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INTEGRATED BATTLEFIELD CONTROL SYSTEM (IBCS) DIVISION LEVEL SYSTEM DEFINITION (STAFF ORGANIZATION AND PROCEDURES, 2d REFINEMENT) STUDY. VOLUME XIII. APPENDIX W. COMMAND POST PROGRAM STUDY

Army Combat Developments Command
Intelligence and Control Systems Group
Fort Belvoir, Virginia

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INTEGRATED BATTLEFIELD CONTROL SYSTEM (IBCS) DIVISION LEVEL SYSTEM DEFINITION (STAFF ORGANIZATION AND PROCEDURES, 2D REFINEMENT) STUDY

VOLUME XIII

APPENDIX W - COMMAND POST PROGRAM STUDY

UNITED STATES ARMY
COMBAT DEVELOPMENTS COMMAND
INTELLIGENCE AND CONTROL SYSTEMS GROUP

NOTICE

This appendix is a direct re-print of the Command Post Program Study and does not follow the organization or pagination of the rest of this study. Volume II of the Command Post Program Study is not included as a part of the IBCS 2d Refinement Study Report.

APPENDIX W

COMMAND POST PROGRAM

STUDY

NOTICE

DISCLAIMER

The contents of this study, including findings, conclusions, and recommendations, are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

ACKNOWLEDGEMENT

The conclusions and recommendations of this study are those of the Commander, USACDC INCS Group. This study is based upon information gathered and analysis performed primarily by the USACDC INCS Group. Individuals having a major area of responsibility in the preparation of supporting study material are listed below:

Major James L. Osteen	Study Project Officer, USACDCINCS
Dr. Leon Narwocki	Statician and Technical Advisor, ARI

Cooperation and assistance were received from all USACDC elements in preparation of this study.

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STUDY CONTRIBUTORS

Combat Developments Command Headquarters

MAJ D. D. Kidd

Intelligence and Control Systems Group

BG E. F. Gudgel
COL A. J. Vitullo
COL G. F. Hoge
COL D. M. Ellis
LTC D. M. Monihan
MAJ J. L. Osteen
CPT R. W. Crosby
Dr. L. B. Speck

Combat Systems Group

COL W. A. Adkins
LTC R. E. Wallis

Personnel and Logistics Systems Group

MAJ G. R. Hedgepeth

Concepts and Force Design Group

LTC D. E. Pike

Systems Analysis Group

Mr. R. F. May

Communications-Electronics Agency

MAJ G. H. Perino

Intelligence Agency

LT W. H. Newton

Army Research Institute

Dr. L. H. Narwocki

ABSTRACT

The Command Post Program is a study to review command and control functions during the pre-1976 time frame to reduce personnel, increase mobility and survivability, and decrease size and signature of command post. Echelons from battalion through division are addressed in the final report. The basis for the study was a questionnaire survey sent to commanders and former commanders world-wide. This report contains an analysis of the useable questionnaires to include conclusions. Key result of the study is the conclusion drawn from the survey analysis that command and control effectiveness would be improved at battalion level with the merger of operations and intelligence functions.

COMMAND POST PROGRAM STUDY

EXECUTIVE SUMMARY

1. INTRODUCTION.

a. With the recent reduction of US Army personnel strength based on the reduced level of hostilities in SEAsia and concurrent budgetary restrictions, additional emphasis is being given to means by which army resources - both men and materiel - may be more efficiently utilized. A major objective of this effort is improvement of the command and control structure for tactical forces in the field.

b. In 1971, USACDC conducted a preliminary investigation to determine equipment changes which could be expected to improve command and control capabilities of echelons from battalion through corps in the 1972-76 time frame. This investigation indicated that no major equipment changes would be effected during this period. As a result CDR USACDC directed that attention should be given to the current organization of tactical command posts with a view towards reducing personnel requirements and improving utilization of existing equipment.

c. This guidance has resulted in the Command Post Program, a study undertaken by USACDC Intelligence and Control Systems Group to determine means for improving equipment utilization and reducing personnel requirements of the current TO&E command post organization at battalion through corps levels in the 1973-76 time frame. To accomplish this task, a questionnaire was developed and directed to commanders and former commanders at these echelons, soliciting ideas and opinions which could form a base for development of desired improvements. The conclusions and recommendations of this study specifically exclude certain possible changes currently the subject of other formal study efforts as well as changes which could not realistically be implemented prior to 1976. These ideas will, however, be introduced into other ongoing command and control studies.

2. PROBLEM.

a. Commitment of sizable numbers of personnel to command and control functions has long been a matter of concern in the Army. In the near future, with significant reduction of forces expected, the most efficient utilization of soldier-strength is essential. The basic problem is to identify the lowest personnel commitment level which insures effective command and control and to recommend appropriate changes to H-series TOE.

b. In view of the anticipated imposition of lower overall troop strength ceilings, failure to identify excess personnel associated with

the command and control function may result in a lower number of personnel being available for combat forces. However, an indiscriminate reduction in the number of personnel associated with command and control may negate possible improvements in the commander's ability to direct his fighting forces. Thus, a balance must be struck between personnel reductions and command and control improvements.

3. PURPOSE. To review command and control functions during the pre-1976 time frame to determine how reductions in number of personnel can be achieved while increasing mobility and survivability and decreasing size and signature of command posts. Expected use of study results includes recommendations for minor changes to H-series TOE and doctrinal manuals which will result in improvement in command and control without causing major disruption.

4. OBJECTIVES.

a. To determine if the number of people committed to command and control during the pre-1976 time frame can be reduced, and if so, how, without causing major organizational disruption or degradation of command and control.

b. To EVALUATE physical size of command posts and RECOMMEND feasible decreases.

c. To DETERMINE means for reducing the electronic signature of command posts, without degradation of command and control.

d. To ASSESS the mobility and survivability of command posts with a view toward improving both.

e. To DETERMINE what minor revisions of TOE could be made to implement results of this study.

f. To DETERMINE testing requirements in support of evaluation of the study results.

5. METHODOLOGY. A comprehensive command and control survey, designed to support accomplishment of the stated objectives, was developed and distributed to selected commanders and former commanders world-wide. A qualitative, quantitative, and comparative analysis was then made of the survey results. Recommendations, where appropriate, for minor changes in organization, equipment, and doctrine will be forwarded to the appropriate proponent agency for evaluation and possible implementation.

6. ANALYSIS.

a. Qualitative Results.

(1) QUESTION 1. Can you suggest changes in personnel authorizations (numbers, functional organization, or grade) which would improve

your command and control capability?

(a) There was a 97% response to this question.

(b) Respondents to this question stated that an increase in number of personnel in the form of assistants, clerks, or radio operators are necessary to improve command and control capabilities. These requirements vary from battalion through division to facilitate a 24-hour operational capability over an extended period of time. Changes suggested for corps echelon stated that eliminating redundancy of communications equipment and associated personnel would improve command and control effectiveness.

(c) No structural realignment or grade change was suggested at Corps or Division echelons. Respondents did suggest that the two Majors (04) currently within the battalion be redesignated Deputy for Operations and Deputy for Support as an improvement. The two-deputy idea was also suggested for brigade echelon by some respondents.

(2) QUESTION 2. In the combat environment, do you believe that any of the principal staff members (S1/G1, S2/G2, S3/G3, S4/G4, S5/G5) should be senior in grade to the others? If so, indicate which ones.

(a) There was a 98.5% response to this question.

(b) Respondents to this question favored the S3 being the senior staff officer at battalion. Comments addressing brigade echelon were fairly equal but tended to support the S3 being the senior staff officer and the position upgraded to LTC. For Division and Corps echelons, there was strong feeling all staff officers should be of equal rank.

(3) QUESTION 3. Can you suggest a means for reducing the number of personnel committed to command and control at your echelon which would still allow you to achieve continuous operations?

(a) There was a 98.5% response to this question.

(b) Most respondents to this question suggested that a reduction in the number of personnel would be detrimental to command and control effectiveness.

(c) Respondents addressing Corps eschelon did suggest a reduction in communications equipment which would thereby reduce personnel.

(4) QUESTION 4. Can you suggest a means of reducing the physical size of your command post complex without degradation of your command and control capability?

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(a) There was a 97% response to this question.

(b) Respondents to this question stated that an increase in number of personnel in the form of assistants, clerks, or radio operators are necessary to improve command and control capabilities. These requirements vary from battalion through division to facilitate a 24-hour operational capability over an extended period of time. Changes suggested for corps echelon stated that eliminating redundancy of communications equipment and associated personnel would improve command and control effectiveness.

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(b) Most respondents to this question suggested that a reduction in the number of personnel would be detrimental to command and control effectiveness.

(c) Respondents addressing Corps eschelon did suggest a reduction in communications equipment which would thereby reduce personnel.

(4) QUESTION 4. Can you suggest a means of reducing the physical size of your command post complex without degradation of your command and control capability?

(a) There was a 100% response to this question.

(b) Respondents addressing each echelon suggested the physical size of command post can be reduced through austerity. Opinions reflected that less austerity could be implemented at battalion while more austerity is suggested at each succeeding higher echelon. Austerity was suggested through eliminating luxury items, elaborate briefing facilities, and excess vehicles.

(c) Decentralizing or dispersing staff elements was also suggested as a way to reduce the physical size of command post complex. Only the functions essential to tactical operations should comprise the command post complex.

(5) QUESTION 5. Can you suggest a means for reducing the electronic "signature" of your command post complex without seriously degrading your command and control capability?

(a) There was a 97% response to this question.

(b) Reduction in transmission time was suggested as the predominate means for reducing the electronic signature of command post. To reduce transmission time requires using radios for only essential tactical information and strict adherence to proper operating procedure.

(c) Issuing secure transmission radios was suggested as contributing to decreasing transmission time by allowing information to be transmitted without being concerned with violating security.

(6) QUESTION 6. Can you suggest changes in the type, quantity or capability of the communications equipment you are now authorized which would improve your command and control capability?

(a) There was a 100% response to this question.

(b) Respondents suggested that all radios have the secure transmission capability. They also recommended that communications equipment be more reliable, durable, less complex, lighter, smaller, better weather-proofed and more powerful.

(7) QUESTION 7. Are the maps you are currently authorized adequate for your operational needs in terms of scale and quantity?

(a) There was a 98.5% response to this question.

(b) The majority of respondents to this question consider current authorization of maps as adequate. Those who felt it was less than adequate suggested a more liberal distribution of 1:50,000 scale

maps is necessary at battalion and brigade. At Division and Corps echelon, the issue of 1:100,000 scale maps should be reinstituted.

(8) QUESTION 8. How could the QUALITY of the maps you are currently authorized be improved to better meet your operational needs?

(a) There was a 95.5% response to this question.

(b) Updating maps was suggested more frequently as improving the quality of maps currently authorized.

(c) Respondents also suggested that durability of maps requires improvement through weather-proofing surface to allow writing and erasures, and ability to be easily folded.

(9) QUESTION 9. Can you suggest innovations in the map symbols currently used by your staff to display information?

(a) There was a 91% response to this question.

(b) Respondents felt that current map symbols are satisfactory and that no effort be directed toward changing them.

(10) QUESTION 10. Can you suggest changes in type, quantity, or performance criteria of power sources (such as generator) you are currently authorized?

(a) There was a 97% response to this question.

(b) Respondents generally felt the current power sources in the TOE are unsatisfactory. There is a need for a new family of generators which are more durable, require less maintenance, have interchangeable parts, and are lighter and smaller.

(11) QUESTION 11. Can you suggest changes which might be made in the shelters you are currently authorized which might lead to improvement of command and control?

(a) There was a 92.5% response to this question.

(b) Changes in shelters currently authorized were suggested as telescopic poles for tentage and lightweight tentage to replace the bulky tentage now in use.

(12) QUESTION 12. Can you suggest a means for improving reproduction of overlays and orders in the field?

(a) There was a 95.5% response to this question.

(b) Respondents to this question suggesting an improved reproduction capability recommend a Xerox type copier for overlays and

orders. The machine will have to be sufficiently rugged to withstand field operations.

(13) QUESTION 13. Can you suggest improvement in your personal command vehicle(s)?

(a) There was a 92.5% response to this question.

(b) Respondents suggested that the M114 Command Vehicle be replaced with the M113 Personnel Carrier.

(c) For all command vehicles it was recommended that secure communications equipment be installed.

(14) QUESTION 14. Can you suggest improvement in the vehicles you and your staff are currently authorized for use as operations centers in the field?

(a) There was a 92.5% response to this question.

(b) Respondents suggested that operation center vehicles have the capability to be connected to form a more integrated operations effort. To accomplish this, tent extensions on operational staff vehicles should have snaps or zippers to facilitate joining them together.

b. Qualitative Results.

(1) QUESTION 15. Current TOE authorization regarding ORGANIZATION for command and control is:

excellent	more than adequate	adequate	less than adequate	inadequate

(a) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(b) Respondents to this question generally felt that the current TOE regarding organization is adequate to excellent. Augmentation is accomplished when and where the situation so demands.

(2) QUESTION 16. It has been suggested that the combination of operations and intelligence elements might result in more effective command and control. Do you find this proposition at your level:

highly desirable	somewhat desirable	indifferent	somewhat undesirable	undesirable

(a) The scale on this question was collapsed into "indifferent-highly desirable" versus "somewhat undesirable-undesirable" categories.

(b) Generally, respondents interpreted the combining of operations and intelligence functions as collocating them in one physical facility. The respondents favored this combining of these two functions.

(c) There was strong opinion that merging the two functions at battalion under the supervision of a deputy for operations would improve effectiveness of command and control. Respondents tended to accept the merging of these two staff elements at Brigade. At Division and Corps echelons, respondents rejected the idea of merging the two elements due to their complexities at these levels.

(3) QUESTION 17. At your level, do you consider the number of personnel authorized by TOE for the receipt, processing and dissemination of information/intelligence:

excessive	more than adequate	adequate	less than adequate	inadequate

(a) The scale on this question was collapsed two different ways because of the varying responses for each category. Responses were collapsed first as "adequate-excessive" versus "less than adequate-inadequate"; then "more than adequate-excessive" versus "adequate-inadequate" categories.

(b) A significant number of respondents feel the TOE personnel authorizations are adequate. This is to say that they felt it was neither excessive nor inadequate, but just sufficient for the receipt, processing, and dissemination of information or intelligence.

(4) QUESTION 18. If someone suggested that you combine your logistics and personnel elements into a single staff element, would you find the idea:

undesirable	somewhat undesirable	indifferent	somewhat desirable	highly desirable

(a) The scale on this question was collapsed into "somewhat undesirable-undesirable" versus "undesirable-highly desirable" categories.

(b) Respondents felt that the functions of logistics and personnel were too divergent and complex to be combined. Each area is a separate career field unrelated in training, procurement, distribution, and use.

(5) QUESTION 19. (Please respond to this question even though it applies to the division level.) FM 101-5 states that dual-duty assignments should be limited to preserve integrity. At division level, several staff elements are perenially organized under a "dual-hat" concept; notably engineer, signal and artillery units. Do you believe that this "dual-hat" technique is preferred for elements of:

ENGINEER	☐ YES	☐ NO
SIGNAL	☐ YES	☐ NO
ARTILLERY	☐ YES	☐ NO

(a) The strength of respondents' opinions on this question was measured for each of the three branches.

(b) At Brigade, Division, and Corps echelons, there is a significant preference for the dual-hat technique. However, at Battalion echelon, the preference is insignificant for or against the dual-hat concept.

(6) QUESTION 20. Current STAFF PROCEDURES for command and control, as outlined in FM 101-5, are:

inadequate	less than adequate	adequate	more than adequate	excellent

(a) The scale on this question was collapsed into "less than adequate-inadequate" versus "adequate-excellent" categories.

(b) A highly significant percentage (95%) of respondents felt satisfied with current staff procedures as outlined in FM 101-5.

(7) QUESTION 21. Some commanders establish clear-cut separation between planners and operators. Others integrate the two on a continuous basis. Does your TOC have any responsibility for PLANNING operations beyond 24 hours?

☐ YES ☐ NO

(a) Respondents felt that some planning beyond 24 hours is necessary at all echelons. At battalion and brigade this planning consisted primarily of command post displacement, contingency missions, and logistics functions.

(b) At division level, it was felt that good planning is done a minimum of 24 hours in advance. While at Corps level, it is essential that planning be conducted as far in advance as permissible.

(8) QUESTION 22. In terms of current authorizations of personnel, is the information flow within your TOC, that is, the flow of information between elements of your TOC:

excellent	more than adequate	adequate	less than adequate	inadequate

(a) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(b) Respondents felt that information flow within tactical operations centers is adequate. Comments were made that it could be improved and suggestions for improvement were also stated.

(9) QUESTION 23. In terms of the information you need to make decisions, the information flow into your TOC from other TOCs is:

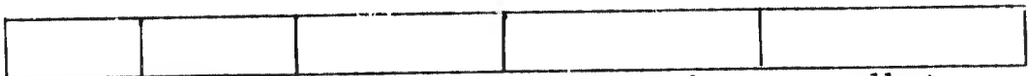
inadequate	less than adequate	adequate	more than adequate	excellent

(a) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(b) A significant portion of respondents who had commanded in combat felt that information flow between TOCs was adequate or better. On the other hand, non-combat commanders indicated no significant opinion on adequacy or inadequacy of information flow between TOCs.

(c) The majority of respondents who expressed dissatisfaction with the information flow between TOCs directed their comments to the lateral flow rather than the vertical flow of information.

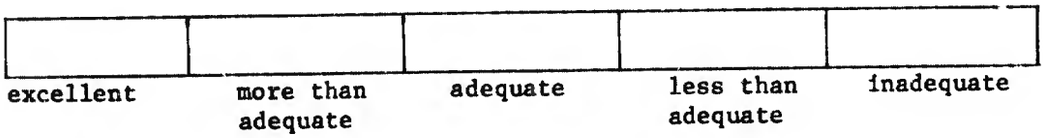
(10) QUESTION 24. Would you evaluate your ability to accomplish airspace coordination as:



(a) The scale on this question was collapsed into "good-excellent" versus "fair-poor" categories.

(b) A significant portion of respondents expressed a fair to poor ability to accomplish airspace coordination at all echelons. Responses given include a lack of doctrinal agreement between the Army and Air Force and lack of dedicated personnel and equipment to perform this function.

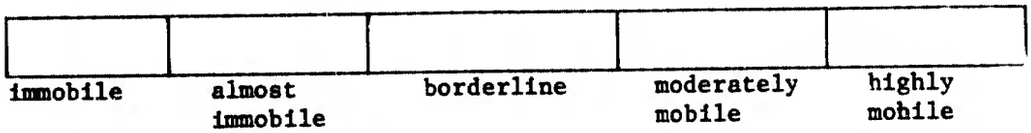
(11) QUESTION 25. Current TOE authorizations regarding EQUIPMENT for command and control are:



(a) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(b) Respondents generally felt that command and control equipment currently authorized is adequate. Improvement of current equipment was expressed as needing attention, particularly radios and associated equipment.

(12) QUESTION 26. With current organization and equipment do you consider your command post:



(a) The scale on this question was collapsed into "borderline-highly immobile" versus "almost immobile-immobile" categories.

(b) The majority of respondents felt that current organization and equipment permit reasonable mobility of the command post, although on the verge of being just sufficient.

(13) QUESTION 27. In light of the mid-intensity nuclear threat, do you consider your command post:

very vulnerable	somewhat vulnerable	borderline	moderately safe	invulnerable

(a) The scale on this question was collapsed into "borderline-invulnerable" versus "somewhat vulnerable-very vulnerable" categories.

(b) Respondents felt that command post vulnerability is a function of echelon. That is, the higher the echelon, the greater the feeling that the command post is vulnerable to a nuclear attack, e.g., 61% at battalion related to 100% at division and corps.

(14) QUESTION 28. Do you find the idea of computers at your level of command:

undesirable	somewhat undesirable	indifferent	somewhat desirable	highly desirable

(a) The scale on this question was collapsed into "indifferent-highly desirable" versus "somewhat undesirable-undesirable" categories.

(b) Most of the respondents find the idea of computers as undesirable. This feeling tends to decrease at division and corps echelons.

(15) QUESTION 29. Would you describe your "hands-on" experience with computers as:

extensive	above average	average	very little	non-existent

(a) The scale on this question was collapsed two different ways to more accurately pin point the level of the respondents' experience. The scale was first collapsed into "average-extensive" versus "very little-non-existent" categories. Secondly, the scale was collapsed into "above average-extensive" versus "average-non-existent" categories.

(b) A majority of the respondents have had very little or no "hands-on" experience with computers.

(c) The relationship on how respondents replied to this question and Question 28 is reflected in the chart below.

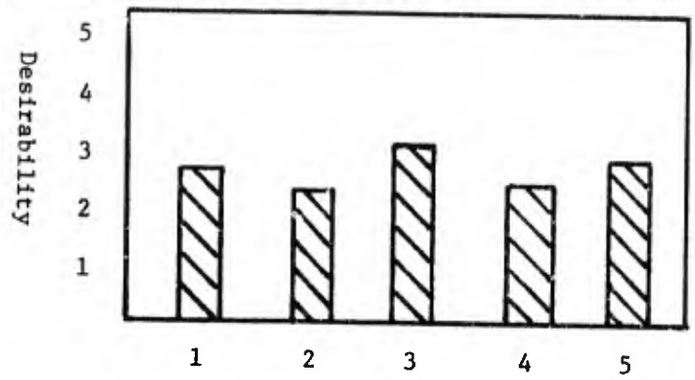


Figure 1 - Level of Experience

c. Comparative Analysis. Evaluation and comparison of the survey results revealed statistical insignificant difference in responses by category. Therefore, a comparative analysis was determined to be of little or no value and was not conducted.

7. CONCLUSIONS. In forming conclusions for this survey report, questions were grouped to support the study objectives to which they are related, either directly or indirectly.

a. Objective 1. To determine if the number of people committed to command and control during the pre-1976 time frame can be reduced, and if so, how, without causing major organizational disruption or degradation of command and control.

(1) There are three interrelated components which effect the performance of a particular function. Survey questions were grouped to address these components and conclusions thereto are included under this objective. These interrelated components are:

(a) Staff organization.

(b) Staff procedures and techniques.

(c) Equipment supporting staff procedures and techniques.

(2) Staff Organization.

(a) Current TOE authorizations regarding organization are adequate; therfore, any reduction in the number of personnel would result in a degradation of command and control effectiveness. Personnel changes to improve command and control necessitates an increase of staff assistants, clerks and radio operators.

(b) At battalion level command and control would be enhanced by designating two deputy commanders. One deputy commander would be designated for operations (currently the S3), who would supervise and direct the functions of operations and intelligence. The second deputy commander would be designated for support (currently the executive officer), who would supervise and direct the functions of personnel and logistics. Adaptation of the two-deputy concept may prove effective at brigade level to enhance command and control.

(c) The merger of personnel and logistics staff functions should be discounted due to the complexity and diversity of these areas.

(d) The merger of operations and intelligence staff functions at battalion level, and possibly at brigade level, is feasible.

(3) Staff Procedures and Techniques.

(a) FM 101-5 adequately describes staff procedures in the exercise of effective command and control.

(b) Dual-hat assignments for Engineer, Signal, and Artillery commanders at division level preserve integrity in these areas and should be retained.

(c) Map symbols currently used for display of information should not be altered. Techniques for posting maps with current symbols vary throughout the Army and no one technique is prominent.

(d) The ability to accomplish airspace coordination at every echelon is ineffective to satisfy the needs of commanders.

(4) Equipment Supporting Staff Procedures and Techniques.

(a) Currently authorized TOE equipment is adequate to support staff functions.

(b) There are two weak areas where equipment should be improved to enhance command and control. One area is communications, which requires a secure radio transmission capability for all radios. In addition, the quality of radios should be improved so they are more powerful, reliable, durable, require less maintenance, and are less complicated to repair and maintain. The other area requiring attention is the quality of maps. Map production procedures should be changed so that maps are reproduced to be weather-resistant and allow writing and erasure with ballpoint pens, lead pencils, and grease pencils.

(c) A ruggedized automatic reproduction capability will reduce staff reaction time at brigade and division echelons in publishing and distributing plans and orders.

(d) Use of computers should be limited at this time to above the division echelon. Adaptation of computer systems at division level and below will require less delicate equipment to withstand field operations.

b. Objective 2. To evaluate physical size of command posts and recommend feasible decreases.

(1) Survey questions considered related to this objective are those which address major items of equipment. Survey question number 4 specifically addresses the physical size of CPs.

(2) The physical size of a command post complex can be reduced by eliminating major items of equipment nonessential for effective tactical operations, e.g., elaborate briefing facilities and large messing facilities.

(3) Reduction in the physical size of a command post complex can be accomplished by the dispersion and relocation of functional elements not directly associated with control of tactical operations.

(4) A command post complex can be reduced in physical size by restricting traffic flow of all types of vehicles into the command post area.

c. Objective 3. To determine means for reducing the electronic "signature" of command posts without degradation of command and control.

(1) Survey questions related to this objective are those which address communications equipment.

(2) The electronic signature of command posts can be reduced by using secure transmission radios to transmit only essential tactical information with proper radio procedures being strictly enforced.

d. Objective 4. To assess the mobility and survivability of command posts with a view toward improving both.

(1) Survey questions related to this objective are those which address vehicles, shelters, and communications equipment.

(2) Mobility.

(a) Increased mobility of command posts can be achieved by reducing set-up and tear-down time of shelters. This time can be reduced by using telescopic poles for tentage and replacing current tentage with lightweight tentage. Tentage used as vehicle extentions should be designed to allow easily joining other vehicle extension tentage.

(b) The M113 Personnel Carrier should be used as the tactical command vehicle.

(3) Survivability.

(a) Vulnerability of command posts as a nuclear target can be decreased by reducing its physical size and electronic signature. See conclusions for objectives 2 and 3.

(b) Vulnerability (mobility, dispersion, hardening) of command posts as a nuclear target cannot be significantly reduced without degradation to command and control effectiveness.

8. RECOMMENDATION. The conclusions drawn from the questionnaire analysis do not appear to support any specific recommendations for this study. In view of the fact the survey population was limited; a transfer of ideas within questions and responses to questions was lacking; and the main thrust of the study remains to surface candidate areas for further investigation to improve command and control, only one general recommendation is presented. It is recommended that the Command Post Program Study be incorporated into the IBCS 2d Refinement Study, which will be field tested and later evaluated during the IBCS 3d Refinement Study effort.

MAIN REPORT

CHAPTER 1

INTRODUCTION

1. GENERAL. This report consists of survey data and the rationale for the study. The major impact of this report is to identify candidate areas for further investigation rather than to recommend changes in specific personnel positions or items of line equipment.

2. PROBLEM.

a. Commitment of sizable numbers of personnel to command and control functions has long been a matter of concern in the Army. In the near future, with significant reduction of forces expected, the most efficient utilization of soldier-strength is essential. The basic problem is to identify the lowest personnel commitment level which insures effective command and control and to recommend appropriate changes to H-Series TOE.

b. In view of the anticipated imposition of lower overall troop strength ceilings, failure to identify excess personnel associated with the command and control function may result in a lower number of personnel being available for combat forces. However, an indiscriminate reduction in the number of personnel may adversely affect command and control functions. Thus, a balance must be struck between personnel reductions and the maintenance of the commander's ability to direct his fighting forces.

3. OBJECTIVES. The main thrust of this study is to carefully consider in which functional area directly associated with command and control a reduction in personnel would be most feasible during the pre-1976 time frame. Accordingly, six objectives were established:

a. To determine to what extent the number of people committed to command and control during the pre-1976 time frame might be reduced without causing major organizational disruption or degradation of command and control.

b. To evaluate size of command posts and recommend feasible decreases.

c. To determine means for reducing the electronic signature of command posts without degradation of command and control.

d. To assess the mobility and survivability of command posts with a view toward improving both.

e. To determine what minor revisions of TOE could be made to implement results of this study.

f. To determine testing requirements necessary to select the most appropriate means for implementing study results.

Satisfying these objectives at a level of detail sufficient for implementation will necessitate further test, study, and evaluation of the results of this study. Therefore, the initial study was conducted to surface candidate areas within each objective to be refined for optimum results.

4. SCOPE. Command posts for battalion through corps echelons were considered sufficient to determine what minor revisions of TOE and FM are required to accomplish the stated objectives without causing major reorganization in the field. Mechanized infantry units were selected for initial investigation prior to proceeding with a study of infantry, armor, airmobile, and airborne forces. With the H-Series TOE approved for implementation, this is the TOE which the survey evaluated. The many functions and related equipment associated with or related to command and control necessitated limiting the functions primarily to the command groups and operations and intelligence staffs at each echelon addressed.

5. STUDY ASSUMPTIONS. Two assumptions were made in the conduct of this study:

a. The Army will continue to develop concepts for integration of data automation into command and control functions.

b. No major automated systems will be fielded prior to 1976.

CHAPTER 2

METHODOLOGY

1. GENERAL TECHNIQUE. To accomplish the purpose of the study, a survey encompassing the stated objectives was developed. The survey was distributed to selected officers selected as representing the typical level of experience at each echelon addressed in the study. The intent was to obtain field commander's ideas and opinions regarding the study objectives. The survey questions were divided into two main types - qualitative and quantitative. An open response section was included in the survey to increase the flexibility of survey responses.

2. QUALITATIVE QUESTIONS. The 14 qualitative questions were presented for open-end responses. Problem areas were stated and suggestions for solutions solicited. Since this type of question does not require an answer, Appendix E presents the number of persons who chose to respond. It may be assumed those who failed to respond did not believe the problem to be critical, relevant to their experience, or were unable to arrive at a solution.

3. QUANTITATIVE QUESTIONS. This group of 15 questions consisted of proposals for the improvement of command and control. Respondents were encouraged to respond in terms of their strength of opinion or attitude toward the stated proposal. A five-point scale was established to measure the strength of the respondent's feeling toward the question. The five-point scale was later collapsed to obtain the necessary values for application of the Chi Square test. The confidence level selected was that of a 5% or less chance of error.

4. THREAT.

a. The profile of the ground threat that faces NATO today is a highly mobile force, with powerful armored and motor-rifle elements and with nuclear weapons organic down to division. Conventional artillery strength (SP guns, howitzers, rocket-launchers and heavy mortars) is also attached to the strike forces; air defense systems are organic in regiment strength in Front and Army organization; anti-tank defense exists throughout down to battalion level; engineering capacity is closely integrated for high-speed crossings of rivers and obstacles, with the "rear services" (logistics) also being adapted to the requirements of high-speed advances and the extended range of operations.

b. The Soviet forces available for use in the European theater are impressive in scale (even on a superficial inspection) -- over 30 divisions in Eastern Europe, 60-70 in Western Russia, including a strong airborne component. The current military thinking within Soviet Armed

Forces as revealed in a recent unclassified study, is that a conflict in Europe would be violent but of short duration.

c. The capability to wage a nuclear conflict has been clearly established by the Soviets, but their intent is still speculative. In 1967, the CinC of the Warsaw Pact Forces declared that current organizations and weaponry made it possible for his ground forces to conduct military operations successfully with or without the use of nuclear weapons. This declaration can by no means be construed as a shift away from nuclear weapons. At best, this is a theoretical admission by the Soviet military that operations in Europe might be conducted at the non-nuclear as well as the full-scale nuclear level (and even a form of limited nuclear encounter). The predominant assumption by the Soviets is that in the "main sectors" (the central battle area in Europe, for example), the resort to nuclear weapons would be the likeliest possibility.

5. SCENARIO. Assuming a massive attack by Bloc forces, consider that US and allies will execute a successful delay to a pre-determined line. Following mobilization and reinforcement, NATO will assume the offensive to restore territorial boundaries and terminate hostilities. Nuclear weapons, though present, have not been employed; however, the threat of their employment is constant. Allied and Bloc air forces are at parity with each other, and both have the capability to establish local air superiority for short periods at a high expenditure of effort.

6. CONSTRAINTS. There were no constraints placed on this study except as established by responses to the questionnaire survey.

7. LIMITATIONS. This study effort is aimed at considerations in reduction of the number of people and equipment committed to command and control during the specified time frame. Accordingly, the following are not addressed:

a. Functions other than those which can clearly be associated with the commander's control of a combat situation.

b. Equipments other than those which clearly contribute to the stated objectives.

c. Formal cost effectiveness analysis.

8. SOURCE OF DATA. To avoid attacking the objectives of the study in a vacuum, a questionnaire was developed to solicit opinions and ideas of commanders and former commanders in the field. Preparation of the survey was accomplished in cooperation with personnel from the Army Research Institute (ARI). The survey was designed to be comprehensive and to secure quantitative as well as qualitative data for use in achieving the study objectives. Selection of participants was made by Office of Personnel Operations, HQ DA, for Colonels and Lieutenant Colonels. General officers were selected by CG, CDCINCS, Director,

INCSCACS; and Chief, Command Systems Division, INCSCACS. An even distribution was desired and achieved for command experience in four major geographic environments: CONUS, Europe, Alaska, and RVN. A statistical summary of the characteristics of the respondents may be found in Appendix E.

CHAPTER 3

SURVEY RESULTS

1. REPRESENTATIVENESS OF SAMPLE. The number of useable responses is in direct proportion to the original breakout of questionnaires based on selection criteria. This is to say the return rate of useable responses is approximately the same as the proportion for each grade and geographic area addressed in the original survey. For example, 8.7% of the original questionnaires were sent to Brigadier Generals. Brigadier General responses comprise 9% of the useable surveys. Geographically 17% of the original surveys were sent out to commanders of CONUS units, and the responses comprise 17% of all useable responses. It cannot be stated exactly to what extent the original list was representative of the entire Army in the field. However, based on the purpose and objectives of this study, and confirmation of the reliability confidence factor of the survey data, it is our judgement that respondents are reasonably representative of the Army in the field.

2. CONFIDENCE. In all quantitative questions, statistical comparisons for each category were based on a criterion of 5% or less probability of error. The test used throughout was the Chi Square (Siegel, 1956). This test was selected as being the most appropriate statistical method for evaluating these kind of data. In the report and summaries of comments, the terms "many", "most", and "some" are used to summarize ideas and opinions. The term "many" can be related to approximately 30-40 percentile, while the term "most" can be equated to 60 to 70 percentile. The term "some" is intended to reflect less than a 20 percentile.

3. QUALITATIVE RESULTS.

a. QUESTION 1. Can you suggest changes in personnel authorizations (numbers, functional organization, or grade) which would improve your command and control capability?

(1) There was a 97% response to this question.

(2) Respondents to this question stated that an increase in number of personnel in the form of assistants, clerks, or radio operators are necessary to improve command and control capabilities. These requirements vary from battalion through division to facilitate a 24-hour operational capability over an extended period of time. Changes suggested for corps echelon stated that eliminating redundancy of communications equipment and associated personnel would improve command and control effectiveness.

(3) No structural realignment or grade change was suggested at Corps or Division echelons. Respondents did suggest that the two

Majors (04) currently within the battalion be redesignated Deputy for Operations and Deputy for Support as an improvement. The two-deputy idea was also suggested for brigade echelon by some respondents.

b. QUESTION 2. In the combat environment, do you believe that any of the principal staff members (S1/G1, S2/S2, S3/G3, S4/G4, S5/G5) should be senior in grade to the others? If so, indicate which ones.

(1) There was a 98.5% response to this question.

(2) Respondents to this question favored the S3 being the senior staff officer at battalion. Comments addressing brigade echelon were fairly equal but tended to support the S3 being the senior staff officer and the position upgraded to LTC. For Division and Corps echelons, there was strong feeling all staff officers should be of equal rank.

c. QUESTION 3. Can you suggest a means for reducing the number of personnel committed to command and control at your echelon which would still allow you to achieve continuous operations?

(1) There was a 98.5% response to this question.

(2) Most respondents to this question suggested that a reduction in the number of personnel would be detrimental to command and control effectiveness.

(3) Respondents addressing Corps echelon did suggest a reduction in communications equipment which would thereby reduce personnel.

d. QUESTION 4. Can you suggest a means of reducing the physical size of your command post complex without degradation of your command and control capability?

(1) There was a 100% response to this question.

(2) Respondents addressing each echelon suggested the physical size of command posts can be reduced through austerity. Opinions reflected that more austerity is suggested at each echelon. At battalion level, however, it is suggested that more austerity may result in degradation of command and control. Austerity was suggested through eliminating luxury items, elaborate briefing facilities, and excess vehicles.

(3) Decentralizing or dispersing staff elements was also suggested as a way to reduce the physical size of the command post complex. Only the functions essential to tactical operations should comprise the command post complex.

e. QUESTION 5. Can you suggest a means for reducing the electronic "signature" of your command post complex without seriously degrading your command and control capability?

(1) There was a 97% response to this question.

(2) Reduction in transmission time was suggested as the predominate means for reducing the electronic signature of command posts. To reduce transmission time requires using radios for only essential tactical information, and strict adherence to proper operating procedure.

(3) Issuing secure transmission radios was suggested as contributing to decreasing transmission time by allowing information to be transmitted without being concerned with violating security.

f. QUESTION 6. Can you suggest changes in the type, quantity or capability of the communications equipment you are now authorized which would improve your command and control capability?

(1) There was a 100% response to this question.

(2) Respondents suggested that all radios have the secure transmission capability. They also recommended that communications equipment be more reliable, durable, less complex, lighter, smaller, better weather-proofed and more powerful.

g. QUESTION 7. Are the maps you are currently authorized adequate for your operational needs in terms of scale and quantity?

(1) There was a 98.5% response to this question.

(2) The majority of respondents to this question consider current authorization of maps as adequate. Those who felt it was less than adequate suggested a more liberal distribution of 1:50,000 scale maps is necessary at battalion and brigade. At Division and Corps echelon it suggested that 1:100,000 scale maps should be reinstituted.

h. QUESTION 8. How could the QUALITY of the maps you are currently authorized be improved to better meet your operational needs?

(1) There was a 95.5% response to this question.

(2) Updating maps more frequently was suggested as improving the quality of maps currently authorized.

(3) Respondents also suggested that durability of maps requires improvement through weather-proofing the surface to allow writing, erasures, and easy folding.

i. QUESTION 9. Can you suggest innovations in the map symbols currently used by your staff to display information?

(1) There was a 91% response to this question.

(2) Respondents felt that current map symbols are satisfactory and that no effort be directed toward changing them.

j. QUESTION 10. Can you suggest changes in type, quantity, or performance criteria of power sources (such as generators) you are currently authorized?

(1) There was a 97% response to this question.

(2) Respondents generally felt the current power sources in the TOE are unsatisfactory. There is a need for a new family of generators which are quieter, more durable, require less maintenance, have interchangeable parts, and are lighter and smaller.

k. QUESTION 11. Can you suggest changes which might be made in the shelters you are currently authorized which might lead to improvement of command and control?

(1) There was a 95.5% response to this question.

(2) Changes in shelters currently authorized were suggested as telescopic poles for tentage and lightweight tentage to replace the bulky tentage now in use.

l. QUESTION 12. Can you suggest a means for improving reproduction of overlays and orders in the field?

(1) There was a 95.5% response to this question.

(2) Respondents to this question suggesting an improved reproduction capability recommend a Xerox type copier for overlays and orders. The machine will have to be sufficiently rugged to withstand field operations.

m. QUESTION 13. Can you suggest improvement in your personal command vehicle(s)?

(1) There was a 92.5% response to this question.

(2) Respondents suggested that the M114 Command Vehicle be replaced with the M113 Personnel Carrier.

(3) For all command vehicles it was recommended that secure communications equipment be installed.

n. QUESTION 14. Can you suggest improvement in the vehicles you and your staff are currently authorized for use as operations centers in the field?

(1) There was a 92.5% response to this question.

(2) Respondents suggested that operation center vehicles have the capability to be connected to form a more integrated operations effort. To accomplish this, tent extensions on operational staff vehicles should have snaps or zippers to facilitate joining them together.

4. QUANTITATIVE RESULTS. In the case of quantitative questions, responses were compared across echelons, elements, combat experience, and geographic areas. These are discussed only in cases where a statistically significant difference was obtained between groups in a particular category.

a. QUESTION 15. Current TOE authorizations regarding ORGANIZATION for command and control are:

excellent	more than adequate	adequate	less than adequate	inadequate

(1) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(2) A significant proportion of respondents indicated that the current TOE regarding organization is adequate to excellent. Augmentation is accomplished when and where the situation so demands.

b. QUESTION 16. It has been suggested that the combination of operations and intelligence elements might result in more effective command and control. Do you find this proposition at your level:

highly desirable	somewhat desirable	indifferent	somewhat undesirable	undesirable

(1) The scale on this question was collapsed into "indifferent-highly desirable" versus "somewhat undesirable-undesirable" categories.

(2) Generally, respondents interpreted the combining of operations and intelligence functions as collocating them in one physical facility. Overall this proposal was found to be neither particularly desirable nor undesirable.

(3) There was strong opinion indicated in the additional comments that merging the two functions at battalion under the supervision of a deputy for operations would improve effectiveness of

command and control. Respondents tended to accept the merging of these two staff elements at Brigade. At Division and Corps echelons, respondents were evenly divided on the notion of merging the two elements due to function complexity at these echelons.

c. QUESTION 17. At your level, do you consider the number of personnel authorized by TOE for the receipt, processing and dissemination of information/intelligence:

excessive	more than adequate	adequate	less than adequate	inadequate

(1) The scale on this question was collapsed two different ways to obtain a more accurate indication of a possible borderline opinion. Responses were collapsed first as "adequate-excessive" versus "less than adequate-inadequate"; then "more than adequate-excessive" versus "adequate-inadequate."

(2) As expected, a significant number of respondents felt the TOE personnel authorizations are adequate. This is to say that they felt there are neither excessive nor inadequate, but just sufficient for the receipt, processing, and dissemination of information or intelligence.

d. QUESTION 18. If someone suggested that you combine your logistics and personnel elements into a single staff element, would you find the idea:

undesirable	somewhat undesirable	indifferent	somewhat desirable	highly desirable

(1) The scale on this question was collapsed into "somewhat undesirable-undesirable" versus "indifferent-highly desirable" categories.

(2) Respondents felt such a combination to be undesirable since the functions of logistics and personnel are too divergent and complex to be combined. Each area is a separate career field unrelated in training, procurement, distribution, and use.

e. QUESTION 19. (Please respond to this question even though it applies to the division level.) FM 101-5 states that dual-duty assignments should be limited to preserve integrity. At division level, several

staff elements are perennially organized under a "dual-hat" concept; notably engineer, signal and artillery units. Do you believe that this "dual-hat" technique is preferred for elements of:

ENGINEER	☐ YES	☐ NO
SIGNAL	☐ YES	☐ NO
ARTILLERY	☐ YES	☐ NO

(1) The strength of respondents' opinions on this question was measured for each of the three branches.

(2) Regardless of the branches above being evaluated, at Brigade, Division, and Corps echelons there is a significant preference for the dual-hat technique with the strongest preference at brigade level. However, at Battalion echelon, the preference is neither significantly for nor against the dual-hat concept.

f. QUESTION 20. Current STAFF PROCEDURES for command and control, as outlined in FM 101-5, are:

inadequate	less than adequate	adequate	more than adequate	excellent

(1) The scale on this question was collapsed into "less than adequate-inadequate" versus "adequate-excellent" categories.

(2) A highly significant percentage (95%) of respondents felt current staff procedures as outlined in FM 101-5 were at least adequate.

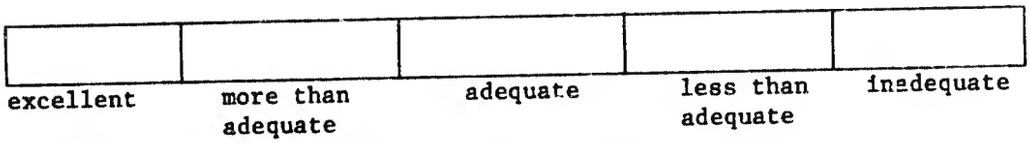
g. QUESTION 21. Some commanders establish clear-cut separation between planners and operators. Others integrate the two on a continuous basis. Does your TOC have any responsibility for PLANNING operations beyond 24 hours?

☐ YES ☐ NO

(1) A significant proportion of respondents felt that some planning beyond 24 hours is necessary at all echelons. At battalion and brigade this planning consisted primarily of command post displacement, contingency missions, and logistics functions.

(2) At division level, it was felt that good planning is done a minimum of 24 hours in advance. While at corps level, it is essential that planning be conducted as far in advance as permissible.

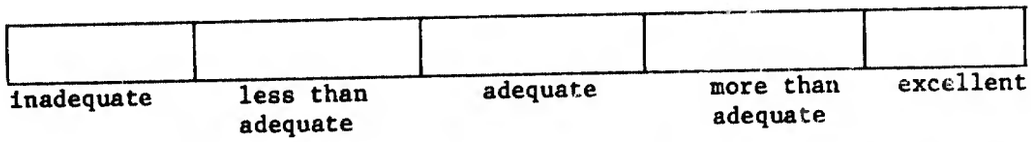
h. QUESTION 22. In terms of current authorizations of personnel, is the information flow within your TOC, that is, the flow of information between elements of your TOC:



(1) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(2) Respondents felt that information flow within tactical operations centers is adequate.

i. QUESTION 23. In terms of the information you need to make decisions, the information flow into your TOC from other TOCs is:

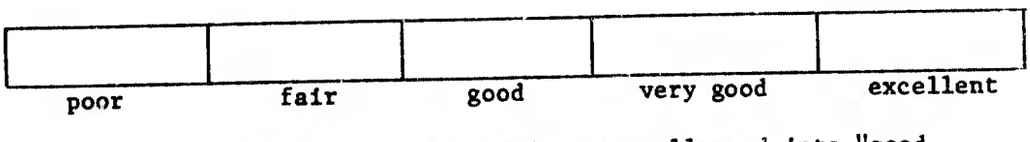


(1) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(2) A significant portion of respondents who had commanded in combat felt that information flow between TOCs was adequate or better. On the other hand, non-combat commanders indicated no significant opinion on adequacy or inadequacy of information flow between TOCs.

(3) The majority of respondents who expressed dissatisfaction with the information flow between TOCs directed their comments to the lateral flow rather than the vertical flow of information.

j. QUESTION 24. Would you evaluate your ability to accomplish airspace coordination as:



(1) The scale on this question was collapsed into "good-excellent" versus "fair-poor" categories.

(2) A significant portion of respondents expressed dissatisfaction with their ability to accomplish airspace coordination at all

echelons. Explanations given include the lack of doctrinal agreement between the Army and Air Force and the lack of dedicated personnel and equipment to perform this function.

k. QUESTION 25. Current TOE authorizations regarding EQUIPMENT for command and control are:

excellent	more than adequate	adequate	less than adequate	inadequate

(1) The scale on this question was collapsed into "adequate-excellent" versus "less than adequate-inadequate" categories.

(2) Respondents felt that command and control equipment currently authorized is adequate. Some improvement of current equipment was expressed as needing attention, particularly in the case of radios and associated equipment.

l. QUESTION 26. With current organization and equipment do you consider your command post:

immobile	almost immobile	borderline	moderately mobile	highly mobile

(1) The scale on this question was collapsed into "borderline-highly immobile" versus "almost immobile-immobile" categories.

(2) The majority of respondents felt that current organization and equipment permit reasonable mobility of the command post, although on the verge of being just sufficient.

m. QUESTION 27. In light of the mid-intensity nuclear threat, do you consider your command post:

very vulnerable	somewhat vulnerable	borderline	moderately safe	invulnerable

(1) The scale on this question was collapsed into "borderline-invulnerable" versus "somewhat vulnerable-very vulnerable" categories.

(2) Respondents felt that command post vulnerability is a function of echelon. That is, the higher the echelon, the greater the feeling that the command post is vulnerable to a nuclear attack, e.g., 61% at battalion related to 100% at division and corps.

n. QUESTION 28. Do you find the idea of computers at your level of command:

undesirable	somewhat undesirable	indifferent	somewhat desirable	highly desirable

(1) The scale on this question was collapsed into "indifferent-highly desirable" versus "somewhat undesirable-undesirable" categories.

(2) Most of the respondents find the idea of computers as undesirable. This feeling tends to decrease at division and corps echelons.

o. QUESTION 29. Would you describe your "hands-on" experience with computers as:

extensive	above average	average	very little	non-existent

(1) The scale on this question was collapsed two different ways to more accurately pin point the level of the respondents' experience. The scale was first collapsed into "average-extensive" versus "very little-non-existent" categories. Secondly, the scale was collapsed into "above average-extensive" versus "average-non-existent" categories.

(2) A majority of the respondents have had very little or no "hands-on" experience with computers.

(3) The relationship on how respondents replied to this question and QUESTION 28 is reflected in Appendix E.

CHAPTER 4

CONCLUSIONS

1. GENERAL. In forming conclusions for this report, survey questions are grouped to support the study objective to which they relate, either directly or indirectly. Identification of survey questions related to each objective is indicated to include repetition of associated questions where applicable. In addition, a correlated explanation between survey questions and study objectives is presented to provide easier interpretation of the results of this report. Each echelon from battalion through division is addressed separately where applicable. Corps echelon is not addressed separately in the conclusions as the number of respondents at this echelon were too few to permit a valid generalization to the Army in the field. It should be emphasized that conclusions are based on the opinions of the survey respondents and are therefore subject to the bias inherent in any subjective evaluation.

2. OBJECTIVE 1. To determine if the number of people committed to command and control during the pre-1976 time frame can be reduced, and if so, how, without causing major organizational disruption or degradation of command and control.

a. There are three interrelated components which effect the performance of a particular function. Survey questions were grouped to address these components and conclusions thereto are included under this objective. These interrelated components are:

(1) Staff organization

(2) Staff procedures and techniques

(3) Equipment supporting staff procedures and techniques

b. Survey questions related to objective 1: 1, 2, 3, 6, 7, 8, 9, 12, 15, 16, 17, 19, 20, 22, 23, 24, 25, 28.

c. Staff Organization.

(1) Current TOE authorizations regarding organization are adequate; therefore, any reduction in the number of personnel would result in a degradation of command and control effectiveness. Personnel changes to improve command and control necessitates an increase of staff assistants, clerks and radio operators.

(2) At battalion level command and control would be enhanced by designating two deputy commanders. One deputy commander would be

designated for operations (currently the S3), who would supervise and direct the functions of operations and intelligence. The second deputy commander would be designated for support (currently the executive officer), who would supervise and direct the functions of personnel and logistics. Adaptation of the two-deputy concept may prove effective at brigade level to enhance command and control.

(3) The merger of personnel and logistics staff functions should be discounted due to the complexity and diversity of these areas.

(4) The merger of operations and intelligence staff functions at battalion level, and possibly at brigade level, is feasible.

d. Staff Procedures and Techniques.

(1) FM 101-5 adequately describes staff procedures in the exercise of effective command and control.

(2) Dual-hat assignments for Engineer, Signal, and Artillery commanders at division level preserve integrity in these areas and should be retained.

(3) Map symbols currently used for display of information should not be altered. Techniques for posting maps with current symbols vary throughout the Army, and no one technique is dominant.

(4) The ability to accomplish airspace coordination at every echelon is considered ineffective to satisfy the needs of commanders.

e. Equipment Supporting Staff Procedures and Techniques.

(1) Currently authorized TOE equipment is adequate to support staff functions.

(2) There are two weak areas where equipment should be improved to enhance command and control. One area is communications, which requires a secure radio transmission capability for all radios. In addition, the quality of radios should be improved so they are more powerful, reliable, durable, requires less maintenance, and are less complicated to repair and maintain. In other words, there is a high degree of dissatisfaction with existing radio equipment. The other area requiring attention is the quality of maps. Map production procedures should be changed so that map surfaces are more weather-resistant and easier to write upon and erase with a wide range of writing tools.

(3) A ruggedized automatic reproduction capability will reduce staff reaction time at brigade and division echelons in publishing and distributing plans and orders.

(4) Use of computers should be limited at this time to echelons at division and above. Adaptation of computer systems at division level and below will require, at the least, less delicate equipment to withstand field operations.

(5) There is a need for a new family of generators which are quieter, more durable, require less maintenance, have interchangeable parts, and are lighter and smaller.

3. OBJECTIVE 2. To evaluate physical size of command posts and recomment feasible decreases.

a. Survey questions considered related to this objective are those which address major items of equipment. Survey question number 4 specifically addresses the physical size of CPs.

b. Survey questions related to objective 2: 4, 6, 11, 12, 13, 14, 25.

c. The physical size of a command post complex can be reduced by eliminating major items of equipment nonessential for effective tactical operations. Specific examples include elaborate briefing facilities and large mess facilities.

d. Reduction in the physical size of a command post complex can be accomplished by the dispersion and relocation of functional elements not directly associated with control of tactical operations.

e. A command post complex can be reduced in physical size by restricting traffic flow of all types of vehicles into the command post area.

4. OBJECTIVE 3. To determine means for reducing the electronic "signature" of command posts without degradation of command and control.

a. Survey questions related to this objective are those which address communications equipment.

b. Survey questions related to objective 3: 5, 6, 10, 23, 24, 28.

c. The electronic signature of command posts can be reduced by using secure transmission radios to transmit only essential tactical information with proper radio procedures being strictly enforced.

5. OBJECTIVE 4. To assess the mobility and survivability of command posts with a view toward improving both.

a. Survey questions related to this objective are those which address vehicles, shelters, and communications equipment.

b. Survey questions related to objective 4: 4, 5, 10, 11, 14, 25, 26, 27.

c. Mobility.

(1) Increased mobility of command posts can be achieved by reducing set-up and tear-down time of shelters. This time can be reduced by using telescopic poles for tentage and replacing current tentage with lightweight tentage. Tentage used as vehicle extentions should be designed to allow easy joining to other vehicle extension tentage.

(2) The M113 Personnel Carrier should be used as the tactical command vehicle.

d. Survivability.

(1) Vulnerability of command posts as a nuclear target can be decreased by reducing its physical size and electronic signature. See conclusions for objectives 2 and 3.

(2) Vulnerability (mobility, dispersion, hardening) of command posts as a nuclear target cannot be significantly reduced without degradation to command and control effectiveness.

CHAPTER 5

RECOMMENDATION

The conclusions drawn from the questionnaire analysis do not appear to support any specific recommendations for this study. In view of the fact the survey population was limited; a transfer of ideas within questions and responses to questions was lacking; and the main thrust of the study remains to surface candidate areas for further investigation to improve command and control, only one general recommendation is presented. It is recommended that the Command Post Program Study be incorporated into the IBC$ 2d Refinement Study, which will be field tested and later evaluated during the IBCS 3d Refinement Study effort.

APPENDIX A

STUDY DIRECTIVE

The Study Directive for the Command Post Program was initially staffed within INCS Group with comments incorporated into the edition staffed with Hqs, CDC and CDC groups and agencies. Upon complete staffing within CDC, the Study Directive was presented to the Study Advisory Group for its approval and then submitted to the Commander, CDC INCS Group for command approval. The Command Post Program is under the CDC Lead Horse concept, which establishes CDC INCS Group Commander as the approving authority. The Study Directive was approved on 4 October 1972, and is at Annex A.

The Study Plan at Annex B was staffed with INCS Group and then submitted to Study Advisory Group members for comment. Recommended and agreed-upon changes to the Study Plan were approved at a SAG conference for incorporation into the Study Plan. The Study Plan was then approved by the Commander, CDC INCS Group.

DEPARTMENT OF THE ARMY
HEADQUARTERS
USACDC INTELLIGENCE AND CONTROL SYSTEMS GROUP
FORT BELVOIR, VIRGINIA 22060

IN REPLY REFER TO:
INCSCACS-CS

4 October 1972

SUBJECT: Combat Development Study Directive: Command Post Program

SEE DISTRIBUTION

1. References: Inclosure 1.

2. Purpose: To review command and control functions during the pre-1976 time frame to determine how reductions in number of personnel can be achieved while increasing mobility and survivability and decreasing size and signature of command posts. Expected use of study results includes recommendations for minor changes to H-Series TOE which will result in improvement in command and control without causing major disruption.

3. Threat Considerations: Inclosure 2.

4. Study Sponsor: Directorate of Concepts and Command Systems, Headquarters, Intelligence and Control Systems Group, Fort Belvoir, Virginia, 22060. Sponsor's representative is MAJ James L. Osteen, Autovon 35-41628.

5. Study Monitor: Not applicable.

6. Terms of Reference:

a. Problem. Commitment of sizable numbers of personnel to command and control functions has long been a matter of concern in the Army. In the near future, with significant reduction of forces expected, the most efficient utilization of soldier-strength is essential. The basic problem is to identify the lowest personnel commitment level which will still allow an improvement in the operation of the command and control structure.

b. Objectives:

(1) To DETERMINE how the number of people committed to command and control during the pre-1976 time frame can be reduced without causing major organizational disruption, or degradation of command and control.

(2) To EVALUATE size of command posts and RECOMMEND feasible decreases.

(3) To DETERMINE means for reducing the electronic signature of command posts, without degradation of command and control.

(4) To ASSESS the mobility and survivability of command posts with a view toward improving both.

(5) To DETERMINE what minor revisions of TOE could be made to implement results of this study.

(6) To DETERMINE testing requirements in support of evaluation of the study results.

c. Limits. The MAIN THRUST of this study effort is to carefully consider what reductions of the number of people committed to command and control can be made during the specified time frame. Accordingly, the following will NOT be addressed:

(1) Functions other than those which can clearly be associated with the commander's control of a combat situation.

(2) Equipments other than those which clearly contribute to the stated objectives.

(3) Cost effectiveness.

d. Scope:

(1) Command posts for battalion thru corps echelons will be considered.

(2) Determination will be made of what minor revisions of TOE and FMs would be required to accomplish the stated objectives without causing a major reorganization in the field.

(3) Adequate evaluation of study results for mechanized infantry will be made before proceeding with study of infantry, armor, airmobile, and airborne forces.

e. Time Frame. This study will focus on the pre-1976 time frame. Recommendations will be made for minor revisions to TOE which could be implemented during the transitional period prior to fielding of the Integrated Battlefield Control System (IBCS). Organizations developed, must, therefore, provide appropriate interface with subsequent IBCS fielding.

f. Assumptions.

(1) The Army will continue to develop concepts for integration of data automation into command and control functions.

(2) No major automated systems will be fielded prior to 1976.

g. Essential Elements of Analysis (EEA): Essential Elements of Analysis will be developed by INCSG in conjunction with preparation of the study plan, and will be limited to those required to achieve the study objectives.

h. Environment. Initial consideration will be a mid-intensity European environment. Subsequent considerations may be included in the study plan.

i. Constraints. None

j. Methodology.

(1) A comprehensive command and control survey designed to support accomplishment of the stated objectives, will be developed by INCSG in cooperation with personnel from BESRL.

(2) The survey will be distributed to selected commanders and former commanders, world-wide.

(3) Responses to the survey will be analyzed by the study proponent.

(4) A written report will be rendered by INCSG on results of the response analysis. Recommendation will be made, where appropriate, for minor changes in:

(a) Organization.

(b) Equipment.

(c) Doctrine.

(5) INCSG will forward recommendations to the appropriate proponent agency (and to the IBCS System Definition Study Group) for evaluation. When the need for a discrete workshop evaluation at MASSTER is indicated, INCSG will make the arrangements.

(6) When a change in organization, equipment or doctrine is identified as desirable, the proponent for the echelon effected will take necessary action to evaluate and verify the recommended changes.

k. Alternatives. Additional recommendations may be presented to the study proponent by interested agencies or commands (e.g., USCONARC, MASSTER, etc).

l. Measures of Effectiveness. To be determined during study development. Examples are effectiveness of various personnel configurations; ability to meet needs of the commander in selected combat situations, and response effectiveness.

m. Related Studies. The following major CDC studies and support actions relate to this study:

(1) IBCS (Phase I) (ACN 16881).

(2) IBCS Experimentation and Evaluation (ACN 18317).

7. Support and Resource Requirements.

a. Proponent. USACDCINCSG is designated as proponent for this study.

b. Other CDC Elements. As indicated in the stated methodology, evaluation of proposed changes will be made by the proponent for the echelon effected (COMSG for battalion, brigade and division; CONFG for Corps). More detailed resource data will be provided with the Study Plan.

c. Non-CDC elements. INCSG will determine input requirements from non-CDC elements and will include draft tasking letters with the study plan.

d. Contract support. Contractual support funds for this study are not required.

8. Administration.

a. Study Title: Command Post Program.

b. Study Schedule:

(1) Study Plan: Within 60 days following distribution of this directive.

(2) Initiation of Study: Following approval of study plan.

(3) Initial SAG meeting: Following approval of study plan.

(4) Completion of Study: Final report and recommendations disseminated NLT Dec 72.

c. Control procedure: Study proponent will establish a Study Advisory Group. Recommended membership is as shown in Inclosure 3.

d. Coordination and communication: Coordination will be accomplished as provided in USACDC Reg 71-1.

e. Distribution: Initial distribution of the study will be to USACDC organizations providing input. A recommended distribution will be developed with the final draft of the study. Final distribution will be made following approval of the proposed distribution list.

f. Security: Security classification of the study will be not higher than Confidential. Every effort will be made to keep the study effort unclassified.

9. Combat Developments Objective Guide. Not applicable.

10. Correlation: USACDC Action Control Number 18972.

FOR THE COMMANDER:

JAMES A. HUMMER
1LT, GS
Adjutant

3 Incl
as

DISTRIBUTION:
CG, USACDC
CG, CONFG
CG, COMSG
CG, PALSG
CO, SAG
CO, CEA
CO, INTA

REFERENCES

1. USACDC Study, TOC/CP, Volumes I and II, August 1970.

2. Command Post Systems, Experiment CP-3 Report, July 1971.

3. USACDC Study, Echelons above Division (EAD), January 1969.

4. Letter, CDCCD-D, USACDC, 11 August 1971, subject: Combat Developments Study Directive: Echelons above Division - Evaluation of Span of Control.

THREAT

The profile of the ground threat that faces NATO today is a highly mobile force, with powerful armored and motor-rifle elements and with nuclear weapons organic down to division. Conventional artillery strength (SP guns, howitzers, rocket-launchers and heavy mortars) is also attached to the strike forces; air defense systems are organic in regiment strength in Front and Army organizations; anti-tank defense exists throughout down to battalion level; engineering capacity is closely integrated for high-speed crossings of rivers and obstacles, with the "rear services" (logistics) also being adapted to the requirements of high-speed advances and the extended range of operations.

The Soviet forces available for use in the European theater are impressive in scale (even on a superficial inspection)--over 30 divisions in Eastern Europe, 60-70 in Western Russia, with a strong airborne component. The current military thinking within Soviet Armed Forces as revealed in a recent unclassified study, is that a conflict in Europe would be violent but of short duration.

The capability to wage a nuclear conflict has been clearly established by the Soviets, but their intent is still speculative. In 1967, the CinC of the Warsaw Pact Forces declared that current organizations and weaponry made it possible for his ground forces to conduct military operations successfully with or without the use of nuclear weapons. This declaration by no means can be construed as a shift away from nuclear weapons. At best, this is a theoretical admission by the Soviet military that operations in Europe might be conducted at the non-nuclear as well as the full-scale nuclear-level (and even a form of limited nuclear encounter). The predominant assumption by the Soviets is that in the "main sectors" (the central battle area in Europe, for example), the resort to nuclear weapons would be the likeliest possibility.

SCENARIO

Assuming a massive attack by Bloc forces, consider that US and allies will execute a successful delay to a pre-determined line. Following mobilization and reinforcement, NATO will assume the offensive to restore territorial boundaries and terminate hostilities. Nuclear weapons, though present, have not been employed; however, the threat of employment is constant. Allied and Bloc air forces are at parity with each other and both have the capability to establish local air superiority for short periods at a high expenditure of effort.

Incl 2

STUDY ADVISORY GROUP
MEMBERSHIP
COMMAND POST PROGRAM

ACN 18972

PERMANENT MEMBERS

CHAIRMAN: Deputy Commander, INCSG

VICE-CHAIRMAN: Director, CACS, INCSG

REPRESENTATIVES (O-5 or equivalent): HQ, USACDC
HQ, CONFG
HQ, COMSG
HQ, PALSG
HQ, SAG

OBSERVERS

Representative of DA, OACSFOR

Representative of HQ, CEA

Representatives of other commands, agencies or directorates, within CDC or from outside of CDC, as desired.

Incl 3

DEPARTMENT OF THE ARMY
HEADQUARTERS
USACDC INTELLIGENCE AND CONTROL SYSTEMS GROUP
FORT BELVOIR, VIRGINIA 22060

IN REPLY REFER TO:

CDCINCSCACS-CS

18 January 1973

SUBJECT: Combat Development Study Plan: Command Post Program

SEE DISTRIBUTION

1. References: Appendix A.

2. Purpose: To review command and control functions during the pre-1976 time frame to determine how reductions in number of personnel can be achieved while increasing mobility and survivability and decreasing size and signature of command posts. Expected use of study results includes recommendations for minor changes to H-series TOE which will result in improvement in command and control without causing major disruption.

3. Threat Considerations: Appendix B.

4. Terms of Reference:

a. Problem. Commitment of sizable numbers of personnel to command and control functions has long been a matter of concern in the Army. In the near future, with significant reduction of forces expected, the most efficient utilization of soldier-strength is essential. The basic problem is to identify the lowest personnel commitment level which will insure effective command and control and to recommend appropriate changes to H-series TOE.

b. Impact of Problem. In view of the anticipated imposition of lower overall troop strength ceilings, failure to identify excess personnel associated with the command and control function may result in a lower number of personnel being available for combat forces. However, an indiscriminate reduction in the number of personnel associated with command and control may negate possible improvements in the Commander's ability to direct his fighting forces. Thus, a balance must be struck between personnel reductions and command and control improvements.

c. Objectives.

(1) To DETERMINE if the number of people committed to command and control during the pre-1976 time frame can be reduced, and if so how, without causing major organizational disruption, or degradation of command and control.

(2) To EVALUATE physical size of command posts and RECOMMEND feasible decreases.

(3) To DETERMINE means for reducing the electronic signature of command posts, without degradation of command and control.

(4) To ASSESS the mobility and survivability of command posts with a view toward improving both.

(5) To DETERMINE what minor revisions of TOE could be made to implement results of this study.

(6) To DETERMINE testing requirements in support of evaluation of the study results.

d. Limits. The MAIN THRUST of this study effort is to consider carefully what reductions of the number of people and equipment committed to command and control can be made during the specified time. Accordingly, the following will NOT be addressed:

(1) Functions other than those which can clearly be associated with the commander's control of a combat situation.

(2) Equipments other than those which clearly contribute to the stated objectives.

(3) Formal cost effectiveness analysis.

e. Scope.

(1) Command posts for battalion thru corps echelons will be considered.

(2) Determination will be made of what minor revisions of TOE and FMs would be required to accomplish the stated objectives without causing a major reorganization in the field.

(3) Analysis of study results for mechanized infantry will be made before deciding whether to proceed with study of infantry, armor, airmobile, and airborne forces.

(4) The solution of Allied forces to the command and control problems surfaced in this study will be considered.

f. Assumptions.

(1) The Army will continue to develop concepts for integration of data automation into command and control functions.

(2) No major automated systems will be fielded prior to 1976.

g. Essential Elements of Analysis (EEA). Appendix C.

h. Environment. Initial consideration will be a mid-intensity European environment. The mid-intensity environment will be postulated for this study. This can be accomplished by use of existing scenarios and threats which have been derived primarily from the CONFAD model.

i. Constraints. None.

j. Methodology.

(1) A comprehensive command and control survey, designed to support accomplishment of the stated objectives, has been developed by INCSG in cooperation with personnel from BESRL.

(2) The survey has been distributed to selected commanders and former commanders, world-wide.

(3) Responses to the survey will be analyzed by INCS Group.

(4) Qualitative Analysis - a synthesis of narrative comments, keyed to survey questions where possible. Of special interest are those views which appear to be widely held among the survey respondees. Judgemental in nature, this analysis is also to identify those new or innovative suggestions possessing merit and potential for evaluation and possible implementation.

(5) Quantitative Analysis - a statistical analysis of Part III of the survey, expressing response in terms of percentages.

(6) Comparative Analysis - a comparison of responses, based on various "groupings" of respondees. The purpose of this analysis is to determine if there is discernible correlation in response pattern (e.g., Do those who have attended War College level military schooling respond to a particular question in a manner significantly different from those who have not?) Similar analysis can be made for age group, years of commissioned service, and combat vs non-combat command experience.

(7) A written report will be rendered by INCSG on results of the response analysis. Recommendation will be made, where appropriate, for minor changes in:

(a) Organization.

(b) Equipment.

(c) Doctrine.

(8) INCSG will forward recommendations to the appropriate proponent agency (and to the IBCS System Definition Study Group) for evaluation. When the need for a discrete workshop evaluation at MASSTER is indicated, INCSG will make the arrangements.

(9) When a change in organization, equipment or doctrine is identified as desirable, the appropriate proponent agency for the echelon effected will take necessary action to accomplish the change.

k. Alternatives. Additional recommendations may be presented to the study proponent by interested agencies or commands (e.g., CONARC, MASSTER).

l. Measures of Effectiveness.

(1) Recommended minor change to H-series TOE which, on the basis of military judgment, insure a capability to perform command and control functions as well or better than currently performed will be evaluated on a basis of the following factors:

(a) Increased mobility and survivability.

(b) Decreased vulnerability.

(2) These factors will be judged from the following quantifiable indicators:

(a) Reduction in total number of personnel committed to command and control functions.

(b) Decrease in physical size of CPs.

(c) Reduction in electronic signature, through reduction or improvement in communications equipment.

(d) Reduction in size and weight of CP support equipment (vehicles, shelters, etc).

(e) Reduction in communication traffic without decrease in information flow.

m. Related Studies. The following major CDC studies and support actions relate to this study:

(1) IBCS (Phase I) (ACN 16881).

(2) Reassessment of Span of Control, RSOC (ACN 18971).

(3) Division and Corps Level Mobile Command Post (ACN 18335).

n. Criterion of Choice. Suggested minor changes to H-series TOE derived from this study will be considered as follows:

(1) Those minor changes which clearly result in improvement in command and control.

(2) Those minor changes which result in a reduction of personnel without degradation of command and control.

5. Support and Resource Requirements:

a. Support Requirements. The methodology selected for this study and the support requirements outlined below allow for a fully cooperative effort while recognizing that each contributor has other priority tasks to consider in resource expenditures.

(1) USACDCINCSG: Responsible for overall conduct of the study. Conduct a qualitative, quantitative and comparative analysis of the Command and Control Survey (developed by INCSG in cooperation with BESRL and already distributed to Commanders and former commanders world-wide). Prepare a written report on the survey analysis and forward that report, with recommendations for appropriate changes, to the proponent for the echelon(s) affected. Provide necessary assistance to the respective proponents for evaluation and implementation of the proposed changes.

(2) USACDCCONFG: Evaluate changes proposed in the Command and Control Survey Analysis Report which affect the corps echelon. Implement change(s), if appropriate, by modification of TOE, revision of FM, development of ROC or other action as required.

(3) USACDCCOMSG. Evaluate changes proposed in the Command and Control Survey Analysis Report which affect the battalion, brigade, and division echelons. Implement change(s), if appropriate, by modification of TOE, revision of FM, development of ROC or other action as required.

(4) USACDCINTA. Support USACDCCONFG and USACDCCOMSG in evaluating and implementing proposed changes which impact in area(s) of intelligence.

(5) USACDCCEA. Support USACDCCONFG and USACDCCOMSG in evaluating and implementing proposed changes which impact in area(s) of communications-electronics.

(6) USACDCPALSG. Support USACDCCONFG and USACDCCOMSG in evaluating and implementing proposed changes which impact in area(s) of personnel and logistics.

b. Resource Requirements. A minimum of 19 estimated man-months of CDC resources are required for completion of this effort. No computer time or contractual assistance is required.

c. Data Requirements. The following data are required:

(1) All of the personal background, qualitative, and quantitative response data of the Command and Control Survey.

(2) H-Series and other TOEs applicable to the pre-1976 time frame.

(3) Reference data on H-Series equipment.

(4) Data on the mobility and survivability of command posts.

(5) Formats for specifying testing requirements.

6. Administration:

a. Study Schedule.

(1) Receipt of survey responses will be complete by 8 September 1972.

(2) Analysis of survey responses complete by 10 December 1972.

(3) Preliminary report to CDC SAG by 5 January 1973.

(4) Preliminary report to CDC and agencies affected by 30 January 1973.

(5) Final report published and distributed by 28 February 1973.

CDCINCSCACS-CS
SUBJECT: Combat Development Study Plan: Command Post Program

b. Study Outline.

(1) Executive Summary. Will highlight salient features, conclusions, and recommendations of the Final Report in synthesized form.

(2) Vol I, Final Report. Will include background information, purpose and objectives of the study, methodology employed, conclusions drawn from qualitative, quantitative and comparative analysis of survey responses, conclusions, and recommendations to include designation of proponents for implementing actions.

(3) Vol II, Data Presentation. Will include the Command and Control Survey, and synthesized raw data from survey responses.

(4) Vol III, Foreign Command and Control Considerations. A presentation of approaches to tactical command and control by the USSR, French, British, and Canadian forces.

c. Study Project Officer. MAJ James L. Osteen, CDCINCSCACS-CS, Telephone Autovon 354-1628.

7. Correlation: USACDC Action Control Number 18972.

FOR THE COMMANDER:

A. J. VITULLO
Colonel, FA
Deputy Commander

DISTRIBUTION:
CDR, USACDC
CDR, USACDCCONFG
CDR, USACDCCOMSG
CDR, USACDCPALSG
CDR, USACDCSAG
CDR, USACDCCEA
CDR, USACDCINTA

APPENDIX A

REFERENCES

FIELD MANUALS:

US Department of Army. Field Manual 7-20, The Infantry Battalions. Washington: December 1969.

_____. Field Manual 7-30, The Infantry Brigades. Washington: March 1969.

_____. Field Manual 11-21, Tactical Signal Communications Systems, Army, Corps, and Division. Washington: 21 November 1961.

_____. Field Manual 11-50, Signal Battalion, Armored, Infantry, Infantry (Mechanized) and Airmobile Divisions, with Change 1. Washington: September 1971.

_____. Field Manual 11-92, Corps Signal Communications. August 1971.

_____. Field Manual 29-30-1, Division Maintenance Battalion, Washington: September 1971.

_____. Field Manual 30-5, Combat Intelligence. Washington: 1 February 1971.

_____. Field Manual 30-9, Military Intelligence Battalion - Field Army. Washington: March 1968.

_____. Field Manual 32-20, Electronic Warfare. Washington: 14 September 1971.

_____. Field Manual 44-1, US Army Air Defense Artillery Employment. Washington: 6 February 1970.

_____. Field Manual 44-3, Air Defense Artillery Employment Chaparral/Vulcan, with Change 1. Washington: 9 August 1968.

_____. Field Manual 61-24, Division Communications. Washington: 7 June 1968, with Change 1.

_____. Field Manual 61-100, The Division. Washington: November 1968.

_____. Field Manual 101-5, Staff Organization and Procedure. Washington: June 1968, with Changes 1 through 4.

TRAINING TEXTS:

USACDC Intelligence Agency. Training Text 30-7, Combat Intelligence Battalion, Mechanized Division Training Text, Final Draft. Fort Holabird, Maryland: 10 August 1970.

USACDC Institute of Combined Arms and Support. Training Text 30-30-1, (C) TARS-75 Field Evaluation Training Text (U),Final Draft. Fort Leavenworth, Kansas: October 1969.

TABLES OF ORGANIZATION AND EQUIPMENT (TOE):

TOE 5-146H, Headquarters and Headquarters Company, Engineer Battalion, Armored or Infantry (Mechanized) Division.

TOE 6-302H, Headquarters and Headquarters Battery, Division Artillery, Infantry, Armored, Mechanized Division.

TOE 6-366H, Headquarters and Headquarters Battery, Field Artillery Battalion 155mm, Self-Propelled, Armored or Mechanized Division Artillery.

TOE 7-46H, Headquarters and Headquarters Company, Infantry Battalion (Mechanized).

TOE 11-15G, Corps Signal Battalion.

TOE 11-36H, Headquarters and Headquarters Detachment, Signal Battalion, Infantry Division (Mechanized), with Augmentations 1, 2, and 3.

TOE 11-37H, Command Operations Company, Signal Battalion, Infantry Division (Mechanized), with Augmentations 1 and 7.

TOE 11-38H, Forward Communications Company, Signal Battalion, Infantry Division (Mechanized), with Augmentation 1.

TOE 11-39H, Signal Support Operations Company, Signal Battalion, Infantry Division (Mechanized), with Augmentations 1 and 3.

TOE 19-27H, Military Police Company, Infantry Division (Mechanized).

TOE 29-2H, Headquarters and Headquarters Company, Support Command, Infantry Division (Mechanized).

TOE 29-509H, Data Processing Unit, Support Command, Infantry Division (Mechanized).

TOE 30-88T, Military Intelligence Support Detachment, Military Intelligence Battalion, Field Army.

TOE 30-206T, Headquarters and Headquarters Company, Combat Intelligence Battalion.

TOE 32-57G, (C) Army Security Agency Divisional Support Company (U), with modifications from IBCS Phase I Definition.

TOE 37-4H, Headquarters and Headquarters Company, Infantry Division (Mechanized), with Augmentation 1.

TOE 37-42H, Headquarters and Headquarters Company, Infantry Division Mechanized Brigade.

TOE 37-87H, Division Aviation Company, Infantry Division (Mechanized).

STUDIES:

USACDC Institute of Combined Arms and Support, Refinement of the IBCS Concept, IBCS, Phase I, Final Study.

USACDC Institute of Combined Arms and Support. Integrated Battlefield Control System (IBCS), Phase I: Alternative IBCS Concepts. Fort Leavenworth, Kansas: 2 November 1970.

_____. (FOUO) TOC/CP Description and Correlation to the Integrated Battlefield Control System (IBCS) (U). Fort Leavenworth, Kansas: August 1970.

REFERENCE BOOKS:

United States Army Combat Developments Command (FOUO) Communications-Electronics Reference Data (U). Fort Belvoir, Virginia: 16 February 1970.

US Army Command and General Staff College. Reference Book 61-1, The Division. Fort Leavenworth, Kansas: 15 June 1970.

US Army Combat Developments Command, (U) INTEROPS/CONOPS Phase I Study (ACN 18006), dated November 1971.

APPENDIX B

THREAT CONSIDERATIONS

The profile of the ground threat that faces NATO today is a highly mobile force, with powerful armored and motor-rifle elements and with nuclear weapons organic down to division. Conventional artillery strength (SP guns, howitzers, rocket-launchers and heavy mortars) is also attached to the strike forces; air defense systems are organic in regiment strength in Front and Army organizations; anti-tank defense exists throughout down to battalion level; engineering capacity is closely integrated for high-speed crossings of rivers and obstacles, with the "rear services" (logistics) also being adapted to the requirements of high-speed advances and the extended range of operations.

The Soviet forces available for use in the European theater are impressive in scale (even on a superficial inspection)--over 30 divisions in Eastern Europe, 60-70 in Western Russia, with a strong airborne component. The current military thinking within Soviet Armed Forces as revealed in a recent unclassified study, is that a conflict in Europe would be violent but of short duration.

The capability to wage a nuclear conflict has been clearly established by the Soviets, but their intent is still speculative. In 1967, the CinC of the Warsaw Pact Forces declared that current organizations and weaponry made it possible for his ground forces to conduct military operations successfully with or without the use of nuclear weapons. This declaration by no means can be construed as a shift away from nuclear weapons. At best, this is a theoretical admission by the Soviet military that operations in Europe might be conducted at the non-nuclear as well as the full-scale nuclear level (and even a form of limited nuclear encounter). The predominant assumption by the Soviets is that in the "main sectors" (the central battle area in Europe, for example), the resort to nuclear weapons would be the likeliest possibility.

SCENARIO

Assuming a massive attack by Bloc forces, consider that US and allies will execute a successful delay to a pre-determined line. Following mobilization and reinforcement, NATO will assume the offensive to restore territorial boundaries and terminate hostilities. Nuclear weapons, though present, have not been employed; however, the threat of employment is constant. Allied and Bloc air forces are at parity with each other and both have the capability to establish local air superiority for short periods at a high expenditure of effort.

APPENDIX C

ESSENTIAL ELEMENTS OF ANALYSIS

1. How can the number of people committed to command and control during the pre-1976 period be reduced without reduction in functional effectiveness?

   a. Are functions being performed that are not essential to command and control?

   b. Are there unnecessary redundancies or duplications in the performance of command and control functions?

   c. Are there personnel assigned to command and control functions who are not fully employed?

2. Can the size of CPs be reduced without reduction in command and control functional performance?

   a. What functions currently performed within the CP can be performed elsewhere?

   b. What fraction of command and control activities within the CP are performed solely for internal coordination and information exchange?

   c. Can the volume of internal information flow be reduced through changes in staff structure or reduction in staff size?

3. Can the electronic signature of command posts be reduced without degradation of command and control performance?

   a. Can the number of transmissions be reduced by changes in organization and procedures?

   b. Can the length of transmissions be reduced by increasing the information content of traffic, e.g., through increased use of standard formats?

   c. Can the number of radio nets be reduced?

4. Can the size, weight or number of communication equipments associated with CPs be reduced?

5. Can the size, weight, and number of other equipments supporting the CP be reduced, e.g., shelters, vehicles?

6. Can the mobility of CPs be increased by changes in organization, doctrine, or equipment without impairment of command and control functional performance?

APPENDIX B

ESSENTIAL ELEMENTS OF ANALYSIS

1. How can the number of people committed to command and control during the pre-1976 period be reduced without reduction in functional effectiveness?

a. Are functions being performed that are not essential to command and control?

b. Are there unnecessary redundancies or duplications in the performance of command and control functions?

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c. Can the number of radio nets be reduced?

4. Can the size, weight or number of communication equipments associated with CPs be reduced?

5. Can the size, weight, and number of other equipments supporting the CP be reduced, e.g., shelters, vehicles?

6. Can the mobility of CPs be increased by changes in organization, doctrine, or equipment without impairment of command and control functional performance?

APPENDIX C

REFERENCES

FIELD MANUALS:

US Department of Army. Field Manual 7-20, The Infantry Battalions. Washington: December 1969.

_____. Field Manual 7-30, The Infantry Brigades. Washington: March 1969.

_____. Field Manual 11-21, Tactical Signal Communications Systems, Army, Corps, and Division. Washington: 21 November 1961.

_____. Field Manual 11-50, Signal Battalion, Armored, Infantry, Infantry (Mechanized) and Airmobile Divisions, with Change 1. Washington: September 1971.

_____. Field Manual 11-92, Corps Signal Communications. August 1971.

_____. Field Manual 29-30-1, Division Maintenance Battalion, Washington: September 1971.

_____. Field Manual 30-5, Combat Intelligence. Washington: 1 February 1971.

_____. Field Manual 30-9, Military Intelligence Battalion - Field Army. Washington: March 1968.

_____. Field Manual 32-20, Electronic Warfare. Washington: 14 September 1971.

_____. Field Manual 44-1, US Army Air Defense Artillery Employment. Washington: 6 February 1970.

_____. Field Manual 44-3, Air Defense Artillery Employment Chaparral/Vulcan, with Change 1. Washington: 9 August 1968.

_____. Field Manual 61-24, Division Communications. Washington: 7 June 1968, with Change 1.

_____. Field Manual 61-100, The Division. Washington: November 1968.

_____. Field Manual 101-5, Staff Organization and Procedure. Washington: June 1968, with Changes 1 through 4.

TRAINING TEXTS:

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USACDC Institute of Combined Arms and Support. Training Text 30-30-1, (C) TARS-75 Field Evaluation Training Text (U), Final Draft. Fort Leavenworth, Kansas: October 1969.

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TOE 6-302H, Headquarters and Headquarters Battery, Division Artillery, Infantry, Armored, Mechanized Division.

TOE 6-366H, Headquarters and Headquarters Battery, Field Artillery Battalion 155mm, Self-Propelled, Armored or Mechanized Division Artillery.

TOE 7-46H, Headquarters and Headquarters Company, Infantry Battalion (Mechanized).

TOE 11-15G, Corps Signal Battalion.

TOE 11-36H, Headquarters and Headquarters Detachment, Signal Battalion, Infantry Division (Mechanized), with Augmentations 1, 2, and 3.

TOE 11-37H, Command Operations Company, Signal Battalion, Infantry Division (Mechanized), with Augmentations 1 and 7.

TOE 11-38H, Forward Communications Company, Signal Battalion, Infantry Division (Mechanized), with Augmentation 1.

TOE 11-39H, Signal Support Operations Company, Signal Battalion, Infantry Division (Mechanized), with Augmentations 1 and 3.

TOE 19-27H, Military Police Company, Infantry Division (Mechanized).

TOE 29-2H, Headquarters and Headquarters Company, Support Command, Infantry Division (Mechanized).

TOE 29-509H, Data Processing Unit, Support Command, Infantry Division (Mechanized).

TOE 30-88T, Military Intelligence Support Detachment, Military Intelligence Battalion, Field Army.

TOE 30-206T, Headquarters and Headquarters Company, Combat Intelligence Battalion.

TOE 32-57G, (C) Army Security Agency Divisional Support Company (U), with modifications from IBCS Phase I Definition.

TOE 37-4H, Headquarters and Headquarters Company, Infantry Division (Mechanized), with Augmentation 1.

TOE 37-42H, Headquarters and Headquarters Company, Infantry Division Mechanized Brigade.

TOE 37-87H, Division Aviation Company, Infantry Division (Mechanized).

STUDIES:

USACDC Institute of Combined Arms and Support, Refinement of the IBCS Concept, IBCS, Phase I, Final Study.

USACDC Institute of Combined Arms and Support. Integrated Battlefield Control System (IBCS), Phase I: Alternative IBCS Concepts. Fort Leavenworth, Kansas: 2 November 1970.

USACDC Study, Echelons above Division (EAD), January 1969.

USACDC Study, TOC/CP, Volumes I and II, August 1970.

_____. (FOUO) TOC/CP Description and Correlation to the Integrated Battlefield Control System (IBCS) (U). Fort Leavenworth, Kansas: August 1970.

REFERENCE BOOKS:

United States Army Combat Developments Command. (FOUO) Communications-Electronics Reference Data (U). Fort Belvoir, Virginia: 16 February 1970.

US Army Command and General Staff College. Reference Book 61-1, The Division. Fort Leavenworth, Kansas: 15 June 1970.

US Army Combat Developments Command, (U) INTEROPS/CONOPS Phase I Study (ACN 18006), dated November 1971.

OTHER:

Command Post Systems, Experiment CP-3 Report, July 1971.

Letter, CDCCD-D, USACDC, 11 August 1971. Subject: Combat Developments Study Directive: Echelons Above Division - Evaluation of Span of Control.

APPENDIX D

METHODOLOGY

A comprehensive command and control survey, designed to support accomplishment of the stated objectives, was developed by INCSG in cooperation with personnel from BESRL. The survey was then distributed to selected commanders and former commanders world-wide. (Copy at Annex A). A statistical analysis was made for the qualitative and quantitative questions after which a comparative analysis was made based on the six classification categories. The comparative analysis allowed a determination if there was any discernible correlation in response pattern. A comparison was made for each and all of the category groupings. Comments accompanying each question were synthesized to assist in forming a judgmental position in determining which recommendations are appropriate from the study. The comments also allowed a better interpretation of the statistical data related to each survey question.

Personnel selected to receive a survey were chosen by OPO (COL and LTC), with General Officers being selected by a committee headed by the Commander, INCSG. Criterion for selection was established as personnel who have commanded in various parts of the world, in peace time or war time, at all echelons.

Recommendations from the study will be forwarded to CDC Groups and Agencies for evaluation and verification prior to changes being implemented. The reliability of the survey responses was established at .95 using the Chi Square formula. This means that if the survey was expanded throughout the Army, there is a 95% probability that the results would be in consonance with this study.

Assumptions:

- The Army will continue to develop concepts for integration of data automation into command and control functions.

- No major automated systems will be fielded prior to 1976.

There were no constraints placed on this study.

Limitations:

The main thrust of this study effort is to carefully consider what reductions of the number of people committed to command and control can be made during the specified time frame. Accordingly, the following were not addressed:

(1) Functions other than those which can clearly be associated with the commander's control of a combat situation.

(2) Equipments other than those which clearly contribute to the stated objectives.

(3) Cost effectiveness.

COMMAND AND CONTROL

SURVEY

IN SUPPORT OF
COMMAND POST PROGRAM STUDY
(USACDC ACN 18972)

INTELLIGENCE & CONTROL SYSTEMS GROUP

UNITED STATES ARMY COMBAT DEVELOPMENTS COMMAND

Fort Belvoir, Va 22060

MAY 72

PART I

INTRODUCTION

PLEASE READ CAREFULLY BEFORE PROCEEDING

PART I - INTRODUCTION

Comprehensive efforts are underway in Combat Developments Command to define and field an improved command and control system. It is to be a system which will lend itself eventually to the carefully considered integration of automated equipments. Called the Integrated Battlefield Control System (IBCS), several concepts are already under test evaluation at Fort Hood. Through a process of refinement, testing, and further refinement, a system will evolve which is practical in the "real world" of the tactical commander. At the same time it is expected that the tactical commander will realize benefits of automation which can be achieved without prohibitive trade-off in such areas as mobility. Understandably, this evolutionary process will, and appropriately should, take considerable time.

As an ancillary effort, while the larger evolutionary process is underway, a study is being conducted to identify improvements which might be made in the NEARER TIME FRAME. This study is called the Command Post Program.

The purpose of the Command Post Program is to review command and control functions during the pre-1976 time frame to determine how reductions in number of personnel can be achieved while increasing mobility and survivability and decreasing size and signature of command posts.

IN ORDER TO ACCOMPLISH THE STATED PURPOSE, SIX OBJECTIVES HAVE BEEN SELECTED. THEY ARE:

- DETERMINE how the number of people committed to command and control during the pre-1976 time frame can be reduced without causing major organizational disruption, or degradation of command and control.

- EVALUATE size of command posts and recommend feasible decreases.

- DETERMINE means for reducing the electronic signature of command posts, without degradation of command and control.

- ASSESS the mobility and survivability of command posts with a view toward improving both.

- DETERMINE what minor revisions of TOE could be made to implement results of this study.

- DETERMINE testing requirements in support of evaluation of the study results.

Probably the most important contribution to this study effort will be the ideas received from you, the tactical commander. The five part survey you are being asked to complete is designed to solicit both quantitative and qualitative data. It is important to note that ideas for viable improvements will not end up on a shelf, but will result in implementation action. For your interest, a copy of the final study report, complete with recommendations to various implementary agencies, will be mailed directly to you upon completion of the study. Completion is currently scheduled for December 1972. Your personal responses and expressed views will be considered in view of other input and can in no way reflect adversely. Accordingly, complete candor is requested and is essential to the study effort.

This survey consists of five parts:

PART I - INTRODUCTION

PART II - PERSONAL BACKGROUND

PART III - QUALITATIVE RESPONSE

PART IV - QUANTITATIVE RESPONSE

PART V - FREE COMMENT

Instructions for completing the various parts of the survey are included with each respective part. Typing is not necessary. However, it will be helpful if you complete the survey in blue or black pen or ballpoint in a legible manner.

PLEASE TURN TO PART II

COMMAND & CONTROL

"AN ARRANGEMENT OF PERSONNEL, FACILITIES AND THE MEANS FOR INFORMATION ACQUISITION, PROCESSING AND DISSEMINATION EMPLOYED BY A COMMANDER IN PLANNING, DIRECTING, COORDINATING, AND CONTROLLING OPERATIONS."

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PART II - PERSONAL BACKGROUND

PART II - PERSONAL BACKGROUND

NAME_____AGE_____RANK_____
LAST FIRST, MI

YEARS COMMISSIONED SERVICE_____SOURCE OF COMMISSION_____

BRANCH_____HIGHEST MILITARY SCHOOLING_____YEAR GRADUATED_____

INCLUSIVE DATES OF LAST COMMAND ASSIGNMENT_____

HAVE YOU COMMANDED IN COMBAT? YES ☐ NO ☐

IF "YES", LIST UNITS, LOCATIONS, AND INCLUSIVE DATES:

LIST UNITS, LOCATIONS, AND INCLUSIVE DATES OF PEACETIME COMMAND:

PRINCIPAL STAFF EXPERIENCE *

	G1/S1	G2/S2	G3/S3	G4/S4	G5/S5
BATTALION/SQUADRON					
BRIGADE/REGIMENT					
DIVISION					
HIGHER LEVEL					

* MARK X = COMBAT

MARK ✓ = PEACETIME

MARK Ⓧ = MOST RECENT COMBAT PRINCIPAL STAFF ASSIGNMENT

MARK Ⓥ = MOST RECENT PEACETIME PRINCIPAL STAFF ASSIGNMENT

PART III - QUALITATIVE RESPONSE

PLEASE COMPLETE BEFORE PROCEEDING TO PART IV

PART III - QUALITATIVE RESPONSE

This portion of the survey is designed to solicit your narrative comments regarding some of the study objectives outlined in the introduction. Specifically, we are interested in what changes in organization, procedures, or equipment you would make to improve command and control.

Initially, please address each question as if you were a COMMANDER IN COMBAT in a MID-INTENSITY EUROPEAN ENVIRONMENT. It is quite possible that you have never experienced a mid-intensity combat environment, and equally possible that your command experience has been in other geographic areas of the world. However, extrapolation of your experience is needed.

AFTER you have responded as a "commander in Europe", please comment regarding how your response might have been significantly different (if such is the case) had you answered for some other geographic area in which you have had experience.

In this portion of the survey, please respond for only the ONE echelon at which your experience best qualifies you. You will have an opportunity in PART V to expand your comments to other echelons if you desire. It is essential that you respond in the comment space provided for every question.

PLEASE "X" THE APPROPRIATE BOX.

"I AM RESPONDING AS A

- ☐ BATTALION/SQUADRON COMMANDER"
- ☐ BRIGADE/REGIMENT COMMANDER"
- ☐ DIVISION COMMANDER"
- ☐ CORPS COMMANDER"

QUESTION: Can you suggest changes in personnel authorizations (numbers, functional organization, or grade) which would improve your command and control capability?

COMMENT:

QUESTION: In the combat environment do you believe that any of the principal staff members (S1/G1, S2/G2, S3/G3, S4/G4, S5/G5) should be senior in grade to the others? If so, indicate which ones.

COMMENT:

QUESTION: Can you suggest a means for reducing the number of personnel committed to command and control at your echelon which would still allow you to achieve continuous operations?

COMMENT:

QUESTION: Can you suggest a means of reducing the physical size of your command post complex without degradation of your command and control capability?

COMMENT:

QUESTION: Can you suggest a means for reducing the electronic "signature" of your command post complex without seriously degrading your command and control capability?

COMMENT:

QUESTION: Can you suggest changes in the type, quantity or capability of the communications equipment you are now authorized which would improve your command and control capability?

COMMENT:

QUESTION: Are the maps you are currently authorized adequate for your operational needs in terms of scale and quantity?

COMMENT:

QUESTION: How could the QUALITY of the maps you are currently authorized be improved to better meet your operational needs?

COMMENT:

QUESTION: Can you suggest innovations in the map symbols currently used by your staff to display information?

COMMENT:

QUESTION: Can you suggest changes in type, quantity, or performance criteria of power sources (such a. generators) you are currently authorized?

COMMENT:

QUESTION: Can you suggest changes which might be made in the shelters you are currently authorized which might lead to improvement of command and control?

COMMENT:

QUESTION: Can you suggest a means for improving reproduction of overlays and orders in the field?

COMMENT:

QUESTION: Can you suggest improvement in your personal command vehicle(s)?

COMMENT:

QUESTION: Can you suggest improvement in the vehicles you and your staff are currently authorized for use as operations centers in the field?

COMMENT:

PART IV - QUANTITATIVE RESPONSE

PLEASE COMPLETE BEFORE PROCEEDING TO PART V

PART IV - QUANTITATIVE

This portion of the survey is designed to develop STATISTICAL DATA regarding the "gut feelings" of you, the commanders in the field. Accordingly, it is essential that you respond to every question. Please observe the following:

1. MARK ONLY ONE "X" FOR EACH QUESTION.

2. MARK "X" ONLY IN BOXES PROVIDED.

3. DO NOT MODIFY THE QUESTION. If you are not certain that you understand a question, mark the response you think is most likely to reflect your intended view and comment in the space provided.

4. DO NOT INTERPOLATE. Marking "between" two responses would necessarily result in having to eliminate your response from the summary data. Mark one response or the other and comment in the space provided.

5. DO COMMENT IN THE SPACE PROVIDED. When you have selected and marked your response, please comment. Elaboration on why you selected a response or suggestions attendant to a particular question will be most helpful to those evaluating the summary data.

Initially, please address each question as if you were a COMMANDER IN COMBAT in a MID-INTENSITY EUROPEAN ENVIRONMENT. It is quite possible that you have never experienced a mid-intensity combat environment, and euqally possible that your command experience has been in other geographic areas of the world. However, extrapolation of your experience is needed.

AFTER you have responded as a "commander in Europe", please comment regarding how your response might have been significantly different (if such is the case) had you answered for some other geographic area in which you have had experience.

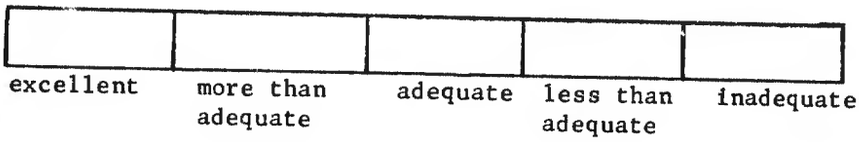
In this portion of the survey, please respond for only the ONE echelon at which your experience best qualifies you. You will have an opportunity in PART V to expand your comments to other echelons if you desire. It is essential that you respond in the comment space provided for every question.

PLEASE "X" THE APPROPRIATE BOX

I AM RESPONDING AS A

- ☐ BATTALION/SQUADRON COMMANDER
- ☐ BRIGADE/REGIMENTAL COMMANDER
- ☐ DIVISION COMMANDER
- ☐ CORPS COMMANDER

QUESTION: Current TOE authorizations regarding ORGANIZATION for command and control are:



COMMENT:

QUESTION: It has been suggested that the combination of operations and intelligence elements might result in more effective command and control.

Do you find this proposition, at your level:

highly desirable	somewhat desirable	indifferent	somewhat undesirable	undesirable

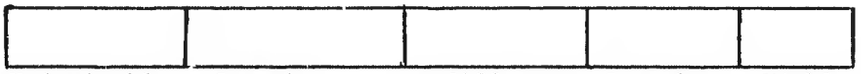
COMMENT:

QUESTION: At your level, do you consider the number of personnel authorized by TOE for the receipt, processing and dissemination of information/intelligence:

excessive	more than adequate	adequate	less than adequate	inadequate

COMMENT:

QUESTION: If someone suggested that you combine your logistics and personnel elements into a single staff element, would you find the idea:



Undesirable	Somewhat undersirable	Indifferent	Somewhat desirable	Highly desirable

QUESTION: (Please respond to this question even though it applies to the division level)

FM 101-5 states that dual-duty assignments should be limited to preserve integrity. At division level, several staff elements are perennially organized under a "dual-hat" concept; notably engineer, signal and artillery units. Do you believe that this "dual-hat" technique is preferred for elements of

ENGINEER	☐ YES	☐ NO
SIGNAL	☐ YES	☐ NO
ARTILLERY	☐ YES	☐ NO

COMMENT:

QUESTION: Current STAFF PROCEDURES for command and control, as outlined in FM 101-5 are:

inadequate	less than adequate	adequate	more than adequate	excellent

COMMENT:

QUESTION: Some commanders establish clear-cut separation between planners and operators. Others integrate the two on a continuous basis. Does your TOC have any responsibility for PLANNING operations beyond 24 hours?

☐ YES ☐ NO

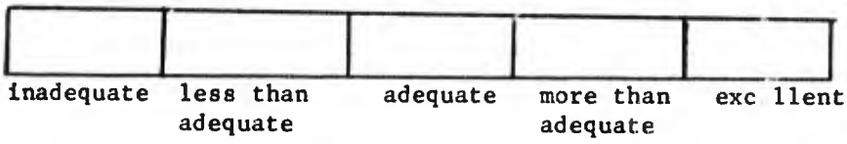
COMMENT:

QUESTION: In terms of current authorizations of personnel is the information flow <u>within</u> your TOC, that is, the flow of information between elements of your TOC:

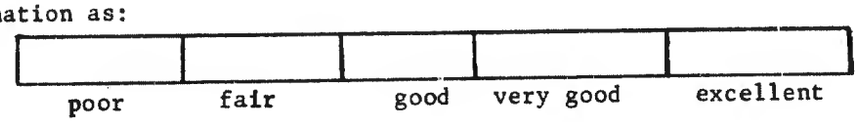
excellent	more than adequate	adequate	less than adequate	inadequate

COMMENT:

QUESTION: In terms of the information you need to make decisions, the information flow into your TOC from other TOCs is:



QUESTION: Would you evaluate your ability to accomplish airspace coordination as:



COMMENT:

QUESTION: Current TOE authorizations regarding EQUIPMENT for command and control are:

excellent	more than adequate	adequate	less than adequate	inadequate

COMMENT:

QUESTION: With current organization and equipment do you consider your command post:

immobile	almost immobile	borderline	moderately mobile	highly mobile

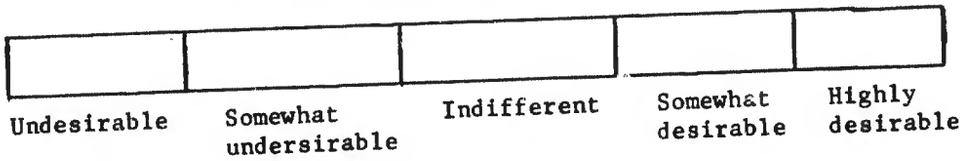
COMMENT:

QUESTION: In light of the mid-intensity nuclear threat, do you consider your command post

very vulnerable	somewhat vulnerable	borderline	moderately safe	invulnerable

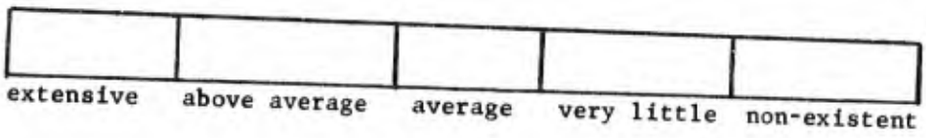
COMMENT:

QUESTION: Do you find the idea of computers at your level of command:



COMMENT:

QUESTION: Would you describe your "hands-on" experience with computers as



COMMENT:

PART V - FREE COMMENT

Having completed PARTS II - IV of the survey, you may find that you still have some things to say. Perhaps, in your opinion, a pertinent question has been overlooked or one or more of the included questions has been misworded. Possibly you would like to expand on a thought not fully developed through response to the survey questions.

The next three pages are blank sheets for your use if you desire to comment further. Add sheets if necessary.

We also take this opportunity to thank you for your effort in completing the survey, and the meaningful contribution you are making to this important effort.

APPENDIX E

SURVEY DATA

Data pertinent to each survey question is presented with that question. Free comments and related data have not been related to specific questions as presented here. These ideas and opinions are, however, incorporated into the summary of comments for each survey question. The additional information submitted includes extracts from letters, published articles, and, in one case, a personal interview. This information, although not reflected in the statistical data, has been considered with equal weight in forming conclusions and recommendations for this study. For the purpose of identifying differences, the survey data was divided into six categories. These six categories were considered by the SAG as being most useful for the survey results. The categories of Echelons and Geographically are further broken down for the purpose of identifying requirements at each echelon and geographic area addressed in the survey. The four remaining categories were further broken down by geographic areas, echelon and principal staff elements, for comparison. These four categories were collapsed for the final report as it was determined there were no statistical differences reflected by the sub-division statistics. For example, statistics were the same for commanders in combat whether combat command was in World War II, Korea, or Vietnam. The same is true whether a peacetime command was in CONUS, Europe, Alaska, or other areas in the world. Statistical summary of qualitative responses were collapsed into favorable or unfavorable categories for the purpose of establishing their reliability coefficient. The reliability coefficient for the survey was established and is reflected at .95.

BASELINE DATA - USEABLE RESPONSES

		Age	Svc
LTG	3 or 4.6%	56.3 yrs	33.7
MG	8 or 12.1%	52.0	30.3
BG	6 or 9.1%		
COL	19 or 28.8%	44.7	23.2
LTC	30 or 45.5%	39.7	17.1
TOTAL	66 or 64.1% of surveys sent out.		

Breakout of Branch:

	LTG	MG	BG	COL	LTC	TOTAL
INF	3	5	1	19	20	48 or 72.7%
ARTY			1			1 or 1.5%
ARM		2	3		10	15 or 22.7%
MI		1				1 or 1.5%
ORD			1			1 or 1.5%

Highest Military Schooling:

War College: 39 or 59.1%

C&GSC: 25 or 37.9%

Non-C&GSC: 2 or 3.0%

Source of Commission:

USMA: 18 or 27.3%

OCS: 15 or 22.7%

ROTC: 24 or 36.4%

OTHER: 9 or 13.6%

Command in Combat: 43 or 65.2%

	Bn/Sqdn	Bde/Regt	Div	Higher
WWII	3 or 6.10%	2 or 4.7%		
KOREA		1 or 2.3%		
RVN	28 or 65.1%	10 or 23.3%	9 or 20.9%	3 or 6.10%

Peacetime Command: 50 or 75.8%

	Bn/Sqdn	Bde/Regt	Div	Higher
ALASKA	5 - 10.0%	3 - 6.0%		
EUROPE	16 - 32.0%	9 - 18.0%	7 - 14.0%	
CONUS	15 - 30.0%	11 - 22.0%	3 - 6.0%	
OTHER	3 - 6.0%	3 - 6.0%		1 - 2.0%

Combat Principal Staff Experience: 42 or 66.7%

	S1/G1	S2/G2	S3/G3	S4/G4	S5/G5
BN/SQDN	1 - 1.6%	2 - 3.2%	9 - 14.3%	3 - 4.8%	
BDE/REGT	3 - 4.8%	3 - 4.8%	8 - 12.7%		
DIV	1 - 1.6%	2 - 3.2%	9 - 14.3%	1 - 1.6%	1 - 1.6%
HIGHER	6 - 9.5%	3 - 4.8%	14 - 22.2%		1 - 1.6%

Peacetime Principal Staff Experience: 59 or 89.4%

	S1/G1	S2/G2	S3/G3	S4/G4	S5/G5
BN/SQN	9 - 15.3%	5 - 8.5%	29 - 49.2%	4 - 6.8%	
BDE/REGT	8 - 13.6%	4 - 6.8%	21 - 35.6%	3 - 5.1%	
DIV	7 - 11.9%	3 - 5.1%	12 - 20.3%	1 - 1.7%	
HIGHER	20 - 33.10%	11 - 18.6%	25 - 42.4%	6 - 10.2%	2 - 3.4%

PART III - QUALITATIVE RESPONSE

This portion of the survey is designed to solicit your narrative comments regarding some of the study objectives outlined in the introduction. Specifically, we are interested in what changes in organization, procedures, or equipment you would make to improve command and control.

Initially, please address each question as if you were a COMMANDER IN COMBAT in a MID-INTENSITY EUROPEAN ENVIRONMENT. It is quite possible that you have never experienced a mid-intensity combat environment, and equally possible that your command experience has been in other geographic areas of the world. However, extrapolation of your experience is needed.

AFTER you have responded as a "commander in Europe," please comment regarding how your response might have been significantly different (if such is the case) had you answered for some other geographic area in which you have had experience.

In this portion of the survey, please respond for only the ONE echelon at which your experience best qualifies you. You will have an opportunity in PART V to expand your comments to other echelons if you desire. It is essential that you respond in the comment space provided for every question.

QUESTION: Can you suggest changes in personnel authorizations (numbers, functional organization, or grade) which would improve your command and control capability?

COMMENT:

1. Statistical Summary.

	Suggest Changes	Cannot Suggest Changes
a. Echelons:		
Battalion	58%	42%
Brigade	53%	47%
Division	50%	50%
Corps	100%	0%
b. Geographically:		
CONUS	55%	45%
Europe	55%	45%
Alaska	62%	38%
RVN	56%	44%
c. Command in Combat:	67%	33%
d. Commanded in Peacetime:	56%	44%
e. Combat Principal Staff Duty:	57%	43%
f. Peacetime Principal Staff Duty:	53%	47%

2. Summary of Comments.

a. General. Overall responses to this question state that an increase in personnel is required to improve command and control effectiveness at division level and below. At Corps echelon, reducing redundancy of communications equipment and associated personnel is suggested to improve command and control. Several comments addressed

structural realignment of the staff at brigade and battalion levels and recommended that S1/S4 and S2/S3 functions be supervised by deputy commanders. The deputy commanders would be Lieutenant Colonels at brigade and Majors at battalion, with each staff function having an OIC one grade lower.

b. Comments recommending personnel increases by echelon are as follows:

(1) Battalion.

S1: 1 officer assistant
2 clerk/typists

S2: 1 officer (MI) assistant
1 NCO intelligence specialist

S3: 1 officer assistant
1 clerk/draftsman
4 radio operators
1 liaison NCO per company

S4: 1 officer assistant

(2) Brigade.

S1: 1 officer assistant
1 NCO personnel specialist
1 clerk/typist

S2: 1 clerk/typist

S3: 1 TOC duty officer
1 S3 air NCO

S4: 1 officer assistant
1 clerk/typist

S5: 1 officer
1 NCO assistant

(3) Division.

G2: 2 officers in OB section
2 officers in G2 air

G3: 2 TOC duty officers

(4) Corps. No recommendations.

c. Related comments in response to this question.

(1) To alleviate some of the higher commander's concern for security of the logistics and support units, as well as rear area protection, the S2/S3 of these type units should be combat arms officers or have had combat arms experience in the grade of Major.

(2) As a minimum, two major command posts of equal capability and a tactical command post are necessary at division. This allows an improved command and control configuration with maximum flexibility and an adequate base for future organizational transition. These command posts might be considered as primary and alternate rather than main and alternate and should be concerned essentially with the command and control of the battle.

(3) The brigade liaison section should be melded with the operations/intelligence team.

(4) DISCOM requires around-the-clock capability not now inherent in the H-Series TOE for field operations. However, if G4 was combined with DISCOM in field operations, no additional personnel would be required.

QUESTION: In the combat environment, do you believe that any of the principal staff members (S1/G1, S2/G2, S3/G3, S4/G4, S5/G5) should be senior in grade to the others? If so, indicate which ones.

COMMENT:

1. Statistical Summary.

	One Senior	All Equal
a. Echelons:		
Battalion	67%	33%
Brigade	58%	42%
Division	8%	92%
Corps	0%	100%
b. Geographically:		
CONUS	64%	36%
Europe	73%	27%
Alaska	75%	25%
RVN	61%	39%
c. Commanded in Combat:	53%	47%
d. Commanded in Peacetime:	58%	42%
e. Combat Principal Staff Duty:	52%	48%
f. Peacetime Principal Staff Duty:	60%	40%

2. Summary of Contents.

a. General. Comments stating that one staff officer be senior in grade predominantly addressed battalion and brigade echelons. The recommendation that the S3 be the senior staff officer at these echelons was overwhelming. At division and corps echelons, the overwhelming response was that no one staff officer be senior.

b. Comments recommending the S3 be senior at battalion and brigade levels stated that he acts as the XO or assist the commander much of the time, and because all staff coordination revolves around operations, the S3 is required to coordinate and supervise staff actions. The S3 can best do this when he is senior to the other staff elements, which implies he is more knowledgeable and has more experience. At battalion level he is in the best position to assist or replace the commander as the XO is often at battalion rear. Comments supporting the brigade S3 as being the senior staff officer offer the opinion that he should be a Lieutenant Colonel with the maturity, knowledge, and experience to be a battalion commander to enhance his assistance to the brigade commander.

c. Comments supporting no one staff officer as being senior state that the function of the senior staff member would dominant the other staff functions and restrict the flow of ideas and objective recommendations to the commander.

d. There were several minority recommendations that combinations of S1 and S3, S2 and S3, and S3 and S4 be the senior staff members. These comments stated that these staff functions required more know-how, responsiveness, and experience which is commensurate with higher grade.

QUESTION: Can you suggest a means for reducing the number of personnel committed to command and control at your echelon which would still allow you to achieve continuous operations?

COMMENT:

1. Statistical Summary.

	Suggest Reduction	Suggest No Reductions
a. Echelon:		
Battalion	21%	79%
Brigade	26%	74%
Division	25%	75%
Corps	100%	0%
b. Geographically:		
CONUS		100%
Europe	27%	73%
Alaska	38%	62%
RVN	28%	72%
c. Commanded in Combat:	33%	67%
d. Commanded in Peacetime:	28%	72%
e. Combat Principal Staff Duty:	26%	74%
f. Peacetime Principal Staff Duty:	26%	74%

2. Summary of Comments.

a. General. Very few comments on this question addressed the same areas. The one area receiving the most comments is communications, and the opinions were that there were either too many radio nets or that by having secure radios the number of nets could be reduced.

b. Several comments were made on redundancy of and unnecessary reports resulting from over control by higher headquarters.

c. Only two comments recommended deletion of a particular position. Those comments suggested that one assistant division commander is all that is required at division.

QUESTION: Can you suggest a means of reducing the physical size of your command post complex without degradation of your command and control capability?

COMMENTS:

1. Statistical Summary.

	Suggest Reduction	Suggest No Reductions
a. Echelon:		
Battalion	36%	64%
Brigade	58%	42%
Division	67%	33%
Corps	100%	0%
b. Geographically:		
CONUS	64%	36%
Europe	45%	55%
Alaska	38%	62%
RVN	39%	61%
c. Commanded in Combat:	53%	47%
d. Commanded in Peacetime:	58%	42%
e. Combat Principal Staff Duty:	55%	45%
f. Peacetime Principal Staff Duty:	57%	43%

2. Summary of Comments.

a. General. Comments on reduction of the physical size of the command post were general in nature for application at each echelon. Where specific echelons of command were addressed, it will be so indicated.

b. Austerity. Throughout the survey, comments recommended that command post be more austere. There is the opinion that each headquarters from battalion through corps has excessive non-essential equipment,

vehicles, and personnel for the purpose of enjoying luxurious living. Equipment can be reduced by eliminating briefing tents, large sleeping tents, and by collocating staff elements to use the same facilities (also reduces the number of vehicles), map boards, mess tents, etc. The number of vehicles can be reduced by combining two 1/4-ton vehicle loads into one 3/4-ton vehicle. Reliance on mission type orders at battalion and brigade plus elimination of excessive non-essential reports will allow a reduction in radio nets, personnel and administrative type equipment normally found in abundance in a command post.

c. New or improved equipment. Comments in this area addressed communications equipment, power sources, and vans. Recommendations were that miniaturized radios and smaller power sources be developed. In addition, this equipment should be more reliable, less complicated to repair, and more durable to eliminate backup floats. Vans should be less bulky, more mobile, or replaced by M577 Command Post vehicles as the tactical operation center at each echelon.

d. Decentralizing or dispersing staff elements. There were many comments suggesting that the tactical command post should be small and comprise only the commander and the essential tactical staff elements. The support staff elements should be located to the rear. The general opinion on this question was that the commander with his S2, S3, and artillery liaison officer comprise the command post. They could and should operate out of one vehicle at battalion level and possibly four at corps level. Not only would this reduce the size of the command post, but it was also suggested that command post mobility would be increased.

QUESTION: Can you suggest a means for reducing the electronic "signature" of your command post complex without seriously degrading your command and control capability?

COMMENT:

1. Statistical Summary.

	Suggest Reduction	Suggest No Reductions
a. Echelon:		
Battalion	61%	39%
Brigade	42%	58%
Division	50%	50%
Corps	50%	50%
b. Geographically:		
CONUS	45%	55%
Europe	64%	36%
Alaska	38%	62%
RVN	67%	33%
c. Commanded in Combat:	60%	40%
d. Commanded in Peacetime:	56%	44%
e. Combat Principal Staff Duty:	64%	36%
f. Peacetime Principal Staff Duty:	60%	40%

2. Summary of Comments.

a. General. Specific echelons of command are not referred to in summarizing these comments since radios and related communications equipment are very similar. Comments suggesting reduction of electronic signature have application at battalion through corps echelons.

b. Reducing radio transmission time through training of all personnel who use a radio was suggested throughout the comments. If proper radio

procedures are enforced, there will be a reduction in time on the air. Using the radio only when essential tactical information is required should eliminate use of the radio for periodic sitreps, administrative, and logistical inquiries. Using radios for only essential tactical information not only reduces the command post electronic signature but would decrease the requirement for radios and related communications equipment.

c. Several comments suggested use of wire and messenger as the only means of communications within a command post complex. Administrative and logistical information should be transmitted via wire or messenger to the greatest extent possible. This would eliminate the requirement for radios, thereby reducing electronic signature of command posts. It was recognized that some administrative or logistics radio traffic would be required, yet the requirement would be limited, thus the operations or command net could be used.

d. Decreasing the electronic signature of essential tactical radios was suggested through improved communications equipment. Reducing transmission time could be accomplished with secure radios employing the "short burst" principle at company through corps echelons. This will allow completing a transmission and then sending it in a fraction of a second. Combining the "short burst" principle with remoting directional antennas was suggested as severely reducing the electronic signature of a command post.

e. Whereas comments on reducing electronic signature primarily addressed communications equipment, other equipment was recommended for attention. Engine ignitions, motor generator slip rings, and commutators must be shielded to prevent unintentional electrostatic emissions. Sympathetic radiations from passive structures, such as metal guy wires or wire fences, should be prevented by bonding or grounding.

QUESTION: Can you suggest changes in the type, quantity or capability of the communications equipment you are now authorized which would improve your command and control capability?

COMMENT:

1. Statistical Summary.

	Suggest Changes	Suggest No Changes
a. Echelon:		
Battalion	64%	36%
Brigade	53%	47%
Division	92%	8%
Corps	50%	50%
b. Geographically:		
CONUS	64%	36%
Europe	55%	45%
Alaska	50%	50%
RVN	67%	33%
c. Commanded in Combat:	70%	30%
d. Commanded in Peacetime:	62%	38%
e. Combat Principal Staff Duty:	69%	31%
f. Peacetime Principal Staff Duty:	64%	36%

2. Summary of Comments:

a. General. Communication requirements vary at each echelon of command, however, there is some equipment which is identical. For example, comments concerning voice radios recommended that all have secure transmission capability regardless of command echelon. Additionally, recommended improvements include that radios be more reliable and durable, less complex, lighter, smaller, better weatherproofed, and more powerful.

b. Comments received addressing corps echelon.

(1) Improvements should include automated voice and record switching, more responsive, reliable, and less complex multi-channel communications equipment, and automated technical control facilities. Single sideband secure voice HF capability within corps would provide an additional command and control means. There is also an urgent need for a capability to transfer operational data via visual displays within various staff sections internal and external to the TOC, e.g., closed-circuit cable TV or visual computer readout device.

c. Comments received addressing division echelon.

(1) Furnish miniaturized, computer-assisted, secure telephone service.

(2) Furnish dedicated television circuits between commanders and between S3's and G3's for coordination of plans and operations.

d. Comments received addressing brigade echelon.

(1) The communications equipment available in the brigade is adequate for most command and control requirements. The additional equipment provided by the division signal battalion gives the brigade adequate communications of all types.

(2) Suggest that improved capabilities be used as a means to reduce the number and type of equipment present at any echelon.

e. Comments addressing battalion echelon.

(1) Be realistic in quantities of radios as spares must be provided for.

(2) The commander needs a multi-channel preset radio which can be transferred to any vehicle he may use to command his forces.

QUESTION: Are the maps you are currently authorized adequate for your operational needs in terms of scale and quantity?

COMMENT:

1. Statistical Summary:

	Adequate	Inadequate
a. Echelon:		
Battalion	61%	39%
Brigade	63%	37%
Division	58%	42%
Corps	50%	50%
b. Geographically:		
CONUS	82%	18%
Europe	64%	36%
Alaska	100%	0%
RVN	89%	11%
c. Commanded in Combat:	81%	19%
d. Commanded in Peacetime:	76%	24%
e. Combat Principal Staff Duty:	83%	17%
f. Peacetime Principal Staff Duty:	77%	23%

2. Summary of Comments.

a. General. Most respondees indicated that maps currently authorized are adequate in terms of scale and quantity. In response to this question, some comments were made concerning improvements to quality, and these comments are incorporated with those for Question 8. Comments applicable to this question are categorized by echelon. Geographic applications are so stated.

b. Comments addressing corps and division echelons stated the 1:100,000 scale map is useful and used extensively. It was recommended that distribution of the 1:100,000 scale map be reinstituted for these echelons.

c. Comments addressing brigade echelon.

(1) A more liberal distribution of 1:50,000 scale map was recommended.

(2) The 1:100,000 scale map should be issued to brigade for planning maps.

d. Comments addressing battalion echelon and lower echelons.

(1) The quantity of 1:50,000 scale maps issued to battalions should be increased.

(2) The 1:25,000 scale map should be issued to company and platoon echelons for fire planning.

QUESTION: How could the QUALITY of the maps you are currently authorized be improved to better meet your operational needs?

COMMENT:

1. Statistical Summary.

	Suggestions	No Suggestions
a. Echelon:		
Battalion	55%	45%
Brigade	74%	26%
Division	67%	33%
Corps	50%	50%
b. Geographically:		
CONUS	36%	64%
Europe	45%	55%
Alaska	38%	62%
RVN	44%	56%
c. Commanded in Combat:	65%	35%
d. Commanded in Peacetime:	40%	60%
e. Combat Principal Staff Duty:	71%	29%
f. Peacetime Principal Staff Duty:	64%	36%

2. Summary of Comments.

a. General. Dissatisfaction with the quality of current maps was generally the same in all categories.

b. The majority of comments stated that maps should be updated more frequently. There were no suggestions how often maps should be updated. It was commented that replacement with current maps through attrition is unsatisfactory.

c. Respondees suggested that the durability of maps needs improvement. It was recommended that map sheets be weather resistant, easily

folded, and allow writing with pencil and erasures.

d. Color coding maps was also suggested as a needed improvement. Color coding should reflect terrain elevation and water depths. In combination with showing water depths, maps should indicate current speed, fording site depths, and bridge classification.

QUESTION: Can you suggest innovations in the map symbols currently used by your staff to display information?

COMMENT:

1. Statistical Summary.

	Yes	No
a. Echelon:		
Battalion	6%	94%
Brigade	10%	90%
Division	17%	83%
Corps	0%	100%
b. Geographically:		
CONUS	9%	91%
Europe	9%	91%
Alaska	0%	100%
RVN	6%	94%
c. Commanded in Combat:	12%	88%
d. Commanded in Peacetime:	12%	88%
e. Combat Principal Staff Duty:	12%	88%
f. Peacetime Principal Staff Duty:	10%	90%

2. Summary of Comments.

a. General. Current map symbols are quite satisfactory as indicated by the statistical summary. Comments supporting no change in current map symbols stated that any changes would be too confusing. All that is required is for personnel to learn the current symbols.

b. Several map posting techniques were suggested in the comments. Use of magnetic or self-adhering symbols, a numerical color code and log book system, and a string indicator system were recommended as quick and informative ways of posting situation maps.

QUESTION: Can you suggest changes in type, quantity, or performance criteria of power sources (such as generators) you are currently authorized?

COMMENT:

1. Statistical Summary.

	Suggest Changes	Suggest No Changes
a. Echelon:		
Battalion	79%	21%
Brigade	89%	11%
Division	83%	17%
Corps	100%	0%
b. Geographically:		
CONUS	82%	18%
Europe	82%	18%
Alaska	75%	25%
RVN	83%	17%
c. Commanded in Combat:	84%	16%
d. Commanded in Peacetime:	84%	16%
e. Combat Principal Staff Duty:	81%	19%
f. Peacetime Principal Staff Duty:	81%	19%

2. Summary of Comments.

a. General. The statistical summary and large number of comments indicate attention and effort are required to improve power sources for field units. Responses by category are reflected in the statistical summary; however, comments are universal and are grouped by recommended improvements.

b. The majority of comments suggested that current generators be replaced with a standard family (with common parts) of generators that are smaller, lighter, quieter, more reliable and durable, and with more power. The new family of generators should be multi-fuel with an adjustable KW output and five to ten outlet terminals.

c. Ease of maintenance was suggested as a needed improvement to generators. Generators should not require specialized training for persons who perform routine maintenance. An automatic breaker should be built into the generator to preclude it from operating when maintenance is required.

d. Replacing current generators with power cells which are light-weight and a 12-to 24-hour operation period at peak output before recharging.

e. Several comments suggest a central power facility mounted in a vehicle or trailer with sufficient outlets to serve the command post requirements.

f. An increased power requirement was suggested at the following echelons:

(1) Battalion - one 100 KW generator.

(2) Brigade - two 10 KW generators for the command post.

(3) Division - one 500 KW generator.

QUESTION: Can you suggest changes which might be made in the shelters you are currently authorized which might lead to improvement of command and control?

COMMENT:

1. Statistical Summary.

	Suggest Changes	Suggest No Changes
a. Echelon:		
Battalion	64%	36%
Brigade	63%	37%
Division	75%	25%
Corps	50%	50%
b. Geographically:		
CONUS	55%	45%
Europe	18%	82%
Alaska	75%	25%
RVN	61%	39%
c. Commanded in Combat:	51%	49%
d. Commanded in Peacetime:	52%	48%
e. Combat Principal Staff Duty:	57%	43%
f. Peacetime Principal Staff Duty:	52%	48%

2. Summary of Comments:

a. General. Commonality in comments on this question stated that current tentage is less than adequate at all echelons. Improvements in tentage are suggested by replacement with lightweight, durable material accompanied by lightweight telescopic poles for ease in erecting. This suggestion is also recommended for the M577 command post vehicle. Collapsible modular structured shelters also were

suggested as replacing tentage for command post. Modular shelters either chassis-mounted or easily and quickly erected/collapsed would not only be better structures than tents but would enhance command post mobility.

b. Comments addressing corps echelon.

(1) The corps CP should have a capability to configure to mobile vans, lightweight tents, and possibly inflatable shelters. Related equipment should be designed for adaption to these through configurations and should include responsive communications, adequate power sources, and sufficient lighting, heating and ventalation.

(2) Improvements for the 292 van include:

(a) Lighter with greater van length and width. Possibly a cab over engine chassis would increase length.

(b) Make all van doors sliding and inset. Vans should be capable of being parked in a series to provide several connected working compartments.

(c) Heating and ventalation should be on the exterior with ducts in the four corners.

(d) Leveling on a 5% grade should be provided.

(e) The van should be wired for four to six telephones with simple plug-in receptacles positioned throughout the van. Outside receptacles to receive standard power are required. Map display with internal lighting, desk, and security containers should be designed into the van.

c. Comments addressing division echelon.

(1) The 5-ton expandable vans are adequate for command and control. However, attention is required to decrease its vulnerability to small arms and artillery fragments. There should be provisions to remove the shelters from the chassis to harden the shelter against air and nuclear attacks. A crank-up antenna with lead wire to radios should be built into the shelter.

(2) The M577 command post vehicle is adequate at division level but requires some improvements. The vehicle should have a crankout, accordian type, extension with lightweight durable flooring to replace current tentage. A light set is required for the vehicle extension.

d. Comments addressing brigade echelon.

(1) The M577 vehicle should have a prefabricated metal flooring for its extension. Lighting fixtures should be incorporated in the vehicle extension.

(2) A lightweight shroud arrangement should be developed for jeeps.

(3) A new set of functional shelters should be developed to accommodate staff elements. These shelters should be lightweight, highly mobile and have built-in communications, lights, and heaters/ air conditioners.

e. Comments addressing battalion echelon.

(1) Current tentage should be replaced with inflatable shelters to increase mobility.

(2) The M577 command post vehicle is adequate for battalion with improvements on the shelter extension.

QUESTION: Can you suggest a means for improving reproduction of overlays and orders in the field?

COMMENT:

1. Statistical Summary:

	Suggest Improvement	Suggest No Improvement
a. Echelon:		
Battalion	45%	55%
Brigade	58%	42%
Division	75%	25%
Corps	50%	50%
b. Geographically:		
CONUS	64%	36%
Europe	27%	73%
Alaska	38%	62%
RVN	56%	44%
c. Commanded in Combat:	63%	37%
d. Commanded in Peacetime:	54%	46%
e. Combat Principal Staff Duty:	62%	38%
f. Peacetime Principal Staff Duty:	53%	47%

2. Summary of Comments.

a. General. Comments addressing each echelon indicated a requirement for some form of reproduction capability. Many comments addressing battalion echelon stated that at battalion level orders should be simple, the TOC should be lean, and no requirement really exists for a reproduction capability. Comments suggesting Xerox type equipment specify that such equipment must be adaptable for reliable field operations.

b. Comments addressing Corps echelon. Reproduction equipment with the following characteristics should be procured and authorized:

(1) It should have a quick (50-100 copies per hour) copy capability.

(2) Require electricity only for the reproduction process, with the paper manually positioned, fed from a roll, cut and folded.

(3) Operate on varied voltage (110 - 220V) and cycles (50-60) without special components or adapters.

c. Comments addressing division echelon.

(1) A portable, rugged, Xerox type reproduction capability powered by AC and/or DC current.

(2) The reproduction machine should have the capability to print overlays the length and width of 1½ standard map sheets at a rate of 150 - 200 per hour.

(3) Division should have a telecopier capability to transmit via secure phone orders and overlays.

d. Comments addressing brigade echelon.

(1) A suitable rugged Xerox type machine is needed at brigade. It should be capable of reproducing overlay type orders.

(2) A manually or battery operated durable machine to reproduce orders and overlays would be satisfactory at brigade.

(3) Brigade should have a secure telecopier connection to division.

e. Comments addressing battalion echelon.

(1) A small, lightweight, high-speed thermo-fax duplicating machine powered by a 3KW generator is sufficient at battalion.

(2) A photo copier, such as the Polaroid camera, will satisfy battalion requirements.

(3) Simplicity is necessary at battalion and can be satisfied by using a stylus and overlay paper with prearranged carbons, as is currently done with typewriter paper.

QUESTION: Can you suggest improvement in your personal command vehicle(s)?

COMMENT:

1. Statistical Summary.

	Suggest Improvement	Suggest No Improvement
a. Echelon:		
Battalion	55%	45%
Brigade	47%	53%
Division	50%	50%
Corps	50%	50%
b. Geographically:		
CONUS	27%	73%
Europe	27%	73%
Alaska	38%	62%
RVN	44%	56%
c. Commanded in Combat:	47%	53%
d. Commanded in Peacetime:	34%	66%
e. Combat Principal Staff Duty:	38%	62%
f. Peacetime Principal Staff Duty:	41%	59%

2. Summary of Comments.

a. General. Comments pertaining to this question primarily addressed inadequacies of communications in current vehicles and recommended that the M113 be issued in lieu of the M114. Secure communications should be mounted in all command vehicles. The M114 vehicle was commented on as being inadequate for its intended purpose.

b. Comments addressing corps echelon stated that both ground and aerial vehicles should contain communications equipment and display systems to insure the commander has access to and can control all his

tactical assets. Design should be such that it does not outwardly portray a unique item of equipment. Mobility of the ground vehicle should be as great as vehicles in the unit commanded.

c. Comments addressing division echelon.

(1) A standard lap display unit for use in M151, 1/4-ton vehicle, helicopters, vans, etc., is needed. The display should accommodate wide map coverage which can be selectively displayed, a durable surface permitting writing and a means to tear off an overlay sketched on the durable surface.

(2) Air, wheeled, and tracked command vehicles need a lap light for map reading during darkness while moving or halted.

d. Comments addressing brigade echelon state that the M151, 1/4-ton vehicle issued as a command vehicle should be properly equipped prior to being issued. The vehicle should be enclosed, for small arms protection, and have heat, and inside map light, and greater cross-country capability.

e. Comments addressing battalion echelon.

(1) The commanders' vehicles should be wired for easy removal/installing preset push button radio and a foot-activated push-to-talk switch. Each commander should also be issued pilot type helmets so his hands are free.

(2) The M151, 1/4-ton vehicle should have protection against small arms, an increased cross-country capability, a console for accouterments, multi-communications console, automatic weapons mounted, erectable shelter extension, and blackout exterior lights.

QUESTION: Can you suggest improvement in the vehicles you and your staff are currently authorized for use as operations centers in the field?

COMMENT:

1. Statistical Summary.

	Suggest Improvement	Suggest No Improvement
a. Echelon:		
Battalion	24%	76%
Brigade	31%	69%
Division	33%	67%
Corps	50%	50%
b. Geographically:		
CONUS	18%	82%
Europe	9%	91%
Alaska	25%	75%
RVN	29%	71%
c. Commanded in Combat:	28%	72%
d. Commanded in Peacetime:	24%	76%
e. Combat Principal Staff Duty:	24%	76%
f. Peacetime Principal Staff Duty:	21%	79%

2. Summary of Comments.

a. General. The majority of comments suggested a means of interconnecting staff element as a needed improvement for TOC vehicles. The capability to couple and expand current vehicles was suggested as a way to increase staff information flow resulting in better staff coordination and effectiveness of command and control.

b. Comments addressing corps echelon:

(1) An enclosure (combination of vans, inflatable huts, lightweight tentage) is needed which will accommodate the majority of the TOC staff under one roof.

(2) A limited number of command and control ground vehicles are needed which have a snap-on tent to provide the commander and key operational staff members shelters for a TAC CP.

c. Comments addressing division echelon:

(1) The power source for equipment inside the vehicle should be an integral part of the vehicle it supports. The power source could either be built in or separated from the vehicle.

(2) CP vehicles should have built in or a kit issued adaptable to the staff section using the vehicle. Such equipment should include map boards w/blacklights, telephone consoles, desks, cabinets, and rifle racks.

d. Comments addressing brigade echelon expressed satisfaction with the M577 command post vehicle for TOCs.

e. Comments addressing battalion echelon also expressed satisfaction with the M577 command post vehicle. It was suggested that the vehicle be built lighter with more power. Other recommended improvements to the M577 were:

(1) Manual crank-up antenna built into the vehicle.

(2) Lightweight tentage that snaps onto the vehicle and allows connecting with additional tentage on the end and either side.

PART IV - QUANTITATIVE

This portion of the survey is designed to develop STATISTICAL DATA regarding the "gut feelings" of you, the commanders in the field. Accordingly, it is essential that you respond to every question. Please observe the following:

1. MARK ONLY ONE "X" FOR EACH QUESTION.

2. MARK "X" ONLY IN BOXES PROVIDED.

3. DO NOT MODIFY THE QUESTION. If you are not certain that you understand a question, mark the response you think is most likely to reflect your intended view and comment in the space provided.

4. DO NOT INTERPOLATE Marking "between" two responses would necessarily result in having to eliminate your response from the summary data. Mark one response or the other and comment in the space provided.

5. DO COMMENT IN THE SPACE PROVIDED. When you have selected and marked your response, please comment. Elaboration on why you selected a response or suggestions attendant to a particular question will be most helpful to those evaluating the summary data.

Initially, please address each question as if you were a COMMANDER IN COMBAT in a MID-INTENSITY EUROPEAN ENVIRONMENT. It is quite possible that you have never experienced a mid-intensity combat environment, and equally possible that your command experience has been in other geographic areas of the world. However, extrapolation of your experience is needed.

AFTER you have responded as a "commander in Europe", please comment regarding how your response might have been significantly different (if such is the case) had you answered for some other geographic area in which you have had experience.

In this portion of the survey, please respond for only the ONE echelon at which your experience best qualifies you. You will have an opportunity in PART V to expand your comments to other echelons if you desire. It is essential that you respond in the comment space provided for every question.

QUESTION: Current TOE authorizations regarding ORGANIZATION for command and control are:

Excellent	More than Adequate	Adequate	Less than Adequate	Inadequate

COMMENT:

1. Statistical Summary:

	Adequate to Excellent	Less than Adequate
a. Echelon:		
Battalion	78%	22%
Brigade	81%	19%
Division	73%	27%
Corps	0	100%
b. Geographically:		
CONUS	55%	45%
Europe	82%	18%
Alaska	88%	12%
RVN	78%	22%
c. Commanded in Combat:	69%	31%
d. Commanded in Peacetime:	73%	27%
e. Combat Principal Staff Duty:	71%	29%
f. Peacetime Principal Staff Duty:	77%	23%

2. Summary of Comments:

a. General. Respondees replying that the current TOE organizational authorizations are less than adequate or inadequate generally expressed the inability to operate over a sustained period. It seems the current TOE does not allow sufficient depth in personnel to preclude "burning out" operations personnel in about 72 hours. Three-day exercises conducted with TOE personnel authorizations do not surface this problem, whereas, continuance beyond the three days, efficiency and effectiveness is sharply reduced.

b. The comments received addressing corps echelon stated the H-Series TOE had not been received for review and implementation. A MTOE under which one corps is organized was submitted and is attached. This MTOE organization is the basis for the percentile response in the less than adequate column.

c. Comments addressing division echelon.

(1) TOEs are an average and a basis for change to meet varying situations. Inadequate authorizations can be and are augmented to meet existing conditions.

(2) Additional qualified personnel are required in the intelligence direction and analysis areas. Augmentation of the intelligence elements does not satisfy this shortcoming.

d. Comments addressing brigade echelon.

(1) Augmentation to the TOC with shift officers, NCO's, clerks, RTO's, and drivers are required for effective command and control at brigade level.

(2) Modification of the TOE to suit the brigade commander's needs and satisfy information flow to higher headquarters will always be required. Current TOE's are adequate if these requirements are not too great; augmentation is required when information requirements increase.

e. Comments addressing battalion echelon.

(1) More important than the number of people authorized is the quality of personnel to perform assigned tasks. The TOE is adequate when all positions are filled with trained personnel.

(2) Additional communications personnel (radio operators, radio repairmen) should be authorized at battalion level.

QUESTION: It has been suggested that the combination of operations and intelligence elements might result in more effective command and control. Do you find this proposition, at your level:

Highly Desirable	Somewhat Desirable	Indifferent	Somewhat Undesirable	Undesirable

COMMENT:

1. Statistical Summary:

	Desirable	Undesirable
a. Echelon:		
Battalion	75%	25%
Brigade	62%	38%
Division	55%	45%
Corps	0%	100%
b. Geographically:		
CONUS	61%	39%
Europe	75%	25%
Alaska	73%	27%
RVN	91%	9%
c. Commanded in Combat:	64%	36%
d. Commanded in Peacetime:	67%	33%
e. Combat Principal Staff Duty:	67%	33%
f. Peacetime Principal Staff Duty:	70%	30%

2. Summary of Comments:

a. General. This question was invaribly accepted as the intelligence staff element being subordinate to the operations staff element. There was strong agreement that operations and intelligence, staff, functions should be "combined" by collocation to facilitate the necessary coordination between the two staffs. Comments point cut the divergent efforts of these staff elements and the requirement for expertise in both areas to furnish the commands with unbiased recommendations. At brigade and battalion level comments supported a deputy commander for operations with a separate S2 and S3 staff officer under supervision of the deputy.

b. Comments addressing corps echelon.

(1) The functions of intelligence collection and operations direction are too diverse and involved to be placed under one staff individual.

(2) The tasking of many intelligence and operations support units that are available to corps would be too cumbersome for one staff chief to direct.

c. Comments addressing division echelon.

(1) The two staff sections function independently and should remain so to preclude emasculating intelligence. There should be complete objectivity in intelligence analysis with direct access to the commander.

(2) Span of control over the integrated functional areas will be too great for adequate supervision by one staff chief.

(3) Independent judgment outweighs the need for economy of force.

d. Comments addressing brigade echelon.

(1) For the commander to receive complete and accurate intelligence information on which to base decisions, the intelligence officer must have equal status with the operations officer.

(2) One staff officer controlling both operations and intelligence could more easily meld the two and result in better intra-staff coordination.

(3) Placing intelligence under operations will tend to make it less effective when intelligence is often the sole basis for tactical operations.

(4) Combining the two staff functions into one staff element would increase staff reaction time during critical periods.

(5) Both positions are definable, yet the present organization allows this combination if the commander so desires.

e. Many comments addressing battalion echelon stated this combination had been used or is currently being used with success. As indicated in the statistical summary the greater percent of response at battalion level favor combining the S2 and S3 into one staff element. Additional comments both favorable and unfavorable are as follows:

(1) They are combined by being collocated which is a necessity for practical operations and essential for effective command.

(2) These two elements have to work together <u>all</u> the time, therefore combining them will probably result in greater efficiency by allowing sufficient personnel to operate the TOC and adding depth for continuous operations. Little reorganization would be required.

(3) Combining the S2 with S3 positions the intelligence officer as an assistant operations officer. This distracts from the valuable asset of intelligence and confines its essential independent actions.

(4) The complexity of both staff functions precludes highly qualified detailed supervision by one staff officer at battalion level.

QUESTION: At your level, do you consider the number of personnel authorized by TOE for the receipt, processing and dissemination of information/intelligence:

Excessive	More than Adequate	Adequate	Less than Adequate	Inadequate

COMMENT:

1. Statistical Summary.

	Adequate to Excessive	Inadequate
a. Echelon:		
Battalion	66%	34%
Brigade	48%	52%
Division	45%	55%
Corps	100%	0%
b. Geographically:		
CONUS	55%	45%
Europe	36%	64%
Alaska	75%	25%
RVN	78%	22%
c. Command in Combat:	62%	38%
d. Commanded in Peacetime:	53%	47%
e. Combat Principal Staff Duty:	57%	43%
f. Peacetime Principal Staff Duty:	55%	45%

2. Summary of Comments.

a. General. Comments on this question addressed battalion through division. At all echelons comments suggested that trained experienced personnel assigned to the intelligence staffs probably would negate augmentations to these elements. It was expressed that an increase in numbers of personnel is not a substitute for qualified personnel.

b. Comments addressing division echelon stated that augmentation of the intelligence staff is necessary for sustained operations on a 24-hour basis.

c. Comments addressing brigade echelon.

(1) Consolidating the S2 and S3 will probably eliminate the necessity to augment the intelligence staff with additional TOC personnel.

(2) The complexity of the intelligence specialty and greater emphasis on intelligence gathering techniques required additional specialists on the intelligence staff.

(3) Additional personnel are required in the TOC for sustained 24-hour timely intelligence.

d. In the comments addressing battalion echelon, specific personnel additions were recommended by many respondees. Among these comments, it was stated that by combining the S2 and S3 there would be no requirement for additional people on the intelligence staff. A listing of the recommended additions stated in the comments and other comments are:

(1) Officer as assistant S2
Production and dissemination officer
Assistant intelligence sergeant
Two clerk/radio operators

(2) Greater depth and flexibility without augmentation with additional personnel, who are usually untrained, is achieved by combining the operations and intelligence staffs.

(3) Additional trained personnel are needed to receive, process, and disseminate the volume of information which is the norm.

QUESTION: If someone suggested that you combine your logistics and personnel elements into a single staff element, would you find the idea:

Undesirable	Somewhat Undesirable	Indifferent	Somewhat Desirable	Highly Desirable

COMMENT:

1. Statistical Summary.

	Undesirable	Desirable
a. Echelon:		
Battalion	63%	37%
Brigade	76%	24%
Division	73%	27%
Corps	100%	0%
b. Geographically:		
CONUS	64%	36%
Europe	64%	36%
Alaska	63%	37%
RVN	78%	22%
c. Commanded in Combat:	69%	31%
d. Commanded in Peacetime:	73%	27%
e. Combat Principal Staff Duty:	69%	31%
f. Peacetime Principal Staff Duty:	65%	35%

2. Summary of Comments.

a. General. Comments received on this question strongly supported the undesirable position. Rationale was usually the same in all comments regardless of echelon. Personnel and logistics are diverse, and complex specialties which do not compliment each other, are not compatible and, therefore, should not be combined into a single staff

element. These functions are separate career fields and unrelated in training, procurement, distribution, and use. The complexity and diversity of these functions preclude proper direction and supervision by a single staff chief.

b. Comments supported collocating the two staff elements and sharing physical facilities when permitted. Some of the responses indicating that the merger is desirable qualified their selection with comments supporting collocating the two staff elements.

QUESTION: (Please respond to this question even though it applies to the division level.) FM 101-5 states that dual-duty assignments should be limited to preserve integrity. At division level, several staff elements are perennially organized under a "dual-hat" concept, notably engineer, signal and artillery units. Do you believe that this "dual-hat" technique is preferred for elements of:

ENGINEER	☐ YES	☐ NO
SIGNAL	☐ YES	☐ NO
ARTILLERY	☐ YES	☐ NO

COMMENT:

1. Statistical Summary.

	ENGR		SIG		ARTY	
	YES	NO	YES	NO	YES	NO
a. Echelon:						
Battalion	60%	40%	60%	40%	60%	40%
Brigade	90%	10%	90%	10%	90%	10%
Division	91%	9%	82%	18%	91%	9%
Corps		100%	100%		100%	
b. Geographically:						
CONUS	73%	27%	73%	27%	73%	27%
Europe	45%	55%	55%	45%	55%	45%
Alaska	88%	12%	88%	12%	88%	12%
RVN	78%	22%	78%	22%	72%	28%
c. Commanded in Combat:	70%	30%	70%	30%	70%	30%
d. Commanded in Peacetime:	73%	27%	73%	27%	80%	20%
e. Combat Principal Staff Duty:	76%	24%	78%	22%	71%	29%
f. Peacetime Principal Staff Duty:	72%	28%	72%	28%	72%	28%

2. Summary of Comments.

a. Comments supporting dual-duty assignments of division Artillery, Engineer, and Signal officers:

(1) Proven effectiveness through the years confirms that these three areas of responsibility are better managed when the planner can also be the executor.

(2) This arrangement provides for officers keenly tuned to the staff requirements for plans and operations and yet fully aware of the implications on unit capabilities and limitations. The span of attention of these positions permit compatibility of the two roles.

b. Comments supporting separation of the dual assignments of division Artillery, Engineer, and Signal officers.

(1) Operational and staff responsibilities should be separated as each is a full-time function when performed efficiently.

(2) Commanders should be unencumbered from staff responsibilities so that full attention is devoted to command.

c. Comments addressing these three units separately:

(1) The dual-hat concept of duty assignments is not preferred in terms of engineer positions. The division engineer battalion is primarily a "doer" organization rather than a planning and coordinating element. A commander charged with conducting the tactical operations of his unit cannot objectively or adequately advise his higher headquarters on proper utilization of total assets.

(2) This concept is acceptable for technical agencies; however, the division artillery commander is unable to "command" widespread units participating in a number of battles simultaneously.

(3) The engineer and signal battalion commanders have insufficient time to advise the division commander while attempting to accomplish the battalion combat mission.

(4) The 1969 report of the Dual Hat Special Study Group supports the dual assignment for engineer and artillery commanders. An extract of this report follows:

Dual Hat Special Study Group, Signal Center Team, "The Role of the Signal Officer."

EXTRACT

* * * * *

"6. CONCLUSIONS - The conclusions reached by the study group represent review and analysis of the staff relationship to COMMEL functions at all levels of command within the Theater Army. The conclusions represent the study group's findings with respect to the most efficient and effective manner in which to manage COMMEL activities within the Theater Army. These are based on analysis of the present staff organization, consideration of the expanded use of COMMEL equipment and devices, future expansion in the use of Communications-Electronics, and from field opinion. They were also based on the relative significance of advantages vs disadvantages offered for the improvement of staff relationships to the management of COMMEL functions rather than a mathematical preponderance of opinions. The conclusions are:

(1) The term "COMMEL" is applicable to all echelons of the theater army, i.e., divison, corps, and field army.

(2) The expanded use of COMMEL devices and equipment for the command and control of tactical forces requires a reevaluation of the position of the CE officer at all tactical levels of command.

(3) Present COMMEL functions cut across all lines of staff and command.

(4) The present Communications-Electronics staff organization within the tactical force structure of the Theater Army results in the fragmentation of the C-E staff function, diminishing the C-E staff officers' efficiency and effectiveness.

(5) The reasoning for a J6 at the Joint and Combined Staff level as stated in the Joint and Combined Staff Officer's Manual is applicable to all echelons of the Theater Army and serves as justification for an ACS, C6, C-E, at Division, Corps, and Field Army.

(6) The establishment of an ACofS, C6, C-E, at Division, Corps, and Field Army would insure complete integration of overall COMMEL capabilities into unit plans and operations providing increased responsiveness to command requirements.

(7) The division Communications-Electronics responsibilities are more diverse than those of the present "signal" staff. This also applies in some degree to the echelons of corps and field army.

(8) C-E staff officers serve in different capacities on the staff within each tactical command echelon largely depending on the degree of importance placed on the C-E officer concerned.

(9) The "dual-hat" incumbent is unavoidably the victim of divided loyalty. No matter how objective he attempts to be, he cannot avoid the influence of one conflicting responsibility on the other. The

cost of a "dual-hatted" C-E officer is too high for the benefits derived.

(10) Command responsibilities are a full-time job, as are staff responsibilities. A combination of staff and command responsibilities vested in a single individual can only result in a decrease in efficiency and effectiveness. Inevitably, one job or the other will be denied the benefit of his presence and personal participation, both of which are vital.

(11) Close coordination of requirements and resources can be efficiently and effectively carried out without dual-hatting the C-E officer. Intimate knowledge of available resources is necessary. The C-E staff officer does not have to exercise command authority to gain such knowledge."

d. Comments significantly related to the question are also furnished:

(1) We should advance this concept to include the division G4 commanding the support command.

(2) The division G4 should be assigned to support command and the division staff be reduced accordingly.

QUESTION: Current STAFF PROCEDURES for command and control, as outlined in FM 101-5, are:

Inadequate	Less than Adequate	Adequate	More than Adequate	Excellent

COMMENT:

1. Statistical Summary.

	Less than Adequate	Adequate to Excellent
a. Echelon:		
Battalion	6%	94%
Brigade	0%	100%
Division	9%	91%
Corps	0%	100%
b. Geographically:		
CONUS		100%
Europe	9%	91%
Alaska		100%
RVN		100%
c. Commanded in Combat:	5%	95%
d. Commanded in Peacetime:	4%	96%
e. Combat Principal Staff Duty:	2%	98%
f. Peacetime Principal Staff Duty:	5%	95%

2. Summary of Comments.

a. General. Comments addressing this question stated that the manual is excellent when used as it was designed -- a guide -- for staff procedures. Problems arise only when staff officers fail to read and use the manual in guiding their efforts.

QUESTION: Some commanders establish clear-cut separation between planners and operators. Others integrate the two on a continuous basis. Does your TOC have any responsibility for PLANNING operations beyond 24 hours?

☐ YES ☐ NO

COMMENT:

1. Statistical Summary.

	YES	NO
a. Echelon:		
Battalion	77%	23%
Brigade	81%	19%
Division	80%	20%
Corps	100%	0%
b. Geographically:		
CONUS	78%	22%
Europe	45%	55%
Alaska	100%	
RVN	83%	17%
c. Commanded in Combat	85%	15%
d. Commanded in Peacetime:	79%	21%
e. Combat Principal Staff Duty:	88%	12%
f. Peacetime Principal Staff Duty:	78%	22%

2. Summary of Comments.

a. General. The comments received on this question stated that there is some planning beyond 24 hours at all echelons. Whereas operational planning may be limited to 24 hours in advance, logistical support planning is required beyond a 24-hour time frame. In addition, planning for contingency missions is necessary as far in advance as practical, usually beyond 24 hours in advance. Each echelon of

command has different requirements for planning and varying resources with which to obtain information upon which plans are formulated. The melding of planners and operators was suggested as enhancing the effectiveness to perform both functions.

b. Comments addressing corps echelon stated that operational planning is accomplished a minimum of 24 hours in advance. The TOC and G3 plans are physically separated but closely integrated to insure continuity in execution of the present operation and furnish feedback for future operations plans.

c. Comments addressing division echelon:

(1) Good planning must receive dedicated attention by designated staff people and the commander which must extend beyond 24 hours.

(2) Integration of these functions is desirable as planners should be prepared to execute what they write.

d. Comments addressing brigade echelon:

(1) It is undesirable to separate planners and operators at brigade. Close and continuous coordination is essential as many plans are planned and executed within 24 hours.

(2) Separate physical facilities are required for each function; however, personnel should form a team to accomplish these functions.

(3) The interrelationship at brigade level is indistinguishable.

e. Comments addressing battalion level:

(1) Separate planning beyond 24 hours in advance is performed only for special operations, logistics continuity, contingency missions, and displacement of command post. A separate planning staff is not required.

(2) Integration of planners and operators promotes coordination and continuity while economizing on personnel resources.

(3) There is no requirement for separate elements since a clear distinction between plans and operations is difficult at battalion level. Additionally, insufficient people are available.

(4) The requirement for battalion to respond to changes in the tactical situation precludes planning beyond 24 hours in advance with any degree of realism.

QUESTION: In terms of current authorizations of personnel, is the information flow within your TOC, that is, the flow of information between elements of your TOC:

Excellent	More than Adequate	Adequate	Less than Adequate	Inadequate

COMMENT:

1. Statistical Summary.

	Adequate to Excellent	Inadequate
a. Echelon:		
Battalion	90%	10%
Brigade	81%	19%
Division	90%	10%
Corps	0%	100%
b. Geographically:		
CONUS	90%	10%
Europe	80%	20%
Alaska	75%	25%
RVN	94%	6%
c. Commanded in Combat:	88%	12%
d. Commanded in Peacetime:	82%	18%
e. Combat Principal Staff Duty:	85%	15%
f. Peacetime Principal Staff Duty:	85%	15%

2. Summary of Comments.

a. General. Comments stated that information flow within the TOC is usually a product of training, personnel experience, and personnel working together as a team. Current equipment and future equipment

are useful tools which only assist passing of information. It must be recognized by all TOC members that information must be widely disseminated for use by other staff elements. It was suggested that intercom equipment would enhance information flow within the TOC and the main command post. Equipment development for the future should be display devices.

b. Comments addressing corps echelon stated that each element of the TOC manages to keep abreast of activities in its specific area. A shortfall appears with timely coordination between elements within the TOC and those outside the TOC. Simultaneous display of available data to all operating elements is needed to resolve this situation.

c. Comments addressing division echelon are incorporated in paragraph a above.

d. Comments addressing brigade echelon stated that information flow within the TOC and headquarters is a function of command emphasis, staff supervision, and proper organization. Problem areas are corrected through training.

e. Problems with information flow within the battalion are resolved through training and staff supervision. The size of the battalion TOC facilitates monitoring data just by the proximity of the personnel.

QUESTION: In terms of the information you need to make decisions, the information flow into your TOC from other TOCs is:

Inadequate	Less than Adequate	Adequate	More than Adequate	Excellent

COMMENT:

1. Statistical Summary.

	Inadequate	Adequate to Excellent
a. Echelon:		
Battalion	27%	73%
Brigade	43%	57%
Division	33%	67%
Corps	100%	0%
b. Geographically:		
CONUS	40%	60%
Europe	40%	60%
Alaska	50%	50%
RVN	17%	83%
c. Commanded in Combat:	33%	67%
d. Commanded in Peacetime:	42%	58%
e. Combat Principal Staff Duty:	37%	63%
f. Peacetime Principal Staff Duty:	38%	62%

2. Summary of Comments.

a. General. The lateral flow of information was stated as being inadequate at all echelons. Difficulties in vertical information flow between headquarters could be resolved by having all communication secure voice to preclude coding and lengthy unclear transmissions.

Secure communications should also create an increase in the amount of information transmitted between headquarters by allowing personnel to concentrate on the information to be transmitted rather than worrying about a security violation.

b. Comments addressing corps have been incorporated into paragraph a above.

c. Comments addressing division echelon:

(1) The time flow of intelligence information from intelligence gathering sources to a central facility at division for analysis and dissemination needs attention.

(2) Information gathering activities, such as aerial reconnaissance is without an adequate spot report system.

d. Comments addressing brigade echelon:

(1) Compartmentalizing types of information prevents the commander from monitoring significant traffic from other TOCs on one net.

(2) Critical decisions are reached based on personal contact between commanders. Information passed over the radio is to support staff functions and routine decisions.

e. Comments addressing battalion echelon:

(1) Quantity and quality of information flow is governed by the training and knowledge of personnel in the TOC.

(2) A faster more secure means of exchanging useful information is required at battalion.

QUESTION: Would you evaluate your ability to accomplish airspace coordination as:

Poor	Fair	Good	Very Good	Excellent

COMMENT:

1. Statistical Summary.

	Fair to Poor	Good to Excellent
a. Echelon:		
Battalion	58%	42%
Brigade	65%	35%
Division	64%	36%
Corps	100%	0%
b. Geographically:		
CONUS	40%	60%
Europe	82%	18%
Alaska	75%	25%
RVN	50%	50%
c. Commanded in Combat:	56%	44%
d. Commanded in Peacetime:	64%	36%
e. Combat Principal Staff Duty:	70%	30%
f. Peacetime Principal Staff Duty:	64%	36%

2. Summary of Comments.

a. General. Comments stated that Army and Air Force doctrinal agreement is lacking on airspace coordination. Dedicated personnel and improved equipment are necessary to adequately perform this function at all levels. Coordination of airspace utilized by only organic aircraft does not present a problem primarily because of the small number of aircraft assigned.

b. Comments addressing corps echelon:

(1) Until doctrine is agreed upon and communication channels established between field Air Force assets and Army elements, corps cannot adequately perform the function of airspace coordination and control.

(2) Secure communications between ground and air elements for expeditious coordination on standardized procedures are essential.

c. Comments addressing division echelon:

(1) Air boundaries should be established to define clear-cut areas of responsibility.

(2) Airspace coordination is performed by the ADA battalion representative in the TOC which allows for accomplishing this function.

(3) The division headquarters aviation section should be increased by 2 officers, 2 NCOs, and 2 EM for full-time duty in the ACE at DTOC to accomplish airspace coordination. An expandable van with two FM and HF radios is necessary to support this function.

(4) The G3 Air, in coordination with the Aviation Section and Fire Support Center, should control airspace utilization.

d. Comments addressing brigade echelon:

(1) Airspace coordination capability is not organic to the brigade. Augmentation is required for coordinating other than brigade aviation assets.

(2) Integrating the S3 Air, ALO, and Avn officer under the S3 allows coordination of brigade airspace and aviation assets.

(3) The commander, with his command group, S3, ALO, Arty LNO, and ADAO, in conjunction with his battalion commanders, should perform this function. No air activities should take place in the division sector without coordination with local commanders who should control the air activity.

e. Comments addressing battalion echelon:

(1) Additional personnel and equipment are necessary if battalion is to have the capability to control and coordinate airspace utilization.

(2) This function should not be placed on the battalion except for short durations. Then the commander with the Arty LNO and FAC can adequately perform this function.

QUESTION: Current TOE authorizations regarding EQUIPMENT for command and control are:

Excellent	More than Adequate	Adequate	Less than Adequate	Inadequate

COMMENT:

1. Statistical Summary.

	Adequate to Excellent	Less Than Adequate
a. Echelon:		
Battalion	84%	16%
Brigade	81%	19%
Division	70%	30%
Corps	0%	100%
b. Geographically:		
CONUS	91%	9%
Europe	82%	18%
Alaska	75%	25%
RVN	83%	17%
c. Commanded in Combat:	80%	20%
d. Commanded in Peacetime	77%	23%
e. Combat Principal Staff Duty:	80%	20%
f. Peacetime Principal Staff Duty:	80%	20%

2. Summary of Comments.

a. General. Comments varied on the amount of equipment authorized. There were opinions that there is too much, as well as too little, equipment currently authorized at division and below. There is general agreement that communications and reproduction equipment is outdated.

b. Comments addressing corps echelon:

(1) Additional communications equipment is necessary to establish corps intelligence and air raid warning nets.

(2) A requirement exists for a viable corps rear CP with real time secure access to current and planned operational information which will allow a reduction in size of the corps main and achieve greater mobility.

c. Comments addressing division echelon:

(1) The requirement exists for an intelligence net from division to Corps.

(2) Reliable secure voice radio and telephone equipment is needed.

d. Comments addressing brigade echelon:

(1) Vans on wheeled vehicle chassis are big, vulnerable and roadbound. M577 CP vehicles should be issued to house functional areas at brigade.

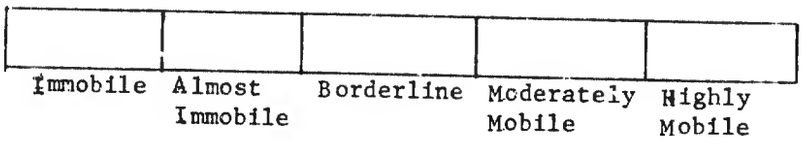
(2) Communications and power source equipment currently on hand is outdated and requires a great deal of maintenance.

e. Comments addressing battalion echelon:

(1) Equipment currently in the battalion is too complex for easy maintenance and repair. All equipment issued to the battalion should be streamlined, simple, lightweight and durable.

(2) More reliable and durable power resources are required at battalion.

QUESTION: With current organization and equipment, do you consider your command post:



COMMENT:

1. Statistical Summary.

	Immobile	Mobile
a. Echelon:		
Battalion	10%	90%
Brigade	5%	95%
Division	10%	90%
Corps	100%	0%
b. Geographically:		
CONUS	0%	100%
Europe	0%	100%
Alaska	37%	63%
RVN	6%	94%
c. Commanded in Combat:	10%	90%
d. Commanded in Peacetime:	11%	89%
e. Combat Principal Staff Duty:	15%	85%
f. Peacetime Principal Staff Duty	7%	93%

2. Summary of Comments.

a. General. It is recognized that this question does not establish a base to which mobility can be measured. One comment --"immobility is a state of mind in the CPs and this is abetted by the tendency to grow, expand, make everything bigger, nicer, prettier, etc." -- is an accurate summary of the remarks made in response to this question. Comments to improve CP mobility at each echelon follow:

b. Comments addressing corps echelon stated the main CP is cumbersome with equipment that is antiquated, jerry-rigged, and inefficient. Additional personnel and more efficient equipment are required to establish an effective alternate CP to facilitate expeditious relocation of the corps main CP while still retaining effective command and control.

c. Comments addressing division echelon:

(1) Replace vans with track vehicles in sufficient quantity to establish a main and alternate CP capability.

(2) Training and repeated exercises in accordance with a detailed SOP will enable a commander to achieve the degree of mobility he determines necessary for his command.

d. Comments addressing brigade echelon stated that displacement time is a direct function of qualified personnel. Discipline, training, and practice will improve CP mobility where required.

e. Comments addressing battalion echelon stated that all CP facilities -- tent, generators, etc. -- should be vehicular or trailer-mounted for greater mobility.

QUESTION: In light of the mid-intensity nuclear threat, do you consider your command post:

Very Vulnerable	Somewhat Vulnerable	Borderline	Moderately	Invulnerable

COMMENT:

1. Statistical Summary.

	Vulnerable	Invulnerable
a. Echelon:		
Battalion	61%	39%
Brigade	76%	24%
Division	100%	0%
Corps	100%	0%
b. Geographically:		
CONUS	70%	30%
Europe	73%	27%
Alaska	87%	13%
RVN	67%	33%
c. Commanded in Combat	81%	19%
d. Commanded in Peacetime:	78%	22%
e. Combat Principal Staff Duty:	76%	24%
f. Peacetime Principal Staff Duty:	79%	21%

2. Summary of Comments:

a. General. Comments addressing the vulnerability of command post were common throughout the survey responses. The undercurrents were expressed as distinctly similar at each echelon, as were suggestions and recommendations to reduce command post vulnerability. The requirements for mobility and communications to exercise command

and control prevents a command post from becoming invulnerable as a nuclear target. To reduce command post vulnerability, several recommendations were expressed:

(1) Reduce the electronic signature through improved secure communications and fewer radios.

(2) Restrict the size to only essential elements and disperse these elements as far as practicable.

(3) Displace often and adhere to cover and concealment principles by rigid enforcement of sound camouflage procedures.

(4) Reduce vehicle traffic.

(5) Eliminate non-essential reports and reduce reporting via electronic means.

(6) House all elements in semi-hardened shelters which can be dug-in and still have rapid mobility.

(7) Establish a split command post with each having a continuous operational capability in the mobile state.

QUESTION: Do you find the idea of computers at your level of command:

Undesirable	Somewhat Undesirable	Indifferent	Somewhat Desirable	Highly Desirable

COMMENT:

1. Statistical Summary.

	Undesirable	Desirable
a. Echelon:		
Battalion	71%	29%
Brigade	43%	57%
Division	36%	64%
Corps	0%	100%
b. Geographically:		
CONUS	64%	36%
Europe	73%	27%
Alaska	50%	50%
RVN	44%	56%
c. Commanded in Combat:	47%	53%
d. Commanded in Peacetime:	45%	55%
e. Combat Principal Staff Duty:	57%	43%
f. Peacetime Principal Staff Duty:	55%	45%

2. Summary of Comments.

a. General. The storing, sorting, and retrieving of information at all echelons were commented on as needing attention. There is difficulty in properly processing the current volume of information on which a commander must base a decision. Improved communications and intelligence gathering capabilities will increase the volume of information received at a headquarters. To preclude vital information

from becoming lost or misplaced, automation appears to be a solution; however, the comments favorable to computers were qualified stating they must be ruggedized for field use and simple to operate and maintain. As indicated by the statistical summary, at lower echelons there is less desirability for computers where it was felt that automated assistance would neither replace personnel nor be more effective. At each successively higher echelon, comments suggested that either a savings in personnel could be realized or handling of information would be more efficient.

b. Comments addressing corps echelon:

(1) Computer assistance is highly desirable to process the large volume of information for effective decision making.

(2) Dependency on computers is undesirable because of their vulnerability, and they will be a very desirable target for the enemy.

(3) Computers and data links thereto must be reliable under the most adverse field conditions and programs must be simple to use and simple to read out.

c. Comments addressing division echelon:

(1) The computer should be of great assistance to the staff officer as an information bank for instant recall of enemy information and preparation of journals, summaries, estimates, etc.

(2) Computer equipment must be rugged, small, light, and simple to operate and maintain.

(3) Availability of skilled personnel, increased power requirements and electronic signature, and a decrease in mobility dictate against computers except for higher level supply functions.

d. Comments addressing brigade echelon:

(1) Computers used below division must be durable, reliable, and maintainable. They should not require special shelters, power sources, and highly trained specialists for efficient operations.

(2) A computer terminal device is more desirable at brigade, which is a tactical headquarters. Input and retrieval of information on a near real time basis could be realized without subjecting the brigade command post with the difficulties a computer will present. The terminal device would have to be small, lightweight, and rugged so as not to be a hindrance to mobility.

(3) Any automated systems instituted must serve and assist the commander rather than creating a monstrous reporting system. To

serve the commander automation should either reduce CP personnel while maintaining the same level of efficiency or substantially increase the efficiency of the command post.

e. Comments addressing battalion echelon:

(1) Computers are impractical at battalion due to their complexity and sophistication. Requirements will be increased in organization, maintenance and security with an adverse impact on mobility.

(2) Equipment at battalion level should remain simple. The fluid situation dictates personal contact between staff officers and commanders.

(3) The computers offer no improvements in operations already being accomplished manually. In addition, a manual backup will still be necessary.

(4) Improvements are always desirable. The computer at battalion level should be miniaturized, rugged, durable and reliable without restricting mobility and increasing the command post electronics signature.

QUESTION: Would you describe your "hands-on" experience with computers as:

Extensive	Above Average	Average	Very Little	Non-existent

COMMENT:

1. Statistical Summary.

	Average to Extensive	Very Little to Non-existent
a. Echelon:		
Battalion	43%	56%
Brigade	30%	70%
Division	70%	30%
Corps	0%	100%
b. Geographically:		
CONUS	36%	64%
Europe	55%	45%
Alaska	12%	88%
RVN	39%	61%
c. Commanded in Combat:	38%	62%
d. Commanded in Peacetime:	44%	56%
e. Combat Principal Staff Duty:	37%	63%
f. Peacetime Principal Staff Duty:	45%	55%

2. Summary of Comments.

General. The relationship between Question #28 - desirability of computers - and this question is reflected in the graph below. Comparing responses to both questions, a person with no experience with computers considered them no more desirable or undesirable than personnel with little or no experience.

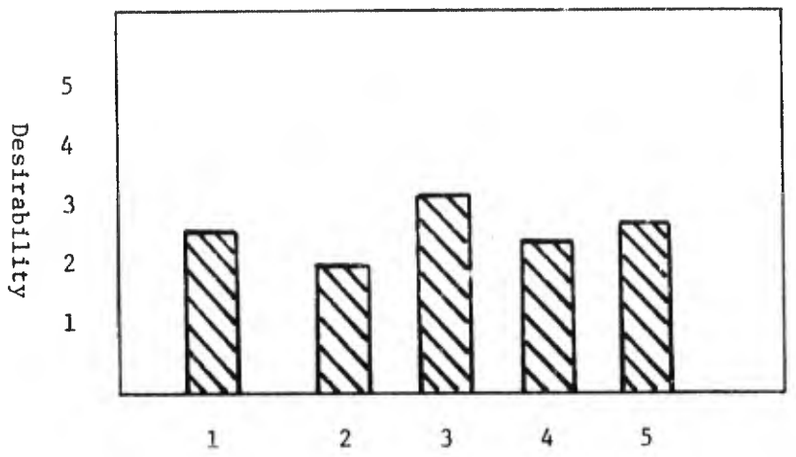


Figure 1

General. In the free comment portion of the survey the opinions, suggestions, and ideas generally addressed the necessity to have qualified personnel filling TO&E positions. It seems that this is never the situation. Therefore, personnel above the number authorized by TO&E, pulled from line units, have duty in the command post which increases the size of the command post. It was also suggested that functions of staff elements be analyzed to determine what tasks are being performed for the sake of keeping someone busy. The TOE is accepted as a basis for a commander to organize his headquarters to meet the current situation. TO&Es should not be the candidate for revision, rather, efforts should be placed on equipment improvements and staff procedures to better perform those functions which assist the commander in the decision making process. There will never be--and rightly so--a substitute for military judgment or a command decision. Industry should be tasked to develop lighter, smaller, more durable, reliable, and easily maintainable vehicles and equipment to enhance mobility and processing of useful information. Selected individual comments which reflect more specific opinions on command and control are presented:

I recognize that this has been an objective of the Chief of Staff. But this is one of those innovations that we can be carried away with, and its development must be closely scrutinized for reasons indicated below.

First, we must be careful of the zealots and the salesman. The zealots will be mostly military with some civilian technicians who are so interested in the electronics and other technical aspects and who truly believe it will be "so good for us" that they will be blind to cost, support requirements, and the like. Also, they won't know much about the battlefield. The salesmen will be the representatives of the companies who make the product and will see a great future in billion dollar programs. They won't worry about the bill in complexity, men, and money.

This is something we have to watch closely. Automation is expensive. It often gives you more information than you can use, but more important, not many people who push automation are knowledgeable about the conditions that actually exist in the forward environment of the battlefield. Given the dust, the condition of the roads, the enemy firepower that can be brought to bear, the more sophisticated means now available to the enemy to pick up the signatures of our communications equipment, the capability for jamming that we know the Russians have, and their ability to adapt technologies that we have and use them effectively, we may be deluding ourselves when we talk of how much automation is going to do for us.

There's a definite area for automation--the further back you get, the more important it is. I think in personnel replacement and maintenance support systems it has great value. Also, intelligence at higher levels--most important at top echelons. But when you start getting forward of the division, and possibly even the corps, you're asking for trouble. Given the enemy's ability to bring firepower to bear on headquarters areas from which large electrical emissions are coming, one has to ask what happens when your automation is knocked out. I won't say anymore on it. That's enough to make the point.

I was struck in Vietnam with the vast resources that were put into the emplacement of listening and warning devices and other things that would supposedly keep us posted on the enemy's activities. We had many indications at a tremendous expense without any real knowledge as to what the pay-off was. In the forward edge of the battlefield, the man, the individual up there, is very important. The listening devices, acoustic means, and other things that we are developing help him out, but he's the one that's going to have to make it work. If you get too dependent on some of these things, however, and if you don't consider the capability of the enemy for either spoofing them or jamming those frequencies at a time when you think they are working for you, there may be great danger.

There's one thing that we must be ever conscious of with the American soldier--he's a careless soldier and lackadaisical. He just has a tendency to let up, or depend on someone else, if he is not under pressure. If he has something that he thinks will provide him protection, he's likely to go to sleep on guard or not be very alert. What we need more than a lot of devices, are soldiers who are alert and ready to take advantage and make the best use of some of the things that we offer. The soldier does not need to be promised something that is going to give him complete control and knowledge on the battlefield on which he will be operating. He needs help--but more important he must stay alert.

Some of the writing and talk on the integrated or automated battlefield conveys the impression of an area in which few soldiers are needed to do any fighting. The impression conveyed is that all you need to do is listen, transcribe all the data to figure where the enemy is, and then bring some kind of firepower to bear on him. It doesn't work that way in combat.

We spent billions in Vietnam and Laos on these systems--yet how many and how much came down the trails?

It appears that the best way to reduce the size and number of personnel in a Corps Headquarters is to reduce the functions performed or the degree to which the functions are performed. A study of the various NATO staff organizations and their manning could well provide some additional input for your study. On the other hand, it appears that in an age of computerization and rapid communications, the demands by the press, public, and executive branch for information will overtax our existing Corps organization. Sections

that must handle casualty reporting, mail and other moral items are inadequate to do that job. This will be particularly true in a war where the existence of the US is not threatened.

The size of the CP and its composition is directly proportional to the requirements placed upon the command involved by its higher headquarters. For instance, as administrative requirements are heaped upon a tactical command, the headquarters CP will be structured to accommodate the requirements. A study, conducted by DCSOPS, USARV on this problem in October 1971, determined that in excess of 400 administrative requirements were levied on the average company and battalion. To satisfy these requirements, resources must be diverted from their primary purpose. In the company and battalion, combat personnel must perform clerical duties, and materiel to perform these duties must be obtained over and above the TOE/TDA authorization. The size and complexity of the CP thus expands. The above study showed that when a rifle company was at 80-90% strength, it was capable of fielding 50-60 soldiers for a company operation. In my opinion, CP complexity should be reduced; administrative requirements must be reduced and we don't need a CDC study to accomplish this! Briefly, let's stop in place and improve on what we have today. Let's not introduce any additional equipment. Concentration on fielding the most soldiers, equipped as they are now, should be the prime area of interest.

Our basic premise is that the C & C (the TOC) should be as efficient as possible. A secondary consideration is one to streamline and reduce the size of the personnel and equipment. The latter should not be done arbitrarily at the expense of the former. The most pressing needs are secure voice equipment, antennas and reliable vehicles.

We also need at least double the number of clerk/typists. An authorization of two for the entire brigade staff is completely unsatisfactory. A clerk/RTO cannot be double slotted as a commander or key staff officer's driver; there are not that many hours in a day.

In summary, authorizations should be so realistic for command and control that a commander does not have to rob personnel and equipment from maneuver elements to augment his staff in order to sustain mid-intensity combat operations round the clock.

We should proceed with caution in our attempt to automate the battlefield in operations centers. As a general rule I can see some advantages to be gained at division level and above, but seriously question the ultility of any such system at brigade and below. In addition, the most

serious question involved in automation is disciplining the system. Too many times, simply because the equipment has the capability we assume that every piece of information should be stuffed into the machine. This is not necessarily the case--there are things the division does not need to know--indeed should not know about what the companies and troops are doing.

A most important factor that must be given attention is training sufficient enlisted men in appropriate formal courses to be able to man and maintain our communications equipment and computer systems. When our unit was up to strength on such personnel, the command and control function worked well. Conveniently when we were short or operating with a big OJT program, the communications and control function did not work well.

I'm sorry that I can't make a more meaningful contribution. My feeling is that TOE's are probably reasonably close to real world requirements but that we never give them a chance to work--layering and lumping starts at DA level and generates requirements for beyond the capability of lower HQ. My belief is that if DOD/DA were cut by 50%, the other HQ, down to company level, could live with auth personnel and equipment. Otherwide, capability will never catch up with requirements. In short, I think our method of operation needs more of an overhaul than does the TOE.

I believe that the monstrosity called "Command and Control" is a direct result of today's tendency to over-command, over-control and over-coordinate. As stated in the body of the questionnaire, there is a tendency to force the use of "all available means" in terms of communications availability. That is, if a channel is available, there is an inclination to use it, for the sake of usage. The G-2 and G-4 tend to flood the FM airways with traffic that could well be sent by hard copy.

The necessity for many "spot" reports or immediate precedence messages is also challenged. The best way to know what is going on is to see for yourself. I believe the CP complex should be a file of record exclusively, with actual direction or command and control coming from the commander at his OP or vantage point -- preferably his command vehicle up with the subordinate commander concerned.

Summarized, what I believe to be the solution to the ever expanding CP complex is:

1. A reduction in reporting.
2. A consolidation of various FM Nets.
3. More mobile commanders.
4. A consolidation of the S-3/S-2 Element.

I fully believe that Auto Control - as ADP Command Facilities and equipment are to command tools of the future. However, we may be pushing the state of the art too much in our present development time table. Possibly we should concentrate more on R&D activities - perfect this - before we even attempt to set up full scale production schedules or "buys".

A. I have -

1. given you a few comments.

2. given you a few indications of current inadequacy in the brigade control apparatus.

B. This is for a purpose. Generally, the current TOE is adequate to support the brigade commander with his current tactical charter. That apparatus should be kept unusually lean and mean. Start changing this TOE, and Parkinson's law will become operative fast. Put in a better means of making orders and overlays, and will have more orders and overlays than we need. Put in more radios; and will take more than we need; and we talk too much now. Add more people and they will all work long and hard - and will have more information, probably information we don't need, but will process and digest because its available.

C. In summary, I'm very skeptical of new systems at this level. Bring in those - and only those - which will improve capabilities without an increase in personnel, physical timeliness, commo signature, noise, or number of information systems.

I feel strongly that the Battalion must be lean, tough, and mobile. Its procedures must be simple and its soldiers disciplined and tough. Some of a combat Battalion's essential strength already is sapped by complex machinery that is too sensitive for extended battlefield use and abuse. Let's not weaken the battalion further with "advances" that add fat to its waistline.

My practical experience is with the "golf" series, but I am familiar with "hotel" series, though not thoroughly.

Communications equipment is more than adequate - it is the training, practical use, and excessive senseless requirements which increase signature and decrease operational capability.

Organization is OK - here again, training and practice under realistic conditions spell the difference.

Order preparation and technique verify that - habitually - higher headquarters - at every level - take excessive time in planning, thus reducing the time for the ground soldier to properly execute from time of receipt at Div - the bn level and lower echelons should - as a minimum - have 1/2 of the time available for proper preparation and reconnaissance, 1/4 of the time is - I am sure - above average. Planning at company level is the critical stage.

Thanks for the chance to comment.

In the not too far distant past, the emphasis was on developing and maintaining tactical skills by military personnel. This insured that the soldier could function effectively regardless of whether or not he was equipped with fancy equipment.

Today, it appears that the emphasis has shifted away from the development of tactical skills and more emphasis is being placed on technical skills. This is a dangerous trend in that our people may soon find themselves at a point where they are helpless if their fancy gadgets break down.

While technology is important and useful, we should not "go ape" on fancy gadgets. We may find ourselves in a position of great vulnerability.

In my opinion, a major contribution toward the command and control of a battalion size unit would be a modernized headquarters and headquarters company.

This unit should be relatively small (most probably about 75 personnel), highly mobile, capable of continuous operations, and prepared to support up to five rifle companies. This can be accomplished as follows:

1. Combine specific staff functions--such as the S1/S4; S2/S3; XO/SigO.

2. Review the necessity for the current size of: The Medical Platoon; Authorization for Administrative and Logistical Personnel; and the present support procedures.

3. Reduce the preparation of all administrative reports to nothing more than "feeder reports" to the Division Headquarters.

4. Introduce shelters that are: air transportable; semi-hardened; and, capable of transport cross-country at speeds up to 50 MPH.

5. Reduce the number of vehicles and radios that are currently authorized at this level, and establish rigid procedures for transmission.

6. Introduce the close circuit TV to the battalion level TOC, as well as replace the current sets of radios with new, light weight, longer range, secure instruments.

Collectively, these recommendations could lead to the development of a highly responsive HHC that could meet the demands of a rifle battalion in a mid intensity environment.

In considering requirements, equipment, personnel, employment and configuration, its hoped that this study will also take into consideration that each command and control group have different requirements. The infantry battalion will be a little different from the Air Mobile Battalion and the Mech Bn different from the Abn Bn, therefore their requirement will be different. However, the same principals should be applied to all. Most battalions can move and shoot, however, communication is a continuing problem because of training and equipment limitations, therefore communications should be reviewed.

It is my personal view that vague doctrine has combined with available technology over the years to produce an unnecessary escalation of information "required". This, in turn, has produced larger command posts, more equipment, and larger signatures, has reduced mobility and increased vulnerability. The vague doctrine begins at the service school level where young officers are provided elaborate information models related to each staff function and to the decision making cycle. These models may be appropriate for instructional purposes - but, unless constrained by experience and prudence, they tend to generate an infinite data base. In my opinion, infinite information is as useless to command as no information. This process, begun in our schools, tends to be perpetuated in the field, particularly where inexperienced commanders often substitute information gathering for timely judgment.

Command and control, in my opinion, can be simple or complicated; - but it must be directly related to the external influences that bear on us in time of war. If, in the war you describe, we must cope with the myriad details of support, operational reports, investigations, administration, visitors, morale and welfare, etc., etc., etc., that commanders in RVN faced, a very large C&G and administrative network and staff must be available.

If, on the other hand, the WW V-grams, packaged rations for all, modest reporting requirements, reduced types of ammunition, and fewer creature comforts were to obtain, the modest staff and command setup so compatible with mobile warfare is a promising prospect. Unfortunately, the latter won't be possible, in my opinion, unless we are losing a war or face a threat that energizes the nation as a whole to a common purpose.

Publications written and furnished by General Bruce C. Clark, USA retired:

Mission-Type Orders

In World Warld War II, those who served in armored divisions--and probably in other units as well--learned that mission-type orders were a requirement if the most was to be obtained from a command. Since then, we have had to consider the control of operations in the fluidity and unpredictability of nuclear battle. As battle becomes more complex and unpredictable, responsibilities must be more and more decentralized. Thus mission-type orders often will be used at all echelons of command and probably will be the rule at the division and higher levels. This will require all commanders to exercise initiative, resourcefulness, and imagination--operating with relative freedom of action.

In our tactical forces we have built-in organizational flexibility. We must recognize this and capitalize on it in our orders. To get maximum combat power, we must have plans flexible enough to meet rapidly changing situations, but careful planning is not enough. This must be coupled with the readiness to change and adapt to situations as they are, not as they were expected to be.

To train commanders and staff officers for operations in war, where mission-type orders will be widely used, it is necessary that tactical courses in our schools teach the use of such orders, and that we widely employ mission-type orders in our peacetime operations.

Basically, a mission-type order needs to cover only three important things:

. It should clearly state what the commander issuing the order wants to have accomplished.

. It should point out the limiting or control factors that must be observed for coordinating purposes.

. It should delineate the resources made available to the subordinate commander and the support which he can expect or count on from sources outside of his command.

There is a strong reluctance at every headquarters to relinquish the authority to direct the details of an operation. This reluctance is clearly seen in the embellishments added to an order as it threads its way down to company level. Careful judgment must be used at every echelon of command in stating the limiting and control factors in a mission-type order. Confidence must be placed in the judgment and ability of the subordinate commander. Too often, what starts out as a broad mission-type order at a high echelon ends up with voluminous, minute, detailed, and restricting instructions specifying "how to get the job done" when it finally gets down to company level.

Many officers hearing this may think they would like to have a command functioning under such a system. Others who may say they would like to work under such a system really are disturbed by the thoughts of it. There are some officers who require something "in writing" before they will take significant action.

A mission-type order requires the subordinate commander and his staff to make basic decisions and plans based upon a careful analysis of the situation. If the basic decisions or plans are not successful, there is no paper foxhole into which they can crawl. Mission-type orders require initiative, promptness, and resourcefulness which are not always forthcoming. Problems in service schools, based upon such orders, bring forth a variety of solutions which are difficult for the faculty to grade. This sometimes looms as a very important problem.

I have said many times that a commander has two channels within which to operate. He has the "channel of command" and the "channel of suggestion." I believe that a good commander who has subordinates who are trained and have the confidence to use mission-type orders can operate almost exclusively using the "channel of suggestion," reserving the "channel of command" for use only when he wants to give special emphasis to an order, to relieve someone, to take disciplinary action, or like cases.

I went to Leavenworth over 20 years ago, so it is difficult for me to remember all the things which I must have learned then at the Command and General Staff School. The one thing that I have never forgotten and which has stood me in good stead was the teaching of General McNair, then Commandant, when he stated:

When you receive an order or a directive from your next higher commander do everything you can and in the best way you can to further the mission which he wants to accomplish.

An officer who follows this advice will find that he can act promptly and aggressively with confidence. He will have no problem in operating in an environment of mission-type orders.

Will You Wait for It? Or Will You... GO GET IT

There is more than one school of thought concerning how a commander can acquire reliable information upon which to base his actions. One school contends that the commander should analyze reports that come to him from his subordinate units and his staff. Another advocates that the commander go see for himself. Yet another endorses a combination of these methods.

As a commander from company to army group, and as an observer of others holding such positions in three wars, I have come to certain conclusions myself. Moreover, since my retirement from the Army, I have worked as a consultant to research organizations making studies of command, control and communication problems for the Army. The results of this active and retired experience might be helpful to students and practioners who would like to excel in the art and techniques of commander-ship and generalship.

During World War II, it was my privilege and good fortune to command combat commands (brigades) in two armored divisions engaged in European combat. Looking back, it seems to me more than ever that my best information, on both our own forces and the enemy's, was obtained by visiting or observing subordinate commanders. This was done either by jeep or by an L4 fixed wing airplane borrowed from the artillery. Small radios in each were adequate. While I tried hard to avoid getting in the way of the units, it seemed that my presence was generally known and felt on the battlefield.

Once during that period I observed a division commander who put together a fancy war room in his headquarters. A prominent feature was a telephone line to each and every unit. This general constantly talked on the telephone to some unit as he rotated his attention throughout the division. Apparently he seldom left his telephone terminal. One can only speculate what impact a modern visual display device, if available then, would have had on him.

As a corps commander in Korea with five divisions on the line, I often left my headquarters by chopper after the morning staff briefing and visited the five division headquarters in turn from left to right. The divisions knew when I was coming. The division commanders were told that they need not wait for me, and that I would talk to the chiefs of staff.

Over a cup of coffee, we discussed the latest situations. Then we discussed the problems which had been presented by them on a previous day. Then I noted what they wanted my corps headquarters to do to help them. I told them of the situation in the Eighth Army and in the I Corps as I knew it.

Returning to headquarters shortly after noon, I briefed my staff, gave them the divisions' problems, the solutions to which were expected the next morning, and spent the remainder of the day in my office or visiting corps troops. Generally, the next day I repeated this. As a result I was not only the corps commander, but the corps liaison officer, and to a large extent, the corps communicator with the lower units.

I always felt that I had a grasp of the real situation in the corps and that the division commanders were never at a loss for information or unaware of the desires of the corps and higher commanders. Command and staff inertia in I Corps was hard to find. Furthermore, there were no security leaks.

This was in a static situation, but such command techniques are not unusual in mobile warfare.

History is full of instances where the commander being at the critical point at the critical time turned the tide of battle to victory. Or conversely, the commander not being on the scene, his force was defeated.

Few such examples have been related so dramatically as in the poem "Sheridan's Ride" by Thomas Buchanan Read.

One will recall that early in the morning Sheridan was at Winchester, Virginia, 20 miles away from his command when news of a new battle arrived. He mounted his horse and took off at full speed for the field of combat. Read's stirring verse traces Sheridan's progress through five stanzas, giving equal credit to both him and his horse. The sixth stanza shows what happens when the commander arrives at the critical point of battle and at the critical time:

> The first the general saw were the groups
> Of stragglers, and then the retreating troops;
> What was done? What to do? A glance told
> him both,
> Then striking his spurs with a terrible oath,
> He dashed down the line mid a storm of
> huzzas,
> And the wave of retreat checked its course
> there because
> The sight of the master compelled it to
> pause.

It is inconceivable that the same result could have been attained on an automated battlefield. Nor could Sheridan have brought order out of chaos while seated before a display panel 20 miles away.

From my associations with various research firms, I find that they are unduly oriented to automation techniques and "the systems approach" to combat command and control. They seek a steady flow of detailed data and

reports from front to rear, tied to a computer if possible. They do not understand movement or how to cope with it and still maintain command, control and communications. They seek and prescribe logical processes leading to quantified solutions. These are fine until the disorderly and confusing conditions that occur so often on the battlefield materialize. They do not realize the roles of the judgement and experience factors which must be used in handling tactical battle reports. Inevitably, these lead to a working principle, such as, "Discount by 50 percent all very favorable or unfavorable operational reports which come into your headquarters from your subordinate units and then question the remainder."

Routine personnel, logistical and intelligence data should flow back to the staff. The chief of staff should be available to answer calls from the rear and to run the headquarters staff.

The commander should be forward as much as possible to detect early the critical situations in all fields and to render help quickly to his units when it is needed. He must give personal attention to morale and disciplinary matters as well as to things operational. He should tie in with his chief of staff as frequently as he can to give, and to receive, critical current information and directions.

The command helicopter which combines mobility and communications as well is an admirable vehicle for allowing the commander to go see for himself, and to keep in touch. If he does this, his next higher commander will never know more of his business than he knows. And his subordinate commanders will never lack for assistance and guidance. Hopefully, then, nothing that happens in his command will ever surprise him or the people above him.

A Field Army Commander Considers AUTOMATION

For several years I have thought it possible to carry automation, in the fields of command and control, into several of the higher echelons of command within the field army. I believe the majority of senior Army officers are also in agreement. Why we have yet not done so after years of study and millions of dollars of expenditures is a proper question.

Almost all who have considered the problem have applied their thinking and their proposed systems to the 7th US Army. This is a special (probably all field armies will be "special" in the future) type of US field army. It happens to be located in a friendly foreign country and is prepared to fight with both conventional weapons and tactical nuclear weapons.

There are American, German, and French commanders between the 7th Army and the Supreme Commander of the North Atlantic Treaty Organization in whose framework it exists and must be prepared to fight.

Uncertain Line of Communications

Located in Germany, several thousand miles from the United States, its logistic support is complicated by the uncertain line of communications across France. The great Rhine River lies to its rear. As an element of NATO, this US Force must be prepared in time of war to support troops of allied nations, fight alongside of them, and to have such troops in corps or lesser strengths, attached to it for combat. It must be prepared to move forward or backward, change directions, defend, attack, or delay as required. Its emergency plans, in case of Communist attack, from the East, are complicated by practical, political, and military factors such as the Forward Strategy, the availability of forward combat troops from France, and the strength of the Northern Army Group on its left.

If the Soviets cross into West Germany in a surprise move, they may attack north of the 7th Army in the Northern Army Group area and penetrate quickly to the Rhine River. The 7th US Army might then be facing an enemy to the north as well as to the east. Under such battle conditions, the American forces could find themselves in a condition of confusion, cut-off units, and deep penetrations with a lack of well-defined lines and boundaries between units. The Battle of the Bulge, in the general area of Saint-Vith and Bastogne, is an example of such a situation. The characteristics of that battle could well be repeated on a far larger scale.

These are just some of the basic considerations facing a 7th Army commander constantly. They condition his outlook on any major or radical change in his command and control setup, including automatic data processing (ADP). While he does not doubt the ability of automated command and control facilities to function well in a static, nonmobile situation, his consideration of their possible application to combat conditions (such as those which could face the 7th Army) should raise certain practical questions.

With this in mind, I will now put myself in the place of a present-day hypothetical 7th US Army commander. I have just been briefed by Department of the Army staff officers and by members of a research organization on a proposed plan for automating the operations centers of the top three or four echelons of the 7th Army.

The time has come for Lieutenant General "A" to speak and to ask questions.

"Gentlemen. I find your proposal interesting and intriguing. I am sure you are expert on the present state of the art in automation. I am also aware that you have the benefit of significant applications and studies on ADP in command and control to support your confidence."

"You have been briefed on the operational plans and special circumstances facing the 7th Army both in Germany and within the framework of the NATO command. In this light, I would like to ask a few major and some minor questions of a practical nature to assist my evaluation of what you are offering.

"If you will assume, as I do, that any headquarters from a brigade up which is discovered by the enemy will be soon destroyed by him, the following question arise:

"1. Will an automated operations center unduly limit the ability of a headquarters to hide? Is the problem further complicated by a substantial increase in the already large number of special vehicles which must be hidden?

"2. Can a headquarters with ADP move at least as quickly as it can now to avoid destruction or capture?

"3. Will there be an increase of generators, antennas, cables, and other signal equipment in a headquarters area because of ADP?

"4. Will the enemy be able to detect readily the communication and electronic emanations with ADP equipment?

"In addition to these problems of concealment, I am also concerned about the ability of an automated operations center to perform adequately under mobile warfare conditions in Europe. In that connection these points come to mind:

"1. Are reliable, constant, mobile power sources available?

"2. Will the ADP facility be out of action during the move of a command post? What are the close down and setup times?

"3. When it is necessary to fragment a headquarters, even its forward command elements, will this present problems in the use of ADP equipment?

"4. Will the Army replacement system be able promptly to furnish commanders, staff officers, operators, and maintenance men who are experienced in ADP operations to replace battle casualties and other losses?

"5. Is the equipment reliable, small, rugged, 'soldier proof,' and rain, snow, and cold proof? In short, can it operate reliably and be maintained in the field army combat environment?

"6. Will ADP facilitate or handicap the setting up of alternate headquarters to insure against disruption of command and control?

"7. Can a commander afford to risk his command and control entirely to ADP or must he keep intact his conventional means? What are the personnel implications of retaining manual capabilities?

Commanders Are Apprehensive

"I would not be honest with you if I did not point out that commanders at all echelons are apprehensive of the tendencies to use ADP to facilitate centralization of command and control. I can foresee disastrous effects from indiscriminate centralization (or over centralization) and loss of flexibility in modern fluid warfare.

"My own limited reading on ADP leads me to believe that to change your automated procedures and formats is time consuming and requires highly skilled specialists. Can you tell me:

"1. Would ADP tend to encourage increased centralization and contribute to greater rigidity both within 7th Army and above?

"2. Will ADP inhibit 'tailoring' of task force organizations to the changing requirements or the battle situation?

"3. Would our automated command and control facility readily tie into US air and naval support; into allied air and naval support?

"4. Will ADP increase or reduce the problem of absorbing major units when attached to a headquarters in the course of battle?

"5. Will there be further complications when we absorb foreign units of NATO into the command?

"6. Will ADP cause the commander to be more command post bound and thus reduce his ability to be at critical points at critical times?

"7. With its increased speed and capacity for information, will ADP, in the hands of staff officers of higher headquarters, tend to encourage them to put an increased burden of reporting on lower echelons who are often busily engaged in the vital conduct of the battle?

"8. Will your automated command and control system increase our dependency on electrical communications and add to the already over-taxed tactical communications system in the 7th Army?

"Finally, let me ask you whether it can be demonstrated conclusively to the commander in the field that ADP will bring substantial improvement in the information acquiring ability and responsiveness of his headquarters in both conventional and nuclear operations? I use the word 'demonstrated' purposefully. The issues of effective command and control in battle are so grave that paper and desk calculations by themselves are not acceptable.

"Gentlemen, when I pose these questions, it is not from a negative outlook in the ADP field. Several of these questions apply equally to our present manual methods of handling tactical operations. I am sure that we cannot help but benefit from the critical and objective analysis that your system designers will bring to bear on Army command and staff procedures, information handling, and communications, regardless of how extensively we accept automation.

"As early as 1956, the 7th Army played a pioneering part in automating its stock control functions under the Army's Project MASS. It may be necessary for us to serve again as the proving ground in ADP for command and control before we can arrive at the final solution for the entire US Army.

"I repeat that I am interested in anything that will help the commanders and staffs of a field army to carry out their responsibilities of command and control when vitally engaged in the confusion of modern mobile battle.

"I have said my piece--now it is your turn."

G2 - Member of the Operations Team

There has been a tendency in recent years to consider intelligence personnel as members of a technical support service. This tendency has had the result of lowering the influence and prestige of G2 below that of the G3 on the operations team. I claim that, if both do their jobs well and effectively, each will be a coordinate member of the operations team in a tactical unit. This requirement starts with the battalion staff.

What are the attitudes, techniques, and procedures that will make G2 a really important member of the decision making, planning, and supervising staff supporting the commanding officer or general?

In order to approach this subject, we first must understand the four steps in command and the part G2, G3, and other staff members play in each of these steps. These four steps in command are:

. Determine, isolate, and define the limits of the problem (usually comes from the mission).

. Turn the problem into an operation by issuing the commander's clear directive for solving it.

. With the help of the chief of staff, monitor and guide the staff while it prepares and issues coordinated instructions, plans, and orders for implementing the directive.

. Follow up to see that instructions, plans, and orders are understood and carried out, making the necessary modifications and additions as the operation progresses to completion.

Decision-Making Process

There is often a tendency to consider that the most important need for intelligence is in the first step, the decision-making process. This is a fallacy because it is also badly needed in the other three steps. During step four, particularly, intelligence that is timely and reliable is needed at the fingertips of the commander if he is to conduct effectively the operation as the changing conditions of battle unfold and critical situations occur.

In the second step, the essential elements of information (EEI's) are important, During this stage, the commander or his G2, or both, direct the content, scope, and extent of the intelligence-gathering effort. It is here that many G2's use the "shotgun" approach by putting out so many EEI's that they diffuse the intelligence effort, thereby obscuring the really "essential" elements. I have found that concentrating on only three or four really essential elements of information produces results that are meaningful to and usable by the commander.

How does G2 determine the three or four really "essential" elements? Here, his close relationship with G3 pays off. G3 can tell him the few most dangerous and critical situations that could develop to defeat the operation. G2 should concentrate on watching these, for they are truly essential to the commander in his conduct of the operation as it unfolds.

Napoleon Bonaparte said, in effect, that you should be ready with two or three good plans in case of adversity. His next plan in case of success presented no difficulty to him.

The G2 should be watching for factors that indicate possible adversity. Close coordination with G3 is essential to detect them at the earliest time.

A Positive Approach

The G2 often feels that his principal job is to tell his commander what problems are going to prevent him from carrying out his mission. The task of overcoming these obstacles, he often thinks, belongs in the realm of G3. I have never believed in such compartmentalizing of responsibilities. It is a dangerous oversimplification of important staff functions.

If the G2 can tell from the intelligence he gathers in what way the strength of the enemy is the greatest, he should also be able to tell where he is the weakest and, therefore, the most vulnerable. We must remember that the decision to launch an attack, to gain an objective, or to overcome an enemy has probably been handed to the commander from higher headquarters. Therefore, despite the gloomy outlook of G2, he must carry out his orders. He cannot decide otherwise, and now wants to know the best way to accomplish his mission.

The final paragraph of a G2 estimate should generally set forth the course of action the G2 thinks offers the best promise of success. Thus, he ends on a positive note. When he has this "positive" attitude, G3 will accept him gladly as an equal member of the operations team and will welcome his information and advice.

There is often a tendency in the "intelligence community" to use technical channels for passing orders down and information up that have command importance, thereby bypassing commanders and their staffs. The G2 is an important member of the staff team of his unit. He should guard his status as such. He is rated by his chief of staff and his commander. He cannot serve two masters well and should not expect those on echelons below to do so.

Automation in the G2 field can certainly be an advantage, but it must be used with discretion and under strict discipline.

It could enable an overzealous G2 staff to burden the lower headquarters with demands. This is especially true if a G2 is too prolific with his EEI's. An operational headquarters, pushed hard enough from above, will provide information, but it may well be guesses or something even less reliable just to ease the pressure exerted from above.

There is a tendency of automation programmers to want to move information quickly from the front up to higher headquarters. To do so, they often advocate bypassing intermediate headquarters. They say the higher headquarters should then send back to the bypassed headquarters the information required. I have never known any commander to be bypassed in this way to agree with such a theory. I believe it is a dangerous procedure. It was tried in the early stages of the battle of France by the 3d Army, but was quickly abandoned.

The great bulk of automated information can often clog the digestion processes, causing really essential information to be over-looked.

The information in a memory bank must be kept current or else it is worse than none. Also, it must be remembered that data processing equipment cannot purify or validate inaccurate or poor information regardless of how attractively it is displayed.

Another matter of concern is compartmentalizing which should be avoided by all means between G2 and G3. If it is, there will, of course, be "gray" areas or overlaps. However, these should present no problem to a compatible G2-G3 team. I am more worried as their commander where there are gaps between G3 and G2.

Staff coordination between G2 and G3 must be by frequent personal contact. There is no place for memoranda or for digging "paper foxholes" under active operational conditions.

I have been a chief of staff and a G3, but never a G2. However, I have enjoyed the best of G2 and G3 operations team support in many echelons of command. I believe the principles I have set forth for G2's and others have been the reason. I have found both G3 and G2 have blossomed under these principles of operation.

APPENDIX F

DATA FROM UNSOLICITED SURVEYS

1. GENERAL. In this appendix is a summarization of responses to the Command and Control Survey which were submitted by all the commanders in one division. It was felt that to integrate these responses with those of selected respondents would bias the results of the study and not accurately represent the Army in the field. Placing the results of the unsolicited surveys in this appendix stresses the importance and recognition of any suggestions for improving effectiveness of command and control. The data herein is presented according to the questionnaire format.

2. BASELINE DATA.

a. Personnel Submitting Surveys: 27

b. Responses by Grade:

Colonel	5 or 18.5%
Lieutenant Colonel	20 or 74.0%
Major	2 or 7.4%

c. Average age: 39.9 years

d. Average years commissioned service: 17

e. Breakout by Branch:

Infantry	7 or 25.9%
Armor	9 or 33.3%
Artillery	6 or 22.2%
ADA	1 or 3.7%
CE	1 or 3.7%
MSC	1 or 3.7%
ORD	1 or 3.7%
QM	1 or 3.7%

f. Highest Military Schooling:

War College	5 or 18.5%
C&GSC	20 or 74.0%
Non-C&GSC	2 or 7.4%

g. Source of Commission:

USMA	9 or 33.3%
OCS	6 or 22.2%
ROTC	11 or 40.7%
Other	1 or 3.7%

h. Commanded in Combat: 12 or 44.4%

i. Combat Command Matrix:

	Plt & Co	Bn/Sqdn	Bde/Regt
Korea	2	-	-
RVN	4	2	3

j. Commanded in Peacetime: 27 or 100%

k. Peacetime Command Matrix:

	Plt & Co	Bn/Sqdn	Bde/Regt
Europe	7	25	5
CONUS	13	1	-
Other	7	-	-

l. Combat Principal Staff Matrix:

	S1/G1	S2/G2	S3/G3	S4/G4	S5/G5
Bn/Sqdn	1	-	3	-	-
Bde/Regt	1	-	3	-	-
Div	2	-	-	-	-
Higher		-	4	1	1

m. Peacetime Principal Staff Matrix:

	S1/G1	S2/G2	S3/G3	S4/G4	S5/G5
Bn/Sqdn	6	2	9	7	-
Bde/Regt	-	3	4	2	-
Div	1	1	1	-	-
Higher	3	1	7	1	1

PART III - QUALITATIVE RESPONSE

This portion of the survey is designed to solicit your narrative comments regarding some of the study objectives outlined in the introduction. Specifically, we are interested in what changes in organization, procedures, or equipment you would make to improve command and control.

Initially, please address each question as if you were a COMMANDER IN COMBAT in a MID-INTENSITY EUROPEAN ENVIRONMENT. It is quite possible that you have never experienced a mid-intensity combat environment, and equally possible that your command experience has been in other geographic areas of the world. However, extrapolation of your experience is needed.

AFTER you have responded as a "commander in Europe", please comment regarding how your response might have been significantly different (if such is the case) had you answered for some other geographic area in which you have had experience.

In this portion of the survey, please respond for only the ONE echelon at which your experience best qualifies you. You will have an opportunity in PART V to expand your comments to other echelons if you desire. It is essential that you respond in the comment space provided for every question.

PLEASE "X" THE APPROPRIATE BOX.

"I AM RESPONDING AS A

- ☐ BATTALION/SQUADRON COMMANDER"
- ☐ BRIGADE/REGIMENT COMMANDER"
- ☐ DIVISION COMMANDER"
- ☐ CORPS COMMANDER"

QUESTION: Can you suggest changes in personnel authorizations (numbers, functional organization, or grade) which would improve your command and control capability?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	
2	No	Bde	With TOE spaces filled
3	Yes	Bde	Add personnel to S1 and S4 staff sections
4	No	Bde	
5	No	Bn	With TOE spaces filled
6	Yes	Bn	Add communications sergeant
7	No	Bn	With TOE spaces filled
8	No	Bn	
9	Yes	Bn	Add personnel to S2 and S3 staff sections
10	Yes	Bn	Add 1 E6 to S2; 1 RTO to S3; 2 wireman to commo plat
11	No	Bn	
12	No	Bn	
13	Yes	Bn	Add 2 RTO to S3 and S1/S4 sections; 2 LnOs to S3
14	Yes	Bn	Comments addressed artillery battalions
15	No	Bn	
16	Yes	Bn	Comments addressed artillery battalions
17	No	Bn	
18	Yes	Bn	Add assistant S3 for 24-hr. operations
19	Yes	Bn	Add 1 off and 1 NCO to S2 sec; 1 CPT and Spec to S3 sec
20	Yes	Bn	Add 2 LnOs and 2 NCOs to S3 sec

21	Yes	Bn	Majors as deputy for spt and ops; staff chiefs captains
22	Yes	Bn	Comments addressed artillery battalion
23	No	Bn	
24	Yes	Bn	Add 1 person to S2 section
25	Yes	Bn	Add 1 clerk; draftsman/driver to S3 section
26	No	Bn	
27	Yes	Bn	Add personnel for clerks, generator operators to S3 sec

QUESTION: In the combat environment do you believe that any of the principal staff members (S1/G1, S2/G2, S3/G3, S4/G4, S5/G5) should be senior in grade to the others? If so, indicate which ones.

COMMENT:

	Response	Echelon	Comment
1	Yes	Bde	S3/G3 senior
2	No	Bde	
3	Yes	Bde	S3 should be a LTC
4	Yes	Bde	S3/G3 senior
5	Yes	Bn	S3/G3 senior
6	Yes	Bn	S3/G3 senior
7	No	Bn	
8	Yes	Bn	S3/G3 senior
9	Yes	Bn	S3/G3 senior
10	Yes	Bn	S3 senior at Bn
11	Yes	Bn	Bn S3 and S4 should be majors
12	Yes	Bn	S3 senior at Bn
13	No	Bn	
14	Yes	Bn	S3/G3 senior
15	Yes	Bn	
16	Yes	Bn	S3 senior
17	Yes	Bn	S3 senior
18	Yes	Bn	S3 senior
19	No	Bn	S3 should be senior to company commanders
20	Yes	Bn	S3 senior
21	Yes	Bn	Majors as deputy for OPS and SPT

22	No	Bn	
23	Yes	Bn	S3 senior
24	No	Bn	
25	Yes	Bn	S3 senior
26	Yes	Bn	S3/G3 senior
27	Yes	Bn	S3 senior

Staff experience information on "Yes" responses:

28.6% with background in only S3/G3 staff duty
38.1% with background of mixed staff duty
33.3% with no background in S3/G3 staff duty

QUESTION: Can you suggest a means for reducing the number of personnel committed to command and control at your echelon which would still allow you to achieve continuous operations?

COMMENT

	Response	Echelon	Comment
1	No	Bde	
2	No	Bde	
3	No	Bde	Add people to S1 and S4 sec; give Bde admin/log responsibility
4	Yes	Bde	With more secure FM radios
5	No	Bn	
6	No	Bn	
7	No	Bn	TO&E is minimal to perform the job
8	No	Bn	TO&E is adequate but not fat
9	Yes	Bn	More efficient communications
10	No	Bn	
11	Yes	Bn	Combine S2 and S3 sections
12	No	Bn	
13	No	Bn	
14	No	Bn	
15	No	Bn	
16	Yes	Bn	Reduce volume of reports to higher headquarters
17	No	Bn	
18	No	Bn	
19	No	Bn	
20	No	Bn	
21	No	Bn	

22	No	Bn
23	No	Bn
24	No	Bn
25	No	Bn
26	No	Bn
27	No	Bn

QUESTION: Can you suggest a means of reducing the physical size of your command post complex without degradation of your command and control capability?

COMMENT:

	Response	Echelon	Comment
1	Yes	Bde	Reduce CP vehicles by 1 M577
2	No	Bde	
3	Yes	Bde	Disperse CP elements
4	Yes	Bde	More secure FM capability
5	Yes	Bn	Eliminate eye-wash facilities and excessive written reports
6	No	Bn	
7	No	Bn	
8	No	Bn	
9	Yes	Bn	Reduce required written reports
10	Yes	Bn	Eliminate 1 M577
11	No	Bn	
12	No	Bn	
13	No	Bn	
14	No	Bn	
15	No	Bn	
16	Yes	Bn	Comments addressed artillery battalion
17	No	Bn	
18	No	Bn	
19	No	Bn	
20	Yes	Bn	Establish a rear and forward CP. Do not have one main.
21	No	Bn	

22	Yes	Bn	Comments addressed Air Defense Art Bn
23	No	Bn	
24	No	Bn	
25	Yes	Bn	TOC should consist of only S2/S3; S1/S4 in Trains
26	Yes	Bn	Separate operations and support activities
27	No	Bn	

QUESTION: Can you suggest a means for reducing the electronic "signature" of your command post complex without seriously degrading your command and control capability?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	
2	Yes	Bde	Reduce reporting requirements
3	Yes	Bde	Disperse communications; use roving communication center
4	Yes	Bde	Secure voice FM; highly directional antennas
5	Yes	Bn	Through better operator and radio procedure training
6	Yes	Bn	Extensive radio silence
7	No	Bn	
8	Yes	Bn	Remote automatic radio relays
9	Yes	Bn	Reduce the size of the CP
10	Yes	Bn	Use wire and secure voice; better trained operators
11	Yes	Bn	Have only 2 operations FM nets; reduce long-winded traffic
12	No	Bn	
13	Yes	Bn	Use LnO; secure FM; and wire radio silence and strict RTO procedures
14	Yes	Bn	Use scramble radios
15	No	Bn	
16	Yes	Bn	Use secure FM, up burst transmission; mobile directional antennas
17	No	Bn	
18	No	Bn	

19	Yes	Bn	Use secure FM radios
20	Yes	Bn	Use wire from Bn to Co. All stations have same wattage.
21	No	Bn	
22	No	Bn	
23	Yes	Bn	Issue USC-3 for AM capability at Bn
24	Yes	Bn	Use secure FM
25	Yes	Bn	More use of wire and messengers
26	Yes	Bn	Censor traffic
27	Yes	Bn	Use secure FM

QUESTION: Can you suggest changes in the type, quantity or capability of the communications equipment you are now authorized which would improve your command and control capability?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	
2	Yes	Bde	Improved and reliable telephone and teletype capability
3	Yes	Bde	More secure voice which is lighter and easily maintained
4	Yes	Bde	Secure voice down to company level
5	Yes	Bn	Perhaps additional RTT capability
6	Yes	Bn	Issue ANVRC49 in lieu of ANVRC47 at Bn and Co
7	No	Bn	
8	Yes	Bn	Use crypto "scramblers" at all levels
9	Yes	Bn	Get radios lighter, less bulky and more efficient
10	Yes	Bn	Secure voice radios for Co; easy change maint modules
11	Yes	Bn	Add "scrambler" components for existing radios
12	Yes	Bn	Issue facsimile receiver/transmitter equipment
13	No	Bn	
14	Yes	Bn	Smaller FM radios w/plug in/out circuits; range 40-50K
15	No	Bn	
16	Yes	Bn	Secure FM to company level
17	No	Bn	
18	Yes	Bn	Secure FM

19	Yes	Bn	Issue KY-8 to each co; mortar plat; scout plat
20	Yes	Bn	Secure FM to company level
21	Yes	Bn	Push-button modulized radio; easy transfer
22	Yes	Bn	Add "scrambler" capability to radios
23	Yes	Bn	Issue VRC12 in lieu of VRC47 at Bn and Co
24	Yes	Bn	Secure FM nets at Co, Bn, etc.
25	Yes	Bn	Secure FM nets; add 2 net capabilities of S4 and Spt Plat
26	Yes	Bn	Secure voice telephone
27	Yes	Bn	Secure FM; spring open electric antennas

QUESTION: Are the maps you are currently authorized adequate for your operational needs in terms of scale and quantity?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	Increase issue of 1:50,000 scale
2	Yes	Bde	
3	Yes	Bde	
4	Yes	Bde	
5	Yes	Bn	
6	Yes	Bn	
7	Yes	Bn	
8	No	Bn	Issue 1:100,000 scale
9	Yes	Bn	
10	Yes	Bn	
11	Yes	Bn	
12	Yes	Bn	
13	Yes	Bn	
14	Yes	Bn	
15	Yes	Bn	
16	Yes	Bn	
17	Yes	Bn	
18	Yes	Bn	
19	Yes	Bn	
20	Yes	Bn	
21	Yes	Bn	
22	No	Bn	Issue 1:100,000 scale

23	Yes	Bn
24	Yes	Bn
25	Yes	Bn
26	Yes	Bn
27	Yes	Bn

QUESTION: How could the QUALITY of the maps you are currently authorized be improved to better meet your operational needs?

COMMENT:

	Echelon	Comments
1	Bde	Weatherproof; allow ease of writing and erasure
2	Bde	Update more often
3	Bn	Update more often
4	Bn	Update more often
5	Bn	Weatherproof; allow ease of writing and erasure
6	Bn	Provide overprints with bridge and road classification
7	Bn	Weatherproof; update; allow ease of writing and erasure
8	Bn	Layer tent maps
9	Bn	Update more often
10	Bn	Update more often
11	Bn	Update more often
12	Bn	Update more often
13	Bn	Update more often
14	Bn	Update more often
15	Bn	Supplement with issue of recent aerial photo
16	Bn	Update every 2-3 years

Note: Comments suggesting ease of writing and erasure specified using lead pencil, ballpoint pens and grease pencils.

QUESTION: Can you suggest innovations in the map symbols currently used by your staff to display information?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	
2	No	Bde	
3	No	Bde	
4	No	Bde	
5	No	Bn	
6	No	Bn	
7	No	Bn	
8	No	Bn	
9	No	Bn	
10	No	Bn	
11	No	Bn	
12	No	Bn	
13	No	Bn	
14	No	Bn	
15	No	Bn	
16	No	Bn	
17	No	Bn	
18	No	Bn	
19	No	Bn	
20	No	Bn	
21	No	Bn	Too many and too complicated
22	No	Bn	

23	No	Bn	A field block light board will allow easy viewing
24	No	Bn	
25	No	Bn	
26	No	Bn	
27	No	Bn	

QUESTION: Can you suggest changes in type, quantity, or performance criteria of power sources (such as generators) you are currently authorized?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	
2	No	Bde	
3	Yes	Bde	Generators should be more rugged, maintainable and quiet.
4	Yes	Bde	Generators should be quieter and multi-fuel
5	Yes	Bn	Generators should be lighter and quieter
6	No	Bn	
7	No	Bn	
8	Yes	Bn	Generators should be more quiet; maintainable; multi-fuel
9	Yes	Bn	Quieter, multi-fuel, more efficient power output for weight
10	Yes	Bn	Reduce noise by a minimum of 80%
11	Yes	Bn	Replace current generators w/multi-fuel powered
12	No	Bn	
13	No	Bn	
14	Yes	Bn	Smaller, lighter, quieter with same performance
15	No	Bn	
16	Yes	Bn	Less noisy. Mechanically simplified w/ standard connectors.
17	Yes	Bn	Generators should be guieter
18	No	Bn	
19	No	Bn	

20	Yes	Bn	Need quieter, multi-fuel generators; all connection to civilian elec power
21	No	Bn	
22	No	Bn	
23	Yes	Bn	Permanent installations rectifier instead of transformers. Each Co CP have 4.2 gens; 15 KW/110/220V for S3 section
24	Yes	Bn	Lightweight; quiet; multi-voltage; longer life
25	No	Bn	
26	No	Bn	
27	Yes	Bn	Make a multi-fuel 5 KW that can be switched to 110 AC - 28 DC

QUESTION: Can you suggest changes which might be made in the shelters you are currently authorized which might lead to improvement of command and control?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	
2	No	Bde	
3	Yes	Bde	M577 canvas should be folded accordian style
4	Yes	Bde	Vehicles should have shelter kits for unit functions
5	Yes	Bn	Current tentage difficult to repair and no flooring
6	Yes	Bn	Battalion Hqs should have a 292 van
7	No	Bn	
8	Yes	Bn	Replace M577 with 5T vehicle currently used by Germans
9	Yes	Bn	Lighter w/larger area, simple to erect by 2 people
10	No	Bn	
11	No	Bn	
12	No	Bn	
13	No	Bn	
14	Yes	Bn	M577 tentage should be lighter, pre-camouflaged, easy to erect
15	Yes	Bn	Vans or expandable trailers would improve mobility
16	Yes	Bn	Loudspeaker extensions from radios into vehicle extension
17	No	Bn	
18	Yes	Bn	Design and construct C&C vehicle w/radios, desks, mapboards, etc.

19	No	Bn	
20	No	Bn	
21	Yes	Bn	Redesign M577 for easier and faster erection of tentage, floors, etc.
22	No	Bn	
23	Yes	Bn	Lightweight tentage w/light telescopic poles
24	Yes	Bn	Larger tent area onto M577; better heat and ventilation; blackout
25	No	Bn	
26	No	Bn	
27	Yes	Bn	Improve weather resistance - canvas leaks at seams

QUESTION: Can you suggest a means for improving reproduction of overlays and orders in the field?

COMMENT:

	Response	Echelon	Comment
1	Yes	Bde	A portable shock resistant Xerox type machine
2	No	Bde	
3	No	Bde	
4	Yes	Bde	A Xerox capability
5	No	Bn	
6	Yes	Bn	An automatic copier
7	No	Bn	
8	No	Bn	
9	No	Bn	
10	Yes	Bn	Pressure sensitive overlay paper; a 24-volt photocopier
11	No	Bn	
12	Yes	Bn	A facsimile process such as the gelatin reproduction kit
13	Yes	Bn	Reissue the Jelly Roll duplicator which is adequate
14	No	Bn	
15	No	Bn	
16	Yes	Bn	A table with built-in light, no complicated mechanical device
17	No	Bn	
18	No	Bn	
19	No	Bn	
20	Yes	Bn	The mimeograph machine is more than adequate

21	Yes	Bn	A simple, compact reproduction item for orders and overlays
22	No	Bn	
23	Yes	Bn	A field copying machine (A.B. Dick or 3M) would help
24	Yes	Bn	A Xerox machine
25	Yes	Bn	Authorize the Jelly Roll or similar equipment
26	Yes	Bn	Specially designed Thermofax or Xerox type machines
27	Yes	Bn	Small, compact (18" x 18" x 18") mimeograph machine

QUESTION: Can you suggest improvement in your personal command vehicle(s)?

COMMENT:

	Response	Echelon	Comment
1	Yes	Bde	Replace M114 with M113
2	No	Bde	
3	Yes	Bde	Replace M114 with modified M113; quieter engine and map light on M151
4	Yes	Bde	Mount radios in front of compartment
5	No	Bn	
6	No	Bn	
7	No	Bn	
8	Yes	Bn	Replace M114 with M113
9	Yes	Bn	More efficient placement of radios; self-contained tent lighting
10	No	Bn	
11	Yes	Bn	Cmd vehicle should have additional radio
12	Yes	Bn	Add map light, hand set and speakers on dash of M151
13	Yes	Bn	Replace M114
14	Yes	Bn	A true cmd vehicle (new) is needed to replace M151
15	No	Bn	
16	Yes	Bn	Add map light, writing surface; and mount speakers and hand set on dash for M151
17	No	Bn	
18	No	Bn	
19	No	Bn	
20	No	Bn	

21	Yes	Bn	A vehicle to live in, such as Rommel's cmd car
22	No	Bn	
23	Yes	Bn	Replace M114 with M113; add map light to M151
24	Yes	Bn	Mount radios in front of compartment and increase visibility for M114; add map light on M151
25	No	Bn	
26	No	Bn	
27	Yes	Bn	Modify M113 for cdr to live in, not fight from.

QUESTION: Can you suggest improvement in the vehicles you and your staff are currently authorized for use as operations centers in the field?

COMMENT:

	Response	Echelon	Comment
1	No	Bde	
2	No	Bde	
3	No	Bde	
4	No	Bde	
5	No	Bn	
6	Yes	Bn	Bn needs 292 van for operations center
7	No	Bn	
8	Yes	Bn	A wheeled CP vehicle is desirable for European environment.
9	Yes	Bn	Wheeled vans w/self-contained radios capable of 10 stations remote at 1 KM
10	No	Bn	
11	No	Bn	
12	No	Bn	
13	No	Bn	
14	No	Bn	
15	No	Bn	
16	No	Bn	
17	No	Bn	
18	Yes	Bn	M109 van should be authorized for jump CP
19	No	Bn	
20	Yes	Bn	M577 should have crank-up 292 antenna built onto vehicle

21	Yes	Bn	Redesign M577 for easier, faster erection of tentage, of floors, etc.
22	No	Bn	
23	Yes	Bn	
24	No	Bn	
25	No	Bn	
26	No	Bn	
27	Yes	Bn	Improve weather resistance of canvas extension

PART IV - QUANTITATIVE RESPONSE

PLEASE COMPLETE BEFORE PROCEEDING TO PART V

PART IV - QUANTITATIVE

This portion of the survey is designed to develop STATISTICAL DATA regarding the "gut feelings" of you, the commanders in the field. Accordingly, it is essential that you respond to every question. Please observe the following:

1. MARK ONLY ONE "X" FOR EACH QUESTION.

2. MARK "X" ONLY IN BOXES PROVIDED.

3. DO NOT MODIFY THE QUESTION. If you are not certain that you understand a question, mark the response you think is most likely to reflect your intended view and comment in the space provided.

4. DO NOT INTERPOLATE. Marking "between" two responses would necessarily result in having to eliminate your response from the summary data. Mark one response or the other and comment in the space provided.

5. DO COMMENT IN THE SPACE PROVIDED. When you have selected and marked your response, please comment. Elaboration on why you selected a response or suggestions attendant to a particular question will be most helpful to those evaluating the summary data.

Initially, please address each question as if you were a COMMANDER IN COMBAT in a MID-INTENSITY EUROPEAN ENVIRONMENT. It is quite possible that you have never experienced a mid-intensity combat environment, and equally possible that your command experience has been in other geographic areas of the world. However, extrapolation of your experience is needed.

AFTER you have responded as a "commander in Europe", please comment regarding how your response might have been significantly different (if such is the case) had you answered for some other geographic area in which you have had experience.

In this portion of the survey, please respond for only the ONE echelon at which your experience best qualifies you. You will have an opportunity in PART V to expand your comments to other echelons if you desire. It is essential that you respond in the comment space provided for every question.

PLEASE "X" THE APPROPRIATE BOX

I AM RESPONDING AS A

- ☐ BATTALION/SQUADRON COMMANDER
- ☐ BRIGADE/REGIMENTAL COMMANDER
- ☐ DIVISION COMMANDER
- ☐ CORPS COMMANDER

QUESTION: Current TOE authorizations regarding ORGANIZATION for command and control are:

3.7%	18.5%	48.2%	29.6%	0
excellent	more than adequate	adequate	less than adequate	inadequate

COMMENT:

	Echelon	Comment
1	Bde	Number of admin/log personnel is inadequate
2	Bde	Not adequate for 24-hr, 7-day week capability
3	Bn	Authorization is adequate, but seldom are auth numbers on hand
4	Bn	Bn could become more austere without degradation of capability
5	Bn	Add 2 RTOs and 2 LnOs to S3 sec; 2 RTOs in S1/S4 section
6	Bn	Add assistant S3 to enhance sustained operations
7	Bn	S3 section requires additional people for sustained operations
8	Bn	Reorgn: Majors as deputies for Ops and Spt; CPTs as S1, S2, S3, S4, command and main
9	Bn	Assign authorized people; authorize S1/S4 CP track
10	Bn	Additional people are needed for sustained 24-hr operations

QUESTION: It has been suggested that the combination of operations and intelligence elements might result in more effective command and control. Do you find this proposition, at your level:

40.7%	33.3%	3.7%	7.4%	14.8%
highly desirable	somewhat desirable	indifferent	somewhat undesirable	undesirable

COMMENT:

Echelon		Comment
1	Bde	In reality are practically combined now in combat
2	Bn	Combined S2/S3 assist in coordination
3	Bn	In this unit one officer serves as S2/S3
4	Bn	Unit SOP provides for ops/intel center w/personnel from S2 and S3
5	Bn	S2/S3 are already merged in a Bn TOC
6	Bn	This is done anyway, regardless of what the TOE prescribes
7	Bn	Desirable provided there is no reduction in personnel
8	Bn	Sections have independent functions; S3 span of control too great
9	Bn	Essential functions of S2 would probably be detracted from or overlooked
10	Bn	It is already a fact
11	Bn	This combination provides personnel for sustained 24-hr operations
12	Bn	Two distinct functions. A divided staff provides a safety check.
13	Bn	Adopt two-deputy concept
14	Bn	Combination provides personnel and equipment for prolonged operations
15	Bn	These elements are now collocated and integrated.

16	Bn	One element might override the other or intelligence be downgraded
17	Bn	It is function of XO to coordinate these staff functions
18	Bn	Present separation is good for honest and objective staff analysis

QUESTION: At your level, do you consider the number of personnel authorized by TOE for the receipt, processing and dissemination of information/intelligence:

0	3.7%	55.6%	22.2%	18.5%
excessive	more than adequate	adequate	less than adequate	inadequate

COMMENT:

	Echelon	Comment
1	Bde	Could not have 24-hour operation if reduced beyond present authorization
2	Bde	Additional officers and NCOs required for 24-hr, 7-day week operation
3	Bn	Adequate when authorized personnel are present
4	Bn	Intelligence section is austere enough, but not overworked
5	Bn	Additional personnel and radios are required
6	Bn	No reduction is recommended
7	Bn	The chemical maint NCO authorized just can't cut it
8	Bn	Desirable addition is a LT asst S2 and NCO asst Intel Sgt
9	Bn	Most difficult, if not impossible, for 2 people to function for sustained periods
10	Bn	Must be augmented for extended continuous operations
11	Bn	A separate physical security officer is necessary
12	Bn	Totally inadequate
13	Bn	To improve the capability would require additional school for S2s
14	Bn	At least 2 radio operators should be assigned for 24-hr operation

QUESTION: If someone suggested that you combine your logistics and personnel elements into a single staff element, would you find the idea:

70.4%	11.1%	0	14.8%	3.7%
Undesirable	Somewhat undesirable	Indifferent	Somewhat desirable	Highly desirable

COMMENT:

	Echelon	Comment
1	Bde	Areas are too divergent and specialized
2	Bde	Have tried this with relative success
3	Bn	Is a logical grouping of functions
4	Bn	Is like mixing apples and oranges
5	Bn	Each function is a highly technical and specialized area
6	Bn	Too diverse and demanding for one person to supervise
7	Bn	Each functional area is a distinct field
8	Bn	Must combine for 24-hour operations anyway
9	Bn	Activities do not lend themselves to consolidation
10	Bn	Span of control too great for 1 officer; A/L net facilitates commo
11	Bn	Fields are too diverse
12	Bn	Would require 100% availability of authorized personnel
13	Bn	It is unjustified. Areas are diverse enough with no overlapping responsibilities.
14	Bn	These are two separate areas that do not blend together
15	Bn	Functions are so dissimilar that a combination is incomprehensible
16	Bn	Separate career fields in various and myriad unrelated tasks

17	Bn	Collocation is acceptable, but each operations should remain separate
18	Bn	The functions are very different and need specialists in each area
19	Bn	Each area is too big and complex for any one man to handle

QUESTION: (Please respond to this question even though it applies to the division level.)

FM 101-5 states that dual-duty assignments should be limited to preserve integrity. At division level, several staff elements are perennially organized under a "dual-hat" concept; notably engineer, signal and artillery units. Do you believe that this "dual-hat" technique is preferred for elements of

ENGINEER	☐	YES 80.8%	☐	NO 19.2%
SIGNAL	☐	YES 88.5%	☐	NO 11.5%
ARTILLERY	☐	YES 88.5%	☐	NO 11.5%

COMMENT:

	Comment
1	Current technique is fine
2	Theoretical employment, status and composition of available forces is best accomplished with this technique
3	Any additional duty for a cdr detracts from his ability to command
4	Is logical that a commander is better able to advise superiors of his unit's capabilities
5	These commanders execute their own plans which is best arrangement
6	The commander is best able to advise utilization of his unit
7	Except for combat engineers. Other two units have no need for intelligence gathering staff as this information is furnished them.
8	The dual-hat technique allows direct communications from CG to commander
9	With a full-time deputy at DTOC, this should present no problems

QUESTION: Current STAFF PROCEDURES for command and control, as outlined in FM 101-5, are:

0	3.7%	63.0%	22.2%	11.1%
inadequate	less than adequate	adequate	more than adequate	excellent

COMMENT:

	Comment
1	They provide for standardized procedures and cover essential functions
2	The system is not as important as the people who make it work. FM 101-5 is valuable as a general guide.
3	No increase in the guidance as stressed in FM 101-5 is necessary
4	FM 101-5 is adequate for its purpose but common sense should prevail
5	FM 101-5 does not contain enough information to assist at the battalion level
6	Extremely cumbersome in many cases in technique, and hence breakdown during fast-paced operations
7	The time to perform all the correct staff procedures is generally not available in fast-moving situations.

QUESTION: Some commanders establish clear-cut separation between planners and operators. Others integrate the two on a continuous basis. Does your TOC have any responsibility for PLANNING operations beyond 24 hours?

☐ YES 96.3% ☐ NO 3.7%

COMMENT:

	Comment
1	There is little or no separation at brigade and lower
2	Primarily contingency planning at battalion
3	Logistics planning is done as far in advance as possible
4	Plans and operations are integrated on a continuous basis. There are insufficient personnel to split functions at battalion.
5	This distinction at battalion is very hazy - some people do both
6	Insufficient personnel for separate effort at battalion
7	Planning at battalion level is within normal operations
8	Plans and operations cannot be separated at battalion
9	Planners and operators must be integrated for effective response
10	The S3 as planner and operator provides best continuity of effort
11	There is no separation at battalion; planning is short-range
12	To plans less than a 24-hour period is highly unsatisfactory
13	The plan and its execution should go together
14	Plans for beyond a 24-hour period is usually directed by brigade
15	The same people do both jobs at battalion

QUESTION: In terms of current authorizations of personnel, is the information flow within your TOC, that is, the flow of information between elements of your TOC:

11.1%	14.8%	51.9%	22.2%	0
excellent	more than adequate	adequate	less than adequate	inadequate

COMMENT:

	Comment
1	More people are needed for continuous capability
2	Not sure it suffers from numbers of people or organizational structure
3	Practice and experience will improve information flow
4	At battalion level one SITMAP and journal should suffice, enablin all to access to a central source of information and minimizing this flow
5	Additional clerks and liaison officers are needed at battalion
6	The close proximity of workers facilitates excellent information flow
7	It's awkward having to go from one M577 to another and back
8	By itself, S2 section has insufficient people; however, combined with S3, the problem is eliminated.
9	Could be improved if S1 and S4 would be involved in full operations
10	Is in direct proportion to the ability of people to communicate timely, freely, and not so many numbers
11	Collocation allows free flow of information between TOC elements

QUESTION: In terms of the information you need to make decisions, the information flow into your TOC from other TOCs is:

14.8%	22.2%	48.2%	14.8%	0
inadequate	less than adequate	adequate	more than adequate	excellent

COMMENT:

Comment

1 It is the old story of not keeping higher or lower hqs completely informed. The flow of information up the chain is greater than down the chain.

2 This is a function of how well the reporting system and the chain of command is working.

3 The problem lies with information flow to adjacent units.

4 Deficiencies can only be corrected by continuous training.

5 Information flow is in direct relation to working communications.

6 Limited communications results in insufficient or late information.

7 Sufficient information is provided by bde for decisions at bn.

8 When equipment is operational, the flow is adequate.

9 Information from lateral units is simply nonexistent.

QUESTION: Would you evaluate your ability to accomplish airspace coordination as:

66.7%	11.1%	11.1%	11.1%	0
poor	fair	good	very good	excellent

COMMENT:

	Comment
1	Bde isn't equipped to perform this function
2	Capability is next to nil below division level
3	Bde's 7 sqdns are not staffed for this mission
4	There is not a means of positive control of airspace present
5	Should be the responsibility of a hqs higher than battalion
6	Battalion has neither personnel nor equipment to coordinate airspace
7	Air liaison officer/element in unit TOC is essential for this
8	Good with normal attachment of AF FAC Team
9	S3 Air, Arty LnO, and TACP are adequate to effect airspace coordination
10	A full-time airspace coordinator is needed at brigade level.

QUESTION: Current TOE authorizations regarding EQUIPMENT for command and control are:

3.7%	18.5%	37.0%	37.0%	3.7%
excellent	more than adequate	adequate	less than adequate	inadequate

COMMENT:

	Comment
1	More secure FM capability needed to enhance brigade operations
2	Somewhat bulky; lacks necessary map boards, tent floors, and repro equip
3	292 antennas are required at bn and co level for optimum commo
4	Expandable vans are needed for Bn S2/S3
5	Improvements in communications equipment would assist
6	There is redundancy which is "nice to have"
7	Addition of facsimile receiver/transmitter equip would help
8	Long-range AM radios would be an improvement
9	Secure voice FM would eliminate the need for other radio nets
10	Increase issue of KY-8 from one to seven per battalion.
11	A definite need exists for secure FM from bn to company
12	Secure voice is lacking; RTT is inadequate; power supply poor
13	More secure voice capability or issue what is authorized

QUESTION: With current organization and equipment do you consider your command post:

0	0	0	63.0%	37.0%
immobile	almost immobile	borderline	moderately mobile	highly mobile

COMMENT:

	Comment
1	In an armored cmd, a CP is highly mobile except for size
2	CP is housed in tent which delays displacement time
3	The Cmd Group is highly mobile. The full CP is cumbersome.
4	Degradation of CP mobility is caused by tentage
5	Moderately mobile with all the time in the world
6	A split CP enhances CP mobility
7	Mech Inf Bn CP is highly mobile in M577 vehicles
8	Loss of S4 track under H-series decreases CP mobility

QUESTION: In light of the mid-intensity nuclear threat, do you consider your command post:

22.2%	14.8%	18.5%	44.4%	0
very vulnerable	somewhat vulnerable	borderline	moderately safe	invulnerable

COMMENT:

	Comment
1	Borderline due to time required to break down, move and set up again
2	Radio signature is not so great that Bn will be a nuclear target
3	CP is based in tentage which is very vulnerable
4	Split CPs reduce vulnerability of entire Command Post
5	Thin-skinned vehicles and canvas makes Bn very vulnerable
6	Low signatures, few vehicles make Bn a less lucrative target
7	Command Post could survive if masked from ground zero
8	Nuclear threat to a battalion CP is minimal
9	High mobility reduces CP nuclear vulnerability
10	With adequate warning the M577 offers moderate protection
11	Earth-moving equipment is required to dig in command tracks
12	Frequent displacement affords moderate safety for CP
13	Battalion CPs are not large enough to be a desirable nuclear target

QUESTION: Do you find the idea of computers at your level of command:

22.2%	14.8%	22.2%	18.5%	22.2%
Undesirable	Somewhat Undesirable	Indifferent	Somewhat Desirable	Highly Desirable

COMMENT:

	Comment
1	Depends on: functions, dependability, maintenance, vulnerability, required back-up
2	Considering reliability, cost, operator training with present computers makes them infeasible at Bde or Bn
3	Rugged computers to withstand field use are highly desirable at Div
4	Have to be integrated with higher level data links
5	Diverse problems at Bn present programming difficulties
6	They must enhance capability for command and control
7	Computers are too complicated and delicate for Bn level
8	Information can be processed to the Bn in sufficient detail without computers
9	No other computers required besides FADAC
10	Functions performed manually are satisfactory at Bn level
11	Insufficient information is generated at Bn to justify computers
12	Computers would increase requirements for personnel and space to store and operate the equipment
13	Desirable only if they are light, reliable, and easy to maintain
14	For use to collect, evaluate and transmit info and computer Arty data for firing
15	If they could be small enough and rugged or if they could be patched into an electronic computer net to acquire information

QUESTION: Would you describe your "hands-on" experience with computers as:

7.4%	22.2%	22.2%	14.8%	33.3%
extensive	above average	average	very little	non-existent

COMMENT:

PART V - FREE COMMENT

Having completed PARTS II-IV of the survey, you may find that you still have some things to say. Perhaps in your opinion, a pertinent question has been overlooked or one or more of the included questions has been misworded. Possible you would like to expand on a thought not fully developed through response to the survey question.

The next three pages are blank sheets for your use if you desire to comment further. Add sheets if necessary.

We also take this opportunity to thank you for your effort in completing the survey, and the meaningful contribution you are making to this important effort.

"The daily reporting requirement is far too great - especially in the logistical area. Some could be eliminated; others made briefer."

"At this level C&C personnel and equipment are adequate for tasks assigned, except for the areas indicated.

However, a word of caution regarding getting too overly sophisticated and exotic with equipment. This unit can barely maintain the relatively unsophisticated equipment we now own. If we are not careful, we can saddle ourselves with devices that cannot be maintained by the Joe Schmedlaps available to us. Let's just keep the equipment simple, reliable and Joe Schmedlap-proof."

"Commanders and staffs do not have enough time to drill themselves on the procedures of running a CP. CPXs are excellent. They do not provide the full range of difficulties which a large unit FTX does, however. For the unit that does obtain sufficient exercise and enjoys satisfactory longevity in its command and staff personnel, a very high level of command and control effectiveness can be obtained under present TOE (G and probably H series)."

"Parkinson's Law is applicable at every level. If a commander is provided personnel, equipment, and vehicles, he will use them and cry because he does not have more. Our battalion command posts tend to be rolling circuses if not ruthlessly kept austere.

My comments pertain only to tank units; command posts for cavalry units would, of course, require more communications, and more vehicles for "jump" capability, but I do not feel qualified to be specific."

"It appears, from this survey, that there is thoughts of combining elements of special or general staffs or both. I have made my position quite clear on this matter that I am not in favor of it; however, if it is determined that is the direction it must go, to save money, or other reasons, I have one proposal to make.

Instead of a staff at battalion level, use the two majors assigned as deputy commanders, one for operations, the other for materiel. The Deputy Commander, Materiel would be in charge of HQ and Service Battery. The Deputy Commander, Operations would be in charge of the 3 firing batteries, and would be responsible for target development, engaging the target, surveillance of the battlefield, etc.

This is a "broad brush" treatment of this matter. I feel that if it is determined to combine staff functional areas, the above mentioned should be considered."

"It must be considered that I am not a tactical commander but a logistical unit commander. I require a great deal of logistical intelligence as well as tactical intelligence in order to conduct and plan support operations. My logistical intelligence is far from adequate but a thousand times more complete and available than my tactical intelligence. I do not have the personnel nor the communications to solve the problem internally."

"Really the basic problems are:

1. Ability to communicate with next higher and lower levels of command quickly, clearly and easily.

2. Physical arrangement of the command post so people can do the job easily and effectively. Right now at battalion level the arrangements are miserable, leading to fatigue, lowered efficiency, and confusion. Why not get someone skilled in human engineering to redesign the whole thing, organized around who does what to whom, with places at a console, decent lighting, internal voice network, etc., etc. Get a little science fiction into it, and also a lot of common sense (why should S2 and S3 be in separate M577's, for example?)."

APPENDIX G

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