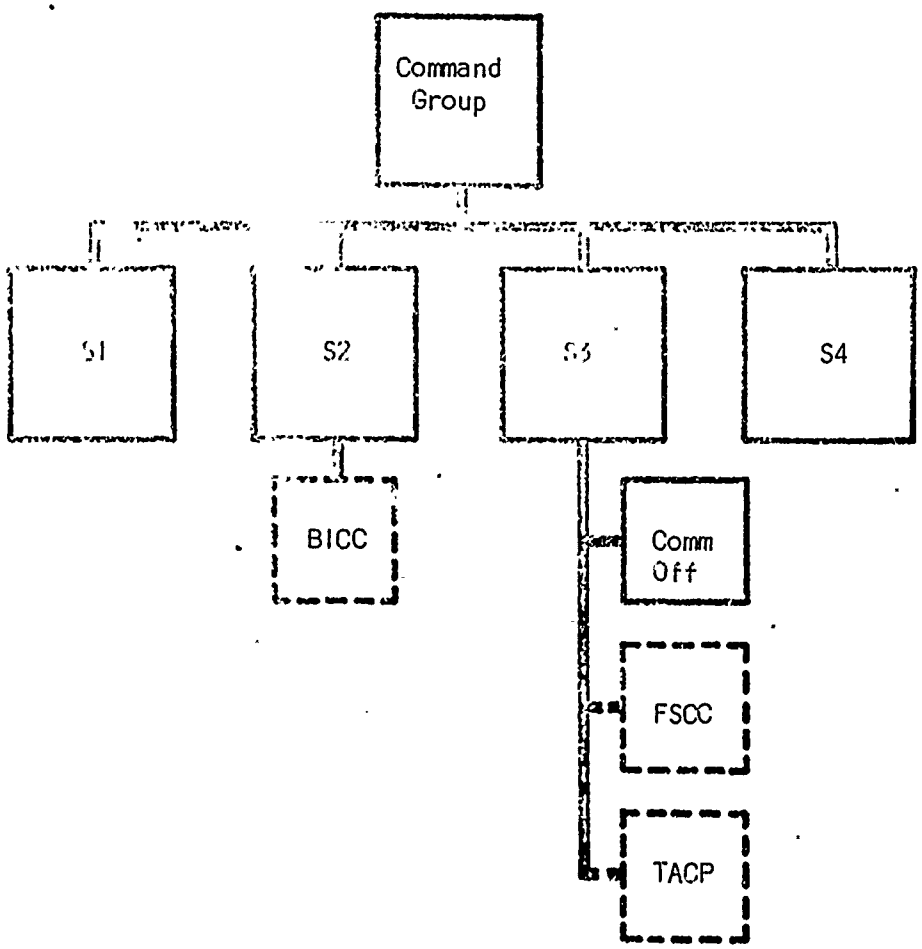


Figure 1-3. Battalion staff organization.

The organizational concepts of the staff elements tested do not differ greatly from those organizational concepts contained in the current H-series TOE authorization. The most significant departure from current H-series authorization is noted in the G2 or intelligence subsystem functional areas. Chapter 2 contains detailed information concerning personnel and major items of equipment that were authorized for test purposes to each of the staff elements noted in figures I-1, I-2, and I-3.

b. During the test, selected elements of the division, as identified in figure I-4, were evaluated with respect to the documentation contained in the TSP.

Section II. TEST DESIGN

I-4. Methodology.

a. The nature of the three questions to be answered and the stated information needs attendant with the questions necessitated that the agreed-upon measures of performance be applicable to all conditions which the division was expected to experience.

(1) The three questions to be answered are listed below:

(a) Question 1. How effective is the staff organization when performing normal offensive and defensive type operations?

(b) Question 2. How effective is the staff organization in maintaining continuity of operations during and after displacement of the main command post?

(c) Question 3. How effective is the alternate CP in insuring continuity of operations if the main CP is destroyed?

(2) With respect to the questions listed above, 51 information needs were contained in the Concept Plan of Test (CPOT). The summarized information needs are to determine the following:

(a) Adequacy of personnel and equipment to maintain a 24-hour operational capability.

(b) Adequacy of the SOP and the organizations and functions manual (OFM).

(c) Strengths and weaknesses of each section.

(d) Quantity and quality of staff inputs and outputs.

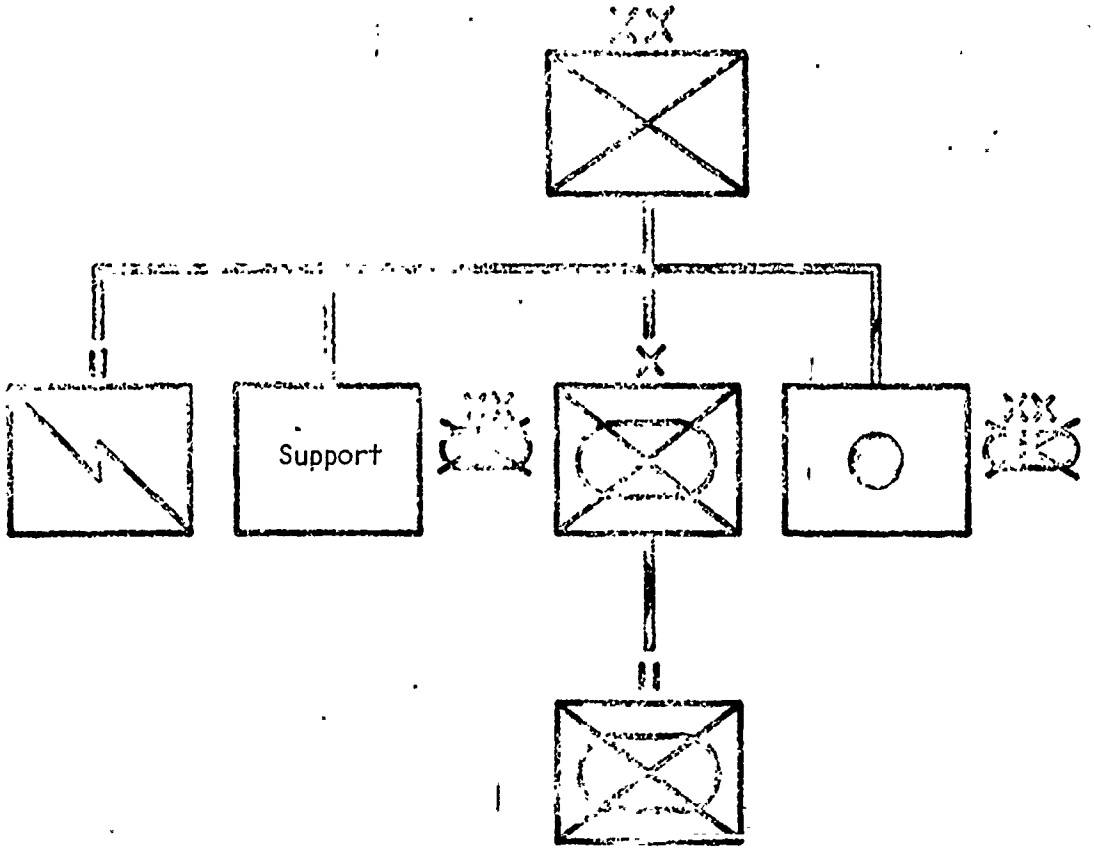


Figure I-4. Organizations evaluated.

(e) Maps, charts, and files used and their accuracy.

(f) Time required to produce major staff outputs.

(g) Time required to recognize traceable events.

(h) Percent of staff outputs requiring clarification.

(i) Elapsed time from information input until information was posted on a display.

(j) Workload capacity, by section.

(k) Available planning time used by division.

(3) The agreed-upon measures of performance (MOP) of a staff organization or a command post in a command post exercise (CPX) environment are listed below:

(a) Performance of listed and unlisted functions.

(b) Accomplishment of stated procedures.

(c) Staff organization.

(d) Staff manning levels.

(e) Physical arrangement of the elements.

(f) Activity levels.

(g) Information flows.

(h) Use of files and reports.

(i) Completeness and correctness of estimates, plans, and orders.

(j) Relative capability of accomplishing the mission from different facilities; e.g., Div Main, Div Alt, etc.

b. The CONOPS conditions to be experienced by the division are summarized in figure I-5. They concerned the following situations:

(1) Normal operations.

(2) Displacement of the Div Main CP.

(3) Deployment of the TAC CP.

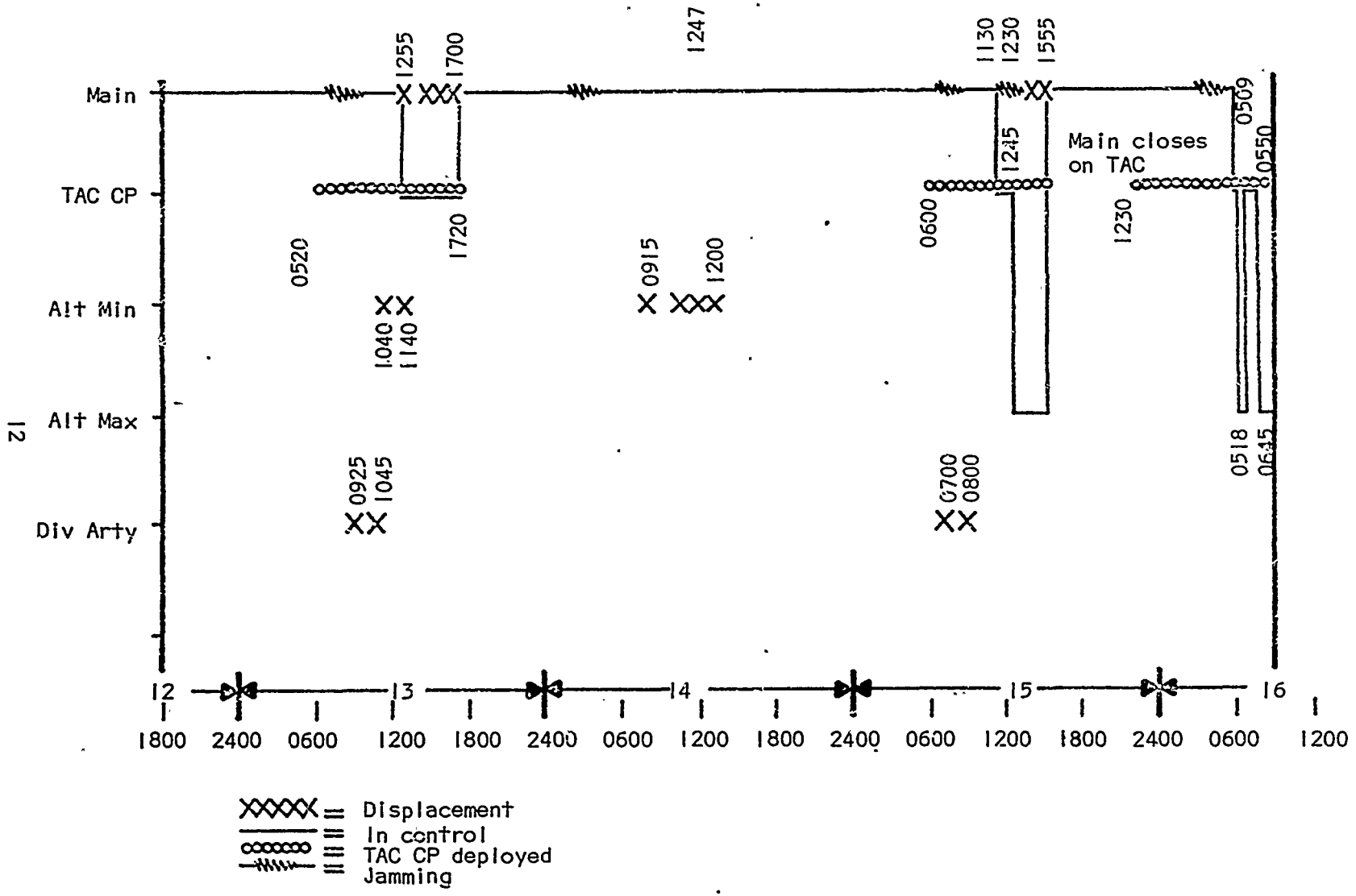


Figure 1-5. CONOPS conditions.

(4) Use of the Div Alt CP.

(5) Change of division control.

(6) Destruction of the Div Main CP.

(7) Jamming of communications means.

c. CONOPS, as defined for purposes of the test, was not just the ability of the commander and the principal staff elements to control subordinate organizations through use of the frequency modulated (FM) radio, but was defined as being a demonstrated ability to:

(1) Control subordinate attached units.

(2) Effectively coordinate and employ the resources available to the division.

(3) Maintain necessary information to portray the current status and posture of the division.

(4) Satisfy the stated information requirements of a higher headquarters.

(5) Constantly be aware of the division's capability to continue or sustain the current mission and to accept a new mission, if required, from the controlling corps.

(6) Develop requisite plans to satisfy contingency requirements.

(7) Maintain information concerning the enemy situation.

d. The defined requirements for CONOPS necessitated that consideration be given to this aspect of military operations from the outset. Development of a staggered work shift for branch personnel assured CONOPS at the lowest level. Within a staff section the staggered work shifts for the elements were sequential to assure sufficient overlap between branches of the section and thereby insure functional area representation at all times. The following actions were considered for CONOPS at the division level:

(1) Requiring echelon displacement of divisional elements.

(2) Deactivating secondary multichannel communications links at the Div Main CP and subsequently reactivating these links as command links at the new main location.

e. Two methods of echelon displacement were planned to demonstrate COMOPS through employment of the division communications system.

(1) Conditions and procedures defined for the first method of Div Main displacement were as follows:

(a) TAC CP deployed and in control during the displacement of the Div Main CP.

(b) Div Main to move in two echelons, advance party and main body, to the new Div Main location and not to close on the TAC CP.

(c) Div Arty designated as the Div Alt CP.

(d) Division multichannel communications reserve constituted by two radio terminal sets. Reserve realized when the Div Alt mission is assigned to Div Arty.

(e) Control of the division may be shifted from the TAC CP to the Div Alt CP, if desired by the commander.

(f) Main CP becomes operational and assumes the control mission from the TAC CP.

(2) Conditions and procedures defined for the second method of Div Main displacement were as follows:

(a) TAC CP deployed and in control.

(b) Div Main to move in one increment to close on the TAC CP.

(c) The 37-man alternate augmentation, operating from a separate location, being designated as the Div Alt CP.

(d) No multichannel communications reserve.

(e) Control of the division be shifted from the TAC CP to the Div Alt CP during the displacement of the Div Main.

f. Two concepts for deployment of the TAC CP were also planned to be evaluated during the test to determine minimum staffing requirements and information needs. The mission of the TAC CP was to maintain information concerning the current mission, operational capability, disposition of forces, and the existing enemy situation. The two concepts are listed below:

(1) The first concept required manning of the TAC CP with command group and coordinating staff members: e.g. the ADC(M), G2, G3, etc., when initially deployed.

(2) The second concept tested did not require the presence of command group and coordinating staff members until just prior to control of the division being exercised from the TAC CP. Personnel manning under this concept was accomplished by lesser grade operations and intelligence personnel until the command group and coordinating staff members arrived.

g. The division alternate command post (Div Alt CP) was defined as a facility, which, upon notice from the commander, would assume and retain control of forces assigned to or in direct support of the division until directed by the commander to relinquish control. The mission of the alternate CP was to maintain information concerning the following:

(1) The current mission, operational capability, and disposition of forces assigned and/or attached to or in direct support of the division.

(2) The existing enemy situation.

h. Three concepts for maintaining a Div Alt CP were planned for the test to determine the minimum staffing requirements and information needs necessary to achieve CONOPS. The three concepts to be evaluated are listed below:

(1) Concept A (Current Doctrine). Div Arty was assigned the mission of Div Alt CP but was not provided additional personnel augmentation.

(2) Concept B. An 11-man augmentation was authorized for the division and was collocated with Div Arty. The responsibility for discharging the mission of alternate rested with the 11-man augmentation and not the personnel of Div Arty.

(3) Concept C. A 37-man augmentation was authorized the division and was used to establish a separate Div Alt CP.

(4) Command group representation to the alternate during concepts B and C was to be realized by assigning three additional personnel from the division TOE (the assistant division commander, his aide, and the driver) to the Div Alt CP. The total operating strength under concept B was to be 14 and under concept C, it was to be 40 personnel.

i. The following information was to be furnished the Div Alt CP.

(1) Teletype messages. The alternate CP was to be included as an information addressee on teletype messages originated by division main, division rear, DISCOM, brigades, Div Arty, separate battalions, and the armored cavalry squadron.

(2) Plans and Orders. The alternate CP was to be furnished written plans and orders that were originated by the organizations listed above.

(3) Reports. Copies of recurring reports required to be forwarded to division by annex Z to the SOP, not previously transmitted by teletype, were to be furnished the alternate CP.

(4) The assistant chiefs of staff section; e.g., G1, G2, etc., at division main would update his counterpart at the alternate CP at least every 2 hours with current operational information. Notification of a negative update would be required.

j. Responsibility for maintaining the information to be received at Div Alt CP during the three concepts to be tested was as noted in figure I-6.

Div Alt Element	Maintained by Concept A	Concept B	Concept C
G1	Div Arty S1	G1 element	G1 section
PM	Div Arty S1	G1 element	PM element
G2	Div Arty S2	G2 element	G2 section
BICC	Div Arty BIC	G2 element	BICC section
SS/EWE	Div Arty S2	G2 element	BICC section
G3	Div Arty S3	G3 element	G3 section
FSE	Div Arty FDC	FSE element	FSE
ADA	Div Arty S3	G3 element	ADA section
USAF	Div Arty S3	G3 element	USAF element
C-E	Div Arty C-E	G3 element	G3 section
G4	Div Arty S4	G4 element	G4 section

Figure I-6. Alternate CP information.

k. To generate requisite data, personnel from an active Army division who were currently performing the duties assigned to staff sections at the division, brigade, and battalion level were used as opposed to the fielding of a composite or provisional type organization that would consist of personnel not currently performing coordinating and special staff duties. Unit integrity was maintained, since staff personnel of the 2d Armored Division assumed the role of members of the 53d Mechanized Infantry Division during the test. The composition of the 53d Division is shown in figure I-7. The standard military symbols depict those elements actually fielded and the hachured symbols depict

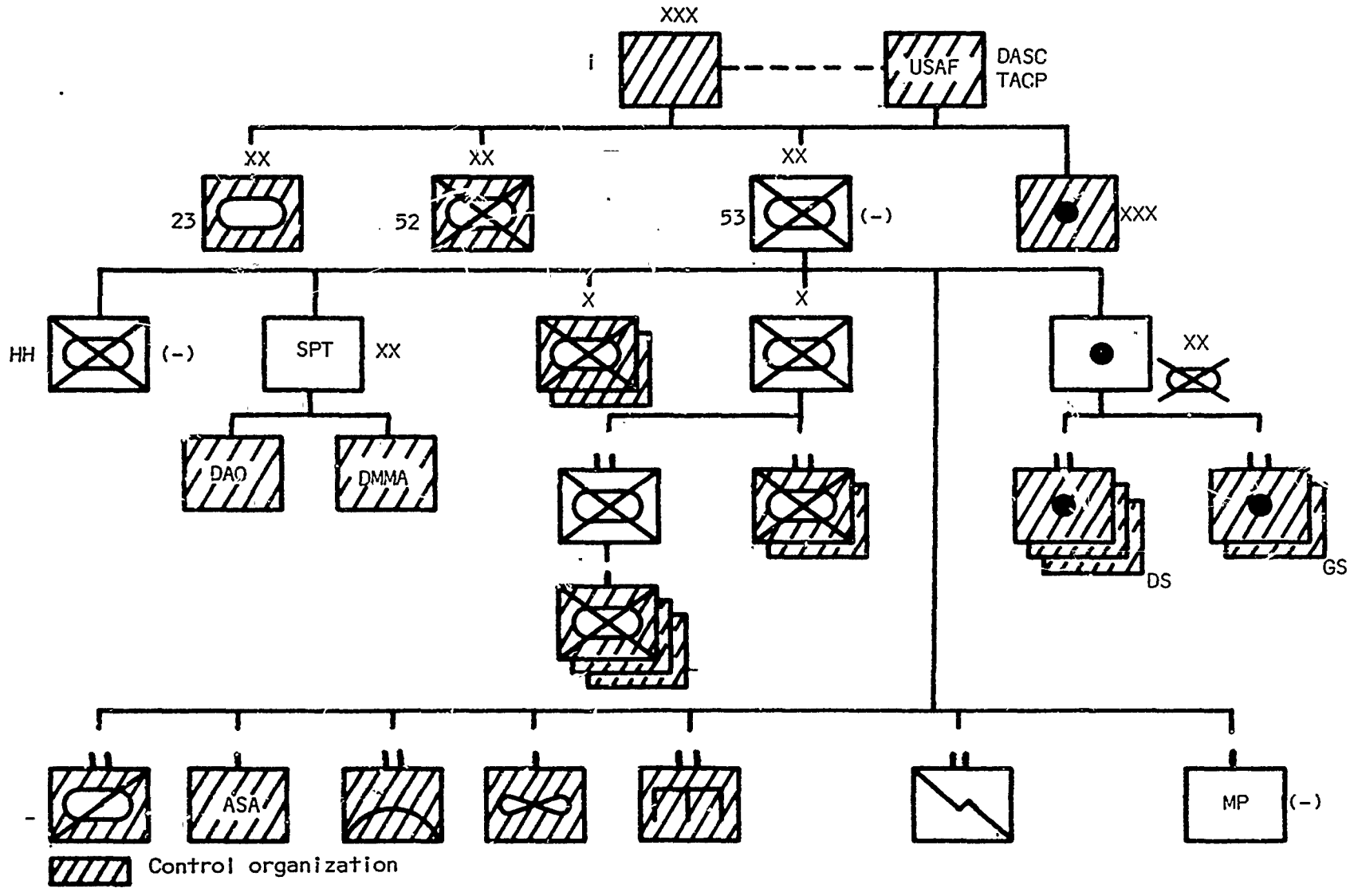


Figure 1-7. 53d Inf Div (Mech).

those elements represented by the control organization. The threat presented to the division was the task organization of the standard Combined Arms Army as shown in figure I-8. Personnel from the control organization and from the 2d Armored Division represented those elements of the division that were not fielded. Other elements of the corps, to include adjacent divisions, were also represented by this organization. When the controller personnel were acting as a subordinate element of the division, they responded directly to requests or tasking from staff element personnel. When the controller personnel acted in the capacity of the corps control organization, they tasked the staff elements of the division. The control organization was housed in a series of ammunition bunkers at West Fort Hood. Evaluated elements of the division were fielded at distances varying from 7 to 30 kilometers (km) from the control organization. Doctrinal communications were used between the control organization and the evaluated elements. Additionally, personnel of the control organization attended briefings and performed liaison functions as required by the evaluated elements. Reports that were required by the division and corps SOP reports annex, were submitted by the control organization.

I. The quantitative data requirements contained in the test objectives and the qualitative and quantitative data requirements expressed in the information needs necessitated the use of two data sources. The quantitative data was to be obtained primarily from personnel of the organizations being evaluated while evaluators were required to obtain necessary qualitative data at the various levels. Figure I-9 defines the data sources by level. The system extends from the commanding general to the shifted personnel of a branch, section, or element. The vertical lines below the section, branch, or element symbol represent these personnel. The section consists of one or more branches or elements. The officer in charge (OIC) of a section (the G1, G2, G3, etc.) is not shifted but works until his current mission is accomplished. An element consists of an OIC and a noncommissioned officer in charge (NCOIC) and other personnel assigned to that functional area who are shifted. Personnel from other coordinating staffs and special staff branches or sections are used to constitute element representation in the TOC as noted by the arrow. An example of element representation is provided in figure I-10. The administrative and operations branches are organic to the G3 section. The plans element is a combined facility that is constituted by representatives from the G2 and G3 section. The FSE, ACE, etc., are constituted from resources organic to other coordinating and special staff agencies and services. In this report the term "element" includes those branches or sections organic to or under the operational control of a coordinating section. The quantitative data sources are identified as being primarily at the element level and secondarily at the section level. The qualitative data sources are primarily at the section level and secondarily at the system (division) level.

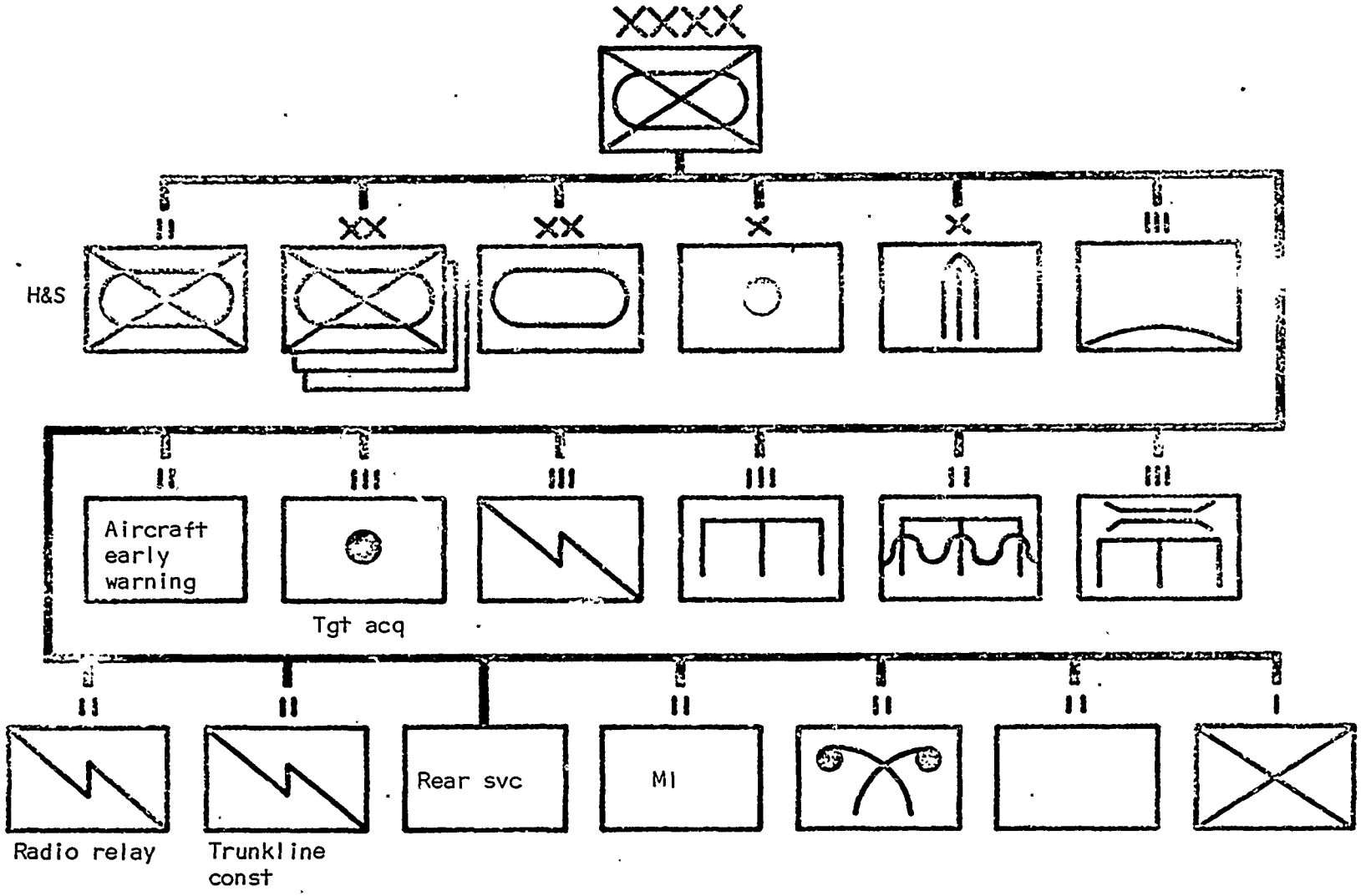


Figure I-8. Combined arms Army.

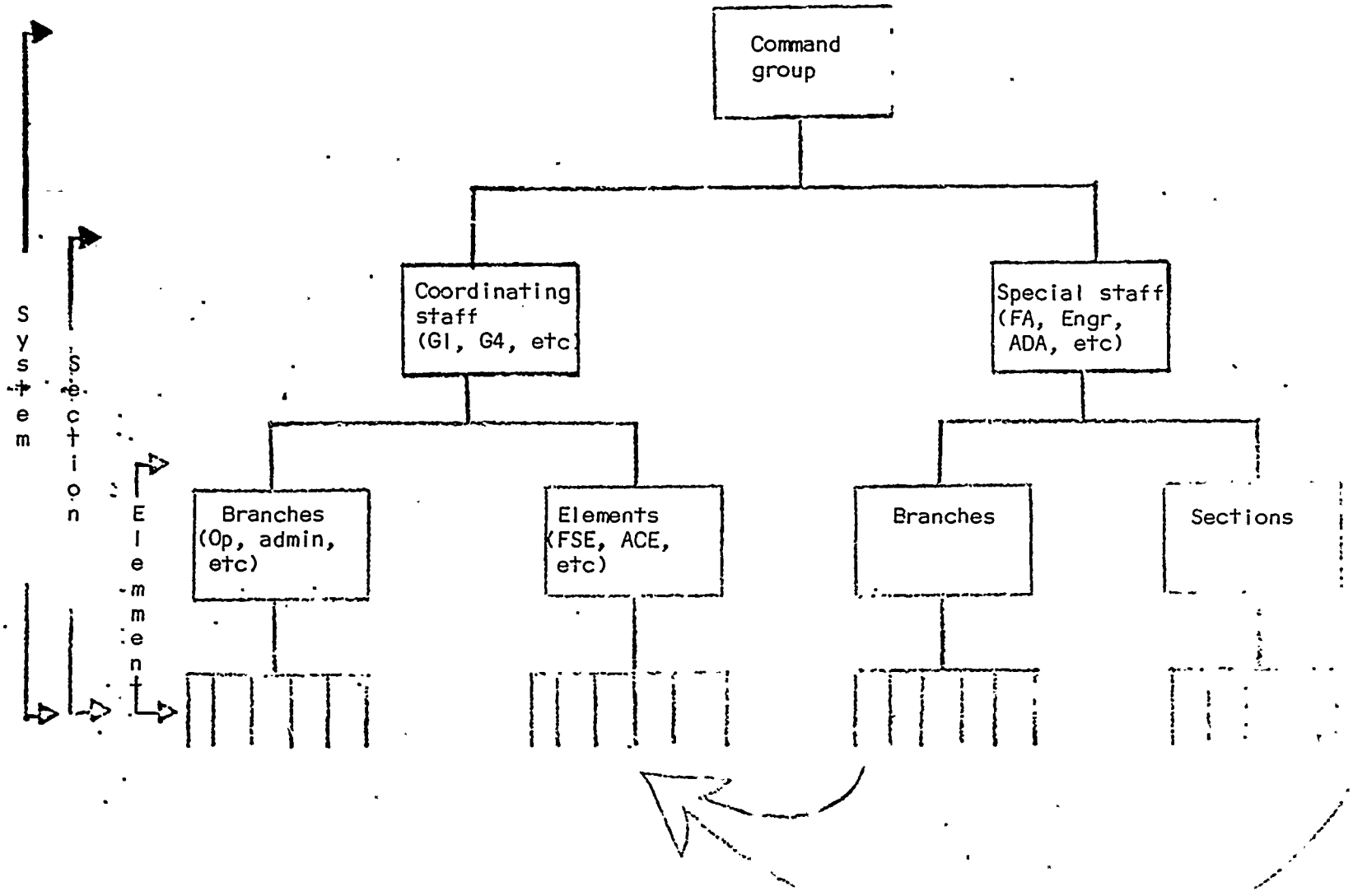


Figure I-9. Data sources.

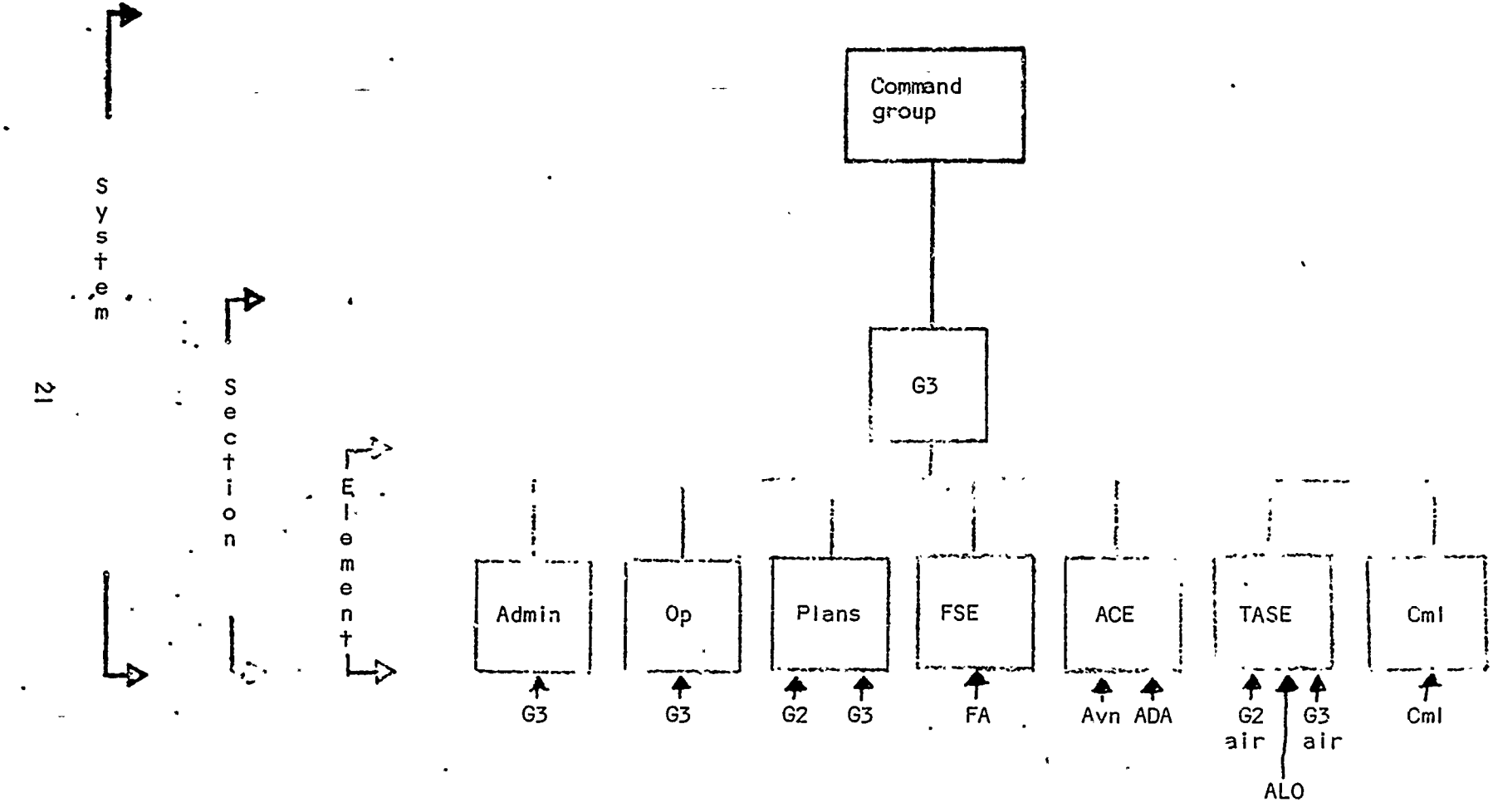


Figure I-10. Element representation.

m. Special evaluators were used at the headquarters, facility, system, section, and element levels. Definitions and examples of these terms follow:

(1) Headquarters: The division, brigade, and battalion CP.

(2) Facility: Div Alt CP and TAC CP, when deployed.

(3) Section: A coordinating staff section; e.g., G1, G2, G3, S-1, S-3, etc., consisting of one or more elements.

(4) Element: A grouping of personnel subordinate or under the operational control of a section; e.g., FSE, TASE, etc.

n. Evaluators were officers and senior enlisted men who were qualified in the functional area they were required to observe and evaluate. The evaluators were divided into three distinct categories as defined in (1), (2), and (3) below. The availability of the evaluator afforded an opportunity to acquire a detailed understanding of the functioning of each evaluated organization to the element level. Additionally, the evaluator could, through observation, determine if the assets available to each section were utilized efficiently, and if the resources available to the division were fully coordinated and used effectively to support the existing mission of the division. The defined categories of evaluators and a general description of their duties follow:

(1) Category I. Evaluators were officers in the grade of 05 and were assigned to the system and section level; i.e., division command group, coordinating staff officers, and command groups of subordinate headquarters. The category I evaluator conducted a functional evaluation of staff and section performance through observations, review of staff outputs, and broad discussions concerning the current situation. He directed and supervised the activities of subordinate category II and III evaluators.

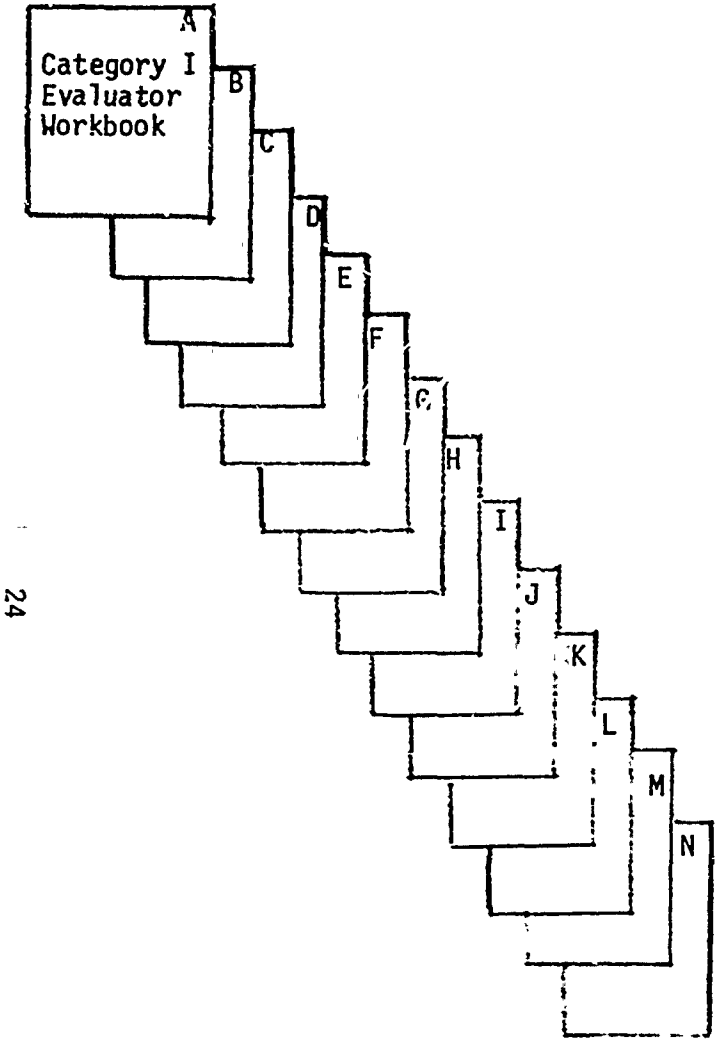
(2) Category II. Evaluators were officers in the grade of 02, 03, and 04 and were assigned to the section or element level. The category II evaluator conducted an evaluation of the total performance of one or more selected staff sections or elements, recorded staff performance data as appropriate, conducted detailed discussions with section personnel concerning section activities, and supervised the activities of subordinate category III evaluators.

(3) Category III. Evaluators were NCO's in the grades of E5, E6, E7, and E8 and were assigned to the section or element level. The category III evaluator collected data from selected charts and maps, prepared interior tent and vehicle layout diagrams, and recorded changes in location of personnel and equipment as various elements of the section displaced to new locations.

(4) The communications support provided by the corps and division signal battalion was not required to be evaluated; however, it was essential that the communications established be in accordance with the TSP and that the service provided be recorded for subsequent review as to the effect on CONOPS. Therefore, special communication evaluators were positioned at each major signal facility (Div Main, Div Alt, Div Arty, TAC CP, player brigade and battalion, and the control organization headquarters) to obtain detailed data on the communications support provided, on who provided it, and on how much it was utilized.

o. Evaluators completed questionnaires or data collection forms on a daily basis, and category I and II evaluators rendered a final report at the conclusion of the test. Quantifiable data contained in the category I and II evaluator daily questionnaires were extracted manually at the Field Test Center, Data Reduction Facility. Qualitative type data-form questions with supporting rationale for responses made by the evaluator were reviewed, and the questionnaire was then placed in an evaluator workbook for use by the evaluator when he prepared his final report. The evaluator workbooks provided a capability to quickly and easily render a final report on observations made during the test. The outline of the evaluator workbook is shown in figure I-II. The data collection forms, which the category III evaluator completed daily, were entered into an automatic data processing equipment (ADPE) data base for reduction and posttest analysis and evaluation.

p. To acquire requisite quantifiable data to satisfy the questions to be answered as a result of the test, an additional data source was defined. The source was personnel of the evaluated organizations fielded. Player questionnaires were completed daily by shifted personnel assigned to a staff element. The questionnaire concerned quantifiable type information that pertained to hours worked, time expended in performing functions during different conditions, use of files and preparation of reports, workload density, etc. Staff element officer in charge (OIC) and noncommissioned officer in charge (NCOIC) of shifted personnel completed an additional questionnaire on a daily basis. This questionnaire concerned conditions of normal operations, displacement, TAC CP deployed, Alt CP conditions, and main CP destroyed. At the conclusion of the test, selected staff element personnel submitted a player end-of-test questionnaire. This questionnaire afforded these personnel the opportunity to submit narrative type comments concerning the design, conduct, and execution of the test. Coordinating staff members, i.e., the G1, G2, G3, G4, completed a player questionnaire daily. The questionnaire concerned the same conditions of displacement, TAC CP deployment, etc. They also completed a player end-of-test questionnaire. Members of the command group either completed a player end-of-test questionnaire or were orally debriefed by their counterpart category I evaluator.



A End of test procedures
B-E CAT I daily (days 1,2,3,4)
F CAT I report (blank)
G Question correlation guide CAT I report to CAT I daily
H Problem sheets (evaluator and player initiated which reach CAT I level)
I Problem sheets (controller initiated, pertaining to system)
J Controller reports applicable to section
K Question correlation guide
L Player end-of-test questionnaire 1 (completed by counterpart) or senior officer debriefing report
M Player daily questionnaire 1 (section members of command group)
N Player daily questionnaire 2 (from applicable counterparts)

Figure I-11. Evaluator workbook.

q. Quantifiable data concerning the accuracy of displays and update time of both friendly and enemy situation maps was obtained through the use of questionnaires that were completed by the category III evaluator. Figure I-12 indicates the type data with respect to the enemy situation that was collected by these senior enlisted personnel. For example, at the evaluated battalion, the evaluator recorded within the area of operations of the battalion, to a depth of 10 kilometers, all symbols portrayed on the enemy situation map. Simultaneous with this effort, the brigade evaluator recorded similar information to a depth of 20 kilometers for the evaluated brigade. Meanwhile, at division, the category III evaluator accomplished the same mission to a depth of 30 kilometers. That 30-kilometer rectangle became the area of operations, influence, and interest of the division. Data from charts was collected by the sampling method (fig I-13). The columns most subject to change from pertinent predefined charts within the division were copied, recorded, and entered into the ADPE data base. In figure I-13, the "assigned strength" and the "killed in action" columns were the most subject to change on the unit strength chart recommended for data sampling.

r. CP vulnerability data was obtained through use of the OV-1D Mohawk aircraft and its attendant surveillance systems. Two OV-1D aircraft were used to determine CP vulnerability during the test. An OV-1D aircraft, equipped with an infrared (IR) detecting system and downward looking aerial camera loaded with black and white film, overflew the various CP's while operating both systems simultaneously. This allowed the vulnerability of the CP to IR detection techniques to be compared to its vulnerability as a result of interpretation of the black and white vertical imagery. The other OV-1D overflew the CP within minutes after the first aircraft completed its mission. This aircraft was also equipped with a downward looking aerial camera; however, camouflage detection (CD) film was used for this second vulnerability recording effort. The CD imagery provided a means to determine the vulnerability of the CP to a third technological means of aerial surveillance. Additionally, this second aircraft was equipped with a forward-looking, nose-mounted, panoramic camera. After the second aircraft completed its CD film run, it overflew the CP at an altitude of 50 feet above ground level and exposed the film contained in the panoramic camera. This film assisted in determining the silhouette vulnerability of the CP to visual observation.

s. The nature of many of the information needs contained in the CPOT, especially those relating to objectives 2 and 3, required that performance data be collected at fairly precise times during the test. These data measurement times were event-keyed and predefined. Chart data were recorded every 6 hours. Friendly and enemy situation map data were keyed to CONOPS conditions (fig I-5), and data from these situation maps were recorded

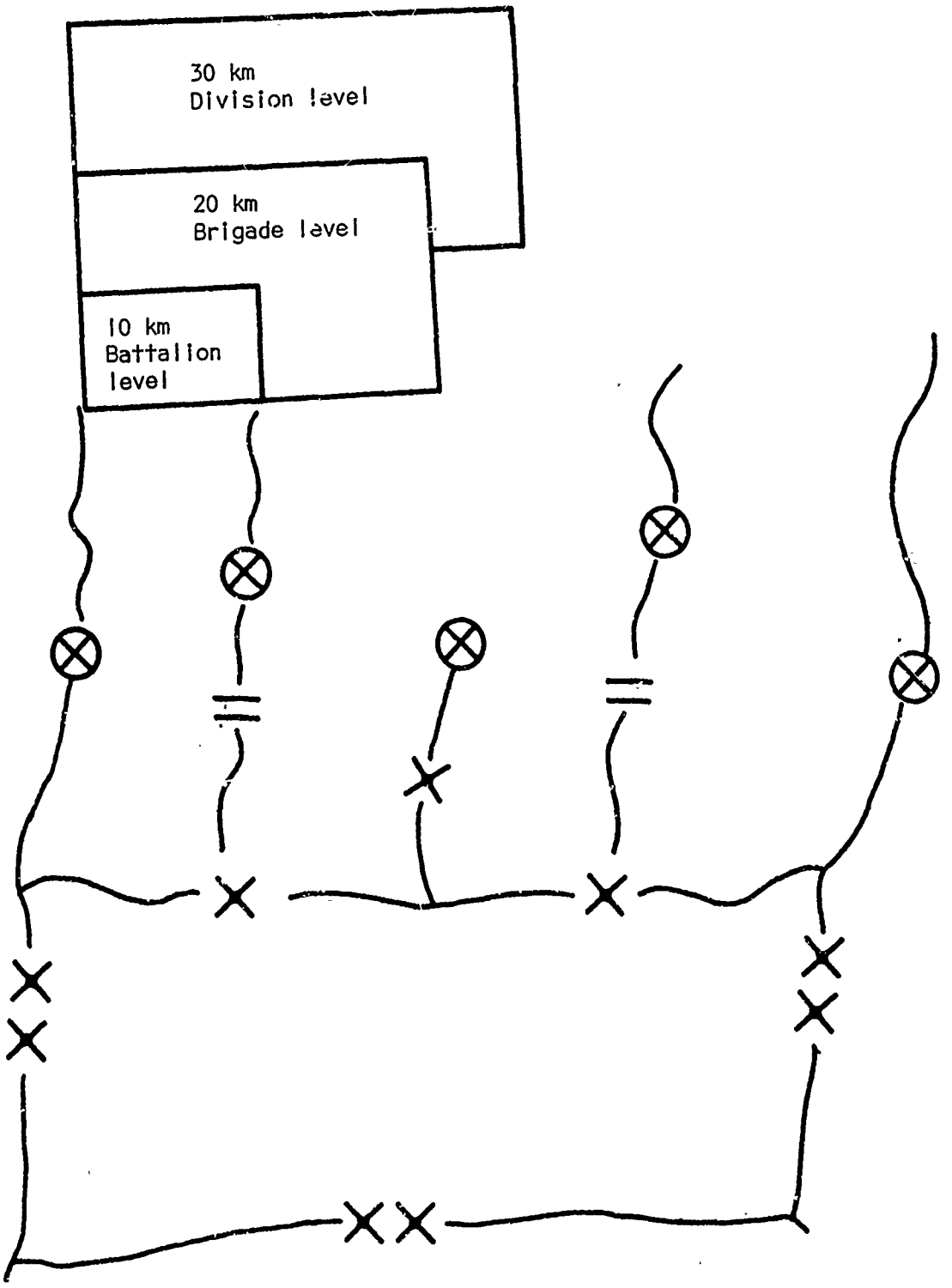


Figure I-12. Enemy situation data.

Unit	Auth	ASG	Duty	KIA	WIA
1st Bn, 41st Inf	542	542	542	0	0
2d Bn, 41st Inf	542	320	320	98	124
1st Bn, 67th Armd	675	650	650	0	0
2d Bn, 67th Armd	675	600	600	70	5

Figure I-13. Unit strength chart.

at the times indicated in figure I-14. Established information needs also required that time data concerning staff delay, recognition, and reaction times be furnished. The sampling method was selected to satisfy these information needs. The TSP did not define any criteria by which to measure the relative utility of the time data to be collected. To bridge the gap between the TSP and an understandable final report, criteria for information needs by staff element and reaction times in response to these information needs was developed by merging the information contained in two previous studies published by the Combat Developments Command (CDC). Information needs from company to corps are contained in *Refinement of the IBCS Concept, IBCS-Phase 1 Final Study,* ACN 16881, dated April 1971. The staff reaction time by echelon of command to a given condition was defined in the *Commander's Surveillance and Target Acquisition Information Needs (CSTAIN)* (U), dated 1 September 1972. Analysis of information contained in these two studies resulted in staff reaction time being defined as "the time that elapses from the recognition of an event until positive action is taken with respect to the event." The average staff reaction time for the division staff was identified as being 58 minutes while the average for the corps level staff was 63 minutes. This time criteria was applied to scenario events that were generated during the test. Selected and tactically logical situations were injected and measured with respect to this CDC established criteria. The information needs to be injected were divided into two categories for each level of command. These categories concerned the friendly posture and the existing enemy situation presented to the command.

t. The information needs injected by the test control organization are listed below:

(1) Division level.

(a) Friendly.

1. Changes in political constraints.

2. Changes in status of fire or close air support (CAS) priority.

Measurement number	DTG	Measurement number	DTG
1	121900	15	150100
2	122300	16	150630
3	130530	17	150930
4	130830	18	151230
5	131136	19	151530
6	131430	20	151830
7	131730	21	152130
8	132030	22	160230
9	132330	23	160330
10	140730	24	160430
11	141230	25	160530
12	141530	26	160630
13	141830	27	160730
14	142130	28	160830

Recapitulation by condition

Measurement number	Condition
1-5, 7-17, and 20-24	Normal operations
6-7 and 18-19	During displacement
6, 18, and 25-26	TAC CP in control
19, and 27-28	Alternate in control
25	Main destroyed
26	TAC CP destroyed

Figure I-14. Data measurement times.

3. Loss of unit combat effectiveness of a battalion-size or equivalent force; includes loss of direct support (DS) and general support (GS) elements, both maneuver and support.

4. Notification of intent to escalate, or likelihood of escalation, to high intensity conflict.

5. Strength, location, and operational posture of forces down to battalion level - includes DS and GS units.

6. Changes in status of major organic items.

7. Class III and V status.

8. Priority of fire and CAS.

(b) Enemy.

1. Major contact or withdrawal of battalion-size or larger force.

2. Change in location of battalion-size or larger unit.

3. Sighting of battalion-size or larger force.

4. Employment of chemical, biological, and radiological agents.

5. Appearance of nuclear fire support weapons.

6. Location, strength, and identification of unit in contact and capability of enemy units to reinforce and support.

7. Current operational posture of forces.

8. Significant changes in logistic capabilities.

(2) Corps level.

(a) Friendly.

1. Changes in political constraints.

2. Changes in status of fire or (CAS) priority.

3. Loss of unit combat effectiveness of a brigade-size or equivalent force; includes loss of DS or GS elements, both maneuver and support.

4. Notification of intent to escalate, or likelihood of escalation, to high intensity conflict.

5. Strength, location, and operational posture of forces down to battalion level - includes DS and GS units.

6. Changes in status of major organic items.

7. Class III and V status.

8. Priority of fire and CAS.

(b) Enemy.

1. Major contact or withdrawal of regimental-size or larger force.

2. Change in location of brigade-size or larger unit.

3. Sighting of brigade-size or larger force.

4. Employment of chemical, biological, and radiological agents.

5. Appearance of nuclear fire support weapons.

6. Location, strength, and identification of units in contact and capable of reinforcing and supporting.

7. Current operational posture of forces.

8. Significant changes in logistic capabilities.

u. A type example of an information need which concerns the enemy situation and requires a response by several staff sections can be illustrated and more clearly understood by referring to figure I-15. The information need of the G2 section is, in reality, an essential element of information (EEI) which is shown on the collection worksheet and is known to all subordinate elements of the division. The information need of the G3 section is not limited in scope and includes the requirement for understanding, and subsequently posting on a situation map, the location of all hostile battalion-size or larger organizations in the division area of operations, interest, and influence. The fire support element (FSE) and Div Arty information needs, in this example, are the same and are necessary for the development of target lists and for inclusion in the fire support plan in the event escalation to a higher level of conflict is considered.

v. By using the sampling method previously described to gather data during the test, it was possible to measure for each staff section the time the event was available for recognition, the time it was recognized, and the time positive action was taken with respect to the event.

w. Approximately 181 such traceable events were injected during the test to develop requisite data for all staff sections and to answer the information needs as stated in the CPOT. Collection of data pertaining to staff reaction times and traceable events was the responsibility of the category I and II evaluators, and quantitative data pertaining to these events are included in part III of this report.

x. Data concerning communications was collected through the use of special evaluators and resources available from the US Army Security Agency (USASA). The division communications configuration fielded was essentially that defined in the TSP as modified by recommendations resulting from the intelligence processes workshop. Figure I-16 lists the single channel (FM, AM, UHF) radio nets to be employed. The multichannel concept required to be simulated during the test is portrayed schematically in figure I-17.

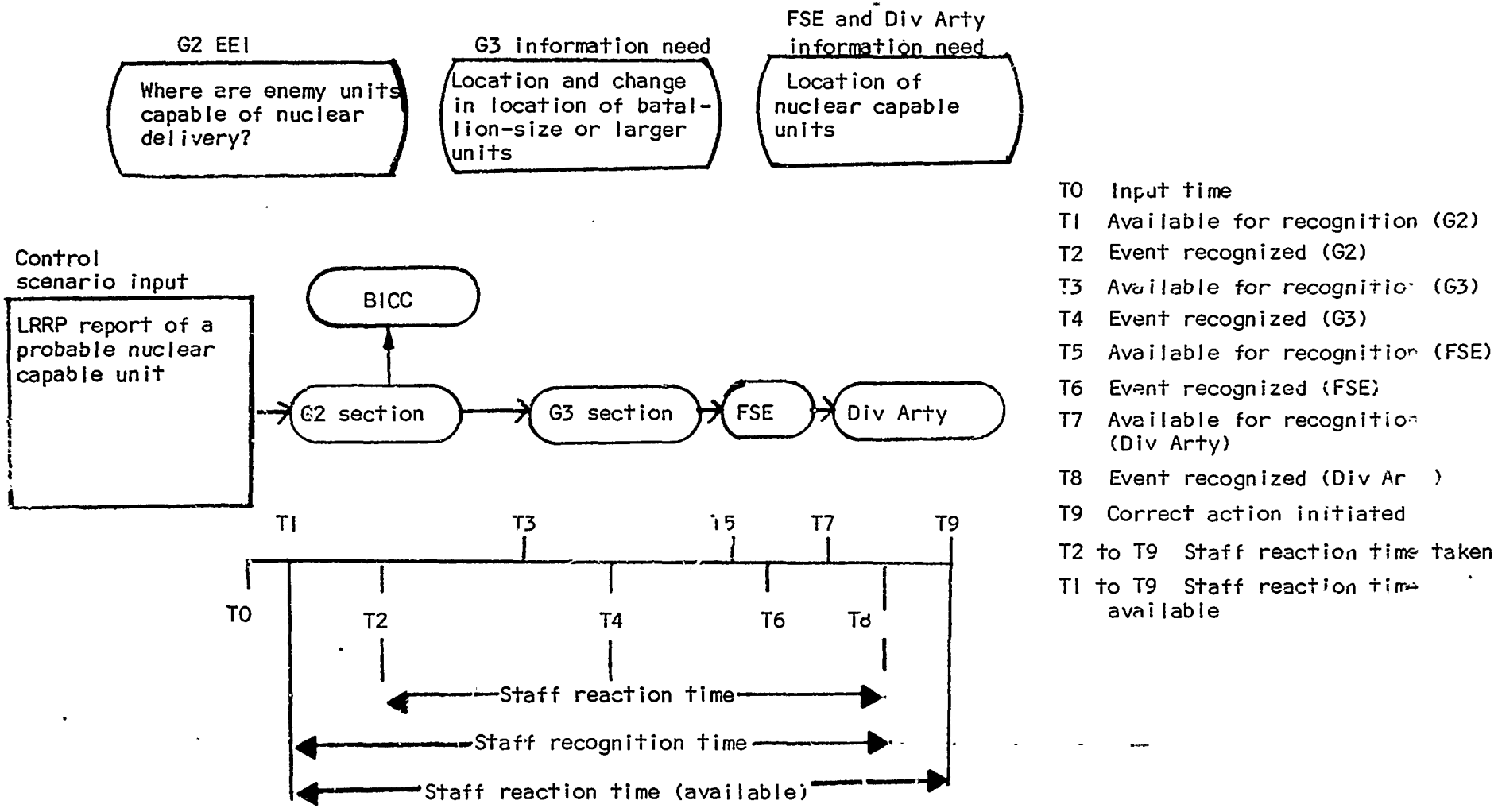


Figure I-15. Information needs and traceable events.

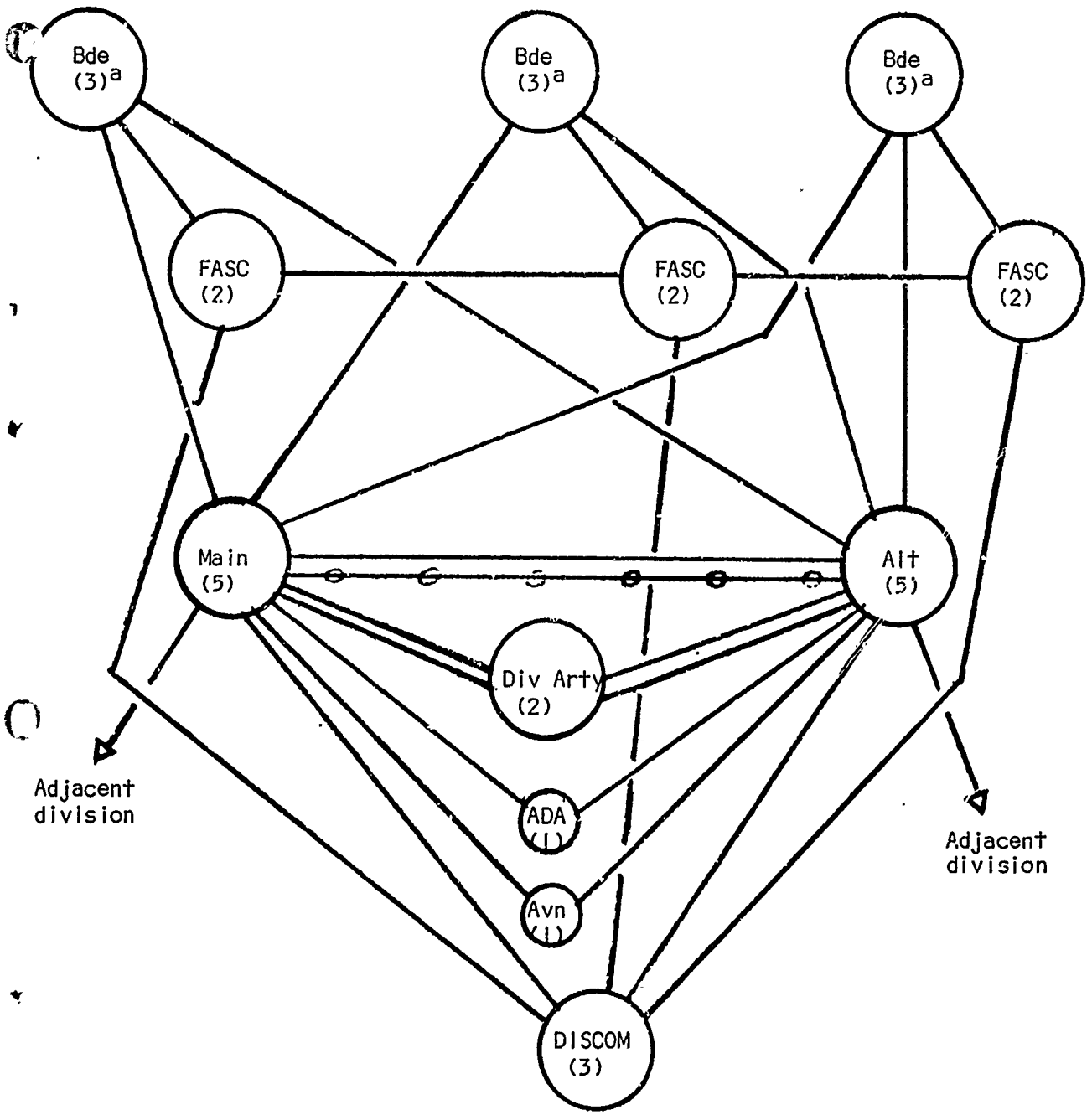
Command	FM, AM, UHF nets			
	FM	AM (voice)	AM (RATT)	Air Force net
Division	Cc manding general comd	TOC	Corps comd	Air request (AM)
	Intel		Op	Air direction (UHF)
	Air trf con		Admin and log Intel (BICC)	
Div Arty	Comd and fire		Corps Arty FD	
	Admin and intel		Comd fire 1	
			Comd fire 2	
Brigade	Comd		Bde RATT	
	Intel			
	Admin and log (AL)			
DISCOM	Spt comd			
Battalion (player)	Comd			
	AL			
	Gnd survl			
ADA battalion	Comd	AD liaison		
DS arty bn (Player bde)	Comd and fire			
	FD			

Figure I-16. Single channel radio nets.

(1) Multichannel data. Multichannel data was collected at each communications node. Evaluators at the division main systems control (SYSCON) and the division alternate technical control (TECHON) used forms specifically designed to record the complete history of each system and circuit from initial activation until the termination of the test. Multichannel logs were maintained at all locations and the data was used to further verify the records maintained by the evaluators at SYSCON and TECHON.

(2) Radio teletypewriter (RATT) percentage of utilization data and station availability data were centrally collected at the control organization location. RATT station availability was further substantiated from communication logs which were reviewed daily by evaluators at each location. Quantitative RATT data is contained in part III of this report.

(3) FM and AM voice radio data. USASA support personnel monitored all FM and AM voice nets with tape recorders. The reduced data for each net is contained in part III of this report.



*AN/TRC-145 terminals authorized by TOE 11-35H - 33
AN/TRC-145 terminals required to be operational for this configuration - 33

[a]One terminal for displacement (Jump) capability.

LEGEND

( ) No of terminals required
12-channel radio system
12-channel cable system

Figure 1-17. Multichannel concept simulated.

(4) Communications center teletypewriter data. Percent utilization and circuit availability were effectively recorded on all teletype circuits at the division main, alternate, and control organization locations. Quantitative teletypewriter data is contained in part III of this report.

(5) G2 point-to-point voice circuits. Tape recorders were used by evaluator personnel to monitor the G2 point-to-point circuits. The reduced data for each circuit is contained in part III of this report.

(6) Electronic warfare (jamming) data. Throughout the test, the USASA support personnel effectively jammed portions of the test division's communications. A recapitulation of their activities, including the estimated success, is contained in part III of this report.

y. The data collection effort resulted in the development of a quantitative and a qualitative data base. Figure I-18 depicts how the data sources were used to fill the two data bases. The numbers next to an arrow emanating from a level approximate the percent of data base fill from that source.

z. The quantitative and qualitative data bases provided a means to complete development of the detailed evaluation plan and pattern of analysis. Figure I-19 defines the relationship of the agreed-upon measures of performance (MOP) to the summarized information needs and equates these to the evaluated topic areas at the element, section, and system level. Figure I-20 depicts the four step analysis process followed for each of the topic areas. Figure I-21 shows an example of a pattern of analysis developed to provide information concerning the adequacy of the Organization and Functions Manual (OFM). Patterns of analysis for each of the topic areas are contained in part III of this report.

I-5. Scenario Development. The building block concept was used during scenario development. A friendly concept of operation was developed which satisfied those tactical activities required during the test. Maneuver elements of the division, down to the platoon level, were represented as being on the ground and arrayed in consonance with current doctrine for a mechanized infantry division in the defense. Control time lines were developed in consonance with the desired scheme of maneuver and the terrain. Based on the friendly concept of operation and the control time lines, an aggressor concept of operation was developed, and aggressor forces were deployed facing friendly forces in consonance with aggressor tactical doctrine. Four-hour time lines were used as guidelines for subordinate controllers to determine the rate of advance they should portray to player staffs and as guidelines

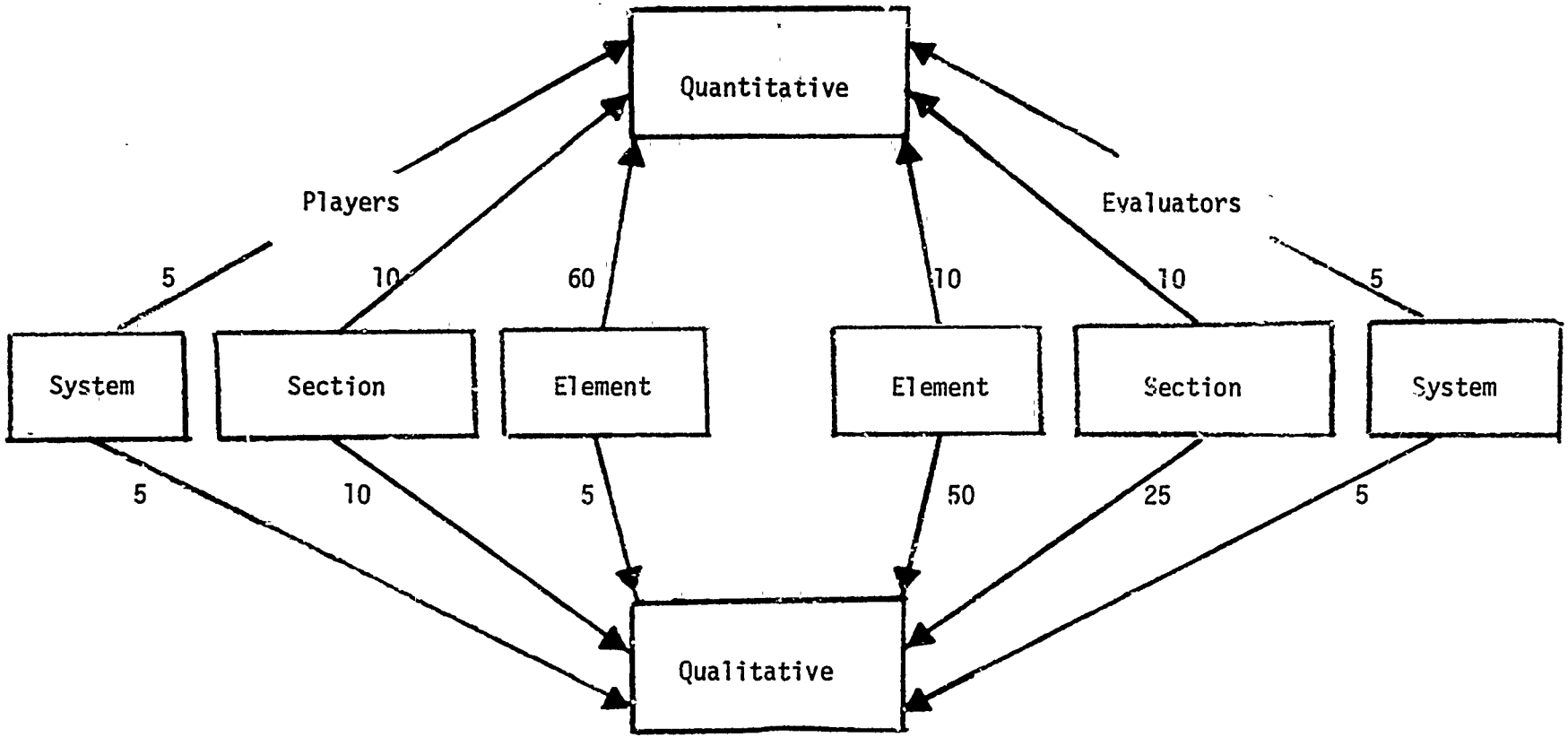


Figure 1-18. Data base sources.

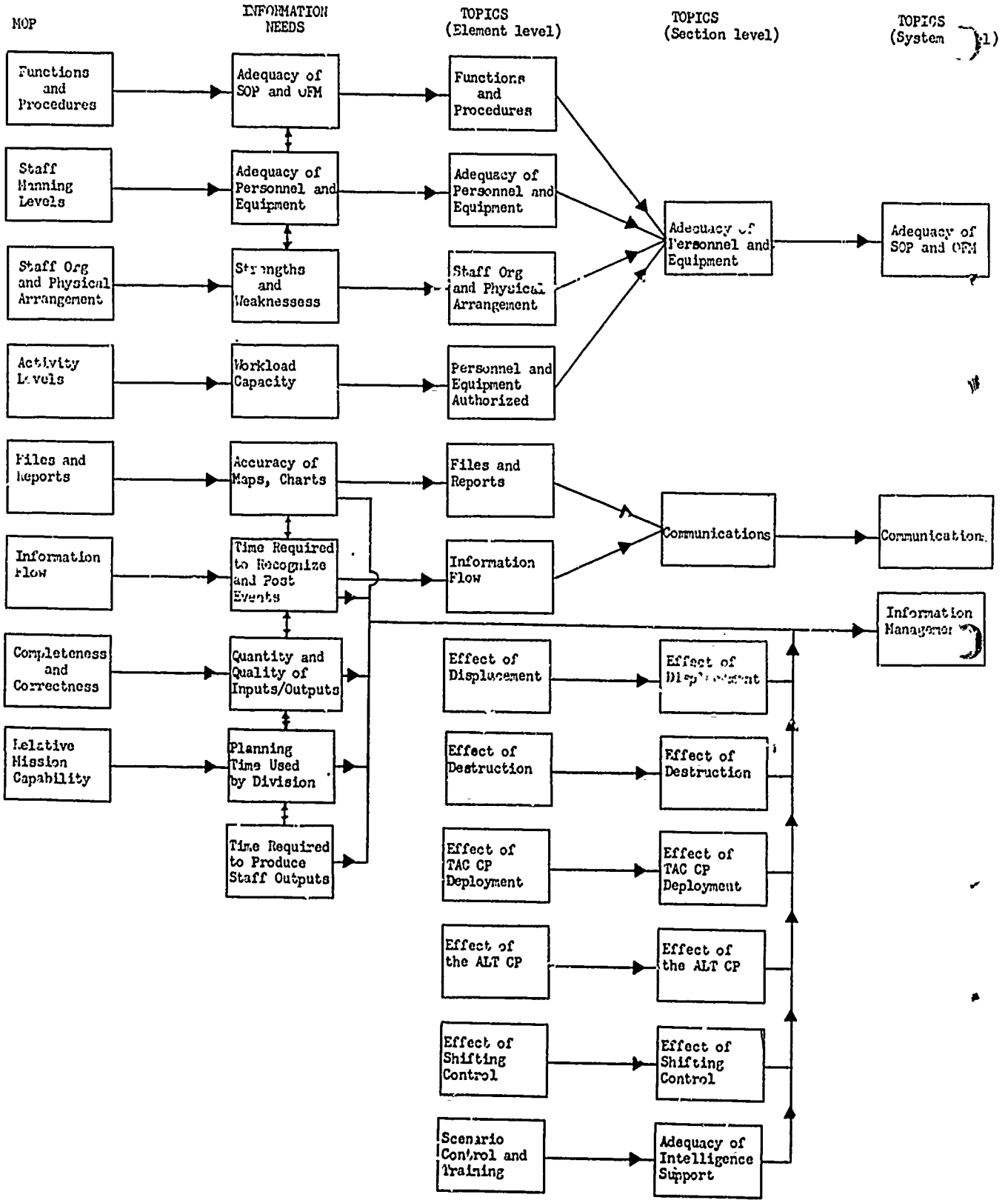


Figure 1-19 Relationship of topic areas.

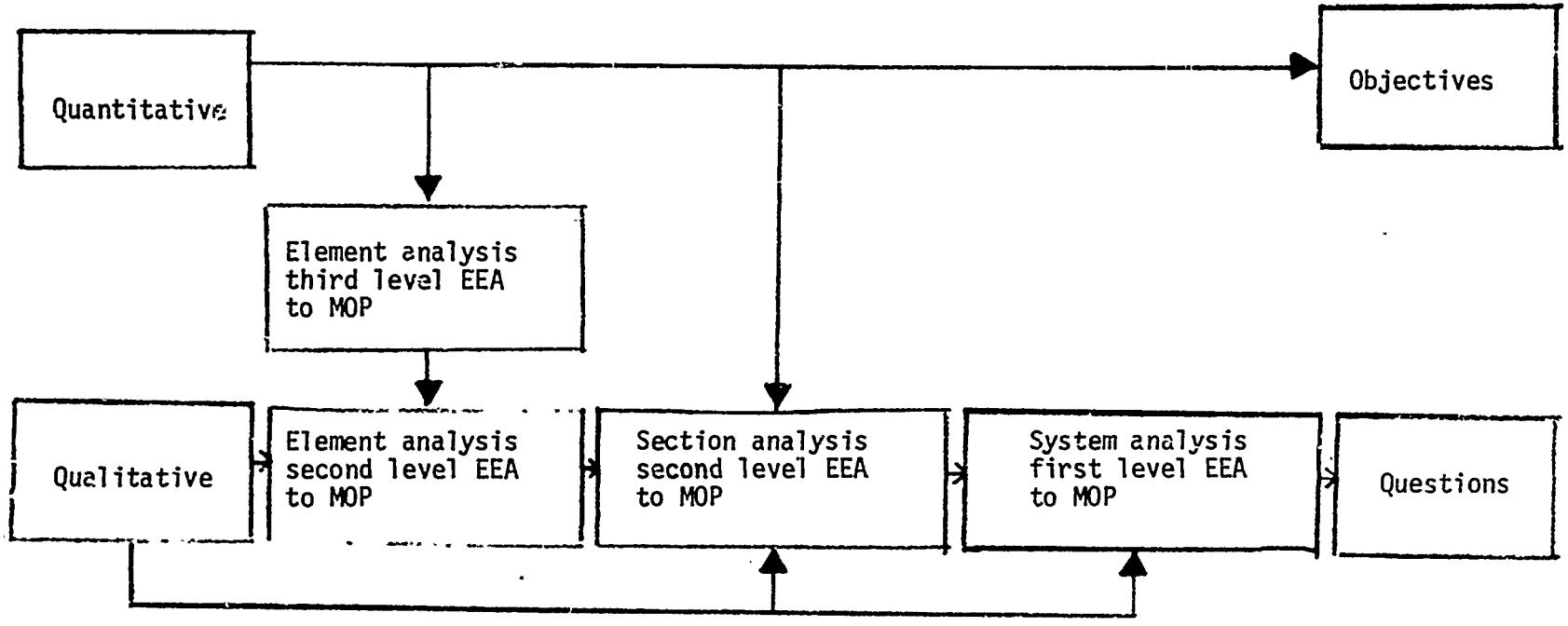


Figure 1-20. Four-step analysis process.

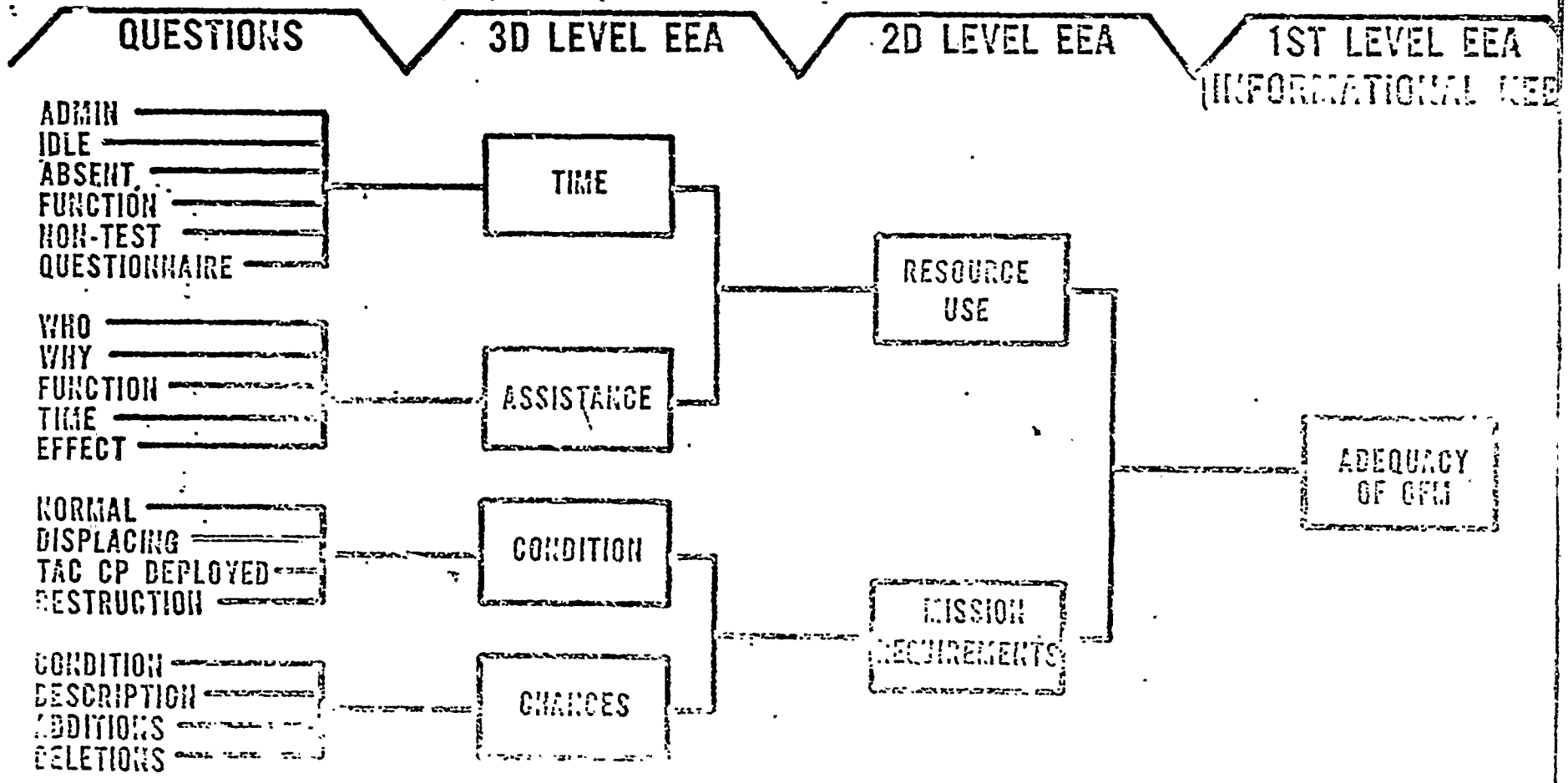


Figure 1-21. Example of [illegible] analysis.

for the aggressor controller in the maneuver of aggressor elements. If friendly player organizations employed tactics which could defeat the aggressor combat power in a sector, time lines were adjusted to allow more rapid advance. If friendly organizations failed to exert necessary combat power in a sector, time lines were retarded to slow rates of advance. Casualty rates and equipment losses were used to assist in slowing or advancing rates of advance. The controlled density scenario caused the evaluated organizations to react and perform the functions for which they were responsible. The scenario generated sufficient events to cause the staff to operate in under-capacity, within-capacity, and overcapacity modes when elements of the division were conducting simulated offensive and defensive operations in a mid-intensity European type environment. The evaluated organizations were not furnished a scenario outline but were given a mission, assigned an area of operation, furnished with task organization and/or task force information, and provided a corps operations order prior to the test. The control organization responded directly to actions initiated by the evaluated organization through the simulation of tactical operations against an identified threat. This method of scenario execution required the staff elements at each level of command to act or react to the scenario events presented. The detailed scenario covered approximately 87 hours of continuous military operations and was subdivided into 4-hour operational blocks or periods. This manner of operation afforded the opportunity to obtain information necessary to measure the reaction of the various staff elements to the presentation of significant as well as routine information and to tactical events.

I-6. Training.

a. Development and use of reference material. In coordination with representatives from TRADOC, and based upon the contents of the TSP, baseline SOP and organization and functions manuals (OFM's) were developed for use by player personnel during the test. The SOP that was developed for evaluation during the test concerned staff organization and procedures and reports required and the frequency of their submission. Displacement procedures and organization and functions of the TAC CP and alternate CP were also defined. The OFM depicted the organization of each element tested and defined the major functions assigned to each of these elements. The procedures to be performed to satisfy the functional work statement were also defined in the OFM. Separate OFM's were developed for each of the evaluated organizations elements, and personnel of these organizations were trained on the use of the SOP and OFM that pertained to their element. Charts, files, and samples of completed reports that were to be submitted by the staff elements were contained in the reference material provided. As part of the pretest preparation, charts to be maintained by the staff elements were

made and printed in quantity for use by the staff elements. File folders were also acquired, labeled, and furnished to the staff elements for their use. Approximately 10 days of data were contained in the files to permit the evaluated organizations to commence the CPX with a fully loaded data base. The background data contained in the files issued to the staff elements was prepared by MASSTER personnel in consonance with the scenario and included such reports as the intelligence summary, situation report, personnel daily summary, unit strength, unit status, and the division critical items list, etc.

b. Instruction presented.

(1) Personnel of the evaluator and controller organizations received approximately 40 hours of conference, classroom, and practical exercise instruction. On-the-job training was conducted in the field during the 72-hour pilot test that preceded the actual test. Remedial training was conducted on an individual basis during a 1-week period between the pilot test and start of the actual test. Data reduction personnel received approximately 80 hours of combined instructions with emphasis on practical exercise.

(2) Player personnel received approximately 14 hours of conference and classroom instruction. Prior to the test, a prepilot, or "warm-up" exercise, was conducted by the division. Personnel assigned to the division were used. The scenario executed during this 48-hour training period was based on involvement in a mid-intensity European-oriented type environment. The purpose of the exercise was twofold; first, to afford personnel of the division the opportunity to become familiar with the organizational differences between the current H-series TOE and that organizational concept to be evaluated during the test. Second, to become familiar with the displacement and destruction, or CONOPS, portion of the division field SOP to be followed.

Section III. TEST EXECUTION

I-7. General. The test was planned and executed as shown in figure I-22.

I-8. Scenario and Control. During the test week, an 87-hour scenario was executed. Problem play commenced on Monday, 12 November, at 1800 hours and terminated on Friday, 16 November, at 0900 hours. On the first day of the CPX, elements moved from garrison locations and occupied facilities in the field and were prepared to conduct operations at 1800 hours that day. At 1900 hours the division received a corps order to conduct an attack. The task organization of the corps had been provided previously, and the division could request the use of these additional assets when required. Requests from the division to corps for these additional assets were not granted routinely; however, they were

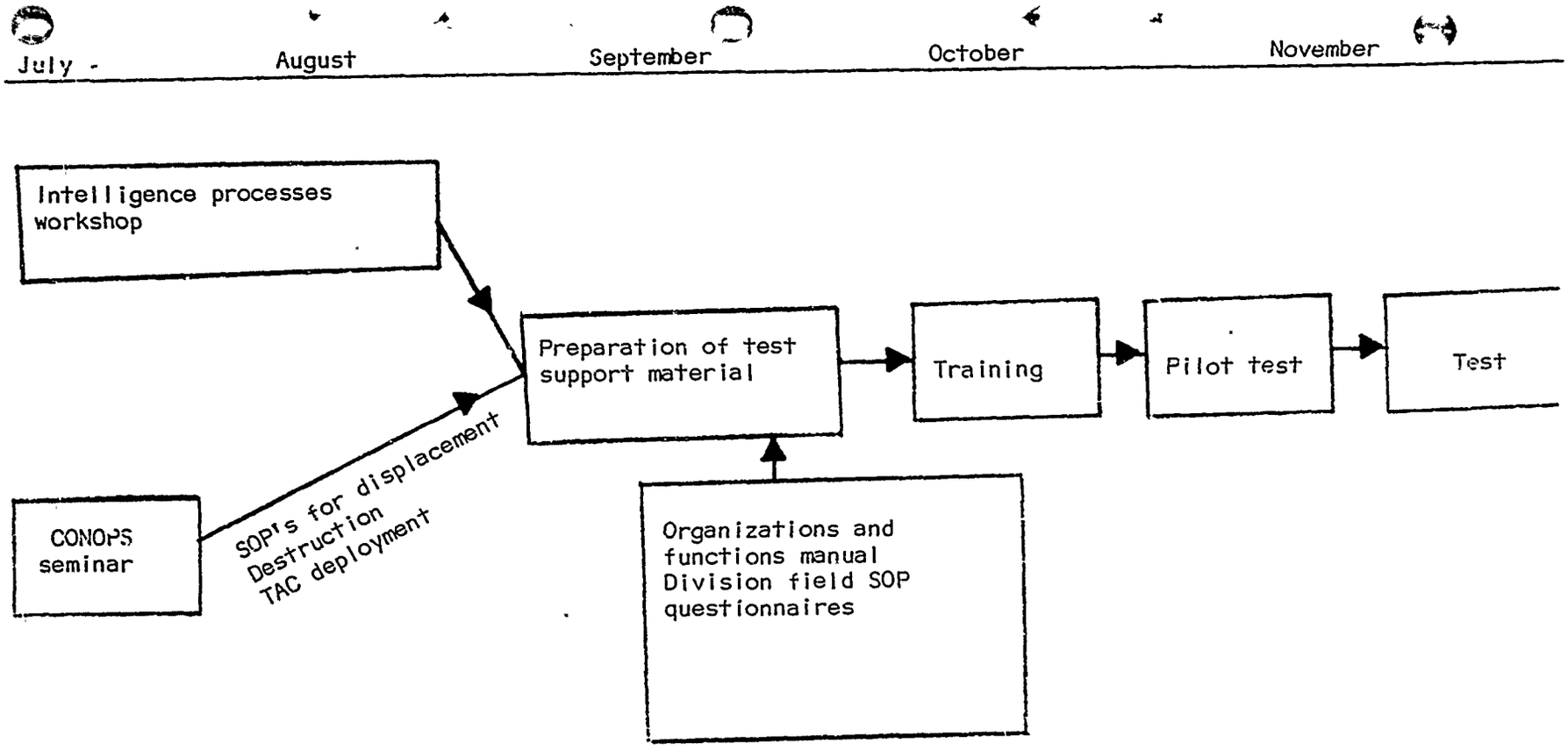


Figure I-22. Test planning and execution cycle.

considered in view of the current mission of the corps and the threat then being presented to the other two divisions attached to the corps. This realistic use of corps assets caused the division to be selective in its requests to corps for additional assets and to be prepared to justify why these additional assets were required in the time frame requested.

I-9. CONOPS. The conditions of displacement and destruction and the use of alternate CP facilities were evaluated. The communications means used and method of displacements and TAC CP deployments are discussed in paragraph I-10. The effect of these conditions on other elements of the division is contained in part III of this report.

a. Continuity of command and control during the displacements was accomplished primarily through the use of the TAC CP and secondarily through the use of the Div Alt CP. The TAC CP was deployed prior to the displacement of the Div Main CP in both instances, because the displacements were required due to the existing tactical situation. In a tactical environment, the Div Main CP normally displaces when any or all of the conditions listed below exist.

(1) A significant change in the planned or current tactical disposition of friendly forces or enemy action occurs.

(2) Reduced communications capability is experienced.

(3) Interference with the existing communications occurs.

(4) Enemy maneuver or capability threatens the security of survivability of the CP.

b. The three concepts for maintaining a Div Alt CP were evaluated. To assure that the Div Alt CP augmentees were afforded the opportunity to become familiar with the operating procedures of the division and the current disposition of forces, a phased alternate implementation plan was developed. On day 1 of the test, during the concept A phase when Div Arty was assigned the mission as the Div Alt CP, the 11-man augmentation was located at Div Main adjacent to the division TOC. This allowed the 11-man augmentation element to meet their counterparts at the division TOC and become familiar with the operating procedures of these personnel and the tactical situation of the division. On day 2 of the test, the 11-man augmentation departed Div Main and collocated with Div Arty. Prior to departing, the augmentees recorded the current disposition of forces assigned to, attached to, or in direct support of the division. Information concerning the enemy situation was recorded on overlays and charts. Status information was acquired from the G1 and G4 sections located at Div Main. On

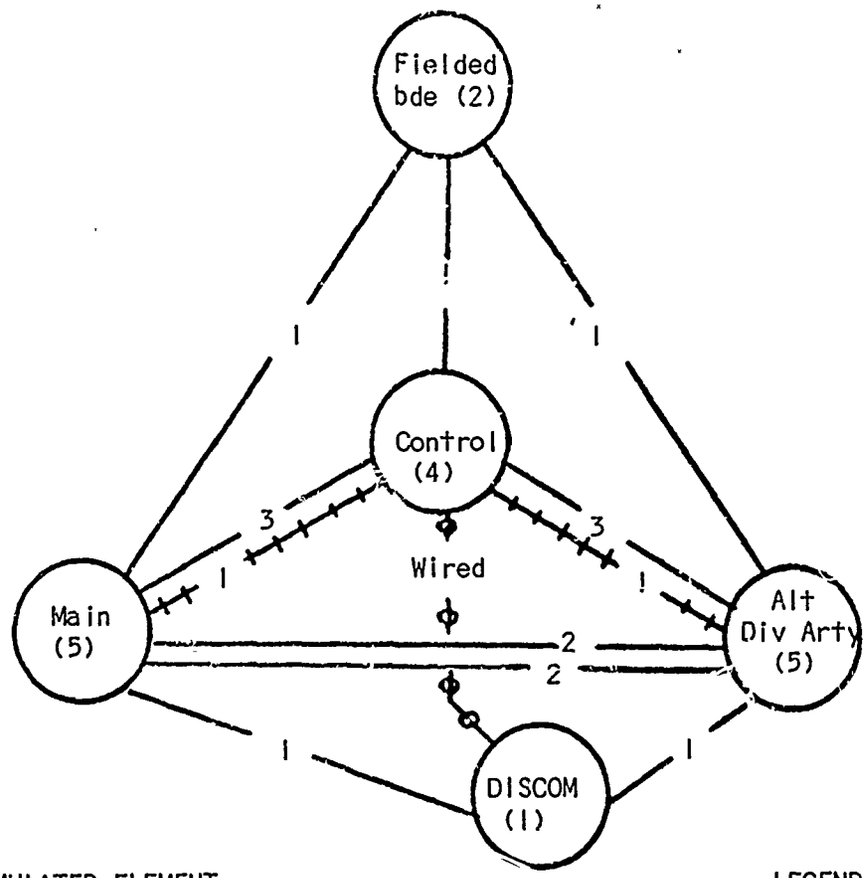
arrival at Div Arty, the concept B phase commenced. The concept C phase was realized when the 11-man augmentation displaced from the Div Arty location and constituted a separate alternate facility at a planned operating strength of 37 personnel. The additional 26 augmentees were to join the initial 11-man augmentation at the new location. They were briefed on the current tactical situation of the division and the existing enemy situation, and then proceeded to assume the mission for which they had been trained. The planned strength of 37 for concept C was not realized, since the two USAF personnel authorized as part of the 37-man Div Alt CP configuration were not present. Current tasking to the USAF from the US Army for tactical air control parties (TACP) does not require full-time USAF representation at the Div Alt CP. USAF representation at the Div Alt CP is therefore limited to those periods of time when the Div Alt CP actually assumes control of the division. The USAF concept is that representatives from an uncommitted brigade TACP will join the Div Alt CP when it is apparent that control will be transferred to the Div Alt CP or when the Div Main is destroyed.

I-10. Communications Concepts Evaluated. CONOPS, as defined previously, required the maximum exchange of information within and between staff elements and organizations. The exchange of information within a division is accomplished by a clearly defined SOP and a method of communicating within and between organizations. The capabilities of the division signal battalion and organic units constituted the means of information exchange between organizations. The capabilities provided by the means, as evaluated, are discussed below.

a. Division signal battalion support.

(1) Multichannel radio. The initial multichannel configuration established for the test is schematically portrayed in figure I-23. Division alternate is not shown as a separate location because Div Arty initially had the additional mission of alternate. From main, four 12-channel systems were installed to Div Arty; two for Div Arty and two for the alternate mission. From main and from alternate, one 12-channel system was installed to each brigade, DISCOM, and the ADA battalion and aviation company. The ADA and aviation circuits were combined on one system from each location. The area system was not installed using multichannel equipment, but was simulated at control by hardwired circuits between switchboards (fig I-24). Telephone and teletype circuit allocations for the division multichannel network are contained in figure I-25.

(2) Radio teletypewriter (RATT). The RATT nets established for division, Div Arty, brigade, and battalion are shown in figures I-26 through I-30. To test the alternate as a separate facility, two additional RATT stations above the division authorization, were required



CONTROL SIMULATED ELEMENT

Corps and/or Corps units
2d Bde
3d Bde
Armd cav sqd
3 ea DS arty bn
2 ea GS arty bn
ADA bn
S&T bn
Maint bn
Med bn
Avn co
MP co
DISCOM DMMA
Signal bn FASC's

LEGEND

( ) No of multichannel terminals
—No— 12-channel divisional system
++No++ 24-channel corps system
'No' above denotes number of systems.

Figure I-23. Initial multichannel radio configuration.

a 1st Bn, 45th Arty - BARREL
b 1st Bn, 46th Arty - BULLET
c 1st Bn, 47th Arty - BLUNDERBUSS
d 1st Bn, 48th Arty - BUCKLE
e 1st Bn, 49th Arty - BACKFIRE
f Routing capability same as thru BOXER MAIN

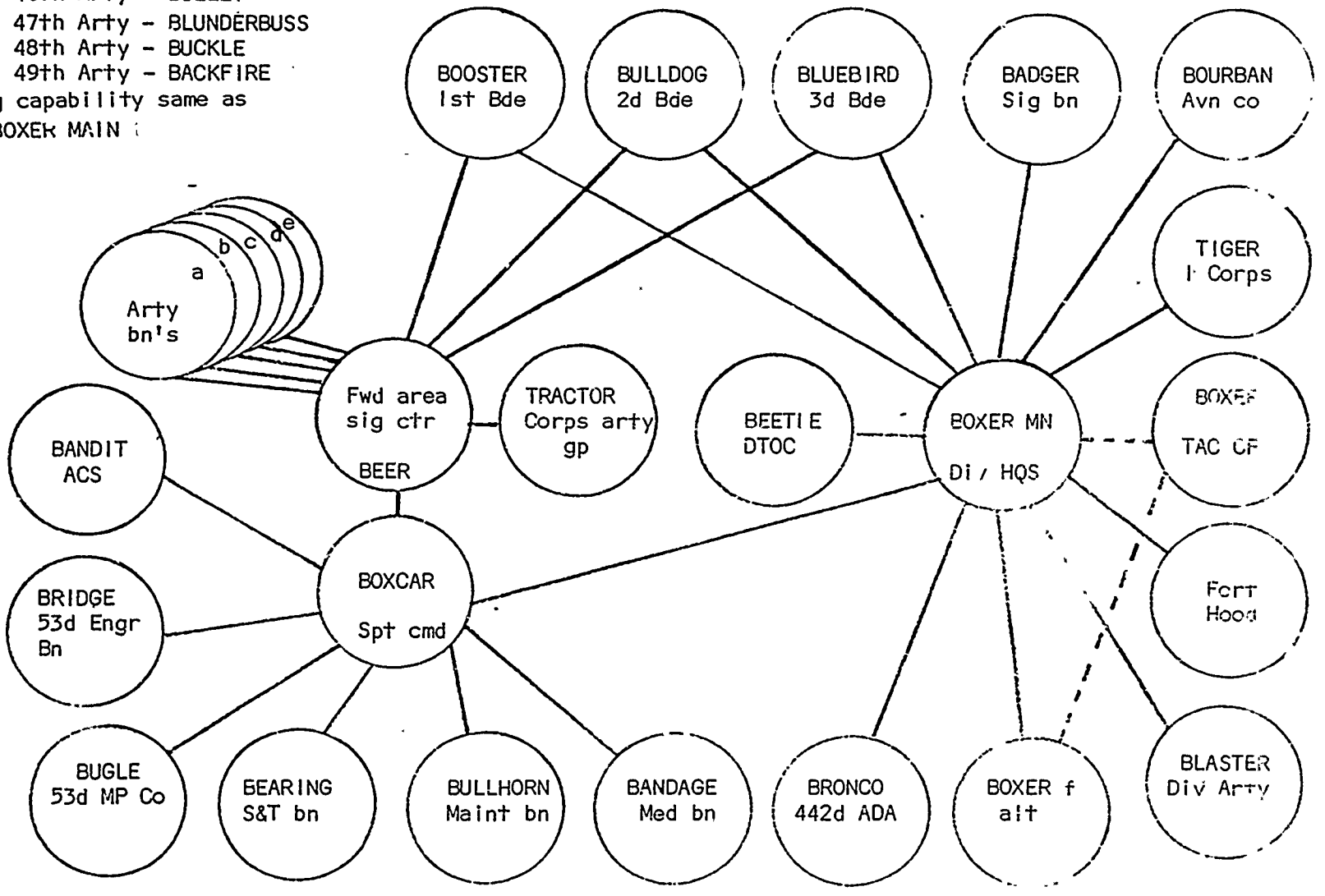


Figure 1-24. Simulated area system.

DIVISION MAIN/ALT	to	CORPS
G3	1 SUTP*	G3
G2 OPS (BICC CC&D SEC)	1 SUTP	G2 OPS
TASE	1 SUTP	DASC
FSE	1 SUTP	FSE
ACE	1 SUTP	ACE
EWE	1 SUTP	EWE
SWBD**	6 CUTP*	SWBD
COMMCEN	1 FDX*	COMMCEN
TOC	1 FDX	TOC
SSO	1 FDX	SSO
(STRAP-THRU) DISCOM	HARDWIRED	G4
(STRAP-THRU) DIVARTY FDC	2 SUTP	CORPS ARTY FDC
AF WX	1 SUWX*	AF WX
Total Circuits	18 each from Main and Alternate	

DIVISION MAIN/ALT	to	DIVISION ALT/MAIN
G3	1 SUTP	G3
G2 OPS (CC&D SEC)	1 SUTP	G2
FSE	1 SUTP	FSE
SWBD	5 CUTP	SWBD
ASA	1 HDX*	ASA
COMMCEN	1 HDX	COMMCEN
Total Circuits	10	

Figure I-25. Telephone-teletype circuit allocation.

DIVISION MAIN/ALT	to	DIVARTY
(STRAP-THRU) CORPS ARTY FDC	2 SUTP	FDC
FSE	2 SUTP	FDC
G2 OPS (CC&D SEC)	1 SUTP	S2
(STRAP-THRU) DA ARTY BNs	3 SUTP	FDC
SWBD	3 CUTP	SWBD
(STRAP-THRU) DISCOM SWBD	1 CUTP	SWBD
COMMCEN	1 HDX	MSGCEN
Total Circuits	13 each from Main and Alternate	

DIVISION MAIN/ALT	to	BRIGADE
G3	1 SUTP	S3
G2 OPS (CC&D SEC)	1 SUTP	S2
FSE	1 SUTP	FSCC
TASE	1 SUTP	S3 AIR
(STRAP-THRU) DIVARTY FDC	1 SUTP	DS ARTY BN (STRAP-THRU)
SWBD	3 CUTP	SWBD
COMMCEN	1 HDX	MSGCEN
Total Circuits	9 each from Main and Alternate	

DIVISION MAIN/ALT	to	DISCOM
G4	1 SUTP	OPS
SWBD	6 CUTP	SWBD
COMMCEN	1 HDX	COMMCEN
G3	1 SUTP	ACS S3 (STRAP-THRU)
G2 OPS (CC&D SEC)	1 SUTP	ACS S2 (STRAP -THRU)
(MAIN ONLY) TASE	1 SUTP	ACS S3 AIR (STRAP-THRU)
Total Circuits	11 from Main	
	10 from Alternate	

Figure 1-25 (cont). Telephone-teletype circuit allocation.

DIVISION MAIN/ALT	to	ADA BN
SWBD	2 CUTP	SWBD
COMMCEN	1 HDX	COMMCEN
Total Circuits	3 each from Main and Alternate	
DIVISION MAIN/ALT	to	TAC CP
G3	1 SUTP	G3 FWD
G2	1 SUTP	G2 FWD
FSE	1 SUTP	FSE FWD
C/S	1 SUTP	G2/3 OPS FWD
SWBD	2 CUTP	G2/3 OPS FWD
(STRAP-THRU) CORPS SWBD**	2 CUTP	G2/3 OPS FWD
Total Circuits	8 each from Main and Alternate	
DIVISION MAIN/ALT	to	DIV AVN
ACE	1 SUTP	OPS
SWBD	1 CUTP	OPS
Total Circuits	2 each from Main and Alternate	
BRIGADE TRAINS (FASC)	3 CUTP	Bde SWBD
	5 CUTP	DISCOM

*SUTP = Sole User Telephone

CUTP = Common User Telephone

HDX = Half Duplex Teletype

FDX = Full Duplex Teletype

SUWX = One-way Weather Teletype

** = When the Div TAC CP is deployed, 2-ea of the 6-ea Corps-to-Division common-user telephone circuits are strapped at Division Main and Alternate to the TAC CP.

Figure 1-25 (cont). Telephone-teletype circuit allocation.

NET / STATION	Corps Cmd (RATT)	Div CG Cmd (FM)	Div Intel (FM)	Div TOC (AM)	Air Trf Ctrl (FM)	Div Ops (RATT)	Div A/L (RATT)	Div BICC (RATT)	Div Arty CF (FM)	Div Arty CF 2 (RATT)	ADA Bn Cmd (FM)	ADA Bn ADL (AM)	USAF Air Req (AM)	USAF Air Dir (UHF)
CG		X												
ADC (M)		X												
ADC (S)		X												
C/S		X												
G1		X												
PM		X												
G2		X	X											
G2 (CC&D)			NCS											
G3 TOC		NCS		NCS										
FSE									X	NCS				
ACE					X						X	X		
TASE													X	X
Div Jump		X		X										
Div Tac CP		X	X			X (NCS)								
G4		X												
Sig Bn Main	CS					NCS	X	NCS						
G2 Alt		X	X											
BICC Alt			X											

Figure 1-26. Division radio nets.

NET / STATION	Corps Cmd (RATT)	Div CG Cmd (FM)	Div Intel (FM)	Div TOC (AM)	Air Trf Ctrl (FM)	Div Ops (RATT)	Div A/L (RATT)	Div BICC (RATT)	Div Arty CF (FM)	Div Arty CF 2 (RATT)	ADA Bn Cmd (FM)	ADA Bn ADL (AM)	USAF Air Req (AM)	USAF Air Dir (UHF)
G3 Alt		X		X										
FSE Alt									X	X				
ACE Alt					X						X	X		
Sig Bn Alt	CS					X	X	X						
Div Arty		X	X	X		X	X	X	X	X				
DISCOM		X					NCS							
Bde's		X	X	X		X	X	X					X	
ACS		X	X	X		X	X	X					X	
ADA Bn		X		X		X	X				NCS	NCS		
S&T Bn							X							
Maint Bn							X							
Med Bn							X							
MP Co		X												
Helipad					NCS									
FASC's							X							

NCS = Net Control Station CS = Corps Supplied X = Station in Net

Figure 1-26 (cont). Division radio nets.

NET / STATION	Corps Arty FD (RATT)	Div CG Cmd (FM)	Div Intel (FM)	Div TOC (AM)	Div Ops (RATT)	Div A/L (RATT)	Div BICC (RATT)	Div Arty CF (FM)	Div Arty A/I (FM)	Div Arty CF 1 (RATT)	Div Arty CF 2 (RATT)
CO		X						X			
XO		X						X			
S2/3								X	X		
FDC		X						X	X		
OP-FD Sec				X							
FSE Main								X			NCS
FSE Alt								X			X
BIC			X				X				
Radar Sec								X			
Radio Sec	X				X	X	S			X	X
TA Plt Ldr								X			
Rec Surv Off								X			
Ch Surv								X			
C-E Off								X			
HHB CO								X			
DS Bn's								X	X	X	
GS Bn's								X	X		X
Corps Arty Gp								X			

NCS = Net Control Station X = Station in Net S = Division Signal Battalion Supplied

Figure I-27. Div Arty radio nets.

NET / STATION	Div CG Cmd (FM)	Div A/L (RATT)	Spt Cmd Cmd (FM)
CO	X		X
XO	X		X
S2/3 Ops	X		NCS
DMMA			X
DAO			X
S&T Bn			X
Maint Bn			X
Med Bn			X
Sig Bn RATT Tm		NCS (S)	

NCS = Net Control Station


= Station in Net

(S) = Signal Battalion Supplied

Figure I-28. DISCOM radio nets.

NET / STATION	Div CG Cmd (FM)	Div Intel (FM)	Div TOC (AM)	Div Op (RATT)	Div A/L (RATT)	Div BICC (RATT)	Bde Cmd (FM)	Bde Intel (FM)	Bde A/L (FM)	Bde RATT (RATT)	DS Arty CF (FM)	USAF Air Req (AM)	USAF Air Dir (UHF)
CO	X						X						
XO							X		X				
S2							X						
S3	X		X				X						
S1/4							X		NCS				
Arty LO (FSCC)							X				X		
TACP							X					X	X
C-E Off							X						
Bde Ops Sec	X		X				NCS						
BICC		X				S		NCS					
HHC CO							X						
Radio Sec				S	S					NCS			
Battalions							X	X	X	X	X	X	X

NCS = Net Control Station X = Station in Net S = Signal Battalion Supplied

Figure 1-29. Brigade radio nets.

NET / STATION	Bde Cmd (FM)	Bde Intel (FM)	Bde A/L (FM)	Bde RATT (RATT)	Bn Cmd (FM)	Bn A/L (FM)	DS Arty CF (FM)	DS Arty FD (FM)	USAF Air Req (AM)	USAF Air Dir (UHF)
CO	X				X					
XO					X	X				
S2		EICC			X					
S3	X				X					
Bn Ops	X				NCS					
Arty LO					X		X	X		
TACP					X				X	X
S1/4			Spt Plt		X	NCS				
Scout Plt					X	X				
AT Plt Ldr					X					
Mort Plt Ldr					X					
FDC						X	X			
Redeye Sec Ldr					X					
Gnd Surv Sec					X					
C-E Off					X					
Comm Plt				X	X					
HHC CO					X					
Companies					X	X		X		

NCS = Net Control Station X = Station in Net

Figure 1-30. Battalion radio nets.

at division alternate; one for the division intelligence (RATT) net and one for the Div Arty CF 2 net. Additionally, the ASA (RATT) net, which provided secure dedicated record copy message service between ASA elements attached to division and corps, was installed using ASA resources.

(3) Voice radio communications. Single channel voice radio nets installed during the test were structured as shown in figures I-26 through I-30.

(a) AM radio nets. The division TOC and ADA battalion ADL nets were installed in accordance with the TSP but were not used during the test since the greater range afforded by the high frequency band was not required due to the geographical confines of the test.

(b) FM radio nets. Four FM radio nets in addition to those prescribed in the TSP were used during the test: an ASA FM net, an intelligence net at division and brigade level, and an administrative intelligence (admin-intel) net at Div Arty. The ASA installed FM net provided secure voice radio communications between ASA elements attached to division and corps. The intelligence nets were added as a result of findings of the intelligence processes workshop that was conducted prior to the test. The need for a Div Arty admin-intel net was identified by the players during the pilot test. The senior CACDA representative concurred in the addition of the net prior to the actual test phase. The air traffic control net was not structured in accordance with the TSP; the ACE at division main and alternate was added to this net after the pilot test at the request of the division aviation officer and with the approval of CACDA.

b. Corps support. Corps support to the test consisted of multichannel systems and RATT.

(1) Multichannel systems. Corps multichannel support to the division consisted of separate 24-channel microwave links from corps to division main and alternate.

(2) RATT. Corps RATT support to the division consisted of providing a single station to division main for entrance into the corps command net (RATT). During the test, division alternate was furnished an additional station to provide an alternate record copy means with corps.

c. Displacement. During the 87-hour scenario, division main displaced twice.

(1) The first method of displacement required the maximum time-phased use of personnel and equipment. The second method of displacement required the maximum use of multichannel communications assets from the

division signal battalion. During execution of the first method, personnel and equipment to form the TAC CP departed the division main CP approximately 4 hours prior to the scheduled departure of the first increment. Multichannel communications were functional from the TAC CP to the Div Main and Div Alt CP locations approximately 2 hours prior to the displacement of Div Main. Personnel and equipment from the division signal battalion displaced to the new main CP location approximately 3 hours prior to the scheduled departure of the first increment from the Div Main CP. A combination of deactivating secondary links and using the multichannel reserve made available by the collocation of Div Army and division alternate constituted the means by which the signal battalion personnel established multichannel communications at the new main location. Figure I-31 diagrams the manner in which division main and alternate displaced their multichannel systems. It shows the systems that were activated immediately upon arrival at the new location, and those systems that were placed in parallel standby[1] with the systems that remained at the old location in support of the second echelon. During the first displacement, the first increment departed the division main location as scheduled and closed on the new main CP location approximately 1 hour later. The first increment was capable of conducting effective operations approximately 1 hour after arrival at the new location by the use of organic equipment. The second increment departed the main CP at approximately the same time that the first increment arrived at the new location. The second increment arrived at the new location about 30 minutes after its departure from the main CP and was capable of conducting effective operations approximately 30 minutes later by the use of organic equipment. At the time this method of displacement was being evaluated, the division was in the attack transitioning from the coordinated phase to the exploitation phase. The speed of the exploitation restricted the use of multichannel communication means. The multichannel communications capability from the new Div Main location was not sufficiently responsive to classify it as the primary means of command communications; therefore, staff elements were required to rely on FM (voice) as the primary means of command communication. Figure I-32 portrays the multichannel configuration used for the first displacement.

(2) The second method of CP displacement occurred during the time the Div Alt CP was defined as being a separate operating facility, not collocated with other elements of the division, and at an operating

[1]Parallel standby is defined as having the system alined but operating on listening silence on the same frequencies as the active system it parallels.

MULTICHANNEL DISPLACEMENT (DIV MAIN)

DIV MAIN SYSTEMS	1 (a)	2 (b)	3 (c)	4 (d)
1. Div Alt (A)		X		
2. Div Alt (B)	X			X
3. DIVARTY (A)		X		
4. DIVARTY (B)	X			X
5. DISCOM		X		
6. 1st Bde			X	
7. 2d Bde	X	X		
8. 3d Bde		X		
9. ADA/Avn	X		X	
10. TAC CP			X	

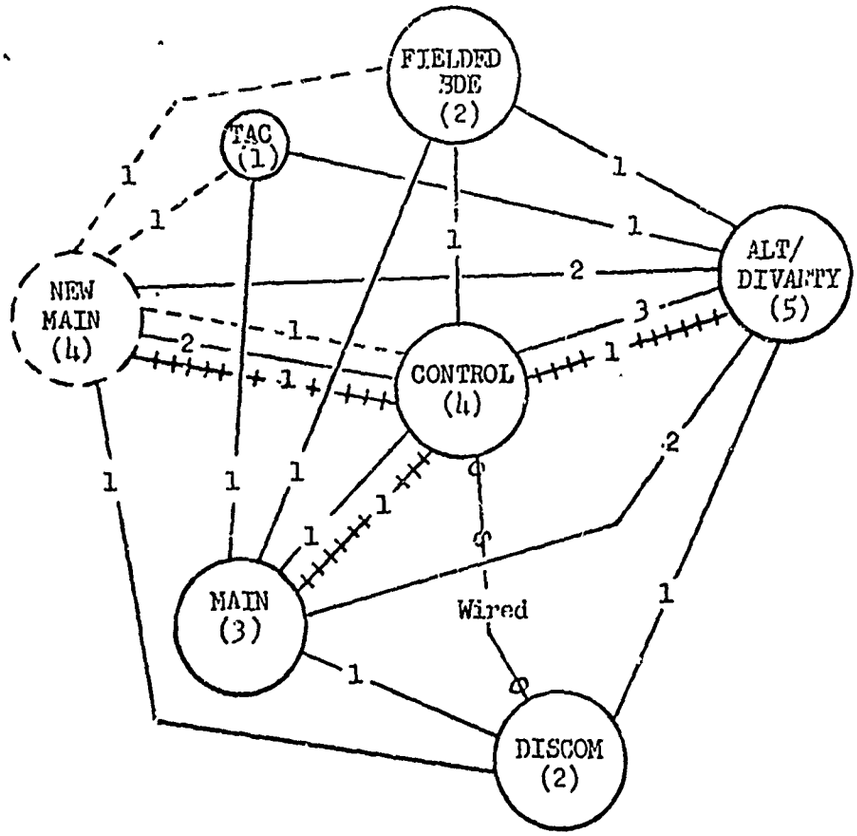
(a) Systems deactivated to provide equipment to displace with the 1st echelon.

(b) Systems initially activated at the new location.

(c) Systems placed on parallel standby at new location until deactivation of the system it parallels at the old location.

(d) System deactivated for movement with the 1st echelon, and not reactivated until the 2d echelon closed on the new main location.

Figure 1-31. Displacement of division main and alternate multichannel systems.



CONTROL SIMULATED ELEMENTS

Corps/Corps Units
2d Bde
3d Bde
Armored Cav Sqdn
3-ea DS Arty Bn's
2-ea GS Arty Bn's
ADA Bn
S&T Bn
Maint Bn
Med Bn
Avn Co
MP Co
DISCOM DMMA
Signal Bn FASC's

LEGEND

( ) No. of multichannel terminals.

—— No —— 12-channel divisional system.

+++ No ++ 24-channel corps system.

- - - No - - 12-channel system alined, but not activated until old system it parallels is deactivated.

Note: 'No', above, indicates number of systems.

Figure 1-32. Multichannel configuration (first displacement).

strength of 37 personnel. The sequence of events and times associated with these events for the second method of displacement are comparable to those described above for the first displacement with the following exceptions:

(a) The multichannel division reserve assets used by the division signal battalion during the first displacement were not available because they were committed to fulfilling communication requirements at the Div Alt CP.

(b) The multichannel assets used as lateral communication links between forward area signal centers were employed to fill the void created by the lack of Div Alt multichannel communication assets. Figure I-33 portrays the multichannel configuration used for the second displacement.

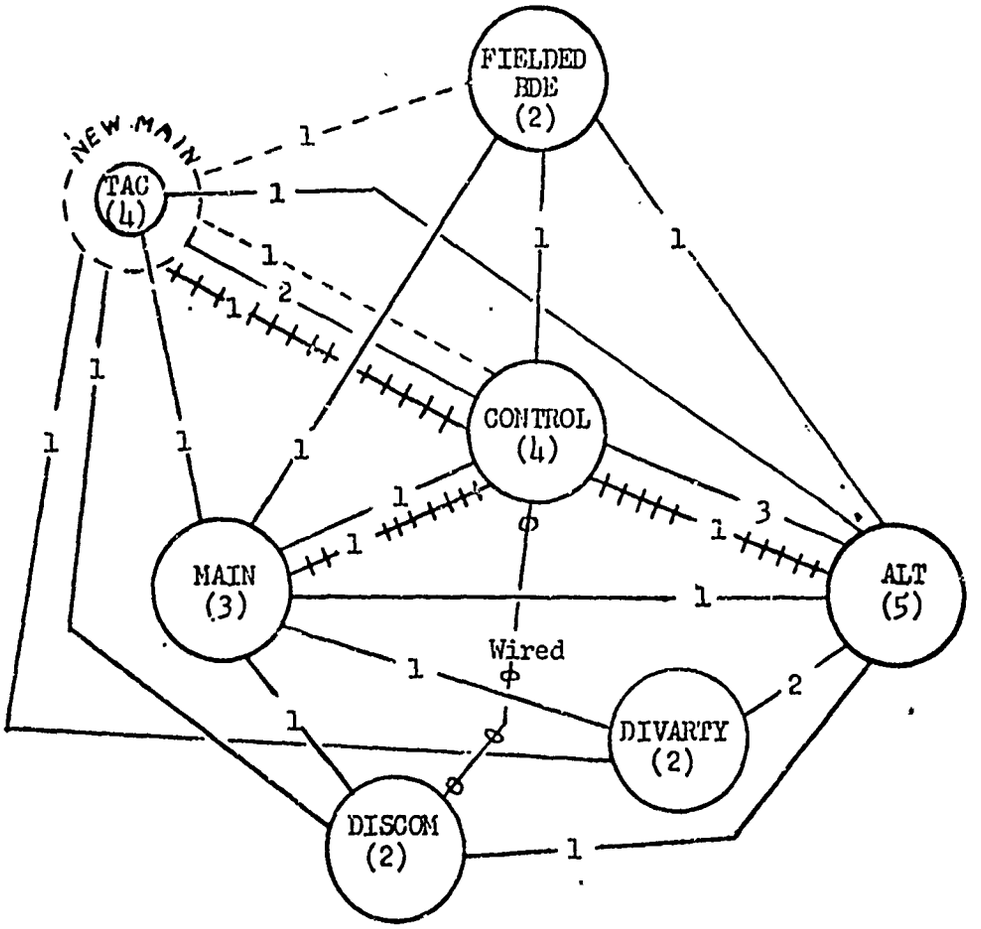
d. TAC CP. The TAC CP deployed three times during the test.

(1) The means of communications provided the TAC CP during the first deployment are as shown in figure I-34.

(2) The means of communication provided the second and third deployments are as shown in figure I-35.

(3) The two concepts differ as the corps command station (RATT) and the division BICC station (RATT) were added to the means provided the TAC CP for the second and third deployments. The additional RATT capability was deployed at the direction of the division C-E officer since the plans of division main were to displace to the TAC CP location.

I-11. Destruction. During the third deployment of the TAC CP, the division main was destroyed at measurement point 25, and the TAC CP was destroyed at measurement point 26. The effect of destruction is discussed in detail in chapter 2 and the quantifiable data collected during these conditions is contained in part III of this report.



CONTROL SIMULATED ELEMENTS

Corps/Corps Units
2d Bde
3d Bde
Armored Cav Sqd
3-ea DS Arty Bn
2-ea GS Arty Bn
ADA Bn
S&T Bn
Maint Bn
Med Bn
Avn Co
MP Co
DISCOM DMMA
Signal Bn FASC's

LEGEND

( ) No. of multichannel terminals.

—— No —— 12-channel divisional system.

+++ No +++ 24-channel corps system.

-- No - - - 12-channel system alined, but not activated until old system it parallels is deactivated.

Note: 'No', above, indicates number of systems.

Figure 1-33. Multichannel configuration (second displacement).

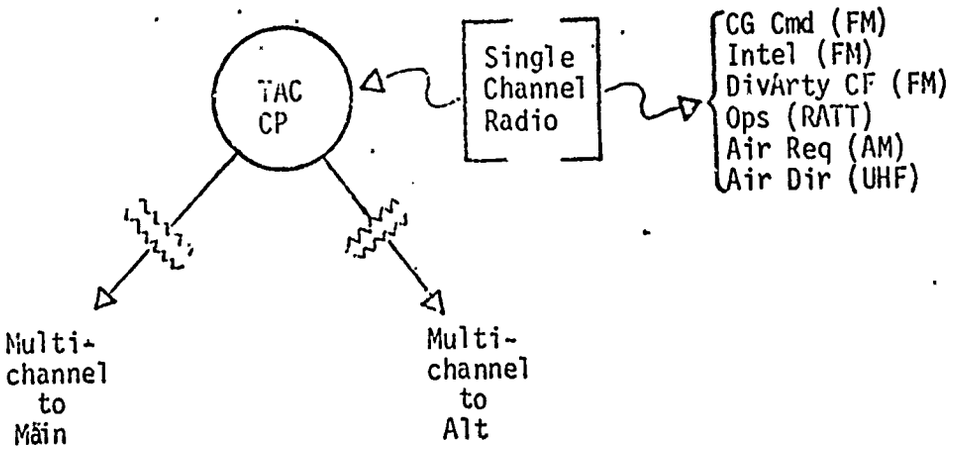


Figure I-34. Method I - TAC CP communications support.

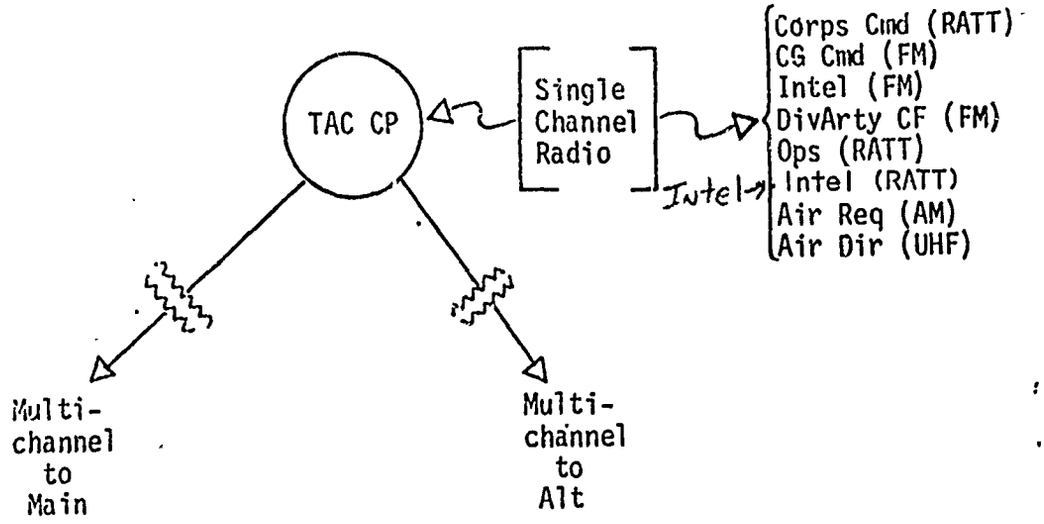


Figure I-35. Methods 2 and 3 - TAC CP communications support.

CHAPTER 2 - FINDINGS

2-1. General. The objectives as stated were mission type objectives that required the generation, collection, and presentation of quantitative data for use during development of the IBCS Third Refinement study effort. Findings pertinent to the objectives are contained in sections I through IV. Subfindings pertinent to the information needs are contained in sections V and VI.

Section I - OBJECTIVE I

2-2. Objective and Finding.

a. Purpose. The purpose of this objective was to obtain performance data on the division staff in the refined organization.

b. Finding. The data in part III of this report constitutes the performance data for the division staff during normal operating, displacement, and destruction conditions.

Section Ii - OBJECTIVE 2

2-3. Objective and Findings.

a. Purpose. The purpose of this objective was to obtain quantitative data for both the refined organization and the H-series TOE on the division command, control, and communications concepts and procedures when the Div Main CP is destroyed.

b. Findings.

(1) The quantitative data collected subsequent to destruction of the Div Main CP is contained in part III.

(2) Staff elements were capable of maintaining continuity of operations subsequent to the destruction of the Div Main CP.

Section III - OBJECTIVE 3

2-4. Objective and Findings.

a. Purpose. The purpose of this objective was to obtain quantitative data for both the refined organization and the H-series TOE on the division command, control, and communications concepts and procedures when the Div Main CP is displaced.

b. Findings.

(1) The data in part III of this report is the quantitative data that was collected during the periods when the Div Main CP was displacing or preparing to displace.

(2) Staff elements were capable of maintaining continuity of operations when the Div Main CP was displaced.

Section IV - OBJECTIVE 4

2-5. Objective and Findings.

a. Purpose. The purpose of this objective was to obtain quantitative data on the performance of the organization and on the procedures used by those elements in the refined organization which differ from the H-series TOE.

b. Findings.

(1) The SOP in appendix D of this report constitutes a definition of procedures used by those elements that differ from the H-series TOE.

(2) Quantitative data collected when staff elements were responding to a controller density scenario in a field environment during conditions of displacement and/or destruction are furnished in response to objectives 1, 2, and 3.

Section V - DIVISION ANALYSIS

2-6. Division Level Data. This section contains data pertinent to the information needs that are applicable only at the division (system) level of command. Selected quantitative data from part III of this report has been summarized and is presented in subparagraphs a through e below with supporting narrative, where applicable.

a. Quality of staff outputs. Figure 2-1 identifies the name of each major output and the mean quality rating assigned to the output by the evaluator. The total time required to produce the output, mean output preparation time, quality of each mandatory entry on the output, and the definition of the measurement categories are in part III.

b. Staff reaction to significant traceable events. Figure 2-2 contains information concerning the time required to recognize and react to selected significant traceable events. Detailed data by staff section and facility for each event is in part III.

c. Staff section processing time. Figure 2-3 contains information pertaining to staff section processing time for significant and routine traceable events. Detailed time data for each event is in part III.

d. Display update time. Map and chart update time data is presented in figure 2-4. Detailed data by section and facility is presented in part III.

e. Accuracy of visual displays. Figures 2-5 and 2-6 contain data by section and facility for friendly and enemy situation map data. Data concerning chart accuracy is presented in figures 2-7a through 2-7d. Part III contains detailed data for maps and charts maintained by each section or facility.

Time	Name	Mean rating[a]
	G1	
14 11 00	Internees str	1.57
13 09 30	Internees str	1.00
15 10 00	Internees str	1.00
13 08 45	Pers dly sum	1.00
14 08 30	Pers dly sum	1.00
15 07 30	Pers dly sum	1.00
	G2	
14 12 00	EW annx	1.00
14 12 00	G2 port of OPLAN/OPORD	1.57
12 24 00	INTSUM	1.06
13 24 00	INTSUM	1.06
14 24 00	INTSUM	1.06
15 24 00	INTSUM	1.09
	G3	
14 17 00	FS annx	1.63
13 01 30	FS annx	1.42
14 23 00	G3 port of OPLAN/OPORD	1.57
13 01 30	G3 port of OPLAN/OPORD	1.19
13 22 40	G3 port of OPLAN/OPORD	2.14
14 17 00	G3 port of OPLAN/OPORD	1.19
13 04 00	Op SITREP	1.22
14 03 30	Op SITREP	1.22
15 03 00	Op SITREP	2.55

Figure 2-1. Quality of staff outputs.

Time	Name	Mean rating[a]
	G4	
12 19 00	Div crit items rpt	1.00
15 05 25	Div crit items rpt	1.00
	Division Artillery	
15 04 00	INTSUM	1.08
16 00 00	INTSUM	1.55
13 02 00	INTSUM	1.41
15 05 30	Pers dly sum	1.00
13 00 00	Pers dly sum	1.00
	DISCOM	
15 12 30	S3 port of OPLAN/OPORD	1.00
14 03 10	INTSUM	1.00
13 24 00	Pers dly sum	1.00
12 24 00	Pers dly sum	1.00
13 00 15	INTSUM	1.57
13 11 06	S3 port of OPLAN/OPORD	1.00
12 22 00	S3 port of OPLAN/OPORD	1.12
13 11 00	S3 port of OPLAN/OPORD	1.15
14 03 15	S3 port of OPLAN/OPORD	1.00
	Brigade	
16 00 15	Op SITREP	1.76
14 00 02	Op SITREP	1.44
13 00 01	Op SITREP	1.71
14 03 30	INTSUM	1.36
12 24 00	INTSUM	4.09
12 24 00	Pers dly sum	1.00
14 03 00	Pers dly sum	1.00
14 24 00	Pers dly sum	1.00
15 01 30	S2 port of OPLAN/OPORD	1.56
15 02 00	INTSUM	2.09
14 19 30	FS annx	1.72
13 04 00	S3 port of OPLAN/OPORD	4.14
14 22 00	S3 port of OPLAN/OPORD	2.40
15 01 50	Op SITREP	1.58

Figure 2-1 (cont). Quality of staff outputs.

Time	Name	Mean rating[a]
	Battalion	
14 10 00	FS annx	3.00
12 23 00	S3 port of OPLAN/OPORD	2.35
14 00 01	S3 port of OPLAN/OPORD	1.46
15 06 00	S3 port of OPLAN/OPORD	1.52

[a]A quality rating of all elements of the output based on a scale of 1 to 5 as follows:

Rating	Explanation
1	Output is completely intelligible and correct, and is in consonance with existing tactical/logistical conditions; permits proper action by addressee.
2	Output contains sufficient amount of correct information to permit proper action by addressee; reflects minor misinterpretations of tactical/logistical conditions.
3	Output requires degree of intrepretation permitting doubt about propriety of action.
4	Output requires sender to be queried prior to initiating action; action appears in direct conflict with known existing conditions.
5	Output contains erroneous information that would lead to incorrect action or required entry omitted.

Figure 2-1 (cont). Quality of staff outputs.

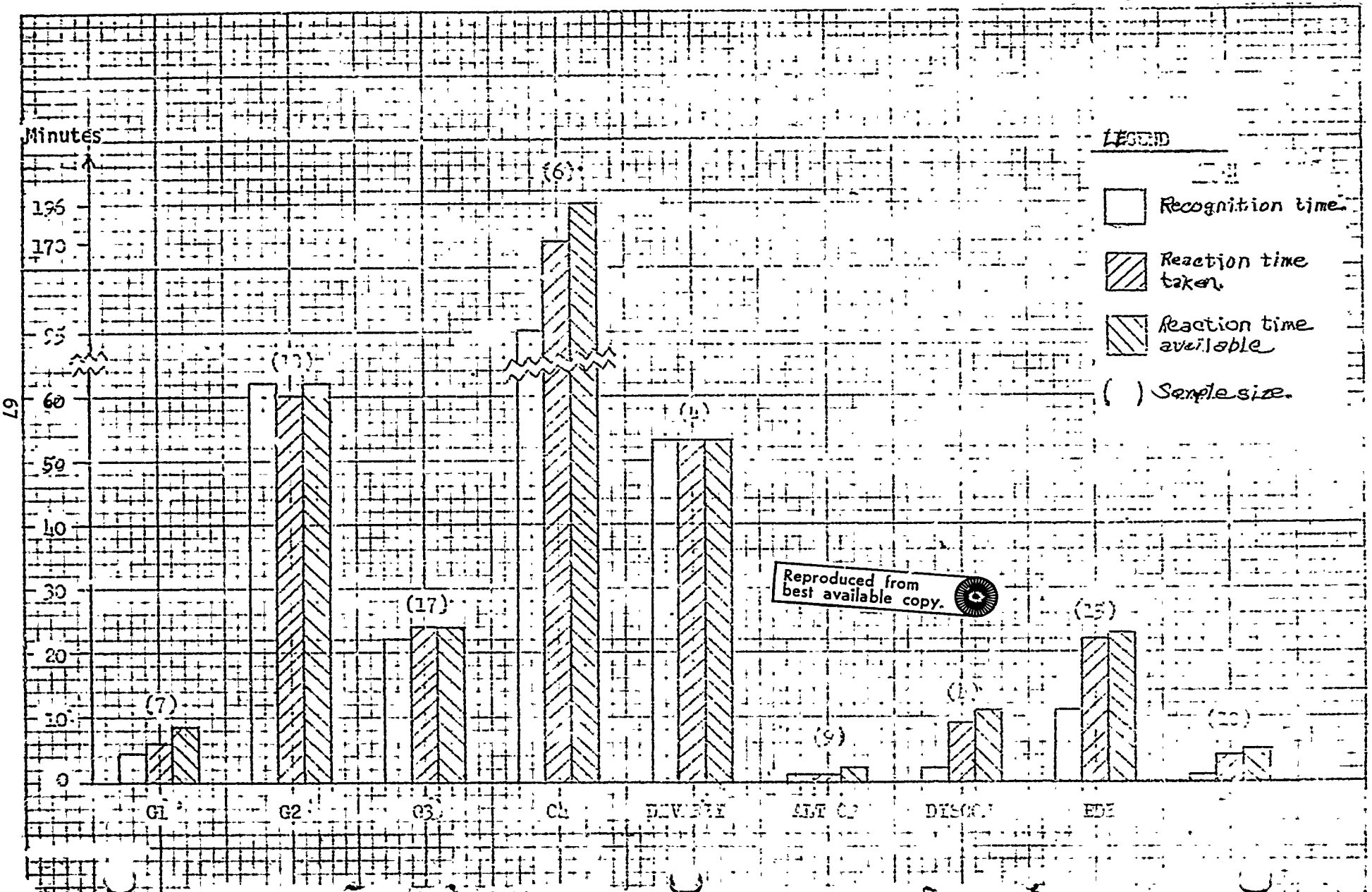


Figure 2-2. Staff reaction time to significant [illegible].

SECTION/ LOCATION	SIGNIFICANT TRACEABLE EVENTS				ROUTINE TRACEABLE EVENTS				TRACEABLE EVENTS (TOTAL)			
	SAMPLE SIZE	MEAN TIME (MINUTES)	PERCENTILES (MINUTES)		SAMPLE SIZE	MEAN TIME (MINUTES)	PERCENTILES (MINUTES)		SAMPLE SIZE	MEAN TIME (MINUTES)	PERCENTILES (MINUTES)	
			5th	95th			5th	95th			5th	95th
G1	8	6.0	1.8	10.2	21	9.6	0	23.4	29	9.0	0	23.4
G2	9	17.4	0.6	93.6	24	36.6	0.6	214.8	33	31.2	1.2	123.0
G3	17	1.8	0	4.8	21	2.4	0	4.8	38	2.4	0	6.0
G4	5	57.0[a]	15.0	145.2	19	14.4	0	60.0	24	23.4[a]	0	90.0
Alt (Min)	-	-	-	-	9	2.4	0.6	7.2	9	2.4[a]	0.6	7.2
Alt (Max)	9	2.4	0	6.6	17	1.8	0	5.4	26	1.8	0	6.0
Alt (Div Arty)	3	1.2	0.6	1.2	5	9.6	0.6	34.8	8	6.6[b]	0.6	34.8
Div Arty	4	1.8	0.6	3.6	27	60.0	0	348.0	31	52.2	0	286.8
DISCOM	4	11.4	6.0	15.0	43	12.0[c]	1.2	40.2	47	12.0[c]	1.2	40.2
Brigade	14	14.4	0	8.4	50	25.2	1.2	109.8	64	22.8	0.6	109.8
Battalion	10	3.0	0	5.4	32	10.8	0	30.0	42	9.0	0	30.0

[a]One measurement of 8.42 hours not included.

[b]One measurement of 5.80 hours not included.

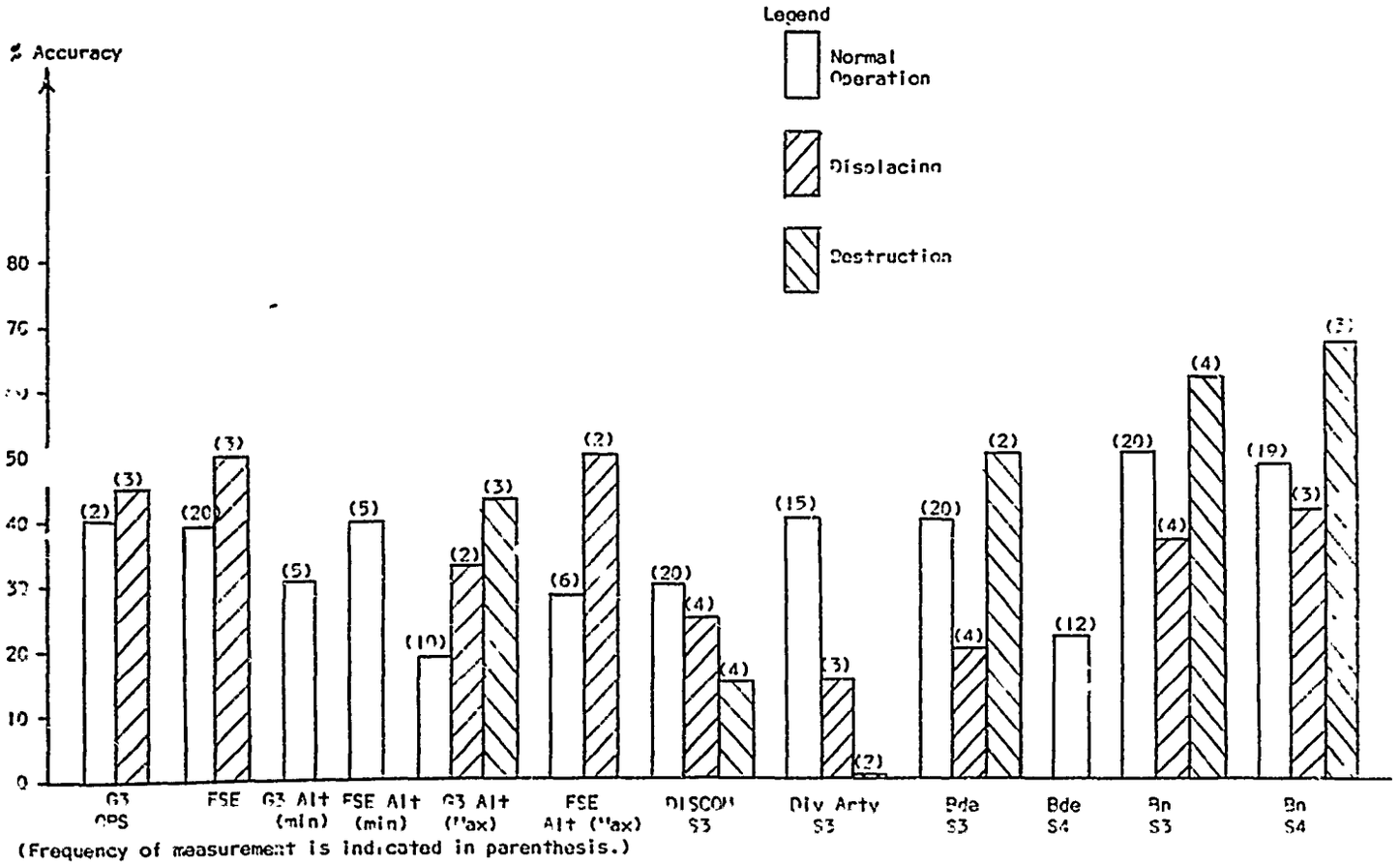
[c]One measurement of 6.08 hours not included.

NOTE: Data is not distributed normally in all cases.

Figure 2-3. Traceable event processing time.

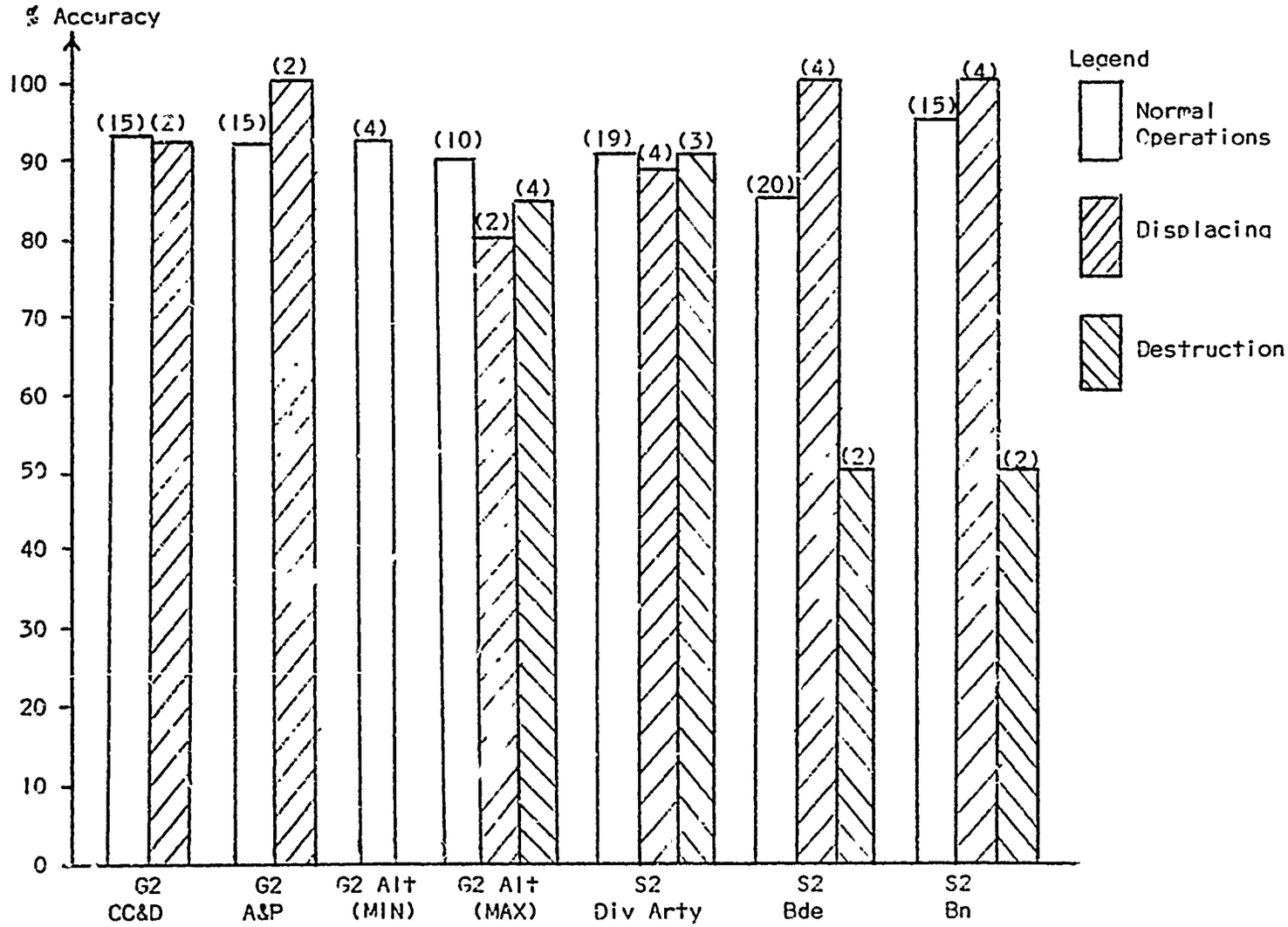
SECTION/ LOCATION	NORMAL OPS		DURING DISPLACEMENT		AFTER DESTRUCTION		ENTIRE TEST	
	SAMPLE SIZE	MEAN TIME (MIN)	SAMPLE SIZE	MEAN TIME (MIN)	SAMPLE SIZE	MEAN TIME (MIN)	SAMPLE SIZE	MEAN TIME (MIN)
G1	4	2.4	-	-	-	-	4	2.4
G2	19	4.8	1	13.2	-	-	20	5.4
G3	17	9.0	1	0	-	-	18	8.4
G4	2	30.0	-	-	-	-	2	30.0
MAIN CP (TOTAL)	42	7.2	2	6.6	-	-	44	7.2
Alt (Min)	3	3.6	-	-	-	-	3	3.6
Alt (Max)	5	2.4	2	2.4	3	1.2	10	1.8
Alt (Div Arty)	-	-	-	-	-	-	-	-
ALT (TOTAL)	8	3.0	2	2.4	3	1.2	13	2.4
Div Arty	4	2.4	1	0	-	-	5	1.8
Bde	8	19.2	1	2.4	1	7.8	10	15.6
Bn	11	11.4	2	2.4	1	9.6	14	7.8

Figure 2-4. Display update time (maps and charts).



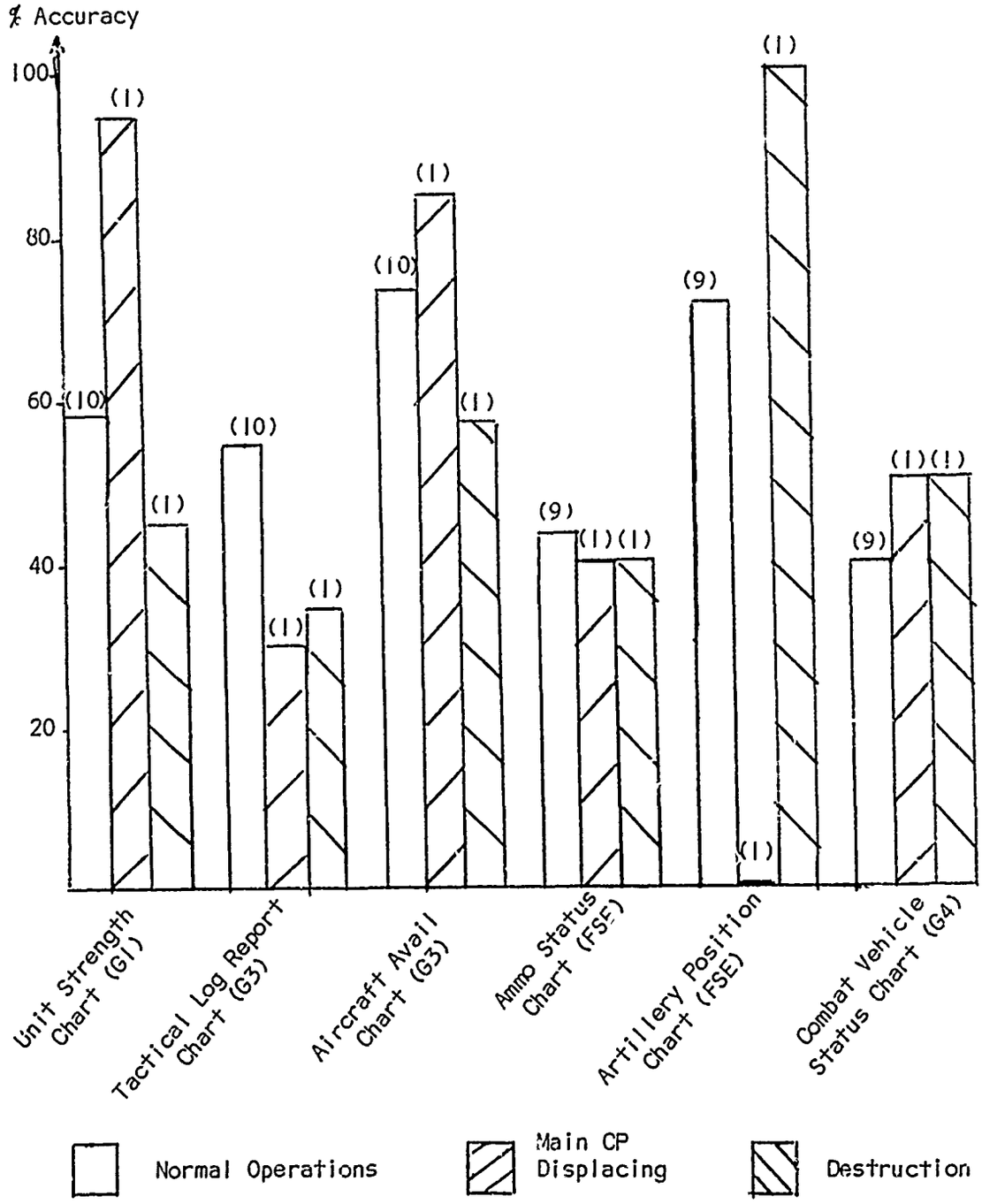
(Frequency of measurement is indicated in parenthesis.)

Figure 2-5. Friendly situation map accuracy ratings.



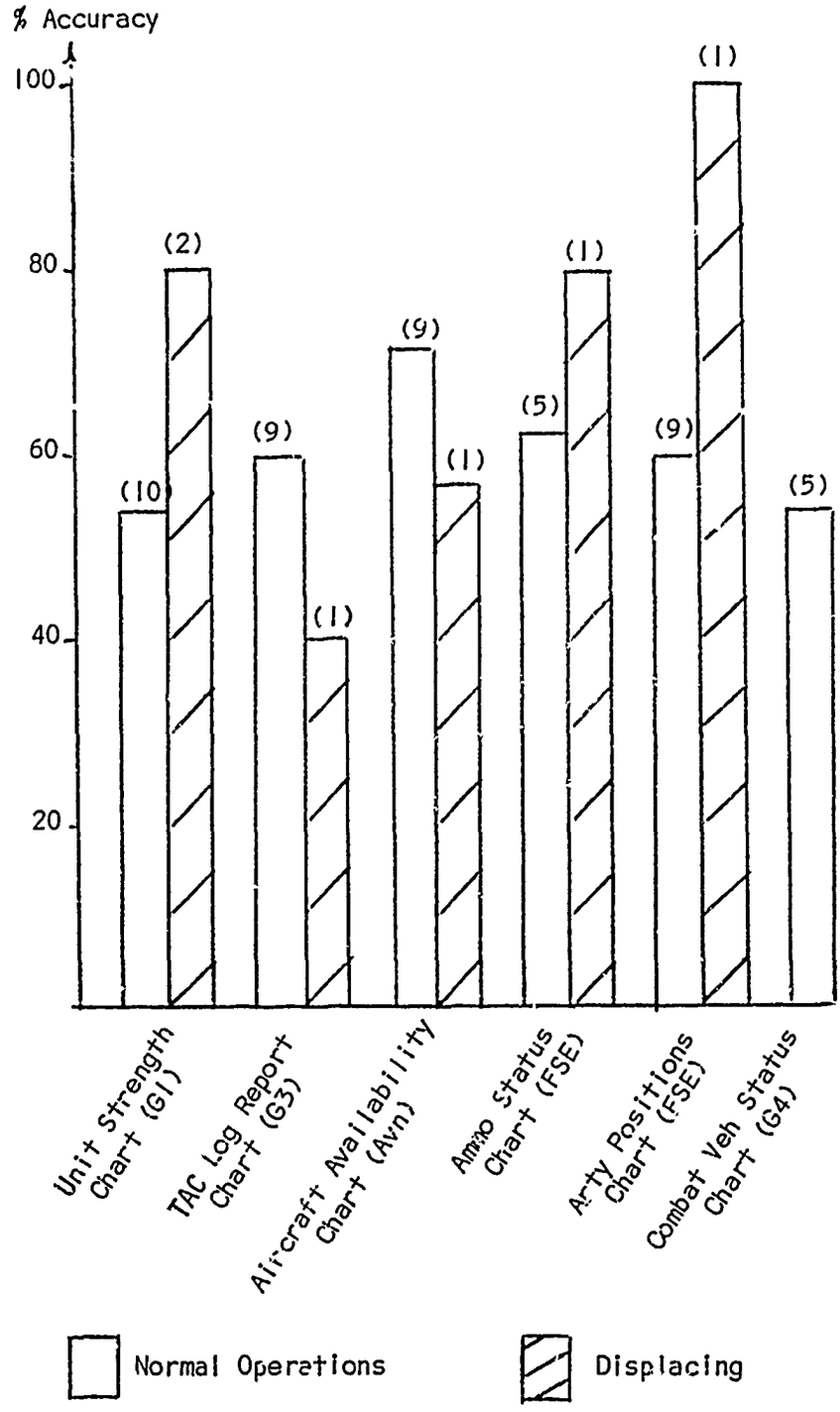
(Number of measurement times is indicated in parenthesis.)

Figure 2-6. Enemy situation map accuracy ratings.



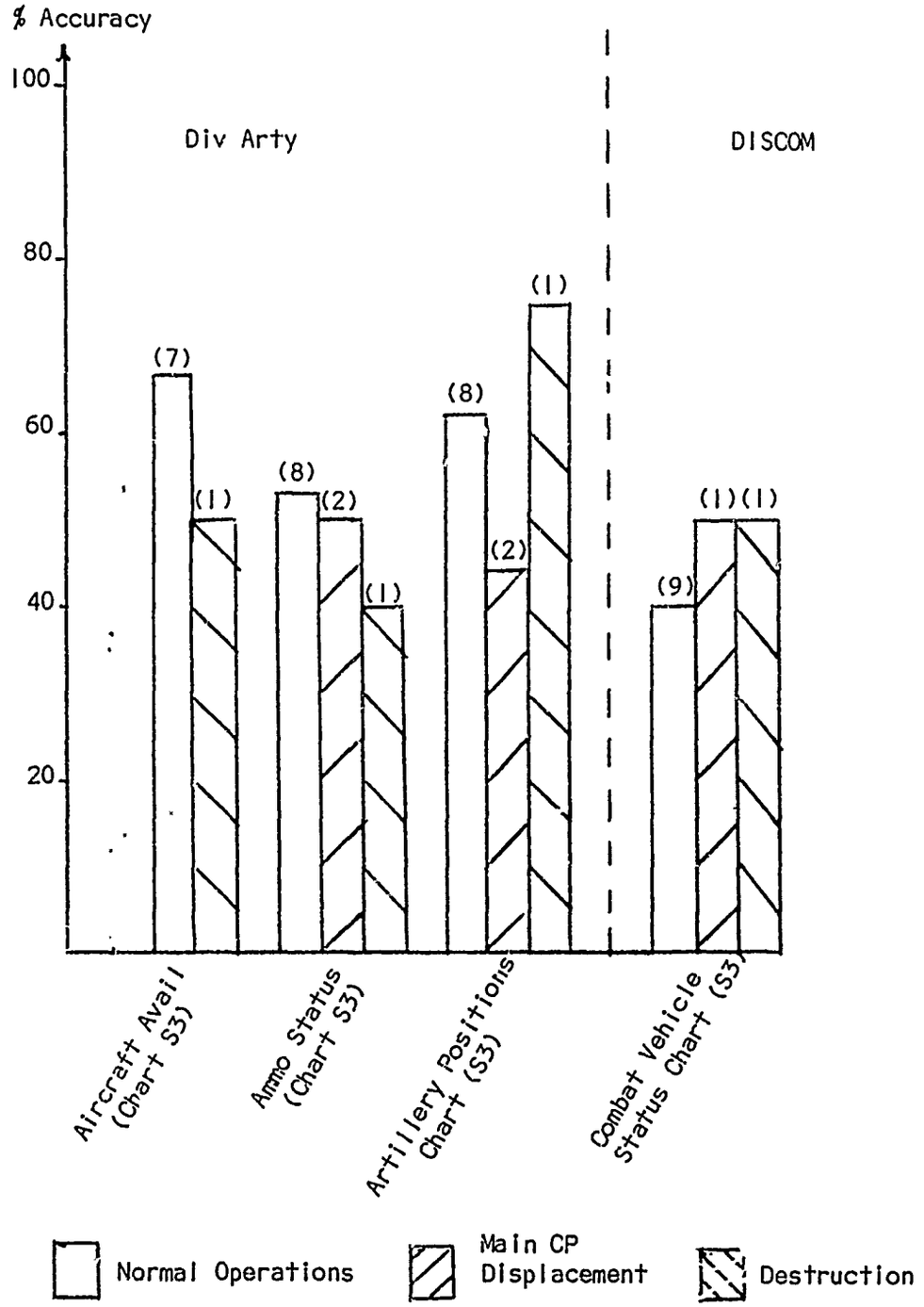
(Frequency of measurement indicated in parenthesis.)

Figure 2-7a. Chart accuracy ratings Division Alternate CP.



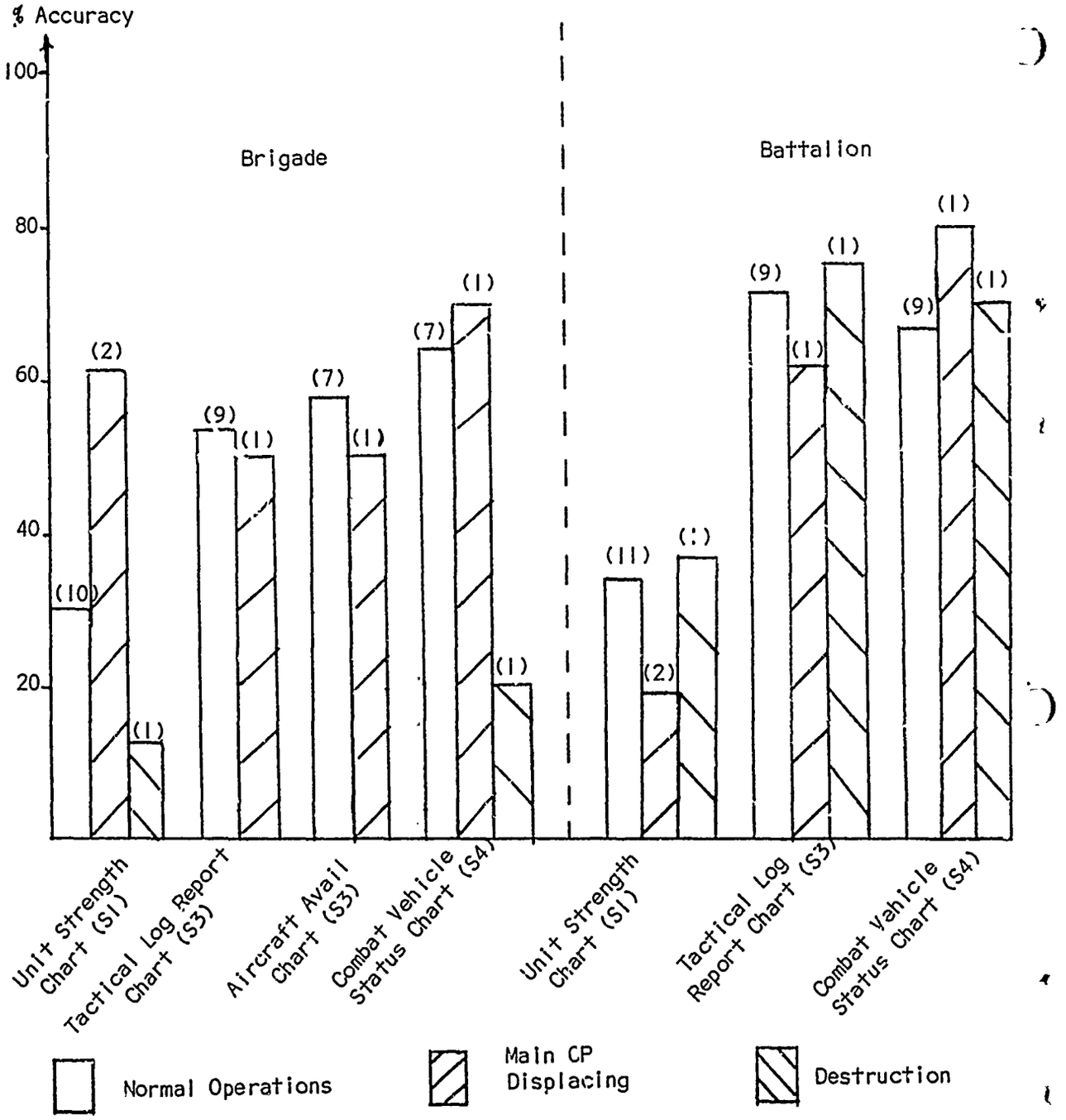
(Frequency of measurement is indicated in parenthesis.)

Figure 2-7b. Chart accuracy ratings Div Main CP.



(Frequency of measurement indicated in parenthesis.)

Figure 2-7c. Chart accuracy ratings Div Arty and DISCOM.



(Frequency of measurement indicated in parenthesis.)

Figure 2-7d. Chart accuracy ratings, Brigade and Battalion.

Section VI - SECTION AND ELEMENT ANALYSIS

2-7. General.

a. This section presents subfindings that pertain to the section and element levels for the headquarters and facilities fielded for the test. The headquarters is defined as being the division, DISCOM, division artillery, brigade, and battalion; while the facility is the TAC CP and division alternate CP.

b. The section and element subfindings were developed by reference to the quantitative data contained in part III of this report. A section is defined as a coordinating staff section; e.g., G1, G2, S1, and S2, and consists of two or more elements. An element is defined as a grouping of personnel subordinate to a section. Examples of elements subordinate to the G3 section are operations, plans, and the fire support element (FSE).

c. The section subfindings are grouped into seven topics that are pertinent to the section analysis. These topics, summarized from the section and element level data, are effect of displacement, effect of destruction, effect of TAC CP deployment, effect of alternate CP, effect of shifting control, adequacy of intelligence support, and adequacy of personnel and equipment. Additional topics are included if the subfindings are pertinent to the section analysis.

d. The element subfindings are grouped into 15 topics that are pertinent to the element analysis. These topics are explained in paragraphs (1) through (14) below.

(1) Personnel. A listing by title, grade, branch, and MOS of personnel authorized for each element by the current H-series TOE and the Second Refinement, and as fielded during the test is provided. The H-series authorization column has been added to provide a comparison capability with respect to the personnel authorizations contained in the Second Refinement. The strength figure in the fielded 119 column indicates whether the requirement as expressed in the Second Refinement column was satisfied. The requirement with respect to MOS qualifications was satisfied by a person possessing the same or a similar MOS or a person with sufficient expertise to satisfactorily accomplish the job in a test environment. The strength figure in the fielded 119 column does not necessarily mean that the grade authorization in the Second Refinement was followed. However, since the person filling the position was otherwise qualified by MOS description or expertise, it was assumed that the actual grade of the incumbent was not relevant to the purpose of the test. Isolated instances where this assumption was not valid are discussed in the element analysis. Examples of optional positions are the CG's aide and stenographer, and food service technicians.

(2) Equipment. The equipment listing for each element follows the concept explained above for personnel. Only major items of equipment used by the element are listed; e.g., trucks, tracks, vans, radio sets, and speech security equipment.

(3) Functions and procedures.

(a) As stated in chapter I of this report, an organization and functions manual (OFM) was prepared by reference to the TSP and in coordination with representatives from CACDA. The OFM defined the major functions assigned to each element and the procedures required to be followed to satisfy the functional work statements. The player daily questionnaire (PDQ) completed by element personnel contained a listing of each function and its associated procedures. A separate listing of functions and procedures was prepared and included in the PDQ for each element. The element analysis contains information pertaining to time expended by personnel of the element by defined categories. Rationale is provided when certain functions and/or procedures were not performed. Generally, the function or procedure was not required to be performed during execution of a mid-intensity, European oriented, short duration scenario in a CPX environment. Preparation of training circulars and dissemination of nuclear strike warnings are examples of the type functions not required to be performed during execution of the scenario.

(b) The defined categories of time expended applicable to functions and activity levels (subparagraph (15) of each element analysis) are noted in figure 2-8.

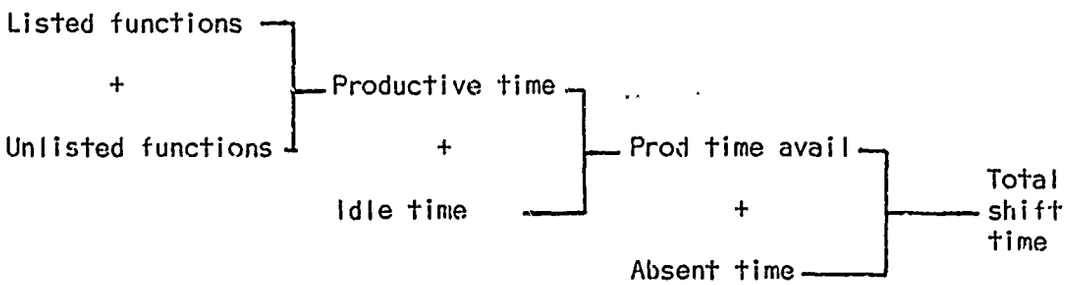


Figure 2-8. Time categories.

(c) Listed functions are those functions extracted from the OFM. Unlisted functions are those functions not listed in the OFM but were required to be performed by the element, e.g., preparing to displace and displacing. Idle time is that time when the person was present but had no work to do. Absent time is that time when the person was away from the element and not on element business.

(4) Files and reports. The TSP identified the working and visible files that were to be maintained, modified, and/or accessed by personnel of each section. Document input and output charts in the TSP contained a listing of reports, plans, orders, and estimates flowing in and out of each section.

(a) During development of the detailed plan of test, it became apparent that the files listing contained in the TSP was satisfactory for any contingency; however, examples and definition of the type of information to be contained in working files and on visible displays and a format for the type of information was not available. Additionally, the document input and output charts contained report titles that differed between levels of command. The charts also contained listing of reports for which formats could not be defined and for which adherence to the Standardization Agreements (STANAG) could not be assured.

(b) Based on these observations, a meeting was conducted with representatives from CACDA.

1 The primary purpose of the meeting was to establish a means whereby a definition and/or example of information contained in a working file or on a visible file, as well as a desired format for the information to be filed, could be developed. It was also necessary to establish a means to insure that reports prepared and/or used by elements of the division conformed to STANAG guidance and adhered to current Army doctrine for format and frequency of submission.

2 The secondary purpose of the meeting was to discuss the nature of information exchanged, reports prepared, and estimates made at the division and lower levels of command. During the meeting, it was agreed that files and reports required further definition and that providing completed examples of reports and a definition of the files to player personnel would improve the final product of the test. The following items were also agreed upon during the meeting:

a The estimates at the division and lower levels of command are not formally written documents but are logically developed estimates delivered orally to a superior.

b Few reports below the division level are formally prepared and submitted.

c Formally written reports, those forwarded to corps for example, are usually prepared by the assimilation of information received in the form of spot and situation reports and requests for additional resources and/or support.

d The division reports annex to the draft division SOP for test T19, which had evolved from previous tests, would be the basis for report submission and measurement during the test.

e The files listing in the TSP would be used for pertinent file data.

f MASSTER personnel would define the files and develop examples of completed reports.

(c) Subsequent to this meeting, the division reports annex to the SOP was finalized. In addition, files were defined, and examples of visible files and completed reports were prepared and presented during player orientation classes. These examples were incorporated in the reference material furnished to the player for his use during the test.

(d) Quantifiable data contained in this report concerning files conforms to the TSP, while data pertinent to reports conforms to the reports annex of the SOP.

(e) The element analysis contains information pertaining to file and report usage. Rationale is provided when certain files and reports are not used. Generally, a file or report was not used because execution of the mid-intensity scenario did not require its use. Other reasons were that the report and its attendant file were used only periodically; i.e., weekly or monthly, or the reports annex to the Div TAC SOP did not require its use. Time expended by element personnel in file usage and maintenance was expended concurrently with the performance of listed and unlisted functions. Therefore, data on productive man-hours expended exclusively using and maintaining the files is not presented.

(f) During future tests, consideration should be given to accelerating some selected scenaric events to assure that infrequently used periodic reports are required. Additionally, some specific scenario events will have to be added to insure that files appropriate for an element are afforded an opportunity for use.

(5) Organizational structure, physical relationships, and facilities. The element analysis defines the placement of the element in the organizational structure of the concept tested and gives representation of the physical relationship of the element within the CP as well as an interior layout of the vehicle or tent housing the element.

(6) Communications. Data at the element level is presented with respect to usage factors, problems experienced, if any, and identification of any additional communication means required. Most problems recorded by the player and elaborated on by the element and/or section

evaluators concern conditions indicative of real-world problems expected to be encountered by units in a fast-moving, mid-intensity conflict environment.

(7) Effect of displacement. Information contained in chapter I, section III, describes the concepts and procedures followed to effect overall displacement of the Div Main CP. The element analysis describes the displacement procedures followed, primary means of communication used during displacement, times associated with displacement as experienced by the element, and identification of the elapsed time from arrival at the new location until the element was capable of conducting effective and thence sustained operations at the new location.

(8) Effect of destruction. As explained in chapter I, the Div Main CP and the TAC CP were destroyed during the test. The element analysis identifies either the condition of being destroyed if at either of these locations, or the effect on other elements subsequent to this destruction.

(9) Effect of TAC CP deployment. The analysis provides a capability to determine the effect on the element during deployment of the TAC CP. Personnel and equipment furnished by an element to consitute the TAC CP are identified. Functions and procedures transferred to or received from another element as a result of the deployment are also identified.

(10) Effect of the alternate CP. The intent of this topic is to indicate how an element not located at the Div Alt CP was affected by the presence of the Div Alt CP in terms of procedural changes, information exchange, and workload activity.

(11) Effect of shifting control. The analysis defines how the element became aware that control of the division had changed, the means used to make this determination, and the effect on the element in making necessary changes, if any, to communicate with the newly designated control location. Control of the division was shifted from one location to another as shown in figure I-5.

(12) Scenario, control, and training. This portion of the element analysis defines from a player's point of view the adequacy of the scenario executed, identifies any scenario-related constraints placed on the element, and identifies any lack of individual qualifications that would affect the data collected during the test.

(13) Information flow. Analysis contained under this topic describes the staff relationship and the characteristics of the information exchanged within and between headquarters elements during the staff coordination process. A functional relationships matrix which depicts

the relationship existing between the element and division command group, other members within the division staff, and personnel at other levels of command is also provided. This relationship is illustrated as a percentage of occurrences experienced by the element. The matrix does not require further explanation; therefore, subfindings are not presented with respect to the matrix.

(14) Adequacy of personnel and equipment. Data contained under this topic, in conjunction with that data defined under the topic of functions and procedures, provides a capability to determine workload activity experienced, effectiveness of the element when performing functions assigned, and, if applicable, additional personnel and equipment required to improve the effectiveness of the element.

2-8. Division Command Group.

a. Personnel authorized and fielded are shown in figure 2-9.

Title	Grade	Branch	MOS	Strength Authorized H-ser	Strength Authorized 2d ref	Strength Fld 119
Div Comd	08	GO	00002	1	1	1
Asst Div Comd	07	GO	00002	2	2	2
CofS	06	AM	02010	1	1	1
SGS	04	NO	02011	1	1	1
Aide	03	NO	02030	1	1	1
Aide	LT	NO	02030	3	3	3
CSM	E9	NC	00Z50	1	1	1
Secy-Steno	E6	NC	71C30	2	2	2
Secy-Steno	E5	NC	71C30	1	1	1
Lt Veh Dvr	E3		11B10	3	3	3
TOTAL (Off/EM)				9/7	9/7	9/7

Figure 2-9. Division command group personnel.

b. The functions of the command group did not differ from that defined in FM 101-5. Command group personnel and evaluators were of the opinion that the procedures for the conditions noted below should be followed.

(1) Div Arty should be the designated Div Alt CP.

(2) Personnel augmentation is required for Div Arty when control is to be retained by Div Arty in excess of 24 hours.

(3) Div Arty or the TAC CP should take control of the division when the Div Main CP displaces.

(4) Off shift personnel from Div Main should sleep at the Div Alt CP location when practicable.

(5) The Div Main CP should close on the TAC CP when displacing.

(6) The Div Main CP should displace in one increment by march units.

2-9. Division GI Section.

a. General. The organization of the division GI section and the elements over which it exercises staff supervision are shown in figure 2-10. Subfindings pertinent to the section are in paragraph b, while subfindings pertinent to the elements of the GI section are contained in paragraphs c and d.

b. Section subfindings.

(1) Effect of displacement.

(a) During both displacements of the main CP, the GI section displaced in one group and closed on the advance party provided by the G4 section and the MP security platoon.

(b) Since the GI and administration element have no FM communications, their operational capability was nullified during displacements.

(c) The establishment of a division admin/log FM net, which could also be used to control the division CP displacements, was recommended.

(2) Effect of destruction. The GI section was destroyed.

(3) Effect of TAC CP deployment. The GI section provided no personnel or equipment to the TAC CP and was not affected by its deployment.

(4) Effect of alternate CP. The GI section was not adversely affected by the establishment of the alternate CP.

(5) Effect of shifting control. The GI section did not experience any difficulty when control of the division was shifted from one location to another.

(6) Adequacy of intelligence support.

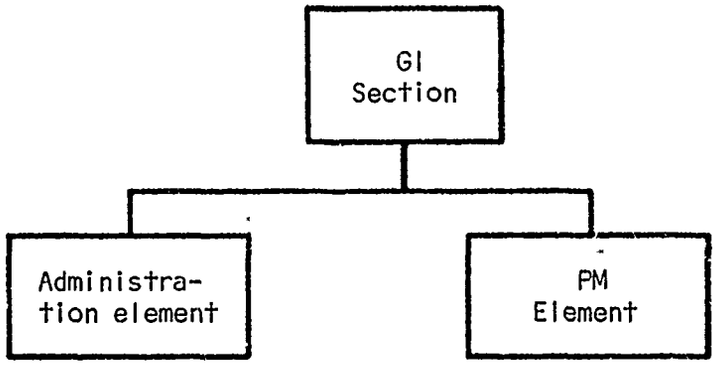


Figure 2-10. GI organization.

(a) Data pertinent to the adequacy of intelligence provided to the section is contained in part III.

(b) The GI and administration element generally could not evaluate the adequacy of intelligence support since none was received except for the daily staff intelligence briefings.

(c) The PM element reported that the intelligence support was not adequate due to insufficient intelligence dissemination to the element and a lack of requests for information by G2 personnel.

(7) Adequacy of personnel and equipment.

(a) Except during displacement operations, the personnel and equipment assigned to the GI section are adequate.

(b) The GI stated that an AN/VRC-46 radio is required to control CP displacement.

(c) The GI recommended the establishment of a division admin/log net, consisting of the following stations: brigade trains, DISCOM, Div Arty, division rear, and separate battalions.

(d) The GI recommended that the headquarters commandant be under the staff supervision of the GI.

c. Administration element.

(1) Personnel authorized and fielded are shown in figure 2-11.

(2) Equipment authorized and fielded is shown in figure 2-12.

Title	Grade	Branch	MOS	Strength Authorized H-ser	2d ref	Fld 119
GI	05	NO	02260	1	1	1
Asst GI	04	NO	02260	1	1	1
Pers mgt supv	E9	NC	71H50	1	1[a]	1
Secy-steno	E5		71C30	1	1[a]	1
Clk-typ	E4		71B30	2	2[a]	1
Lt veh dvr	E3		11B10	1	1	1
Reenl off	04	AG	02310	1	0	0
AC counselor supv	E6	NC	00E50	1	0	0
TOTAL (Off/EM)				3/6	2/5	2/4

[a]Optional for test

Figure 2-11. Administration element personnel.

Nomenclature	Strength Authorized H-ser	2d ref	Fld 119
Truck, utility, 1/4-ton	0	2	2
Truck, cargo, 3/4-ton	1	0	0
Trailer, cargo, 1/4-ton	0	2	2
Trailer, cargo, 3/4-ton	1	0	0
Tent, gp, sm	1	1	1

Figure 2-12. Administration element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 208 productive hours available during the test, 161 hours (77 percent) were expended performing listed and unlisted functions.

(b) Procedures F02P02 (Promotes welfare), F02P03 (Recovered US prisoners of war), F02P04 (pertaining to battlefield promotions), and function F03 (Health services management) were not required by the scenario.

(c) Scenario events pertaining to procedures F01P02B (Other personnel reports), F02P01B (Awards and decorations), and function F03 (Development and maintenance of morale) were forwarded to the division adjutant general company (played by a control organization) for action. No supervision was required during the test.

(d) F05 (Maintenance of discipline, law, and order) was performed by the Provost Marshal and, under actual conditions, would have been performed by the Staff Judge Advocate (not played).

(e) F02P02 (Prisoners of war) was performed by the provost marshal element and required no supervision.

(f). F01P02C (Prepares personnel estimates, orders) was prepared prior to commencement of the test.

(g) F06P02 (Recommends general location of the rear CP) was performed by the GI, who was not required to report on time spent performing functions and procedures.

(h) The OFM was used by personnel of the element.

(i) The OFM adequately described the functions and procedures to be performed by the element.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 161 productive hours expended by the element, 67 hours (42 percent) were expended in using the files and 36 hours (22 percent) were expended in maintaining the files (includes visual displays).

(b) Files 1101 (Staff Section Workbook), 1103 (Suspense), 1104 (Division SOP), 1107 (Accident Report), 1108 (Serious Incident Report), 1109 (Policy), 1114 (Discipline, Law, and Order), 1115 (Awards and Decorations), 1116 (Disciplinary Action), 1117 (Incidents), and 1118 (Periodic Personnel Reports) were not required by the scenario.

(c) Chart 1113 (PW Status) was maintained by the provost marshal element.

(d) The information required on the visual displays was adequate.

(e) Charts 1113 (PW Status) and 1117 (Incidents) and file 1112 (Internee Strength Report) should be maintained solely by the provost marshal element.

(f) Chart 1115 (Awards and Decorations) should be maintained solely by the adjutant general company.

(g) Chart 1116 (Disciplinary Action) should be maintained solely by the staff judge advocate element or the adjutant general company.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 161 productive hours expended by the element, 24 hours (15 percent) were expended in report preparation.

(b) Reports 1101 (Periodic Personnel) and 1107 (Discipline, Law, and Order) were not required by the scenario.

(c) Players and evaluators indicated that report 1107 (Internee Strength) should be prepared by the provost marshal element.

(6) Organizational structure, physical relationships, and facilities. Figure 2-10 depicts the organizational relationship of the administrative element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from the G4 van and this facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) The element made all calls (282) and received all calls (170) by telephone.

(b) The element prepared 76 messages for transmission and received 98 messages that had been transmitted by common-user teletype/RATT.

(c) Seventy-five percent of the element responses indicated that the element had enough communications.

(d) Element and evaluator personnel classified the means of communication available to the element as adequate to accomplish the assigned mission.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but as one group. During both displacements, the element closed on the advance party provided by the G4 section.

(b) The GI and administration element have no communication capability during displacement.

(c) The element was ready to move an average of 70 minutes after displacement procedures started.

(d) The element departed the old location an average of 26 minutes after being ready to move.

(e) The element was capable of conducting effective operations an average of 105 minutes after the element arrived at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of 112 minutes after arriving at the new location.

(g) Element and evaluator personnel recommended that displacement procedures in the division TAC SOP be revised to eliminate the requirement for incremental displacement.

(h) Element and evaluator personnel reported that an FM radio is required when the element displaces.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The administrative element provided no personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) Personnel of the element normally learned orally from the GI that the point of control within the division had changed.

(c) The procedure followed by the element to establish communications with the newly designated point of control within the division was to wait for the signal battalion to establish telephone and message communication means.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) No significant additional training requirements were identified for element personnel.

(14) Information flow. Data pertaining to the exchange of information between the administration element and other elements of the division is contained in part III. The matrix in figures 2-13 and 2-14 depicts the relationship between the element and the division command group, other personnel within the division staff, and personnel at other levels of command. (Note: Figure 2-13 pertains only to the GI.)

(a) The adequacy, relevancy, timeliness, and accuracy of the information provided to the element was generally rated as 'good'.

(b) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An undercapacity workload condition was experienced 75 percent of the time. Players and evaluators attributed this situation to an operational oriented scenario and the difficulty in exercising an administration element in a CPX environment.

(b) The mean productive time expended per day was 7 hours for officers and 1 hour for NCO's.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
HQ Comdt	18	42.86	Comd Gp	15	100.00	Comd Gp	18	24.00	Comd Gp	09	12.50
AG	12	28.57				PM	09	12.00	G3	09	12.50
PM	09	21.43				AG	09	12.00	G4	06	8.33
DTO	03	7.14				G3	06	8.00	C-E Off	06	8.33
						G4	06	8.00	PM	06	8.33
						C-E Off	06	8.00	AG	06	8.33
						HQ Comdt	06	8.00	HQ Comdt	06	8.33
						DTO	03	4.00	SI, DISCOM	06	8.33
						SI, DISCOM	03	4.00	SI, Div Arty	06	8.33
						SI, Div Arty	03	4.00	SI, Bde	06	8.33
						SI, Bde	03	4.00	SI, Bn	06	8.33
						SI, Bn	03	4.00			

Figure 2-13. GI functional relationships.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
SI, DISCOM	18	28.57	GI	36	60.00	SI, DISCOM	18	21.43	GI	18	18.75
SI, Div Arty	18	28.57	Comd Gp	12	20.00	SI, Div Arty	18	21.43	SI, DISCOM	18	18.75
SI, Bde	12	19.05	G2	06	10.00	SI, Bde	18	21.43	SI, Div Arty	18	18.75
PM	06	9.52	G3	06	10.00	GI	12	14.29	SI, Bde	18	18.75
AG	06	9.52				AG	12	14.29	Comd Gp	06	6.25
GI	03	4.76				PM	06	7.14	AG	06	6.25
									Bde Comd Gp	06	6.25
									G2	03	3.13
									G3	03	3.13

Figure 2-14. GI administrative element functional relationships.

(c) The mean idle time per day was 3 hours for officers and 2 hours for NCO's.

(d) The mean absent time per day was 0 hours for officers and 1 hour for NCO's.

d. Provost marshal element.

(1) Personnel authorized and fielded are shown in figure 2-15.

Title	Grade	Branch	MOS	Strength Authorized H-ser	2d Ref	Fld 119
Div PM	05	MP	09100	1	1	1
Asst Div PM	04	MP	09100	1	1[a]	1
CI	WO		951A0	1	1[a]	0
Op Sgt	E8	NC	95B50	1	1	1
Sr Asst CI	E7		95D40	1	1[a]	0
Clerk-Typ	E4		71B30	1	1	1
MP	E3		95B10	1	1	1
TOTAL (Off/EM)				3/4	3/4	2/3

[a]Optional for test

Figure 2-15. PM element personnel.

(2) Equipment authorized and fielded is shown in figure 2-16.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 256 productive hours available during the test, 252 hours (99 percent) were expended performing listed and unlisted functions.

(b) Procedures F02F02A (Confinement, rehabilitation, hospital prison wards), F02F02F (Aid to civil authorities), and F02F02K (Temporary detention of US military prisoners) were not required by the scenario.

(c) The OFM was used by personnel of the element.

(d) The OFM did not adequately describe the functions and procedures and requires revision to provide a more detailed description of job responsibilities.

Nomenclature	Strength Authorized H-ser	2d ref	Fld 119
Truck, Utility, 1/4-ton	2	2	2
Trailer, Cargo, 1/4-ton	2	2	2
Radio Set, AN/VRC-46, mtd in trk, 1/4-ton	1	1	1
Radio Set, AN/VRC-47, mtd in trk, 1/4-ton	1	1	1
Tent, GP, Sm	1	1	1
Vestibule, Tent for Tent, GP, Sm	1	1	1

Figure 2-16. PM element equipment.

(4) Files. A complete listing of files and their resultant usage factors is contained in part III.

(a) Of the 252 productive hours expended by the element, 38 hours (15 percent) were expended in using the files and 21 hours (8 percent) were expended in maintaining the files (includes visual displays).

(b) All listed files were used by the element.

(c) The information required on the visual displays was adequate.

(d) Element and evaluator personnel reported that chart 1117 (Incidents), files 1108 (Serious Incident Report) and 1112 (Internee Strength Report), and unlisted files "Personnel Utilization" and "US Prisoners of War" should be added to the provost marshal files.

(5) Reports.

(a) The provost marshal element is not required by Annex Z, Division SOP, to submit any reports.

(b) The internee strength report is only submitted by each brigade. This method does not ensure reports from separate or rear units. Provost marshal personnel indicated that report 1106 (Internee Strength) should also be submitted through provost marshal channels to the GI by the military police platoons manning the division collection points.

(6) Organization structure, physical relationships, and facilities. Figure 2-10 depicts the organizational relationship of the PM element within the section. Sketches depicting the physical relationship of the element within the main CP and the interior layout of the tent housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from a small general purpose tent which was adequate for the number of people assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 123 calls made, 8 percent were placed by FM and 92 percent by telephone.

(b) Of the 97 calls received, 2 percent were received by FM and 98 percent by telephone.

(c) The element prepared 37 messages for transmission and received 44 messages that had been transmitted by common-user teletype or RATT.

(d) All element personnel indicated that the element had enough means of communication.

(e) Element and evaluator personnel classified the means of communication available to the element as adequate to accomplish the assigned mission.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element are contained in part III.

(a) During the first displacement, the element did displace in two distinct serials concurrent with the first increment of the division main. During the second displacement, the element moved as a group with division main. During both displacements, the element closed on the advance party provided by the MP security platoon.

(b) Element and evaluator personnel reported no difficulty with communications and few difficulties with obtaining information during displacements.

(c) The element was ready to move an average of 63 minutes after displacement procedures started.

(d) The element departed the old location an average of 49 minutes after being ready to move.

(e) The element was capable of conducting effective operations an average of 70 minutes after arriving at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of 95 minutes after arriving at the new location.

(g) Element and evaluator personnel did not recommend that the SOP be revised to improve its utility although subsequent discussion with the players revealed that the PM and assistant PM would probably not travel with the division main increments during a move because they would be supervising MP operations.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The PM element provided no personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. The PM element was not adversely affected by the establishment of an alternate CP and received no requests for information from the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the element is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned by attendance at staff meetings that the point of control within the division had changed.

(c) The procedure followed by the element to establish communications with the newly designated point of control within the division was to wait for the signal battalion to install all communications.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) The scenario did not adequately portray MP operations in the division area. Also, due to a shortage of experienced MP personnel, controllers at both company and corps level lacked qualifications in MP operations.

(b) Qualifications of the personnel assigned to the element with respect to rank and MOS were satisfactory.

(c) Additional MOS, management, and administrative training are required by the PM element.

(14) Information flow. Data pertaining to the exchange of information between the provost marshal element and other elements of the division is contained in part III. The matrix in figure 2-17 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) The relevancy, timeliness and accuracy of the information provided to the element was generally rated as 'fair'. The adequacy of the information provided was generally rated as 'poor' due to the lack of realistic play in the scenario.

(b) The element provided and received orders and guidance in sufficient time to meet operational requirements. However, element personnel indicated more guidance and requests for information from G2 personnel could have been initiated to more effectively use military police in the intelligence gathering role.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) A within-capacity workload was experienced 100 percent of the time.

(b) The mean productive time expended per day was 20 hours for officers and NCO's. However, subsequent discussion with element personnel indicated that the assistant PM and operations sergeant, who were not shifted, slept in the PM element tent and improperly recorded this time as time spent performing various functions. A mean productive time of 12 to 16 hours is more realistic.

(c) The mean idle time per day was 1 hour for officers and 0 hours for NCO's.

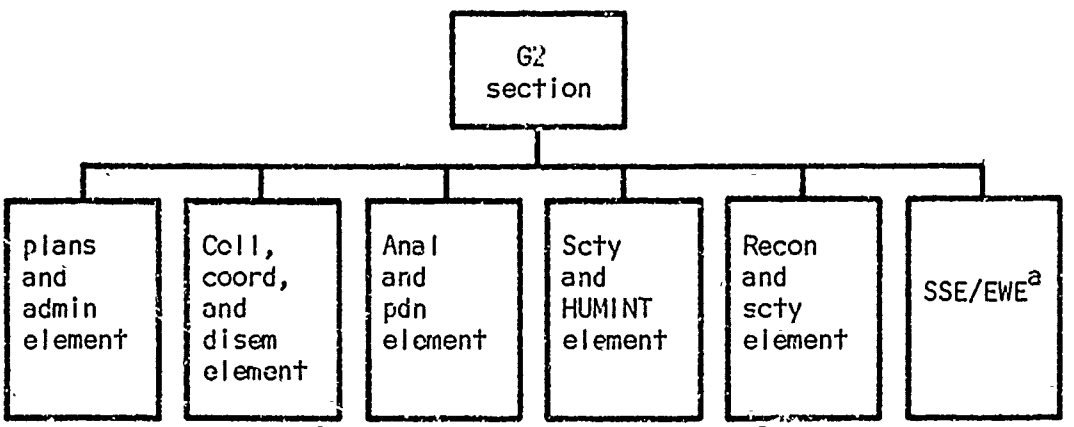
(d) The mean absent time per day was 1 hour for officers and 1 hour for NCO's.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
SI, Bde	12	66.67	Comd Gp	54	75	G5	18	60	G1	18	30
HQ Comdt	6	33.33	G1	18	25	DTO	12	40	G4	18	30
									DTO	12	20
									HQ Comdt	12	20

Figure 2-17. PM element functional relationships.

2-10. Division G2 Section.

a. General. The organization of the division G2 section and the elements over which it exercised operational control are shown in figure 2-18. Subfindings pertinent to the section are at paragraph b, while subfindings pertinent to the elements of the G2 section are contained in paragraphs c through h.



[a]Staff supervision provided by EWCO.

Figure 2-18. G2 organization.

b. Section subfindings.

(1) Effect of displacement.

(a) During both displacements of the division main CP, the G2 section generally displaced in two increments. During the first displacement, the section closed on the advance party provided by the plans and administration (P&A) and reconnaissance and surveillance (R&S) elements. During the second displacement, the section closed on the TAC CP.

(b) During neither displacement was the section operational at the new location prior to the second increment departing the old location. Thirty-five percent of the element responses indicated that the section could not maintain effective operations during displacement. However, the TAC CP or Alternate CP had assumed control of the division and was able to operate effectively during both displacements.

(2) Effect of destruction. The G2 section was destroyed.

(3) Effect of TAC CP deployment.

(a) In addition to the G2, the section provided personnel from the plans and administration, analysis and production (A&P), and reconnaissance and surveillance elements to the TAC CP. A complete listing of the personnel and equipment is contained in the element analysis.

(b) The division TAC SOP did not include the R&S officer nor personnel from the A&P element as part of the TAC CP. During the test, the R&S officer deployed with the TAC CP and remained with it until the G2 arrived, which was just prior to the time the TAC CP assumed control of the division. The division TAC SOP included three ASA (SI) communications personnel as part of the TAC CP. The G2 replaced these personnel with an intelligence officer and NCO from the A&P element.

(4) Effect of the alternate CP. The section was not adversely affected by the establishment of the alternate CP.

(5) Effect of shifting control. The section did not experience any difficulty when control of the division was shifted from one location to another. The G2 evaluator commented that shifting control of intelligence production and collection management activities away from the division TOC for extended periods would seriously reduce the capability of the division to perform these vital functions.

(6) Adequacy of intelligence support.

(a) Data pertinent to the adequacy of the intelligence support provided by the section to other sections and subordinate commands of the division is contained in part III and in the individual section analysis.

(b) The CG reported that the intelligence support was much better than that normally experienced under the traditional divisional G2/S2 organization, especially in the SI area.

(c) The G2 classified the intelligence support as worse while the G2 evaluator classified it as better. The rationale provided by the G2 was that the absence of a deputy precluded him [the G2] from being able to visit subordinate commands.

(7) Adequacy of personnel and equipment. The P&A, CC&D, R&S, and SSE/EWE elements reported that additional personnel and/or equipment are required to provide the elements with a 24-hour operational capability. The G2 and his evaluator reported that a deputy is required to supervise G2 personnel in the DTOC, be responsible for displacement of the section, and act as the G2 in his absence. (Note: The division intelligence SOP,

developed during the workshop, provided for the deputy G2 as plans officer and BICC OIC as deputy G2 for operation. These two officers should be adequate to perform all the duties required.)

(8) Files and reports. The files and reports used by the elements of the G2 section are identified in the division intelligence SOP and are listed for the section as a whole. Except for the SSE/EWE, all elements of the G2 section have the identical list of files and reports. Therefore, the element analysis will only list the files and reports used by that particular element.

c. Plans and administration element.

(1) Personnel authorized and fielded are shown in figure 2-19.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
G2	05	AM	09301	1	1	1
Deputy G2, Plans	04	AM	E9301	1	1	1
G2 SGM	E9	NC	96B50	1	1	1
Secretary-steno	E5		71C30	1	1	1
Clerk-typist	E4		71B20	1	1	1
Pers carr dvr	E4		11B20	1	1	1
Lt veh dvr	E3		11B10	0	1	1
TOTAL (Off/EM)				2/4	2/5	2/5

Figure 2-19. Plans and administration element personnel.

(2) Equipment authorized and fielded is shown in figure 2-20.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 200 productive hours available during the test, 166 hours (83 percent) were expended performing listed and unlisted functions.

(b) All listed functions and procedures were performed.

(c) The OFM was used by personnel of the element.

(d) The OFM did not adequately describe the functions and procedures required to be performed by the element.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	1	1
Radio set, AN/VRC-47, mtd in carr, CP	0	1	1
Radio set, AN/VRC-46, mtd in carr, CP	1	0	0
Radio set, AN/VRC-47, mtd in 5-ton van	0	1[a]	0
Radio set contr gp, AN/GRA-39	1	1	0
Speech security equip, TSEC/KY8	0	4	2
Tent, GP, small	1	1	1
Truck, utility, 1/4-ton	1	2	2
Trailer, cargo, 1/4-ton	1	2	2
Truck, van, exp, 5-ton	1	1	1
Trailer, cargo, 1 1/2-ton	1	0	1

[a]This radio is for use of the R&S element.

Figure 2-20. Plans and administration element equipment.

(e) Player and evaluator personnel indicated that the OFM requires revision to more clearly delineate the relationships between elements comprising the G2 section.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 166 productive hours expended by the element, 67 hours (40 percent) were expended in using the files and 6 hours (3 percent) were expended in maintaining the files (including visual displays).

(b) Files 2106 (Staff Journal), 2303 (Air R&S Plan), 2416 (Access System), 2501 (Collection Plan), 2502 (Sit Map), 2508 (Topical File), 2519 (Work File), 2531 (Collateral overlay (sanitized)), 2532 (Weather Chart), 2607 (OB File), 2609 (Significant Events), 2625 (Ensit Map), 2629 (ASI), 2630 (SI overlay (sanitized)), and 2633 (Planning Map) were used and/or maintained by the element.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 166 productive hours expended by the element, 12 hours (7 percent) were expended in report preparation.

(b) Report 2604 (Intelligence Estimates) was the only listed report rendered by this element.

(6) Organizational structure, physical relationships, and facilities. Figure 2-18 depicts the organizational relationship of the P&A element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the facility housing the element are contained in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was not satisfactory.

(c) The element operated from the G2/G3 admin van and the G2/G3 plans tent and the van was not adequate for the personnel assigned. Element personnel reported that during times when both the G2 admin and G3 admin were required to complete priority projects, the amount of available table work space was not sufficient.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 25 calls made, 8 percent were placed by FM, 88 percent by telephone, and 4 percent by AM (voice) communications.

(b) Of the 13 calls received, 8 percent were received by FM, 77 percent by telephone, and 15 percent by AM (voice) communications means.

(c) The element prepared 5 messages for transmission and received 14 messages that had been transmitted by common-user teletype/RATT.

(d) Ninety-four percent of the element responses indicated that the element had enough means of communication.

(e) Element and evaluator personnel classified the means of communication available to the element as adequate to accomplish the assigned mission.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element displaced incrementally during the test.

(b) Element and evaluator personnel generally reported no difficulty with communications or with obtaining information during displacements.

(c) The Deputy G2, Plans, reported that the element was ready to move and departed the old location an average of 110 minutes after displacement procedures started.

(d) The Deputy G2, Plans, reported that the element was capable of conducting effective operations an average of 70 minutes after arriving at the new location.

(e) The Deputy G2, Plans, reported that the element was operational (completely set up) an average of 93 minutes after the element arrived at the new location.

(f) Element and evaluator personnel recommended that the displacement procedures in the division TAC SOP be revised to place the G2 Plans and Admin element in the first increment, provide for an advanced party, and identify march unit commanders.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. Data pertinent to the effects of deployment of the TAC CP on the element is contained in part III.

(a) Personnel furnished by the element to the TAC CP are shown in figure 2-21.

Title	Grade	MOS	Strength
Personnel carrier driver	E4	11E20	1

Figure 2-21. Personnel provided by P&A element to TAC CP.

(b) Equipment furnished by the element to permit the TAC CP is shown in figure 2-22.

Nomenclature	Quantity
Carrier, Command Post	1
Radio set, AN/VRC-47, mtd in carr, CP	1
Speech security equipment TSEC/KY8	1
Truck, utility, 1/4-ton	1
Trailer, cargo, 1/4-ton	1
Trailer, cargo, 1 1/2-ton	1

Figure 2-22. Equipment provided by P&A element to TAC CP.

(c) Element and evaluator personnel reported that providing personnel and equipment to the TAC CP did not degrade the operational effectiveness of the element.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) Element personnel reported that the alternate CP seldom requested information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from the G3 operations officer that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that would affect the test data were imposed on the element by the scenario or the control organization when executing the scenario. However, element personnel reported a lack of administrative scenario events that would normally be performed by the element.

(b) Qualifications of the personnel assigned to the element were generally unsatisfactory due to non-intelligence related MOS's and the lack of any intelligence experience.

(c) Element and evaluator personnel indicated that additional training was required for the G2 SGM, plans officer, and all clerks.

(14) Information flow. Data pertaining to the exchange of information between the G2 Plans and Admin element and other elements of the division is contained in part III. The matrix at figures 2-23 and 2-24 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command. (Note: Fig 2-23 pertains only to the G2 and BICC OIC.)

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G3	15	13.16	G2	24	16.67	G2	18	24.00	Comd Gp	36	37.50
FSE	15	13.16	G3	21	14.58	GI	12	16.00	G2	21	21.88
Comd Gp	12	10.53	FSE	21	14.58	FSE	09	12.00	BICC OIC	18	18.75
G2	12	10.53	GI	12	8.33	BICC OIC	09	12.00	EWCO	09	9.38
G4	12	10.53	G4	12	8.33	S2, DISCOM	06	8.00	GI	03	3.13
BICC OIC	12	10.53	BICC OIC	12	8.33	S2, Div Arty	06	8.00	G3	03	3.13
GI	06	5.26	S2, Div Arty	12	8.33	S2, Bde	06	8.00	G4	03	3.13
EWCO	06	5.26	S2, Bde	12	8.33	G3	03	4.00	FSE	03	3.13
S2, DISCOM	06	5.26	S2, DISCOM	06	4.17	G4	03	4.00			
S2, Div Arty	06	5.26	S2, Bn	06	4.17	EWCO	03	4.00			
S2, Bde	06	5.26	Comd Gp	03	2.08						
S2, Bn	06	5.26	EWCO	03	2.08						

Figure 2-23. G2 and BICC OIC functional relationships.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
PM	12	57.14	G2	36	48.00	G2	18	21.43	Comd Gp	24	25.81
G3	03	14.29	G3	15	20.00	Comd Gp	15	17.86	G2	18	19.35
BICC OIC	03	14.29	Comd Gp	12	16.00	G3	12	14.29	G3	15	16.13
HQ Comdt	03	14.29	GI	06	8.00	BICC OIC	09	10.71	BICC OIC	09	9.68
			HQ Comdt	06	8.00	GI	06	7.14	GI	06	6.45
						FSE	06	7.14	DTO	06	6.45
						HQ Comdt	06	7.14	PM	03	3.23
						PM	03	3.57	EWCO	03	3.23
						EWCO	03	3.57	ADE	03	3.23
						ADE	03	3.57	Cml Off	03	3.23
						Cml Off	03	3.57	HQ Comdt	03	3.23

Figure 2-24. Plans and Administration element functional relationships.

(a) Information provided to the element was generally considered adequate, relevant, timely, and accurate.

(b) Element and evaluator personnel reported that the element had no difficulty in obtaining information from other elements and sections.

(c) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An overcapacity workload was experienced 13 percent of the time.

(b) An undercapacity workload condition was experienced 38 percent of the time.

(c) The mean productive time expended per day was 16 hours for officers and 7 hours for NCO's.

(d) The mean idle time per day was 1 hour for officers and 3 hours for NCO's.

(e) The mean absent time per day was 3 hours for officers and 12 hours for NCO's.

(f) Element and evaluator personnel indicated that the G2 requires a full-time deputy to coordinate the overall G2 section and the various activities of the section. These duties were performed by the Deputy G2, Plans.

(g) Element and evaluator responses indicated the G2 required a radio mounted on the 1/4-ton truck to provide a means for convoy and intelligence coordination during moves.

d. Collection, Coordination, and Dissemination (CC&D) element.

(1) Personnel authorized and fielded are shown in figure 2-25.

(2) Equipment authorized and fielded is shown in figure 2-26.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 318 productive hours available during the test, 294 hours (92 percent) were expended performing listed and unlisted functions.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
CC&D Sec C	03	MI	9301	0	2	2
Op Sgt	E8	NC	96B50	0	1	1
Asst Op Sgt	E7	NC	96B40	0	1	1
Intel Anal (RATELO)	E5		96B20	0	2	2
Intel Anal (Journal Clk)	E4		96B20	0	2	2
TOTAL (Off/EM)				0	4/4	4/4

Figure 2-25. Collection, coordination, and dissemination element personnel.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Radio set, AN/VRC-46, mtd in 1/4-ton	0	1	1
Speech security equipment, TSEC/KY8	0	1	1
Truck, utility, 1/4-ton	0	1	1
Trailer, cargo, 1/4-ton	0	1	1
Truck, cargo, 2 1/2-ton	0	1	1
Trailer, cargo, 1 1/2-ton	0	1	1

Figure 2-26. Collection, coordination, and dissemination element equipment.

(b) Procedures F01P12 (coordinates SIGINT activities) and F03P02 (insures that appropriately "sanitized" information is either included or considered in all products of the G2 section) were not performed by personnel of this element because the procedures must be performed within the special intelligence area and should be added to the analysis and production (A&P) element's procedures.

(c) The OFM was reported as not being used by personnel of this element during the test; however, because of experience, previous tests, workshops, and training, the functions and procedures as outlined in the OFM were executed except as noted in the previous paragraph.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 294 productive hours expended by the element, 126 hours (43 percent) were expended in using the files and 91 hours (31 percent) were expended in maintaining the files.

(b) Files 2106 (Staff Journal), 2110 (Reference), 2501 (Collection Plan), 2502 (SITMAP), 2532 (Weather Chart), 2609 (Significant Events), 2612 (Briefing and Plan), 2625 (Ensit Map), 2630 (SI O/L), and 2635 (Briefing Chart) were used and maintained by the element.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 294 productive hours expended by the element, 64 hours (22 percent) were expended in report preparation.

(b) Reports 2326 (Inflight report), 2328 (Hot rep), 2501 (Intel requests), 2508 (Spot report), 2522 (Weather report), 2532 (Weather forecast), 2524 (Weather advisory), 2525 (Effective wind message), 2604 (Intel estimates), 2605 (Intel studies), 2607 (Intsum), and 2621 (Bomb shel/Mort report) were prepared by the element.

(6) Organizational structure, physical relationships, and facilities. Figure 2-18 depicts the organizational relationship of the CC&D element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element, are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from the G2/G3 van, one of the vehicles comprising the division tactical operations center, and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 917 calls made, 58 percent were placed by FM, 42 percent by telephone, and less than one percent by AM (voice) communications means.

(b) Of the 1,350 calls received, 58 percent were received by FM, 42 percent by telephone, and less than one percent by AM (voice) communications means.

(c) The element prepared 76 messages for transmission and received 152 messages that had been transmitted by common-user teletype/RATT.

(d) Element personnel reported that the element had enough means of communications.

(e) Element and evaluator personnel classified the means of communication available to the element as being adequate to accomplish the mission.

(f) The element was able to function effectively during periods when jamming was experienced.

(g) The element did not experience difficulty in receiving/disseminating early warning messages using the intelligence FM net.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During both displacements, the element moved with the 2d increment of the div main CP.

(b) FM radio was the means of communication used during displacement.

(c) The element was ready to move an average of 90 minutes after displacement procedures started.

(d) The element departed the old location an average of 60 minutes after being ready to move.

(e) The element was capable of conducting effective operations an average of 50 minutes after arriving at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of 80 minutes after arriving at the new location.

(9) Effect of destruction. The G2 CC&D element was destroyed.

(10) Effect of TAC CP deployment. The element did not provide personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) Element personnel reported that the alternate CP seldom requested information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element was not adversely affected when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from the G3 duty officer that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) Element and evaluator personnel responses noted a *total* loss of usefulness of the RATT when untrained operator personnel came on shift.

(14) Information flow. Data pertaining to the exchange of information between the G2 CC&D operations element and other elements of the division is contained in part III. The matrix at figure 2-27 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered accurate, adequate, relevant, and timely with the exception of RATT traffic.

(b) Element and evaluator personnel reported that no difficulty was experienced in obtaining information from other elements and sections.

(c) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(d) Evaluator and element responses indicated that information disseminated by the element was slowed with the use of a thermofax single sheet copier.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S2, Div Arty	18	25.00	BICC OIC	60	32.79	S2, Bde	30	13.51	G2	33	14.47
S2, DISCOM	15	20.83	G2	45	24.59	S2, Div Arty	27	12.16	S2, Div Arty	33	14.47
S2, Bde	15	20.83	G3	27	14.75	S2, DISCOM	24	10.81	G3	30	13.16
G2	06	8.33	S2, Bde	15	8.20	S2, Bn	24	10.81	S2, Bde	30	13.16
BICC OIC	06	8.33	S3, DISCOM	12	6.56	BICC OIC	18	8.11	BICC OIC	24	10.53
S2, Bn	06	8.33	S2, Div Arty	12	6.56	FSE	12	5.41	S2, DISCOM	24	10.53
G3	03	4.17	S2, Bn	12	6.56	G2	09	4.05	S2, Bn	24	10.53
FSE	03	4.17				G3	09	4.05	EWCO	12	5.26
						PM	09	4.05	ALO	06	2.63
						EWCO	09	4.05	FSE	03	1.32
						Cml Off	09	4.05	PM	03	1.32
						G4	06	2.70	ADE	03	1.32
						G5	06	2.70	Avn Off	03	1.32
						AG	06	2.70			
						Avn Off	06	2.70			
						ADA Off	06	2.70			
						GI	03	1.35			
						C-E Off	03	1.35			
						ADE	03	1.35			
						ALO	03	1.35			

Figure 2-27. Collection, coordination, and dissemination element functional relationships.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An overcapacity workload condition was experienced 6 percent of the time.

(b) An undercapacity workload condition was experienced 50 percent of the time, primarily by the night shift.

(c) The mean productive time expended per day was 11 hours for officers and 9 hours for NCO's.

(d) The mean idle time and absent time per day was less than 1 hour for officers and 1 hour for NCO's.

(e) Element and evaluator personnel reported that the shift OIC was delegated to operating a thermofax copier and thus was prevented from adequately supervising the collection effort. They commented that an additional analyst (MOS 96B) is required to expedite message flow.

(f) Both element and evaluator responses indicated a need for a faster reproduction capability.

(g) Evaluator responses indicated a need for a facsimile device to pass lengthy perishable messages which tie-up the FM net and overwhelm the intelligence RATT.

(h) Element and evaluator personnel stated that additional personnel and equipment are required to satisfy normal mission requirements as shown in figures 2-28 and 2-29.

Title	Grade	MOS	Strength
Intelligence analyst	E4/5	96B20	1

Figure 2-28. Collection, coordination, and dissemination recommended personnel addition.

Nomenclature	Quantity
Multicopy reproduction machine (Xerox)	1
Facsimile device	1

Figure 2-29. Collection, coordination, and dissemination element recommended equipment additions.

e. Analysis and production (A&P) element.

(1) Personnel authorized and fielded are shown in figure 2-30.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
BICC OIC	04	MI	09301	0	1	1[a]
Intel Off	Lt	MI	09301	0	3	3
OB Tech	WO		954A0	0	1	1
Intel Sgt	E6	NC	96B40	0	2	2
Intel Anal	E5		96B20	0	2	2
TOTAL (Off/EM)				0	5/4	5/4

[a]BICC OIC was arbitrarily placed in A&P element.

Figure 2-30. Analysis and production element personnel.

(2) Equipment authorized and fielded is shown in figure 2-31.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Radio set, AN/VRC-47, mtd in trk, van, exp	0	1	1
Radio set, contr gp, AN/GRA-39	0	1	1
Speech scty equip, TSEC/KY-8	0	1	1
Truck, van, expansible, 5-ton	0	1	0

Figure 2-31. Analysis and production element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 338 productive hours available during the test, 322 hours (95 percent) were expended performing listed and unlisted functions.

(b) Procedure F02P02 (identifies intelligence needs in operational planning) was not performed by the element.

(c) The OFM was used by personnel of the element.

(d) Except for procedure F02P02 the OFM adequately described the functions and procedures required to be performed by the element.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 322 productive hours expended by the element, 170 hours (53 percent) were expended in using, and 73 hours (23 percent) in maintaining, the files (includes visual displays).

(b) Files 2110 (reference), 2115 (Reading), 2121 (Intel SOP), 2124 (INTSUM Writing Guide), 2502 (SITMAP), 2508 (Topical), 2511 (Incoming), 2514 (Outgoing), 2607 (OB), 2609 (Significant Events), 2625 (ENSITMAP), 2629 (ASI), and 2635 (Briefing Chart) were used and/or maintained by the element.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 322 productive hours expended by the element, 50 hours (16 percent) were expended in report preparation.

(b) Reports 2309 (Hostile Air Attack), 2501 (Intel Requests), 2508 (Spot Report), 2604 (Intel Estimates), 2605 (Intel Studies), and 2607 (INTSUM) were prepared by the element.

(6) Organizational structure, physical relationships and facilities. Figure 2-18 depicts the organizational relationship of the A&P element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the element was not satisfactory with respect to the division TOC elements and with other elements comprising the division main CP.

(c) The element operated from within the special intelligence (SI) area collocated with the SSE/EWE element and was physically separated from the other G2 elements which made a runner continually necessary. Element and evaluator personnel recommended that the SI area be moved closer to the DTOC.

(d) The element operated from the SSE/EWE element expansible van and this facility was adequate for the number of personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 450 calls made, 100 percent were placed by filtered phone to the CC&D element.

(b) Of the 470 calls received, 100 percent were received by the filtered phone from the CC&D element.

(c) The element prepared 68 messages for transmission, and received 238 messages that had been transmitted, by common-user teletype or RATT.

(d) Element personnel reported that the element had enough means of communication.

(e) Twenty percent of the element responses indicated that problems were experienced with RATT communications.

(f) Early warning messages were passed to the CC&D element for dissemination via filtered phone with no difficulties experienced.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During both displacements, the element moved with the 2d increment of the division main CP.

(b) FM radio was the means of communication used during displacement.

(c) The element was not functional during displacement.

(d) The element was ready to move an average of 52 minutes after displacement procedures started.

(e) The element departed the old location an average of 60 minutes after being ready to move.

(f) The element was capable of conducting effective operations an average of 60 minutes after arriving at the new location.

(g) The element was capable of conducting sustained operations (completely set up) an average of 68 minutes after arriving at the new location.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. Data pertinent to the effects of deployment of the TAC CP on the element is contained in Part III.

(a) Personnel provided by the element to the TAC CP during deployment are shown in figure 2-32.

Title	Grade	Branch	MOS	Strength
Intel Off	02	MI	9309	1
Intel Anal	E6	NC	96B40	1
TOTAL (Off/EM)				1/1

Figure 2-32. Analysis and production element personnel provided to the TAC CP.

(b) Personnel provided were in excess of the number authorized by the TAC SOP.

(c) Element and evaluator personnel reported that providing personnel to the TAC CP did not seriously degrade the operational effectiveness of the element.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) Element personnel reported that the alternate CP seldom requested information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element was not adversely affected when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from the division BICC OIC that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic contraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario. Element personnel and the evaluator did report, however, that the control organization was not fully responsive to the needs of the A&P element.

(b) Element and evaluator personnel reported that a few unrealistic scenario events were injected into the problem play. The intelligence officer commented that these intelligence scenario events were exceptions to the aggressor manual, thus creating more research than would ordinarily be required.

(c) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(d) The data indicated that the only additional training needed would be more cross-training in electronic warfare.

(14) Information flow. Data pertaining to the exchange of information between the A&P element and other elements of the division is contained in part III. The matrix at figure 2-33 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered accurate, adequate, and relevant, but often not timely.

(b) Element personnel and the evaluator reported that the element experienced problems in obtaining timely information from the CC&D element because of communications difficulties and the physical separation of the element from the DTOC.

(c) The element provided orders and guidance in sufficient time to meet operational requirements.

(d) The evaluator reported that on a few occasions the element received requests for information with short suspense times resulting in inadequate analytical judgments being given for intelligence estimates.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
BICC OIC	12	57.14	BICC OIC	27	52.94	BICC OIC	24	36.36	BICC OIC	24	28.57
EWCO	06	28.57	G2	21	41.18	G2	15	22.73	G2	21	25.00
S2, Bde	03	14.29	S2, Bde	03	5.88	S2, Bde	09	13.64	EWCO	15	17.86
						FSE	06	9.09	S2, Bde	09	10.71
						EWCO	06	9.09	G3	06	7.14
						G3	03	4.55	FSE	06	7.14
						C-E Off	03	4.55	C-E Off	03	3.57

Figure 2-33. Analysis and production element functional relationships.

(a) An undercapacity workload condition was experienced 30 percent of the time.

(b) An overcapacity workload condition was experienced 30 percent of the time and is correlated to times when the element personnel were dispatched to the TAC CP.

(c) The mean productive time expended per day was 12 hours for officers and 10 hours for NCO's.

(d) The mean idle time and absent time per day was less than 1 hour for officers and for NCO's.

(e) Element and evaluator personnel reported that the element was effective in performing its assigned functions.

f. Security and HUMINT (S&H) element.

(1) Personnel authorized and fielded are shown in figure 2-34.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Scty/HUMINT Off	04	AM	9301	1	1	1
Scty/HUMINT NCO	E6[a]	NC	96B40[a]	1	1	1
Scty/HUMINT Clk	E4[b]		96B20[b]	1	1	1
TOTAL (Off/EM)				1/2	1/2	1/2

[a]By H-series, Grade E5; MOS 11F20.

[b]By H-series, Grade E3; MOS 70A10.

Figure 2-34. Security and HUMINT element personnel.

(2) No major items of equipment were authorized or fielded.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 194 productive hours available during the test, 112 hours (58 percent) were expended performing listed and unlisted functions.

(b) All listed functions and procedures were performed.

(c) The OFM was used by personnel of the element.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 112 productive hours expended by the element, 42 hours (38 percent) were expended in using the files and 30 hours (27 percent) were expended in maintaining the files (includes visual displays).

(b) Files 2106 (Staff Journal), 2110 (Reference), 2115 (Reading), 2121 (Intelligence SOP), 2122 (Admin), 2305 (Ground R&S Plan), 2416 (Access System), 2417 (Security), 2418 (Counterintelligence), 2501 (Collection Plan), 2502 (SITMAP), 2511 (Incoming), 2519 (Work), 2520 (Briefing and Planning), 2609 (Significant Events), 2612 (Briefing and Planning), 2625 (ENSIT Map), 2633 (Planning Map), 2634 (Situation Chart), and 2635 (Briefing Chart) were used and maintained by the element.

(c) The information required on the visual displays was considered excessive for maps and charts.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 112 productive hours expended by the element, 47 hours (42 percent) were expended in report preparation.

(b) Reports 2329 (IPIR/GPIR), 2330 (Collection Request), 2418 (Tactical Interrogation), 2419 (Agent Report), 2420 (Document Translation), 2501 (Intelligence Request), 2508 (Spot Reports), 2604 (Intelligence Estimate), 2605 (Intelligence Studies), 2606 (PERINTREP), and 2607 (INTSUM) were prepared by the element.

(6) Organizational structure, physical relationships, and facilities. Figure 2-18 depicts the organizational relationship of the S&H element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the tent housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the element to the division TOC and other elements comprising the division main CP was satisfactory as a point of control for the element, but was not suitable for HUMINT source control.

(c) The element operated from a tent in the vicinity of the division TOC and the facility was adequate for the number of personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 9 calls made, all were placed by telephones located in other element facilities.

(b) Of the 6 calls received, 83 percent were received by telephone and 17 percent were received by AM communication means also located in other facilities.

(c) The element prepared 9 messages and received 17 messages that had been transmitted by common-user teletype/RATT.

(d) One-hundred percent of the element and evaluator personnel responses indicated that the element required its own means of communication.

(e) The small number of calls and messages made and received by the element was due to a lack of scenario activity pertaining to security and HUMINT.

(f) Element personnel indicated no problems were experienced with the means of communication utilized other than not being readily available.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During both displacements, the element moved with the 2d increment of the division main CP.

(b) There is no accurate data available from which to derive displacement times.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The element provided no personnel or equipment to the TAC CP and was not affected by the deployment of the TAC CP.

(11) Effect of the alternate CP. The element was not affected by establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element did not experience any difficulties when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from the CC&D element personnel that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic contraints that could affect the data were imposed on the element by the scenario or the control organization when executing the scenario. Element personnel and the evaluator did report the absence of appropriate scenario events to properly exercise the S&H element.

(b) Qualifications of the NCO (Grade E5, MOS 64C20) assigned to the element were inadequate with respect to rank, MOS, and experience for the position assigned.

(14) Information flow. Data pertaining to the exchange of information between the G2 S&H element and other elements of the division is contained in part III.

(a) Information provided to the element was generally considered relevant and accurate, but not adequate or timely. Element personnel and the evaluator reported that information usually arrived too late to act upon and was generally without the what, where, who, when, or why. Replies to element's requests for additional information were never received.

(b) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An undercapacity workload condition was experienced 67 percent of the time. This condition was caused by a lack of scenario input pertaining to the S&H element.

(b) A within-capacity workload condition was experienced 33 percent of the time.

(c) The mean productive time expended per day was 18 hours for the officer and 2 hours for the NCO.

(d) The mean idle time per day was 2 hours for the officer and 9 hours for the NCO.

(e) The mean absent time per day was less than 1 hour for the officer and 7 hours for the NCO.

(f) Element personnel reported the S&H element to be effective in performing its assigned duties.

(g) The NCO assigned to the element was a heavy truck driver (MOS 64C20).

(h) Element and evaluator personnel reported that grade and MO. changes are required in the personnel structure of the element as shown in figure 2-35.

Title	Grade	Branch	MOS	Strength
S&H Officer	W3/04	MI	971A/9666	1
S&H NCO	E7	NC	97B40	1
S&H Clerk	E4		97D20	1
TOTAL (Off/EM)				1/2

Figure 2-35. Security and HUMINT element recommended changes in personnel structure.

g. Reconnaissance and surveillance (R&S) element.

(1) Personnel authorized and fielded are shown in figure 2-36.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Strength Fld 119
R&S Officer	04	AM	09309	1	1	1
Asst R&S Officer	03	MI	09309	1	1	1
Intel Sgt	E8	NC	96D50[a]	1	1	1
Intel Sgt	E7	NC	96D40[a]	1	1	1
TOTAL (Off/EM)				2/2	2/2	2/2

[a]H-series MOS is 19B40.

Figure 2-36. R&S element personnel.

(2) Equipment authorized and fielded is shown in figure 2-20.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 111 productive hours available during the test, 108 hours (99 percent) were expended performing lisied and unlisted functions.

(b) All functions and procedures listed in the organization and functions manual (OFM) were performed.

(c) Function F01, pertaining to all R&S activities throughout the division, is the responsibility of the TASE, but actually performed by the R&S element.

(d) The OFM was used by personnel of the element.

(e) Element personnel reported that the OFM requires revision to assign responsibility for ground surveillance.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 108 productive hours expended by the element, 29 hours (27 percent) were expended in using the files and 17 hours (16 percent) were expended in maintaining the files (includes visual displays).

(b) Files 3502 (SITMAP), 2511 (Incoming), 2514 (Outgoing), 2625 (ENSITMAP), 2627 (Results and Planning Overlay), and 2532 (Weather Chart) were used or maintained by the element in addition to those that specifically pertained to R&S activities.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 108 productive hours expended by the element, 72 hours (67 percent) were expended in report preparation.

(b) Reports 2326 (Inflight), 2327 (Mission), 2328 (HOTREP), 2329 (IPIR/GPIR), and 2508 (Spot Report) were prepared by the element in addition to those that specifically pertained to R&S activities.

(6) Organizational structure, physical relationships, and facilities. Figure 2-18 depicts the organizational relationship of the R&S

element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated as part of the TASE in the fire support van. The facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 345 calls made, 32 percent were placed by FM and 68 percent by telephone.

(b) Of the 214 calls received, 75 percent were received by FM and 25 percent by telephone.

(c) The element prepared 49 messages and received 159 messages that had been transmitted by common-user teletype or RATT.

(d) Evaluator and element personnel reported that the R&S element did not have adequate means of communication to accomplish the assigned mission.

(e) Eighty-two percent of the element responses indicated that problems were experienced with telephone communications.

(f) Element and evaluator personnel reported that a FM means of communication was required to monitor inflight reports.

(8) Effects of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) Element personnel reported that the element displaced incrementally. During the first displacement, the element closed on the advance party of the G2 section; during the second displacement, the element closed on the TAC CP.

(b) No communication was used during displacement.

(c) The element was ready to move an average of 34 minutes after displacement procedures started.

(d) The element departed the old location an average of 33 minutes after being ready to move.

(e) The element was capable of conducting effective operations an average of 50 minutes after arriving at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of 98 minutes after arriving at the new location.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. Data pertinent to the effects of deployment of the TAC CP on the element is contained in part III.

(a) Personnel provided by the element to the TAC CP during deployment are shown in figure 2-37.

Title	Grade	Branch	MOS	Strengtn
R&S Officer[a]	04	AM	09309	1
Intel Sgt[b]	E7	NC	96D40	1

[a]Was used to establish the TAC CP only.

[b]Was used continuously with the TAC CP.

Figure 2-37. R&S personnel provided to the TAC CP.

(b) When the officer and NCO deployed with the TAC CP, the two remaining element personnel attempted to continue to perform all functions and procedures.

(c) Element and evaluator personnel reported that providing personnel to the TAC CP seriously degraded the operational effectiveness of the element.

(11) Effect of alternate CP. Data pertinent to the effects of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) Element personnel reported that the alternate CP seldom requested information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element reported that in some instances critical information was missing when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from the CC&D, G3 operations, or fire support element that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience were satisfactory except that the E7, Intelligence Sergeant, was inexperienced.

(c) Element personnel require additional training in the employment of ground surveillance radars (GSR's) and unattended ground sensors (UGS's).

(14) Information flow. Data pertaining to the exchange of information between the R&S element and other elements of the division is contained in part III. The matrix at figure 2-38 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered accurate, adequate, and relevant, but not always timely. Element personnel reported that inflight read outs were late arriving at the DTOC.

(b) Element personnel reported that in some instances the element experienced difficulty in obtaining information from other elements and sections.

(c) Generally, the element gave and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G2	18	16.67	G2	27	42.86	S2, Bde	30	22.73	BICC OIC	24	33.33
ALO	18	16.67	ALO	18	28.57	G2	24	18.18	ALO	24	33.33
BICC OIC	12	11.11	G3	09	14.29	BICC OIC	24	18.18	G2	18	25.00
S2, Bde	12	11.11	BICC OIC	09	14.29	ALO	18	13.64	S2, Bde	06	8.33
S2, Bn	12	11.11				S2, Bn	12	9.09			
G3	06	5.56				G3	06	4.55			
FSE	06	5.56				FSE	06	4.55			
EWCO	06	5.56				S2, Div Arty	06	4.55			
Avn Off	06	5.56				Avn Off	03	2.27			
ADA Off	06	5.56				ADA Off	03	2.27			
S2, Div Arty	06	5.56									

Figure 2-38. Reconnaissance and surveillance element functional relationships.

(a) An undercapacity workload condition was experienced 27 percent of the time.

(b) An overcapacity workload condition was experienced 18 percent of the time due to providing two men to the TAC CP.

(c) The mean productive time expended per day by element personnel was 10 hours.

(d) Element personnel reported that the element was somewhat less than effective in performing its assigned functions. The rationale provided was that the element provided two men to the TAC CP, and as a result, the element was generally 50 percent under strength.

h. SIGINT Support and Electronic Warfare Element (SSE/EWE).

(1) Personnel authorized and fielded are shown in figure 2-40.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
EW Crypto Stf Off	04	MI	09620	1	1	1
ECM Off	02	MI	09610	1	1	1
SIGINT Supv	E7	NC	98C40	0	1	1
Liaison Sgt	E7	NC	98J40K3	1	1	1
Sr SIGINT Anal	E6		98C30	1	1	1
Sr Sig Anal	E6		98J30K3	1	1	1
Sr Traffic Anal	E5		98C20	1	1	1
Sig Anal	E5		98J30K3	1	1	1
Traffic Anal	E4		98C20	2	2	2
TOTAL (Off/EM)				2/7	2/8	2/8

Figure 2-40. SSE/EWE personnel.

(2) Equipment authorized and fielded is shown in figure 2-41.

(3) Functions and procedures. A listing of the unclassified functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 416 productive hours available during the test, 369 hours (89 percent) were expended performing listed and unlisted functions.

(b) All functions and procedures listed in part III were performed.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Code changer, KYK-28/TSEC	1	1	1
Data analysis central, AN/TYQ-5	1	1	0[a]
Digital data set, AN/TYC(U)	0	1	0
Radio set, AN/VRC-47, mtd in trk, 1/4-ton	1	1	1
Speech scty device, TSEC/KY-8	1	1	1
Speech scty device, TSEC/KY-38	1	0	0
Trailer, cargo, 1/4-ton	0	1	1
Trailer, cargo, 3/4-ton	0	1	1
Truck, utility, 1 1/4-ton	0	1	1
Truck, utility, 1/4-ton	0	1	1
Truck, van, exp, 2 1/2-ton, 6 x 6, dropside	1	1	1[a]

[a]In lieu of the AN/TYQ-5 and the 2 1/2-ton van, an AEQ-12 was fielded.

Note: One AN/MGC-17 (Central Office, Telet/pewriter) mounted on a 1 1/4-ton truck and one AN/GRC-142 (RATT) mounted on a 1 1/4-ton truck with power supplies and operators are provided by the HHC of ASA Bn.

Figure 2-41. SSE/EWE equipment.

(c) Element personnel reported that procedures for the dissemination of early warning and perishable targets messages should be specified in the OFM.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 369 productive hours expended by the element, 194 hours (52 percent) were expended in using and 82 hours (22 percent) in maintaining the files (includes visual displays).

(b) Files 2701 (Collection Planning), 2702 (ECM Planning), 2709 (Enemy C-E Vulnerability), 2710 (Enemy C-E Equipment), 2711 (Enemy SIGINT/EW Status), 2712 (Friendly C-E Vulnerability), 2713 (Friendly C-E Equipment), and 2714 (Friendly SIGINT/EW Status) were not required by the scenario.

(c) Files 2709 - 2714 were incorporated into a single general reference file. The following files were also added by element personnel: Reading, SIGINT Work, ECM Work, and MIJI.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 369 productive hours expended by the element, 20 hours (5 percent) were expended in report preparation.

(b) Report 2703 (EW/SIGINT Summary Report) was provided by corps and was not prepared by the SSE/EWE.

(6) Organizational structure, physical relationships, and facilities. Figure 2-18 depicts the organizational relationship of the SSE/EWE element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are contained in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the element to the division TOC and other elements comprising the division main CP was not satisfactory. The physical separation of the G2/CC&D and the SSE/EWE prevented frequent friendly situation updates and slowed dissemination of sanitized SI information to the using elements at division main and below. However, the collocation of the SSE/EWE with the A&P element, as demonstrated in previous tests, was a significant improvement over the traditional separation of these two elements.

(c) Element and evaluator personnel indicated the ASI work area should be moved adjacent to the DTOC with no more than a 10-foot separation distance. A walkway between the two vans would permit access with security provided by MP personnel in the DTOC.

(d) The SSE/EWE element operated from an expansible van shared with the A&P element and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 26 calls made, 81 percent were placed by FM and 19 percent by telephone.

(b) Of the 23 calls received, 87 percent were received by FM, and 13 percent by telephone.

(c) The element prepared 114 messages for transmission, and received 1,108 messages that had been transmitted, by common-user teletype or RATT.

(d) All the element responses indicated that the element had enough means of communication.

(e) Element and evaluator personnel classified the means of communication available to the element as adequate to accomplish the assigned mission.

(f) Twenty-seven percent of the element responses indicated that the element experienced difficulty in disseminating early warning messages through existing communications means.

(g) Element and evaluator personnel indicated FM communications with brigade and battalion in the intelligence net would be highly beneficial.

(8) Effect of displacement. Data pertinent to the effect of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. The element closed on the advance party provided by the SSE/EWE (1 1/4-ton vehicle with radio).

(b) Element and evaluator personnel reported that no difficulty was experienced with communications or in obtaining information during displacement.

(c) The element was ready to move an average of 38 minutes after displacement procedures started.

(d) The element departed the old location an average of 38 minutes after being ready to move.

(e) The element was capable of conducting effective operations an average of 85 minutes after arriving at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of 95 minutes after arriving at the new location.

(g) Additional personnel and equipment are not required when the element displaces; however, element personnel indicated the division TAC SOP should be revised to eliminate the requirement for incremental displacement.

(9) Effect of destruction. The element was destroyed.

(10) Effect of the TAC CP deployment. Element responses indicated the element was not affected by deployment of the TAC CP.

(11) Effect of the alternate CP. The element was not affected by establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element did not experience any difficulties when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned through a telephone call that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that would affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Individual qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) Additional training in SSE/EWE operations and cross-training of personnel was indicated as being required.

(14) Information flow. Data pertaining to the exchange of information between the SSE/EWE element and other elements of the division is contained in part III. The matrix at figure 2-42 depicts the relationship between the element and the division command group, other members within the division staff, and members of other levels of command.

(a) Information provided to the element was considered adequate, relevant, and accurate; but often not timely from the corps SSE/EWE.

(b) Element personnel and the evaluator reported that in a few instances the element experienced difficulty in obtaining information from other elements and sections.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
EWCO	18	37.50	BICC OIC	24	25.81	BICC OIC	30	23.81	EWCO	18	27.27
BICC OIC	12	25.00	G2	21	22.58	G2	27	21.43	G3	15	22.73
G2	06	12.50	EWCO	21	22.58	EWCO	27	21.43	BICC OIC	15	22.73
G3	06	12.50	G3	18	19.35	G3	24	19.05	G2	12	18.18
C-E Off	06	12.50	Comd Gp	06	6.45	C-E Off	15	11.90	C-E Off	06	9.09
			C-E Off	03	3.23	FSE	03	2.38			

Figure 2-42. SIGNIT and EW element functional relationships.

(c) Generally, the element provided orders and guidance in sufficient time to meet operational requirements, but received very little guidance or orders. Evaluators indicated that this situation was due to a general lack of understanding of the capabilities available from the SSE/EWE by staff personnel.

(d) All element and evaluator personnel rated the intelligence support as better than previously experienced due to the collocation of the SSE/EWE with the BICC A&P element.

(e) The G2 section evaluator responding in the end-of-test report recommended that an effort be made to reduce or eliminate the control of SIGINT as specified by current DOD regulations.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An undercapacity workload condition was experienced 56 percent of the time because of a lack of tasking from other divisional sections which were not familiar with SSE/EWE operations.

(b) The mean productive time expended per day was 11 hours for officers and 8 hours for NCO's.

(c) The mean idle time expended per day was 1 hour for officers and 1 hour for NCO's.

(d) The mean absent time per day was 1 hour for officers and less than 1 hour for NCO's.

(e) During post test discussions, element and evaluator personnel recommended that the personnel requirement as indicated in figure 2-43 be authorized to provide an adequate 24-hour capability. In addition, the elimination of the EW/cryptologic officer, added as a special staff separate from the SSE/EWE element, was recommended since these functions can be performed by the OIC of the SSE/EWE.

Rank	Branch	MOS	Qty
04	MI	9640	2
E8	NC	98Z	2
E6		98J	2
E6		98C	2
E6		98C	2
E6/5		98C	2

Figure 2-43. SSE/EWE recommended personnel requirements.

2-11. Division G3 Section.

a. General. The organization of the division G3 section and the elements over which it exercised staff supervision are shown in figure 2-44. Subfindings pertinent to the section are at paragraph b, while subfindings pertinent to the elements of the G3 section are contained in paragraphs c through l.

b. Section subfindings.

(1) Effect of displacement.

(a) During both displacements of the division main CP, the G3 section displaced in the first increment. The operations, aviation, tactical air support, fire support, air defense artillery, and communication-electronics elements displaced with the first increment. The plans element displaced with the second increment. The chemical, engineer, and administration elements reported displacing with both increments.

(b) During the first displacement, the section closed on the advance party provided by the G2 and G4 sections. During the second displacement, the section closed on the TAC CP.

(c) The section was not operational at the new location during either displacement prior to the second increment departing the old location. However, the TAC CP or alternate CP had assumed control of the division and was able to maintain effective operations during both displacements.

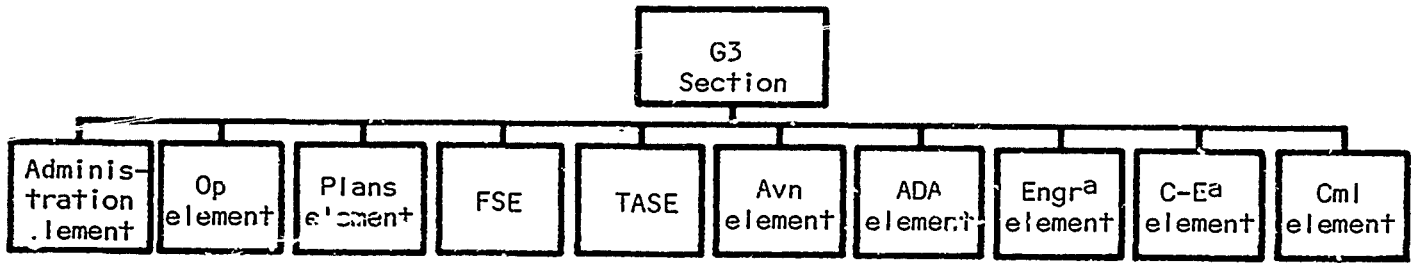
(2) Effect of destruction. The G3 section was destroyed.

(3) Effect of TAC CP deployment.

(a) In addition to the G3, the section provided personnel from the operations element, FSE, and TASE to the TAC CP. A complete listing of the personnel and equipment is contained in the element analysis.

(b) The division TAC SOP did not include the assistant G3 as part of the TAC CP. During the test, however, he deployed with the TAC CP and remained there until the G3 arrived just prior to the TAC CP assuming control of the division.

(c) Section and evaluator personnel reported that the operations element did not have sufficient personnel or equipment to provide to the TAC CP, and the requirement to provide these personnel degraded the operational effectiveness of the element.



[a]Not subordinate staff elements; shown here for continuity during analysis.

Figure 2-44. G3 organization.

(4) Effect of the alternate CP. The section was not adversely affected by the establishment of the alternate CP.

(5) Effect of shifting control. The section did not experience any difficulty when control of the division was shifted from one location to another.

(6) Adequacy of intelligence support. Data pertinent to the adequacy of the intelligence support provided to the section is contained in part III. The G3 classified the intelligence support as inadequate because of the late receipt of intelligence updates from higher headquarters. The G3 evaluator also classified the intelligence support as inadequate, but qualified this rating as being personnel dependent and not an organizational problem.

(7) Adequacy of communications. The adequacy of the communications means provided to the division is discussed in detail in paragraph 2-19. The subject is also briefly addressed here because of its impact on the operational capability of the G3 section.

(a) Early warning.

1 Evaluators reported that appropriate action was initiated by the operations element on all 15 early warning messages received for dissemination. The brigade evaluators, however, reported that only three of these messages were received. Subsequent conversation with the assistant G3 and brigade S3 failed to clarify these conflicting reports.

2 Seventy-five percent of the operations element responses indicated that the personnel experienced difficulties in disseminating early warning messages. These difficulties were attributed to an overcrowded CG command net (FM) and an unrealiable AM TOC net (voice). However, the section evaluator stated that the division AM TOC net was not used. This finding is confirmed by the fact that the operation element made only two AM voice calls during the entire test (para 2-11d(7)).

3 Section and evaluator personnel reported that a one-way, direct dedicated communication means is required to disseminate early warning messages throughout the division.

(b) Operations RATT net.

1 The Second Refinement redesignated the general purpose RATT net as the division BICC RATT net and the operations-intelligence RATT net as the operations RATT net. The BICC RATT net provided dedicated service, and the station was located with the G2/BICC.

2 The operations RATT station was located in the signal battalion RATT park, and the messages were routed through the AG message center. Section and evaluator personnel reported that this procedure was not responsive to the G3 section, and messages were unnecessarily delayed in arriving at the division TOC.

3 Section and evaluator personnel reported that locating the operations RATT terminal adjacent to the division TOC should greatly imporve this service to the G3 section.

(c) Division CG command net (FM). The division was provided two FM nets for the test. The G2-BICC FM net and the CG/Command FM net were authorized to be used by the division during the test. Section and evaluator personnel reported that the CG/Command FM net did not satisfy the needs of the section and that a second operations net (FM) is required to provide the G3 section with adequate and responsive communications to subordinate organizations.

(8) Adequacy of personnel and equipment. The operations, engineer, tactical air support, and plans elements reported that additional personnel and equipment are required to provide the elements with a 24-hour operational capability. The G3 reported that the operations element requires additional personnel, especially when the TAC CP is deployed.

c. Administration (admin) element.

(1) Personnel authorized and fielded are shown in figure 2-45.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
G3	05	AM	02162	1	1	1
Chief op sgt	E9	NC	11F50	1	1	1
Secy steno	E5		71C30	1	1	1
Lt veh dvr	E4		11B10	1	1	1
TOTAL (Off/EM)				1/3	1/3	1/3

Figure 2-45. Administration element personnel.

(2) Equipment authorized and fielded is shown in figure 2-46.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119
Radio set, AN/VRC-46, mtd in trk, 1/4-ton	1	1	1
Trailer, cargo, 1/4-ton	1	1	1
Truck, utility, 1/4-ton	1	1	1

Figure 2-46. Administration element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) The only listed function performed was F77 (administrative services), since all other listed functions pertained only to the ACofS G3 who was not required to report on time expended. However, of the 104 productive hours available during the test, 97 hours (93 percent) were expended performing unlisted functions which primarily concened supervision of the administration and personnel portions of TOC operations.

(b) The OFM manual was used by personnel of the element.

(c) The OFM adequately described the functions and procedures required to be performed by the element.

(4) Files. The G3 admin element utilized the files maintained by the operations and plans elements; therefore, data pertinent to the use and maintenance of files was not collected during the test.

(5) Reports. The G3 admin element forwarded those reports prepared by other elements of the G3 section; therefore, report preparation time and other data were not submitted by the element.

(6) Organizational structure, physical relationship, and facilities. Figure 2-44 depicts the organizational relationship of the administration element within the section. Sketches depicting the physical relationship of the element within the main CP and the interior layout of the facility housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from a van attached directly to the G2/G3 vans, as part of the vehicles comprising the division tactical operations center. The facility was adequate for the personnel assigned.

(7) Communications. Because of the operational nature of the administration element and the number of samples received, no attempt has been made to present subfindings relative to communications usage and problems experienced. Pertinent data will be considered in the overall analysis of the G3 section.

(8) Effect of displacement. Data pertinent to the effects of displacement of the element is contained in part III.

(a) The element displaced as one element concurrent with the first increment of the DTOC.

(b) Element and evaluator personnel reported no difficulty with communications or in obtaining information during displacement.

(c) The element was ready to move and departed the old location an average of 85 minutes after displacement procedures started.

(d) The element was capable of conducting effective operations an average of 2 hours after arriving at the new location.

(e) The element was capable of conducting sustained operations (completely set up) an average of 3 hours after arriving at the new location.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. Data pertinent to the effects of deployment of the TAC CP on the element is contained in part III.

(a) Personnel provided by the element to the TAC CP during deployment are shown in figure 2-47.

(b) Equipment provided by the element to the TAC CP during deployment is shown in figure 2-48.

Title	Grade	Branch	MOS	Strength
ACofS, G3	05	AM	02162	1
Lt veh dvr	E4		11B10	1
TOTAL (Off/EM)				1/1

Figure 2-47. Personnel provided by the administration element to TAC CP.

Nomenclature	Quantity
Truck, utility 1/4-ton	1
Trailer, cargo, 1/4-ton	1
Radio set, AN/VRC-46, mtd in trk, 1/4-ton	1

Figure 2-48. Equipment provided by administration element to TAC CP.

(c) Element personnel and evaluators reported that the establishment of the TAC CP did not seriously degrade the operational effectiveness of the element.

(11) Effect of the alternate CP. Establishment of the alternate CP had no adverse effect on the element.

(12) Effect of shifting control. The shifting of control of the division from one location to another had no adverse affect on the element.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(b) No requirements for additional training of personnel assigned to the element were identified.

(14) Information flow. Data pertaining to the exchange of information between the G3 and other elements of the division is contained in part III. The matrix in figures 2-49 and 2-50 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command. (Note: figure 2-49 pertains only to the G3).

(a) The information provided to the element was generally considered to be adequate, relevant, timely, and accurate.

(b) The element received information in sufficient time to meet operational needs.

(c) The element experienced no difficulty in obtaining information from the other elements of the staff.

(15) Adequacy of personnel and equipment. Activities of the G3 administration element were difficult to define because the operations sergeant (E9) and the secretary-steno operated as part of other G3 elements, and the G3 supervised the entire section. Thus, these subfindings reflect data obtained from the op sgt and secy-steno while performing duties with the operations element. Data concerning these activity levels, as experienced by the element, are contained in part III.

(a) An overcapacity workload condition was experienced 17 percent of the time.

(b) The mean productive time expended per day by element personnel was 16 hours.

(c) The mean idle time per day for element personnel was 1 hour.

(d) The mean absent time per day for element personnel was 4 hours.

(e) Personnel and equipment organic to the element were rated as adequate to perform normal operational requirements.

d. Operations element.

(1) Personnel authorized and fielded are shown in figure 2-51.

(2) Equipment authorized and fielded is shown in figure 2-52.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
ADE	12	14.81	CMD GP	21	22.58	CMD GP	36	26.09	G1	12	8.70
G1	06	7.41	G1	12	12.90	DISCOM CMD			G2	12	8.70
G2	06	7.41	G2	12	12.90	GP	12	8.70	G4	12	8.70
G4	06	7.41	G4	12	12.90	DIV ARTY CMD			DISCOM CMD		
C-E OFF	06	7.41	C-E OFF	06	6.45	GP	12	8.70	GP	12	8.70
FSE	06	7.41	FSE	06	6.45	G1	06	4.35	DIV ARTY CMD		
BICC OIC	06	7.41	EWCO	06	6.45	G2	06	4.35	GP	12	8.70
ALO	06	7.41	BICC OIC	06	6.45	G4	06	4.35	C-E OFF	06	4.35
CML OFF	06	7.41	ADE	06	6.45	C-E OFF	06	4.35	FSE	06	4.35
AVN OFF	06	7.41	ALO	06	6.45	FSE	06	4.35	EWCO	06	4.35
ADA OFF	06	7.41				EWCO	06	4.35	BICC OIC	06	4.35
PM	03	3.70				BICC OIC	06	4.35	ADE	06	4.35
EWCO	03	3.70				CML OFF	06	4.35	ALO	06	4.35
DTO	03	3.70				DIV SURG	06	4.35	CML OFF	06	4.35
						AVN OFF	06	4.35	DIV SURG	06	4.35
						ADA OFF	06	4.35	AVN OFF	06	4.35
						DTO	06	4.35	ADA OFF	06	4.35
						S3, DIV ARTY	06	4.35	DTO	06	4.35
									DAO, DISCOM	06	4.35
									S3, DIV ARTY	06	4.35

Figure 2-49. G3 functional relationships.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
X	X	X	G3	06	100.00	X	X	X	X	X	X

Figure 2-50. G3 administration element functional relationships.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
Asst G3	04	AM	E2162	1	2	2
Asst C Op Sgt	E8	NC	11F50	1	1	1
Op Spec	E5		11F20	2	2	1
Op Asst	E4		11F20	1	1	1
Per Carr Dvr	E4		11B20	1	1	1
Lt Veh Dvr	E4		11B10	1	1	1
TOTAL (Off/EM)				1/6	2/6	2/5

Figure 2-51. Operations element personnel.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119
Carrier, CP	1	1	1
Radio Set, AN/GRC-106, mtd in trk, van, exp	1	1	1
Radio Set, AN/VRC-46, mtd in trk, van, exp	2	2	2
Radio Set, AN/VRC-46, mtd in trk, 1/4-ton	1	1	1
Radio Set, AN/VRC-47, mtd in carrier, CP	1	1	1
Radio Set, AN/VRC-47, mtd in trk, van, exp	0	1	1
Speech Security Equip, TSEC/KY-8	1	1	1
Trailer, Cargo, 1/4-ton	1	1	1
Trailer, Cargo, 1 1/2-ton	2	2	2
Truck, Utility, 1/4-ton	1	1	1
Truck, Van, Expansible, 5-ton	2	2	2

Figure 2-52. Operations element equipment.

(a) Of the 216 productive hours available during the test, 212 hours (98 percent) were expended performing listed and unlisted functions.

(b) Functions F05 (Disseminate nuclear strike warning) and F07 (Training) were not required by the scenario.

(c) Procedures F03P01 (prepares portion of order pertaining to combat elements) and F03P02 (coordinates staff inputs for portions of order) were not performed, because sufficient personnel and time were not available to prepare operation orders. Therefore, the G3 plans element prepared the written operation and fragmentary orders.

(d) Procedure F06P03 (Disseminate movement orders) was not performed because no movement orders were prepared during the test.

(e) The organization and functional manual (OFM) was used by personnel of the element.

(f) Element personnel indicated that the OFM requires revision to assign responsibility for the dissemination of early warning messages.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 212 productive hours expended by the element, 119 hours (56 percent) were expended in using the files and 36 hours (17 percent) were expended in maintaining the files (includes visual displays).

(b) File 3109 (Unit Readiness Report); files 3112, 3118, and 3119 (pertaining to nuclear warfare); and files 3113, 3114, 3115, and 3116 (pertaining to laying of minefields) were not required by the scenario.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 212 productive hours expended by the element, 36 hours (17 percent) were expended in report preparation.

(b) Reports 3101, 3111, and 3117 (pertaining to nuclear warfare) and reports 3106, 3107, 3108, and 3109 (pertaining to laying minefields) were not required by the scenario.

(c) Reports 3412 (Request for Army Aviation Support) and 3415 (Airfield/Heliport Location Report) were not prepared by this element since the ACE received these reports/requests from the S3(Air) of the subordinate units.

(d) Reports 3613 and 3614 (pertaining to joint tactical air requests) were not prepared by this element since the TASE receives these requests from the S3(Air) of the subordinate units.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the operations element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are contained in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated in the G2/G3 van as part of the division tactical operations center, and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 1002 calls made, 84 percent were placed by FM, 16 percent by telephone, and less than one percent by AM (voice) communications means.

(b) Of the 1197 calls received, 86 percent were received by FM, 14 percent by telephone, and less than one percent by AM communications means.

(c) The element prepared 25 messages for transmission and received 112 messages that had been transmitted by common-user teletype or RATT.

(d) Sixty percent of the element responses indicated the element did not have enough means of communication.

(e) Element and evaluator personnel classified the FM means of communication available to the element as inadequate to accomplish the assigned mission.

(f) Thirty-three percent of the element responses and the evaluator end-of-test report indicate that the element was unable to function effectively during periods of jamming.

(g) Seventy-five percent of the element responses indicated that the element experienced difficulty in disseminating early warning messages when using the CG command FM net and the AM TOC net.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During the first displacement, the element closed on the advance party of the G2 and G4 sections; during the second displacement, the element closed on the TAC CP.

(b) Element and evaluator personnel reported no difficulty with communications or in obtaining information during displacement.

(c) The element was ready to move and departed the old location an average of 64 minutes after displacement procedures started.

(d) The element was capable of conducting effective operations an average of 53 minutes after arriving at the new location.

(e) The element was capable of conducting sustained operations (completely set up) an average of 88 minutes after arriving at the new location.

(f) Element and evaluator personnel recommended that displacement procedures in the division TAC SOP be revised to eliminate the requirement for incremental displacement.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. Data pertinent to the effects of deployment of the TAC CP on the element is contained in part III.

(a) Personnel provided by the element to the TAC CP during deployment are shown in figure 2-53.

Title	Grade	Branch	MOS	Strength
Asst G3	03	AR	2162	1
Asst Chief Op Sgt	E8	NC	11F50	1
Pers Carr Dvr	E4		11B20	1
TOTAL (Off/EM)				1/2

Figure 2-53. Personnel provided by the operations element to TAC CP.

(b) Equipment provided by the element to the TAC CP during deployment is shown in figure 2-54.

Nomenclature	Quantity
Carrier, CP	1
Radio Set, AN/VRC-47, mtd in carrier, CP	1
Speech Security Equipment, TSEC/KY-8	1

Figure 2-54. Equipment provided by the operations element to TAC CP.

(c) When the assistant chief operations sergeant deployed with the TAC CP, the chief operations sergeant replaced him in the operations element. The secretary-steno functioned as a RATELO and journal typist during deployment of the TAC CP.

(d) Element and evaluator personnel reported that providing personnel and equipment to the TAC CP degraded the operational effectiveness of the element.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) Element personnel reported that the alternate CP frequently requested and received information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned through the use of the division command FM net that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(14) Information flow. Data pertaining to the exchange of information between the G3 operations element and other elements of the division is contained in part III. The matrix in figure 2-55 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered adequate, relevant, and accurate; but often not timely.

(b) Element and evaluator personnel reported that in a few instances the element experienced difficulty in obtaining information from other elements and sections.

(c) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An overcapacity workload condition was experienced 6 percent of the time.

(b) A within-capacity workload condition was experienced 94 percent of the time.

(c) The mean productive time expended per day was 19 hours for officers and 12 hours for NCO's.

(d) Element officers and NCO's did not report any idle time.

(e) The mean absent time per day was less than an hour for officers and less than 2 hours for NCO's.

(f) The element did not field an operations specialist, MOS 11F20 throughout the test.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S3, BDE	36	24.00	CMD GP	141	64.38	COMD GP	84	18.06	CMD GP	48	13.45
ALO	24	16.00	G3	48	21.92	G3	36	7.74	ALO	30	8.40
BDE CMD GP	21	14.00	FSE	09	4.11	FSE	27	5.81	G3	24	6.72
ADA OFF	15	10.00	G2	06	2.74	ALO	27	5.81	BICC OIC	24	6.72
S3, DIV ARTY	12	8.00	BICC OIC	03	1.37	S3, BDE	24	5.16	CML OFF	21	5.88
ADE	09	6.00	ALO	03	1.37	G4	21	4.52	S3, DIV ARTY	18	5.04
S1, DISCOM	09	6.00	CML OFF	03	1.37	BICC OIC	21	4.52	S3 BDE	18	5.04
MED BN CDR	09	6.00	AVN OFF	03	1.37	CML	21	4.52	G2	15	4.20
AVN OFF	06	4.00	ADA OFF	03	1.37	ADA OFF	21	4.52	G4	15	4.20
G1	03	2.00				G2	18	3.87	FSE	15	4.20
G4	03	2.00				ADE	18	3.87	ADE	15	4.20
CML OFF	03	2.00				AVN OFF	15	3.23	ADA OFF	15	4.20
						DISCOM CMD GP	15	3.23	BDE CMD GP	15	4.20
						DIV ARTY CMD GP	15	3.23	G1	12	3.36
						S3, DIV ARTY	15	3.23	EWCO	12	3.36
						BDE CMD GP	15	3.23	AVN OFF	12	3.36
						S3, DISCOM	12	2.58	DISCOM CMD GP	09	2.52
						G1	09	1.94	S3, DISCOM	09	2.52
						EWCO	09	1.94	DIV ARTY CMD GP	09	2.52
						S1, DISCOM	09	1.94	S1, DISCOM	06	1.68
						G5	06	1.29	PM	03	0.84
						C-E OFF	06	1.29	AG	03	0.84
						DTO	06	1.29	DTO	03	0.84
						PM	03	0.65	HQ CMDT	03	0.84
						AG	03	0.65	MED BN CDR	03	0.84
						DIV SURG	03	0.65			
						HQ CMDT	03	0.65			
						MED BN CDR	03	0.65			

Figure 2-55. Operations element functional relationships.

(g) Element personnel reported that the element was only marginally effective in performing its assigned functions. The rationale provided for this rating was that insufficient personnel were assigned to the element to perform required functions on a timely basis, especially when the TAC CP was deployed.

(h) Element and evaluator personnel stated that the strength of the operations element should be increased to provide two four-man shifts and an assistant G3 operations officer. The operations officer should be free from shift duty to perform required coordination ties with other elements of the division TOC and main CP. The additional personnel reported as being required to satisfy normal operation and TAC CP mission requirements are as shown in figure 2-56.

Title	Grade	Branch	MOS	Strength
Asst G3	03	AM	2162	1
Asst Op Sgt	E7	NC	11F40	1
Op Asst	E4		11F20	1
TOTAL (Off/EM)				1/2

Figure 2-56. Operations element recommended personnel additions.

e. Plans Element.

(1) Personnel authorized and fielded are shown in figure 2-57.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
Asst G3 (Plans)	MAJ	AM	E2162	1	1	1
Asst G3 (Plans)	CPT	AM	02162	1	1	1
Op Specialist	E5	NC	11F20	1	1	1
Clerk Typist	E4		71B30	2	2	2
Lt Veh Dvr	E4		11B20	1	1	1
TOTAL (Off/EM)				2/4	2/4	2/4

Figure 2-57. Plans element personnel.

(2) Equipment authorized and fielded is shown in figure 2-58.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119
Tent, GP, Sm	1	1	0
Trailer, Cargo, 1/4-ton	0	1	1
Truck, Utility, 1/4-ton	0	1	1
Vestibule Tent, for GP, Sm	1	1	1
Tent, GP, Med	0	0	1

Figure 2-58. Plans element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 309 productive hours available during the test, 226 hours (83 percent) were expended performing listed and unlisted functions.

(b) Function F06 (responsibility for the command SOP) was not required by the scenario.

(c) OPORD's and framentary orders were prepared by the element and were not reported as additional functions performed.

(d) The OFM was used by personnel of the element.

(e) The OFM adequately described the functions and procedures required to be performed by the element.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 256 productive hours expended by the element, 5 hours (two percent) were expended in using and maintaining the files.

(b) Subsequent discussion with element personnel revealed that file usage and maintenance time reported was not indicative of actual performance.

(5) Reports. The element did not report any time expended in preparing reports.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the plans element within the G3 section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the tent housing the element are contained in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory except as noted in paragraph c below.

(c) The element operated in a GP medium tent with the G2 plans and staff elements. Element and evaluator personnel reported that there was not sufficient working space in the tent.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Telephone and common-user RATT/teletype were the only means of communications available to the element.

(b) Sixty-two telephone calls were made by the element, and 58 calls were received.

(c) The element prepared five messages for transmission by common-user teletype or RATT.

(d) Ninety-five percent of the element responses indicated that the means of communications available were adequate to accomplish the assigned mission.

(e) The element was not adversely affected by communications jamming.

(f) Element personnel reported that the 4 to 6 hour backlog of record copy traffic was detrimental to the operations of the element.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element are contained in part III.

(a) The element did not displace incrementally, but in one group with the second increment of the division TOC.

(b) This element had no means of communications during displacement.

(c) The element was ready to move an average of 52 minutes after displacement procedures started.

(d) The element departed the old location an average of 76 minutes after being ready to move.

(e) The element was capable of conducting effective operations (completely set up) an average of 35 minutes after arriving at the new location.

(f) The element was capable fo conducting sustained operations (completely set up) an average of 50 minutes after arriving at the new location.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The element did not provide personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element did not require nor receive information from the alternate CP.

(b) The alternate CP seldom requested data from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the element is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element were informed by the TOC when the point of control changed within the division.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element are contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory except for clerical personnel.

(c) Element personnel require additional training in OPLAN preparation and coordination.

(14) Information flow. Data pertaining to the exchange of information between the G3 plans element and other elements of the division is contained in part III. The matrix in figure 2-59 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element were generally considered adequate, relevant, and accurate; but often not timely. The evaluator reported that the annexes to the OPLAN's were habitually late.

(b) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) A within-capacity workload condition was experienced 63 percent of the time.

(b) An undercapacity workload condition was experienced 37 percent of the time.

(c) The mean productive time expended per day was 17 hours for officers and 10 hours for NCO's.

(d) The mean idle time per day was 4 hours for officers and 2 hours for NCO's.

(e) The mean absent time per day was less than an hour for officers and 5 hours for NCO's.

(f) Element and evaluator personnel reported that additional personnel are required to satisfy normal operational mission requirements and provide a 24 hour operational capability. (Note: Test results do not support this finding). These additional personnel are identified in figure 2-60.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
FSE	24	8.70	CMD GP	60	62.50	CMD GP	24	10.53	G3	24	9.20
EWCO	24	8.70	G3	36	37.50	G3	24	10.53	G1	18	6.90
BICC OIC	24	8.70				FSE	24	10.53	G2	18	6.90
ADE	24	8.70				G1	12	5.26	G4	18	6.90
ALO	24	8.70				G2	12	5.26	C-E OFF	18	6.90
CML OFF	24	8.70				G4	12	5.26	FSE	18	6.90
ADA OFF	24	8.70				C-E OFF	12	5.26	EWCO	18	6.90
DTO	24	8.70				EWCO	12	5.26	BICC O'C	18	6.90
HQ CMDT	24	8.70				BICC OIC	12	5.26	ADE	18	6.90
G1	12	4.35				ADE	12	5.26	ALO	18	6.90
G2	12	4.35				ALO	12	5.26	CML OFF	18	6.90
G3	12	4.35				CML OFF	12	5.26	ADA OFF	18	6.90
G4	12	4.35				AVN OFF	12	5.26	DTO	18	6.90
C-E OFF	12	4.35				ADA OFF	12	5.26	HQ CMDT	18	6.90
						DTO	12	5.26	AVN OFF	03	1.15
						HQ CMDT	12	5.26			

Figure 2-59. Plans element functional relationship.

Title	Grade	Branch	MOS	Strength
Asst G3 (Plans)	CPT	AM	2162	1
Op Specialist	E4/5		11F20	1

Figure 2-60. Plans element recommended personnel additions.

f. Fire Support Element (FSE).

(1) Personnel authorized and fielded are shown in figure 2-61.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
Fire Spt Coord Asst	05	FA	51193	1	1	1
Fire Spt Coord Asst	04	FA	51193	1	1	1
FA Intel Off	04	FA	59301	1	1	1
Target Analyst	03	FA	52162	2	2	2
Intel Sgt	E8	NC	13Z50	1	1	1
Op Sgt	E8	NC	13Z50	1	1	1
C Fire Dir Cmpt	E7	NC	13E40	1	1	1
Asst C Fire Dir Cmpt	E6	NC	13E40	1	1	1
Radio TT Team C	E5	NC	05C40	1	1	1
Radio TT Op	E4		05C20	2	2	1
Clk-Typ	E4		71B30	1	1	1
Lt Veh Dvr	E3		13A10	2	2	2
TOTAL (Off/EM)				5/10	5/10	5/9

Figure 2-61. Fire support element personnel.

(2) Equipment authorized and fielded is shown in figure 2-62.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 465 productive hours available during the test, 442 hours (95 percent) were expended performing listed and unlisted functions.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Elec TT Sec Equip, TSEC/KW-7	1	1	1
Speech Sec Equip, TSEC/KY-8	0	0	1
Radio Set, AN/VRC-46, mtd in trk, shop, van	2	2	2
Radio Set Cont Gp, AN/GRA-39	2	2	2
Radio TT Set, AN/GRC-142	1	1	1
Tent, GP, Med	1	1	1
Trailer, Cargo, 1 1/2-ton	1	1	1
Truck, Cargo, 1 1/4-ton	1	1	1
Truck, Cargo, 2 1/2-ton	1	1	1
Truck, Util, 1/4-ton	2	2	2
Truck, Van, Shop, 2 1/2-ton	1	1	1

Figure 2-62. Fire support element equipment.

(b) All listed functions and procedures were performed except procedure F05P03 (disseminates strike warnings) which was not required by the scenario.

(c) The OFM was used by personnel of the element.

(d) The OFM adequately described all of the functions and procedures required to be performed by the element; however, the officers in the element indicated that the OFM should contain more detailed information.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 442 productive hours expended by the element, 163 hours (37 percent) were expended in using the files and 68 hours (15 percent) were expended in maintaining the files (includes visual displays).

(b) Files 3702 (Staff Section Workbook), 3703 (Suspense), and 3708 (Call for special ammunition fire from higher hq) were not required to be used by the scenario.

(c) Element and evaluator personnel reported that files 3702 (Staff Section Workbook) and 3704 (Policy) were not required for use by the element and should be deleted from the OFM.

(d) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the FSE within the G3 section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are contained in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated in the FSE van as part of the vehicles comprising the division tactical operations center and the facility was adequate for the number of personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element are contained in part III.

(a) Of the 1185 calls made, 62 percent were placed by FM, 38 percent by telephone, and less than one percent by AM communications means.

(b) Of the 952 calls received, 64 percent were received by FM, 36 percent by telephone, and none by AM communications means.

(c) The element prepared 23 messages for transmission and received 209 messages that had been transmitted by common-user teletype or RATT.

(d) Eighty-seven percent of the element responses indicated that the element had enough means of communication to accomplish its mission.

(e) The element was able to function effectively during periods of jamming.

(f) The element did not experience difficulty in disseminating early warning messages.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During the first displacement the element closed on the advance party provided by the G2 and G4 sections; during the second displacement the element closed on the TAC CP.

(b) Element and evaluator personnel reported no difficulty with communications.

(c) Element personnel reported that information about operations, intelligence, and support could not be obtained on a timely basis during displacement; however, the FSE representative at the TAC CP was able to maintain effective operations during the time the element was displacing.

(d) Element and evaluator personnel reported that when the TAC CP is deployed, the element is not capable of displacing incrementally.

(e) The element was ready to move an average of 41 minutes after displacement procedures started.

(f) The element departed the old location an average of 15 minutes after being ready to move.

(g) The element was capable of conducting effective operations an average of 29 minutes after arriving at the new location.

(h) The element was capable of conducting sustained operations (completely set up) an average of 51 minutes after arriving at the new location.

(i) Element and evaluator personnel recommended that the division TAC SOP be revised to eliminate the requirement for incremental displacement.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. Data pertinent to the effects of deployment of the TAC CP on the element is contained in part III.

(a) Personnel provided by the element to the TAC CP during deployment are shown in figure 2-63.

(b) Equipment provided by the element to the TAC CP during deployment is shown in figure 2-64.

(c) Element personnel reported that the requirement to furnish personnel to the TAC CP would have a degrading effect on the element if the TAC CP was deployed for an extended period of time.

Title	Grade	Branch	MOS	Strength
Fire Spt Coord Asst	05	FA	51193	1
Op Sgt	E8	NC	13Z50	1
Lt Veh Dvr	E3		13A10	1
TOTAL (Off/EM)				1/2

Figure 2-63. Personnel provided by FSE element to TAC CP.

Nomenclature	Quantity
Radio Set, AN/VRC-46	1
Speech Sec Equip, TSEC/KY-8	1
Radio Set Cont Gp, AN/GRA-39	1
Truck, Util, 1/4-ton	1

Figure 2-64. Equipment provided by FSE element to TAC CP.

(d) Evaluators indicated that with the addition of the KY-8 speech security device (which is not authorized for the element) at the TAC CP, the means of communication were adequate.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) Element personnel reported that the alternate CP frequently requested and received information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the element is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element were normally informed by the G3 or personnel in the G3 operations element when the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) The only requirement for additional training for element personnel was refresher training in nuclear targeting and analysis.

(14) Information flow. Data pertaining to the exchange of information between the fire support element and other elements of the division is contained in part III. The matrix in figure 2-65 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered adequate, relevant, accurate, and timely. The only difficulty reported by element personnel was in receiving adequate intelligence for nuclear targeting and information relating to future operations.

(b) The element gave and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An overcapacity workload condition was experienced 8 percent of the time.

(b) An undercapacity workload condition existed 26 percent of the time.

(c) The mean productive time expended per day by element personnel was 12 hours.

(d) The mean idle time per day for element personnel was less than one hour.

(e) The mean absent time per day for element personnel was also less than one hour.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G3, DIV ARTY	60	20.41	CMD GP	93	21.38	AVN OFF	60	11.90	ADA OFF	60	11.98
G3	36	12.24	G3	78	17.93	S3, DIV ARTY	60	11.90	S3, DIV ARTY	60	11.98
FSE	36	12.24	S3, DIV ARTY	72	16.55	G3	54	10.71	CMD GP	54	10.78
ADA OFF	24	8.16	FSE	36	8.28	ALO	54	10.71	ALO	54	10.78
S2, DIV ARTY	24	8.16	DIV ARTY CMD GP	36	8.28	ADA OFF	54	10.71	AVN OFF	54	10.78
C-E OFF	18	6.12	ALO	24	5.52	CMD GP	36	7.14	G3	42	8.38
ALO	18	6.12	G2	18	4.14	CML OFF	36	7.14	CML OFF	36	7.19
AVN OFF	18	6.12	C-E OFF	12	2.76	G2	30	5.95	G2	33	6.59
CML OFF	12	4.08	AVN OFF	12	2.76	FSE	24	4.76	FSE	24	4.79
DIV ARTY CMD GP	12	4.08	ADA OFF	12	2.76	C-E OFF	18	3.57	S2, DIV ARTY	18	3.59
CMD GP	06	2.04	HQ CMDT	12	2.76	DIV ARTY CMD GP	18	3.57	BICC OIC	15	2.99
G5	06	2.04	S2, DIV ARTY	12	2.76	S2, DIV ARTY	18	3.57	G4	12	2.40
HQ CMDT	06	2.04	G4	06	1.38	G4	12	2.38	C-E OFF	12	2.40
S1, DIV ARTY	06	2.04	S1, DIV ARTY	06	1.38	BICC OIC	12	2.38	G1	09	1.80
S4, DIV ARTY	06	2.04	BDE CMD GP	06	1.38	HQ CMDT	06	1.19	DAO, DISCOM	06	1.20
BDE CMD GP	06	2.04				S4, DIV ARTY	06	1.19	DIV ARTY CMD GP	06	1.20
						BDE CMD GP	06	1.19	S4, DIV ARTY	06	1.20

Figure 2-65. FSE element functional relationships.

(f) The element fielded only one radio TT operator, MOS 05C20 throughout the test.

(g) Element and evaluator personnel reported that the FDC set is not required by the element and should be deleted from the TOE.

g. Tactical Air Support Element (TASE).

(NOTE: Air Force data has been excluded by agreement between Headquarters, 12th Air Force, Tactical Air Warfare Center, and Headquarters, MASSTER. With this exclusion, all data except personnel and equipment authorized and fielded presented in the element analysis was collected for Army personnel and presents no representation of Air Force comments).

(1) Personnel authorized and fielded are shown in figures 2-66 and 2-68.

(2) Equipment authorized and fielded is shown in figures 2-67 and 2-69.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
Asst G3 (Air)	MAJ	AM	02163	1	1	1
Op Sgt	E7	NC	11F40	1	1	1
RATELO	E4		05B20	1	1	1
TOTAL (Off/EM)				1/2	1/2	1/2

Figure 2-66. US Army TASE personnel.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119
Truck, utility, 1/4-ton w/trailer	0	1	1

Figure 2-67. US Army TASE equipment.

Title	Grade	Branch	AFSC	Strength Authorized USAF	Authorized 2d Ref	Fld 119
Air Liaison Off	LTC	USAF	1155C	1	1	1
Airlift Op Off	MAJ	USAF	1155J	1	1	1
Fighter Op Off	MAJ	USAF	1155C	1	1	1
Recon Op Off	MAJ	USAF	1155H	1	1	0
Air Op Supv	E6	USAF	27170	1	1	1
Gnd Radio Comm Rpmn	E7-E5	USAF	304X4	6	6	6
Admin Specialist	E4	USAF	702X0	1	1	1
Supply Inventory Specialist	E4	USAF	64550	1	1	1
TOTAL (Off/EM)				4/9	4/9	4/8

Figure 2-68. US Air Force TASE personnel.

Nomenclature	Quantity Authorized USAF	Authorized 2d Ref	Fld 119
Communications Vehicle, MRC 107	0	4	4

Figure 2-69. US Air Force TASE equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 58 productive hours available during the test, 56 hours (93 percent) were expended performing listed and unlisted functions.

(b) All functions and procedures outlined in the organizations and functions manual were performed.

(c) The assistant G3 (Air) reported that although the OFM was not required by the element, it would be beneficial for personnel inexperienced in tactical air operations.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 56 productive hours expended by the element 29 hours (52 percent) were expended in using the files and 22 hours (40 percent) were expended in maintaining the files.

(b) Files 3601 (Staff Journal), 3602 (Section Workbook), 3604 (Policy File), 3605 (Suspense File), 3607 (Allocation of Close Air Support), 3610 (Aerial Reconnaissance and Surveillance Overlay), and 3614 (Joint Tactical Airlift Request) were not required to be used by the scenario.

(c) The assistant G3 (Air) reported that files 3601 (Staff Journal), 3602 (Staff Section Workbook), 3607 (Allocation of Close Air Support Chart), and 3607 (Mission Record Chart) are not required for use by the element and should be deleted from the OFM.

(5) Reports. A listing of reports and attendant preparation factors for the element is contained in part III.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the TASE within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the facility housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the element was satisfactory with respect to the Div TOC elements and also with other elements comprising the division main CP.

(c) The element operated from a van collocated with the ADA and aviation elements, as part of the vehicles comprising the division tactical operations center and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III. It is important to note that this data does not include utilization of communication means by Air Force personnel of the TASE.

(a) Of the 27 calls made, 56 percent were placed by AM, 40 percent by telephone and 4 percent by common-user teletype or RATT.

(b) All of the 17 calls received were by telephone.

(c) Element personnel reported that the means of communications were adequate to accomplish the assigned mission.

(d) No significant problems were experienced with any of the means of communications available to the element.

(e) Element and evaluator personnel reported a requirement for an AM voice capability in the air request net.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The Army contingent of the element displaced as one group. During the first displacement, the element closed on the advance party provided by the G2 and G4 sections; during the second displacement, the element closed on the TAC CP. During both displacements, adequate Air Force personnel moved to the point within the division assuming control during displacement operations.

(b) Both AM and FM radio means of communications were available to the controlling contingent of the element during displacement operations; however, during the test the G3 (Air) had no means of communication available for his use.

(c) The TASE was capable of conducting effective operations during displacement.

(d) The element was ready to move an average of 52 minutes after displacement procedures started.

(e) The element departed the old location an average of 5 minutes after being ready to move.

(f) The element was capable of conducting effective operations an average of 38 minutes after arriving at the new location.

(g) The element was capable of conducting sustained operations (completely set up) 30 minutes after arriving at the new location during the first displacement and 2 hours and 45 minutes during the second displacement.

(h) Element and evaluator personnel stated a need for an Army dedicated AM radio capability while displacing.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. Data pertinent to the effects of deployment of the TAC CP on the element is contained in part III.

(a) The Air Liaison Officer (Air Force) with an MRC 107 deployed with the TAC CP.

(b) Element and evaluator personnel reported no degradation of the operational effectiveness of the element when the TAC CP was deployed.

(11) Effect of the alternate CP. Data pertinent to the effects of the alternate CP on the element is contained in part III.

(a) The element did not require or receive information from the alternate CP.

(b) The alternate CP seldom requested data from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the element is contained in part III.

(a) Personnel of the element were informed by the TOC when the point of control within the division had changed.

(b) When control was returned to main from TAC, element personnel reported that not knowing the status of current air requests until the ALO returned from the TAC CP was detrimental to the element's operational effectiveness.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element are contained in part III.

(a) No unrealistic constraints that could effect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Initially, a problem was experienced relative to bomb damage assessement (BDA) in that no results were being submitted subsequent to air strikes. When this problem was resolved, the G3 (Air) passed the required BDA information to the TOC.

(c) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were reported as being satisfactory for the duties assigned.

(14) Information flow. Data pertaining to the exchange of information between the G3 (Air) and elements of the division is contained in part III. The matrix in figure 2-70 depicts the relationship between the element and the division command group, other members within the division staff, and members of other levels of command.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
FSE	12	36.36	CMD GP	12	33.33	G3	18	25.00	G2	18	21.43
ALO	12	36.36	G3	12	33.33	G2	12	16.67	ALO	18	21.43
G3	06	18.18	FSE	12	33.33	FSE	12	16.67	G3	12	14.29
S3, BDE	03	9.09				CMD GP	06	8.33	FSE	12	14.29
						ALO	06	8.33	BICC OIC	12	14.29
						AVN OFF	06	8.33	S3, BDE	12	14.29
						ADE OFF	06	8.33			
						S3, BDE	06	8.33			

Figure 2-70. TASE functional relationships.

(a) Information provided to the element was generally considered adequate, relevant, and accurate, but not timely. The G3 (Air) reported that 1 hour to evaluate, process, and forward preplanned air strikes was unrealistic and that approximately 2 hours is required.

(b) The element provided and received orders and guidance in sufficient time to meet operational needs.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An overcapacity workload condition was experienced 29 percent of the time.

(b) An undercapacity workload condition was experienced 14 percent of the time.

(c) The mean productive time expended per day was 16 hours for the G3 (Air) and 6 hours for the operations sergeant.

(d) There was no mean idle time per day reported for the G3 (Air) and 2 hours for the NCO.

(e) The mean absent time per day was less than an hour for the G3 (Air) and two hours for the NCO.

(f) Subsequent discussion with the element evaluator indicated that the 16 hour average workday expended by the G3 (Air) was required because of the level of experience of the operations NCO.

(g) Element and evaluator personnel stated a need for additional personnel and equipment to provide the element with a full 24-hour operational capability for operating in a mid-intensity conflict environment. The additional personnel are shown in figure 2-71 and the equipment in figure 2-72.

Title	Grade	MOS	Quantity
Assistant G3 (Air)	CPT	51542	1
Operations Sgt	E6	11F40	1

Figure 2-71. TASE recommended personnel additions.

Nomenclature	Quantity
AM Radio	1

Figure 2-72. TASE recommended equipment addition.

h. Aviation Element.

(1) Personnel authorized and fielded are shown in figure 2-73.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119	
Avn Stf Of	LTC	NO	02518	1	1	1	
Asst Avn Stf Off	MAJ	NO	02518	1	1	1	
Avn Safety Off	MAJ	NO	07423	1	1	1	(opt)
Op Sgt	E8	NC	71P50	1	1	1	
Clerk Typist	E4		71B30	1	1	1	
Lt Veh Dvr	E4		11B10	0	1	1	
TOTAL (Off/EM)				3/2	3/3	3/3	

Figure 2-73. Aviation element personnel.

(2) Equipment authorized and fielded is shown in figure 2-74.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119	
Truck, Utility, 1/4-ton	1	2	2	
Tent, GP, Small	1	0	1	
Vestibule Tent	1	0	1	(opt)
Radio, AN/VRC-46	0	0	1	

Figure 2-74. Aviation element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 83 productive hours available during the test, 44 hours (53 percent) were expended performing listed and unlisted functions.

(b) Function F03 (Supervision of the Aviation Safety Program) was not required to be performed by the scenario.

(c) The OFM was used by personnel of the element.

(d) The OFM adequately described the functions and procedures required to be performed by the element.

(e) Element and evaluator personnel commented that an OFM was nice to have but was not required since functions and procedures to the aviation element were covered in Army Regulations and Training Manuals.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 44 productive hours expended by the element, 14 hours (33 percent) were expended in using the files and 6 hours (15 percent) were expended in maintaining the files (includes visual displays).

(b) Files 3401 (Staff Journal), 3405 (Aircraft Availability Report), 3406 (Aircraft Availability Chart), 3408 (Division SOP), and 3416 (Request for Army Aviation) were used. No data was reported on other listed files.

(c) Player and evaluator personnel reported that the files are adequate for element performance.

(d) Subsequent discussion with player and evaluator personnel revealed that the files not used are normally required; however, the scenario did not require their use.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the aviation element within the G3 section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are shown in part III.

(a) The element experienced no difficutly in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated as part of the ACE/TASE from a van as part of the vehicles comprising the division tactical operations center, and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element are contained in part III.

(a) Of the 154 calls made, 51 percent were placed by FM and 49 percent by telephone.

(b) Of the 117 calls received, 60 percent were received by FM, 31 percent by telephone, and 9 percent by common-user teletype or RATT.

(c) All element responses indicated that the means of communications were adequate to accomplish the assigned mission.

(d) No significant problems were experienced with any of the means of communications available to the element.

(e) Element and evaluator personnel reported that an AN/VRC-46 radio is required for backup communication with the Air Traffic Control Center. An AN/VRC-46 radio was provided for this purpose during the test; however, the element is not authorized any means of FM communications.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During the first displacement, the element closed on the division CP advance party; during the second displacement, the element closed on the TAC CP.

(b) FM radio was the means of communications used during displacement. Element and evaluator personnel reported that no difficulty was experienced with communications; however, some difficulty was experienced in obtaining information relating to operations, intelligence, and support requirements.

(c) Seventy-five percent of the responses stated that the element was capable of maintaining effective operations while displacing.

(d) The element was ready to move an average of 45 minutes after displacement procedures started.

(e) The element departed the old location an average of 25 minutes after being ready to move.

(f) The element was capable of conducting effective operations an average of 20 minutes after arriving at the new location.

(g) The element was capable of conducting sustained operations (completely set up) an average of 35 minutes after arriving at the new location.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The element did not provide personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. Data pertinent to the effects of the alternate CP on the element is contained in part III.

(a) The alternate CP seldom requested information from the element.

(b) The element was not adversely affected by establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from the TOC that the point of control within the division had changed.

(c) The procedure followed to reestablish communications with the point of control within the division was by direct liaison.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints were reported that would affect the data collected.

(b) No control or scenario problems were reported.

(c) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(14) Information flow. Data pertaining to the exchange of information between the aviation element and other elements of the division is contained in part III. The matrix in figure 2-75 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered adequate, relevant, and accurate; but not always timely.

(b) Element and evaluator personnel reported that in a few instances, the element experienced difficulty in obtaining information from other elements and sections.

(c) Generally, the element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An undercapacity workload condition was experienced 92 percent of the time. This condition can be related to the fact that in a CPX environment, without active aviation participation, the aviation element provides little or no meaningful function.

(b) The mean productive time expended per day by element personnel was 3 hours.

(c) The mean idle time per day for the element personnel was 3 hours.

(d) The mean absent time per day for element personnel was less than one hour.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G3	03	16.67	AVN OFF	24	16.54	G3	09	60.00	G3	06	33.33
FSE	03	16.67	G3	15	38.46	S4, DISCOM	03	20.00	CMD GP	03	16.67
PM	03	16.67				S3, BDE	03	20.00	G4	03	16.67
ADF	03	16.67							S4, DISCOM	03	16.67
ALO	03	16.67							S3, BDE	03	16.67
S3, BDE	03	16.67									

Figure 2-75. Aviation element functional relationships.

(e) Element and evaluator personnel reported that an AN/VRC-46 is required by the element for backup communication with the air traffic control center.

1. Air Defense Artillery (ADA) Element.

(1) Personnel authorized and fielded are shown in figure 2-76.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
Op Off	MAJ	AD	01174	1	1	1
Asst Op Off	CPT	AD	01174	1	1	1
Op Sgt	E7	NC	17H40	1	1	1
Asst Op Sgt	E6	NC	16H40	1	1	1
RATELO (Drivers)	E4		05B20	2	1	2
TOTAL (Off/EM)				2/4	2/3	2/4

Figure 2-76. ADA element personnel.

(2) Equipment authorized and fielded is shown in figure 2-77.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119
Radio Set, AN/GRC-106, mtd in trk, 1 1/4-ton	0	2	2
Radio Set, AN/GRC-46, mtd in trk, 1 1/4-ton	0	2	2
Radio Set Cont GP, AN/GRA-39	2	2	2
Radio Set Cont GP, AN/GRA-74	2	2	2
Truck, Cargo, 1 1/4-ton	0	2	2

Figure 2-77. ADA element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 154 productive hours available during the test, 91 hours (59 percent) were expended performing listed and unlisted functions.

(b) Procedure F01P05 (Prepares the airspace utilization annex to division OPLAN/OPORD) was not performed by the element.

(c) Function F04 (Coordinates Army air traffic) was not performed because of the absence of aviation play in the test.

(d) Data provided relative to the use, adequacy, and requirement for an organization and functions manual connot be reduced to a finding as pertains to the element because of the diversified opinions of the element and evaluator personnel.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 91 productive hours expended by the element, 31 hours (34 percent) were expended in using the files and 12 hours (12 percent) were expended in maintaining the files (includes visual displays).

(b) File 3802 (Section Workbook), 3804 (Division SOP), 3805 (Policy File), and 3810 (Air Traffic Control Overlay) were not required to be used by the scenario.

(c) The information required on the visual display was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the ADA element within the section. Sketches depicting the physical relationship of the element within the division main CP, and the interior layout of the van housing the element, are contained in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from a van collocated with the TASE and AVN element as part of the vehicles comprising the division tactical operations center, and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 321 calls made, 90 percent were placed by FM, 9 percent by telephone, and less than one percent by AM voice communication means.

(b) Of the 335 calls received, 92 percent were received by FM, 7 percent by telephone and less than one percent by common-user teletype or RATT.

(c) There were no significant problems experienced by the element with the means of communications available.

(d) The element had a requirement to disseminate early-warning messages and reported that a one-way, direct, dedicated system is required for dissemination to the division elements.

(e) Element and evaluator personnel classified the means of communications available to the element, (except as reported in paragraph (d) above), as adequate to accomplish the assigned mission.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During the first displacement, the element closed on the advance party of the G2 and G4 sections; during the second displacement, the element closed on the TAC CP.

(b) Both AM and FM radio means of communications were available for use during displacement. Element and evaluator personnel reported that no difficulty was experienced with communications or in obtaining information during displacement.

(c) The element was capable of conducting effective operations during displacement.

(d) The element was ready to move an average of 35 minutes after displacement procedures started.

(e) The element departed the old location an average of 13 minutes after being ready to move.

(f) The element was capable of conducting effective operations upon arrival at new location.

(g) The element was capable of conducting sustained operations (complete set up) an average of 37 minutes after arriving at the new location.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The ADA element did not provide personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element did not require or receive information from the alternate CP.

(b) The alternate CP seldom requested data from the element.

(c) The element was not adversely affected by establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element were information by the TOC when the point of control changed within the division.

(13) Scenario, control, and training. Quantative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(14) Information flow. Data pertaining to the exchange of information between the air defense artillery element and other elements of the division is contained in part III. The matrix in figure 2-78 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G3	06	100.00	ADA OFF	36	63.16	G3	30	35.71	ADA OFF	24	42.11
			G3	09	15.79	ADA OFF	24	28.57	S3, BN	18	31.58
			S3, BN	09	15.79	S3, BN	24	28.57	G3	15	26.32
			ALO	03	5.26	FSE	06	7.14			

Figure 2-78. ADA element functional relationships.

(a) Information provided to the element was generally considered adequate, relevant, and accurate; but not always timely.

(b) Problems were reported in the timeliness of receipt of hostile aircraft early-warning messages.

(c) Element and evaluator personnel reported that in some instances the element experienced difficulty in obtaining information from other elements and sections.

(d) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by the element is contained in part III.

(a) An undercapacity workload was experienced 100 percent of the time. This undercapacity workload condition can be attributed to the lack of air defense and avaition play in the scenario and the absence of player units.

(b) The mean productive time expended per day was 6 hours for element personnel.

(c) The mean idle time per day was 4 hours for element personnel.

(d) The mean absent time per day was less than one hour for element personnel.

j. Engineer Element.

(1) Personnel authorized and fielded are shown in figure 2-79.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
ADE	04	EN	57010	1	1	1
Liaison Off	03	EN	01330	1	1	1
Cbt Const Foreman	E8	NC	12Z50	1	1	1
Gen Draftsman	E4		81A10	1	1	1
Lt Veh Dvr	E3		12A10	2	2	2
TOTAL (Off/EM)				2/4	2/4	2/4

Figure 2-79. Engineer element personnel.

(2) Equipment authorized and fielded is shown in figure 2-80.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119
Radio Set, AN/VRC-46, mtd in trk, 1/4-ton	1	1	1
Radio Set, AN/VRC-47, mtd in trk, 1/4-ton	1	1	1
Tent, General Purpose, Small	1	1	1
Trailer, Cargo, 1/4-ton	1	1	1
Trailer, Cargo, 3/4-ton	1	1	0
Truck, Cargo, 1 1/4-ton	1	1	1
Truck, Utility, 1/4-ton	1	1	1
Vestibule Tent, for Tent, GP, Small	1	1	0

Figure 2-80. Engineer element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 238 productive hours available during the test, 157 hours (66 percent) were expended performing listed and unlisted functions.

(b) All listed functions and procedures were performed except procedures F02P02G (Classification of roads, bridges, and airfields), F02P0H (CBR decontamination operations), and F02P0I (Rear area protection). The scenario did not require these procedures to be performed.

(c) The organization and functions manual (OFM) was used by personnel of the element.

(d) Element and evaluator personnel reported that the OFM should contain a more detailed description of job responsibilities.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 157 productive hours expended by the element, 34 hours (22 percent) were expended in using the files and 11 hours (7 percent) were expended in maintaining the files (includes visual displays).

(b) All files were used except file 3A09 (Barriers overlay) which was not required to be used by the scenario.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resulting usage factors is contained in part III.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the engineer element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the tent housing the element are contained in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from a GP small tent as part of the division main CP and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element are contained in part III.

(a) The only voice means of communication used by the element was the telephone. The element placed 15 and received 21 telephone calls.

(b) The element prepared 6 messages for transmission and received 22 messages that had been transmitted by common-user teletype or RATT.

(c) Element and evaluator personnel reported that the element had sufficient means of communication and did not experience any difficutly with the communications available.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element are contained in part III.

(a) The assistant division engineer (ADE) reported that the element displaced incrementally; however, during the first displacement the second increment departed the old location prior to the first increment arriving at the new location.

(b) The element did not use any communications during displacement.

(c) Both increments were ready to move an average of 45 minutes after displacement procedures started.

(d) The first and second increments departed the old location an average of 20 and 60 minutes respectively, after being ready to move.

(e) The first and second increments were operational and completely set-up an average of 105 and 62 minutes respectively, after arriving at the new location.

(f) Element and evaluator personnel reported that displacement procedures in the division TAC SOP were adequate for the element.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The element did not provide personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. The element was not affected by establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the element is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from other staff members at the division main CP that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) No requirements for additional training of element personnel were identified.

(14) Information flow. Data pertaining to the exchange of information between the engineer element and other elements of the division is contained in part III. The matrix in figure 2-81 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered adequate, relevant, timely, and accurate.

(b) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) Element personnel reported that a within-capacity workload condition was experienced 83 percent of the time and an undercapacity condition 17 percent of the time. However, the evaluators reported that an undercapacity workload condition existed 100 percent of the time.

(b) The mean productive time expended per day by element personnel was 13 hours.

(c) The mean idle time per day for element personnel was 7 hours. (Sleep time was included in the reported idle time).

(d) The mean absent time per day was one hour.

(e) Element and evaluator personnel reported that the element was effective to very effective in performing its assigned functions.

(f) Element and evaluator personnel reported that additional personnel are required to maintain continuous 24 hour operations. (Note: Test results do not support this finding.) These additional personnel are identified in figure 2-82.

k. Communications-Electronic (C-E) Element.

(1) Personnel authorized and fielded are shown in figure 2-83.

(2) Equipment authorized and fielded is shown in figure 2-84.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S3, BN	18	85.71	G3	30	83.33	G3	24	80.00	G2	12	30.77
G3	03	14.29	S3, BN	06	16.67	S3, BN	06	20.00	G3	12	30.77
									S3, BN	12	30.77
									G4	03	7.69

Figure 2-81. Engineer element functional relationships.

Title	Grade	Branch	MOS	Strength
Cp Off	03/02	EN	1330/1333l	l
Asst Op Sgt	E7/E6	NC	12B40	l
Clerk-Typist	E4		75B20	l
TOTAL (Off/EM)				1/2

Figure 2-82. Engineer element recommended personnel additions.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Authorized 2d Ref	Fld 119
ADSO	04	SC	E1010	l	l	l
Radio off	03	SC	00505	l	l	0
Tel & tt Off	LT	SC	00405	l	l	l
Chief Sig NCO	E8	NC	31Z50	l	l	l
Clk-Typ	E4	--	71B30	l	l	l
CEOI Clk	E4	--	72B20	2	2	2
Lt Veh Dvr	E3	--	72B10	l	2	2
TOTAL (Off/EM)				3/5	3/6	2/6

Figure 2-83. C-E element personnel.

Nomenclature	Quantity Authorized H-Ser	Authorized 2d Ref	Fld 119
Message Center, AN/GSQ-80	l	l	l
Op Comm Center, AN/MSC-31	2	2	2
Power Supply, PP-2953/U	l	l	l
Radio Set, AN/VRC-46	l	l	l
Radio Set, AN/VRC-47, mtd in MSC-31	l	l	l
Radio Set, AN/VRC-47, mtd in trk, 1/4-ton	l	l	l
Trailer, Cargo, 1/4-ton	2	2	2
Truck, Cargo, 2 1/2-ton	2	2	2
Truck, Utility, 1/4-ton	2	2	2

Figure 2-84. C-E element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 379 productive hours available during the test, 318 hours (66 percent) were expended performing listed and unlisted functions.

(b) The following functions and procedures were either not performed or were not reported as being performed.

1 Procedure F02P01B (Prepares C-E annexes) was performed prior to the test when the C-E element published and disseminated the C-E annex.

2 Procedure F02P02B (Makes changes as required to C-E systems) was accomplished by the signal battalion commander and S3.

3 Procedure F02P02C (Makes recommendations to higher headquarters concerning electromagmetic emissions not under the signal battalion control) was accomplished by the division signal battalion commander.

4 Procedure F03P01C (Prepares statistical reports) was accomplished in preparation for the morning and evening briefings, but the work time was not recorded by the element.

5 Procedure F03P02B (Requests support as needed from the corps C-E section) was planned for and requested prior to the start of the test with the exception of two instances where additional VHF channels were requested.

6 Procedures F04P01A, F04P01C, and F04P01D (pertaining to the assignment of communications personnel) were not required by the scenario.

7 Procedure F04P02A (Recommends location of C-E elements and space requirements with CP) was accomplished prior to the start of the test since the CP locations were predesignated.

8 Procedure F04P02C (Establishes message/courier service between the CP's) was not accomplished since the message/courier service and schedule were established prior to the test.

9 Procedure F04P02D (Establishes internal operating procedures for incorporation in division SOP, C-E annex, and CESI) was not required by the scenario.

10 Procedure F05P01A (Estimates enemy C-E threat) was not accomplished since the division signal battalion does not estimate the enemy EW threat, but does provide source information input to the EW/ASA support element.

11 Procedure F05P02 (Assists in the interpretation and evaluation of captured enemy communication equipment and documents) was not required by the scenario.

12 Procedure F05P03 (Estimates and recommends preventive and corrective action to be taken concerning communications security violations) was not required by the scenario.

13 Procedure F05P04A (Establishes procedures for reporting ECM) was not accomplished since procedures are established in the division SOP and CESI which were complied with during the test.

14 Procedure F05P04B (Disseminates information through the division SOP and C-E documents) was not accomplished because the documents were prepared and disseminated prior to the start of the test.

15 Procedure F05P04C (Receives and evaluates interference reports and provides the G2 with appropriate information) was accomplished on two occasions by the C-E element as witnessed by the evaluators; however, no work time was reported by element personnel for this procedure. This is the responsibility of the C-E element and, though not properly recorded, it was most evident from the PEQ functional relationship matrix that a close working relationship existed between the two elements.

16 Procedure F05P04D (Recommends employment of electronics counter-countermeasures) was not accomplished since interference reports were provided to the G2 by the C-E element, but ECCM was not recommended.

17 Procedures F06P01A, F06P01B, F06P01C, F06P01D, and F06P01E (Prepares C-E estimates, conducts reconnaissance and profiles, develops communication plans and requests employment of tactical units to secure key terrain features required for communication sites) were either preplanned or were not required by the scenario.

18 Procedure F06P01F (Coordinates planning with higher and adjacent signal units) was coordinated with corps prior to the start of the test.

19 Procedure F06P02F (Requests and recommends augmentation to organic communication organizations) was not accomplished because the augmentation required by the division signal battalion was designated by MASSTER and was provided from corps and division assets.

20 Procedure F06P04 (Recommends and provides communications support of division level training) was accomplished prior to the test.

21 Procedure F06P05A (Evaluates proposed location with respect to overall division communications configuration and recommends site location) was accomplished prior to the test.

22 Procedure F06P05B (Recommends communication relay sites needed to support a particular CP location) was not required by the scenario.

23 Procedures F06P05C (Prepares C-E layout), F06P06 (Estimates, requests, and recommends physical security measures for signal installations), F07P04 (Provides C-E input to division admin/log orders), F09P02 (Prepares communications support plans), F12P92A (Establishes and publishes appropriate procedures in the CEOI and CESI) were accomplished prior to the start of the test.

24 Functions F08 (pertaining to indigenous communications) and F11 (pertaining to audio visual support) and procedures F09P03 (Evaluates performance of C-E units), F10P01B (Monitors performance by inspections and periodic reports), F07P05 (Assists in the development of class IV projects), F07P03D (Recommends priority for C-E maint), F07P02 (pertaining to C-E logistics support requirements), and F07P03C (Recommends allocation of C-E equipment based upon operational capability) were not required by the scenario.

25 Procedure F12P01 (Supervises frequency assignment and use) was not performed because the element did not have an assigned radio officer.

26 Procedure F12P02C (Coordinates with G2 concerning ASA support) was accomplished prior to the test, but not during execution of the scenario.

27 Procedure F12P03 (Plans for the establishment of lateral communications) was accomplished by controller personnel at corps level.

(c) The organization and functions manual (OFM) was used by personnel of the element.

(d) The OFM adequately described the functions and procedures required for the element.

(e) The productive time expended on functions and procedures recorded by the element reflects only the effort expended during the 87-hour scenario and not the time devoted to coordination, planning, and preparation of documents prior to start of the test.

(f) SYSCON accomplished many functions and procedures that would have been performed by the C-E element if a radio officer had been assigned.

(g) Division required an element representative in the DTOC at all times. The requirement was satisfied by shifting the ADSO, wire officer, and chief signal NCO.

(h) An OFM is required for use by the element.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 379 productive hours expended by the element, 93 hours (25 percent) were expended in using the files and 8 hours (2 percent) were expended in maintaining the files (includes visual displays).

(b) File 3911 (C-E Equipment Status Chart); files 3915 and 3916 (pertaining to CESI data); 3917, 3919, and 3920 (pertaining to telephone records); 3922 (Messenger Schedule); 3925-3930 and 3932 (pertaining to the C-E Annex, Operation Plan and Order, Admin/Log Order, SOP's, and location overlays) were prepared prior to the test, but were not used in the execution of the scenario. Scenario activity did not require preparation or use of files 3921 (Line Route Diagram), 3924 (Cable Construction plan), or 3931 (Situation Map).

(c) The information required on the visual displays was adequate.

(d) The OFM adequately defined the file structure of the element.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organizational relationship of the C-E element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The message center facility, AN/GSQ-80, authorized the C-E element, was attached to SYSCON and positioned back-to-back with the

SYSCON communications operations center facility, AN/MSC-31. (Note: SYSCON was positioned as close as possible to the A Co (-) VHF park, while the C-E element positioned itself just outside the protective wire of the DTOC.)

(d) Subsequent discussion with element personnel and evaluators revealed that the AN/MSC-31 provides sufficient space to accomodate the C-E element.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 688 calls made, 35 percent were placed by FM and 65 percent by telephone.

(b) Of the 521 calls received, 40 percent were received by FM and 60 percent by telephone.

(c) The element prepared 6 messages for transmission and received 7 messages that had been transmitted by common-user teletype or RATT.

(d) Element and evaluator personnel reported that the element had sufficient means of communication to accomplish its assigned mission.

(e) The element did not detect the first two of six jamming periods because of other problems with the AM TOC net and the CG command net (FM); however, they did detect the jamming during the subsequent four periods and took appropriate action.

(8) Effect of displacement. Data pertinent to the effects of displacement on the element is contained in part III.

(a) The element did not displace incrementally, but in one group. During the first displacement, the element closed on the the advance party provided by the G2 and G4 sections; during the second displacement, the element closed on the TAC CP.

(b) The element was ready to move an average of 53 minutes after displacement proceudres started.

(c) The element departed the old location an average of 15 minutes after being ready to move.

(d) The element was capable of conducting effective operations 55 minutes after arriving at the new location.

(e) The element was capable of conducting sustained operation (completely set up) an average of 70 minutes after arriving at the new location.

(9) Effect of destruction. The C-E element was destroyed.

(10) Effect of TAC CP deployment. The C-E element was not adversely affected by deployment of the TAC CP.

(11) Effect of the alternate CP. The element was not adversely affected by the establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effects of shifting control of the division is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element normally learned from the G3 section that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) Element personnel and evaluators reported that, due to the limited duration of the scenario, the majority of the element's assigned functions were prepared prior to the field portion of the test. They further stated that the accelerated scenario caused the element to expend most of its time establishing and maintaining communications. Element and evaluator personnel concluded that a test executed over a longer period of time would generate more representative data on the normal missions and functions performed by the C-E element.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience were satsifactory except for the ADSO who reported that he was newly assigned to the position and lacked ADSO experience.

(14) Information flow. Data pertaining to the exchange of information between the C-E element and other elements of the division is contained in part III. The matrix in figure 2-85 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered adequate, relevant, and accurate, but often not timely.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S3, BN	15	27.78	C-E OFF	24	33.33	C-E OFF	21	29.16	C-E OFF	24	32.00
G2	12	22.22	G2	15	20.83	G2	15	20.83	G2	15	20.00
G3	12	22.22	G3	15	20.83	G3	15	20.83	G3	15	20.00
C-E OFF	12	22.22	BN CMD GP	15	20.83	S3, BN	15	20.83	BN CMD GP	12	16.00
BN CMD GP	03	5.56	S3, BN	03	4.17	BN CMD GP	06	8.33	S3, BN	06	8.00
									HQ CMDT	03	4.00

Figure 2-85. C-E element functional relationships.

(b) Element and evaluator personnel reported that is a few instances, the element experienced difficulty in obtaining information from other elements and sections.

(c) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An undercapacity workload condition was experienced 17 percent of the time. This condition was reported by the clerk-typist and the two CEOI clerks.

(b) A within-capacity workload condition existed 83 percent of the time as reported by the officers and NCO's of the element.

(c) The mean productive time expended per day was 15 hours for officers and 11 hours for NCO's.

(d) No idle time was reported by the officers or NCO's of the element.

(e) The mean absent time per day was 7 hours for officers and 9 hours for NCO's (includes sleep time).

(f) The activity level of the element was not significantly affected during the test by the lack of an assigned radio officer, MOS 00505. The multichannel radio functions of the radio officer were performed by SYSCON personnel. The remaining AM and FM related functions were the responsibility of the element, but were accomplished prior to the start of the test. During the test, the element experienced very few AM/FM (voice) frequency problems since alternate FM frequencies were provided in the CEOI, and the AM (voice) radio was seldom used by DTOC personnel.

l. Chemical Element.

(1) Personnel authorized and fielded are shown in figure 2-86.

(2) Equipment authorized and fielded is shown in figure 2-87.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantitiable data is contained in part III.

(a) Of the 264 productive hours available during the test, 172 hours (65 percent) were expended performing listed and unlisted functions.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Div Cml OFF	05	CM	57314	1	1	1
Asst Cml Off	03	CM	57314	1	1	1
Cml Staff Off	03	CM	57314	1	1	1
Cml Op Sgt	E8	NC	54E50	1	1	1
Plotter	E7	NC	54E40	2	2	2
Computer	E6		54E20	1	1	1
Cml Staff Spec	E5		54E20	1	2	2
Clerk Typist	E4		71B30	1.	1	1
TOTAL (Off/EM)				3/6	3/7	3/7

Figure 2-86. Chemical element personnel.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Tent, GP, Small	2	2	2
Trailer, Cargo, 1/4-ton	0	2	2
Trailer, Cargo, 3/4-ton	1	1	1
Truck, Cargo, 1 1/4-ton	1	1	1
Truck, Utility, 1/4-ton	0	2	2
Vestibule Tent, for Tent, GP, Small	1	2	2

Figure 2-87. Chemical element equipment.

(b) All listed functions and procedures were performed.

(c) The organization and functions manual was used by personnel of the element.

(d) Element personnel reported that the OFM requires revision to assign responsibility for performing vulnerability analysis.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 172 productive hours expended by the element, 80 hours (46 percent) were expended in using and maintaining the files.

(b) Maintenance time required for the files was consolidated with usage time as reported by the element.

(c) Files 3505, 3506, 3508, and 3509 (NBC-1 thru 5, except NBC-3) were not required to be used by the scenario.

(d) The information required on the visual displays was adequate.

(e) Element personnel recommended the deletion of the staff journal, section workbook and policy file within the element.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(6) Organizational structure, physical relationships, and facilities. Figure 2-44 depicts the organization relationship of the element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the facility housing the element are shown in part III.

(a) The element experienced no ditficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from a GP small tent as part of the division main CP and the facility was adequate for the number of personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) The only voice means of communication used by the element was the telephone. The element placed 73 and received 53 telephone calls.

(b) The element prepared 27 messages for transmission and received 24 messages that had been transmitted by common-user teletype or RATT.

(c) Adequate communication means were available for the element to perform its assigned mission.

(8) Effect of displacement. Data pertinent to the effects of displacement of the elemonT is contained in part III.

(a) Element personnel reported that the element displaced incrementally as specified in the division tactical SOP.

(b) The element had no means of communications by which to have its information needs satisfied while displacing.

(c) The first and second increments were ready to move an average of 58 and 53 minutes respectively.

(d) The first and second increments departed the old location an average of 27 and 57 minutes respectively.

(e) The element was capable of conducting effective operations an average of 53 minutes after arriving at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of one hour after arriving at the new location.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The chemical element did not provide personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. The element was not affected by the establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the element is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the element were informed by the TOC when the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(14) Information flow. Data pertaining to the exchange of information between the chemical element and other elements of the division is contained in part III. The matrix in figure 2-88 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

(a) Information provided to the element was generally considered adequate, accurate, relevant, and timely.

(b) The element provided and received orders and guidance in sufficient time to meet operational needs.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An undercapacity workload was experienced 100 percent of the time by all element personnel. This undercapacity workload condition can be attributed to the lack of chemical and nuclear play in the scenario.

(b) The mean productive time expended per day by element personnel was 6 hours.

(c) The mean idle time per day for element personnel was 3 hours.

(d) The mean absent time per day for element personnel was one hour.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G3	18	33.33	G3	35	34.20	G3	45	31.25	G2	18	21.43
FSE	18	33.33	FSE	21	20.00	G2	30	20.83	G3	18	21.43
G2	09	16.67	CMD GP	12	11.43	FSE	30	20.83	FSE	15	17.86
CMD GP	06	11.11	G2	12	11.43	CML OFF	12	8.33	CML OFF	12	14.29
G4	03	5.56	CML OFF	12	11.43	CMD GP	09	6.25	G4	09	10.71
			ALO	06	5.71	ALO	06	4.17	GI	03	3.57
			AVN OFF	06	5.71	AVN OFF	06	4.17	ADE	03	3.57
						GI	03	2.08	ALO	03	3.57
						G4	03	2.08	AVN OFF	03	3.57

Figure 2-88. Chemical element functional relationships.

2-12. Division G4 Section.

a. General. The organization of the division G4 section and the elements over which it exercised staff supervision are shown in figure 2-89. Subfindings pertinent to the section are at paragraph b, while subfindings pertinent to the elements of the G4 section are contained in paragraph c and d.

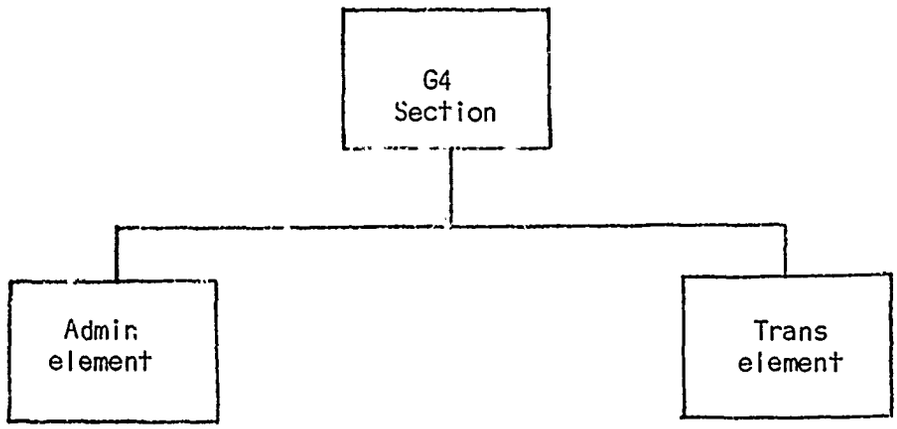


Figure 2-89. G4 organization.

b. Section subfindings.

(1) Effect of displacement.

(a) During both displacements of the division main CP, the G4 section displaced in the first increment and closed on the advanced party provided by the G4 section.

(b) Since the G4 admin element has no FM communications means, their operational capability is nullified during displacement.

(2) Effect of destruction of the main CP. The G4 section was destroyed.

(3) Effect of TAC CP deployment. The G4 section provided no personnel or equipment to the TAC CP and was not affected by its deployment.

(4) Effect of the alternate CP. The G4 section was not adversely affected by the establishment of the alternate CP.

(5) Effect of shifting control. The G4 section did not experience any difficulties when control of the division was shifted from one location to another.

(6) Adequacy of intelligence support. Data pertinent to the adequacy of the intelligence support provided to the section is contained in part III. The intelligence support provided to the section was consistently rated as adequate and no better or worse than normally provided by the traditional S2/G2 configuration.

(7) Adequacy of personnel and equipment. The personnel and equipment authorized the G4 section were generally adequate.

(a) During displacements, the G4 admin element requires FM communication means not presently authorized.

(b) Collocation of the G4 admin and DTO elements in the expansible van (5-ton) was strongly recommended.

(c) The addition to G4 admin of maintenance and supply officers to provide liaison and coordination was recommended.

c. Administration element.

(1) Personnel authorized and fielded are shown in figure 2-90.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Fld 19
G4	05	NO	02625	1	1	1
Asst G4	04	NO	04010	2	2	2
Asst G4	03	NO	04010	1	1	1
C Sup Sgt	E9	NC	76Z5K	1	1	1
Asst C Sup Sgt	E8	NC	76Z5K	1	1	1
Secy-Steno	E5		71C30	1	1	1
Clerk Typist	E4		71B30	2	2	2
Lt Veh Dvr	E3		11B10	1	1	1
Food Svc Tech	WO		941A0	1	1	1
Food Svc Supv	E8	NC	94Z50	1	1	1
TOTAL (Off/EM)				5/7	5/7	5/7

Figure 2-90. Administration element personnel.

(2) Equipment authorized and fielded is shown in figure 2-91.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Tent, GP, Small	1	1	1
Trailer, Cargo, 1/4-ton	1	1	1
Trailer, Cargo, 1 1/2-ton	1	1	1
Truck, Utility, 1/4-ton	1	1	1
Truck, Van, Exp, 5-ton	1	1	1
Generator, 5KW	0	0	1

Figure 2-91. Administration element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 295 productive hours available during the test, 269 hours (83 percent) were expended performing listed and unlisted functions.

(b) Procedures F03P04 (Civilian labor RQR), F03P06 (Construction policies), F03P07 (Allocation and repair of facilities), F04P04 (Area damage control planning), F04P05 (Nuclear accident/incident), and F04P06 (CBR accident decon) were not required to be performed by the scenario.

(c) The OFM was used by personnel of the element.

(d) Element personnel indicated the need to transfer procedure F03P04B (Civilian labor) to the GI section.

(e) Element personnel indicated that procedures F01P01 (Supply requirements), F01P02 (Procurement of supplies), F01P03 (Receipt, storage, and distribution of supplies), and functions/procedures concerning requests for issue and maintenance support should be transferred to operational units, such as DISCOM, rather than to the G4 staff.

(f) Under function F03, a procedure 'advise G5 of civilian labor requirements' should be added.

(g) Element and evaluator personnel reported that the OFM adequately described the functions and procedures.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 269 productive hours expended by the element, 51 hours (19 percent) were expended in using the files and 40 hours (15 percent) were expended in maintaining the files (includes visual displays).

(b) Files 4105 (Policy) and 4129 (Operations Plan) were not required to be used by the scenario.

(c) The information required on the visual displays was adequate.

(d) Element and evaluator personnel indicated that status charts 4108 (CI III), 4110 (CI IV), 4112 (CI V), and 4114 (CI IX) should not be routinely maintained. When specific items of these classes are identified by DISCOM or a brigade as becoming critical, they would be posted to file 4121 (Division Critical Items Chart).

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 269 productive hours expended by the element, 13 hours (5 percent) were expended in report preparation.

(b) Report 4105 (Request for Convoy Clearance) was not required to be prepared by the scenario.

(c) Element personnel commented that there was no apparent need for the routine submission of reports on classes of supply. Any supply items of importance to report to higher headquarters should be included in report 4104 (Critical Item Status).

(6) Organizational structure, physical relationships, and facilities. Figure 2-89 depicts the organizational relationship of the G4 admin element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the van housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other elements comprising the division main CP was satisfactory.

(c) The element operated from a 5-ton expansible van which was shared by the GI section while the division transportation officer (DTO)

operated from a separate facility. Element and evaluator personnel reported a need for the division transportation element to be collocated with the G4 administration element and for the G1 admin to be located in a separate facility.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 308 calls made, 6 percent were placed by FM and 94 percent by telephone.

(b) Of the 351 calls received, 100 percent were received by telephone.

(c) The element prepared 129 messages for transmission and received approximately 200 messages that had been transmitted by common-user teletype or RATT.

(d) Seventy-seven percent of the element responses indicated problems were encountered with the telephone. Sixty-two percent of the responses indicated there were problems with the RATT means of communication.

(e) Fifty-eight percent of the daily responses indicated the element did have enough communication means, but element and evaluator personnel reported that a secure FM radio backup means of communication to brigade S4 elements is needed to overcome the frequent loss of telephone and RATT support.

(f) Seventy-five percent of the element and evaluator personnel reported the means of communications were not adequate to accomplish the assigned mission due to frequent communication outages and lack of FM capability.

(g) Element personnel indicated a desire to have the Admin/Log RATT set located near the G4 administration element for dedicated service.

(h) As recommended in para (6), collocation of this element with the division transportation element would provide the additional FM communications means needed.

(8) Effect of displacement. Data pertinent to the effect of displacement on the element is contained in part III.

(a) The element did not displace incrementally. During both the first and second displacement, the element closed on the advance party of the G4 section.

(b) Element and evaluator personnel reported no difficulty with communications or in obtaining information during displacement; however, no calls were made or received.

(c) The element was ready to move an average of 61 minutes after displacement procedures started.

(d) The element departed the old location an average of 20 minutes after being ready to move.

(e) The element was capable of conducting effective operations an average of 37 minutes after arriving at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of 65 minutes after arriving at the new location.

(g) The average times computed in (d) and (e) above, are based on responses indicating the element was prepared but was without communications support. The G4 reported on the second move that effective and sustained operational conditions were not reached until 3 1/2 hours after arrival of the element at the new location.

(h) The element and evaluator personnel generally rated the overall effectiveness during displacement as marginally effective due to a lack of communications during displacement and the length of time required to reestablish RATT and telephone lines.

(i) Element and evaluator personnel responses indicate a need for FM communication during displacement and additional RATT and AM support at the old and new locations.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The element provided no personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by the establishment of the alternate CP.

(b) The alternate CP seldom requested information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control on the element is shown in part III.

(a) The element personnel did not experience any difficulty when control of the division was shifted from one location to another.

(b) The element normally learned through telephone communications with the DTOC (G3) and personal contact with the G4 that the point of control within the division had changed.

(c) The procedure followed by the element to establish communications with the newly designated point of control within the division was to wait for the division signal battalion support to install necessary communications.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were inposed on the element by the scenario or the control organization when executing the scenario. However, element and evaluator personnel indicated that many of the G4 scenario events were 'operator' in nature and should have been designated for DISCOM.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) A requirement for additional training in planning techniques and corps combat service support concepts, especially ASP operations, was identified by element personnel.

(14) Information flow. Data pertaining to the exchange of information between the G4 administrative element and other elements of the division is contained in part III. The matrix in figures 2-92 and 2-93 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command. (Note: Fig 2-92 applies only to the G4.)

(a) The adequacy, relevancy, and accuracy of the information provided to the element were generally rated as fair.

(b) The timeliness of the information provided to the element was rated as poor due to delayed RATT communications.

(c) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
DTO	18	26.09	Comd Gp	54	90.00	Comd Gp	36	24.49	DISCOM Comd Gp	18	14.29
DAO, DISCOM	12	17.39	G3	06	10.00	DISCOM Comd Gp	24	16.33	Comd Gp	15	11.90
MMA, DISCOM	12	17.39				S4, DISCOM	12	8.16	DTO	12	9.52
DISCOM Comd Gp	06	8.70				G1	06	4.08	S4, DISCOM	12	9.52
S4, DISCOM	06	8.70				G2	06	4.08	DAO, DISCOM	12	9.52
S4, Div Arty	06	8.70				G3	06	4.08	MMA, DISCOM	12	9.52
S4, Bde	06	8.70				FSE	06	4.08	G1	06	4.76
S3, DISCOM	03	4.35				PM	06	4.08	G3	06	4.76
						Avn Off	06	4.08	PM	06	4.76
						DTO	06	4.08	ADE	06	4.76
						S3, DISCOM	06	4.08	Avn Off	06	4.76
						DAO, DISCOM	06	4.08	S4, Div Arty	06	4.76
						MMA, DISCOM	06	4.08	S4, Bde	06	4.76
						S4, Div Arty	06	4.08	FSE	03	2.38
						S4, Bde	06	4.08			
						ADE	03	2.04			

Figure 2-92. G4 functional relationships.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S4, DISCOM	27	13.85	G4	33	26.83	G3	27	11.69	G3	24	12.50
S4, Bde	27	13.85	DISCOM Comd Gp	18	14.63	S4, DISCOM	24	10.39	ADE	18	9.38
DISCOM Comd Gp	18	9.23	G3	15	12.20	G4	21	9.09	DISCOM Comd Gp	18	9.38
Maint Bn Cdr	18	9.23	Comd Gp	09	7.32	DISCOM Comd Gp	18	7.79	S4, DISCOM	18	9.38
DTO	15	7.69	S3, DISCOM	09	7.32	S3, DISCOM	18	7.79	DTO	15	7.81
S3, DISCOM	15	7.69	S4, DISCOM	09	7.32	S4, Bde	18	7.79	S3, DISCOM	15	7.81
S4, Bn	15	7.69	S4, Div Arty	09	7.32	DTO	15	6.49	Maint Bn Cdr	15	7.81
S4, Div Arty	12	6.15	S4, Bn	06	4.88	Maint Bn Cdr	15	6.49	S4, Bde	12	6.25
S&T Bn Cdr	12	6.15	S&T Bn Cdr	06	4.88	ADE	12	5.19	S4, Bn	12	6.25
G5	06	3.08	Maint Bn Cdr	06	4.88	S4, Div Arty	12	5.19	Comd Gp	09	4.69
S&S Co Cdr	06	3.08	S4, Bde	03	2.44	S&T Bn Cdr	12	5.19	S4, Div Arty	09	4.69
G1	03	1.54				G1	09	3.90	S&T Bn Cdr	09	4.69
G2	03	1.54				Comd Gp	06	2.60	G1	03	1.56
G3	03	1.54				S4, Bn	06	2.60	G2	03	1.56
G4	03	1.54				G2	03	1.30	G4	03	1.56
AG	03	1.54				FSE	03	1.30	FSE	03	1.56
Avn Off	03	1.54				Avn Off	03	1.30	Avn Off	03	1.56
DAO, DISCOM	03	1.54				HQ Comdt	03	1.30	HQ Comdt	03	1.56
MMA, DISCOM	03	1.54				DAO, DISCOM	03	1.30			
						MMA, DISCOM	03	1.30			

Figure 2-93. Administration element functional relationships.

(a) An overcapacity workload condition was experienced 4 percent of the time.

(b) An undercapacity workload condition was experienced 12 percent of the time.

(c) The mean productive time expended per day was 10 hours for officers and 11 hours for NCO's.

(d) The mean idle time per day was less than 1 hour for officers and 2 hours for NCO's.

(e) The mean absent time per day was 1 hour for officers and 3 hours for NCO's.

(f) The G4 administration element and division transportation element should be collocated in the G4 expansible van (5-ton).

(g) Element personnel reported that an additional truck, utility, 1/4-ton with driver to accomplish liaison functions with DISCOM and brigade S4's would be required.

(h) Element and evaluator personnel stated that additional personnel and equipment as shown in figures 2-94 and 2-95 are required to satisfy normal operation mission requirements.

Title	Grade	Branch	MOS	Strength
Asst G4 (Maint)	04	NO	04200	1
Asst G4 (Supply)	04	NO	04200	1
Lt Veh Dvr	E3		11B20	1

Figure 2-94. Administration element recommended personnel additions.

Nomenclature	Quantity
Radio Set, AN/VRC-46, mtd in trk, 5-ton, Van, Exp	1
Truck, Utility, 1/4-ton	1

Figure 2-95. Administration element recommended equipment additions.

d. Transportation element.

(1) Personnel authorized and fielded are shown in figure 2-96.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Div Trans Off	04	TC	00692	1	1	1
Mov Con Off	03	TC	00694	1	1	1
Mov Supv	E8	NC	71N5K	1	1	1
Mov Specialist	E4		71N20	1	1	1
. TOTAL (Off/EM)				2/2	2/2	2/2

Figure 2-96. Transportation element personnel.

(2) Equipment authorized and fielded is shown in figure 2-97.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Radio Set, AN/VRC-46, mtd in trk, Cargo, 1/4-ton	1	1	1
Trailer, Cargo, 1/4-ton	1	1	1
Truck, Util, 1/4-ton	1	1	1

Figure 2-97. Transportation element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 165 productive hours available during the test, 136 hours (82 percent) were expended performing listed and unlisted functions.

(b) Procedure F01P08 (Coord with div av. off) was not required to be performed by the scenario.

(c) The OFM was used by element personnel.

(d) The DTO indicated that more detailed information is required for functions and procedures.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 136 productive hours expended by the element, 22 hours (16 percent) were expended in using the files and 8 hours (6 percent) were expended in maintaining the files (includes visual displays).

(b) File 4203 (Transportation Request) was not required by the scenario.

(c) The information required on the visual displays was adequate.

(d) Element and evaluator personnel indicated that a file was added for convoy march tables and the evaluator indicated files 4203 (Transportation Request) and 4204 (Reply to Transportation Request) should be deleted as such documents are transmitted directly to and from the Movement Control Center.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 136 productive hours expended by the element, 3 hours (2 percent) were expended in report preparation.

(b) Report 4205 (Request for Convoy Clearance) was the only report used.

(c) Reports 4201 (per log), 4202 (CI III status), 4203 (CI IV status), and 4204 (critical items status) are prepared by the G4 administration element and not the division transportation element. In addition, no reports required by the higher headquarters were listed.

(6) Organizational structure, physical relationship, and facilities. Figure 2-89 depicts the organizational relationship of the division transportation element within the section. Sketches depicting the physical relationship of the element within the division main CP and the interior layout of the tent housing the element are shown in part III.

(a) The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this element to the division TOC and other sections comprising the division main CP was satisfactory.

(c) The element frequently coordinates with the G4 administration element and element personnel indicated a need to collocate with that element.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 71 calls made, all were placed by telephone.

(b) Of the 47 calls received, all were received by telephone.

(c) The element prepared 12 messages for transmission and received approximately 6 messages that had been transmitted by common-user teletype RATT.

(d) Seventy-seven percent of the element responses indicated the element had enough means of communication.

(e) Element and evaluator personnel classified the means of communication available to the element as adequate to accomplish the assigned mission.

(8) Effect of displacement. Data pertinent to the effect of displacement on the element is contained in part III.

(a) The element did not displace incrementally. During both the first and second displacement, the element closed on the advance party provided by the G4 section.

(b) Element and evaluator personnel reported that no difficulty was experienced in obtaining information during displacement.

(c) The element was ready to move an average of 38 minutes after displacement procedures started.

(d) The element departed the old location an average of 29 minutes after being ready to move.

(e) The element was capable of conducting effective operations an average of 32 minutes after arriving at the new location.

(f) The element was capable of conducting sustained operations (completely set up) an average of 65 minutes after arriving at the new location.

(g) The times computed in (e) and (f) above are based on responses indicating the element was prepared but was without communications support. The G4 indicated on the second move that effective and sustained operational conditions were not reached until 3 1/2 hours after arrival of the element at the new location.

(h) The lack of telephone service just before displacement and immediately after arrival in the new area seriously degraded the operational effectiveness of the element.

(9) Effect of destruction. The element was destroyed.

(10) Effect of TAC CP deployment. The element provided no personnel or equipment to the TAC CP and was not affected by its deployment.

(11) Effect of the alternate CP. Data pertinent to the effect of the alternate CP on the element is contained in part III.

(a) The element was not adversely affected by establishment of the alternate CP.

(b) The alternate CP seldom requested information from the element.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The element did not experience any difficulty when control of the division was shifted from one location to another.

(b) The element normally learned through telephone communications with the DTOC that the point of control within the division had changed.

(c) The procedure followed by the element to establish communications with the newly designated point of control within the division was to wait for the installation of required communications.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario. However, many movements control center requirement events, which would normally not be received by the element, were received.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) A requirement for additional training in staff planning was identified by the G4.

(14) Information flow. Data pertaining to the exchange of information between the division transportation element and other elements of the division is contained in part III. The matrix in figure 2-98 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G4	06	66.67	DTO	18	40.00	G3	09	30.00	DTO	06	33.33
Comd Gp	03	33.33	G4	15	33.33	G4	09	30.00	Comd Gp	03	16.67
			G3	12	26.67	Comd Gp	06	20.00	G3	03	16.67
						DTO	06	20.00	G4	03	16.67
									S4, DISCOM	03	16.67

Figure 2-98. Transportation element functional relationships.

(a) Information provided to the element was generally considered adequate, relevant, accurate, and timely.

(b) Although the element received some information late, it was in sufficient time to meet operational requirements except that some convoy clearance requests were received after the indicated departure time.

(c) The element provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by the element is contained in part III.

(a) An undercapacity workload was experienced 46 percent of the time.

(b) The mean productive time expended per day was 11 hours for officers and 9 hours for NCO's.

(c) The mean idle time per day was 3 hours for officers and 2 hours for NCO's.

(d) The mean absent time per day was 2 hours for officers and 1 hour for NCO's.

(e) Element and evaluator personnel indicated no changes in personnel and equipment are required. This is based on the assumption that the DTO would be collocated in the G4 administrative element facility.

2-13. Division Tactical Command Post (Div TAC CP).

a. General. The Div TAC CP was generally organized as specified by the division tactical SOP. Deviations from the SOP are reflected in paragraphs b and c below. The TAC CP was deployed and assumed control of the division as shown in figure 1-5. The TAC CP was able to maintain effective operations while in control of the division during displacement of the main CP.

b. Personnel authorized and fielded are shown in figure 2-99.

c. Equipment authorized and fielded is shown in figure 2-100.

d. Files and reports were not specifically identified for use by the TAC CP. All files and reports used by the G2 and G3 sections were available for use by personnel at the TAC CP.

Title	Grade	Branch	MOS	Div SOP	119
ADC(M)	07	GO	00002	1	1
Aide	02	NO	02030	1	1
Lt veh dvr	E3		11B10	1	1
G2	05	AM	09301	1	1
R&S off	04	AM	09309	0	1
R&S intel sgt	E7	NC	96D40	1	1
SSE/EWE off	03	MI	09640	1	0[a]
SSE/EWE NCOIC	E7	NC	98J40K3	1	0[a]
SSE/EWE sp	E4		98C20	1	0[a]
Intel off	02	MI	09301	0	1
Intel anal	E5	NC	96B20	0	1
Pers carr dvr	E4		11B20	1	1
Lt veh dvr	E3		11B10	1	1
G3	05	AM	02162	1	1
Asst G3	04	AM	E2162	0	1
Asst op sgt	E8	NC	11F50	1	1
Pers carr dvr	E4		11B20	1	1
Lt veh dvr	E3		11B20	1	1
Asst FSC	05	FA	51193	1	1
Op sgt	E8	NC	13Z50	1	1
Lt veh dvr	E3		13A10	1	1
ALO	05	USAF	1456	1	1
Gnd rdo comm rpmn (dvr)	E4	USAF	30454	1	1
Communications support div signal battalion					
RATT C	E5	NC	05C20	1	1
RATT op	E4		05C20	2	2
Multichannel tm C	E5	NC	72B40	1	1
Multichannel op	E4		72B20	2	2
TOTAL (Off/EM)				7/18	9/17

[a]Prior to the conduct of the test, the decision was made that ASA representation was not required at the TAC CP. In discussions with evaluators and player personnel at the conclusion of the test, it was determined that an SI near real-time capability was required at the TAC CP, and that an ASA team could best provide the capability via FM secure voice radio.

Figure 2-99. Div TAC CP personnel.

Nomenclature	Div SOP	119
Command Group		
Radio set, AN/VRC-12, mtd in 1/4-ton	1	1
G2 section		
Carrier, CP, M577 w/AN/VRC-46	1	1
Truck, 1/4-ton	1	1
Truck, 1/4-ton, w/AN/VRC-46 (ASA)	1	1
G3 section		
Carrier, CP, M577 w/AN/VRC-47	1	1
Truck, 1/4-ton, w/AN/VRC-46	1	1
FSE		
Truck, 1/4-ton, w/AN/VRC-46	1	1
TASE		
Truck, 1/4-ton, w/AN/MRC-107	1	1
ASA (SI) communication support		
Truck, 1/4-ton, w/AN/VRC-46/47	1	0[a]
Signal battalion support		
Truck, 1 1/4-ton, w/AN/VRC-142	1	1
Truck, 1 1/4-ton, w/AN/TRC-145	1	1

[a]See footnote on figure 2-99 (personnel).

Figure 2-100. Division TAC CP equipment authorization.

(1) The files actually used and maintained by personnel at the TAC CP were the task organization chart, friendly and enemy situation maps, significant events chart, CP location chart, and tactical logistics report chart. A complete listing of these files and resultant usage factors is contained in part III.

(2) The files reported by G2 personnel as being required at the TAC CP were the staff journal, situation maps, work file, OB file, and topical file.

(3) The files required by G3 personnel are the staff journal, task organization, situation maps, tactical logistics chart, artillery position chart, and artillery coverage overlay.

(4) The reports required by G2 personnel at the TAC CP are the hostile air attack warning, spot report, INTSUM, and PERINTREP.

(5) The reports required by G3 personnel are the frontline trace, spot reports, tactical logistics report, and artillery position report.

e. The effect of deploying the TAC CP on the staff sections and subordinate commands is contained in part III and discussed in the applicable section and element analysis.

(1) The only elements that reported being adversely affected by deployment of the TAC CP were the G2 R&S element and G3 operations element. Both reported that providing personnel to the TAC CP caused a serious degradation to the operational effectiveness of the element.

(2) During the pilot test, the G2 and G3 deployed with the TAC CP. This procedure proved to be unsatisfactory because it resulted in these principal staff officers being absent from Div Main for prolonged periods of time. During the test, the R&S officer and off-shift assistant G3 established the TAC CP and remained with it until the G2 and G3 arrived, which was just prior to the time the TAC CP assumed control of the division.

(3) G2 section personnel maintain that an intelligence officer and an NCO from the A&P element are required at the TAC CP in place of the three ASI (SI) communications personnel specified in the division SOP. The revised SOP deletes the three ASA communications personnel and adds three SSE/EWE personnel equipped with a secure FM radio and a special intelligence (SI) key list. This provides the TAC CP with an SI capability and the required additional personnel to satisfy the information needs of the G2.

2-14. Division Alternate Command Post.

a. General.

(1) Multiple command posts provide the division with greater flexibility to maintain control over a larger area of operations and for continuity of operations (CONOPS) in the event of destruction, neutralization, or incapacitation of the division headquarters. The methods of establishing and locating multiple command posts are influenced by the availability of personnel and equipment, the tactical situation, and the desires of the commander.

(2) The need for an alternate command post is unquestionable to assure CONOPS when the main CP is inoperable. However, consistency of the command can be best achieved by controlling the division with a trained, equipped, and more experienced single staff agency; rather than increasing the span of control by adding a facility not normally included in formulating estimates or making recommendations leading to the decision making process.

b. Concepts. The three concepts discussed in chapter I were evaluated during the test to determine the minimum staffing requirements and information required to achieve CONOPS.

(1) Responsiveness of the alternate CP did not differ significantly under the three concepts tested although concept A was evaluated as most responsive and concept B the least responsive, as indicated in part III.

(2) Characteristics of the information evaluated under each concept were not significantly different as indicated in the detailed discussion under each concept tested. A comparison of the accuracy of information received is presented in part III. Concept A is indicated as the most accurate and concept C the least accurate.

(3) Traceable events pertinent to the three concepts tested are shown in figure 2-3 and in part III of this report. Recognition and reaction times for routine TE's were similar for each of the three concepts tested. There were no significant differences in TE processing time under the concepts tested.

c. Concept A. Division artillery (Div Arty) was assigned the mission to serve as the division alternate CP and assume control according to the division SOP, or as directed. During this period, control of the division was not passed to the alternate.

(1) There were no reported problems unique to the assigned mission of the Div Arty being prepared to assume control of the division.

(2) Major commanders, senior staff officers, and evaluators reported Div Arty was capable of exercising control of the division for a period of from 4 to 8 hours, and possibly up to 24 hours, without serious degradation of the Div Arty primary mission. For periods in excess of 24 hours, additional personnel would be required. These additional personnel would be used primarily to maintain the required division level data to enable Div Arty to exercise effective control of the division and enhance the 24-hour operational capability of the command. Without an augmentation, the Div Arty mission would, in all likelihood, have to be transferred to the GS battalion if Div Arty assumed the main CP role in excess of 24 hours. The degree of augmentation was not identified.

(3) No degradation to the capability of the Div Arty to perform its primary mission was identified during the period that concept A was being exercised.

(4) No limitations to the capability of the Div Arty to serve as the alternate CP were identified.

(5) Functions and procedures, files and reports, effect of displacement, effect of TAC CP, effect of destruction, and effect of shifting control by Div Arty were the same under concept A as those

reported during other periods. (See Div Arty section analysis, para 2-15.) Since there was no discernible difference in the data when Div Arty served as alternate versus normal functioning, the data has not been presented separately. This data is available from CC&C Directorate, HQ MASSTER, upon request.

d. Concept B. An 11 man augmentation comprising the alternate CP staff operated as an independent alternate TOC collocated with the Div Arty for administrative and logistical support. This element, for the most part, worked on a staggered two-shift basis with officers and key noncommissioned officers changing shifts alternately to assure CONOPS. For those elements (G1 and G4) with only one person, functions were combined for periods when alternate was not in control. As the need arose, the off-duty person was called in. Personnel and equipment authorized for this augmentation are as shown in figures 2-101 and 2-102.

(1) Functions and procedures. A complete listing of the functions and procedures defined for the facility and attendant quantifiable data is contained in part III.

(a) Of the 151 productive hours available during the test, 123 hours (81 percent) were expended performing listed and unlisted functions.

Title	Grade	Branch	MOS	No
G1 Element				
Pers Mgmt Supv	E7	NC	71H50	1
G2 Element				
Intel Off	03	NO	E9301	1
Op Spec	E5	--	11F20	1
Intel Sgt	E7	NC	96D40	1
Intel Anal	E5	--	96B20	1
G3 Element				
Asst G3	04	AM	E2162	1
Asst G3	03	AM	2163	1
Op Sgt	E7	NC	11F50	1
G4 Element				
Asst G4	03	NO	04010	1
FSE				
Asst FSC	04	FA	51193	1
Op Sgt (FSC)	E6	NC	13Z50	1
TOTAL (Off/EM)				5/6

Figure 2-101. Div Alt personnel (concept B).

Nomenclature	No
Tent, GP, Med	1
Truck, Cargo, 1 1/4-Ton	3
Trailer, Cargo, 3/4-Ton	2
Radio Set, AN/VRC-46	2
Radio Set, AN/GRC-106	1

Figure 2-102. Div Alt equipment (concept B).

(b) Time expended performing functions and procedures by element were: G1 - 9 hours, G2/BICC - 55 hours, G3/FSE - 58 hours, and G4 - 8 hours.

(c) BICC support data was provided by Div Arty.

(d) All listed functions and procedures were not performed primarily because the alternate CP is an action headquarters only when in control of the division.

(e) The scenario did not cause the facility to perform those operations and planning functions outlined in the OFM because control was not passed to the alternate CP.

(f) A separate OFM for the operation of alternate was not provided. The OFM for the division was used with a consolidated list of functions and procedures pertinent to each staff section.

(g) A separate OFM is required for the alternate CP element.

(2) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 123 productive hours expended by the facility, 73 hours (59 percent) were expended in using the files (including visual displays). Times expended using the files by element were: G1 - none, G2/BICC - 33 hours, G3/FSE - 40 hours, and G4 - none.

(b) Of the 123 productive hours expended by the facility, 47 hours (38 percent) were expended in maintaining the files. Times expended by element were: G1 - none, G2/BICC - 12 hours, G3/FSE - 35 hours, and G4 - none.

(c) Use of all files listed in the division OFM was not required by the scenario.

(d) The information required on the visual displays was adequate.

(3) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 123 productive hours expended by the facility, 12 hours (10 percent) were expended in report preparation. Times expended by element were: G1 - none, G2/BICC - 12 hours, G3/FSE - none, and G4 - none.

(b) The reports prepared are those that were required during the period the element exercised control of the division.

(4) Organizational structure, physical relationships, and facilities. Sketches depicting the physical relationship of the facility within the Div Arty CP and the interior layout of the tent housing the facility are shown in part III.

(a) The element experienced some difficulty in accomplishing its mission as a result of the absence of an ALO, and a capability to monitor the air request and air direction radio nets.

(b) The facility operated from a general purpose medium tent and the tent was adequate for the personnel assigned.

(5) Communications. Data concerning the means, use, and adequacy of communications as experienced by the facility is contained in part III.

(a) Of the 160 calls made, 83 percent were placed by FM and 17 percent by telephone.

(b) Of the 138 calls received, 93 percent were received by FM and 7 percent by telephone.

(c) The AM (voice) TOC net was inoperative throughout the test.

(d) The facility prepared two messages for transmission by common-user teletype or RATT and received 155 messages by this means.

(e) Sixty-seven percent of the facility responses indicated that the communication means available to the facility were adequate.

(f) The facility has a requirement to receive early warning messages; however, dissemination was not required since control of the division by the alternate CP was not exercised under this concept.

(g) Fifty-six percent of the facility responses indicated that difficulties were experienced using the telephone and RATT to provide data from main to alternate. Twenty-two percent experienced difficulty by radio and 22 percent experienced no difficulty. No difficulties were reported with common-user TTY and/or courier.

(h) The absence of the air request and air direction net to be provided by the ALO prevented the facility from remaining abreast of the current air situation.

(i) During periods of interrupted communications, such as jamming and other interferences, the facility's ability to function adequately was seriously affected.

(6) Effect of displacement. The division alternate (minimum augmentation) did not execute a tactical displacement as part of the test. Displacement from Div Arty to Cmd SIGCEN Platoon (Alt), 142d Signal Battalion, was conducted as an administrative move.

(7) Effect of destruction. The division main was not destroyed during the period the alternate was being tested.

(8) Effect of shifting control. Data pertinent to the effect of shifting control between various elements of the division is shown in part III.

(a) While control of the division was not passed to alternate during this time frame, the facility was not adversely affected when control of the division was shifted from one location to another.

(b) Personnel of the facility normally learned from the CG command net (FM) that the point of control within the division had changed.

(c) Element personnel reported that control of the division should be passed to alternate to provide control experience during periods that the main CP is displacing. Evaluator personnel reported that control of the division should remain with the main CP except during an emergency condition; i.e., destruction of main, thereby causing the main CP to displace by echelon.

(9) Scenario, control, and training. Quantitative data concerning the scenario, control, and status of training of personnel assigned to the facility is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the facility by the scenario or the control organization.

(b) Qualifications of the personnel with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(10) Information flow. Data pertaining to the exchange of information between the facility and other elements of the division is contained in part III.

(a) Information provided to the facility was generally considered adequate, relevant, and accurate; but often not timely.

(b) Fifty-seven percent of the responses indicated that sufficient information was received to enable the facility to temporarily control the division if the main CP had been destroyed.

(c) All responses indicated that the facility was able to effectively manage the information received.

(d) Eighty-nine percent of the responses indicated that needed information was missing at the alternate CP.

(e) The missing information included orders, plans, and reports from subordinate, superior, and adjacent units.

(f) Element and evaluator personnel reported that the elements experienced difficulty in obtaining information required by the SOP from main CP counterparts. This situation was exacerbated during periods of peak activity at the main CP.

(g) Personnel and logistical type information required to effectively control the division was rated as marginally effective.

(11) Adequacy of personnel and equipment. Data concerning activity levels as experienced by facility personnel is contained in part III.

(a) An overcapacity workload condition was not experienced.

(b) A within-capacity workload condition was experienced 33 percent of the time and undercapacity conditions were experienced 67 percent of the time.

(c) The mean productive time expended by the facility was 10 hours.

(d) The mean idle time was 2 hours.

(e) The mean absent time was 2 hours.

(f) No additional requirements for personnel and equipment were identified.

e. Concept C. An authorized 37-man augmentation (figure 2-103) was used to establish a separate division alternate CP collocated with Comd SIGCEN Platoon (Alt), A Company, 142d Signal Battalion. Communications equipment is the prime equipment requirement for establishing an alternate CP. No additional communications equipment was authorized the division above that authorized to the signal battalion for establishment of this facility. Since the facility must be prepared to assume control of the division at all times without prior notice, the TOC element must be capable of communicating with all subordinate elements of the division while maintaining communications with higher and adjacent units. To establish an alternate CP as a separate facility, the maximum utilization of multichannel terminal equipment totally commits all multichannel equipment of the division signal battalion, and leaves none for replacement of defective equipment or CP displacements. Personnel comprising the assigned elements worked on a staggered two-shift basis with officers and key noncommissioned officers changing shifts alternately within each element to ensure CONOPS. Generally, element personnel reported that control of the division should be shifted to the alternate CP while the main CP displaces. This would provide training to alternate CP personnel. However, the evaluators reported that control of the division should remain with the main CP. Subfindings pertinent to the elements comprising this facility are contained in paragraphs (1) through (4).

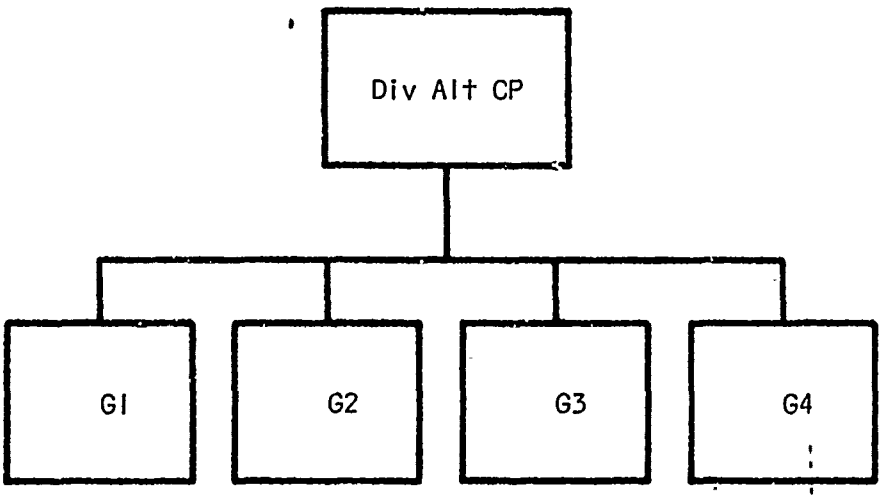


Figure 2-103. Division alternate organization.

(1) GI. Personnel authorization is as shown in figure 2-104; equipment was provided by other alternate CP elements.

(a) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

1 Of the 33 productive hours available during the test, 30 hours (92 percent) were expended performing listed and unlisted functions.

2 Functions F02 (Headquarters management), F04 (Plans/supervises MP operations), and F05 (Internal security of CP) were not reported as being performed.

Title	Grade	Branch	MOS	No
Asst GI	03	NO	00260	1
Pers Mgmt Supv	E7	NC	71H50	1
Op Sgt	E7	NC	95B50	1
TOTAL (Off/EM)				1/2

Figure 2-104. GI element personnel.

3 Function F04 (Plans/supervises MP operations) was not required by the scenario.

4 Rationale could not be determined as to why functions F02 and F04 were not performed.

5 A separate OFM was not provided for alternate; however, a separate list of functions and procedures pertinent to alternate was provided.

6 A functions and procedures manual is required for the element.

(b) Files. A complete listing of files and resultant usage factors is contained in part III.

1 Of the 30 productive hours expended by the element, 19 hours (63 percent) were expended in using and 11 hours (4 percent) in maintaining the files (includes visual displays).

2 No determination can be made concerning the nonuse of files.

3 The information required on the visual displays was adequate.

(c) Reports. Because of the short duration that alternate (maximum augmentation) exercised control, no reports were rendered.

(d) Organizational structure, physical relationships, and facilities. Figure 2-103 depicts the organizational relationship of the GI element within the facility. Sketches depicting the physical relationship of the element within the division alternate CP and the interior layout of the tent housing the element are shown in part III.

1 The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

2 The physical relationship of the element to the division alternate TOC and other elements comprising the division alternate CP was satisfactory.

3 The element operated in the GI/G4 tent, collocated with G4, FSE, and ADA as part of the division alternate tactical operations center. This facility was adequate for the personnel assigned.

(e) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

1 Telephone and common-user RATT/teletype were the only means of communication available to the element.

2 The element placed 30 telephone calls and received four.

3 The element received 34 RATT/teletype messages and dispatched none.

4 Element and evaluator personnel reported that telephone communications were so poor they were unable to remain abreast of the current situation.

5 All the element responses indicated that the element did not have adequate means of communication.

6 All of the element responses indicated that the telephone was the only means of communication that caused difficulty in providing data from main to alternate.

(f) Effect of displacement. The alternate CP (maximum augmentation) did not displace during the conduct of the test.

(g) Effect of destruction. Data pertinent to the effect on the element of destruction of the main CP is contained in part III.

1 Element and evaluator personnel reported that the element was not adversely affected by destruction of the main CP.

2 Element and evaluator personnel were evenly divided as to the element being fully employed and having more work than could be accomplished after destruction of the main CP.

3 There were no reported deviations from the SOP as a result of destruction of the main CP.

4 Element and evaluator personnel concluded that effective control of the division could be maintained subsequent to destruction of the main CP.

(h) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

1 The element did not experience any difficulty when control of the division was shifted from one location to another.

2 Personnel of the element normally learned from the division command FM net that the point of control within the division had changed or that control by alternate was required.

(i) Scenario, control, and training. Quantitative data concerning the scenario, control, and status of training of personnel assigned to the element is contained in part III.

1 No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

2 Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(j) Information flow. Data pertaining to the exchange of information between the GI element and other elements of the division is contained in part III. The matrix in figure 2-105 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

1 Information provided to the element was generally considered adequate, relevant, and accurate; but often not timely.

2 Element personnel and the evaluator reported that during periods of peak activity at main, the element experienced difficulty in obtaining information in accordance with the SOP from their counterparts at the main CP.

Provides orders, direction or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
SI, Div Arty	06	50.00	GI	27	90.00	GI	03	33.33	GI	12	66.67
SI, BDE	06	50.00	G3	03	10.00	SI, Div Arty	03	33.33	SI, Div Arty	03	16.67
						BDE Comd GP	03	33.33	BDE Comd GP	03	16.67

Figure 2-105. Div Alt GI element functional relationships.

3 Generally, the element issued and received orders and guidance in sufficient time to meet operational requirements.

(k) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

1 An undercapacity workload condition was experienced 100 percent of the time. This condition can be attributed to the fact that alternate is a monitoring agency as opposed to an action agency.

2 The mean productive time expended per day was 10 hours.

3 The mean idle time per day was 1 hour.

4 The mean absent time per day was 3 hours.

5 Element personnel reported that the element was effective in performing its assigned functions.

6 Element and evaluator personnel reported that no additional personnel or equipment are required to satisfy normal operation mission requirements.

7 The GI and section evaluator reported that the additional personnel and equipment shown in figures 2-106 and 2-107 are required to provide a 24-hour operational capability.

Title	Grade	Branch	MOS	Strength
Asst GI	03	NO	2260	1
Asst PM	03	MP	9100	1
Clerk/Driver	E4		71H30	2
TOTAL (Off/EM)				2/2

Figure 2-106. GI element recommended personnel additions.

Nomenclature	Quantity
Truck, 1/4-Ton w/trailer	2
Radio Set, AN/VRC-46	2
Tent, GP, Sm	2

Figure 2-107. GI element recommended equipment additions.

(2) G2. Personnel and equipment authorizations for the G2 element are as shown in figures 2-108 and 2-109.

Title	Grade	Branch	MOS	Strength
Intel Off	03	MI	E9301	1
Intel Off	LT	MI	09301	1
Intel Sgt	E7	NC	96D40	1
Op Specialist	E5	--	11F20	1
Intel Anal	E5	--	86B20	3
Signal Anal	E5	--	98J30R3	1
Traffic Anal	E4	--	98C20	1
Radio TT Tm C	E5	--	95C40	1
Radio TT Opr	E4	--	05E20	2
TOTAL (Off/EM)				2/10

Figure 2-108. G2 element personnel

Nomenclature	Quantity
Truck, 1/4-Ton, w/trailer	1
Truck, 1 1/4-Ton, w/trailer	2
Tent, GP, Med	1
Tent, GP, Sm	1
Radio Set, AN/VRC-46	1
Radio Set, AN/GRC-142	1

Figure 2-109. G2 element equipment

(a) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

1 Of the 181 productive hours available during the test, 174 hours (97 percent) were expended performing listed and unlisted functions.

2 Functions F05 (Provides information on intel received), F07 (Coordinates HUMINT activities), F08 (Provides intel/counterintel obtained by collection agencies), and F014 (Assists CC&D in collection planning and tasking) were not performed by the alternate G2/BICC because of the short time period that alternate exercised control of the division. Function F03 (Supports the division information and production effort) was not performed by the G2 alternate (SSE/EWE) for the same reason.

3 A separate OFM was not provided for alternate; however, a separate list of functions and procedures pertinent to the alternate CP was provided.

4 An OFM manual is required for the element.

(b) Files. A complete listing of files and resultant usage factors is contained in part III.

1 Of the 174 productive hours expended by the element, 58 hours (33 percent) were expended in using and 4 hours (3 percent) in maintaining the files (includes visual displays).

2 No determination can be made concerning the nonuse of files.

3 The information required on the visual displays was adequate.

(c) Reports. A complete listing of reports and resultant usage factors is contained in part III.

1 Of the 174 productive hours expended by the element, 5 hours (3 percent) were expended in the preparation of reports.

2 The reports prepared by the element were appropriate for the functions performed.

(d) Organizational structure, physical relationships, and facilities. Figure 2-103 depicts the organizational relationship of the G2 elements within the facility. Sketches depicting the physical relationship of the element within the alternate CP and the interior layout of the vans housing the element are shown in part III.

1 The element experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

2 The physical relationship of this element to the division alternate TOC and other elements comprising the division alternate CP was satisfactory.

3 The element operated in the G2/G3 van and SI area as part of the division alternate tactical operations center. This facility was adequate for the personnel assigned.

(e) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

1 Of the 93 calls made, all were placed by FM means.

2 Of the 136 calls received, 85 percent were received by FM and 15 percent by telephone.

3 The element prepared four messages for transmission by common-user teletype/RATT and received 252; 74 percent were received by the SSE/EWE.

4 Eighty-five percent of the element responses indicated that the element had adequate means of communications to accomplish its mission.

5 Seventy-five percent of element responses indicated difficulties in receiving data from the main CP by the following means of communications: telephone - 25 percent, radio - 6 percent, common-user TTY - 6 percent, RATT - 32 percent, courier - 6 percent, and LNO - none.

6 There was no reported jamming of the intelligence nets.

(f) Effect of displacement. The alternate CP (maximum augmentation) did not displace during the conduct of the test.

(g) Effect of destruction. Data pertinent to the effect on the element of destruction of the main CP is contained in part III.

1 Element and evaluator personnel reported that destruction of the main CP had no effect on the operational effectiveness of the element.

2 Element and evaluator personnel reported that the element was fully employed after destruction of the main CP.

3 Element and evaluator personnel concluded that effective control of the division could be maintained subsequent to destruction of the main CP.

(h) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

1 The element did not experience any difficulty when control of the division was shifted from one location to another.

2 Personnel of the element normally learned from the division intelligence FM net and the alternate G3 element that the point of control within the division had changed or that control by alternate was required.

(i) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

1 No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario. The signal analyst was of the opinion that information provided by the scenario was often introduced late and prohibited timely analysis.

2 Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

3 The data was evenly divided as to the need for additional training for element personnel.

(j) Information flow. Data pertaining to the exchange of information between the G2 element and other elements of the division is contained in part III. The matrix in figure 2-110 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

1 Information provided to the element was considered adequate, relevant, and accurate, but often not timely.

2 Element personnel and the evaluator reported that, in a few instances during periods of peak activity at main, the element experienced difficulty in obtaining information from their counterparts at the main CP.

3 The element gave and received orders and guidance in sufficient time to meet operational requirements.

(k) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

1 An overcapacity workload condition was not experienced.

2 A within-capacity workload condition was experienced 38 percent of the time; an undercapacity condition was reported 62 percent of the time.

3 The mean productive time expended per day was 11 hours.

4 The mean idle time per day was 2 hours.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
BICC OIC	06	66.67	G2	21	58.33	BICC OIC	15	45.45	BICC OIC	36	63.16
EWCO	03	33.33	G3	15	41.67	G3	12	36.36	G2	06	10.53
						G2	06	18.18	G3	06	10.53
									S2, DIV ARTY	06	10.53
									S2, BDE	03	5.26

Figure 2-110. Div Alt G2 element functional relationships.

5 The mean absent time per day was 1 hour.

6 Element personnel reported that the element was effective in performing its assigned functions.

7 Element and evaluator personnel reported that no additional personnel are required to satisfy normal operation mission requirements.

8 The BICC OIC reported that additional personnel as indicated in figure 2-111 would be required to provide a 24-hour operational capability subsequent to alternate assuming control of the division.

Title	Grade	MOS	No
Signal Anal	E4/5	98J	1
Traffic Anal	E6	98C	1
Traffic Anal	E4/5	98C	1
TOTAL (Off/EM)			0/3

Figure 2-111. G2 element recommended personnel additions.

(3) G3. Personnel and equipment authorization for the G3 element are shown in figures 2-112 and 2-113.

Title	Grade	Branch	MOS	No
Asst G3	04	AM	2162	1
Asst G3	03	AM	2162	1
Op Sgt	E7	NC	11F50	1
Asst FSC	04	FA	51193	1
Asst FSC	03	FA	51193	1
Op Sgt	E6	NC	13Z50	1
FDC Computer	E6	NC	13E40	1
RATT Tm C	E5	NC	05E40	1
Radio Opr	E4		05E20	2
ADA Liaison Off	LT	AD	01174	1
ADA Liaison Sgt	E6	NC	16H40	1
Hvy Veh Dvr	E4		62C20	1
Lt Veh Dvr	E5		11B10	1
Lt Veh Dvr	E3		11B10	3
Asst ALO (USAF)		USAF		1
Gnd Radio Rpmn		USAF		1
TOTAL (Off/EM)				6/13

Figure 2-112. G3 element personnel.

Nomenclature	No
Truck, 1/4-Ton, w/trailer	2
Truck, Van, expansible, 5-Ton	1
Truck, 1 1/4-Ton, w/trailer	3
Radio Set, AN/VRC-46	3
Radio Set, AN/GRC-142	1
Radio Set, AN/GRC-106	1
MRC-107 (Air Force)	1

Figure 2-113. G3 element equipment.

(a) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

1 Of the 255 productive hours available during the test, 217 hours (85 percent) were expended performing listed and unlisted functions.

2 Functions F04 (Provides the maneuver portion and supervises preparation of fragmentary orders), F06 (Disseminate nuclear strike warning), F08 (Planning), F11 (Recommends employment of nuclear/chemical weapons), F13 (Coordinates aviation support), and F25 (Prepares plans and fire support annexes to OPORD's) were not required to be performed because of the short time period that alternate exercised control of the division.

3 Function F14 (Engineer matters), F17 (Matters pertaining to electro-magnetic radiation), and F19 (CE aspects of planning and operations) were not performed because there were no qualified personnel within the element to perform these functions.

4 A separate OFM was not provided for alternate; however, a separate list of functions and procedures pertinent to alternate was provided.

5 A functions and procedures manual is required for the element.

(b) Files. A complete listing of files and resultant usage factors is contained in part III.

1 Of the 217 productive hours expended by the element, 77 hours (35 percent) were expended in using the files and 41 hours (19 percent) were expended in maintaining the files (includes visual displays).

2 The information required on the visual displays was adequate.

(c) Reports. A compiete listing of reports and resultant usage factors is contained in part III. Of the 217 productive hours expended by the element, 6 hours (3 percent) were expended in report preparation.

(d) Organizational structure, physical relationships, and facilities. Figure 2-103 depicts the organizational relationship of the G3 element within the section. Sketches depicting the physical relationship of the element within the division alternate CP and the interior layout of the facility housing the element are shown in part III.

1 The element experienced no difficulty in accomplishing its mission as a result of the organizational structure.

2 The physical relationship of this element to the division alternate TOC and other elements comprising the division alternate CP was satisfactory.

3 The element operated in the G2/G3 van as part of the division tactical operations center and the facility was adequate for the personnel assigned.

(e) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

1 Of the 609 calls made, 77 percent were placed by FM and 23 percent by telephone.

2 Of the 621 calls received, 84 percent were received by FM and 16 percent by telephone.

3 The element prepared 12 messages for transmission by common-user teletype/RATT and received 428 messages by that means.

4 Fifty percent of the element responses indicated that the element did not have enough means of communication.

5 The element experienced difficulty disseminating early warning messages using the CG command FM net and the AM TOC net.

6 Eighty-three percent of element personnel indicated difficulty in receiving data from main with the following means of communications: telephone - 35 percent, radio - 18 percent, common-user TTY - 6 percent, RATT - 24 percent, courier - none, and LNO - none.

7 Element and evaluator personnel reported that jamming caused the effected nets to be unusable, and that alternate means of

communication were usually ineffective in enabling the element to remain abreast of the tactical situation.

8 The ALO authorized by the augmentation was not present other than during the period that alternate exercised control of the division. The absence of the ALO and his equipment precluded the element from maintaining the status of air requests.

(f) Effect of displacement. The alternate CP (maximum augmentation) did not displace during the conduct of the test.

(g) Effect of destruction. Data pertinent to the effect on the element of destroying the main CP is contained in part III.

1 Element and evaluator personnel reported that destruction of the main CP did not adversely affect the element.

2 Element and evaluator personnel reported that the element was fully employed after destruction of the main CP.

3 There were no reported departures from the SOP as a result of destroying the main CP.

4 Element and evaluator personnel concluded that effective control of the division could be maintained subsequent to destruction of the main CP.

5 The initial absence of an ALO and air request net was considered a handicap to exercising control.

(h) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

1 The element did not experience any difficulty when control of the division was shifted from one location to another.

2 Personnel of the element normally learned through the use of the division command FM net that the point of control within the division had changed or that control by alternate was required.

(i) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

1 No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

2 Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

3 The data was evenly divided as to the need for additional training for element personnel.

(j) Information flow. Data pertaining to the exchange of information between the G3 element and other elements of the division is contained in part III. The matrix in figure 2-114 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

1 Information provided to the element was generally considered adequate, relevant, and accurate; but often not timely.

2 Element personnel and the evaluator reported that, in a few instances during periods of peak activity at main, the element experienced difficulty in obtaining information from their counterparts at the main CP.

3 The element issued and received orders and guidance in sufficient time to meet operational requirements.

(k) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

1 An undercapacity workload condition was experienced 60 percent of the time because the alternate CP is primarily a monitoring agency.

2 The mean productive time expended per day was 11 hours.

3 The mean idle time expended per day was two hours.

4 The mean absent time expended per day was one hour.

5 Element personnel reported that the element was effective in performing its assigned functions.

6 Element and evaluator personnel reported that no additional personnel are required to satisfy normal operation mission requirements; however, element personnel were of the opinion that an additional 5-ton van would enhance the operational capability of the facility.

(4) G4. Personnel and equipment authorization for the G4 element are shown in figures 2-115 and 2-116.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S3, DIV ARTY	42	22.58	G3	63	36.21	G3	48	20.51	G3	48	16.49
S3, BDE	30	16.13	FSE	36	20.69	G2	30	12.82	FSE	45	15.46
G3	24	12.90	DIVARTY COMD GP	33	18.97	S3, DIVARTY	27	11.54	G2	33	11.34
FSE	18	9.68				FSE	18	7.69	S3, DIVARTY	33	11.34
S3, DISCOM	18	9.68	COMD GP	27	15.52	DIVARTY COMD GP	15	6.41	BICC OIC	21	7.22
DISCOM COMD GP	09	4.84	S3, DIVARTY	15	8.62				S3, BDE	21	7.22
DIVARTY COMD GP	09	4.84				S3 BDE	15	6.41	DIVARTY COMD GP	15	5.15
BDE COMD GP	09	4.84				COMD GP	12	5.13	COMD GP	12	4.12
G2	06	3.23				G4	12	5.13	ALO	12	4.12
ALO	06	3.23				ALO	09	3.85	GI	09	3.09
ADA OFF	06	3.23				S2, DIVARTY	09	3.85	G4	09	3.09
GI	03	1.61				GI	06	2.56	S2, DIVARTY	09	3.09
G4	03	1.61				BICC OIC	06	2.56	ADA OFF	06	2.06
BICC OIC	03	1.61				ADA OFF	06	2.56	S3, DISCOM	06	2.06
						DISCOM COMD GP	06	2.56	BDE COMD GP	06	2.06
						S3, DISCOM	06	2.56	DISCOM COMD GP	03	1.03
						BDE COMD GP	06	2.56	S4, DIVARTY	03	1.03
						S4, DIVARTY	03	1.28			

Figure 2-114. Div Alt G3 element functional relationships.

Title	Grade	Branch	MOS	No
Asst G4	CPT	NO	04010	1
Support Sgt	E7	NC	76Z5K	1
Lt Veh Dvr	E3		11B10	1
TOTAL (Off/EM)				1/2

Figure 2-115. G4 element personnel.

Nomenclature	No
Truck 1/4-Ton, w/trailer	1

Figure 2-116. G4 element equipment.

(a) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

1 Of the 40 productive hours available during the test, 15 hours (38 percent) were expended performing listed and unlisted functions.

2 F02 (Transportation), F03 (Miscellaneous - i.e., Rear Boundaries, Logistic Plans, MSR, RAP) were not required because of the short time period that alternate exercised control of the division.

3 A separate OFM was not provided for alternate; however, a separate list of functions and procedures pertinent to alternate was provided.

4 A functions and procedures manual is required for the element.

(b) Files. A complete listing of files and resultant usage factors is contained in part III.

1 Of the 15 productive hours expended by the element, 1 hour (8 percent) was expended in using the files and two hours (14 percent) were expended in maintaining the files (includes visual displays).

2 No determination can be made concerning the nonuse of files.

3 The information required on the visual displays was adequate.

(c) Reports. Because of the short duration that alternate (max aug) exercised control, only one report was rendered.

(d) Organizational structure, physical relationships, and facilities. Figure 2-103 depicts the organizational relationship of the G4 element within the section. Sketches depicting the physical relationship of the element within the division alternate CP and the interior layout of the facility housing the element are shown in part III.

1 The element experienced no difficulty in accomplishing its mission as a result of the organizational structure.

2 The physical relationship of this element to the division alternate TOC and other elements comprising the division alternate CP was satisfactory.

3 The element operated in the G1/G4 tent, collocated with FSE and ADA as part of the division alternate tactical operations center. This facility was adequate for the personnel assigned.

(e) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

1 Telephone and common-user RATT/teletype were the only means of communications available to the element.

2 The element reported making one telephone call and received none.

3 The element originated four common-user RATT/teletype messages and received 51.

4 Seventy-five percent of the element responses indicated that the communication means available to the element were adequate.

5 Fifty percent of the responses indicated that difficulty was experienced in using the telephone.

6 Seventy-five percent of the responses listed the telephone as the major difficulty in communicating with main; 25 percent listed common-user RATT.

(f) Effect of displacement. The alternate CP (maximum augmentation) did not displace during the conduct of the test.

(g) Effect of destruction. Data pertinent to the effect on the element of destroying the main CP is contained in part III.

1 Element and evaluator personnel reported that destruction of the main CP did not adversely affect the element.

2 Element and evaluator personnel reported that the element was fully employed after destruction of the main CP.

3 There were no reported departures from the SOP as a result of destroying the main CP.

4 Element and evaluator personnel concluded the element was marginally effective in performing control of the division subsequent to destruction of the main CP.

(h) Effect of shifting control. Data pertinent to the effect of shifting control between elements of the division is contained in part III.

1 The element experienced difficulty when control of the division was shifted from one location to another because of a lack of current information.

2 Personnel of the element normally learned from the division alternate TOC that the point of control within the division had changed or that control by alternate was required.

(i) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the element is contained in part III.

1 No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

2 Qualifications of the personnel assigned to the element with respect to the rank and MOS were satisfactory for the duties assigned except that the OIC was inexperienced in G4 functional areas of responsibility.

3 Additional training for element personnel is required.

(j) Information flow. Data pertaining to the exchange of information between the G4 element and other elements of the division is contained in part III. The matrix in figure 2-117 depicts the relationship between the element and the division command group, other members within the division staff, and personnel at other levels of command.

1 Information provided to the element was generally considered adequate, relevant, and accurate; but often not timely.

Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct
G4	6	100	G4	12	100	G4	6	100

NOTE: No orders, direction, or guidance were provided by the Div Alt G4 element.

Figure 2-117. Div Alt G4 element functional relationships.

2 Element and evaluator personnel reported that the element experienced difficulty in obtaining information from its main CP counterparts.

3 The element did not receive orders and guidance in sufficient time to meet operational requirements.

4 The element issued sufficient orders and guidance based on the information available in sufficient time to meet operational requirements.

(k) Adequacy of personnel and equipment. Data concerning activity levels as experience by element personnel is contained in part III.

1 An undercapacity workload condition was experienced throughout the test. This can be attributed to the fact that alternate is a monitoring agency as opposed to an action agency and the failure of main counterparts to provide the necessary data required by the element.

2 The mean productive time expended per day was 8 hours.

3 The mean idle time expended per day was 6 hours.

4 The mean absent time expended per day was 1 hour.

5 Element personnel reported that the element was ineffective in performing its assigned functions.

6 Element and evaluator personnel reported that no additional personnel and equipment are required to satisfy normal operation mission requirements

2-15. Division Artillery Headquarters.

a. General. The organization of the division artillery headquarters and the sections over which it exercised staff supervision are shown in figure 2-118. Subfindings pertinent to the division artillery headquarters are at paragraph b, while subfindings pertinent to the individual staff sections are contained in paragraphs c through e.

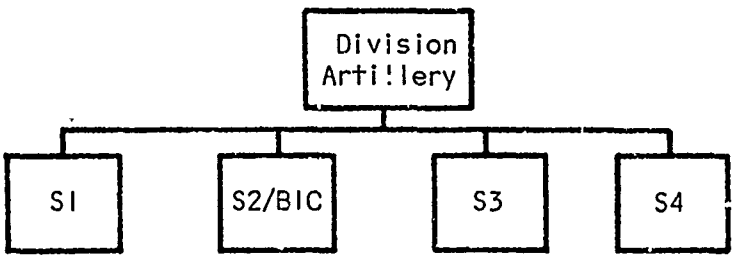


Figure 2-118. Division artillery organization.

b. Division artillery headquarters subfindings.

(1) Effect of displacement.

(a) During both displacements of the Div Arty CP, the headquarters displaced in one group and closed on the advance party consisting of personnel from all staff sections.

(b) The advanced party of the S3/C-E section was capable of conducting effective operations at the new location prior to the departure of the main body from the old location; thus, continuity of operations between the two locations during displacement was assured.

(2) Effect of destruction. The destruction of the Div Main CP had no effect on the operational effectiveness of Div Arty and the headquarters was generally fully employed after destruction of the main CP.

(3) Effect of TAC CP deployment. The Div Arty headquarters generally was not affected by the deployment of the division TAC CP.

(4) Effect of alternate CP. The Div Arty headquarters was not adversely affected by the establishment of the alternate CP.

(5) Effect of shifting control. The Div Arty headquarters did not experience any difficulty when control of the division was shifted from one location to another.

(6) Adequacy of intelligence support.

(a) Data pertinent to the adequacy of intelligence support provided to Div Arty is contained in part III.

(b) The intelligence support provided to Div Arty was generally rated as adequate and no better or worse than normally provided by the traditional S2/G2 configuration without BIC augmentation. However, reported shortcomings were associated with the late (6-8 hours) intelligence/information on RATT from division and the lack of adequate or sufficient end-of-mission reports and radar reports from the control organization. Thus the problems were equipment and CPX environment oriented and not organizational oriented.

(7) Adequacy of personnel and equipment. The personnel and equipment were generally adequate.

(a) The S2/Tgt Acq/BIC personnel recommended the section operate from a 5-ton van from the S3 section instead of the 2 1/2-ton van presently used by the section because of insufficient space.

(b) The S3/C-E section personnel recommended the addition of a 4-6 multichannel communications system to provide sole-user and additional common-user circuits between Div Arty headquarters and the subordinate battalions.

c. S1/S4 section.

(1) Personnel authorized and fielded are shown in figures 2-119 and 2-120.

Title	Grade	Branch	MOS	Strength Authorized H-ser	Strength Authorized OFM	Fld 119
S1	04	FA	02110	1	1	1
Pers Stf NCO	E7	NC	71H40	1	1	1
AC Counselor Supv	E7	NC	00E40	1	1	1
Legal Clerk	E6		71D20	1	1	1
Clerk-Typist	E4		71B30	1	1	1
TOTAL (Off/EM)				1/4	1/4	1/4

Figure 2-119. S1 section personnel.

Title	Grade	Branch	MOS	Strength Authorized H-ser	OFM	Fld 119
S4	04	NO	04010	1	1	1
Food Svc Tech	WO		941A0	1	1	0
Clerk-Typist	E4		71B30	1	1	1

Figure 2-120. S4 section personnel.

(2) Equipment authorized and fielded is shown in figure 2-121. The S1 section is not authorized equipment and collocates with the S4 section.

Nomenclature	Quantity Authorized H-ser	OFM	Fld 119
Tent, GP, Med	1	1	1
Trailer, Cargo, 1 1/2-ton	1	1	1
Truck, Cargo, 2 1/2-ton	1	1	1
Truck, 1/4-ton	0	0	1
Radio Set, AN/VRC-47	0	0	1
Radio Set, AN/GRA-39	0	0	1

Figure 2-121. S4 section equipment.

(3) Fuctions and procedures. A complete listing of the functions and procedures defined for the sections and attendant quantifiable data is contained in part III.

(a) Of the 181 productive hours available during the test, 110 hours (61 percent) were expended performing listed and unlisted functions.

(b) S1 section procedures F02P02 (Assign personnel), F02P03 (Awards, promotions, pay, transfers, reassignments, etc), F02P04 (Promotes welfare), F02P05 (Supervises promotion and appointment program), F02P06 (Use of civilian labor), and, functions F02 (Personnel management; excepting procedure R02P01, Supervision), F03 (Development and maintenance of morale), F04 (Health services), F05 (Discipline, law and order), and F06 (Headquarters management) were not required by the scenario.

(c) S4 section procedures F01P03 (Security of supplies), F01P04 (Distribution of critical items), F01P05 (Recommends prescribed loads), F01P07 (Special munitions), F02P03 (Maintenance priorities), F02P06 (Evacuation of unserviceable equipment), F02P07 (Adequacy of maintenance), F03P03 (Personnel services), F03P06 (Logistic priorities), F03P07 (Use of local civilians), and F03P09 (Operations and security of ammunition trains) were not required by the scenario.

(d) The OFM was not used by the S1/S4 sections and section personnel reported that only the Div Arty SOP was required.

(e) The OFM adequately described the functions and procedures required to be performed by the sections; however, procedures concerning supervision of personal services, bath, and laundry services; clothing impregnation and exchange; requisition, storage, and distribution of PLL; and establishment of priorities for employment of logistic support units should be added. Also, reference to Div Arty Trains should be eliminated since this term is not appropriate at Div Arty level.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 69 productive hours expended by the S1 section, 24 hours (35 percent) were expended using, and 7 hours (10 percent) in maintaining the files (includes visual displays). In addition, the collocation of the S1/S4 sections caused the S1 clerk to function in both the S1 and S4 areas and to expend 12 hours using, and 1 hour maintaining, the S4 files.

(b) Of the 41 productive hours expended by the S4 section, 14 hours (35 percent) were expended using, and 12 hours (29 percent) maintaining the files (includes visual displays).

(c) Files 9102 (Staff Section Workbook), 9103 (Suspense), 9104 (Policy), 9105 (Div SOP), 9109 (Accident Report), 9111 (Discipline, Law, and Order Rept), 9112 (Awards and Decorations Chart), 9113 (Disciplinary Chart), 9114 (Incidents Chart), 9402 (Staff Section Workbook), 9403 (Suspense), 9405 (Policy), 9409 (Class IV Status Rept), 9410 (Class IV Status Chart), 9416 (Numerical Index Equipment), 9419 (Materiel Readiness Rept), 9420 (Bn Trains Location Rept), 9421 (Transportation Request), 9422 (Reply to Trans Req), 9424 (Req for Aerial Resupply), and 9425 (Aerial Resupply Followup) were not required by the scenario.

(d) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 69 productive hours expended by the SI section, 12 hours (17 percent) were expended in report preparation. The collocation of the SI/S4 sections caused the SI clerk to function both in the SI and S4 areas and to expend 10 hours in the preparation of S4 reports.

(b) Of the 41 productive hours expended by the S4 section, 7 hours (17 percent) were expended in report preparation.

(c) SI/S4 section reports 9103 (Discipline, Law, and Order), 9104 (Internee Strength), 9408 (Materiel Readiness), and 9409 (Request for Convoy Clearance) were not required by the scenario.

(d) Report 9104 (Internee Strength) is submitted by maneuver battalions; therefore, Div Arty would only require the report when functioning as the division alternate CP. Reports 9401 (Class III Status), 9403 (Class V Status, and 9404 (Class IX Status) are needed more frequently from field artillery battalions.

(6) Organizational structure, physical relationships, and facilities. Figure 2-118 depicts the organizational relationship of the SI/S4 sections within division artillery. Sketches depicting the physical relationship of the sections within the Div Arty CP, and the interior layout of the tent housing the sections, are shown in part III.

(a) The SI section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the SI/S4 sections to the Div Arty TOC and other sections comprising the Div Arty CP was satisfactory.

(c) The sections operated from a tent, GP, medium and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the SI/S4 sections is contained in part III.

(a) Of the 100 calls made by the SI section, 21 percent were made by FM and 79 percent by telephone.

(b) Of the 99 calls made by the S4 section, 49 percent were placed by FM and 51 percent by telephone.

(c) Of the 73 calls received by the SI section, 10 percent were received by FM and 90 percent by telephone.

(d) Of the 64 calls received by the S4 section, 25 percent were received by FM and 75 percent by telephone.

(e) The S1 section prepared 51 messages for transmission and received 91 messages that had been transmitted by common-user teletype or RATT.

(f) The S4 section prepared 36 messages for transmission and received 77 messages that had been transmitted by common-user teletype or RATT.

(g) With the addition of the Div Arty administrative/intelligence net during the actual test phase (resulting from player and controller pilot test recommendations and concurred with by CACDA representatives), all S1/S4 responses indicated enough communications were available.

(h) Section and evaluator personnel classified the FM (none authorized) and telephone (one common-user authorized) means of communication as not adequate to accomplish the assigned mission.

(8) Effect of displacement. Data pertinent to the effects of displacement on the sections is contained in part III.

(a) During both displacements of the Div Arty CP, the S1/S4 section displaced in one group and closed on the advance party proivded by the S1/S4 section.

(b) With the addition of the Div Arty administrative/intelligence net, section and evaluator personnel reported no difficulties with communications or in obtaining information during the displacement.

(c) The S1 section was ready to move an average of 100 minutes, and the S4 section an average of 75 minutes, after displacement procedures started.

(d) The S1 section departed an average of 28 minutes, and the S4 section an average of 52 minutes, after being ready to move.

(e) The S1 section was capable of conducting effective operations an average of 72 minutes, and the S4 section an average of 38 minutes, after arriving at the new location.

(f) The S1 section was capable of conducting sustained operations (completely set up) an average of 163 minutes, and the S4 section an average of 75 minutes, after arriving at the new location.

(g) Section and evaluator personnel reported a requirement for an FM radio to be used during displacement.

(9) Effect of destruction. Section and evaluator personnel reported that destruction of the main CP had no effect on the operational effectiveness of the SI/S4 sections and that the sections had slack time available after destruction of the main CP.

(10) Effect of TAC CP deployment. The SI/S4 sections were not affected by deployment of the division TAC CP.

(11) Effect of the alternate CP. The SI/S4 sections were not adversely affected by establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The SI/S4 sections did not experience any difficulties when control of the division was shifted from one location to another.

(b) Personnel of the sections normally learned from the Div Arty S3 section that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the SI/S4 sections is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the SI/S4 sections by the scenario or the control organization when executing the scenario.

(b) Section and evaluator personnel indicated that there was a minimum of admin/log scenario events which caused the sections to be inadequately exercised.

(c) Qualifications of the personnel assigned to the sections with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(d) No significant training requirements were identified for section personnel.

(14) Information flow. Data pertaining to the exchange of information between the SI/S4 sections and other elements of Div Arty is contained in part III. The matrix at figure 2-122 depicts the relationship of the SI/S4 sections and the Div Arty command group, other members of the Div Arty staff, and personnel at other levels of command.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S4, Bn	18	42.86	Div Arty Comd Gp	24	47.06	G1	12	19.05	S1, Bn	15	21.74
S1, Bn	15	35.71	G1	15	29.41	Div Arty Comd Gp	12	19.05	G1	12	17.39
G4	6	14.29	S1, Div Arty	6	11.76	S1, Bn	12	19.05	S1, Div Arty	12	17.39
DAO, DISCOM	3	7.14	G4	3	5.88	AG	6	9.52	S4, Bn	9	13.04
			DAO, DISCOM	3	5.88	S3, Div Arty	6	9.52	AG	6	8.70
						S4, Bn	6	9.52	S2, Div Arty	6	8.70
						G4	3	4.76	MMA, DISCOM	3	4.35
						PM	3	4.76	Div Arty Comd Gp	3	4.35
						DAO, DISCOM	3	4.76	S3, Div Arty	3	4.35

Figure 2-122. Div Arty S1 and S4 section functional relationships.

(a) Information provided to the SI/S4 sections was generally considered adequate, relevant, and accurate; but not always timely due to the 2 to 8 hour delay in receipt of RATT messages.

(b) Section and evaluator personnel reported no difficulties experienced in obtaining information from other elements and sections.

(c) The SI/S4 sections provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) An undercapacity workload condition was experienced 100 percent of the time.

(b) Based on non-test experience, S4 section and evaluator personnel recommended that an NCO be added to provide a 24-hour operational capability.

(c) The mean productive time expended per day by the SI/S4 sections, respectively, was 7 and 10 hours for officers and 5 hours for the SI NCO's.

(d) The mean idle time per day was 5 hours and 1 hour for officers and 5 hours for SI NCO's.

(e) The mean absent time per day was 2 hours and 1 hour for officers and 1 hour for SI NCO's.

(f) Section and evaluator personnel reported that one additional NCO (Supply Sergeant; grade E7; MOS 76Y40) and equipment as shown in figure 2-123 is required to satisfy normal mission requirements.

Nomenclature	Quantity
Truck, 1/4-ton	1
Radio Set, AN/VRC-47	1
Radio Set, AN/GRA-39	1

Figure 2-123. S4 section recommended equipment additions.

d. S2/Target Acquisition/Battlefield Information Center (BIC) Section.

(1) Personnel authorized and fielded are shown in figures 2-124 and 2-125.

Title	Grade	Branch	MOS	Strength Authorized H-ser	OFM	Fld 119
S2	04	FA	59301	1	1	0
Tgt Acq Plt Ldr/Asst S2	03	FA	51154	1	1	1
FA Radar Tech	WO		511A0	1	1	1
Intel Sgt	E8	NC	17Z50	1	1	1
Lt Veh Dvr	E3		17A10	1	2	1
TOTAL (Off/EM)				3/2	3/3	2/2

Figure 2-124. S2/Tgt Acq element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-ser	OFM	Fld 119
OIC	02	MI	09301	1	1	1
Intel Sgt	E6	NC	96B40	1	1	1
Intel Analyst	E5		96B20	1	1	2
TOTAL (Off/EM)				1/2	1/2	1/3

Figure 2-125. BIC element personnel.

(2) Equipment authorized and fielded is shown in figures 2-126 and 2-127.

Nomenclature	Quantity Authorized H-ser	OFM	Fld 119
Radio, AN/VRC-46, mtd in trk, 1 1/4-ton	1	1	1[a]
Radio, AN/GRA-39	1	1	1
Truck, Cargo, 1 1/4-ton	1	1	1
Trailer, Cargo, 1 1/2-ton	1	1	1
Trailer, Cargo, 3/4-ton	0	1	1

[a]Remounted in M109 van provided by OPS-FD section.

Figure 2-126. S2/Tgt Acq element equipment.

Nomenclature	Quantity Authorized H-ser	OFM	Fld 119
Radio, AN/VRC-46, mtd in trk, 1 1/4-ton	0	1	1[a]
Radio, AN/GRA-39	0	1	1
Speech Security Equip, TSEC/KY-8	0	1	1
Truck, Cargo, 1 1/4-ton	0	1	1
Trailer, Cargo, 3/4-ton	0	1	0

[a]Remounted in M109 van provided by OPS-FD section.

Figure 2-127. BIC element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures for the S2/Tgt Acq/BIC element and attendant quantifiable data is contained in part III.

(a) Of the 162 productive hours available to the S2/Tgt Acq element during the test, 137 hours (85 percent) were expended performing listed and unlisted functions.

(b) Of the 135 productive hours available to the BIC element during the test, 119 hours (89 percent) were expended performing listed and unlisted functions.

(c) Function F05 (Distributes maps, etc.) and procedures F02P01 (recommends counterbattery status); F03P01 (provides advice on OPSEC), F03P02 (classified document accounting), F03P03 (establishes security SOP), F03P04 (compromise of classified information), F03P06 (counter-intelligence investigative support), F03P07 (security clearance), and F04P03 (provides special weather reports) were not required by the scenario.

(d) The organization and functions manual (OFM) was used by personnel of the section.

(e) The OFM adequately described the functions and procedures required to be performed by the section although some BIC personnel indicated the functions and procedures should be more detailed.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 137 productive hours expended by the S2/Tgt Acq, 72 hours (53 percent) were expended in using the files and 68 hours (50 percent) were expended in maintaining the files (includes visual displays).

(b) Of the 119 productive hours expended by the BIC, 42 hours (35 percent) were expended in using the files and 17 hours (14 percent) were expended in maintaining the files (includes visual displays).

(c) S2/Tgt Acq Files 9202 (Staff Section Workbook), 9207 (Roving Gun Location Overlay), 9215 (R&S Planning), 9217 (Topical), 9218 (Reference), 9219 (Work), 9220 (Counterintelligence and Security), and 9222 (Classified Document Log), were not required by the scenario. All BIC files were used.

(d) The information required on the visual displays was adequate.

(e) The OFM adequately defined the files used by the section. A target list file was added to the BIC files.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III. The S2/Tgt Acq and BIC elements had identical listings.

(a) Of the 137 productive hours expended by S2/Tgt Acq, 26 hours (19 percent) were expended in report preparation.

(b) Of the 119 productive hours expended by the BIC, 34 hours (29 percent) were expended in report preparation.

(c) Reports 9204 (Radio Interference), 9206 (NBC-2), 9207 (NBC-3), and 9208 (NBC-5) were not required by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-118 depicts the organizational relationship of the S2/Tgt Acq/BIC section to Div Arty. Sketches depicting the physical relationship of the section within the Div Arty CP and the interior layout of the van housing the section are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the S2/Tgt Acq/BIC section was satisfactory with respect to other Div Arty staff elements.

(c) The section operated in an M109 van assigned to the OPS-FD section and the facility was not adequate for the personnel assigned due to the addition of the BIC.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section is contained in part III.

(a) Of the 251 calls made by the S2/Tgt Acq element, 76 percent were placed by FM, and 24 percent by telephone.

(b) Of the 529 calls made by the BIC element, 95 percent were placed by FM, and 5 percent by telephone.

(c) Of the 225 calls received by the S2/Tgt Acq element, 71 percent were placed by FM, and 29 percent by telephone.

(d) Of the 531 calls received by the BIC element, 96 percent were received by FM and 4 percent by telephone.

(e) The S2/Tgt Acq element prepared 8 messages for transmission and received 48 messages that had been transmitted by common-user teletype or RATT.

(f) The BIC element prepared 19 messages for transmission and received 68 messages that had been transmitted by common-user teletype or RATT.

(g) Ninety-two percent of the S2/Tgt Acq responses indicated the element had enough means of communication.

(h) With the addition of the Div Arty administration/intelligence net, all of the BIC responses indicated the element had enough means of communication.

(i) Section and evaluator personnel classified the means of communication available to the section as adequate to accomplish the assigned mission.

(j) The section reported no difficulty in disseminating early warning messages.

(8) Effect of displacement. Data pertinent to the effects of displacement on the section is contained in part III.

(a) During both displacements of the Div Arty CP, the S2/Tgt Acq/BIC section displaced in one group and closed on an advanced party provided by the S2/Tgt Acq/BIC section.

(b) Section and evaluator personnel reported no difficulty with communications or in obtaining information during displacement.

(c) The section was ready to move an average of 49 minutes after displacement procedures started.

(d) The section departed an average of 28 minutes after being ready to move.

(e) The section was generally capable of conducting effective and sustained operations (completely set up) an average of 11 minutes after arrival at the new location.

(f) Section and evaluator personnel indicated displacement procedures defined in the Div Arty SOP do not require revision.

(9) Effect of destruction. Section and evaluator personnel reported that destruction of the main CP had no effect on the operational effectiveness of the section and that the section was generally fully employed following destruction of the main CP.

(10) Effect of TAC CP deployment. The S2/Tgt Acq/BIC section was not affected by deployment of the division TAC CP.

(11) Effect of the alternate CP. The S2/Tgt Acq/BIC section was not adversely affected by the establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The section did not experience any difficulty when control of the division was shifted from one location to another.

(b) Section personnel normally learned from the division intelligence net that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) No additional training requirements were identified.

(14) Information flow. Data pertaining to the exchange of information between the S2/Tgt Acq/BIC section and other sections of Div Arty is contained in part III. The matrix at figure 2-128 depicts the relationship between the section and the Div Arty command group, other members within the Div Arty staff, and personnel at other levels of command.

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Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G2	33	19.64	G2	30	18.52	C-E Off	18	19.35	S2, Div Arty	42	23.33
FSE	18	10.71	FSE	18	11.11	BICC OIC	18	19.35	Div Arty Comd	39	21.67
BICC OIC	18	10.71	BICC OIC	18	11.11	S2, Bn	18	19.35	S2	36	20.00
Div Arty Comd	18	10.71	Div Arty Comd	18	11.11	FSE	15	16.13	BICC OIC	21	11.67
S2, Div Arty	18	10.71	S3, Div Arty	18	11.11	G2	12	12.90	FSE	18	10.00
S3, Div Arty	18	10.71	S2, Bn	18	11.11	Div Arty Comd	06	6.45	C-E Off	12	6.67
S2, Bn	18	10.71	C-E Off	12	7.41	S3, Div Arty	06	6.45	S3, Div Arty	12	6.67
C-E Off	12	7.14	S2, Div Arty	12	7.41						
S1, Div Arty	12	7.14	G3	06	3.70						
ALO	03	1.79	S1, Div Arty	06	3.70						
			PM	03	1.85						
			ALO	03	1.85						

Figure 2-128. Div Arty S2 section functional relationships.

(a) Information provided to the section was generally considered relevant and accurate; but often not timely or adequate because of a lack of SHELREP and division artillery radar (AN/TPS-25) reports and because of a lack of or delay in receipt of intelligence traffic.

(b) Section and evaluator personnel reported that in a few instances, the section experienced difficulty in obtaining information from division alternate and division FSE.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) An overcapacity workload condition was experienced 8 percent of the time.

(b) The mean productive time expended per day for S2/Tgt Acq and BIC, respectively, was 16 and 12 hours for officers; and 11 and 9 hours for NCO's.

(c) The mean idle time per day for S2/Tgt Acq and BIC, respectively, was less than 1 hour for officers of both elements; and less than 1 and 2 hours for NCO's

(d) The mean absent time per day for S2/Tgt Acq and BIC, respectively, was 4 hours and less than 1 hour for officers; and 1 hour for NCO's of both elements.

(e) Section and evaluator personnel recommended the personnel and equipment changes shown in figures 2-129 and 2-130 as being required to satisfy normal operations.

Title	Grade	MOS	Quantity Add	Quantity Delete
[a]Intel Analyst/RATELO (BIC)	E4	96B20	1	0

[a]Provide 24 hour capability.

Figure 2-129. BIC element recommended personnel additions.

Nomenclature	Quantity Add	Delete
Radio set, AN/VRC-46, mtd in trk, 1 1/4-ton (BIC and S2/Tgt Acq)	0	2
Radio set, AN/VRC-46, mtd in trk 1/4-ton (S2)	1	0
Radio set, AN/VRC-46, mtd in 5-ton van (S2)[a]	1	0
Radio set, AN/VRC-47, mtd in 5-ton van (S2)[a]	1	0
Truck, utility, 1/4-ton (S2)	1	0

[a]M109 van provided by S3 should be changed to 5-ton van.

Figure 2-130. S2/Tgt Acq/BIC section recommended equipment changes.

(e) S3/C-E section.

(1) Personnel authorized and fielded are shown in figures 2-131 and 2-132.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	OFM	Fld 119
S3	05	FA	52162	1	1	1
Asst S3	04	FA	52162	2	2	2
Cml Off	03	Cml	57314	1	1	1
Plans Off	03	FA	52162	0	0[a]	1
Air Obsr	02	FA	51193	8	8[a]	0
Op Sgt	E9		13Z50	1	1	1
Asst Op Sgt	E8		13Z50	1	1	1
C Fd Comptr	E7		13E40	1	1	1
Cml Stf NCO	E6		54E40	1	1	1
Sr Chronograph Operator	E5		13E20	2[a]	0	0
Chronograph Op	E4		13E20	2[a]	0	0
Clerk-typist	E4		71B30	2	2	2
Sr Radio Op	E4		05B20	1	1	1
Radio Op	E3		05B20	1	1	1
TOTAL (Off/EM)				12/12	12/8	5/8

[a]Optional for test.

Figure 2-131. S3 element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	OFM	Fld 119
C-E Off	04	SC	00205	1	1	1
Lt Veh Dvr	E3		36K20	1	1	1
TOTAL (Off/EM)				1/1	1/1	1/1

Figure 2-132. C-E element personnel.

(2) Equipment authorized and fielded is shown in figures 2-133 and 2-134.

Nomenclature	Quantity Authorized H-Ser	OFM	Fld 119
Radio set, AN/VRC-46, mtd in 2 1/2-ton van, M109	2	2	2
Radio set, AN/VRC-46, mtd in 1 1/4-ton	2	2	2
Radio set, AN/VRC-46, mtd in trk, 1/4-ton	1	1	1
Radio set, Cont Gp, AN/GRA-39	4	4	4
Speech scty equip, TSEC/KY8	2	2	2
Tent GP, Med	1	1	1
Tent GP, Sm	1	1	1
Truck, cargo, 2 1/2-ton	1	1	1
Truck, van, 2 1/2-ton	2	2	2
Truck, utility, 1 1/4-ton	1	1	1
Truck, utility, 1/4-ton	4	4	1
Trailer, cargo, 1/4-ton	3	3	0
Trailer, cargo, 3/4-ton	0	1	0
Trailer, cargo, 1 1/2-ton	0	1	0

Figure 2-133. S3 element equipment.

Nomenclature	Quantity Authorized H-Ser	OFM	Fld 119
Truck, utility, 1/4-ton	1	1	1

Figure 2-134. C-E element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Of the 570 productive hours available to the S3 element during the test, 507 hours (89 percent) were expended performing listed and unlisted functions.

(b) Of the 66 productive hours available to the C-E element during the test, 64 hours (97 percent) were expended performing listed and unlisted functions.

(c) S3 procedures F02P07A (Illumination support), F04P02C (Supervises CBR tng), F04P02D (Supervises distribution of CBR contamination info), F05P02 (Assess causes of combat deficiencies), F05P03 (Recommend remedial tng for combat deficiencies), F05P05 (Supervise tng to correct combat deficiencies) were not required by the scenario.

(d) C-E function F02 (C-E administration) and procedures F01P05 (ECM), and F04P01 (C-E training) were not required by the scenario.

(e) The OFM was used by 56 percent of the section personnel.

(f) The organization and functional manual (OFM) adequately described the functions and procedures required to be performed by the section although some personnel indicated more detailed procedures should be provided.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 507 productive hours expended by the S3 element, 253 hours (50 percent) were expended in using the files and 141 hours (28 percent) were expended in maintaining the files (includes visual displays).

(b) Of the 64 productive hours expended by the C-E element, 3 hours (5 percent) were expended in using the files and 1 hour (2 percent) was expended in maintaining the files (includes visual displays).

(c) S3 element files 9314 (Div SOP), 9316 (Policy), 9317 (Suspense), 9320 (Barrier Overlay), 9321 (Effective Wind Msg), 9323-9327 (NBC-1-5), 9328 (Nuclear A/I report), 9329 (Unit Radiation Exposure Rate), and 9330 (Chemical Target Analysis) were not required by the scenario.

(d) C-E element files 9803 (CESI), 9804 (Div Arty SOP), 9805 (Div SOP), 9806 (C-E status rept), 9808 (C-E estimate), 9812 (Radio Net Diagram), 9813 (Sig SOP), and 9814 (Staff Sec Workbook) were not required by the scenario.

(e) C-E file 9801 (Message Center Staff Journal) was maintained by the C-E platoon.

(f) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III. The C-E element was not required by the Div Arty SOP to submit reports but was provided a listing of the S3 reports.

(a) Of the 507 productive hours expended by the S3 element, 60 hours (12 percent) were expended in report preparation.

(b) S3 element reports 9305 (Tactical Logistics), 9306 (Nuclear Accident/Incident), 9307 (Unit Radiation Exposure), 9308 (Aircraft Availability), 9309 (Request for Army Avn Support), and 9310 (Loss of Friendly Contact) were not required by the scenario. The C-E element did not submit any reports during the test.

(6) Organizational structure, physical relationships, and facilities. Figure 2-118 depicts the organizational relationship of the S3/C-E section within Div Arty. Sketches depicting the physical relationship of the section within the Div Arty and the interior layout of the van housing the section are contained in part III.

(a) The S3/C-E section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical location of this section to the Div Arty TOC and other sections comprising the Div Arty CP was satisfactory.

(c) The section operated in an S3 van as part of the Div Arty TOC and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the S3/C-E section is contained in part III.

(a) Of the 1,432 calls made, 82 percent were placed by FM and 18 percent by telephone.

(b) Of the 1,034 calls received, 86 percent were received by FM and 14 percent by telephone.

(c) The S3/C-E section prepared 79 messages for transmission and received 145 messages that had been transmitted by common-user teletype/RATT.

(d) Seventy-one percent of the element responses indicated the S3/C-E section did not have enough means of FM communications.

(e) Element and evaluator personnel classified the FM means of communications available to the section as inadequate to accomplish the assigned mission due to the congestion on the command fire FM voice net.

(f) The C-E element indicated a need for an FM radio mounted in the C-E 1/4-ton vehicle.

(g) The section personnel reported that a delay in receipt of early warning messages was experienced. Seventy-two percent indicated that the S3 section experienced difficulty in disseminating early warning messages due to the congested FM net.

(8) Effect of displacement. Data pertinent to the effects of displacement on the section is contained in part III.

(a) During both displacements of the Div Arty CP, the S3/C-E section displaced in one group and closed on an advance party which was operational on arrival at the new location and was composed of S3 section personnel.

(b) Section and evaluator personnel reported no difficulty with communications or in obtaining information during displacement.

(c) The section was ready to move and departed the old location an average of 165 minutes after displacement procedures started.

(d) The section was capable of conducting effective operations an average of 27 minutes after arriving at the new location.

(e) The section was capable of conducting sustained operations (completely set up) an average of 80 minutes after arriving at the new location.

(f) The addition of an FM radio to the 1/4-ton vehicle of the S3, allowing the monitoring of both the Div Arty and division command nets, was recommended.

(g) Section and evaluator personnel reported displacement procedures defined in the Div Arty SOP do not require revision.

(9) Effect of destruction. Element and evaluator personnel reported that destruction of the div main CP had no effect on the operational effectiveness of the S3 section, and the section was fully employed after destruction of the main CP.

(10) Effect of TAC CP deployment. The S3/C-E section was not affected by depioyment of the division TAC CP.

(11) Effect of the alternate CP. The S3/C-E section was not adversely affected by establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division is contained in part III.

(a) The S3/C-E section did not experience any difficulty when control of the division was shifted from one location to another.

(b) Personnel of the S3 section normally learned from the division FSE that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) Few unrealistic constraints that could affect the test data were imposed on the section by the scenario or the control organization when executing the scenario. However, constraints imposed by the lack of a liaison officer at corps and from general support reinforcing units caused unrealistic workloads and lack of friendly unit updates.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) Section and evaluator personnel were evenly divided as to the need for additional training for section personnel. The need for additional communications operator and fire planning training was reported.

(14) Information flow. Data pertaining to the exchange of information between the S3 section and other sections of Div Arty is contained in part III. The matrix at figure 2-135 depicts the relationship between the S3 section, the Div Arty command group, other members within the Div Arty staff, and personnel at other levels of command.

(a) Information provided to the section was generally considered adequate, relevant, accurate, and timely.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
FSE	21	21.21	Div Arty Comd Gp	66	40.00	FSE	51	16.35	S2, Div Arty	48	19.51
S2, Div Arty	21	21.21	S3, Div Arty	51	30.91	Div Arty Comd Gp	45	14.42	FSE	45	18.29
S3, Bn	18	18.18	S2, Div Arty	27	16.36	S3, Div Arty	45	14.42	S3, Div Arty	42	17.07
Div Arty Comd Gp	12	12.12	FSE	15	9.09	S2, Div Arty	42	13.46	Div Arty Comd Gp	24	9.76
S1, Div Arty	09	9.09	G2	06	3.64	S4, Div Arty	33	10.58	S4, Div Arty	24	9.76
S4, Div Arty	09	9.09				S1, Div Arty	30	9.62	S1, Div Arty	21	8.54
S2, Bn	06	6.06				Cml Off	12	3.85	S3, Bn	12	4.88
S2, Div Arty	03	3.03				S3, Bn	12	3.85	G2	06	2.44
						Comd Gp	09	2.88	BICC OIC	06	2.44
						C-E Off	09	2.88	Cml Off	06	2.44
						G2	06	1.92	S2, Bn	06	2.44
						G3	06	1.92	G3	03	1.22
						BICC OIC	06	1.92	C-E Off	03	1.22
						S2, Bn	06	1.92			

Figure 2-135. Div Arty S3 section functional relationships.

(b) Section and evaluator personnel reported that the section experienced difficulty in obtaining information from corps/division and obtaining the results of artillery missions from line units.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) An overcapacity workload condition was experienced 2 percent of the time.

(b) An undercapacity workload condition was experienced 48 percent of the time.

(c) The mean productive time expended per day was 13 hours for officers and 11 hours for NCO's.

(d) The mean idle time per day was 1 hour for officers and 1 hour for NCO's.

(e) The mean absent time per day was 3 hours for officers and 3 hours for NCO's.

(f) The mean productive, idle, and absent times were 14 hours, less than 1 hour, and 8 hours respectively for the C-E officer.

(g) Section and evaluator personnel recommended the personnel and equipment changes shown in figures 2-136 and 2-137 as being required to satisfy normal mission requirements and provide communications to each of the FA battalions.

Title	Grade	MOS	Strength
Asst Op (Plans)	03	51192	1
Radio Opr (Multichannel)	E5	05F	1
Radio Opr (Multichannel)	E4	05F	2
Radio Opr (Multichannel)	E3	05F	4

Note: Each DS/GS FA Bn will need operators for the multichannel system.

Figure 2-136. S3 section recommended personnel additions.

Nomenclature	Quantity
4-6 Channel-Multichannel System	4

Note: Each DS/GS FA Bn will need one multichannel system.

Figure 2-137. S3 section recommended equipment additions.

2-16. Division Support Command (DISCOM).

a. General. The organization of the division support command is shown in figure 2-138. DISCOM was administratively set up in a control bunker and did not displace during the test. DISCOM was not significantly affected by the displacement or destruction of the division main CP, deployment of the TAC CP, or establishment of the alternate CP. Therefore, these topics are not further addressed in the analysis of DISCOM and its staff sections. Subfindings pertinent to DISCOM headquarters are at paragraph b, while subfindings pertinent only to the staff sections are contained in paragraphs c through f.

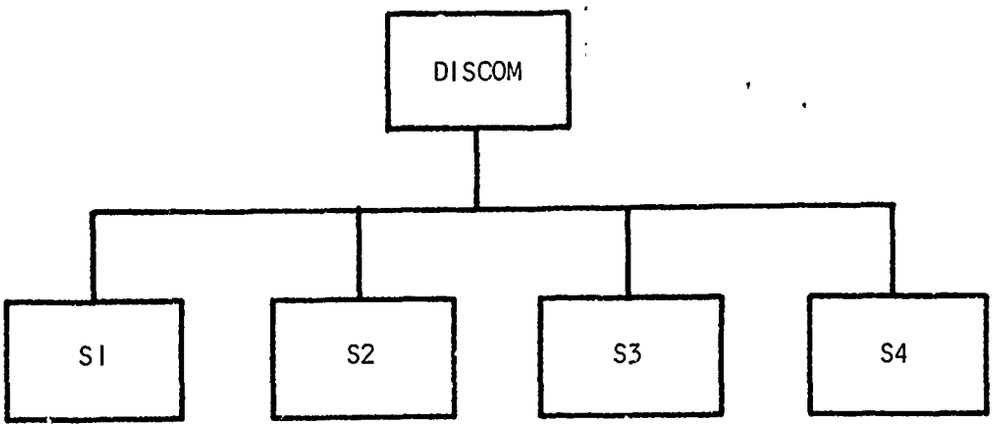


Figure 2-138. DISCOM organization.

b. DISCOM headquarters subfindings.

(1) Effect of shifting control.

(a) DISCOM was not adversely affected when control of the division was shifted from one location to another. The DISCOM commander reported that on one occasion he had difficulty in identifying who was in control of the division when control was shifted from the TAC CP to the alternate CP.

(b) DISCOM learned through the division command FM net when the point of control had changed. The S4 section reported experiencing minor communication difficulties when control was shifted within the division.

(2) Adequacy of intelligence support. Data pertinent to the adequacy of the intelligence support provided to DISCOM is contained

in part III. The DISCOM command group and the evaluator reported that the intelligence support was adequate and no better or worse than previously experienced.

(3) Adequacy of the scenario.

(a) DISCOM personnel and the evaluators reported that the S3 and S4 were required to maintain division equipment status charts and reports that normally would be the responsibility of the Division Maintenance Materiel Agency (DMMA) or subordinate units of DISCOM. This additional tasking created an unrealistic problem play atmosphere.

(b) DISCOM experienced an undercapacity workload condition 55 percent of the time. The mean productive time expended per day by DISCOM personnel was 8 hours. This situation existed because of a lack of sufficient scenario events to adequately drive the DISCOM staff sections.

(4) Adequacy of personnel and equipment. The number of personnel assigned to DISCOM was adequate to accomplish the assigned mission under normal operations. DISCOM personnel reported a requirement for a FM secure voice capability to communicate with division G4 and an AM or FM one-way, direct, dedicated communication means to receive early warning messages. (Note: The DISCOM S3 and S4 were periodically required to update the division G4 as explained in paragraph (3)(a) above. This expressed need for a FM backup capability can be attributed to this requirement and the loss of telephone communications with the G4 during displacement of the division main CP.)

(5) The matrix at figure 2-139 depicts the relationship between the DISCOM command group and the division command group, division staff sections, other members of the DISCOM staff, and personnel at other levels of command.

c. SI section.

(1) Personnel authorized and fielded are shown in figure 2-140.

(2) Equipment authorized and fielded is shown in figure 2-141.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Of the 110 productive hours available during the test, 61 hours (56 percent) were expended performing listed and unlisted functions.

(b) Function F06 (Headquarters management) could not be evaluated because DISCOM was administratively set up in a control bunker and did not displace during the test.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
DISCOM Comd Gp	27	16.98	DISCOM Comd Gp	24	11.94	S1, DISCOM	21	10.00	Comd Gp	39	29.55
S1, DISCOM	12	7.55	S1, DISCOM	18	8.96	S4, DISCOM	21	10.00	DISCOM Comd Gp	33	25.00
S2, DISCOM	12	7.55	S2, DISCOM	18	8.96	G3	18	8.57	G3	12	9.09
S3, DISCOM	12	7.55	S3, DISCOM	18	8.96	C-E Off	18	8.57	DTO	12	9.09
S4, DISCOM	12	7.55	S4, DISCOM	18	8.96	S2, DISCOM	18	8.57	G2	09	6.82
DAO, DISCOM	12	7.55	DAO, DISCOM	18	8.96	S3, DISCOM	18	8.57	Div Surg	06	4.55
S&T Bn Cdr	12	7.55	G3	12	5.97	DAO, DISCOM	18	8.57	S&T Bn Cdr	06	4.55
Maint Bn Cdr	12	7.55	S&T Bn Cdr	12	5.97	G4	12	5.71	Maint Bn Cdr	06	4.55
Med Bn Cdr	12	7.55	Maint Bn Cdr	12	5.97	S&T Bn Cdr	12	5.71	Med Bn Cdr	06	4.55
G3	09	5.66	Med Bn Cdr	12	5.97	Maint Bn Cdr	12	5.71	G1	03	2.27
G2	06	3.77	G4	09	4.48	Med Bn Cdr	12	5.71			
Div Surg	06	3.77	C-E Off	09	4.48	DTO	09	4.29			
DTO	06	3.77	G2	06	2.99	Div Surg	06	2.86			
Comd Gp	03	1.89	Div Surg	06	2.99	MMA, DISCOM	06	2.86			
S4, Div Arty	03	1.89	Comd Gp	03	1.49	G2	03	1.43			
S4, Bde	03	1.89	S4, Div Arty	03	1.49	DISCOM Comd Gp	03	1.43			
			S4, Bde	03	1.49	S4, Bn	03	1.43			

Figure 2-139. DISCOM command group functional relationships.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
SI Officer	04	NO	02110	1	1	1
PSNCO	E7	NC	71H40	1	1	1
Clerk-Typist	E4		71B30	1	1	1
Lt Veh Dvr	E3		71B10	1	1	1
TOTAL (Off/EM)				1/3	1/3	1/3

Figure 2-140. SI section personnel.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Truck, Utility, 1/4-ton	1	0	1
Trailer, Cargo, 1/4-ton	1	0	1

Figure 2-141. SI section equipment.

(c) Procedures F02P02 (Assigns personnel), F02P06 (Civilian personnel management), and F03P01C (Religious services) were not required by the scenario.

(d) The OFM was used by personnel of the section.

(4) Files. A complete listing of files and resultant usage factors is contined in part III.

(a) Of the 61 productive hours expended by the section, 20 hours (33 percent) were expended in using and 23 hours (38 percent) in maintaining the files (includes visual displays).

(b) Files A102 (Staff Section Workbook), A104 (DISCOM SOP), A106 (Policy), A109 (Situation Map), and A110 (Accident Report) were not required by the scenario.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 61 productive hours expended by the section, 6 hours (9 percent) were expended in report preparation.

(b) Report A105 (Discipline, Law, and Order) was not required by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-138 depicts the organizational relationship of the SI section within DISCOM. A sketch depicting the interior layout of the bunker housing the section is shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this section to other sections comprising the DISCOM was satisfactory.

(c) The section operated in a bunker which housed all the DISCOM staff sections and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) The only means of voice communication available to the section was the telephone and the section placed 52 and received 36 calls.

(b) The SI section prepared 157 messages for transmission and received 392 messages that had been transmitted by common-user teletype or RATT.

(c) One-hundred percent of the section responses indicated the section had sufficient means of communication.

(d) Section personnel reported that the type communications available to the section was adequate to permit mission accomplishment.

(8) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(9) Information flow. Data pertaining to the exchange of information between the SI section and other sections of DISCOM is contained

in part III. The matrix at figure 2-142 depicts the relationship between the section and the DISCOM command group, other members within the DISCOM staff, and personnel at other levels of command.

(a) Information provided to the section was considered adequate, relevant, accurate, and timely.

(b) Section personnel and the evaluator reported that in no instance did the section experience difficulty in obtaining information from other sections.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(10) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) A within-capacity workload condition was experienced 17 percent of the time.

(b) An undercapacity workload situation existed 83 percent of the time.

(c) The mean productive time expended per day by section personnel was 5 hours.

(d) The mean idle time per day for section personnel was 4 hours.

(e) The mean absent time per day for section personnel was 2 hours.

d. S2 section.

(1) Personnel authorized and fielded are shown in figure 2-143.

(2) Equipment authorized and fielded is shown in figure 2-144.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Of the 78 productive hours available during the test, 57 hours (73 percent) were expended performing listed and unlisted functions.

(b) Function F06 (Request COMSEC support and arranges for necessary support for SIGINT activities in zone or sector) was not required by the scenario.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S1, Bn	21	100.00	DISCOM Comd Gp	21	50.00	S1, Bn	12	20.00	DISCOM Comd Gp	06	20.00
			G1	12	28.57	DISCOM Comd Gp	09	15.00	S1, Bn	06	20.00
			AG	03	7.14	G1	06	10.00	G1	03	10.00
			S1, DISCOM	03	7.14	S&T Bn Cdr	06	10.00	S&T Bn Cdr	03	10.00
			S3, DISCOM	03	7.14	S&S Co Cdr	06	10.00	S&S Co Cdr	03	10.00
						TMT Co Cdr	06	10.00	TMT Co Cdr	03	10.00
						Maint Bn Cdr	06	10.00	Maint Bn Cdr	03	10.00
						Med Bn Cdr	06	10.00	Med Bn Cdr	03	10.00
						EWCO	03	5.00			

Figure 2-142. DISCOM S1 section functional relationships.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Intel Off	04	NO	09310	1	1	1
Intel NCO	E8	NC	96B50	1	1	1
Lt Veh Dvr	E3		71B10	1	1	1
TOTAL (Off/EM)				1/2	1/2	1/2

Figure 2-143. S2 section personnel.

Nomenclature	Quantity Authorized P-Ser	2d Ref	Fld 119
Truck, Utility, 1/4-ton	1	0	0
Trailer, Cargo, 1/4-ton	1	0	0

Figure 2-144. S2 section equipment.

(c) Procedures F01P02B (Coordinates with other staff sections for fire support, communications, and possible transportation for R&S activities), F03P02 (Supervises the control and accounting of classified documents and materiel), F03P02A (Establishes a security SOP and conducts periodic security checks), F03P02B (Initiates preliminary inquiry into instances of possible compromise of classified material), F03P02C (Requests as needed, counterintelligence surveys and inspections), F03P04 (Administers the security clearance program), and F07P01 (Distributes maps and photographs provided automatically from higher headquarters) were also not required by the scenario.

(d) The OFM was used by personnel of the section.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 57 productive hours expended by the section, 21 hours (36 percent) were expended in using the files and 17 hours (29 percent) were expended in maintaining the files (includes visual displays).

(b) Files A201 (Collection Planning), A203 (Collection Worksheet Chart), A205 (R&S Overlay), A206 (Topical), A208 (Intelligence SOP), A210 (Counterintelligence and Security), A211 (Access System), A212 (Classified Documents Log), A220 (BOMBREP/SHELREP/MORTREP), A221 (Hostile Air Attack Warning Message), A222 (Daily Ground R&S Summary), and A225 (Radio Interference) were not required by the scenario.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 56 productive hours expended by the section, 3 hours (5 percent) were expended in report preparation.

(b) Reports A101 (Periodic Intelligence Report), A204 (BOMBREP/SHELREP/MORTREP), A205 (Hostile Air Attack Warning Message), A206 (Daily Ground R&S Summary), and A209 (Radio Interference) were not required by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-138 depicts the organizational relationship of the S2 section within the DISCOM. A sketch depicting the interior layout of the bunker housing the section is shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this section to other sections comprising the DISCOM CP was satisfactory.

(c) The section operated in a bunker which housed all the DISCOM staff sections and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the element is contained in part III.

(a) Of the 15 calls made, 13 percent were placed by FM (S3's radio) and 87 percent by telephone.

(b) Of the 15 calls received, 100 percent were by telephone.

(c) The section prepared 18 messages for transmission and received 39 messages that had been transmitted by common-user teletype/RATT.

(d) Section personnel indicated that no problems were encountered with the means of communication available to them and that the communications provided were adequate to perform their assigned mission.

(8) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the section by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) Section personnel reported that additional communications training is required.

(9) Information flow. Data pertaining to the exchange of information between the S2 section and other sections of DISCOM is contained in part III. The matrix at figure 2-145 depicts the relationship between the section and the DISCOM command group, other members within the DISCOM staff, and personnel at other levels of command.

(a) Information provided to the section was considered adequate, relevant, accurate, and timely.

(b) Section personnel and the evaluator reported that the section experienced no difficulty in obtaining information from other sections.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(10) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) A within-capacity workload condition was experienced 50 percent of the time.

(b) An undercapacity workload situation existed 50 percent of the time.

(c) The mean productive time expended per day by section personnel was 7 hours.

(d) The mean idle time per day for section personnel was 3 hours.

(e) The mean absent time per day for section personnel was 1 hour.

e. S2 section.

(1) Personnel authorized and fielded are shown in figure 2-146.

(2) Equipment authorized and fielded is shown in figure 2-147.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
DISCOM Comd Gp	24	27.59	DISCOM Comd Gp	36	60.00	DISCOM Comd Gp	24	38.10	DISCOM Comd Gp	24	30.77
S3, DISCOM	12	13.79	G2	12	20.00	S3, DISCOM	12	19.05	S3, DISCOM	12	15.38
S&T Bn Cdr	12	13.79	S3, DISCOM	12	20.00	G2	09	14.29	G2	09	11.54
Maint Bn Cdr	12	13.79				S&T Bn Cdr	06	9.52	S&T Bn Cdr	09	11.54
Med Bn Cdr	12	13.79				Maint Bn Cdr	06	9.52	Maint Bn Cdr	09	11.54
G2	09	10.34				Med Bn Cdr	06	9.52	Med Bn Cdr	09	11.54
DAO, DISCOM	06	6.90							DAO, DISCOM	03	3.85
									S2, Bde	03	3.85

Figure 2-145. DISCOM S2 section functional relationships.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
S3	04	NO	02162	1	1	1
Asst S3	03	NO	52162	1	1	1
LNO	03	NO	04010	1	0	0
Op Sgt	E9	NC	76Z5K	1	1	1
Asst Op Sgt	E8	NC	76Z5K	1	1	1
Clerk-Typist	E4		71B30	1	1	1
Lt Veh Dvr	E3		71B10	1	1	1
TOTAL (Off/EM)				3/4	2/4	2/4

Figure 2-146. S3 section personnel.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Truck, Utility, 1/4-ton	1	1	0
Radio Set, AN/VRC-46	0	2	1
Radio Set, AN/VRC-47	1	1	0
Speech Security Equip, TSEC/KY-8	1	1	1
Antenna, RC-292	2	2	1
Power Supply, PP-2953	2	2	1

Figure 2-147. S3 section equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Of the 211 productive hours available during the test, 195 hours (92 percent) were expended performing listed and unlisted functions.

(b) Function F06 (Supervise and/or coordinate requests for air support), function F07 (Recommend and supervise training to correct combat deficiencies), and procedure F04P02 (Supervise the communications officer in preparation of the communications plan) were not required by the scenario. (Note: On one occasion, the section did coordinate with division G3 air for aviation support and did receive one immediate air request under function F06).

(c) The OFM was used by 50 percent of the section personnel.

(d) Section personnel reported that the OFM adequately described the functions and procedures required to be performed by the section.

(4) A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 195 productive hours expended by the element, 43 hours (22 percent) were expended in using and 11 hours (6 percent) in maintaining the files (includes visual displays).

(b) Files A302 (Staff Section Workbook), A306 (Suspense), A313 (Unit Readiness Report), A315 (Operations Order), A316 (Transportation Request), A317 (Reply to Transportation Request), A319 (Request for Army Aviation Support), A321 (Aerial Resupply Followup), A322 (Maintenance Float), A326 (Numerical Index-Equipment), A327 - A329 (pertaining to nuclear warfare), A330 (Operational Situation), A331 - A335 (Pertaining to friendly and enemy minefields), A336 (Airfield/Heliport), and A337 (Aircraft Availability) were not required by the scenario.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 195 productive hours expended by the section, 2 hours (1 percent) were expended in report preparation.

(b) Reports A302 (Nuclear Accident/Incident), A303 (Operational Situation), A304 (Task Organization), A305 - A309 (pertaining to friendly and enemy minefields), A310 (Unit Radiation Exposure), A311 (Request for Army Aviation Support), A312 (Airfield/Heliport Location), and A313 (Aircraft Availability) were not required by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-138 depicts the organizational relationship of the S3 section within the DISCOM. A sketch depicting the interior layout of the bunker housing the section is shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the S3 section to other sections comprising the DISCOM was satisfactory.

(c) The section operated in a bunker which housed all the DISCOM staff sections and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section is contained in part III.

(a) Of the 323 calls made, 89 percent were placed by FM, 11 percent by telephone, and less than one percent by AM (voice) communication means.

(b) Of the 356 calls received, 8 percent were received by FM, 92 percent by telephone, and less than one percent by AM communication means.

(c) The section prepared 63 messages for transmission, and received 115 messages that had been transmitted, by common-user teletype/RATT.

(d) Thirty percent of the section responses indicated that the section did not have enough means of communication. The deficiencies were identified as an additional FM secure net between DISCOM and division G4 (same as reported by the S4 section) and an AM TOC net to receive early warning messages. However, 75 percent of the section personnel and the evaluator, responding in the end-of-test report, classified the organic means of communication as adequate.

(8) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the section by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were generally satisfactory for the duties assigned.

(9) Information flow. Data pertaining to the exchange of information between the S3 section and other sections of the DISCOM CP is contained in part III. The matrix at figure 2-148 depicts the relationship between the section and the DISCOM command group, other members within the DISCOM staff, and personnel at other levels of command.

(a) Information provided to the section was generally considered adequate, relevant, accurate, and timely.

(b) Section personnel and the evaluator reported that in a few instances the section experienced difficulty in obtaining information from the division staff.

(c) The section gave and received orders and guidance in sufficient time to meet operational requirements.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S3, Bn	24	25.00	DISCOM Comd Gp	66	37.93	DISCOM Comd Gp	24	16.67	G3	24	14.29
DAO, DISCOM	12	12.50	G3	18	10.34	S4, Bde	18	12.50	S2, DISCOM	18	10.71
S4, Bde	12	12.50	G4	12	6.90	S1, DISCOM	12	8.33	S4, DISCOM	18	10.71
G3	06	6.25	S2, Div Arty	12	6.90	S2, DISCOM	12	8.33	S3, Bn	18	10.71
S1, DISCOM	06	6.25	S3, Div Arty	12	6.90	S4, DISCOM	12	8.33	G4	12	7.14
S2, DISCOM	06	6.25	S1, DISCOM	06	3.45	DAO, DISCOM	12	8.33	DISCOM Comd Gp	12	7.14
S4, DISCOM	06	6.25	S2, DISCOM	06	3.45	S3, Bn	12	8.33	S1, DISCOM	12	7.14
S2, Div Arty	06	6.25	S3, DISCOM	06	3.45	G3	06	4.17	DAO, DISCOM	12	7.14
S3, Div Arty	06	6.25	S4, DISCOM	06	3.45	G4	06	4.17	S4, Bde	12	7.14
S3, Bde	06	6.25	DAO, DISCOM	06	3.45	S3, DISCOM	06	4.17	S3, DISCOM	06	3.57
G4	03	3.13	S3, Bde	06	3.45	S2, Div Arty	06	4.17	S2, Div Arty	06	3.57
Fwd Spt Co Cdr	03	3.13	S4, Bde	06	3.45	S3, Div Arty	06	4.17	S3, Div Arty	06	3.57
			S3, Bn	06	3.45	S3, Bde	06	4.17	S3, Bde	06	3.57
			DTO	03	1.72	Fwd Spt Co Cdr	06	4.17	Fwd Spt Co Cdr	06	3.57
			Fwd Spt Co Cdr	03	1.72						

Figure 2-148. DISCOM S3 section functional relationships.

(10) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) A within-capacity workload condition was experienced 45 percent of the time.

(b) An undercapacity workload condition was experienced 55 percent of the time.

(c) The mean productive time expended per day by section personnel was 10 hours.

(d) The mean idle and absent times per day for individual section personnel were less than one hour.

f. S4 section.

(1) Personnel authorized and fielded are shown in figure 2-149.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Fld 119
S4	04	NO	04010	1	1	1
Asst S4	03	NO	04010	1	1	1
Logistics Sgt	E8	NC	76Z5K	1	1	1
Asst Logistics Sgt	E7	NC	76Z5K	1	1	0
Clerk-Typist	E4		71B30	1	1	1
Lt Veh Dvr	E3		71B10	1	1	1
Food Svc Tech	WO		941A0	1	0	0
Food Svc Supv	E7	NC	94Z50	1	0	0
Motor Sergeant[a]	E6	NC	64C40	0	0	1
TOTAL (Off/EM)				3/5	2/4	2/4

[a]Not authorized; used in lieu of Asst Log Sgt, E7, 76Z5K.

Figure 2-149. S4 section personnel.

(2) Equipment authorized and fielded is shown in figure 2-150.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Truck, 1/4-ton	1	0	0
Trailer, Cargo, 1/4-ton	1	0	0

Figure 2-150. S4 section equipment.

(a) Of the 248 productive hours available during the test, 216 hours (87 percent) were expended performing listed and unlisted functions.

(b) Function F02 (Area Damage Control Planning) was not required by the scenario.

(c) The organization and functions manual (OFM) was used by personnel of the section.

(d) The OFM adequately described the functions and procedures required to be performed by the section.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 216 productive hours expended by the section, 92 hours (42 percent) were expended in using, and 50 hours (23 percent) in maintaining, the files (includes visual displays).

(b) Files A404 (DISCOM SOP) and A411 (Class IV Status Chart) were not required by the scenario.

(c) Section and evaluator personnel reported that the DISCOM S4 was required to maintain division level equipment status charts that should have been the responsibility of the DMMA.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 216 productive hours expended by the section, 12 hours (6 percent) were expended in report preparation.

(b) Reports A402 (Class IV Status Report) and A404 (Materiel Readiness) were not required by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-138 depicts the organizational relationship of the S4

within the DISCOM. A sketch depicting the interior layout of the bunker housing the section is shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this section to other sections comprising the DISCOM was satisfactory.

(c) The section operated in a bunker which housed all the DISCOM staff sections and this facility was adequate for the number of personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section is contained in part III.

(a) Of the 355 calls made, two percent were placed by FM and 98 percent by telephone.

(b) Of the 277 calls received, 5 percent were received by FM and 95 percent by telephone.

(c) The section prepared 52 messages for transmission and received 382 messages that had been transmitted by common-user teletype/RATT.

(d) Section personnel reported that a FM secure means of communication is required between DISCOM and the division G4. The evaluator reported that the organic means of communication were adequate.

(8) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) Section personnel and the evaluator reported unrealistic constraints were imposed on the section by the scenario. The requirement to maintain division level status charts and reports was not realistic unless additional personnel were assigned to the section.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience were satisfactory except for the assistant logistics sergeant.

(9) Information flow. Data pertaining to the exchange of information between the S4 section and other sections of DISCOM is contained in part III. The matrix at figure 2-151 depicts the relationship between the section and the DISCOM command group, other members within the DISCOM staff, and personnel at other levels of command.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
DAO, DISCOM	27	20.00	DISCOM Comd Gp	75	36.23	DISCOM Comd Gp	45	20.00	DISCOM Comd Gp	27	15.52
DISCOM Comd Gp	24	17.78	G4	36	17.39	DAO, DISCOM	27	12.00	DAO, DISCOM	27	15.52
MMA, DISCOM	24	17.78	DAO, DISCOM	24	11.59	MMA, DISCOM	24	10.67	G4	24	13.79
G4	12	8.89	G5	18	8.70	G4	18	8.00	MMA, DISCOM	24	13.79
G5	12	8.89	MMA, DISCOM	18	8.70	S4, DISCOM	18	8.00	G5	12	6.90
DTO	12	8.89	DTO	12	5.80	G5	12	5.33	DTO	12	6.90
S&T Bn Cdr	12	8.89	S4, DISCOM	12	5.80	DTO	12	5.33	S&T Bn Cdr	12	6.90
Maint Bn Cdr	12	8.89	S&T Bn Cdr	06	2.90	S3, DISCOM	12	5.33	Maint Bn Cdr	12	6.90
			Maint Bn Cdr	06	2.90	S4, Bde	12	5.33	S1, DISCOM	06	3.45
						S&T Bn Cdr	12	5.33	S3, DISCOM	06	3.45
						Maint Bn Cdr	12	5.33	S4, DISCOM	06	3.45
						S1, DISCOM	06	2.67	S4, Bde	06	3.45
						S2, DISCOM	06	2.67			
						Bde Comd Gp	06	2.67			
						Div Arty Comd Gp	03	1.33			

Figure 2-151. DISCOM S4 section functional relationships.

(a) Information provided to the section was generally considered adequate, relevant, and accurate; but often not timely because of communication failures.

(b) Section personnel reported that in no instance did the section experience difficulty in obtaining information from other sections of the DISCOM staff.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(10) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) A within-capacity workload condition was experienced 56 percent of the time.

(b) An undercapacity workload situation existed 44 percent of the time.

(c) The mean productive time expended per day by section personnel was 8 hours.

(d) The mean idle and absent times per day for section personnel were one hour.

(e) Throughout the test, a motor sergeant, MOS 64C40, was used as a substitute for the assistant logistics sergeant.

(f) Section personnel and the evaluator reported that the section was effective in performing its assigned mission; however, additional personnel would be needed if the section is required to perform the additional tasks required by the test.

2-17. Brigade Headquarters.

a. General. The organization of the brigade headquarters and the sections over which it exercised staff supervision are shown in figure 2-152. Subfindings pertinent to the brigade headquarters are at paragraph b while subfindings pertinent to the individual staff sections are in paragraphs c through f.

b. Brigade headquarters subfindings.

(1) Effect of displacement. The brigade CP did not displace.

(2) Effect of destruction. The destruction of the division main CP had no affect on the operational effectiveness of the brigade and the headquarters was fully employed after destruction of the main CP.

(3) Effect of TAC CP deployment. The brigade CP was not adversely affected by the deployment of the TAC CP and, conversely, brigade personnel indicated that the TAC CP was more responsive than either division main CP or division alternate.

(4) Effect of alternate CP. The brigade CP was not adversely affected by the alternate CP. However, the lack of responsiveness attributed to the division main CP was also attributed to the division alternate CP.

(5) Effect of shifting control. The brigade CP did not experience any difficulty when control of the division was shifted from one location to another except as noted in (3) and (4) above.

(6) Adequacy of intelligence support.

(a) Data pertinent to the adequacy of intelligence support provided to the brigade is contained in part III.

(b) The brigade BICC augmentation authorized by the 2d Refinement consistently provided intelligence support which was rated, by both unit and evaluator personnel, as better than normally provided by the traditional S2/G2 configuration. The only observed weakness was a frequent lack of coordination between BICC and S2 personnel as evidenced by a duplication of effort in many areas and the lack of responsiveness toward subordinate units. This situation was attributed to the innovative BICC/S2 organization, the nonexistant guides on working relationships, the minimal time available for training, and the inexperienced personnel assigned to the brigade S2 section. Conversely, the intelligence support provided by the division intelligence organization to brigade was generally rated as adequate but no better or worse than the support normally provided due to shortcomings such as unresponsiveness and inaccuracies noted in requests for unattended ground sensors (UGS's) weather information, reconnaissance data and other forms of information and intelligence.

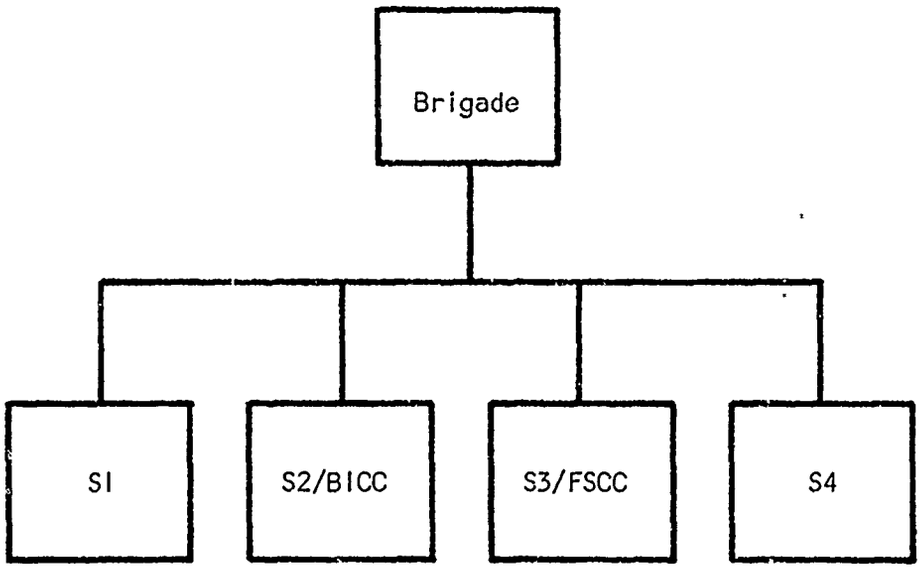


Figure 2-152. Brigade organization.

(7) Adequacy of personnel and equipment. The personnel and equipment were generally adequate. Special problems and recommendations are detailed in the section subfindings.

(a) The elimination of the brigade RATT net was generally felt to be a serious loss to both the brigade and battalion. Although only the control battalions (not the evaluated battalion) were in the net, a *responsive* and *reliable* net which transmits lengthy reports/messages and provides a record copy was considered to be beneficial to the commander and staff.

(b) The reorganization of the S3 section to include a plans element was generally considered by the commander and executive officer to have improved the capability of the S3 section. The element was effectively utilized and provided a formalized organization which could specialize in this critical staff function. When not engaged in operational planning, the element contributed to the overall operations effort as designated by the commander/S3.

(c) The addition of the liaison specialist to the FSCC was reported to have been highly beneficial and required to provide a 24-hour capability.

(8) The matrix at figure 2-153 depicts the relationship between the brigade command group and the division command group, division staff sections, other members within the brigade staff, and personnel at other levels of command.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S1, Bde	30	17.24	Bde Comd Gp	18	50.00	Bde Comd Gp	24	21.05	Comd Gp	30	23.81
S2, Bde	30	17.24	Comd Gp	15	41.67	Comd Gp	18	15.79	S3, Bde	18	14.29
S3, Bde	30	17.24	G3	03	8.33	S1, Bde	12	10.53	S1, Bde	15	11.90
S4, Bde	30	17.24				S2, Bde	12	10.53	S2, Bde	15	11.90
Bde Comd Gp	18	10.34				S3, Bde	12	10.53	S4, Bde	15	11.90
Bn Comd Gp	18	10.34				S4, Bde	12	10.53	Bde Comd Gp	12	9.52
S3, Bn	12	6.90				Bn Comd Gp	12	10.53	G3	09	7.14
G3	06	3.45				G3	09	7.89	Bn Comd Gp	09	7.14
						DISCOM Comd Gp	03	2.63	DISCOM Comd Gp	03	2.38

Figure 2-153. Brigade command group element functional relationships.

c. SI section.

(1) Personnel authorized and fielded are shown in figure 2-154.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Pers Off	04	IN	02110	1[a]	1	1
AC Counselor Supv	E8	NC	00E50	1	0	0
Pers Staff NCO	E7	NC	71H40	1	1	1
Clerk-typist	E4		71B30	1	1	1
Pers carr dvr	E3		11B10	1	1	0
Lt veh dvr	E3		11B10	1	1	1
TOTAL (Off/EM)				1/4	1/4	1/3

[a]Optional for test.

Figure 2-154. SI section personnel.

(2) Equipment authorized and fielded is shown in figure 2-155.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Truck, utility, 1/4-ton	1	1	1
Trailer, cargo, 1/4-ton	1	1	1
Radio set, AN/VRC-46, mtd in 1/4-ton	1	0	0
Radio set, cont gp, GRA-39	1	1	0
Speech scty equip, TSEC/KY8	0	1	1
Carrier, CP	0	1	1
Radio set, AN/VRC-47, mtd in carrier CP	0	0	1
Radio set, AN/VRC-46, mtd in carrier CP	0	1	0

Figure 2-155. SI section equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 135 productive hours available during the test, 116 hours (86 percent) were expended performing listed and unlisted functions.

(b) Procedures F02P01 (Supervise management matters), F02P05 (Prisoner of war management), F02P06 (Recover US prisoners of war), F03P01A (Postal services), F03P01E (Exchange services), and function F04 (Health services) were not required to be performed by the scenario.

(c) Procedure F02P02 (Assigns personnel) is accomplished by the division adjutant general company based on morning reports from all units and required no action at brigade.

(d) The organization and functional manual (OFM) was used by personnel of the element.

(e) The OFM adequately described the functions and procedures required to be performed by the section.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 116 productive hours expended by the section, 56 hours (48 percent) were expended in using the files and 8 hours (7 percent) were expended in maintaining the files. (Includes visual displays.)

(b) Files B103 (Suspense) and B104 (Policy) were not required to be used by the scenario.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 116 productive hours expended by the section, 24 hours (20 percent) were expended in report preparation.

(b) Report B106 (Discipline, Law and Order) was not required to be prepared by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-152 depicts the organizational relationship of the S1 section within the brigade. Sketches depicting the physical relationship of the section within the brigade CP and the interior layout of the track housing the section are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the section to the brigade TOC and to other sections comprising the brigade CP was satisfactory.

(c) The section operated from the SI/4 track and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section are contained in part III.

(a) Of the 281 calls made, 68 percent were placed by FM and 32 percent by telephone.

(b) Of the 206 calls received, 70 percent were received by FM and 30 percent by telephone.

(c) The section prepared 47 messages for transmission and received 44 messages that had been transmitted by common-user teletype/RATT.

(d) Seventy-three percent of the section responses indicated that the section had enough communications.

(e) Section and evaluator personnel classified the means of communication available to the section as adequate.

(f) Section and evaluator personnel were of the opinion that an FM radio net or sole user telephone between the division GI/AG and the brigade SI sections would be beneficial. Also, the AN/VRC-46 radio authorized in the 2d Ref is not adequate for the SI carrier. An AN/VRC-47 radio is required to permit continuous monitoring of the brigade command and administration/logistics nets by SI/S4 personnel.

(8) Effect of displacement. The SI section did not displace.

(9) Effect of destruction. Section and evaluator personnel reported that destruction of the main CP had no effect on the operational effectiveness of the section and that the section had slack time available after destruction of the main CP.

(10) Effect of TAC CP deployment. The SI section was not affected by deployment of the division TAC CP.

(11) Effect of the alternate CP. The SI section was not affected by the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the section is contained in part III.

(a) The section did not experience any difficulties when control of the division was shifted from one location to another.

(b) Personnel of the section normally learned from communications personnel that the point of control within the division had changed.

(c) The procedure followed by the section to establish communications with the newly designated point of control within the division was to wait for the establishment of RATT and telephone communications by signal personnel.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that would affect the test data were imposed on the section by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned except for the PSNCO. This individual was an aviation electronics repairman with no administrative experience or training. However, overall performance of the section was not affected by this MOS discrepancy.

(c) No requirement for additional training of personnel, other than noted in (b) above, was identified.

(14) Information flow. Data pertaining to the exchange of information between the SI section and other sections of the brigade is contained in part III. The matrix at figure 2-156 depicts the relationship between the section and the brigade command group, other members within the brigade staff, and personnel at other levels of command.

(a) The adequacy, relevancy, and accuracy of the information provided to the section was generally rated as good. Timeliness was generally rated as fair because of communication outages which caused a delay in the submission of reports.

(b) Section and evaluator personnel reported that in a few instances the section experienced difficulty in obtaining information from division GI.

(c) Generally, the section provided and received orders and guidance in sufficient time to meet operational requirements.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S1, Bn	03	100.00	Bde Comd Gp	15	22.73	Bde Comd Gp	24	20.00	S1, Bde	12	13.79
			S4, Bde	06	9.09	G1	12	10.00	S4, Bde	09	10.34
			S3, Bn	06	9.09	AG	12	10.00	S1, Bn	09	10.34
			S4, Bn	06	9.09	S1, Bde	12	10.00	G1	06	6.90
			S&T Bn Cdr	06	9.09	S4, Bde	12	10.00	Bn Comd Gp	06	6.90
			S&S Co Cdr	06	9.09	S1, Bn	12	10.00	S3, Bn	06	6.90
			Med Bn Cdr	06	9.09	S3, Bde	06	5.00	S4, Bn	06	6.90
			Med Co Cdr	06	9.09	S3, Bn	06	5.00	S&T Bn Cdr	06	6.90
			G1	03	4.55	S4, Bn	06	5.00	S&S Co Cdr	06	6.90
			S1, Bde	03	4.55	S&T Bn Cdr	06	5.00	Fwd Spt Co Cdr	06	6.90
			S1, Bn	03	4.55	Maint Bn Cdr	06	5.00	Med Co Cdr	06	6.90
						Med Bn Cdr	06	5.00	Bde Comd Gp	03	3.45
									S2, Bde	03	3.45
									S3, Bde	03	3.45

Figure 2-156. Brigade S1 section functional relationships.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by the SI section is contained in part III.

(a) An undercapacity workload condition was experienced 46 percent of the time. This can be attributed to an operational oriented scenario and the difficulty in exercising an administrative element in a CPX environment.

(b) The mean productive time expended per day was 13 hours for officers and 9 hours for NCO's.

(c) The mean idle time expended per day was 1 hour for officers and 3 hours for NCO's.

(d) The mean absent time per day was 7 hours for officers and 3 hours for NCO's. Absent time included sleep for the officers.

(e) Although not supported by problem play or scenario events, players and evaluators indicated the addition of a legal officer and clerk would be beneficial to the unit.

(d) S2/BICC section.

(1) Personnel authorized and fielded are shown in figures 2-157 and 2-158.

(a) S2 element.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Intel Ofi	04	IN	09301	1	1	1
Asst Intel Off	03	IN	09301	1	1	1
Intel Sgt	E8	NC	11F50	1	1	1
Asst Intel Sgt	E7	NC	11F40	1	1	1
Pers Carr Dvr	E4		71B20	1	1	1
Lt Veh Dvr	E3		11B40	0	1	1
TOTAL (Off/EM)				2/3	2/4	2/4

Figure 2-157. S2 element personnel.

(b) BICC element.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
BICC OIC	03	MI	09301	0	1	1
Plt Sgt	E7	NC	96B40	0	1	1
Intel Sgt	E6	NC	96B40	0	2	2
Intel Analyst	E5	NC	96B40	0	2	2
Intel Analyst	E4		96B20	0	2	2
Pers Carr Dvr	E4		11E20	0	1	0
TOTAL (Off/EM)				0/0	1/8	1/7

Figure 2-158. BICC element personnel.

(2) Equipment authorized and fielded is shown in figures 2-159 and 2-160.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	1	1
Truck, utility, 1/4-ton	0	1	1
Radio set, AN/VRC-46, mtd in trk, 1/4-ton	0	1	0[a]
Radio set, AN/VRC-47, mtd in carr, CP	1	0	1
Radio set Control Gp, AN/GRA-39	1	1	0
Speech scty equip, TSEC/KY8	0	2	2

[a]The BICC AN/VRC-46 was removed from the 1/4-ton and mounted in the second carrier for a displacement capability.

Figure 2-159. S2 element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is listed in part III. Functions and procedures for the S2 and BICC were identical.

(a) Of the 179 productive hours available to S2 personnel during the test, 175 hours (98 percent) were expended performing listed and unlisted functions.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	0	1	2
Truck, utility, 1/4-ton	0	1	1
Trailer, cargo, 1/4-ton	0	1	1
Radio set, AN/VRC-46, mtd in trk, 1/4-ton	0	1	0[a]
Radio set, AN/VRC-46, mtd in carr, CP	0	0	1
Radio set, AN/VRC-47, mtd in carr, CP	0	1	0
Radio set Control Gp, AN/GRA-39	0	1	0
Speech scty equip, TSEC/KY8	0	3	3
Tent, Gp, Sm	0	1	1

[a]The S2 AN/VRC-46 was removed from the 1/4-ton and mounted in the S2 carrier to provide increased communication capability.

Figure 2-160. BICC element equipment.

(b) Of the 326 productive hours available to BICC personnel during the test, 307 hours (94 percent) were expended performing listed and unlisted functions.

(c) Procedures F04P06 (Counterintelligence liaison), F04P07 (Abandoned CP check), and Function F05 (HUMINT) were not required to be performed by the scenario. All other functions and procedures were performed by the scenario. All other functions and procedures were performed by either BICC or S2 personnel.

(d) The organization and functional manual (OFM) was used by personnel of the section. Section personnel comments indicated there should be a general delineation of the S2 and BICC functions.

(e) The responses of section personnel and evaluators were evenly divided on the question of OFM adequacy. Those personnel with negative responses indicated more C3 related functions and more detailed procedures were required.

(4) Files. A complete listing of files and resultant usage data is contained in part III. Files for the S2 and BICC elements were identical.

(a) Of the 175 productive hours expended by the S2 section, 40 hours (23 percent) were expended in using the files and 39 hours (22 percent) were expended in maintaining the files (includes visual displays).

(b) Of the 307 productive hours expended by the BICC, 127 hours (42 percent) were expended in using the files and 15 hours (6 percent) in maintaining the files (includes visual displays).

(c) Files B205 (Topical), B208 (CI and Security), B209 (Access), and B210 (Classified Document Log) were not required to be used by the scenario.

(d) File B215 (Collection Worksheet Chart), a collection planning tool, is not normally formalized at brigade and was not used by section personnel. All other listed files, except as noted in (c) above, were used by either the S2 section or BICC.

(e) The information required on the visual displays was adequate.

(f) The OFM adequately described the file structure of the element; however, the section personnel indicated that the OFM should delineate between S2 and BICC files.

(5) Reports. A complete listing of reports and resultant usage data are contained in part III. Reports for the S2 and BICC were identical.

(a) Of the 175 productive hours expended by the S2 section, 9 hours (5 percent) were expended in report preparation.

(b) Of the 307 productive hours expended by the BICC, 9 hours (3 percent) were expended in report preparation.

(c) Reports B207 (Bridge recon), B208 (Airsite recon), B209 (NBC-1), B210 (NBC-2), B211 (NBC-3), B214 (Weather advisory), and B217 [JTAC Air R&S (immediate)] were not required to be prepared by the scenario. All other reports were prepared by either S2 or BICC personnel with some duplication.

(d) The OFM adequately defined the section responsibility for preparation of reports; however, the OFM should provide general delineation between BICC and S2 report preparation.

(6) Organizational structure, physical relationships, and facilities. Figure 2-152 depicts the organizational relationship of the S2/BICC section within the brigade. Sketches depicting the physical relationship of the S2/BICC section with the brigade CP and the interior layout of the tracks housing the section are shown in part III.

(a) The S2/BICC experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test. S2 personnel and evaluators responded in the end-of-test report

that the intelligence support from the BICC was better than normally experienced in a traditional S2 configuration with no augmentation.

(b) The physical relationship of this section to the brigade TOC and other sections comprising the brigade CP was satisfactory.

(c) The S2/BICC section operated from three tracks; two tracks constituted a portion of the brigade TOC while one track provided a displacement capability for the section and was used as an analysis facility during the test. The three tracks were adequate for the number of personnel assigned.

(7) Communications. Data concerning communications by means, usage, and adequacy as experienced by the S2/BICC section is contained in part III.

(a) Of the 236 calls made by the S2 element, 76 percent were placed by FM, 18 percent by AM, and 6 percent by telephone communications means.

(b) Of the 223 calls made by the BICC, 87 percent were placed by FM, 15 percent by AM, and 6 percent by telephone communications means.

(c) Of the 418 calls received by the S2 element, 85 percent were received by FM, 11 percent by AM, and 4 percent by telephone communications means.

(d) Of the 179 calls received by the BICC, 91 percent were received by FM and 9 percent by telephone communications means.

(e) The S2/BICC section prepared no messages.

(f) The S2 element received 13 messages and the BICC 48 messages which were transmitted by common-user teletype/RATT.

(g) All of the S2 responses and 73 percent of the BICC responses indicated that there were sufficient communications available.

(h) Fifty-eight percent of the BICC responses indicated problems were experienced with FM communications. However, this situation was caused by a faulty power source which was not discovered for a period of two days.

(i) S2/BICC and evaluator personnel classified the means of communication available as adequate to accomplish the assigned mission.

(j) The S2/BICC section was able to function effectively during periods of jamming.

(k) The section did not experience difficulty in receiving/disseminating early warning messages using the division and brigade intelligence net.

(l) Section personnel and evaluators indicated that the parking of the BICC dedicated RATT adjacent to the BICC would be beneficial.

(8) Effect of displacement. The S2/BICC section did not displace.

(9) Effect of destruction. S2/BICC and evaluator personnel reported that destruction of the division main CP had no effect on the operational effectiveness of the section and that the section was generally fully employed after destruction of the division main CP.

(10) Effect of TAC CP deployment. The S2/BICC section was not affected by deployment of the division TAC CP.

(11) Effect of the alternate CP. The S2/BICC section was not affected by the alternate CP.

(12) Effect of shifting control. Data pertinent to the effects of shifting control of the division on the section is contained in part III.

(a) The S2/BICC section did not experience any difficulties when control of the division was shifted from one location to another.

(b) Personnel of the section normally learned on the division intelligence net that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic contraints that could affect the test data were imposed on the element by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) Additional training in RATELO procedures and practical field exercise for all personnel, especially the S2, was deemed necessary by a majority of section responses.

(14) Information flow. Data pertaining to the exchange of information between the S2/BICC and other division staff sections or elements is contained in part III. The matrix at figure 2-161 depicts the relationship between the section and the brigade command group, other members within the brigade staff, and personnel at other levels of command.

(a) The adequacy, relevancy, and accuracy of the information provided to the section were gene ally rated as good. Timeliness was generally rated as fair due to the late arrival of information by RATT.

(b) Subsequent discussion with battalion S2/BICC personnel indicated that problems were experienced by the battalion in requesting/receiving information from the brigade S2/BICC. However, these problems were personnel and not organizationally oriented.

(c) Generally, the section gave and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) The S2 section experienced no overcapacity workload conditions and the BICC experienced an overcapacity condition 3 percent of the time.

(b) The S2 section and BICC experienced undercapacity workload conditions 37 and 21 percent of the time.

(c) The mean productive time expended per day was 15 hours for S2 officers, 17 hours for BICC officers, 10 hours for S2 NCO's, and 9 hours for BICC NCO's.

(d) The mean idle time per day was 0 and 1 hour for S2 and BICC officers, and 0 and 1 hour for NCO's.

(e) The mean absent time per day was 7 and 5 hours respectively for S2 and BICC officers (includes sleep time) and 1 hour for S2 and BICC NCO's.

(f) S2/BICC personnel reported the section was effective in performing its assigned functions.

(g) Section and evaluator personnel reported that the equipment shown in figure 2-162 should be deleted/added to satisfy normal operational mission requirements. These additions will give the S2/BICC section a displacement capability with secure communications. However, the brigade did not displace and these responses are based solely on non-test experience.

Provides orders, direction, or guidance to			Receives orders direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
Bde Comd Gp	36	32.43	Bde Comd Gp	96	61.54	Bde Comd Gp	63	36.21	BICC OIC	36	28.57
BICC OIC	24	21.62	S3, Bde	30	19.23	BICC OIC	36	20.69	Bde Comd Gp	36	28.57
S3, Bde	18	16.22	BICC OIC	12	7.69	S3, Bde	24	13.79	S3, Bde	18	14.29
S2, Bn	18	16.22	S2, Bde	12	7.69	S2, Bde	15	8.62	S2, Bn	15	11.90
S2, Bde	12	10.81	S2, Bn	06	3.85	S2, Bn	15.	8.62	S2, Bde	12	9.52
Bn Comd Gp	03	2.70				ALO	12	6.90	ALO	06	4.76
						G2	06	3.45	G2	03	2.38
						FSE	03	1.72			

Figure 2-161. S2/BICC section functional relationships.

Nomenclature	Quantity Add	Delete
Carrier, CP	1	0
Radio set Control Gp, AN/GRA-39	0	2
Radio set, AN/VRC-46, mtd in carr, CP	1	0

Figure 2-162. S2/BICC section recommended equipment changes.

e. S3 section.

(1) Personnel authorized and fielded for the elements of the S3 section are shown in figures 2-163 through 2-168.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Op Off	04	IN	52162	1	1	1
Asst Op Off (Air)	03	IN	E2162	1	1	1
Liaison Off	03	In	1542	1	1	1
C Op Sgt	E9	NC	11F50	1	1	1
Op Asst	E4		11F20	1	1	1
Sr RATELO	E4		05E20	1	1	1
Pers Carr Dvr/RATELO	E4		11B10	1	2	2
RATELO	E3		05E20	2	2	2
Lt Veh Dvr (LNO)	E3		11B10	1	1	1
TOTAL (Off/EM)				3/7	3/8	3/8

Figure 2-163. S3 operations element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Asst Op Off (Plans)	03	IN	E2162	1	1	1
Asst Op Sgt (Plans)	E8	NC	11F50	1	1	1
Clerk-typist	E4		71B20	1	1	1
TOTAL (Off/EM)				1/2	1/2	1/2

Figure 2-164. S3 plans element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Fld 119
Fire Spt Coord	05	FA	5I193	I	I[a]	0
Asst FSC/LNO	03	FA	5I193	I	I	I
LN Sgt	E6	NC	I3E40	I	I	I
LN Specialist	E4		I3E20	0	I	0
Pers Carr Dvr	E4		I3A20	I	I	I
TOTAL (Off/EM)				2/2	2/3	I/2

[a]Optional for test.

Figure 2-165. S3 FSCC element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Fld 119
C-E Off	04	SC	E2050	I	I	I
Lt Veh Dvr	E3		IIBI0	0	I	I
TOTAL (Off/EM)				I/0	I/I	I/I

Figure 2-166. S3 C-E element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Fld 119
Avn Off	03	IN	0I98I	I	I	0
Avn Off	WO		I00B0	0	0[a]	I
Rotary Wing Pilot	WO		I00B0	3	3[a]	0
OH6 Crew Chief	E5		67V20	4	4[a]	0
Avn Fuel Hndlg Specialist/Dvr	E4		76W20	I	I	I
TOTAL (Off/EM)				4/5	4/5	I/I

[a]Optional for test.

Figure 2-167. S3 aviation element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Strength Fld 119
Cml Off	03	CM	57314	1	1	1
Cml Stf NCO	E6	NC	54E40	1	1	1
TOTAL (Off/EM				1/1	1/1	1/1

Figure 2-168. S3 chemical element personnel.

(2) Equipment authorized and fielded for the elements of the S3 section are shown in figures 2-169 through 2-173.

Nomenclature	Quantity Authorized H-Ser	Quantity Authorized 2d Ref	Fld 119
Carrier, CP	2	2	2
Radio set, AN/GRC-106, mtd in carr, CP	1	1	1
Radio set, AN/VRC-46, mtd in carr, CP	2	1	1
Radio set, AN/VRC-47, mtd in carr, CP	0	1	1
Radio set, AN/VRC-47, mtd in trk, 1/4-ton	1	1	1
Radio set, Control Gp, AN/GRA-39	1	0	3
Speech scty equip, TSEC/KY-8	2	1	2
Truck, utility, 1/4-ton (incl LNO veh)	1	2	2
Truck, cargo, 1 1/4-ton (Gamma Goat)	1	0	1
Trailer, cargo, 1 1/2-ton	1	0	0

Figure 2-169. S3 operations element equipment.

Nomenclature	Quantity Authorized H-Ser	Quantity Authorized 2d Ref	Fld 119
Truck, utility, 1/4-ton	0	1	0
Trailer, cargo, 1/4-ton	0	1	0

Figure 2-170. S3 plans element equipment.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	1	1
Radio Set, AN/VRC-49, mtd in carr, CP	1	1	1

Figure 2-171. S3 FSCC element equipment.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Truck, utility, 1/4-ton	0	1	1
Trailer, cargo, 1/4-ton	0	1	1
Radio set, AN/VRC-46, mtd in trk, 1/4-ton	0	1	1

Figure 2-172. S3 C-E element equipment.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Truck, cargo, 1 1/4-ton	1	0	0
Trailer, cargo, 3/4-ton	1	0	0
Radio set, AN/VRC-47, mtd in trk, 1 1/4-ton	1	0	0
Truck, utility, 1/4-ton	0	1	1
Trailer, cargo, 1/4-ton	0	1	1
Radio set, AN/VRC-46, mtd in trk, 1/4-ton	0	1	1

Note: The chemical element has no equipment authorized by the H-series TOE or by the 2d Refinement organization.

Figure 2-173. S3 aviation element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Productive hours available (PHA), productive hours expended (PHE), and percentage of productive hours available (Pct PHA) by element personnel are shown in figure 2-174.

Element	PHA	PHE	Pct PHA
Operations	369	337	91
Plans	120	111	93
FSCC	100	94	94
C-E	69	63	91
Avaiation	49	19	38
Chemical	70	70	100

Figure 2-174. S3 section productive hours.

(b) The plans element performed all its listed functions and procedures.

(c) The following functions and procedures were not required by the scenario.

1 Operations: Procedures F03P02 (Supervise ADA, C-E, FSCC), F05P01B2 (Preplanned Army avn spt), F05P02B3 (Immediate Army avn spt), F05P02C [Approve air spt (immed)], F05P02D [Fwd to G3 (immed)], F06P01 (Combat deficiencies), F06P03 (Remedial training), and F06P04 (Direct remedial training).

2 FSCC: Procedures F01P02B (target-acq), F01P02C (Advise on tgt acq), and F04P01 (Guidance).

3 C-E: Procedures F01P03 (Para 5, OPORD), F02P02 (OP's, C-E security), F02P03 (C-E rqr), F02P04 (Signal equip), F03P01C (CEOI/CESI), F03P01D (Radio stations), F03P01E (Crypto custodian), F03P04 (Radio restrictions), and F03P06 (Relay).

4 Aviation: Procedures F02P01A and F02P01D (Plans and Orders) and function F03 (Airmobile operations).

5 Chemical: Procedures F02P05 (CBR) and F02P06 (Barriers).

(d) Procedures F02P01 (CP interior), F03P01A (Switchboard and LL), F03P02 (Msg Cen), and F03P03 (Monitor nets) which were defined for the C-E element were performed by the communications platoon.

(e) The OFM was used by personnel of the section.

(f) The OFM adequately described the functions and procedures for the operations, plans, and FSCC elements, but not for the aviation, C-E, and chemical elements.

(g) Since the aviation element was not fielded, the aviation officer, whose primary duty is supervision of the element, expended little productive time.

(4) Files. A complete listing of files and their resultant usage data is contained in part III.

(a) The hours expended by each element in using and maintaining files (including visual displays) and the percentage of total productive hours expended (PHE) in this function are shown in figure 2-175.

Element	PHE	USE	Pct	Maint	Pct
Operations	337	37	8	8	2
Plans	111	69	62	24	22
FSCC	94	40	43	0	0
C-E	63	0	0	0	0
Aviation	49	2	4	0	0
Chemical	70	1	1	0	0

Figure 2-175. S3 section files.

(b) The following files were not required by the scenario.

1 Operations: Files B301 (Staff Section Workbook), B308 (Mission Record), and B309 (Barrier Overlay).

2 Plans: Files BC09 (Policy), BC10 (Division SOP), BC11 (Brigade SOP), BC14 (Unit Readiness), BC15 (Radiation Exposure), BC16, BC17 and BC18 (Pertaining to minefields), BC21 (Transportation Request), BC22 (Reply to BC21), BC23 (Convoy), BC26 (Army Aviation), BC27 (Nuclear Accident), and BC28 (Nuclear Strike Warning).

3 FSCC: Files B802 (Staff Section Workbook) and B804 (Nuclear Target Analysis Worksheet).

4 C-E: Files B502 (CEOI), B503 (CESI), B504 (Brigade SOP), B505 and B506 (C-E Equipment Status Report and Chart), B510 (Messenger Schedule), B511 (Radio Net Schedule), B512 (SITMAP), B513 (Staff Section Workbook), and B514 (Division SOP).

5 Aviation: Files B701 (Staff Journal), B702 (Staff Section Workbook), B705 (Aircraft Available), B706 (Suspense), B707 (Policy), B708 (Brigade SOP), B709 (Airfield/Helipad), B710 (Accident Report), and B711 (Aircraft Avail Rpt).

6 Chemical: Files B601 (Staff Journal), B602 (Staff Section Workbook), B605 through B609 (NBC-1 through NBC-5), B610 (Brigade SOP), B611 (Division SOP), B612 (SITMAP), and B613 (Cml Tgt Analysis).

(c) The following files were not maintained in a separate or formal manner.

1 Operations: B304 (Significant Events) and B307 (Allocation of Close Air Support).

2 Plans: BC24 (JTAC Airlift Request) and BC25 (JTAC Air Strike Request, Preplanned).

3 C-E: B507 (C-E Estimates).

(d) The operations element's file B306 (TACLOG Rept) was maintained in the plans element while C-E element files B501 (Message Cen Journal) and B510 (Messenger Schedule) were maintained by the communications platoon.

(e) The information required on the visual displays was adequate.

(f) The OFM adequately described the file structure of the operations, chemical and FSCC elements. Element personnel indicated, however, that the files were excessive in the aviation, C-E, and plans elements and the following files should be deleted:

1 Aviation: B701 (Staff Journal), B702 (Staff Section Workbook), and B707 (Policy).

2 Plans: BC13 (Tactical Logistics Report).

3 Operations: B305 (CP Location).

4 C-E: B512 (SITMAP) and B513 (Staff Section Workbook).

(5) Reports. A complete listing of reports and resultant usage data is contained in part III

(6) Organizational structure, physical relationship, and facilities. Figure 2-152 depicts the organizational relationship of the S3 section within the brigade. Sketches depicting the physical relationship of the section within the brigade CP and the interior layout of the tracks housing the section are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this section to the brigade TOC and other sections comprising the brigade CP was satisfactory.

(c) Since the aviation element was not fielded and the aviation officer's primary duties concern the supervision of this element in the brigade trains area, the aviation officer indicated his position should neither be fielded in a CPX environment nor be located at the brigade TOC.

(d) The S3 section operated from two S3 tracks and one FSCC track as part of the tracks comprising the brigade TOC and this facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section are contained in part III.

(a) The number of calls made and received, the type of means used, and the number of messages prepared and received by each element are shown in figure 2-176.

Element	Total calls FM and Tel		FM		Tel		Messages	
	Made	Rec	Made	Rec	Made	Rec	Made	Rec
Operations	1,048	922	952	850	96	72	26	35
Plans	344	292	296	253	48	39	15	31
FSCC	115	119	103	107	12	12	0	0
C-E	65	10	15	2	50	8	0	1
Aviation	5	0	1	0	4	0	0	0
Chemical	785	703	740	658	45	45	31	20

Figure 2-176. S3 section communications.

(b) Fifty-seven percent of the section responses indicated the section did not have enough communications.

(c) The AN/GRC-106 was inoperative during the test and remained a continuous problem.

(d) The LNO jeep requires an AN/VRC-46 radio for normal operations and the second S3 track requires an AN/VRC-46 radio and secure equipment for adequate communications during displacement operations. However, the responses indicating the track radio requirement are based on non-test experience since the brigade did not displace.

(e) Section and evaluator personnel indicated that the brigade RATT net increased the capability of the brigade to accomplish its mission by providing a backup means of communication, a means for transmitting lengthy messages and reports, and a record copy.

(f) Based on paragraphs (c) and (d), above, section and evaluator personnel classified the means of communication available as inadequate to accomplish the assigned mission.

(g) Seventy-one percent of the section responses and the evaluator end-of-test report indicated the section was able to function effectively during periods of jamming.

(h) Seventy-four percent of the section responses indicated that the section experienced no difficulty in disseminating early warning messages using the brigade command net.

(8) Effect of displacement. The S3 section did not displace.

(9) Effect of destruction. Section and evaluator personnel reported that destruction of the division main CP had no effect on the operational effectiveness of the section and that the section was fully employed after destruction of the main CP.

(10) Effect of TAC CP deployment. The S3 section was not affected by the deployment of the TAC CP.

(11) Effect of the alternate CP. The S3 section was not affected by the establishment of the alternate CP.

(12) Effect of shifting control. Data pertinent to the effect of shifting control of the division on the section is contained in part III.

(a) The section did not experience any difficulties when control of the division was shifted from one location to another.

(b) Personnel of the section normally learned from the division command net that the point of control within the division had changed.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) Few unrealistic constraints that would affect the test data were imposed on the section by the scenario or the control organization when executing the scenario. However, scenario events related to the aviation and chemical elements were limited and element personnel indicated they had not been adequately tasked.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) No significant requirements for additional training were identified for section personnel.

(14) Information flow. Data pertaining to the exchange of information between the S3 section and other division/brigade staff sections or elements is contained in part III. The matrix at figure 2-177 depicts the relationship between the S3 section and the brigade command group, other members within the brigade staff, and personnel at other levels of command.

(a) The adequacy, relevancy, timeliness, and accuracy of the information provided to the section was generally rated as good. However, the adequacy and timeliness of CBR information provided to the chemical element was rated as poor.

(b) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) Overcapacity (over) and undercapacity (under) workload conditions for each element, expressed as a percentage of total time during the test, are shown in figure 2-178.

(b) The undercapacity workload condition experienced in the FSCC is attributed to the liaison sergeant who was continuously employed on the night shift. During periods of high or normal activity, the liaison officer performed all duties.

(c) The continuous overcapacity workload condition in the C-E element is attributed to numerous communication problems and outages experienced by the fielded brigade and battalion. The brigade C-E officer was constantly required to actively rectify these problems.

(d) The aviation element undercapacity workload condition is attributed to the lack of aviation scenario events and lack of a fielded aviation element.

(e) Although CBR activity was minimal, the full capacity employment of the chemical officer and NCO is attributed to their employment as duty personnel in the brigade TOC.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S2, Bde	18	60.00	Bde Comd Gp	42	63.64	Bde Comd Gp	24	30.77	G3	12	20.00
S3, Bn	12	40.00	G3	15	22.73	S2, Bde	12	15.38	Bde Comd Gp	12	20.00
			S3, Bde	06	9.09	S4, Bde	12	15.38	S2, Bde	12	20.00
			Comd Gp	03	4.55	Med Bn Cdr	12	15.38	S4, Bde	12	20.00
						S3, Bde	06	7.69	Comd Gp	06	10.00
						S3, Bn	06	7.69	EWCO	06	10.00
						S&T Bn Cdr	06	7.69			

Figure 2-177. S3 section functional relationship.

Element	Over	Under
Operations	0	23
Plans	18	27
FSCC	0	50
C-E	100	0
Aviation	0	100
Chemical	0	0

Figure 2-178. S3 section workload capacity.

(f) The mean productive, idle, and absent time per day for the officers and NCO's of each element are shown in figures 2-179 through 2-181.

	Mean productive time (in hours)					
	Op	Plans	FSCC	C-E	Avn	Cml
Officer	15	10	18	16	5	12
NCO	11	10	6	NA	2	11

Figure 2-179. S3 section mean productive time.

	Mean idle time (in hours)					
	Op	Plans	FSCC	C-E	Avn	Cmi
Officer	0	0	0	2	6	0
NCO	0	2	2	NA	5	0

Figure 2-180. S3 section mean idle time.

	Mean absent time (in hours)					
	Op	Plans	FSCC	C-E	Avn	Cml
Officer	4	1	4	5	2	0
NCO	2	1	1	NA	2	1

Figure 2-181. S3 section mean absent time.

(g) Section and evaluator personnel reported than an additional clerk-typist, MOS 71B20, grade E4, should be added to the S3 plans element to provide a capability for 24-hour operations.

(h) Subsequent discussion with the asst FSC/LNO indicated the addition of the liaison specialist to the FSCC was highly beneficial and required to provide the element a 24-hour capability.

f. S4 section.

(1) Personnel authorized and fielded are shown in figure 2-182.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Log Off	04	NO	04010	1	1	1
Asst Log Off	03	NO	04010	1	1[a]	1
Food Svc Tech	WO		941A0	1	1	0
Chief Sup Sgt	E8	NC	76Z5K	1	1	1
Food Svc Supv	E7	NC	94Z50	1	0	0
Sup Sp/Lt Veh Dvr	E4		76Y20	1	1	0
Pers Carr Dvr	E4		11B20	1	0	0
Sup Clerk/Lt Veh Dvr	E3		76A10	1	1	1
TOTAL (Off/EM)				3/5	3/3	2/2

[a]Optional for test.

Figure 2-182. S4 section personnel.

(2) Equipment authorized and fielded is shown in figure 2-183.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 236 productive hours available during the test, 193 hours (81 percent) were expended performing listed and unlisted functions.

(b) All listed functions and procedures were performed.

(c) The OFM was used by section personnel.

(d) The OFM adequately described the functions and procedures required to be performed by the section.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	0	0
Truck, utility, 1/4-ton	1	2	1
Truck, cargo, 1 1/4-ton	1	0	1
Trailer, cargo, 1/4-ton	1	1	1
Tent, GP, sm	1	1	1
Radio set, AN/VRC-47, mtd in carrier, CP	1	0	0
Radio set, AN/VRC-47, mtd in truck, 1/4-ton	1	1	1
Radio set, AN/VRC-46, mtd in truck, 1/4-ton	0	1	0
Radio set contr gp, GRA-39	1	1	1

Figure 2-183. S4 section equipment.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 193 productive hours expended by the section, 75 hours (38 percent) were expended in using the files and 37 hours (19 percent) were expended in maintaining the files (includes visual displays).

(b) Files B406 (Policy), B409 (Class IV Status Report), B410 (Class IV Status Chart), B415 (Numerical Index-Ammo), B416 (Numerical Index-Equip), and B422 (Convoy Clearance) were not required to be used by the scenario.

(c) Section and evaluator personnel stated that file B410 (Class V Status Chart) should be deleted.

(d) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 193 productive hours expended by the section, 8 hours (3 percent) were expended in report preparation.

(b) Reports B402 (Class IV), B404 (Materiel Readiness), and B406 (Request Convoy Clearance) were not required by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-152 depicts the organizational relationship of the

section within the brigade. Sketches depicting the physical relationship of the section with the brigade CP and the interior layout of the track housing the section are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this section to the brigade TOC and other sections comprising the brigade CP was satisfactory. The S4 indicated he would probably spend a majority of his time in the brigade trains area.

(c) The element operated from the S1/S4 track at the brigade CP and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section are contained in part III.

(a) Of the 517 calls made, 75 percent were placed by FM and 25 percent by telephone.

(b) Of the 458 calls received, 69 percent were received by FM and 31 percent by telephone.

(c) The section prepared 196 messages for transmission and received 270 messages that had been transmitted by common-user teletype/RATT.

(d) Sixty-seven percent of the section responses indicated that the section had adequate means of communication.

(e) Section and evaluator personnel classified the means of communication available to the section as adequate to accomplish the assigned mission; however, they also indicated a requirement to communicate on FM with the division G4 section.

(8) Effect of displacement. The S4 section did not displace.

(9) Effect of destruction. Section and evaluator personnel reported that destruction of the main CP had no effect on the operational effectiveness of the section and that the section had slack time available after destruction of the main CP.

(10) Effect of TAC CP deployment. The S4 section was not affected by deployment of the TAC CP.

(11) Effect of the alternate CP. The S4 section was not affected by the alternate CP.

(12) Effect of shifting control. The section was not affected when control of the division was shifted from one location to another.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section are contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the section by the scenario or the control organization when executing the scenario. However, section personnel indicated that logistics scenario events were unrealistic.

(b) Qualifications of the personnel assigned to the element with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) No significant additional training requirements were identified for section personnel.

(14) Information flow. Data pertaining to the exchange of information between the S4 section and other elements of the division is contained in part III. The matrix at figure 2-184 depicts the relationship between the section and the brigade command group, other members within the brigade staff, and personnel at other levels of command.

(a) The adequacy and accuracy of the information provided to the section were generally rated as good. Relevancy and timeliness were generally rated as fair due to communications outages and some unrealistic scenario events.

(b) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by element personnel is contained in part III.

(a) An undercapacity workload condition was experienced 20 percent of the time.

(b) The mean productive time expended per day was 12 hours for officers and 12 hours for NCO's

(c) The mean idle time per day for officers was 2 hours and hours for NCO's.

(d) The mean absent time per day was 3 hours for officers and 0 hours for NCO's.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
G4	06	25.00	Bde Comd Gp	48	50.00	Bde Comd Gp	48	25.00	G4	12	14.29
S3, Bde	06	25.00	S4, Bde	24	25.00	S4, Bn	24	12.50	S4, DISCOM	12	14.29
S4, Bde	06	25.00	G4	15	15.63	G4	18	9.38	S4, Bde	12	14.29
S4, Bn	06	25.00	S1, Bde	06	6.25	S4, DISCOM	18	9.38	S4, Bn	12	14.29
			S3, Bde	03	3.13	S1, Bde	18	9.38	S1, Bde	06	7.14
						S3, Bde	18	9.38	S3, Bde	06	7.14
						S4, Bde	18	9.38	S1, Bn	06	7.14
						S1, Bn	12	6.25	S&T Bn Cdr	06	7.14
						S3, DISCOM	06	3.13	Maint Bn Cdr	06	7.14
						DAO, DISCOM	06	3.13	S2, Bde	03	3.57
						MMA, DISCOM	06	3.13	Med Bn Cdr	03	3.57

Figure 2-184. S4 section functional relationships.

2-18. Battalion Headquarters.

a. General. The organization of the battalion headquarters and the sections over which it exercised staff supervision are shown in figure 2-185. Subfindings pertinent to the battalion headquarters are at paragraph b while subfindings pertinent to the individual staff sections are in paragraphs c through f.

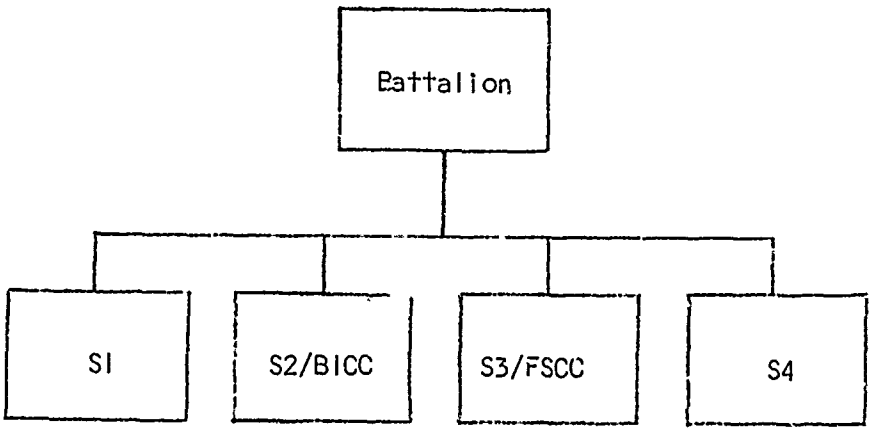


Figure 2-185. Battalion organization.

b. Battalion headquarters subfindings.

(1) Effect of displacement. The battalion headquarters did not displace.

(2) Effect of destruction. The destruction of the division main CP had no effect on the operational effectiveness of the battalion, and the headquarters was generally fully employed after destruction of the main CP.

(3) Effect of TAC CP deployment. The battalion headquarters was not affected by the deployment of the division TAC CP.

(4) Effect of alternate CP. The battalion headquarters was not affected by the alternate CP.

(5) Effect of shifting control. The battalion headquarters did not experience any difficulties when control of the division was shifted from one location to another.

(6) Adequacy of intelligence support.

(a) Data pertinent to the adequacy of intelligence support provided to the battalion is contained in part III.

(b) The battalion BICC augmentation authorized by the Second Refinement consistently provided intelligence support which was rated by both unit and evaluator personnel as better than normally provided by the traditional S2/G2 configuration. Conversely, the intelligence support provided by the brigade was consistently rated as inadequate. However, evaluators indicated the problem was personnel, not organizationally, dependent.

(7) Adequacy of personnel and equipment. Battalion evaluator and unit personnel observations indicated the personnel and equipment authorized were generally adequate.

(a) The elimination of the brigade RATT net was generally not felt to be a serious loss to battalion. These observations were based on the almost continual nonoperational status of the battalion RATT station during the test. However, a reliable RATT system was indicated to be beneficial.

(b) The addition of an assistant operations officer was considered by both unit and evaluator personnel to have been highly beneficial and required.

(c) The addition of the liaison specialist to the FSCC was reported to have been highly beneficial.

(8) The matrix at figure 2-186 depicts the relationship between the battalion command group and the brigade command group, brigade staff sections, and members within the battalion staff.

c. S1 section.

(1) Personnel authorized and fielded are shown in figure 2-187.

(2) Equipment authorized and fielded is shown in figure 2-188.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Of the 150 productive hours available during the test, 87 hours (58 percent) were expended performing listed and unlisted functions.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S1, Bn	33	17.46	Bde Comd Gp	18	37.50	Bn Comd Gp	24	14.04	S3, Bn	24	15.09
S2, Bn	33	17.46	S3, Bde	15	31.25	S1, Bn	24	14.04	S4, Bn	24	15.09
S3, Bn	33	17.46	Bn Comd Gp	15	31.25	S2, Bn	24	14.04	S1, Bn	21	13.21
S4, Bn	33	17.46				S3, Bn	24	14.04	S2, Bn	21	13.21
Bn Comd Gp	18	9.52				S4, Bn	24	14.04	Bde Comd Gp	12	7.55
HQ Comd, Bn	12	6.35				HQ Comdt, Bn	12	7.02	Bn Comd Gp	12	7.55
FSCC, Bn	09	4.76				FSCC, Bn	09	5.26	FSCC, Bn	09	5.66
BICC OIC, Bn	09	4.76				ALO, Bn	09	5.26	BICC OIC, Bn	09	5.66
ALO, Bn	09	4.76				S3, Bde	09	5.26	ALO, Bn	09	5.66
						BICC OIC, Bn	06	3.51	HQ Comd, Bn	09	5.66
						Bde Comd Gp	06	3.51	S3, Bde	09	5.66

Figure 2-186. Battalion command group functional relationships.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Pers Off	03	IN	02110	1	1	1
Pers Stf NCO	E7	NC	71H40	1	1	1
AC Counselor	E8	NC	00E50	1	1[a]	0
Legal Clerk	E6		71D20	1	1	1
Pers Carr Dvr	E4		11B20	1	1	1
Lt Veh Dvr	E3		11B10	0	1	0
TOTAL (Off/EM)				1/4	1/5	1/3

[a]Optional for test

Figure 2-187. SI section personnel.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	1	1
Truck, Cargo, 1 1/4-ton	1	1	0
Trailer, Cargo, 3/4-ton	1	1[a]	0
Radio Set, VRC-47, mtd in carr, CP	1	1	0[b]

[a]Optional for test
[b]Used VRC-46 and PRC-77

Figure 2-188. SI section equipment.

(b) Procedures F02P03 (Supervises awards, promotion, pay transfers, separation, etc.), F02P04 (Promotes welfare of command), F02P05 (Prisoner of war management), F02P06 (Recovered US PW), F02P07 (Battlefield promotions), F02P08 (Civilian personnel), F03P01A (Postal services), F03P01B (Finance services), F03P01C (Religious services), F03P01E (Exchange services), F03P01F (Welfare services), F03P01H (Rest and leave), F04P01 (Health services), F05P01 (Maintenance of discipline, law, and order), F06P01 (Headquarters management) were not required to be performed by the scenario.

(c) The organizations and functions manual (OFM) was used by personnel of the section.

(d) The OFM adequately described the functions and procedures required to be performed by the sect...

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 87 productive hours expended by the section, 8 hours (10 percent) were expended in using the files; and no time was expended in maintaining the files (includes visual displays).

(b) The only files used were P108 (Personnel Daily Strength), P109 (Unit Strength Chart), and P119 (Witness Statement). The remaining files were not required to be used by the scenario.

(c) The information required on the visual displays was adequate.

(d) Thirty-three percent of the section responses indicated that the files listing was excessive.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 87 productive hours expended by the section, 12 hours (14 percent) were expended in report preparation.

(b) Reports P102 (Spot Strength), P106 (Straggler), P107 (Internee Strength), P108 (Discipline, Law, and Order) were not required to be performed by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-185 depicts the organizational relationship of the SI section within the battalion. Sketches depicting the physical relationship of the section within the battalion CP and the interior layout of the track housing the section are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the section to the battalion TOC and other sections comprising the battalion CP was satisfactory.

(c) The element operated from the SI/S4 track and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section is contained in part III.

(a) Of the 215 calls made, 74 percent were placed by FM and 26 percent by telephone.

(b) Of the 188 calls received, 100 percent were received by telephone.

(c) Eighty percent of the section responses indicated there were problems with the telephone means of communication.

(d) Thirty-six percent of the responses indicated that the section did not have enough communications due to an inoperable RATT net and a lack of an FM secure capability.

(e) Section and evaluator personnel classified the means of communications available to the section as not adequate to accomplish the assigned mission due to problems noted in (d).

(8) Effect of displacement. The section did not displace.

(9) Effect of destruction. Section and evaluator personnel reported that destruction of the main CP had no effect on the operational effectiveness of the section and that the section had slack time available after destruction of the main CP.

(10) Effect of TAC CP deployment. The SI section was not affected by deployment of the division TAC CP.

(11) Effect of the alternate CP. The SI section was not adversely affected by the establishment of the alternate CP.

(12) Effect of shifting control. The section did not experience any difficulty when control of the division was shifted from one location to another.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that would affect the test data were imposed on the section by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) A requirement for additional training in staff procedures and techniques was identified.

(14) Information flow. Data pertaining to the exchange of information between the SI section and other sections of the battalion staff is

contained in part III. The matrix at figure 2-189 depicts the ralationship between the section and the battalion command group, other members within the battalion staff, and personnel of other levels of command.

(a) Information provided to the section was generally considered adequate, relevant, timely, and accurate.

(b) Section and evaluator personnel reported no difficulty in obtaining information although some problems were experienced in obtaining the status of replacement personnel and personnel daily summary updates.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by the element is contained in part III.

(a) An undercapacity workload situation existed 100 percent of the time.

(b) The mean productive time expended per day was 9 hours for officers and 7 hours for NCO's.

(c) The mean idle time per day was 8 hours for officers and 4 hours for NCO's.

(d) The mean absent time per day was 4 hours for officers and 1 hour for NCO's.

d. S2/BICC section.

(1) Personnel authorized and fielded are shown in figure 2-190.

(2) Equipment authorized and fielded is shown in figure 2-191.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Of the 172 productive hours available during the test, 154 hours (90 percent) were expended performing listed and unlisted functions.

(b) Procedures F03P10 (Planning info to S3 for cover and deception op), and F05P05 (Coord with S1 on PW and detainees) were not required to be performed by the scenario.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S3, Bn	18	27.27	Bn Comd Gp	36	30.00	S1, Bde	18	17.65	S3, Bn	18	17.65
Med Bn Cdr	09	13.64	S4, Bn	21	17.50	S4, Bn	15	14.71	S4, Bn	18	17.65
Med Co Cdr	09	13.64	S4, Bde	18	15.00	G4	12	11.76	S1, Bde	15	14.71
S4, Bde	06	9.09	S3, Bn	12	10.00	S4, Bde	12	11.76	Bn Comd Gp	15	14.71
Bn Comd Gp	06	9.09	S1, Bde	09	7.50	Bn Comd Gp	12	11.76	S4, Bde	09	8.82
S1, Bn	06	9.09	G4	06	5.00	S1, Bn	12	11.76	S1, Bn	09	8.82
S4, Bn	06	9.09	S1, Bn	06	5.00	S3, Bn	12	11.76	G4	06	5.88
Maint Bn Cdr	06	9.09	G1	03	2.50	S4, Bn	06	5.88	S2, Bn	06	5.88
			Maint Bn Cdr	03	2.50	Med Co Cdr	03	2.94	Med Co Cdr	06	5.88
			Med Bn Cdr	03	2.50						
			Med Co Cdr	03	2.50						

Figure 2-189. S1 section functional relationships.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Intel Off	03	IN	09301	1	1	1
Intel Sgt	E8	NC	11F50	1	1	1
Clerk-Typist	E4		71B20	1	1	1
Pers Carr Dvr	E4		11B20	1	1	1
BICC OIC	LT	MI	09301	0	1[a]	1
Intel Sgt	E6	NC	96B40	0	1[a]	1
Intel Anal	E5		96B40	0	1[a]	1
Intel Anal	E4		96B20	0	1[a]	1
Pers Carr Dvr	E4		11B20	0	1[a]	1
TOTAL (Off/EM)				1/3	2/7	2/7

[a]Integrated BICC personnel

Figure 2-190. S2/BICC section personnel.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	1	1
Radio Set, AN/VRC-47, mtd in carr, CP	1	1	1
Carrier, CP	0	1[a]	1
Radio Set, AN/VRC-46, mtd in carr, CP	0	1[a]	1

[a]Integrated BICC equipment

Figure 2-191. S2/BICC section equipment.

(c) The organizations and functions manual (OFM) was used by personnel of the section.

(d) The OFM adequately described the functions and procedures required to be performed by the section.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 296 productive hours expended by the section, 75 hours (25 percent) were expended in using the files and 85 hours (29 percent) were expended in maintaining the files (includes visual displays).

(b) Files P204 (Collection Worksheet Chart), P207 (Topical), P208 (Reference), and P209 (Workbook) were not required by the scenario.

(c) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 269 productive hours expended by the section, 65 hours (22 percent) were expended in report preparation.

(b) Reports P210 (NBC-1), P211 (NBC-2), P212 (NBC-3), P213 (NBC-4), P214 (NBC-5), and P215 (Radio Interference) were not required to be prepared by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-185 depicts the organizational relationship of the S2/BICC section within the battalion. Sketches depicting the physical relationship of the section within the battalion CP, and the interior layout of the track housing the section are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the section to the battalion TOC and other sections comprising the battalion CP was satisfactory.

(c) The section operated in the S2 and BICC carriers as part of the battalion TOC, and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section is contained in part III.

(a) Of the 446 calls made, 100 percent were placed by FM.

(b) Of the 313 calls received, 100 percent were received by FM.

(c) The RATT was only operational for two to three hours of the test.

(d) Thirty-six percent of the section responses indicated the section did not have sufficient communications means due to an inoperative RATT and FM secure outages. Section personnel recommended that the division BICC, brigade S2/BICC, and the battalion S2/BICC be in the same net to insure rapid dissemination of intelligence traffic.

(e) Element and evaluator personnel generally classified the means of communications available to the section as adequate to accomplish the assigned mission.

(8) Effect of displacement. The section did not displace.

(9) Effect of destruction. Destruction of the division main CP had no effect on the operational effectiveness of the section and the section had slack time available after destruction of the main CP.

(10) Effect of TAC CP deployment. The S2 section was not affected by deployment of the division TAC CP.

(11) Effect of the alternate CP. The section was not adversely affected by establishment of the alternate CP.

(12) Effect of shifting control. The section did not experience any difficulty when control of the division was shifted from one location to another.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) Due to the inadequate or delayed intelligence received from brigade, the section was sometimes unable to produce intelligence needed by the commander. In addition, scenario events from company controllers were frequently unrealistic.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience were satisfactory except for the intelligence officer and intelligence sergeant who lacked training and experience in intelligence operations.

(c) A requirement for additional training in intelligence operations was identified by section personnel.

(14) Information flow. Data pertaining to the exchange of information between the S2/BICC section and other sections of the battalion staff is contained in part III. The matrix at figure 2-192 depicts the relationship between the section and the battalion command group, other members within the battalion staff, and personnel at other levels of command.

(a) Except as noted in paragraph (13)(a), information provided to the section was generally considered adequate, relevant, timely, and accurate.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
S3, Bn	12	66.67	Bn Comd Gp	03	50.00	S2, Bn	18	33.33	S3, Bn	15	38.46
BIC OIC, Bn	03	16.67	S3, Bn	03	50.00	S3, Bn	18	33.33	S2, Bde	12	30.77
ALO, Bn	03	16.67				Bn Comd Gp	06	11.11			

Figure 2-192. Battalion S2 section functional relationships.

(b) Section and evaluator personnel reported difficulty in obtaining information and intelligence from brigade and company controllers.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by the section is contained in part III.

(a) An undercapacity workload condition existed 52 percent of the time. The undercapacity workload condition can be correlated to the periods of time when personnel of the section were waiting for receipt of information and intelligence from subordinate, adjacent, and higher units and requirements or orders from brigade.

(b) The mean productive time expended per day was 16 hours for officers and 11 hours for NCO's.

(c) The mean idle time per day was 1 hour for officers and 1 hour for NCO's.

(d) The mean absent time per day was 2 hours for officers and 1 hour for NCO's.

(e) Section personnel reported that the personnel and equipment shown in figures 2-193 and 2-194 are required to satisfy normal mission requirements. (Note: Test results do not support this finding.)

Title	Grade	MOS	Strength
Op Asst	E4	11F20	1

Figure 2-193. S2 element recommended personnel additions.

Nomenclature	Quantity Delete	Add
Radio Set, VRC-46, mtd in carr, CP (BICC)	1	
Radio Set, VRC-47, mtd in carr, CP (BICC)		1

Figure 2-194. BICC element recommended equipment changes.

e. S3 section.

(1) Personnel authorized and fielded are shown in figures 2-195 through 2-197.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Fld 119
S3	04	IN	02162	1	1	1
S3 Air	03	IN	52163	1	1	1
Asst Op Off	03	IN	02162	0	1	1
Liaison Off	LT	IN	01560	2	2	2
Op Sgt	E8	NC	11F50	1	1	1
Asst Op Sgt	E7	NC	11F40	1	1	1
Cml Stf NCO	E6	NC	54E40	1	1[a]	0
Op Asst	E4	--	11F20	0	1	1
Clerk-Typist	E4	--	71B30	1	1	1
Pers Carr Dvr	E4	--	11B20	2	2	0
Sr Radio Op	E4	--	05B20	1	1	1
Radio Op	E3	--	05B20	1	1	1
Lt Veh Dvr	E3	--	11B10	3	3	3
TOTAL (Off/EM)				4/11	5/12	5/9

[a]Optional for test

Figure 2-195. S3 element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	Strength Authorized 2d Ref	Fld 119
Liaison Off	03	FA	51193	1	1	1
Liaison Sgt	E6	NC	13E40	1	1[a]	1
Liaison Spec	E4	--	13E20	2	2[a]	2
Pers Carr Dvr	E4	--	13A10	1	1	1
TOTAL (Off/EM)				1/4	1/4	1/4

[a]Optional for test

Figure 2-196. FSCC element personnel.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
C-E Off	03	SC	00205	1	1	1
Message Clerk	E3	--	36K20	1	1	1
TOTAL (Off/EM)				1/1	1/1	1/1

Figure 2-197. C-E element personnel.

(2) Equipment authorized and fielded is shown in figures 2-198 through 2-200.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	1	1
Radio Set, AN/VRC-46, mtd in carr, CP	2	2	2
Radio Set, AN/VRC-47, mtd in carr, CP	1	1	1
Truck, Utility, 1/4-ton	3	3	4
Trailer, Cargo, 1/4-ton	3	3[a]	3
Radio Set, AN/VRC-47, mtd in trk, 1/4-ton	1	1	1
Radio Set, AN/VRC-46, mtd in trk, 1/4-ton	2	2	2
Truck, Cargo, 1 1/4-ton	1	1	1
Trailer, Cargo, 3/4-ton	1	1[a]	1
Carrier, Comd & Recon	1	1[a]	0
Radio Set, AN/VRC-12, mtd in carr, Comd & Recon	1	1[a]	0

[a]Optional for test

Figure 2-198. S3 element equipment.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Carrier, CP	1	1	1
Radio Set, GRC-160, mtd in trk, 1/4-ton	1	1	1
Radio Set, AN/VRC-49, mtd in carr, CP	1	1	1
Truck, Utility, 1/4-ton	1	1	1

Figure 2-199. FSCC element equipment.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Radio Set, AN/VRC-49, mtd in trk, 1/4-ton	1	1	1
Truck, Utility, 1/4-ton	1	1	1
Trailer, Cargo, 1/4-ton	1	1	1

Figure 2-200. C-E element equipment.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the section and attendant quantifiable data is contained in part III.

(a) Productive hours available (PHA), productive hours expended (PHE), and percentage of productive hours available (Pct PHA) which were expended by element personnel in the performance of functions and procedures are shown in figure 2-201.

Element	PHA	PHE	Pct PHA
S3	444	364	82
FSCC	162	106	65
C-E	131	118	90

Figure 2-201. Time spent performing functions and procedures (S3 section).

(b) S3 element procedures F06P01B2 (Coord w/TACP for preplanned cbt spt airlift); F06P01C (Recommend approve/disapprove of preplanned CAS & TAC airlift requests); F06P02B2 (Coord w/TACP for immediate combat spt airlift); F06P02B3 (Coord with Bde S3 Air for Army avn spt); F06P02C (Approve/disapprove immediate air requests); F06P02D (Forward immediate air requests to TACP or Bde S3 Air); F07P02 (Training deficiencies and remedial action); F07P03 (Recommend required remedial training); F07P04 (Direct remedial training); and, F07P05 (Supervise training conduct) were not required by the scenario.

(c) C-E procedures F01P02 (Status of comm means); F01P03 (Input to OPORD); F02P01 (Coord with S1); F02P04 (Coord with S4); F02P05 (Coord with Bde C-E); F03P01D (Estab/op radio sta); F03P01E (Crypto custodian); F03P03 (Radio net scty monitor); F03P04A (Enforces radio silence); and, F03P06 (Estb radio relay sta) were not required by the scenario.

(d) FSCC procedure F04P06 (Collects fire support plan inputs) was not performed because inputs were not provided by the artillery controllers.

(e) The OFM was used by 60 percent of the section personnel.

(f) The OFM adequately described the functions and procedures required to be performed by the section.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 364 productive hours expended by the S3 element, 94 hours (26 percent) were expended in using the files and 27 hours (8 percent) were expended in maintaining the files (includes visual displays).

(b) Of the 106 productive hours expended by the FSCC element, 27 hours (26 percent) were expended in using, and 26 hours (25 percent) in maintaining, the files (includes visual displays).

(c) No listed files were used or maintained by the C-E element.

(d) S3 element files P308 (Policy; P311 (Task Org Rept); P318 (Unit Readiness Rept); P319 (Unit Radiation Exposure Rate Rept); P320 - P323 (pertaining to laying of minefields); P325 (Transportation Request); P326 (Reply to Transportation Request); P327 (Convoy Clnc Request); P328 (Joint TAC Airlift Request); P330 (Allocation of CAS Chart); P331 (Mission Rept Chart); P332 (Request for Army Avn Spt); P333 (AD Coverage Overlay); P334 (Air Traffic Control Overlay); P335 (Nuclear Accident/ Incident Rept); P336 (Nuclear Strike Warning); P337 (Barriers Overlay); and P338 (Airfield/Heliport Location Rept) were not required by the scenario.

(e) FSCC element files P802 (Staff Section Workbook) and P804 (Nuclear Target Analysis Worksheet Record) were not required by the scenario.

(f) The OFM adequately defined the files listed for the section except for the C-E element whose listing was rated as 'excessive.'

(g) The information required on the visual displays was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III. The FSCC and C-E elements were not required by the TAC SOP to submit reports; however, a complete listing of the S3 reports was made available to these elements in the event any listed report should be required.

(a) Of the 364 productive hours expended by the S3 element, 91 hours (25 percent) were expended in report preparation.

(b) Of the 106 productive hours expended by the FSCC element, 3 hours (3 percent) were expended preparing report P303 (Spot) and P304 (Front Line Trace).

(c) The C-E element did not prepare any listed reports.

(d) Reports P302 (Nuclear Strike Warning); P307-P310 (Pertaining to laying of minefields); P312 (Unit Radiation Exposure); P313 (Airfield/Heliport Location); P314 (Request for Army Avn Spt); and P315 (Loss of Contact with Friendly Unit) were not required by the scenario.

(6) Organizational structure, physical relationships, and facilities. Figure 2-185 depicts the organizational relationship of the S3 section and supporting elements within the staff. Sketches depicting the physical relationship of the section within the battalion CP, and the interior layout of the track housing the section, are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of the section to the battalion TOC and other sections comprising the battalion CP was satisfactory.

(c) The section operated from the FSCC and S3 track as part of the battalion TOC and this facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section is contained in part III.

(a) Of the 1,352 calls made, 78 percent were placed by FM, 9 percent by AM, and 13 percent by telephone.

(b) Of the 1,323 calls received, 81 percent were received by FM, 9 percent by AM, and 10 percent by telephone.

(c) The element prepared 3 messages for transmission and received 50 messages that had been transmitted by common-user teletype or RATT.

(d) Eighty-nine percent of the section responses indicated that the section had enough means of communications.

(e) Section and evaluator personnel classified the means of communication available to the section as adequate to accomplish the assigned mission.

(f) The RATT was inoperative during a majority of the test, but other means of communication were available and used. The speech security devices, however, were a source of continual problems.

(g) The section responses indicated that no difficulty was experienced in disseminating early warning messages using the battalion FM command net.

(8) Effect of displacement. The S3 section did not displace.

(9) Effect of destruction. Destruction of the division main CP had no effect on the operational effectiveness of the section and the section was fully employed after destruction of the main CP.

(10) Effect of TAC CP deployment. The section was not affected by deployment of the division TAC CP.

(11) Effect of the Alternate CP. The section was not adversely affected by the establishment of the alternate CP.

(12) Effect of shifting control. The section did not experience any difficulties when control of the division was shifted from one location to another.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the section by the scenario or the control organization when executing the scenario.

(b) The liaison sergeant and specialist for the FSCC held MOS's of 13A or 13B rather than the 13E that was required. The two assistant operations officers and the radio operators lacked experience in performing their functions.

(c) Section personnel indicated more training was needed in operations procedures, fire planning, radio procedures, map reading, and field wire communications techniques.

(14) Information flow. Data pertaining to the exchange of information between the S3 section and other sections of the battalion staff is contained in part III. The matrix at figure 2-202 depicts the relationship between the section and the battalion command group, other members within the battalion staff, and personnel at other levels of command.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
Bde Comd Gp	03	33.33	Bn Comd Gp	21	25.00	S4, Bn	12	28.57	S4, Bn	21	25.00
Bn Comd Gp	03	33.33	S3, Bn	18	21.43	S3, Bde	06	14.29	Bn Comd Gp	15	17.86
S4, Bn	03	33.33	S4, Bn	18	21.43	Bn Comd Gp	06	14.29	S2, Bn	15	17.86
			S1, Bn	09	10.71	S2, Bn	06	14.29	S3, Bn	12	14.29
			S2, Bn	09	10.71	S3, Bn	06	14.29	S1, Bn	09	10.71
			Comd Gp	06	7.14	Bde Comd Gp	03	7.14	S3, Bde	06	7.14
			S3, Bde	03	3.57	S1, Bn	03	7.14	Comd Gp	03	3.57
									Bde Comd Gp	03	3.57

Figure 2-202. Battalion S3 section functional relationships.

(a) Information provided to the section was generally considered adequate, relevant, accurate, and timely.

(b) The section experienced no difficulty in obtaining information from higher headquarters; however, the FSCC element did not receive enemy artillery information from the S2, DS artillery battalion.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(5) Adequacy of personnel and equipment. Data concerning activity levels as experienced by section personnel is contained in part III.

(a) The section experienced an undercapacity workload condition 54 percent of the time.

(b) The mean productive time expended per day was 10 hours for officers and 8 hours for NCO's.

(c) The mean idle time per day was 3 hours for officers and 3 hours for NCO's.

(d) The mean absent time per day was 4 hours for officers and 1 hour for NCO's.

(e) Section personnel reported the section was effective in performing its assigned functions.

(f) The additional assistant operations officer was extremely beneficial since his presence provided more efficient TOC operations and an improved plans capability.

(g) Subsequent discussion with the assistant FSC/LNO indicated the addition of the liaison specialist to the FSCC was highly beneficial and was required to provide the element a 24-hour capability.

f. S4 section.

(1) Personnel authorized and fielded are shown in figure 2-203.

(2) Equipment authorized and fielded is shown in figure 2-204.

(3) Functions and procedures. A complete listing of the functions and procedures defined for the element and attendant quantifiable data is contained in part III.

(a) Of the 154 productive hours available during the test, 114 hours (74 percent) were expended performing listed and unlisted functions.

Title	Grade	Branch	MOS	Strength Authorized H-Ser	2d Ref	Fld 119
Log Off	CPT	NO	04010	1	1	1
Mtr Off	CPT	NO	00600	1	1	0
Spt Plat Ldr	LT	NO	04010	1	1	1
Supply Sgt	E7	NC	76K40	1	1	1
Supply Specialist	E4		76Y20	2	2[a]	1
Supply Clk	E3		76A10	2	2[a]	0
Lt Veh Dvr	E3		11B10	2	2	1
TOTAL (Off/EM)				3/7	3/7	1/4

[a]Optional for test

Figure 2-203. S4 section personnel.

Nomenclature	Quantity Authorized H-Ser	2d Ref	Fld 119
Radio Set, VRC-46, mtd in 1/4-ton	2	2[a]	0
Truck, Cargo, 1 1/4-ton	1	1[a]	1
Truck, Util, 1/4-ton	2	2[a]	0
Trailer, Cargo, 3/4-ton	1	1[a]	0
Trailer, Cargo, 1/4-ton	2	2[a]	0

[a]Optional for test

Figure 2-204. S4 section equipment.

(b) All functions and procedures were performed.

(c) The OFM was used by personnel of the section.

(d) All section personnel indicated the OFM adequately described the functions and procedures required to be performed by the section.

(4) Files. A complete listing of files and resultant usage factors is contained in part III.

(a) Of the 114 productive hours expended by the section, 57 hours (50 percent) were expended in using the files and 24 hours (21 percent) were expended in maintaining the files (includes visual displays).

(b) Files P410 (CI IV status rept), P411 (CI IV status chart), P421 (Materiel readiness rept), P423 (convoy clnc request), P424 (transportation request), P425 (reply to transportation request) were not required by the scenario.

(c) The information required on the visible files was adequate.

(5) Reports. A complete listing of reports and resultant usage factors is contained in part III.

(a) Of the 114 productive hours expended by the section, 19 hours (17 percent) were expended in report preparation.

(b) Reports P402 (CI IV Status), P408 (Materiel Readiness), P409 (Convoy Clnc Request), and P410 (Aero Medevac Request) were not required by the scenario.

(6) Organizational structure, physical relationship, and facilities. Figure 2-185 depicts the organizational relationship of the S4 section within the staff. Sketches depicting the physical relationship of the section within the battalion CP and the interior layout of the track housing the element are shown in part III.

(a) The section experienced no difficulty in accomplishing its mission as a result of the organizational structure required for the test.

(b) The physical relationship of this section to the battalion TOC and other sections comprising the battalion CP was satisfactory.

(c) The section operated from the SI/S4 track and the facility was adequate for the personnel assigned.

(7) Communications. Data concerning the means, usage, and adequacy of communications as experienced by the section is contained in part III.

(a) Of the 208 calls made, 86 percent were placed by FM and 14 percent by telephone.

(b) Of the 379 calls received, 73 percent were received by FM and 27 percent by telephone.

(c) The section prepared no messages for transmission and received two messages that had been transmitted by common-user teletype or RATT.

(d) Thirty-six percent of the section responses indicated the section did not have enough communications means because of the nonoperational RATT.

(e) Section and evaluator personnel classified the means of communication available to the section as not adequate to accomplish the assigned mission because of the problem noted in (d) above.

(8) Effect of displacement. The section did not displace.

(9) Effect of destruction. Section and evaluator personnel reported that destruction of the main CP had no effect on the operational effectiveness of the section and that the section was fully employed after destruction of the main CP.

(10) Effect of the TAC CP deployment. The S4 section was not affected by deployment of the division TAC CP.

(11) Effect of the alternate CP. The S4 section was not affected by the establishment of the alternate CP.

(12) Effect of shifting control. The section was not affected when control of the division was shifted from one location to another.

(13) Scenario, control, and training. Quantitative data concerning the scenario, test control, and status of training of personnel assigned to the section is contained in part III.

(a) No unrealistic constraints that could affect the test data were imposed on the section by the scenario or the control organization when executing the scenario.

(b) Qualifications of the personnel assigned to the section with respect to rank, MOS, and experience levels were satisfactory for the duties assigned.

(c) Additional training for section personnel in staff procedures and techniques was identified.

(14) Information flow. Data pertaining to the exchange of information between the S4 section and other sections of the battalion is contained in part III. The matrix at figure 2-205 depicts the relationship between the section and the battalion command group, other members within the battalion staff, and personnel at other levels of command.

(a) Information provided to the section was generally considered adequate, relevant, timely, and accurate.

(b) The section frequently reported difficulty in obtaining timely information on the status of combat vehicles.

Provides orders, direction, or guidance to			Receives orders, direction, or guidance from			Provides information or recommendations to			Receives information or recommendations from		
Name	No	Pct	Name	No	Pct	Name	No	Pct	Name	No	Pct
X	X	X	S4, Bde	06	100.00	S4, Bde	06	100.00	S4, Bde	06	100.00

Figure 2-205. Battalion S4 section functional relationships.

(c) The section provided and received orders and guidance in sufficient time to meet operational requirements.

(15) Adequacy of personnel and equipment. Data concerning activity levels as experienced by the section is contained in part III.

(a) An overcapacity workload condition was experienced 9 percent of the time.

(b) An undercapacity workload condition was experienced 73 percent of the time.

(c) The mean productive time expended per day was 12 hours for officers and 8 hours for NCO's.

(d) The mean idle time per day was 4 hours for officers and 3 hours for NCO's.

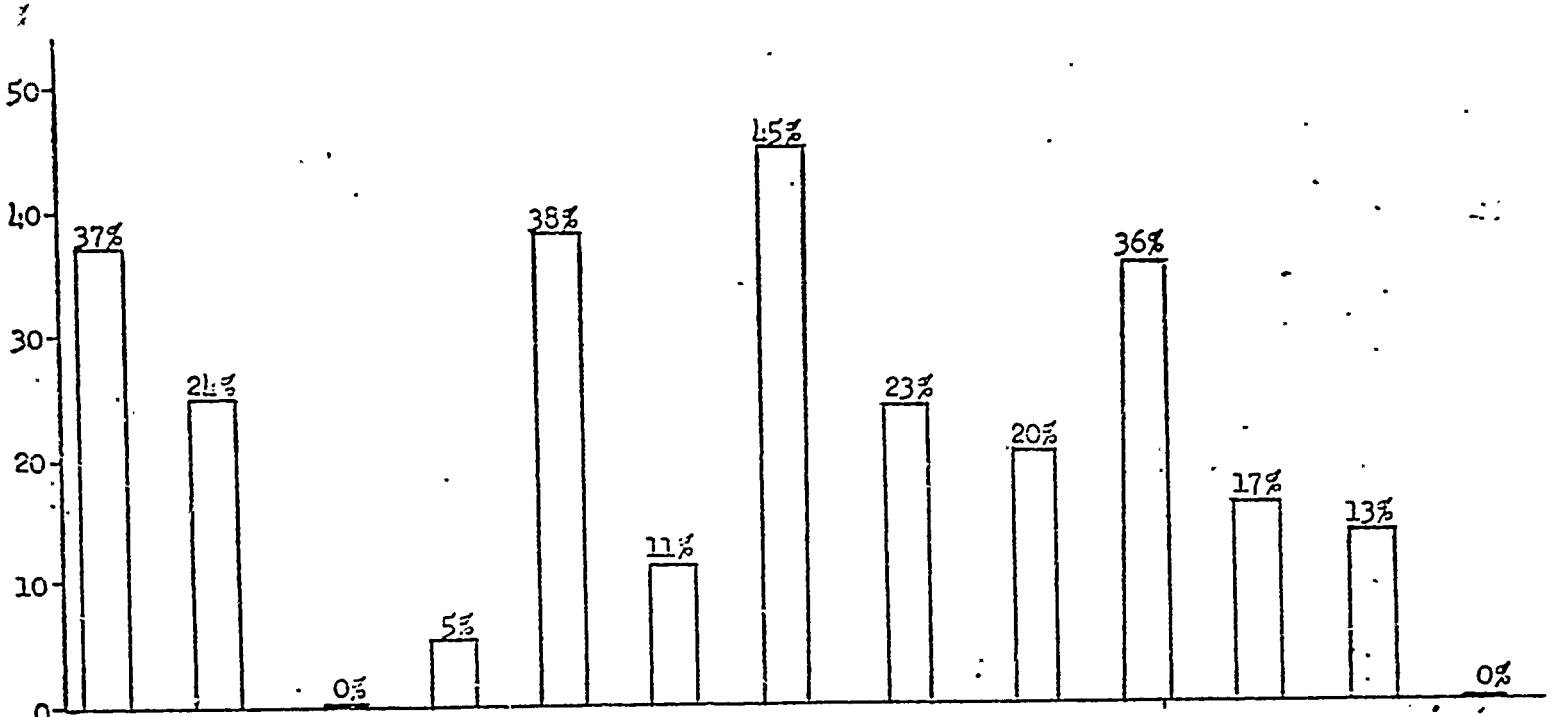
(e) The mean absent time per day was 1 hour for officers and 2 hours for NCO's.

(f) Section personnel reported that the section was effective in performing its assigned functions.

(g) The S4 officer indicated that two AN/VRC-46 radios mounted in the S1/S4 track would be beneficial.

2-19. Communications. Quantitative data concerning the utilization of communications by type means is contained in part III of this report. The data is presented initially by one hour increments in tabular format and then displayed graphically as a distribution of percent utilization versus time. Conditions of displacement, destruction, or system outages are indicated where applicable. The data from part III has been summarized into bar graphs by type communications means and is presented in subparagraphs a through d below with supporting narrative. The jamming schedule for the test and a recapitulation of the USASA support provided are contained in subparagraph e. Data concerning early warning is solely contained in this portion of the report and is addressed in subparagraph f. Answers to specific information needs concerning communications are presented in subparagraph g.

a. FM/AM voice communications. The data bar-graphed in figure 2-206 constitutes the average percent utilization of each FM/AM (voice) net. These percentages are further broken down into type message categories; e.g., operations, intelligence, administrative, logistics, and other type traffic.



% BY CATEGORY	DIV CG CMD (FM)	DIV INTEL (FM)	DIV TOC (AM)	DIV ATC (FM)	DIV ARTY CP (FM)	DIV ARTY A/I (FM)	BDE CMD (FM)	BDE INTEL (FM)	BDE A/L (FM)	MVR BN CMD (FM)	MVR BN A/L (FM)	ADA BN CMD (FM)	ADA BN ADL (AM)
OPS	21	10	0	1	30	1	26	10	1	27	1	4	0
INTEL	2	1	0	0	1	1	2	5	0	2	1	1	0
ADMIN	3	1	0	2	1	3	0	1	4	1	7	1	0
LOG	0	0	0	0	1	1	1	1	8	1	6	2	0
OTHER	11	12	0	2	5	5	16	6	7	5	2	5	0
TOTAL	37%	24%	0%	5%	38%	11%	45%	23%	20%	36%	17%	13%	0%

Figure 2-206. Division FM and AM net average percent utilization (87-hour scenario).

(1) For purpose of the test, the above categories were defined as:

(a) Operations traffic. Communications pertaining to directing operations and controlling forces.

(b) Intelligence traffic. Information pertaining to the enemy and required by the commanders for planning and executing operations.

(c) Administrative traffic. Communications pertaining to the management and execution of all military matters not included in tactics and stragegy, primarily in the fields of personnel management and the internal management of units.

(d) Logistics traffic. Communications pertaining to the planning and carrying out of the movement and maintenance of forces.

(e) Other traffic. Those transmissions/calls determined necessary by the radio operator to maintain communications; e.g., radio checks.

(2) Part III of this report presents the detailed data that was recorded each hour on the FM/AM voice nets and constitutes the data source for the average net utilization percentages graphed in figure 2-206.

(3) Of interest is the percentage of operational type messages sent through use of the Division Intelligence Net (FM). The approximate ratio of ten to one operational traffic versus intelligence traffic utilization is indicative of the type voice information exchanged between the division main CP and major subordinate units.

b. Teletypewriter utilization. The data bar-graph in figure 2-207 presents the average percent utilization of each teletype circuit throughout the test. The limited use of the teletype during the test can be attributed to the following:

(1) The greater reliance on radio teletype (RATT) due to station availability and the single transmission routing capability RATT provides to multiple addressees.

(2) The limited availability of the teletype circuits caused by the multiple displacements of the Div Main, Div Alt, and Div Arty CP's within the 5-day scenario.

(3) Teletype circuits were given the lowest restoration priority by the division.

c. RATT utilization. The data bar-graph in fiugre 2-208 presents the average percent utilization of each net during the test.

d. G2 sole user circuits. Tabular data on the 51 calls that were made through the use of this means is contained in part III of this report. The limited use of these circuits is partially explained by the following:

(1) The division's over reliance on FM radio in a CPX environment.

(2) The multichannel radio links were not secure.

(3) The limited availability of the circuits caused by the multiple displacements of Div Main, Div Alt, and Div Arty CP's within the 5-day scenario.

e. Jamming. The 375th Army Security Agency Company (EW) actively jammed targeted frequencies and/or nets during predesignated periods in accordance with the scenario. The jamming mission was to completely deny the use of the frequencies allocated to the division TAC CP during the specified periods. In accordnace with the most effective jamming procedures, initial establishment of communications and radio checks were allowed to pass; and only the substance of the transmission was jammed. Jamming of the secure mode was extremely successful in that communications were disrupted without operator detection. Figure 2-209 is the jamming schedule followed. Figure 2-210 recapitulates the jamming accomplished and the estimated success.

f. Early warning.

(1) The following questions, concerning the need for a means of desseminating early warning information, were asked during the test.

(a) Should the communications means used for dissemination of early warning messages within the division be a one-way or a two-way system?

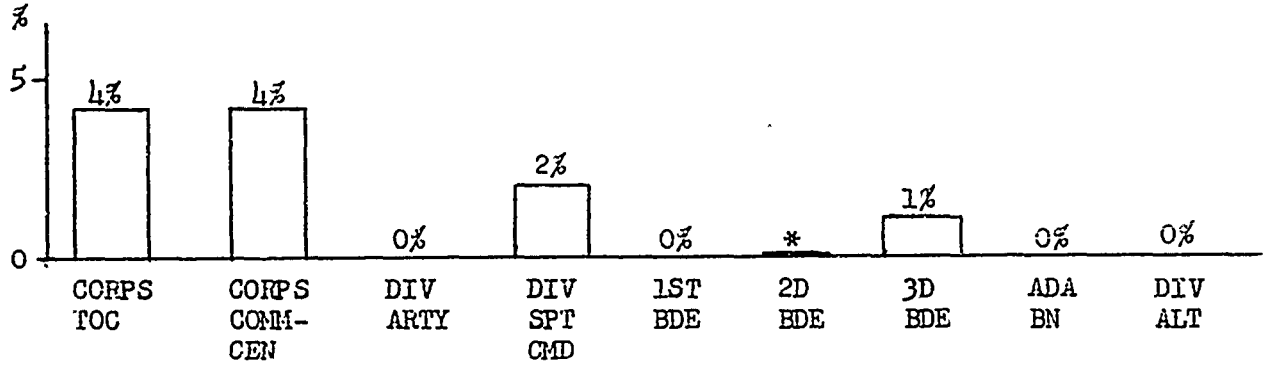
(b) Should early warning message dissemination go direct to all possible users (a net or specific station(s) call) or be relayed through intermediate headquarters?

(c) Should early warning messages be disseminated over a currently authorized multipurpose communications means or over a dedicated communications system designated solely for that purpose?

(d) Should changes be made to the division procedures or equipment concerning dissemination of early warning messages? Possible responses to this question were as follows:

1 Yes, change procedures.

Division Main



* Traffic greater than zero, but much less than one percent.

Division Alternate

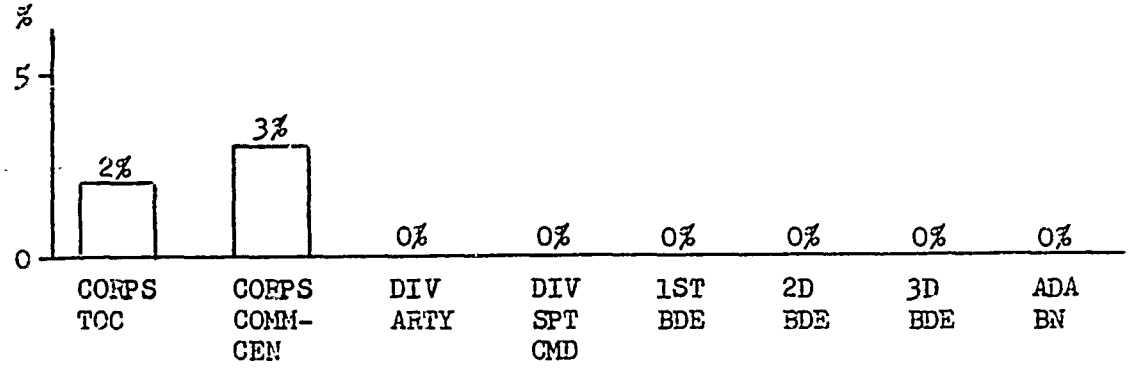


Figure 2-207. Division main teletypewriter average percent utilization (87-hour scenario).

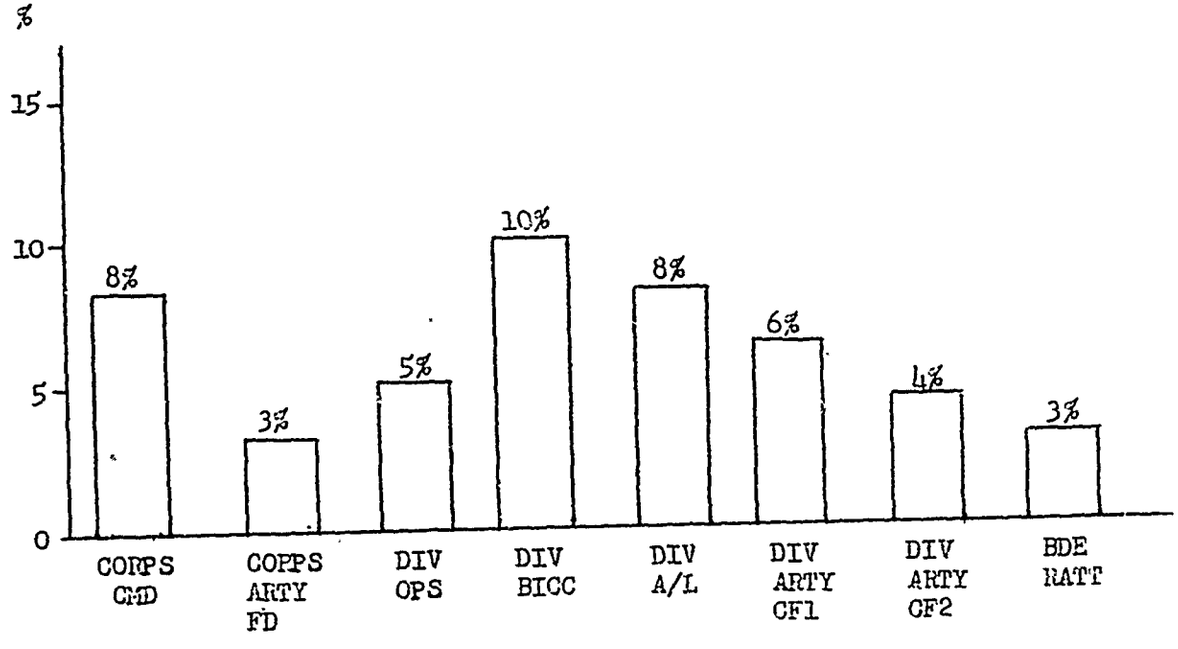


Figure 2-208. AM-RAM average percent utilization (87-hour scenario).

Data time	Communications Means: Div CG cmd net FM voice	Div TOC net AM voice	Div op net RATT	Div A/L movements control net FM voice	VHF link Div Main to TAC CP
0630-0730, Day 2	X	X	X		X
0850-0950, Day 2	X	X	X		X
0310-0405, Day 3	X		X		
0645-0810, Day 4	X		X		
1230-1345, Day 4	X			X	
0215-0435, Day 5	X		X		X

Note: The category III communications evaluator that accompanies the TAC CP simulated VHF jamming by manual deactivation of the VHF multichannel terminals during the above predesignated jamming periods.

Figure 2-209. USASA jamming schedule.

Date	Jamming period	Frequencies	Net	Est success pct	Remarks
13 Nov	0630-0730	49.70 & 30.30 Mhz	Div CG Cmd	100	
		4443.5 & 12058.5 Khz	Div TOC	100	
		4960.0 & 11697.5 Khz	Div Ops	100	
13 Nov	0850-0950	49.70 & 30.30 Mhz	Div CG Cmd	100	
		4443.5 & 12058.5 Khz	Div TOC	100	
		4960.0 & 11697.5 Khz	Div Ops	100	
14 Nov	0310-0415	49.70 & 30.30 Mhz	Div CG Cmd	85	Jamming ceased at 0405 due to generator problems.
		4443.5 & 12058.5 Khz	Div TOC	85	
		4960.0 & 11697.5 Khz	Div Ops	85	
15 Nov	0645-0810	49.70 & 30.30 Mhz	Div CG Cmd	100	
		4960.0 & 11697.5 Khz	Div Ops	100	
	1230-1345	49.70 & 30.30 Mhz	Div CG Cmd	100	
		56.00 Mhz*	Div A/L Move-ments Control	100.	*See notes below.
16 Nov	0415-0435	49.70 & 30.30 Mhz	Div CG Cmd	100.	
		4960.0 & 11697.5 Khz	Div Ops	100	

Figure 2-210. Jamming recapitulation, 12-16 November 1973.

*Note 1: 56.00 Mhz was not cleared for jamming with the AN/TLQ-17. An AN/VRC-46 radio was used with an SG-886 signal generator operating at maximum power output of 35 watts.

Note 2: The Admin/Log Movements Control Net is not a doctrinal FM net, but was activated during displacements for movement control.

Figure 2-210 (cont). Jamming recapitulation, 12-16 November 1973.

2 Yes, equipment and procedures need changing.

3 No change.

(2) Figure 2-211 lists questions (a) through (d) above and records the individual responses provided by the senior players and evaluator personnel.

g. The following subparagraphs provide answers to specific information needs.

(1) System/circuit deactivation and activation times.

(a) During each displacement, discrete measurements were recorded on activation and deactivation of multichannel systems/circuits. A combined total of 16 activation and deactivation times were taken at division main and alternate.

(b) Deactivation time was measured from the time the order was given by the C-E officer to tear down until the vehicle was properly loaded and ready to move. The average time for 16 vehicles was 40 minutes. In comparison, the specially trained multichannel team that supported the division TAC CP accomplished the above in an average time of 22 minutes.

(c) Activation time was measured from the time the equipment was backed into position to the time that 75 percent of the cirucuits on the system being measured were established subscriber to subscriber. Of the 16 measurements taken, the average activation time for systems at main and alternate was two hours and 17 minutes whereas the division TAC CP team averaged 35 minutes.

(2) Net percent utilization before and after displacement. The percent utilization of all the communications nets before and after displacement of the division main CP is located in part III of this report. The periods of time division main devoted to each displacement were from 1300 to 1700 on Day 2 and from 1200 to 1600 on Day 4.

Personnel responses	Q (a)		Q (b)		Q (c)		Q (d)		
	One-way	Two-way	Direct	Relay	Multipurpose	Dedicated	Chg in procedure	Chg in procedure and equipment	No change
Div cmd gp									
CG CAT I eval	X		X		X		X		
ADC(M)	X		X			X		X	
ADC(M) CAT I eval	X		X			X		X	
ADC(S)		X		X		X	X		
ADC(S) CAT I eval	X			X		X		X	
CofS			X			X			
CofS CAT I eval	X		X			X			
G3 section									
G3	X		X			X			
G3 CAT I eval	X		X			X		X	
G3 op		X	X			X		X	
G3 op CAT II eval	X		X			X		X	
Div Arty									
Div Arty Cdr	X		X			X		X	
Div Arty Cdr CAT I eval	X		X			X		X	
DISCOM									
DISCOM Cdr	X		X			X		X	
DISCOM cdr CAT I eval	X		X			X		X	
DISCOM S3	X		X		X				
DISCOM S3 CAT II eval	X		X			X			
Brigade									
Bde cdr	X			X	X				
Bde cdr CAT I eval		X		X	X			X	
Bde S3	X		X		X				
Bde S3 CAT II eval	X		X			X		X	
Battalion									
Bn cdr	X		X			X			
Bn cdr CAT I eval	X		X			X			
Bn S3			X			X			
Bn S3 CAT II eval	X		X			X		X	
TOTAL RESPONSES	20	3	21	4	5	20	2	13	0
PERCENTAGE	87	13	84	16	20	80	13	87	0

Figure 2-211. Dissemination means of early warning information.

Figure 2-212 below, provides the percent utilization of each net for one hour prior and one hour after the displacement of the division main CP.

Nets (FM)	Net percent utilization			
	1st Displacement (Day 2)		2d Displacement (Day 4)	
	1200-1300	1700-1800	1100-1200	1600-1700
CG Cmd	32	13	45	48
Div Intel	9	9	7	17
Bde Cmd	28	53	57	55
Bde Intel	42	45	0	20
Bde A/C	10	50	15	20
Div Arty Cmd	50	13	48	22
Div Arty A/I	13	2	32	33
ADA Bn Cmd	22	13	13	12
Bn Cmd	28	15	58	22
Bn A/L	13	3	2	9
Div ATC	13	18	20	0
Nets (AM)				
Div TOC	0	0	0	0
ADA Bn ADL	0	0	0	0

Figure 2-212. Net percent utilization before and after displacement.

(3) Multichannel restoration times after destruction of the division main CP. Division main was destroyed during the Concept C phase of the test. At this time, division alternate was a separate operating facility and was currently being evaluated. The communications from the division alternate CP were a mirror image of the communications available at the division main CP. No restoration of communications was therefore required subsequent to the destruction of the division main and division TAC CP. The test terminated approximately four hours after the destruction of the division main CP. Establishment of a new division main or another separate division alternate CP would therefore be contingent upon receipt of additional communications assets from either corps, adjacent divisions, and/or the supply system.

(4) Percent of net utilization after destruction of the division main CP. The percent utilization of all communications nets after destruction of the main CP is located in part III of this report. The mean percent utilization for each net for the remaining four hours subsequent to destruction of the main CP is shown in figure 2-213 below.

FM/AM nets	Mean percent utilization 0500-0900 (Day 5)
Nets (FM)	
CG Cmd	18
Div Intel	21
Bde Cmd	34
Bde Intel	10
Bde A/L	5
Div Arty Cmd	45
Div Arty A/I	11
ADA Bn Cmd	16
Bn Cmd	29
Bn A/L	15
Div ATC	0
Nets (AM)	
Div TOC	0
ADA Bn ADL	0

Figure 2-213. Mean percent utilization 0500-0900 (Day 5).

2-20. Electronic Warfare Cryptologic (EWCO) Section.

a. As defined for the test, the EWCO was a special staff officer reporting directly to the CofS and was a major, MI branch, MOS E9640. This position could not be filled through the use of personnel resources available to III Corps; therefore, the USASA selected and furnished the individual to fill this vacancy and MASSTER funds were used to defray costs associated with travel and TDY. The EWCO was not authorized any additional personnel or equipment and divided his time primarily between the G3 plans element and the SSE/EWE. When working in the G3 section, he was assisting the staff in developing and coordinating requirements for USASA resources. When working in the SSE/EWE, he was supervising the OIC of the SSE/EWE and reviewing information contained in various files and reports maintained by the SSE/EWE. He did not maintain any separate files and submitted no reports. Periodically he reviewed the G2 plans enemy situation map to assure that the plans element was aware of the existing enemy situation as portrayed on maps in the all source intelligence work area. During displacements he accompanied the OIC of the SSE/EWE to the new location. The EWCO was a simulated casualty for a 24-hour period during the test. The OIC of the SSE/EWE assumed the responsibilities of the EWCO during this period of time. No apparent change in the use of USASA resources was noted during this period.

b. The TSP identified the special qualification identifier (SQI) "E" as a requirement for selected positions which required assignment of personnel qualified in electronic wartare. Figure 2-214 lists the positions with the "E" SQI requirement as contained in the TSP and a comparison of this requirement to the H-series TOE. (MOS 9610 is an electronic warfare MOS and the SQI is not required in this instance.)

Title	Grade	Branch	MOS	TSP	H-ser
Deputy G2 Plans	04	AM	E9301	1	1
Asst G3	04	AM	E2162	2	0
Asst G3 Plans	04	AM	E2162	1	1
Asst Div Sig Off	04	SC	E1010	1	1
EWCO	04	MI	E9640	1	0
ECCM Off	02	MI	09610	1	0
Bde Asst Ops Off (Plans	03	IN	E2162	1	0
Bde C-E Staff Off	04	SC	E0205	0	1

Figure 2-214. Positions requiring "E" SQI.

(1) In theory, the availability of the "E" SQI for the positions indicated in figure A provide an organic capability for development of requirements for the offensive and defensive use of USASA resources.

(2) In practice, the incumbent is generally not qualified in the SQI and possesses little knowledge concerning the capabilities available from the USASA. This situation does not exist to the same degree in the intelligence functional area as it does in the operational functional area; however, it does necessitate that a person maintaining requisite expertise be available to assist the staff in the development of requirements and the subsequent use of information made available from the USASA.

c. Subfindings.

(1) Players and evaluators were in agreement that the EWCO did assist in the planning for the use of USASA resources.

(2) Players and evaluators reported that the G2 and the G3 most frequently supervised the EWCO.

(3) Eighty percent of the division level players and evaluators responding were of the opinion that the EWCO should be supervised by either the G2 or the G3. These personnel were equally divided as to who should supervise the EWCO, either the G2 or the G3.

(4) The evaluator, EWCO, and the OIC of the SSE/EWE were of the opinion that the position of the EWCO created a condition of unnecessary staff layering and was not required. The evaluator and the OIC of the SSE/EWE were of the opinion that the function should be accomplished by the OIC of the SSE/EWE while the EWCO recommended that the CO of the attached direct support company perform the function. However, these opinions were subjective and based primarily on observations made during this command post exercise. Additionally, the demonstrated lack of understanding of EW and its capabilities by staff personnel supported the requirement for an EW officer on the division staff.

(5) Players and evaluators recommended that procedures be established to permit the release of perishable information direct to the consumer and to the A&P section for inclusion with other intelligence related information.

APPENDIX A

CONCEPT PLAN OF TEST

See CDC Concept Plan of Test, subject, IBCS Division Level System Definition 2d Refinement, Test Number 119, dated 17 Apr 73, and Detailed Plan of Test, Staff Organization and Procedures 2d Refinement (IBCS System Definition), MASSTER Test 119, with annexes A through X, dated August 1973.

APPENDIX B

COMMUNICATIONS OBSERVATIONS

1. General. The information contained in this appendix was derived from evaluators and key personnel. Discussed are the communications means used, alternative considerations for use of currently authorized equipment, and shortcomings observed in some current issue items. This is provided for assistance in developing the Third Refinement Study effort, if applicable, and for consideration during future procurement actions.

2. Multichannel Systems Observations.

a. The test support package (TSP) defined the multichannel configuration that the test division would employ for the test (page 5-10, appendix II, volume XII, reproduced from figure 8-6, FM 11-50). This configuration normally would not be used since it totally commits the multichannel assets of the division signal battalion, making no allowance for defective equipment and/or a displacement capability. However, by establishing a close approximation of the TSP configuration, it was possible to identify those multichannel systems that were actually required and those that could be tentatively identified as excessive to the test division's needs. The following subparagraph identifies systems which could be eliminated and proposes a multichannel configuration which combines division alternate's command systems with the division area systems.

b. Proposed systems for elimination and/or consolidation.

(1) One of the two 12-channel systems between main and alternate should be considered for elimination. Of the 10 circuits installed on these systems during the test, three were sole-user telephone, five were common-user telephone, and two were half-duplex (HDX) teletypewriter circuits. The circuit requirement can be reduced to at least eight by eliminating two of the five common-user circuits (five proved excessive).

(2) One of the two 12-channel systems between division artillery, division main, and division alternate should be considered for elimination. During the test, 13 identical circuits were installed on these two systems. Twelve channels were required in that the speech-plus capability was employed for the HDX teletype circuit. The 12-channel requirement can be further reduced to eight by eliminating the following circuits which were considered excessive:

(a) The common-user circuit to DISCOM.

(b) One of the two sole-user circuits to corps artillery FDC.

(c) One of the two sole-user circuits to FSE.

(d) One of the three common-user trunks to the division main switchboard.

(3) The 12-channel system in support of the ADA battalion, though required, is excessive since the battalion can be adequately served with two common-user circuits. The use of a lower capacity, four to six channel, and less costly system is indicated.

(4) During the test, it was observed that alternate multichannel circuits received minimal use. The routing redundancy provided in the TSP (FM 11-50) multichannel concept is excessive. A reduction in multichannel equipment requirements can be accomplished by combining the alternate command links with the area system links that support DISCOM and the forward area signal centers (FASC's).

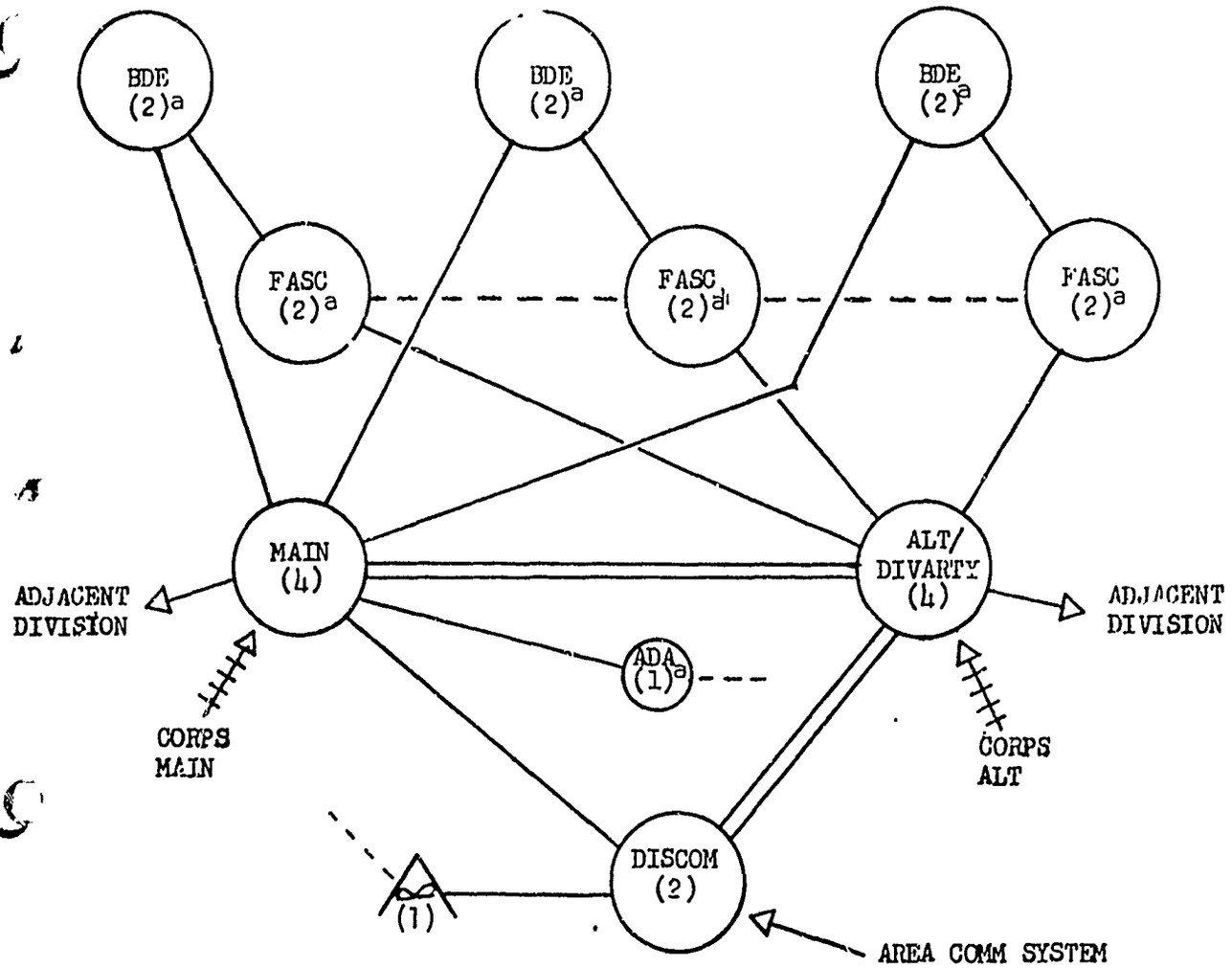
(5) Figure B-1 configures the division multichannel system as proposed in subparagraph (1) through (5) above.

c. In discussions with player personnel, it was brought out that the division signal battalion normally did not operate an established division alternate CP. Figure B-2 was shown to members of the test division signal battalion and they stated that; with the exception of the 4-channel systems in support of the ADA battalion, the division airfield, and the inclusion of lateral systems between FASC's; the configuration was identical to their normal deployment of multichannel assets.

3. Record Copy.

a. RATT operations. The design of the test allowed all RATT nets to be closely observed from a centralized (control) location.

(1) The tactical use of radio teletypewriter communications below division level has been a controversial subject since its inception. The pros and cons of whether it should be used as a dedicated means or be used to provide a common-user service are obvious, depending on which viewpoint is taken. Staff sections naturally desire dedicated service whereas C-E personnel favor common-user service. A compromise recommended during the test was to provide dedicated RATT service during periods of interrupted communications; i.e., displacement, until such time as adequate communications center teletype service is restored. RATT would, at that time, revert to common-user service and provide a backup capability for the communications center circuits.



Multichannel terminals authorized by TOE 11-35H..... 33

Multichannel terminals required to be operational for this configuration..... 24

Multichannel terminals available for replacing defective sets and/or use as a displacement reserve for division headquarters elements.. 9

LEGEND

( ) No. of multichannel terminals required.

——— 12-channel system.

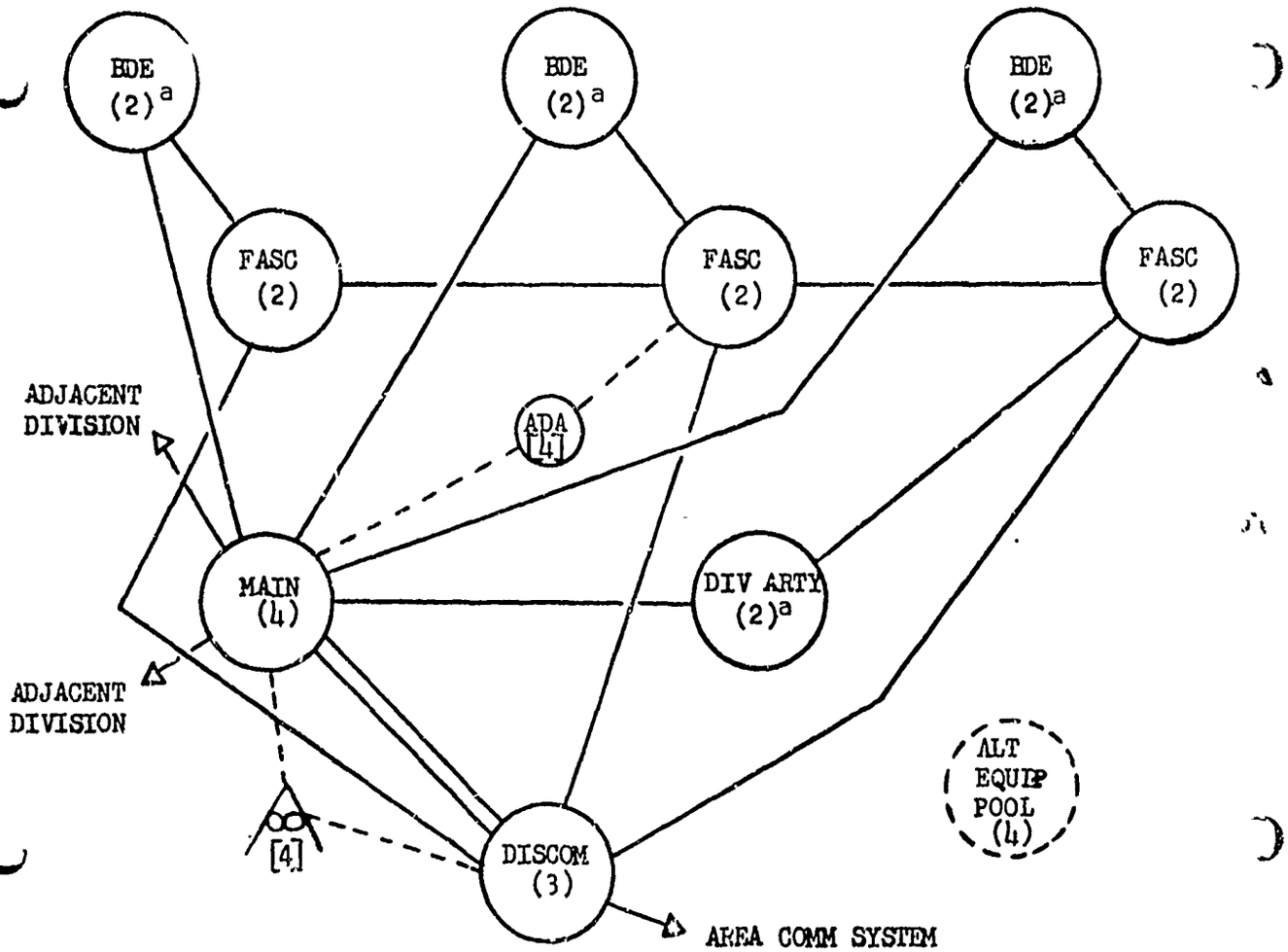
+++++++ 24-channel system.

- - - - - - 12-channel (optional) secondary system.

[a] Includes displacement and/or secondary route capability.

[b] Whenever alternate displaces an additional system can be activated.

Figure B-1. Type multichannel configuration of the division communications system.



AN/TRC-145 terminals authorized by TOE 11-35H..... 33

AN/TRC-145 terminals required to be operational for this configuration..... 25

Additional AN/GRC-163 terminals required for this configuration.... 8

NOTE: AN/TRC-145 terminals are dual system terminals, where as the AN/GRC-163 is a single system terminal.

LEGEND

( ) No. of AN/TRC-145 terminals required.

[ ] No. of AN/GRC-163 Terminals required.

——— 12-channel systems.

– – – – – 4-channel systems.

[a]One terminal for displacement (Jump) capability.

Figure B-2. Type multichannel configuration of the division communications system.

(2) Throughout the test, the utilization of RATT was recorded by measuring the transmission time of record traffic. Time spent conducting communications checks, acknowledging the receipt of messages, etc., was not recorded. Observations showed that when transmission times of record traffic reached 15 to 25 percent of net availability, traffic began to backlog. The backlog condition can be directly attributed to the procedural retyping required by RATT operators, primarily below division level, prior to transmission and is the greatest deterrent to increasing net utilization.

b. Teletypewriter operations. The utilization rates of communications center teletype circuits were very low throughout the test. The reason for the low utilization is that only limited speech-plus circuits were employed and secondly, that the teletype circuits were assigned the lowest activation/restoration priority by the division.

c. Reported inconsistency. Staff sections consistently identified RATT and multichannel teletype speed of service as unsatisfactory. The criteria to which the signal battalion attempted to adhere was based upon the DA objective speed of service for record traffic as expressed in paragraph 4-14, 2, (12) (b) 1, AR 310-34. The overall speed for each level of precedence is listed in figure B-3. Considering the critical comments received and since the signal battalion did meet the DA standards for speed of service, it is apparent that the objective times in AR 310-34 were either misunderstood by the player personnel or else the standards do not satisfy the requirements of a mechanized division in a fast moving, mid-intensity environment.

Precedence	Time objective
FLASH	Not fixed, objective of less than 10 minutes.
Immediate	Within 1 hour.
Priority	Within 6 hours.
Routine	Prior to start of business the following day.

Figure B-3. Message speeds of service.

4. FM Radio.

a. The written comments received from evaluators and players stated the FM nets employed were adequate with the exception of the command nets.

They stated that the intelligence nets should be named operation/intelligence nets (O/I) and made available to other staff elements to provide relief to the otherwise crowded command nets.

b. Written comments at division level further brought out that the requirement for an additional division level FM net is totally dependent on the reliability and/or responsiveness of the multichannel radio network.

5. AM Radio (Voice).

a. Two AM-SSB nets were installed according to FM 11-50, the division TOC net, and the air defense liaison (ADL) net.

b. No data was collected on these nets since they were not used. Reasons for nonuse of the division TOC net are:

(1) The greater range afforded by high frequency radio was not required because of greatly improved FM communications provided by the AN/VRC-12 family of radios.

(2) The AN/GRC-106 radio does not presently have a secure voice capability.

(3) The problems associated with changing frequencies caused by high frequency radio propagation characteristics.

(4) The simplicity and reliability of FM radios developed in recent years has seriously reduced the expertise among noncommunicators when compared to requirements to effectively employ AM radio.

c. The ADL net. The primary purpose of this net is for long-range communications between the ADA battalion and their liaison element at the corps AADCP. The net would have been used except that test constraints required the ADA battalion staff to double as the corps AADCP, thereby eliminating the need for this net during the test.

6. Equipment Observations.

a. Central office telephone, manual AN/TTC-23. The AN/TTC-23, as modified, is incompatible with the subordinate unit switchboards since the AN/TTC-23 cannot use its plug supervision trunk circuits for terminating trunks from subordinate units. This, in turn, greatly reduced the local subscriber termination capability of the AN/TTC-23.

b. Remote set AN/GRA-6. The AN/GRA-6 is the only remote presently available for use with radios with 10-pin audio connectors; for

example, the AN/GRC-106. The AN/GRA-6 transfers only low power audio (10 milliwatts) to the accessory speaker, which cannot be heard in conjested TOC areas. For this reason, the AN/GRA-6 was found to be unsatisfactory by the fielded players. Satisfactory remoting of an AN/GRA-106 radio set used at the test control location was accomplished by using the AN/GRA-39 remote set in conjunction with a locally fabricated 5-10 pin adaptor cable.

c. Radio set AN/GRA-106. This radio set, although ideally suited for use in RATT operations, has undesirable features when used for voice communications. It presently has no voice secure capability, is too noisy for conjested TOC areas, possesses an inadequate remote set (AN/GRA-6), and requires specially trained operators. The high frequency radio, which is part of the TACP radio set (AN/MRC-107), possesses operating features more desirable for voice operations.

d. Communications patching panel SB-611. The present technical control patch panel (SB-611) and its replacement (AN/TSC-76) are unsuited for divisional circuit control in a fast moving environment. Patch operators stressed the need for a main frame as an integral part of the patch panel to enable them to make semi-permanent interconnections. Their rationale was that this would free the jack panel to be used for rerouting or quick restoral of circuits. Operators also stated the need for additional test equipment; e.g., signal to noise and envelope distortion monitoring sets, in the patch assenblage.

e. Communications operations center AN/MSC-31. Evaluators and players commented that the AN/MSC-31 used in the operations/intelligence section (SYSCON) of the signal battalion has insufficient work area. Players indicated that a work area similar to that provided in an AN/MSC-25 is required but that the cross-country mobility of the AN/MSC-25 would not be satisfactory for use by a mechanized division.

GLOSSARY OF TERMS

Area system. A multichannel radio type communications, i.e., telephone, teletypewriter, televisions, facsimile and data signals, provided within a geographical area to all units with a requirement for the support.

Category I evaluators. Officers in the grade of 05 who were assigned to the section and system level; i.e., division command group, coordinating staff officers, and command groups of subordinate headquarters. The category I evaluator conducted a functional evaluation of staff and section performance through observations, review of staff outputs, and broad discussions concerning the current situation. He directed and supervised the activities of subordinate category II and III evaluators.

Category II evaluators. Officers in the grade of 02, 03, and 04 who were assigned to the section or element level. The category II evaluator conducted an evaluation of the total performance of one or more selected staff sections or elements, recorded staff performance data as appropriate, conducted detailed discussions with section personnel concerning section activities, and supervised the activities of subordinate category III evaluators.

Category III evaluators. NCO's in the grades of E5, E6, E7, and E8 who were assigned to the section or element level. The category III evaluator collected data from selected charts and maps, prepared interior tent and vehicle layout diagrams, and recorded changes in location of personnel and equipment as various elements of the section displaced to new locations.

Circuit. One channel of communications provided by a multichannel radio system.

Command system. The multichannel radio type communications support, i.e., telephone, teletypewriter, television, facsimile and data signals, provided to a specific command headquarters.

Command, control, and communications (CC&C). The organization and means by which a commander receives information, makes decisions, and issues orders for the direction and control of military operations.

Command. The authority vested in an individual of the armed forces for the direction, coordination and control of military forces.

Control. The authority, which may be less than full command, exercised over part of the activities of subordinate or other organizations. In this sense, it is the authority exercised by a staff section or a staff officer, in the name of the commander, over a subordinate unit.

Communications. A method or means of conveying information of any kind, in military units, from one person or place to another, except by direct unassisted conversation or correspondence through nonmilitary postal agencies. It is also the method or means of exercising control.

Combat service support (CSS). The assistance provided to combat operating forces primarily in the fields of maintenance, medical service, military policy, supply, transportation and other logistical services. CSS also includes assistance in the fields of administrative, chaplain, legal, financial services, and civil affairs; however, the latter two activities were not evaluated in the test.

Data. Quantified and/or subjective observations from which conclusions can be developed.

Destruction. For test purposes, the simulated neutralization of a CP.

Direction. Instructions which lay out in detail the tasks to be accomplished. Direction is very structured and is not as flexible as guidance. Direction also implies supervision.

Displays. The total collection of physical means, both fixed and electronic, of exhibited data. Displays include such categories of information displays as charts, maps, and visual files.

Early warning messages. Any message passed orally or in writing which is disseminated to friendly forces and contains information concerning a friendly or enemy attack which has occurred or is about to occur which may present a hazard to friendly forces.

Element. A grouping of personnel subordinate to a section.

Function, staff. The integrated set of mission type tasks performed by a staff in order to assist the commander in command and control and to provide necessary support for the mission. A complete listing of the functions defined for each element is contained in part III of this report.

Guidance. Provides broad and general guidelines for accomplishing tasks or missions. Guidance is not as strict as direction and allows the subordinate latitude to select the means within the guidelines to accomplish the task or mission.

Information. Knowledge acquired in any manner, as by reading, observation, hearsay, etc., not necessarily connoting validity.

Input time of traceable event. The actual time at which the information being output by the preceding element became available for recognition by an element and/or section.

Major item of equipment. Those items of TOE equipment listed in the OFM considered to be essential to test play. Routine administrative, support and field equipment are not included in this category of equipment.

Major staff outputs. A subset of the results of a staff sections' work effort selected for analysis and evaluation during the test. These outputs were either routing or nonscheduled events, but shared the characteristic of containing mission essential information.

Mean absent time. The arithmetic mean of time spent by the individuals away from their work area and not in conjunction with official duties.

Mean idle time. The arithmetic mean of time spent by the individuals in their work area with no work to do.

Mean productive time. The arithmetic mean of time spent by the individuals performing duty related to assigned functions and procedures.

Order. May be oral or written and states the mission and concept for execution and is normally issued from commander to subordinate commander. Formal examples are written OPORD, FRAGO, ADMIN/LOG order, and warning order; informal examples are the every day oral versions of the same items.

Outputs requiring clarification. Any staff section output that causes the addressee to actually query the originating section on any aspect of the output. Queries may relate to mistakes, omissions, administrative errors, and transmission induced errors.

Overcapacity workload. A condition that existed when an individual had more work than he could handle during a shift of duty.

Position numbers. A five digit coded number assigned to each player, controller and evaluator associated with the test. This number was used for controlling, accounting for, and identifying test data.

Procedure, staff. A detailed set of staff activities that must be accomplished to fulfill a stated staff function. A complete listing of the procedures defined for each element is contained in part III of this report.

Reaction time. For evaluation purposes, the time measured by recording the time a significant traceable event was detected to the time that appropriate friendly action was initiated.

Recognition time. For evaluation purposes, the total elapsed time from when a significant traceable event was introduced into play until that event was recognized by a key staff officer or commander

Section. A portion of the coordinating staff which contains two or more elements.

Shift (time). That portion of the 24-hour day that the individual was scheduled for duty (summation of productive, idle, and absent times).

Staff input. Information arriving at a staff element and/or section regardless of its mode of arrival which must be acted on by that staff element and or section.

Standard deviation (SD). The degree to which numerical data tends to spread from an average value. For normally distributed data, 68.2 percent of the data is included between the arithmetic mean less one SD, and the arithmetic mean plus one SD.

System. An arrangement of people and equipment with an established method or procedure of accomplishing a task or mission.

Communications system. A simple radio path between two locations which uses multiplexer (wire carrier) and radio equipment in various combinations to simultaneously transmit or receive telephone, teletypewriter, television, facsimile and data signals.

Task force. A temporary grouping of units under one commander, formed for the purpose of carrying out a specific operation or mission.

Task organization. The temporary allocation of forces by a major tactical group.

Time of shift of control. The day and time (DTG) when the controlling element of an organization relinquishes control to another control element.

Traceable event. One or more key inputs to test play which should cause a staff action by more than one individual.

Traffic, operational. Communication pertaining to directing operations and controlling forces.

Traffic, intelligence. Information pertaining to the enemy; required by the operational commanders for planning and executing operations.

Traffic, administrative. Communication pertaining to the management and execution of all military matters not included in tactics and strategy; primarily in the fields of personnel management and the internal management of units.

Traffic, logistics. Communication pertaining to the planning and carrying out the movement and maintenance of forces.

Traffic, other. Those transmissions determined necessary by the radio operator to maintain communication, i.e., radio checks.

Undercapacity workload. A condition defined for the test when individual player personnel rated themselves as having slack time available during their shift of duty.

Within-capacity workload. A condition defined for the test when individual players rated themselves as being fully employed during their shift of duty.

LIST OF ABBREVIATIONS AND ACRONYMS

AADCP	Army Air Defense Command Post
ACE	Airspace Control Element
ACS	Armored Cavalry Squadron
AD	Air Defense
ADA	Air Defense Artillery
ADC(M)	Assistant Division Commander for Maneuver
ADC(S)	Assistant Division Commander for Support
ADL	Air Defense Liaison
ADM	Atomic Demolitions Munitions
ADPE	Automatic Data Processing Equipment
A/I	Administration and Intelligence
Air Dir	Air Direction
Air Req	Air Request
Air Trf Ctl	Air Traffic Control
A/L	Administration and Logistics
ALO	Air Liaison Officer
Anal	Analysis
A&P	Analysis and Production
ASI	All Source Intelligence
BIC	Battlefield Information Center
BICC	Battlefield Information Coordination Center
BOI	Basis of Issue
CAS	Close Air Support
CBTI	Combat Intelligence
CC&D	Collection, Coordination, and Dissemination
CD	Camouflage Detection
CF	Command Fire
CI	Counterintelligence
Commcen	Communications Center
CONOPS	Continuity of Operations
CP	Command Post
CPOT	Concept Plan of Test
CPX	Command Post Exercise
CSTAIN	Commander's Surveillance and Target Acquisition Information Needs
CUTP	Common-User Telephone
DS	Direct Support
ECCM	Electronic Counter-countermeasures
EEA	Essential Elements of Analysis
EEI	Essential Elements of Information
ESIR	Electronic Security Information Report
EW	Electronic Warfare
EWCO	Electronic Warfare Cryptologic Officer
FD	Fire Direction

FDC	Fire Direction Center
FDX	Full Duplex Teletypewriter
FSOP	Field Standing Operating Procedure
FSE	Fire Support Element
GPIR	General Photo Interpretation Report
GS	General Support
HDX	Half Duplex Teletypewriter
IBCS	Integrated Battlefield Control System
ICM	Improved Conventional Munitions
INTSUM	Intelligence Summary
IPIR	Initial Photo Interpretation Report
IPW	Prisoner of War Interrogation
IR	Infrared
LRRP	Long Range Reconnaissance Patrol
MIJI	Meaconing Interference Jamming and Intrusions
MISREP	Mission Report
MOP	Method of Performance
MSD	Minimum Safe Distance
MISREP	Mission Report
NAIC	Nuclear Accident and Incident Control
OB	Order of Battle
OFM	Organization and Function Manual
O/I	Operations and Intelligence
OIR	Other Information Measurements
OPSEC	Operational Security
P&A	Plans and Administration
PDQ	Player Daily Questionnaire
PEQ	Player End of Test Questionnaire
PERINTREP	Periodic Intelligence Report
PHA	Productive Hours Available
PHE	Productive Hours Expended
RATT	Radio Teletypewriter
R&S	Reconnaissance and Surveillance
S&H	Security and Human Intelligence (HUMINT)
SI	Special Intelligence
SIGINT	Signal Intelligence
SIT	Situation
SITMAP	Situation Map
SQI	Special Qualifications Identifier
SRI	Standing Request for Information
SSB	Single Sideband
SSE/EWE	SIGINT Support/Electronic Warfare Element
SSO	Special Security Officer
SUTP	Sole User Telephone
SYSCON	Systems Control
TAC CP	Tactical Command Post
TECHCON	Technical Control

TOC	Tactical Operations Center
TRADOC	Training and Doctrine Command
TSP	Test Support Package
UGS	Unattended Ground Sensors
UHF	Ultra High Frequency