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DEVELOPMENT OF RISK MANAGEMENT TOOLS FOR USE AT UNIT LEVEL

Dr. Joe Stephenson

October 31, 1991

Contract No. DAAJ09-88-D-A002

Prepared for:

U.S. Army Safety Center
Fort Rucker, Alabama



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I. INTRODUCTION

Management of risk is a fundamental leadership/command responsibility. Currently, unit commanders and leaders do not have a complete set of tools and skills needed to effectively evaluate risk in the complex operations they must plan and lead. As a result they often accept risks that could be effectively eliminated or controlled. Accidents result. Conversely, leaders seeking optimum safety often pass up the opportunity to innovate and take prudent risks to obtain important training benefits. As a result, training is not as effective as it should be, and combat risk increases. The Army has devised a safety strategy to overcome these problems. It envisions full integration of safety in the operational mainstream. It also projects expanded involvement of noncommissioned officers (NCOs) and junior officers in the accident prevention effort. The program is based on risk management concepts. Further development of risk management concepts and techniques is essential if the strategy is to succeed.

II. EXECUTIVE SUMMARY

The purpose of this study, as originally conceived, was to provide company/battalion commanders with a tested, validated, risk management tool appropriate to aid in identifying, analyzing, controlling, and evaluating all risks which may adversely affect mission success.

A project plan which included 15 separate tasks was developed and approved for the study (enclosure 1).

Study materials developed included a pretest, administrator's guide, exercise booklet, risk assessment worksheet guide, risk assessment worksheets, a post test with questionnaire, and a 20-minute video cassette program. In all, the study package developed to collect information for the study consisted of over 120 pages (enclosure 2).

Computer programs to support the study were also developed.

Testing should have occurred in the October 1990 to March 1992 timeframe.

As a result of Desert Shield/Desert Storm and changing Army requirements, the original Risk Management Study Test Plan was significantly altered.

The target audience for the study was redefined by the Army.

Instead of gathering information from battalion commanders as originally planned, NCOs were selected. This required modification and simplification of the Risk Assessment Worksheet and the study package (enclosure 3).

Information gathered from NCO Academy attendees at Fort Sill, Oklahoma, and Fort Benning, Georgia, indicates that the Risk Analysis Worksheet can be a useful tool for aiding in efficiently identifying risks associated with tactical situations.

The groups using the Risk Analysis Worksheets consistently produced statistically significant higher numbers and higher percentages of meaningful responses.

Review of questionnaires completed after the use of the worksheet also strongly indicated that the simplified Risk Analysis Worksheet can be a useful tool for supporting tactical exercises and providing risk identification training.

The original study materials remain available to support future studies.

III. METHOD

a. Original

The development of a risk management tool for use at unit level began with review of technical reports and publications on aviation and ground accidents and their causes. Using this information, along with Field Manual (FM) 25-100, Soldiers Manuals, Army Training and Evaluation Program (ARTEPS), How-To-Fight Manuals, and assistance from USASC personnel, operational scenarios and a project plan were developed.

A literature review was conducted to identify risk management techniques and how the techniques were being applied. The application of risk management in the military was also studied to see if it could be applied to military requirements and situations. There is evidence that risk management assessments were being used in certain training situations and are beneficial to the military training program.

A study of the techniques presently being applied by the military was used to develop techniques with the highest potential for widespread Army application at the battalion/company commander level.

A detailed, step-by-step procedure for each application was devised, making the procedures easy to follow and complete. Plans were devised to test the techniques and procedures with the operational scenario.

A questionnaire and risk management package were developed to evaluate the usefulness of the risk management techniques and procedures by the unit commanders. The packages included test instructions, risk management procedures, operational scenarios, and the questionnaires. This package was designed to be self-administered as well as interviewer-administered.

The next hurdle was to determine the level to which risk management should be applied. Originally, risk management techniques were to be applied and tested at the company commander level. A review of techniques indicated that the company commander may not have had all the information required. After a brief meeting it was decided that all the required information may not be at company level, so battalion level was selected.

Commanders from different type organizations were targeted to participate in the test program. With all the information and risk assessment packages the plan was to be administered to the targeted commanders. The results of the information collected from these tests would be used to select the best techniques. The plan was stopped at this point. See Revised Method B.

b. Revised

The original risk management tool was targeted at company/battalion commanders as a tool to aid in identifying, analyzing, controlling/accepting all risks which may adversely affect mission success. Due to Desert Shield/Storm deployment of troops and changing Army requirements, the original risk management tool and study test plan had to be significantly revised. The target audience for use of the tool was redefined by the Army to NCOs since in situations like Desert Shield/Storm, these individuals are often asked to make decisions requiring risk identification and assessment. In an effort to simplify the original Risk Assessment Tool and still maintain its utility, numerical estimations of risk severity and probability were replaced with three level scales for "Likelihood of Occurrence" (very likely (VL), somewhat likely (SL), not likely (NL)) and "Severity of Occurrence/Consequence" (very severe (VS), medium severity (MS), not severe (NS)). These were provided on a Risk Assessment Worksheet along with definitions/explanations for each alternative to assist in appropriate selection. Additionally, the list of risk factors was expanded to provide a more detailed list of risk factors. In order to increase the worksheet's utility, a column was added to indicate the risk assessment method (procedure) used (personal review, hazard analysis, Subject Matter Expert (SME) input, data search or standards search). This would allow for immediate identification of the method used to evaluate each risk associated with a course of action. Also added was a column for indicating the risk has been minimized and considered acceptable or controlled and one for indicating the risk acceptance decision had not yet been made because it was still being evaluated. Expansion of these columns allows for use of the Risk Assessment Worksheet as a working document leading to a go-no/go decision (the last item on the worksheet) upon assessment of all risks. The completed risk Assessment Worksheet was a 1-page, easy-to-complete form with instructions on the reverse (appendix H).

This revised Risk Assessment Worksheet was then tested at two Army installations. Due to time and resource constraints caused by Desert Shield/Storm and revisions required by redefinition of the target audience, the test was designed to evaluate only one aspect of the worksheet--its use as an aid to risk identification. Additionally, only one tactical scenario was used at each location (a scenario appropriate for the target audience).

At Fort Benning, Georgia, and Fort Sill, Oklahoma, personnel attending the NCO Academy were randomly divided into two groups, with one group at each site designated as a control group and the other designated the test group.

Both groups were given tactical scenarios and asked to list the risks associated with the operation described in the scenario.

The test group at each site used the Risk Assessment Worksheet to aid in the exercise.

The tactical scenario used at Fort Sill involved an artillery unit. The Fort Benning scenario described infantry operations.

The lists from all individuals were collected and mailed to the evaluator (the principal investigator for the study). Each individual list was examined to determine the total number of responses and the total number of meaningful responses. (A "response" was anything listed; a "meaningful response" was a response which actually identified a risk, potential risk, or concern. Value judgments were not made about the level of risk nor the validity of the concern. However, statements which merely restated conditions or facts listed in the scenario, questions not related to risks, and irrelevant statements or opinions were not counted as meaningful. Also, some individuals simply restated the same risk several times. Multiple statements of the same risk were only counted once.)

All lists were evaluated by the same individual using the same criteria. At the time the risks were evaluated, the control group and the test group responses were intermixed. The evaluator did not know to which group individual respondents belonged.

The differences in the mean number of total responses and the mean number of meaningful responses between the test and control groups at each site and for combined sites were evaluated for significance using one-tailed t tests (Fisher's t Formula).

Members of the test group were also asked, after using the worksheet, to complete a questionnaire evaluating the value and possible uses for the Risk Assessment Worksheet.

IV. RESULTS

At Fort Sill, the control group listed an average of 10.90 responses, but only an average of 7.27, or 67%, were "meaningful".

The test group, using the Risk Assessment Worksheet as a guide, listed an average of only 10.40 responses but an average of 8.93, or 86%, were meaningful. (See Tables 1 and 4.)

Similarly, at Fort Benning, the average number of total responses was slightly higher for the control group (12.66 vs. 12.30), but again the average number of meaningful responses was higher for the test group (9.22 vs. 7.19) and the percentage of meaningful responses was also higher for the test group (75% vs. 57%). (See Tables 1 and 3.)

On the five questions commenting on the usefulness of the Risk Assessment Worksheet in different applications, over 80% of the

responses were positive at Fort Sill and over 90% of the responses were positive at Fort Benning. (See Table 2.)

The greatest concern at both sites was whether or not there would be sufficient time in a combat situation to do this type of exercise.

NCOs at both posts tended to feel that the Risk Assessment Worksheet could be successfully used by NCOs with well over half indicating that the tool could be used at grades E-5 or below.

There were seven individuals at Fort Sill, however, who indicated that mission decisions are generally made by officers and that the worksheet was not appropriate for NCOs. Even at Fort Sill, this was a minority position.

Responses to the Risk Assessment Worksheet tended to be less positive at Fort Sill than at Fort Benning. At Fort Sill, the survey was conducted the day before a final examination during what would have otherwise been study time. Reportedly, this generated some negative feelings toward the study.

In any event, one-tailed t tests, using Fisher's t formula, indicated that there were no significant differences in the total number of responses listed by the test groups and the control groups at Fort Sill, at Fort Benning, or collectively (t values of 0.275, 0.246, and 0.415, respectively; t value of approximately 1.3 required for significance even at 0.10 level; therefore, null hypotheses accepted).

The differences in mean number of meaningful responses at both Fort Sill and Fort Benning were significant at the 0.10 level (t values of 1.41 and 1.36, respectively; therefore, null hypotheses rejected).

The combined test groups (using the Risk Assessment Worksheets) produced a mean number of meaningful responses that was higher than that of the combined control groups at the 0.05 level of significance ($t = 2.19$; $t = 2.00$ required at 0.05 level; therefore null hypothesis is rejected).

See Tables 3 through 6 for statistical summaries and hypotheses tests.

Results of the information gathered in the questionnaires given to members of the test groups are graphically depicted in figures 1 through 18.

V. CONCLUSIONS

The Risk Assessment Worksheet can, as a stand-alone tool, assist NCOs in identifying risks associated with tactical operations.

NCOs participating in this study indicated, quite strongly, that this tool has several potentially useful applications. These include aiding in risk identification during classroom and field training, after-action reviews, and possibly combat.

VI. RECOMMENDATIONS

Recommend integrating the Risk Assessment Worksheet into NCO tactical training at multiple levels including classroom and field exercises.

Even though the information obtained from this study indicates that the modified Risk Assessment Worksheet can be a useful tool for NCOs, as a practical matter, most major battlefield decisions are made by commissioned officers.

Hopefully, the original risk assessment packages, including the video program, can be evaluated in a follow-on study.

TABLE 1
RISK MANAGEMENT STUDY - Average Number of Responses

<u>TOTALS</u>	<u>FORT SILL</u>	<u>FORT BENNING</u>
CONTROL GROUP		
Responses	10.90	12.65
Meaningful	7.26	7.19
% Meaningful	67%	57%
TEST GROUP		
Responses	10.40	12.30
Meaningful	8.93	9.22
% Meaningful	86%	75%

Summary of Scenario Risks Identified

TABLE 2
RISK MANAGEMENT STUDY (Number Responses by Question)

QUESTION	FORT SILL				FORT BENNING			
	Strongly Disagree	Mildly Disagree	Mildly Agree	Strongly Agree	Strongly Disagree	Mildly Disagree	Mildly Agree	Strongly Agree
1. The Risk Assessment Worksheet helps me spot various kinds of risk and hazards.	2	1	9	13	4	0	2	20
2. The Risk Assessment Worksheet would be a useful tool to improve risk assessment skills in classroom instruction.	1	2	1	10	14	2	1	2
3. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during field training.	2	2	4	11	11	0	1	7
4. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during after actions reviews (AARs).	1	2	1	7	17	2	1	0
5. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during combat actions.	3	3	3	8	10	3	1	2

Summary of Questionnaire Response (Test Groups Only)

FORT BENNING STATISTICAL SUMMARY

	CONTROL GROUP (N=32)		TEST GROUP (N=27)	
	TOTAL RESPONSES	MEANINGFUL RESPONSES	TOTAL RESPONSES	MEANINGFUL RESPONSES
RANGE	4-27	0-24	6-22	4-17
MEAN	12.66	7.19	12.30	9.22
SUM OF MEANS	1353.2	906.9	429.6	338.7
STANDARD DEVIATION	6.50	5.32	3.99	3.54
VARIANCE	42.29	28.34	15.91	12.54

TABLE 3

FORT SILL STATISTICAL SUMMARY

	CONTROL GROUP (N=30)		TEST GROUP (N=28)	
	TOTAL RESPONSES	MEANINGFUL RESPONSES	TOTAL RESPONSES	MEANINGFUL RESPONSES
RANGE	4-26	1-19	3-26	2-19
MEAN	10.90	7.27	10.50	8.93
SUM OF MEANS	876.6	570	841.1	562
STANDARD DEVIATION	5.41	4.43	5.48	4.48
VARIANCE	29.22	19.00	30.04	20.07

TABLE 4

TOTAL STUDY STATISTICAL SUMMARY

	CONTROL GROUP (N=62)		TEST GROUP (N=55)	
	TOTAL MEANINGFUL RESPONSES		TOTAL MEANINGFUL RESPONSES	
RANGE	4-27	0-24	3-26	2-19
MEAN	11.81	7.23	11.28	9.07
SUM OF MEANS	2277.9	1476.8	1315.0	901.7
STANDARD DEVIATION	6.06	4.88	4.89	4.05
VARIANCE	36.74	23.82	23.91	13.39

TABLE 5

TOTAL STUDY HYPOTHESES TESTS

FORT SILL

- t = .275 for total responses (accept)
- t = 1.41 for meaningful responses (reject)
(t=1.31 for .10 level of significance)

FORT BENNING

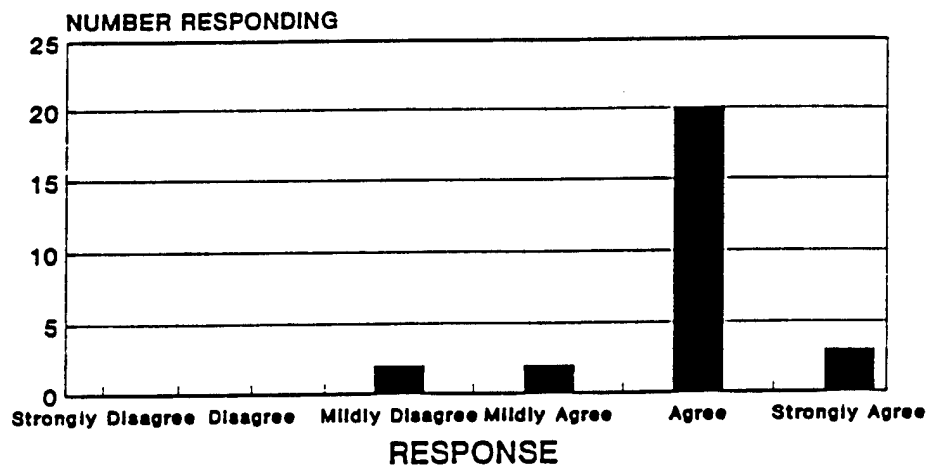
- t = .246 for total responses (accept)
- t = 1.36 for meaningful responses (reject)
(t = 1.31 for .10 level of significance)

TOTAL STUDY (FORT BENNING AND FORT SILL)

- t = .415 for total responses (accept)
- t = 2.19 for meaningful responses (reject)
(t = 2.00 for .05 level of significance)

TABLE 6

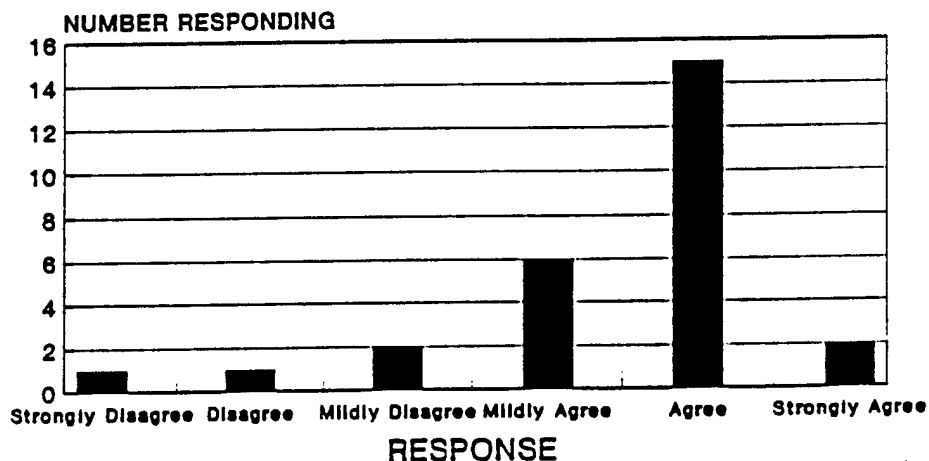
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 1** **FORT BENNING**



1. The Risk Assessment Worksheet helps me spot various kinds of risks and hazards.

FIGURE 1.

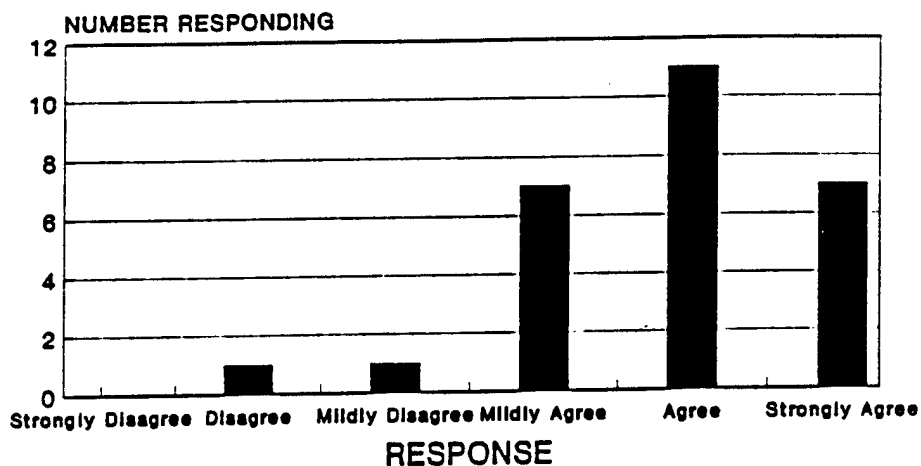
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 2** **FORT BENNING**



2. The Risk Assessment Worksheet would be a useful tool to improve risk assessment skills in classroom instruction.

FIGURE 2.

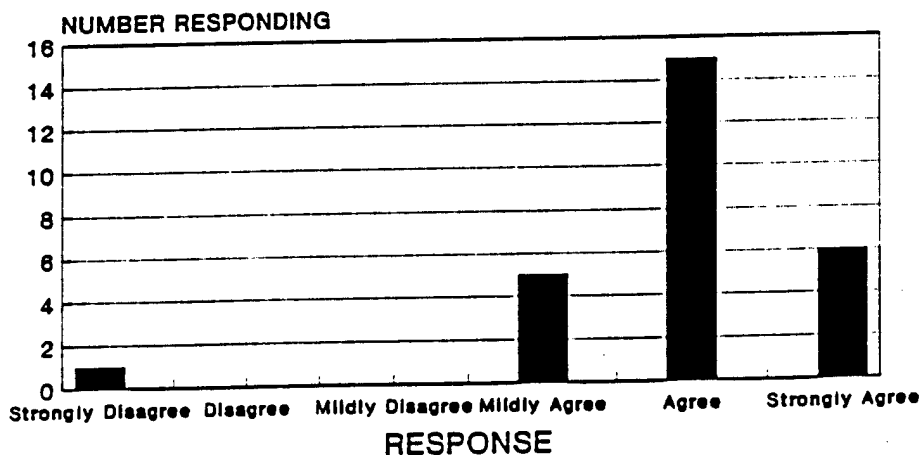
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 3** **FORT BENNING**



3. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during field training.

FIGURE 3.

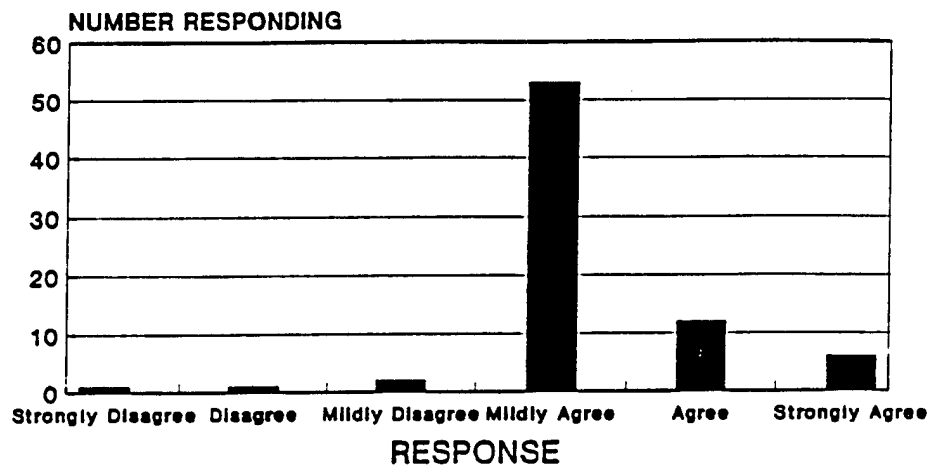
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 4** **FORT BENNING**



4. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during after action reviews (AARS).

FIGURE 4.

RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 5** **FORT BENNING**



5. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during combat actions.

FIGURE 5.

RISK MANAGEMENT QUESTIONNAIRE RESULTS **SUMMARY - FORT BENNING**

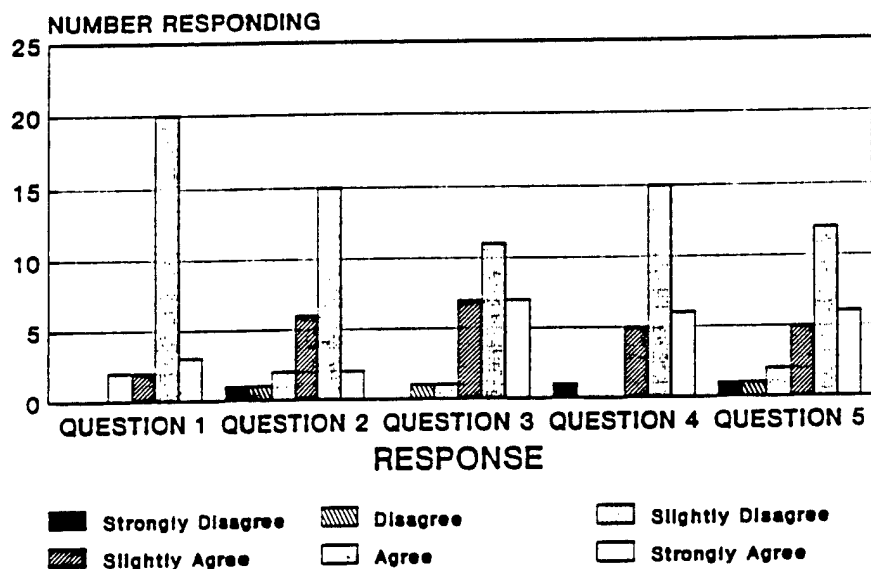
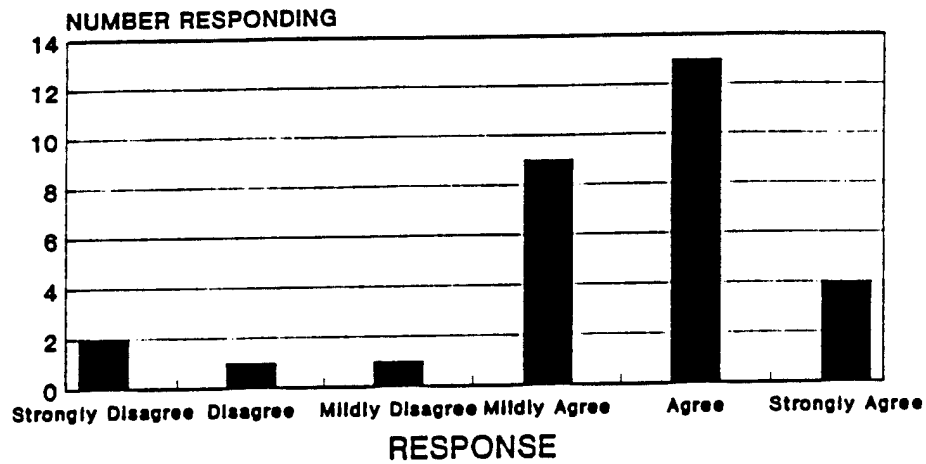


FIGURE 6.

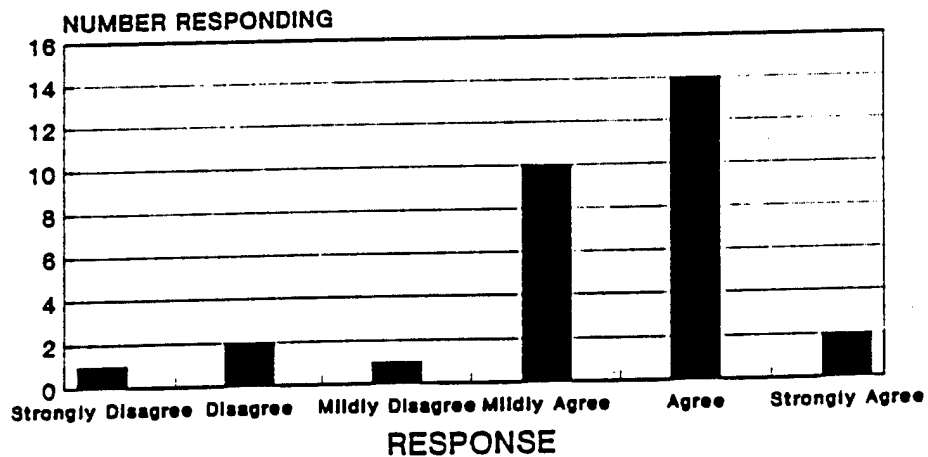
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 1** **FORT SILL**



1. The Risk Assessment Worksheet helps me spot various kinds of risks and hazards.

FIGURE 7.

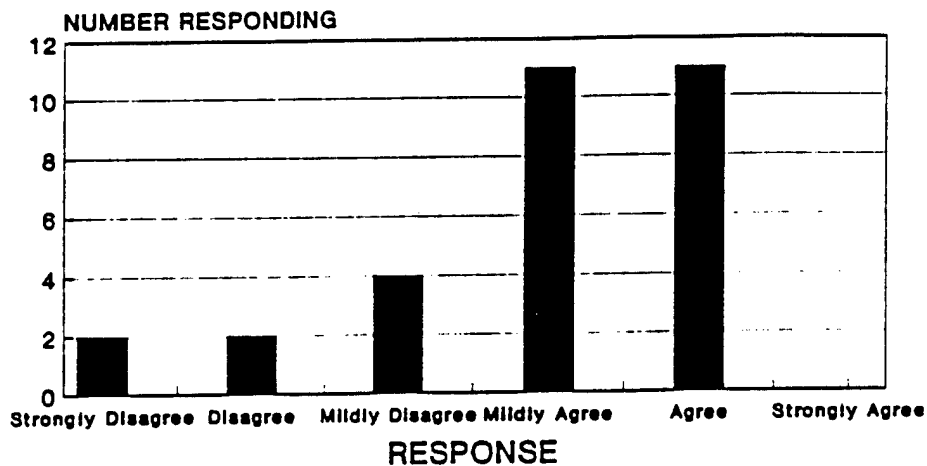
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 2** **FORT SILL**



2. The Risk Assessment Worksheet would be a useful tool to improve risk assessment skills in classroom instruction.

FIGURE 8.

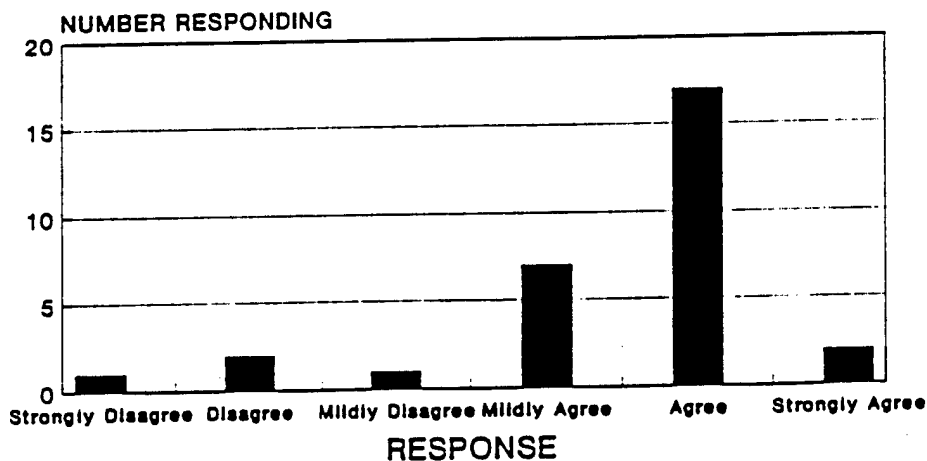
RISK MANAGEMENT QUESTIONNAIRE RESULTS QUESTION 3 FORT SILL



3. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during field training.

FIGURE 9.

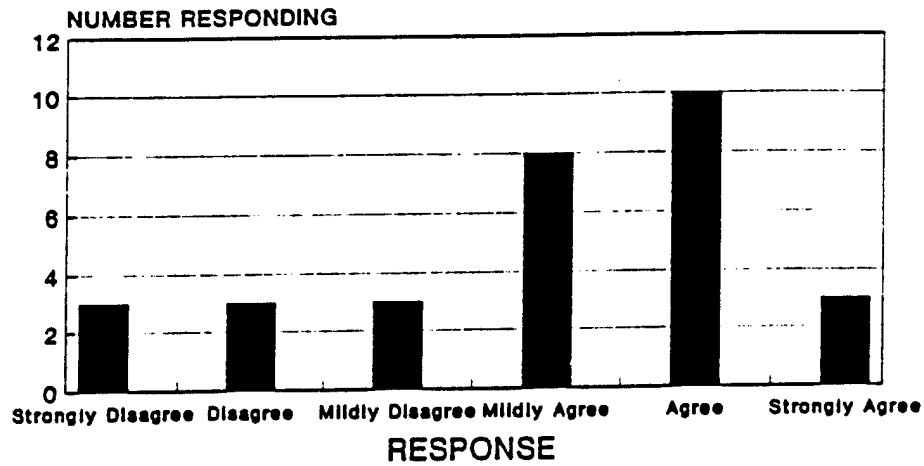
RISK MANAGEMENT QUESTIONNAIRE RESULTS QUESTION 4 FORT SILL



4. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during after action reviews (AARS).

FIGURE 10.

RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 5** **FORT SILL**



5. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during combat actions.

FIGURE 11.

RISK MANAGEMENT QUESTIONNAIRE RESULTS **SUMMARY - FORT SILL**

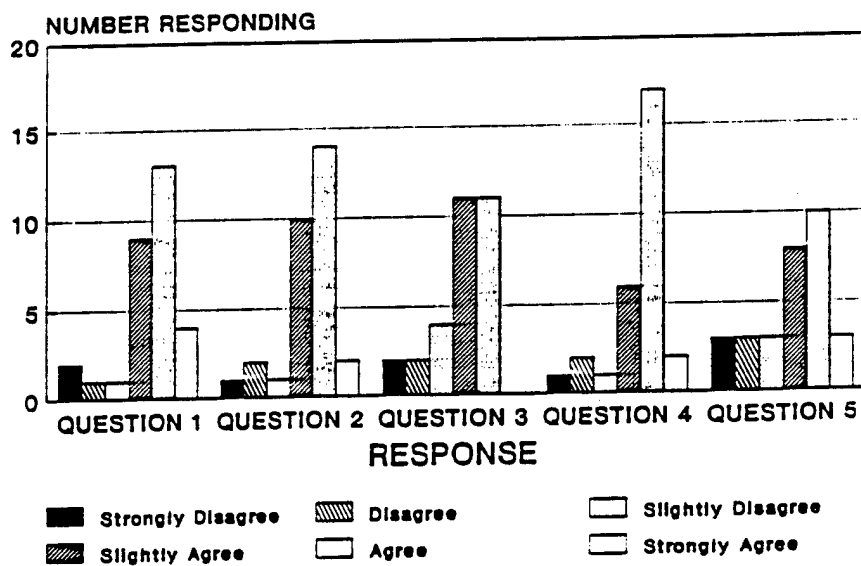
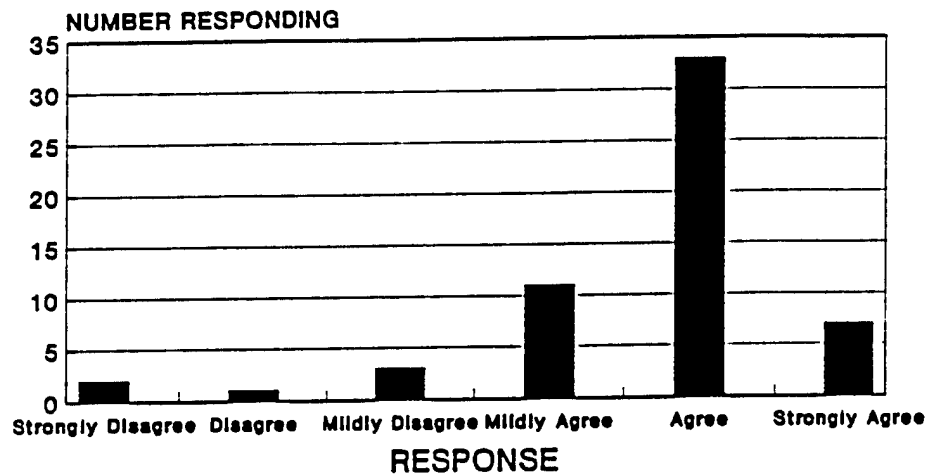


FIGURE 12.

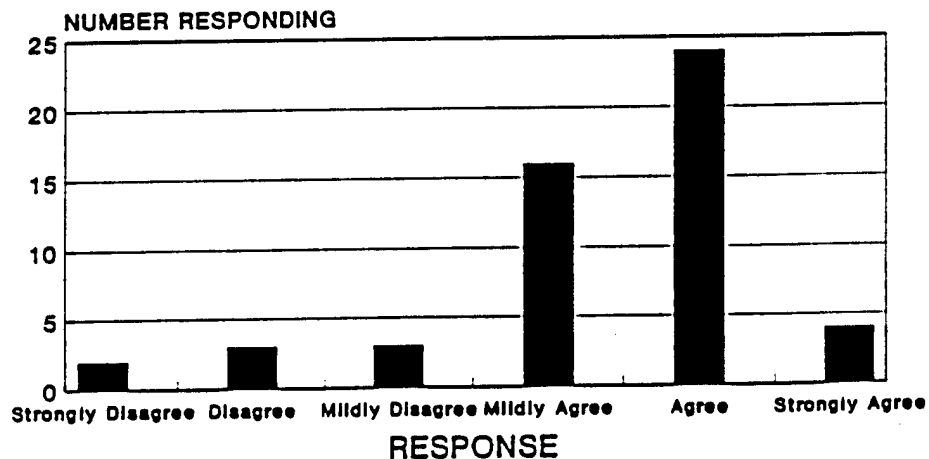
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 1** **TOTAL (FORT SILL AND FORT BENNING)**



1. The Risk Assessment Worksheet helps me spot various kinds of risks and hazards.

FIGURE 13.

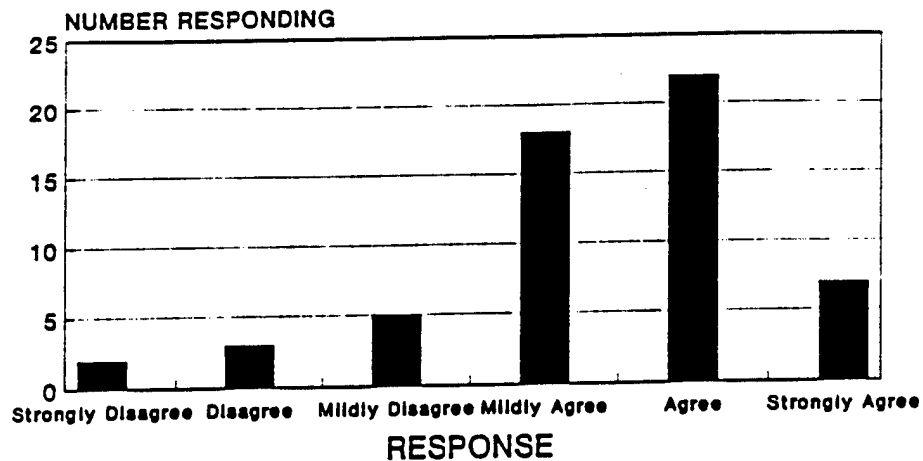
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 2** **TOTAL (FORT SILL AND FORT BENNING)**



2. The Risk Assessment Worksheet would be a useful tool to improve risk assessment skills in classroom instruction.

FIGURE 14.

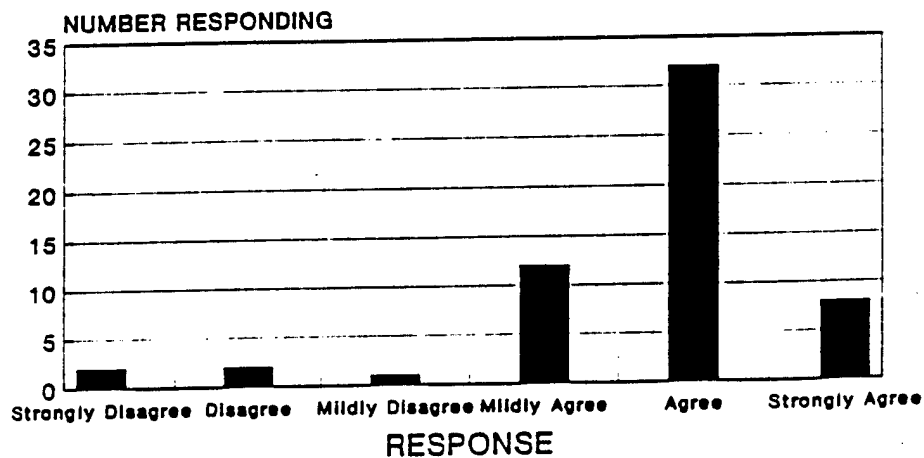
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 3** **TOTAL (FORT SILL AND FORT BENNING)**



3. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during field training.

FIGURE 15.

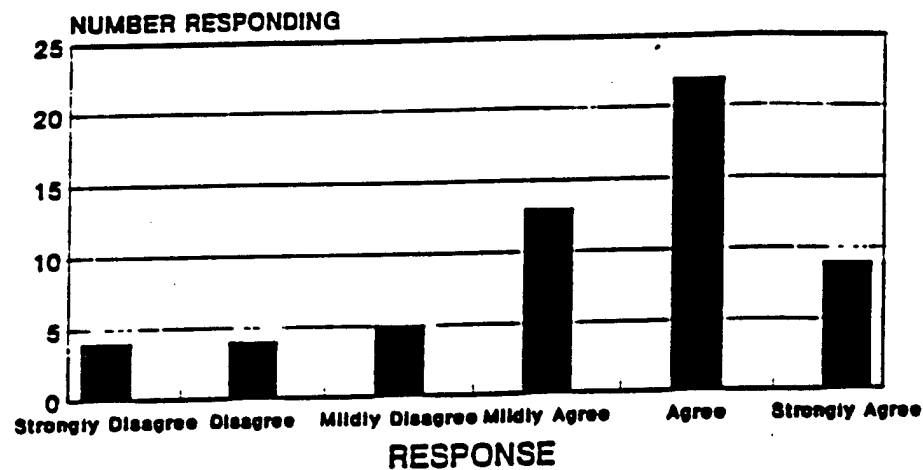
RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 4** **TOTAL (FORT SILL AND FORT BENNING)**



4. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during after action reviews (AARS).

FIGURE 16.

RISK MANAGEMENT QUESTIONNAIRE RESULTS **QUESTION 5** **TOTAL (FORT SILL AND FORT BENNING)**



5. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during combat actions.

FIGURE 17.

RISK MANAGEMENT QUESTIONNAIRE RESULTS **SUMMARY - TOTAL (SILL AND BENNING)**

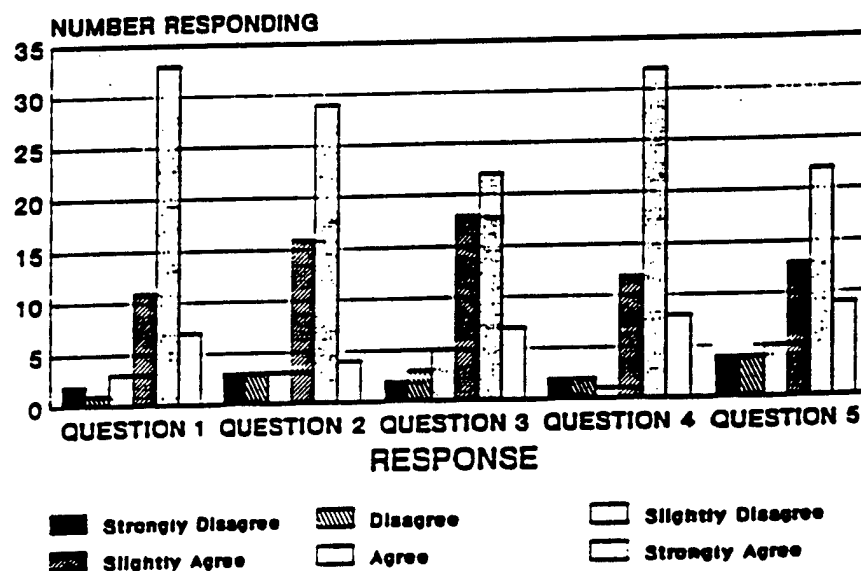


FIGURE 18.

VI. REFERENCES

1. ARTEP 6-400: Army Training and Evaluation Program - The Field Artillery Cannon Battalion, 21 March 1984, Department of the Army.
2. ARTEP 11-35: Army Training and Evaluation Program for Signal Battalion Aim Division (Armor, Infantry, or Infantry Mechanized) and Signal Battalion (Heavy Division, 9 May 1984, Department of the Army.
3. ARTEP 71-2: Army Training and Evaluation Program for Mechanized Infantry/Tank Task Force, 23 November 1981, Department of the Army.
4. ARTEP 7-10 MTP: Mission Training Plan for the Infantry Rifle Company, October 1988, Department of the Army.
5. ARTEP 5-35: Army Training and Evaluation Program - Engineer Combat Battalion, Corps and Engineer Combat Support Equipment Company, 27 February 1985, Department of the Army.
6. ARTEP 7-15: Army Training and Evaluation Program for Infantry Battalions (Infantry, Airborne, Air Assault, and Ranger), 19 April 1985, Department of the Army.
7. ARTEP 17-385: Army Training and Evaluation Program for Attack Helicopter Battalion, September 1984, Department of the Army.
8. ARTEP 17-57-10 MTP: Mission Training Plan for the Scout Platoon, December 1988, Department of the Army.
9. ARTEP 1-247-30 MTP: Mission Training Plan for the Medium Helicopter Company, October 1989, Department of the Army.
10. RB 101-999: Staff Officers Handbook, 1983.
11. Army Safety Report: FY86, Volume 1, Armywide, U.S. Army Safety Center.
12. Army Safety Report: FY86, Volume II, Signal Branch Battalions, U.S. Army Safety Center.
13. Army Safety Report: FY86, Volume II, Armor Branch Battalions, U.S. Army Safety Center.
14. Army Safety Report: FY86, Volume II, Transportation Branch Battalions, U.S. Army Safety Center.
15. Army Safety Report, FY86, Volume II, Aviation Branch Battalions, U.S. Army Safety Center.

16. Army Safety Report, FY86, Volume II, Field Artillery Branch Battalions, U.S. Army Safety Center.
17. Army Safety Report, FY86, Volume II, Infantry Branch Battalions, U.S. Army Safety Center.
18. USASC Technical Report - TR 83-6, January 1983, Analysis of CY81 Fatal, On-Duty Army Ground Accidents, U.S. Army Safety Center.
19. Technical Report 84-1, Analysis of FY82 M113 APC and M60 Tank Accidents, U.S. Army Safety Center.
20. USASC Technical Report - TR 84-2, June 1984, Tracked Vehicle Fire Analysis: 1984 Update, U.S. Army Safety Center.
21. Analysis of Tracked Vehicle Run-over Accidents, November 1984, U.S. Army Safety Center.
22. USASC Technical Report - TR 83-7 July 1983: Lessons Learned from FY82 US Army Aviation Mishaps, U.S. Army Safety Center.
23. USASC Technical Report - TR 83-4: December 1982, Volume II, Analysis of CY81 Army Ground Accidents, U.S. Army Safety Center.
24. USASC Technical Report - TR 83-2: December 1982, Volume I, Analysis of CY81 Army Ground Accidents, U.S. Army Safety Center.
25. USASC Technical Report - TR 81-2: March 1981, Analysis of U.S. Army Fire Accidents, U.S. Army Safety Center.
26. USASC Technical Report TR 80-3: May 1980, Analysis of FY79 Army Motor Vehicle Accidents, U.S. Army Safety Center.
27. Student Handout: Accident Prevention in Combat Designing Safety Programs for Tactical Organizations, U.S. Army Agency for Aviation Safety, Fort Rucker, Alabama.
28. Crew Coordination Study - Progress Report No. 1, 8 March 1990.
29. "Tactical Risk Management," PATHFINDER, Michael P. Darcy, February 1989.
30. "A Case for Combat Safety/Risk Management," PATHFINDER, Michael P. Darcy.
31. "Safety in Training," PATHFINDER, Michael P. Darcy.

VIII. ABBREVIATIONS

AARS	After Action Reviews
AGL	Above Ground Level
AO	Area of Operation
ARPS	ASMIS Retrieval and Processing System
ARTEP	Army Training and Evaluation Program
ATTN	Attention
BMNT	Before Morning Nautical Twilight
C&GS	Command and General Staff
COMPAS	Combat Oriented Mishap Prevention Analysis System
CPT	Captain
DS	Data Search
DZ	Drop Zone
EENT	Ending Evening Nautical Twilight
FARP	Forward Area Refueling Point
FLOT	Forward Line of Troops
FM	Field Manual
FORSCOM	Forces Command
H&I	Harassment and Interdiction
HA	Hazard Analysis
HQS	Headquarters
IAW	In Accordance With
INC.	Incorporated
KIA	Killed In Action
KM	Kilometer
LTC	Lieutenant Colonel
LZ	Landing Zone
MIA	Missing in Action
MM	Millimeter
MOS	Military Occupational Specialty
MS	Medium Severe
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NCO	Noncommissioned Officer
NL	Not Likely
NLT	Not Later Than
No.	Number
NS	Not Severe
°F	Degrees Fahrenheit
OP	Operations
OPCON	Operation and Control
PL	Phase Line
POC	Point of Contact
PR	Personal Review
RAC	Risk Assessment Code
RM	Risk Management
RP	Report Point
SAT	Systems Analysis Training
SL	Suspected Location
SME	Subject Matter Expert
SOF	Special Operation Force
SP	Self Propelled

SS	Standards Search
SSN	Social Security Number
TFA	Task Force A
TFB	Task Force B
TFC	Task Force C
TRADOC	United States Army Training and Doctrine Command
USAF	United States Air Force
USASC	United States Army Safety Center
VL	Very Likely
VS	Very Severe
WIA	Wounded In Action

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ENCLOSURE 1
PROJECT PLAN

ENC1-1

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PROJECT PLAN
RISK MANAGEMENT STUDY

1. General

a. Background:

Management of risk is a fundamental leadership/command responsibility. Risk Management, as defined in this study, is the process of optimizing the chances of mission success by systematically identifying, analyzing, and controlling risks. Risks are then considered to be anything that may prevent mission success including enemy action, adverse weather or terrain, and accidents, including friendly fire. Currently, unit commanders and leaders do not have a complete set of tools and skills needed to effectively evaluate risk in the complex operations they must plan and lead. As a result they often must accept risks, that with the proper tools could have been effectively eliminated or controlled. Accidents result. Conversely, leaders seeking optimum safety often pass up the opportunity to innovate and take prudent risks to obtain important training benefits. As a result, training is not as effective as it should be, and combat risk increases. The Army has devised a safety strategy to overcome these problems. It envisions full integration of safety principles in the operational mainstream. It also projects expanded involvement of NCOs and junior officers in the accident-prevention effort. The strategy is based on the application of risk management concepts. Further development of such concepts and techniques is essential if the strategy is to succeed. Current risk management efforts tend to be directed at determining the level of risk associated with the time allowed for planning, the physical condition and training level of personnel, and the maintenance status of vehicles and equipment. By evaluating these and other factors a quantitative risk assessment can be accomplished. This is valuable information and a necessary step in the risk management process. However, to aid commanders in evaluating courses of action and selecting the one with the greatest probability of mission success, additional information is required. Commanders need an objective method of identifying, analyzing, and controlling (within capabilities) all risks associated with a given mission.

b. Purpose:

The purpose of this study is to provide company/battalion commanders with a tested validated risk management tool

appropriate to aid in identifying, analyzing, controlling, and evaluating all risks which may adversely affect mission success.

c. Approach:

The study will select/develop operational scenarios to be used as vehicles for applying, teaching, and evaluating the selected risk management technique. These operational scenarios will be determined based on a review of historical data and will address identified problem areas. The risk management technique will be developed by reviewing existing risk management literature and systematically identifying, modifying, and/or developing a technique best suited for use by the small unit commander in a tactical environment.

The technique will be refined, tested, and validated by trial application to selected operational scenarios experience and by soliciting peer review and Army feedback during all phases of the study.

This feedback will include discussions with United States Army Safety Center (USASC) and United States Army Training and Doctrine Command (TRADOC) personnel, COBRO project personnel, consultants, and active duty and reserve component Army personnel (to include unit commanders). Written feedback in the form of questionnaires and formal tests will be gathered and analyzed and will be incorporated by modification of the risk management technique.

d. Organization (not required)

e. Quality Control:

The contract manager has overall responsibility for the quality of reports and other deliverables. All reports will be reviewed for technical accuracy by the originator, the contract manager, the technical director, and the senior quality consultant.

2. Tasks:

a. Task 1.

(1) Description: Develop and provide a project plan. After plan approval, review USASC technical reports, publications, and studies on aviation and ground accidents and their causes. Based on this information, in addition to a review of FM 25-100, soldiers manuals, ARTEPS, and How-to-Fight manuals, and our coordination with USASC personnel,

develop aviation and other operational scenarios for the ten most serious Army accident problem areas. Provide a report and briefing.

(2) Approach: Operational tactical scenarios will be selected/developed by preparing a preliminary list of scenarios based on ARTEP tasks for combat arms company/battalion-size units. The preliminary list will then systematically be narrowed to 10 based on the following criteria:

(a) At least two scenarios will be based on ARTEP tasks for aviation, armor, infantry, and artillery units.

(b) Scenarios selected will include significant problem areas identified in Army Safety Reports (volume I and II), priority problems identified in historical and operational data (ASMIS Retrieval and Processing System (ARPS)-Aviation and Ground), and specific problem areas identified in USASC studies or by USASC personnel. The significance of a problem will be gauged in terms of:

1. Frequency of occurrence.
2. Impact of occurrence.
3. Unit-level responsibility for resolution.

The scenarios will be selected so that a wide representation of problem types will be carried forward for analysis.

(c) Specific operational and safety lessons learned/accident data will be analyzed for candidate operational scenarios from all relevant Army experience; but priority will be given to problem areas identified during:

1. Panama Operations
2. Granada Operations
3. Vietnam Operations
4. National Training Center Exercises
5. Other major training exercises and ARTEPS.

(d) Off-duty, sports-related, civilian accident will not be considered.

FM 25-100, soldiers manuals, and How-to Fight manuals will also be used to aid in wording and formatting the operational scenarios. The report will include a complete description of

each operational scenario in the format it would be given to a battalion/company commander for application of risk management.

(3) Rationale:

Operational scenarios based on ARTEP tasks for combat arms company/battalion-sized units are consistent with the focus of the study on high-hazard, combat environment problem areas. Since ARTEP tasks are by definition, those tasks that are recognized as representing typical combat tasks for the units involved, they represent a logical starting point for developing operational scenarios with widespread application and relevance. Using historical data from actual combat operations and from major training exercises ensures that scenarios selected will, in fact, include high-hazard operations.

Even though the risk management technique selected by the study may have some application to off-duty mishaps and combat support/combat service support, and even administrative operations, the selection of combat-oriented scenarios for training purposes is consistent with current training policies and the overall purpose of this study.

(4) Comments:

The correlation of problem areas with the selected operational scenarios may be limited by the nature of the information available. For example, ideally, decisions could be made by analyzing accidents/mishaps which resulted in "mission failure." Accident-reporting procedures make this difficult and other surrogate criteria such as number of accidents, number of fatalities, or dollar loss may have to be used. Accident data files may also limit the ability to identify "root causes," especially for ground mishaps. Access to findings and recommendations is needed to analyze accident data. Such analysis is important to this and other tasks in the study.

5. Target Date:

The proposed target date for the completion of this task is 30 April 1990.

b. Task 2.

(1) Description:

Literature review (including techniques presently applied by military). Identify a minimum of three and a maximum of ten techniques with the highest potential for widespread Army

application at battalion/company commander level. Provide report and briefing.

(2) Approach:

The literature review will include a comprehensive survey of military documents and other publications addressing risk management and risk/hazard identifications, analysis, and control techniques. The review will include, but not be limited to:

- Preliminary Hazard Lists
- Preliminary Hazard Analysis
- Subsystem Hazard Analysis
- System Hazard Analysis
- Operating Hazard Analysis
- Analytical and Logic Trees
- Fault Tree Analysis
- Failure Modes and Effects Analysis
- Change Analysis
- Project Evaluation Tree Analysis
- Energy Trace and Barrier Analysis
- Management Oversight and Risk Tree Analysis
- Event and Causal Factors Chart
- Extreme Value Projection
- HazOps Studies
- Combat-Oriented Mishap Prevention and Analysis System
- Job Safety Analysis
- Risk Assessment Codes
- Control Rating Codes
- Common Cause Analysis
- Cost-Benefit Analysis

The list will be narrowed to three to ten by rating each one with respect to:

Applicability to military scenarios

Ease of understanding

Ease of application

Emphasis on human factors

Input requirements

Time requirements

Scope of applicability

The report will include, as a minimum, the following:

a. Description of the types, range, and number of techniques reviewed. Bibliography will be included as an appendix.

b. A summary and reference for each technique with potential for Army application. Summary will include description of potential Army application.

c. A detailed description and reference for a minimum of three and a maximum of ten techniques with the highest potential for widespread Army application at battalion/company level. Justification for selection of these techniques and restrictions on their use will be included. Format of the report and briefing will be in accordance with (IAW) instructions provided by USASC. Briefing will be given at USASC.

(3) Rationale:

In order for a risk management technique to be useful to the small unit commander in a tactical/combat environment, the technique must be capable of providing useful information in a minimum amount of time.

Additionally, the technique will be easy to understand and easy to use. The technique will address human factors since they represent an area of risks which is at least partially controllable at unit level.

(4) Comments:

While few of the existing techniques may be ideal in their present form for providing small unit commanders with a risk management tool, several of them offer potential. It may be necessary to modify or combine techniques.

(5) Target Date:

The proposed target date for completion of this task is 30 April 1990.

c. Task 3.

(1) Description:

Coordinate with USASC personnel to further review and discuss the high potential techniques. Based on these discussions, narrow the list of potential techniques to three. Determine if techniques are best suited for battalion- or company-level use. Provide a report and briefing.

(2) Approach:

The three to ten techniques selected in Step 2 will be prioritized and, based on discussions with USASC personnel, will be reduced to three.

The primary criteria for determining the appropriate level of application (company vs. battalion) will be ease and speed of application. Report will include rationale for selection of each of the three techniques. Format for the briefing will be IAW instructions provided by USASC. Briefing will be given at USASC.

(3) Rationale:

If the selected techniques can be used quickly and easily at the company level, company-level application is preferable. It is possible that time constraints and the availability of staff support may indicate that the technique may be more successfully applied at battalion level.

(4) Comments:

It may be desirable to validate the decisions made about the level of application during the questionnaire/testing process.

(5) Target Date:

The proposed target date for completion of this task is 7 May 1990.

d. Task 4.

(1) Description:

Adapt each technique for use by the level of command identified

in task 3. Develop detailed, step-by-step procedure for application of each technique. These procedures will be in the format of TRADOC's Analysis Training (SAT). Provide USASC a copy of these procedure and a briefing. Briefing will be given at USASC.

(2) Approach:

Review the format of TRADOC's SAT and, if available, examples of the procedures developed by TRADOC for similar exercises. After the set of procedures for the first scenario have been developed, they will be forwarded to USASC and/or TRADOC personnel for review while work continues on the procedures for the remaining scenarios.

(3) Rationale:

This task is very important and may require a considerable amount of text preparation to cover procedures for 10 scenarios (10 sets of procedures with three step-by-step procedures per set).

If the package is completed before the review cycle begins and the procedures are "off-the-mark," the projects schedule could be compromised. If a timely review of the first set can be accomplished, the final review and resulting revisions (task 5) should not be overwhelming for reviews or revisions!

(4) Comments:

Ideally, step-by-step procedures written for each technique will require little modification from one scenario to another. In practice, this may or may not be the case.

(5) Target Date:

The proposed target date for the completion of this task is 4 June 1990.

e. Task 5.

(1) Description:

Revise procedures based on USASC input and provide USASC with a revised copy of procedures.

(2) Approach:

Revise procedures as recommended by USASC with review by originator.

(3) Rationale:

Originator review of changes is important to ensure intent has not been compromised and that all parties are aware of changes.

(4) Comments:

Early partial review of materials as described in task 4 should expedite this process.

(5) Target Date:

The proposed target date for completion of this task is 18 June 1990.

f. Task 6.

(1) Description:

Develop school solution for application of each technique (using procedures from task 5) on each operational scenario from task 1. Provide USASC with a copy of school solutions and a briefing. Briefing will be given at USASC.

(2) Approach:

School solutions will be developed by systematically applying the specified technique to the operational scenario as prescribed by accompanying procedures. Where possible, solutions will be backed up by lessons learned and other historical data. At a minimum, school solutions will be formulated/validated by appropriate SMEs (including USASC and/or TRADOC personnel).

(3) Rationale:

The success of the entire effort relies heavily on the quality of the school solutions. Considerable effort must be given to providing solutions that are valid, credible, and consistent with the input data.

(4) Comments:

This task represents one of the more difficult and time consuming portions of the project. "School solutions" have always tended to be a point of controversy for tactical scenarios where subjective judgments are involved. Every effort must be made to provide as much objectivity as practical and to validate each solution carefully. In many solutions, the "school solution" may not be the only acceptable solution if the technique is applied correctly and rational decisions have been made.

(5) Target Date:

The proposed target date for completion of this task is 30 July 1990.

g. Task 7.

(1) Description:

Develop a test plan to test use of the techniques and procedures with the operational scenarios. Provide test plan and briefing.

(2) Approach:

Target a minimum of 35 unit commanders (worldwide) to test each RM technique. Targeted unit commanders should represent all branches of the Army. It is allowable to test all three techniques with the same unit commanders (35 commanders) or use 35 different unit commanders for each technique (105 commanders).

Include completion of a questionnaire by unit commanders for evaluation of the usefulness of the RM techniques and procedures. Provide USASC with test plan and a briefing. Briefing will be given at USASC.

The test plan will include a control group which completes the exercises without the benefit of risk management techniques and/or a plan to pretest present risk management technique packages and then post test.

(3) Rationale:

Even though some valuable evaluation of the techniques can be accomplished by reviewing questionnaires (opinions) and by comparing results from the various techniques and absolute scores, the validity and credibility of the effort can be enhanced by including pretesting and/or a control group.

(4) Comments:

Since different personnel will have primary responsibilities for task 6 and task 7, these two tasks can be performed concurrently.

(5) Target Date:

The proposed target date for completion of this task is 30 July 1990.

h. Task 8.

(1) Description:

Revise test plan based on USASC input and provide USASC a copy of revised plan.

(2) Approach:

Revise procedures as recommended by USASC with review by originator.

(3) Rationale:

Originator review of changes is important to ensure intent has not been compromised and that all parties are aware of changes.

(4) Comments:

Ideally, the test plan will be developed with frequent interaction with USASC.

(5) Target Date:

The proposed target date for completion of this task is 13 August 1990.

i. Task 9.

(1) Description:

Develop the questionnaire for administration to unit commanders to evaluate the usefulness of RM techniques and procedures identified in tasks 4 and 5. Questionnaire will include an evaluation of each technique (including the step-by-step procedures) for ease of use, utility/application, time expenditure, etc. Provide USASC a copy of questionnaire and a briefing. Briefing will be given at USASC.

(2) Approach:

The questionnaire will employ a five-part Likert scale to evaluate specific criteria. It will also, however, solicit general comments and recommendations.

The questionnaire will evaluate each technique on ease of use, utility/applicability, time expenditure, and overall value; however, the questionnaire will be simple and quick to complete and administer.

(3) Rationale:

A Likert scale facilitates quantitative analysis but limits the opportunity to state specific opinions/recommendations; therefore, a two-part questionnaire is recommended.

(4) Comments:

A 1- or 2- page questionnaire should be adequate.

(5) Target Date:

The proposed target date for completion of this task is 4 September 1990.

j. Task 10.

(1) Description:

Revise questionnaire based on USASC input. Provide a copy of revised questionnaire to USASC.

(2) Approach:

Revise procedures as recommended by USASC with review by originator.

(3) Rationale:

Originator review of changes is important to insure intent has not been modified and that all parties are aware of changes.

(4) Comments: None

(5) Target Date:

The proposed target date for completion of this task is 17 September 1990.

k. Task 11.

(1) Description:

Based on approved test plan, develop RM package(s) for test. Package(s) will include test instructions, the RM procedures from task 5, the operational scenarios from task 1, and the questionnaire from task 10. Package(s) will be capable of selfadministration as well as interviewer administration. Provide USASC with a copy of the package(s) and the briefing. Briefing will be given at USASC.

(2) Approach:

This task will primarily involve developing clear, concise test instructions and making appropriate cosmetic changes to products produced in other tasks.

(3) Rationale:

A professional-looking package is highly desirable at this stage.

(4) Comments:

Quality of paper and reproduction, size and type of fonts, and other cosmetic details should be emphasized.

(5) Target Date:

The proposed target date for completion of this task is 9 October 1990.

1. Task 12.

(1) Description:

Revise package(s) based on USASC input and pretest with 10 military personnel (present or former unit commanders).
Revise package(s) based on their input. Provide USASC with a report of the results, revised package(s) and a briefing.
Briefing will be given at USASC.

(2) Approach:

Personnel selected for testing should have specific expertise in the types of operational scenarios. A cross section of combat arms and ranks (CPT - LTC) should be included. Revisions will be made only if a significant number of personnel recommend the revision and/or USASC/COBRO reviews agree.

(3) Rationale:

Sometimes revisions are made which are not, in fact, beneficial in an effort to respond to comments made by only one or two individuals. Significant revisions at this point will be made only if preponderance of information available indicates revision is needed. Controversial revisions should be delayed until after larger population is sampled, but all comments should be retained and factored into later revision decisions.

(4) Comments:

Hopefully, revisions at this stage will be minor.

(5) Target Date:

The proposed target date for completion of this task is 29 October 1990.

m. Task 13.

(1) Description:

Conduct test according to test plan. Administer package(s) to targeted commanders. Collect and analyze the risk management questionnaire data. Use results of analysis to validate techniques, select the best technique, and refine and expand on it. Provide revised risk management package for selected technique. Provide a report and briefing.

(2) Approach:

(a) Collect and analyze the RM questionnaire data. Use results of the analysis to validate techniques, select the best technique, and refine and expand on the selected technique (if permitted by the data).

(b) Modify RM package (technique step-by-step procedures, school solutions for operational scenarios, etc) for selected RM technique based on results of data analysis.

(c) Provide USASC a report and briefing on the results of Task 13. Additionally, provide a copy of the final revised RM package which includes the step-by-step RM procedures, operational scenarios, and school solutions for scenarios. Report and briefing will be IAW instructions provided by USASC. Briefing will be given at USASC.

(3) Rationale:

Assumption is made that test results will clearly identify one technique as "best." If this does not occur further analysis may be required.

(4) Comments:

Fielding of more than one technique may be desirable.

(5) Target Date:

The proposed target date for completion of this task is 16 January 1991.

n. Task 14.

(1) Description:

Develop a 1 to 2 hour exportable training package that provides training guidance for the selected technique. Provide training package to USASC.

(2) Approach:

The training package will consist primarily of the package produced in task 13 supplemented by a program of instruction and a videotape presentation of approximately 30 minutes. The test package will be modified so that one or two of the operational scenarios are used as examples, another is used as an in-class practical exercise, and others are used as a performance test.

(3) Rationale:

Video instruction will be used to provide a cost-effective, standardized presentation of cognitive data. Handout materials containing examples and supplemented by an in-class practical exercise and performance test should provide the basic knowledge and skills required for minimum proficiency.

(4) Comments:

Integration of the risk management technique into ARTEPS and other field exercises will be required to develop proficiency and retain skills. The package can be used as a standalone program but should be integrated into appropriate basic courses, advanced courses, and/or C&GS depending upon the level of application (company vs. battalion) selected.

(5) Target Date:

The proposed target date for completion of this task is 20 February 1991.

o. Task 15.

(1) Description:

Provide and brief a final technical report on the entire study.

(2) Approach:

The final technical report(s) will be a narrative covering research performed during the entire contract period and will include the following, as a minimum:

(a) Section I. A brief introduction covering the purpose and scope of the research effort.

(b) Section II. Methods

(c) Section III. Findings (including a description of all pertinent tables and graphs in sufficient detail to explain any significant findings/results achieved).

(d) Section IV. Conclusions and recommendations (including specific accident prevention/corrective actions, in USASC-prescribed format, and the need for further studies).

If the results of the study indicate that the risk management technique is sufficiently beneficial, it may be appropriate to invite senior personnel from TRADOC, other major commands, U.S. Army senior schools, and/or other services to the final briefing.

(3) Rationale:

Risk management techniques, properly applied, could provide the same advantages for other services that they can for the Army. Even if the study produces very favorable results, the concept must be "sold" to major commands and must be integrated into the training system to be of value.

(4) Comments:

Multiple "final briefings" may be appropriate and may be required at locations other than Fort Rucker.

(5) Target Date:

The proposed target date for completion of this task is 20 March 1991.

3. Support Requirements:

The following government-furnished support is requested for this study:

a. Briefings at Fort Rucker and HQs TRADOC and FORSCOM that outline various techniques known to have application at unit level and that indicate possible sources of additional information.

b. Copies of typical soldiers manuals, ARTEPS and How-to-Fight manuals delivered by mail to a site specified by the contractor.

c. Access to Army libraries by prior arrangement to properly cleared contractor personnel. Most should be unclassified.

d. Access to Army personnel familiar with unit level operating concepts for advice. This access will be by telephone or by arrangement, in person, at Fort Rucker or other locations.

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ENCLOSURE 2
ORIGINAL STUDY PACKAGE

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APPENDIX A
RISK ASSESSMENT WORKSHEET

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RISK ANALYSIS WORKSHEET

Scenario _____

Course of Action _____

RISK FACTOR

SEVERITY PROBABILITY

RAC

ENEMY

Fire from objective _____

Supporting Fires _____

- Artillery _____

- Air _____

- Reinforcements _____

Obstacles _____

Other (Specify) _____

Sub Total _____

FRIENDLY

Accidents _____

Friendly Fires _____

- Task Force _____

- Artillery _____

- Air _____

- Other Units _____

Weather _____

Terrain _____

Poor Maintenance _____

Poor Navigation _____

Poor Supply _____

Other (Specify) _____

Sub Total _____

TOTAL _____

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APPENDIX B
RISK ASSESSMENT WORKSHEET GUIDE

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RISK ANALYSIS WORKSHEET GUIDE

1. Read the following instructions which identify the risk factors and items to be considered in determining the appropriate severity code and probability code for each item. Provided also controls available to influence each risk factor. The degree to which these controls have been applied can aid in determining the degree of risk associated with each risk factor for the particular course of action and situation being evaluated.
2. Read Tactical Scenario Number One and then read the Courses of Action for that scenario.
3. Complete a Risk Analysis Worksheet for each scenario by determining a severity code, a probability code, and a risk assessment code (RAC) for each course of action. Use the attached risk assessment code matrix and severity/probability code guidelines. (Note that the severity and probability codes are determined by dividing severity/probability percentages by ten. The risk assessment code is then the product of the severity code multiplied by the probability code.)
4. After determining a RAC for each risk factor, enter the RAC in the appropriate space on the Risk Analysis Worksheet. Total the Enemy Risk Factors and then the Friendly Risk Factors and enter the results in the applicable sub total spaces and finally add the subtotals to determine the total risk assessment score for course of action.
5. Repeat this process for each course of action for each tactical scenario.
6. After analyzing all the courses of action for all scenario's and completing all Risk Analysis Worksheets, transfer the total score for each course of action to the appropriate space on the Posttest.

RISK ASSESSMENT CODES

		PROBABILITY									
		10	9	8	7	6	5	4	3	2	1
SEVERITY	10	100	90	80	70	60	50	40	30	20	10
	9	90	81	72	63	54	45	36	27	18	9
	8	80	72	64	56	48	40	32	24	16	8
	7	70	63	56	49	42	35	28	21	14	7
	6	60	54	48	42	36	30	24	18	12	6
	5	50	45	40	35	30	25	20	15	10	5
	4	40	36	32	28	24	20	16	12	8	4
	3	30	27	24	21	18	15	12	9	6	3
	2	20	18	16	14	12	10	8	6	4	2
	1	10	9	8	7	6	5	4	3	2	1

GUIDELINES

SEVERITY		PROBABILITY	
Code	Per cent of friendly force at risk	Code	Estimated chance of occurrence
10	100	10	100
9	90	9	90
8	80	8	80
7	70	7	70
6	60	6	60
5	50	5	50
4	40	4	40
3	30	3	30
2	20	2	20
1	10	1	10

INSTRUCTIONS

RISK FACTOR

COMMENTS/CONSIDERATIONS

ENEMY

Fire from objective

- Severity: What per cent of your force will be vulnerable to fire coming from the enemy force occupying the objective? (NOTE: If friendly forces are defending, what per cent of your force will be vulnerable to direct fires of the assaulting force?)
- Probability: What are the chances that you will receive fire from the objective (or the assaulting force)? (NOTE: Usually this is 100%)
- Controls: Controls available to reduce fire from the objective include the use of artillery and/or air strikes or by obscuring visibility by use of smoke, cover and concealment, adverse weather, or night operations. The effectiveness of these controls should be weighted against the risks associated with them.

Supporting Fires

- Artillery

- Severity: For the scenario being evaluated, what per cent of your force do you think will be vulnerable to enemy artillery fire?
- Probability: For the scenario being evaluated, what is the probability that the enemy will receive artillery support?
- Controls: Controls available to eliminate or reduce losses due to enemy artillery include the use of friendly artillery and/or air attacks on the firing batteries, fire control devices, an/or forward observers. Other controls include the use of cover and concealment, stealth, and surprise.

- Air

- Severity: For the scenario being evaluated, what per cent of your force do you think will be vulnerable to enemy air attacks? Consider close air support by enemy helicopters and

high performance tactical aircraft and strategic bombers.

Probability: Based on the best information available, what is the probability that the enemy has the resources available to attack you?

Controls: Controls available include preemptive strikes on the enemy's aviation assets, sufficient friendly air cover to maintain air superiority, effective use of cover and concealment, stealth, and surprise, and operations during limited visibility or marginal flying conditions.

- Reinforcements

Severity: What is the size and composition of the enemy's reserve force or other nearby units capable of reinforcing? What per cent of your force would be vulnerable to attack by reinforcing units?

Probability: How far away are possible reinforcing units? How mobile are they? What is the probability that they can reach the objective in time to influence the outcome?

Controls: Controls available include preemptive strikes on reserves and other supporting units and/or interdiction of avenues of approach by artillery, tactical or strategic air, or ground forces.

Obstacles

Severity: What obstacles does the enemy have in place? What per cent of the friendly force may be vulnerable to these obstacles?

Probability: What is the probability that the obstacles exist and will be effective?

Controls: Possible controls include avoiding the obstacles by circumnavigating or overflying (air assault), eliminating by direct or indirect fires, or overcoming by the use of engineering support.

Other

Severity: What other means or weapons systems could the enemy employ? What per cent of your force would be vulnerable?

Probability: What is the likelihood that the enemy has this particular capability and will employ it?

Controls: In general, losses due to enemy action can be controlled by the use of friendly fires to reduce enemy capabilities and the use of cover, concealment, stealth, and surprise.

FRIENDLY

Accidents

Severity: For the particular course of action being evaluated, what percent of your force is vulnerable to accidents in the assembly area? En route to the objective? Consider the types of accidents associated with the combat soldiering tasks being performed, the modes of transportation and the weapons systems being used, the weather, the terrain, and the overall condition of the troops and equipment.

Probability: For the conditions and situation being evaluated, what is the likelihood that accidents will occur? Consider the extremely high human error rates associated with combat operations and the complexity of the tasks being performed.

Controls: Positive control measures, training and discipline necessary to control accidents in a combat environment.

Friendly Fires

- Task Force

Severity: What percent of your force is vulnerable to fires from other elements of the force that may occur from misidentification, misdirected fires, or ricochets?

Probability: What is the likelihood, based on the course of action being analyzed, that separate elements of your force could open fire on each other or otherwise direct fires into friendly troops?

Controls: Controls available include sound, simple plans and positive control measures. Positive communication and/or visual contact should be maintained between elements.

- Artillery

Severity: What percent of your force may be vulnerable to misdirected fires or fragments from supporting artillery?

Probability: What is the likelihood that your force could be vulnerable to misdirected friendly fires?

Controls: The type of munitions and fuzes, the volume of fires, timing, and the proximity of friendly troops to planned fires must be carefully considered. The location of the gun-target line and the capabilities and limitations of supporting weapons systems should be well understood by operations planners.

- Air

Severity: What percent of your force may be vulnerable to misdirected fires, ricochets, or bomb fragments?

Probability: What is the likelihood that either helicopter, tactical air support, or other supporting aircraft will misidentify your troops or the target area or will misdirect fires causing friendly casualties?

Controls: Controls include positive means of identifying targets and friendly positions careful planning, coordination, and good communications between ground and air elements. Operations planners should understand the capabilities, limitations, and characteristics of the munitions, weapons, and aircraft involved.

- Other Units

Severity: What percent of your force may be vulnerable to fires from adjacent or supporting units? How much firepower do they have?

Probability: What is the likelihood that other friendly units or elements may misidentify your forces or otherwise misdirect fires toward them?

Weather

Severity: What percent of your force may be prevented from accomplishing your mission because of adverse weather?

Probability: What weather is forecast? What is the likelihood that the weather will adversely affect your mission?

Controls: Controls are obviously limited. It is important that operations planners know the capabilities and limitations of vehicles, equipment, and weapons systems when subjected to adverse weather conditions. The effect of weather conditions on the trafficability of the terrain should be known. Contingency plans should include measures to be taken in case of adverse or unforecast weather. For example, increased use of otherwise undesirable control measures (lights, radios, ground guides, improved roads, etc.) may be necessary.

Terrain

Severity: What percent of your force may be prevented from accomplishing your mission because of adverse terrains?

Probability: What is the likelihood that the terrain being traversed in the course of actions being analyzed may be impassable?

Controls: Controls include good maps, photographs, and reconnaissance and good terrain analysis. Engineer support can be used to aid in traversing natural obstacles. It is important that operations planners understand the capabilities and limitations of task force vehicles and support equipment.

Poor Maintenance

Severity: What percent of your force may be prevented from accomplishing the mission because of poor maintenance or maintenance problems?

Probability: What is the likelihood that maintenance problems will prevent vehicles, weapons systems, communications equipment, or other items from functioning adequately?

Controls: Controls available include a good preventive maintenance program, training, and discipline. Logistics planners must ensure that maintenance resources are used wisely and that operations do not exceed maintenance capabilities or unduly damage vehicles or equipment.

Poor Navigation

- Severity:** What percent of your force may be prevented from accomplishing the mission because of poor navigation?
- Probability:** What is the likelihood that part of your force will become lost or disoriented?
- Controls:** Controls include the use of easily identifiable control points, good maps, and photographs, and sound, simple plans. Good visibility and good coordination and communications aid navigation, but the use of radios, electronic navigation aids, lights and markers, and daylight operations must consider possible increased vulnerability to enemy action.

Poor Supply

- Severity:** What percent of your force may be prevented from accomplishing the mission because of lack of ammunition, fuel, or other supplies?
- Probability:** What is the likelihood that adequate supplies cannot be provided to support the course of action being analyzed?
- Controls:** Controls include sound planning by logistics personnel to ensure adequate resources are provided and enlightened planning by operations personnel to ensure that resources are not wasted and that planned operations do not exceed the capacity of the supply system.

Other _____

- Severity:** What other factor(s) may prevent the accomplishment of the mission? What percent of your force would be affected?
- Probability:** What is the likelihood that these factors will occur or be present?
- Controls:** Control of losses due to accidents and errors can generally be accomplished through the use of sound, simple plans, positive control measures, training, discipline, and good maintenance of equipment and personnel.

APPENDIX C
ADMINISTRATOR'S GUIDE

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INSTRUCTIONS FOR TEST ADMINISTRATOR

This guide is to assist in administering the Risk Management Exercise used to gather data for the Risk Management Study being conducted by COBRO, Inc., for the U. S. Army Safety Center, Fort Rucker, Alabama.

Materials needed to administer the exercise include:

- Administration Guide (this document)

- Copy of video tape "Risk Management Study"

- Sufficient copies of the following to provide one to each participant:

 - Pretest

 - Exercise booklet - Tactical Scenario's

 - Risk Assessment Worksheet Guidelines

 - Risk Assessment Worksheets (40 per participant)

 - Posttest

Facilities and Equipment required:

- Classroom/conference room with sufficient chairs and table space for all participants

- VHS 1/2" Video Cassette Player and Monitor

- Break area outside the classroom

Exercise Instructions:

Reserve facility, arrange for delivery of exercise materials, and notify participants (by mail) at least 30 days prior to scheduled exercise.

Confirm that participants received notice approximately one week after mailout.

Ensure that all materials have been received and confirm facility reservations at least one week prior to the exercise.

Remind participants of exercise by telephone approximately 2 days prior to exercise.

Arrive at facility at least 30 minutes before scheduled exercise time. Load video cassette "Risk Management Study" into video cassette player. Ensure proper operation and adjust volume.

If possible, provide coffee and/or doughnuts.

When participants arrive (at the scheduled time), introduce yourself and start the video. Instructions for the exercise are contained in the video.

A copy of the script for the video is attached. Your instructions are embedded (in bold print) in the script.

After the exercise is complete, collect all exercise materials and mail them to:

COBRO
Risk Management Study
ATTN: Charlie Mingus
101 E. Fannie Morris Drive
Daleville, AL 36322

For additional information or assistance contact Charlie Mingus or Mike Duffy at (205) 598-5054 or Joe Stephenson at (702) 295-7398.

Draft Script - Risk Management Video

During the next 2 hours you will be participating in an important exercise. The results of the exercise could ultimately influence the way the Army trains and fights and could enhance our chances for success in combat.

First, you will be given a short pretest, primarily to gather demographic information and to sample your current perceptions.

Then you will be given 10 tactical scenarios, each with 3 separate courses of action and asked, based on your current knowledge and experience and the limited information given, to select the most appropriate course of action.

You will then be shown a short video program and given an experimental tool to test and evaluate by using it to aid in repeating the exercise with the same 10 scenarios.

Finally, you will be asked to complete a questionnaire evaluating both the instrument and this entire exercise.

At this time the individual administering this exercise should pass out the pretest and the tactical scenarios.

Complete the pretest first and then proceed with the tactical scenarios, making sure to indicate your choices on the answer sheet included in your pretest.

After completing the pretest questionnaire and exercise, please turn in your pretest to the individual administering the exercise and quietly exit to the break area. Please do not discuss any of your answers or any aspect of this exercise with anyone during the break.

Please turn off the video cassette player at this time.

(Instructor's note: At this time please turn off the video player and pass out the pretest and the exercise booklet - Tactical Scenarios.)

Approximately five minutes after the last individual exits to the break area, ask all participants to return to the classroom.

Ensure that you have collected all the pretests and that all participants have retained their exercise booklets.

After all participants have returned to the classroom and are seated, restart the video player.)

Welcome back.

For the next few minutes I want to discuss some fundamentals of Risk Management - then look specifically at the risk factors in

combat and the importance of Risk Management to the combat leader.

Finally, I want to introduce you to a tool designed to aid in evaluating battlefield risks and making sound tactical decisions.

First, let's talk a little about Risk Management in general. The risk management process consists basically of identifying the hazards of risk factors associated with a specific operation or activity, systematically analyzing and evaluating identified hazards to quantify the risks - in terms of probability and severity, making decisions, developing and implementing controls, and supervising to enforce controls and standards.

In a tactical situation, the battlefield commander may not have the luxury of determining the "Acceptability of Risks". He can, however, still identify risk factors, analyze and quantify risks, apply available controls to reduce risks, and use risk management tools and techniques to develop or select courses of action which have the greatest chances of success.

But wait! Does it even make sense to talk about "risks" in combat when we all know that the only significant risk in combat is that posed by the enemy.

Well, that's certainly the way I felt in 1967 as a scout pilot and later as the Aeroscout Platoon Leader for Delta Troop, 3/4 Cav, in CU CHI. Sure my troop commander told me that as a helicopter Pilot in Vietnam that the odds were about 3 to 1 that if I went home in a body bag it would be the result of an accident - not enemy action. But I didn't really believe him.

By and large, I considered all those safety rules and procedures some administrative B.S. to be tolerated in peacetime and ignored in combat.

Even though I did lose 4 aircraft out of my platoon to accidents and only 1 to ground fire, I still clung to this deeply rooted conviction that the only significant hazard was enemy fire.

It was really only a few years ago - long after my second tour - that I began to really realize the significance of accidents in the combat zone.

I was working as a consultant for the Tactical Air Command, developing a course called COMPAS - The Combat Oriented Mishap Prevention Analysis System. As part of my research for the project, I was studying casualty figures from previous U.S. wars. I would have guessed that accidents and other causes accounted for less than 10% of war time losses. I was shocked to find that for all wars in which the U.S. has participated (excluding the War of 1812 where data was not available), approximately 45% of deaths have been caused by other than enemy action (650,509 battle deaths versus 525,297 non-battle deaths).

When we stop and consider that the statistics are probably highly biased toward reporting "unknown" deaths and all fatalities that occur during and actual battle - including those which may be caused by accidents or friendly fire - as "battle deaths", it is quite possible that actual numbers may exceed 50% --- Also, not included in these statistics are non-combatants killed by military accidents. If these numbers are included, it is quite likely that the good guys frequently kill more good guys than the bad guys do.

So whatever numbers are true and whatever numbers you choose to believe, the impact of accidents on combat operations is highly significant, producing at least 20% of all casualties and possibly more than 50%.

An obvious question at this point is why are accident rates so high in combat? In "Realistic" training exercises, loss rates do not even approach the 20% to 50% range. So why are they so high in combat?

Contained in a human factors block of instruction that is part of System Safety Courses that I teach to NASA, the Department of Energy, The U.S. Air Force, and others is a chart depicting human error rates. Two specific points on that chart always get my attention. Both indicate human error rates of approximately 20%. One is for inflight emergencies. As a pilot, I find this disturbing, but very believable. The second point was for simulated military emergencies...in other words, tactical training exercise. If error rates are 20% in training, can you imagine what they reach in actual combat?

In order to better understand the potential for accidents in combat, let's examine some of the key casual factors of peacetime accidents.

Our historical data tells us two things. One, that tasks associated with the conduct of tactical operations are high hazard tasks; i.e., parachuting and other combat soldiering tasks top the accident statistics for most of the combat arms, followed by transportation and maintenance related operations.

Two, human error tops the list of casual factors, especially if we include both operator error and supervisory error.

Let's look briefly at the human factors that produce human errors and accidents and think about how each factor is magnified by combat.

Basically, the root causes for accidents may be traced to flaws or failures associated with procedures, personnel, or facilities and hardware.

As a general rule, writing and following procedures tend to have a relatively low priority in combat. Procedures for operating a small arms range in peacetime tend to be developed more carefully

and followed with a great deal more concern than procedures for handling much more lethal weapon systems in much more hazardous circumstances on the battlefield. Stories of junior enlisted soldiers being chastised by senior NCO's or officers for quoting procedures or regulations in a combat zone are not uncommon - frequently we not only fail to develop or enforce procedures, we actually discourage their use. Yet, one of the leading casualty factors, for accidents, as reported by boards of investigation, is failure to follow procedures. The probability that adequate procedures are not developed and followed are probably at least 10 times higher in combat than in training.

A second area to consider is facilities and hardware. Even though operator maintenance of vehicle and weapons is normally emphasized in a tactical environment, during prolonged operations the likelihood of equipment failure or malfunction increases significantly. The care and cleaning of equipment in a field environment is considerably more difficult than it is under peacetime conditions. So again, the probability of equipment failure as an accident casual factor also increases significantly in a combat environment.

The most significant cause of accidents in both peacetime and combat is generally considered to be human error. In a prolonged conflict, the entire nature of the fighting force changes. Recruiting and promotion standards are lowered and the overall age and experience level of the force is reduced.

But even for conflicts or situations where long term effects are not a factor, the primary human casual factors become extremely significant.

The physiological factors adversely affecting human performance are almost universally magnified many times in a combat environment. Stress and fatigue both can reach extremely high levels. Chemical abuse, including alcohol, in peacetime or training situations probably does not affect more than 1 or 2% of the force at any given time. During prolonged combat tours, excessive drinking or drug abuse may affect a very high percentage of personnel - including the leadership. Environmental factors - such as exposure to undesirable levels of light, noise, or temperature also adversely impact human performance - and there is little evidence that "practice suffering" improves performance.

Psychological factors that adversely affect performance and cause accidents also increase almost geometrically in a combat environment, with various types of emotional stress probably having the greatest effect. In addition to the obvious strain caused by change and task overload, both financial and marital problems may be greatly multiplied by being separated from family.

You may remember one of the early scenes in the movie "Top Gun" where the pilot becomes so frightened and traumatized that he can hardly fly the aircraft. That level of fear actually occurs. As

a matter of fact, despite the level of combat depicted in the movie, it is interesting, and perhaps realistic, to note that the only U.S. fatality in the movie was the result of a training accident.

In other words, the perception that peacetime accident rates continue into combat and that all additional losses are due to enemy action is wrong.

Even though accurate numbers are difficult to produce, accident rates are many, many times higher in combat and may produce more than half of all losses.

Not only is the probability of accidents many times higher in combat, the consequences of accidents are also much greater.

The loss of an aircraft in peacetime or in a training situation is costly but seldom has any significant effect on the overall mission and losses are generally limited to the aircraft and crew. In a combat situation, the loss of an aircraft can jeopardize the lives of the soldiers involved in the operation being supported. Even the loss of a crane, forklift, computer, or vehicle can have a significant operational impact, especially on long range deployments.

In any event, the concept that combat accident rates are about the same as tactical training accident rates and that the increased losses during a war are all the result of enemy action simply isn't true. Accident rates during actual combat are several orders of magnitude higher than tactical training exercises and account for a very significant portion - again, maybe over half, of total losses.

If these losses are to be controlled - or at least minimized - it is imperative that combat leaders be aware of the real risks associated with combat operations.

If the risk manager of a corporation makes a bad risk management decision, dollars will be lost - the "bottom line" will be effected - and in a worst case scenario, the corporation could go bankrupt.

If the risk manager of a tactical unit makes a bad decision, good soldiers may die needlessly. In a worst case scenario, battles or wars could be lost.

This whole exercise is designed to introduce a risk management tool designed to aid combat leaders in assessing risks. The approach incorporates risk analysis and risk management concepts from industry but has tailored the effort to a tactical environment.

Please give us your best effort during this exercise and please provide us with honest feedback about the value of the approach and suggestions for improvement.

The program uses a risk assessment worksheet as a tool to analyze battlefield risks, to evaluate competing courses of action, and to teach risk management principles.

It employs a risk assessment code or "RAC" similar to those used for other risk analysis or system safety programs. Like other RAC's, the risk factor is determined by use of a matrix with severity on one axis and probability on the other.

Please follow the instructions in your Risk Assessment Worksheet Guide and use the Risk Assessment Worksheets provided to repeat the evaluation of courses of action that you were asked to complete as part of your pretest.

Note that both enemy-related and friendly-related risk factors are to be considered. You are being asked to systematically analyze each risk factor in terms of severity and probability and then to convert your findings into a risk assessment code using the matrix provided.

The information provided is very limited. You may have to make some assumptions in completing the exercise. This is okay as long as you make the same assumptions consistently for each course of action.

Let's quickly review the risk factors and consider some controls.

The first risk to be considered is fire from the objective. Assuming the objective is occupied, the percent of your force receiving fire from the objective will depend on the strength of the enemy and the nature of his weapons at the time your force comes within range of fires from the objective. The probability that you will receive fire from enemy forces on the objective is usually 100%.

Controls to reduce fires from the objective include measures to neutralize the enemy before friendly forces are within range and measures to obscure visibility of enemy forces.

Other enemy risks to consider include supporting fires from artillery, air attacks, and reinforcements. The percent of your forces vulnerable to these risks and the probability that these fires from these sources will effect your mission determine the total risk to mission accomplishment from supporting fires.

Again, controls consist of the use of friendly air or artillery and other measures to neutralize enemy supporting fires or to protect friendly forces from observation.

By analyzing the relative risks associated with fires from the objective and from supporting fires from various sources, it is possible to make enlightened decisions about the best ways to use friendly supporting fires.

Obstacles and other enemy risk factors must also be analyzed to determine the best course of action to accomplish the mission.

As previously noted, accidents also represent a very significant risk to the accomplishment of the mission.

Accidents that may adversely impact the mission may occur in the assembly area, en route to the objective, during the final assault, or during any other phase of operations.

The accidents may involve tactical or support vehicles, weapon systems, or any combat soldiering task.

Factors that increase the likelihood of accidents include poor planning and coordination, difficult terrain, adverse weather, limited visibility, inadequate control measures, fatigue, stress, fear, complex operations, poor communications, and difficult formations.

Well rested, informed, confident troops executing relatively simple plans with good communications, good visibility, and reliable control measures have the best chance of avoiding accidents.

Friendly fire accidents also represent a real risk in combat operations. Mistakes by friendly fire support elements, adjacent units, or even elements of the same task force can be deadly. Again, simple plans, reliable control measures, and well informed, well disciplined, confident troops operating over well defined avenues of approach with good communications are less likely to become victims of friendly fire.

Even though adverse weather and terrain can provide some tactical advantages, they can also prevent friendly troops from reaching the objective.

In extreme cases, the weather or terrain alone may stop an attack. More frequently, they contribute to mission failure by causing accidents or causing unplanned delays.

Poor maintenance can also jeopardize a mission. Aircraft or vehicles that won't start, weapons that won't fire, or communications equipment that fails at a critical time can have significant adverse effects. Commanders must frequently weigh tradeoffs between the need for maintenance or equipment and other factors like the need for rest for the troops and for strict noise and light discipline.

A frustrating and embarrassing cause of mission failure can be poor navigation...part of the task force simply gets lost. Good planning, thorough briefings, and good maps, photographs, and/or reconnaissance can reduce risks associated with navigation errors. Avenues of approach, terrain, weather, control points, communications, and formations are also factors.

Mission accomplishment and mission options can also be limited by resources. Supply shortages can prevent mission accomplishment. This risk can generally be controlled by close coordination with logistics personnel, good and accurate planning and forecasting, conservation of resources, and prevention of accidents.

Additionally, there may be other factors to consider which may pose a risk to the mission.

Generally, control of accidental losses can be accomplished through the use of sound, simple plans, positive control measures, training, discipline, and good maintenance of equipment and personnel.

APPENDIX D
PRETEST

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PRETEST

NAME _____ DATE _____
RANK _____ MOS _____ SSN _____ UNIT _____
YEARS OF COMMAND EXPERIENCE: COMPANY _____ BATTALION _____
PRESENT ASSIGNMENT _____
COMBAT EXPERIENCE: _____ VIETNAM _____ OTHER (SPECIFY _____)

In a peacetime training situation, it is obvious that the only real threat to life and property is accidents.

In an actual combat situation, however, the obvious threat is the enemy.

In your opinion, based on your military education and experience to date, please express your relative agreement with each statement using the following scale:

- 1 = STRONGLY AGREE
- 2 = AGREE
- 3 = NEUTRAL
- 4 = DISAGREE
- 5 = STRONGLY DISAGREE

- _____ 1. Safety constraints may be necessary in training situations but have no place in combat.
- _____ 2. In combat, the course of action which offers the greatest element of surprise will almost always offer the greatest chance of success.
- _____ 3. Accidents (including friendly fire) and illnesses historically account for less than 10% of war deaths.
- _____ 4. Accidents (including friendly fire) and illnesses historically account for 10% to 30% of war deaths.
- _____ 5. Accidents (including friendly fire) and illnesses historically account for 30% to 50% of war deaths.
- _____ 6. Accidents (including friendly fire) and illnesses historically account for more than 50% of war deaths.

- _____ 7. The probability of accidents in a combat environment are about the same as they are in a training situation.
- _____ 8. Accidents are not as important in a combat environment as they are in peacetime.
- _____ 9. Risk management and safety should be taught at all levels of officer military education (Basic Course, Advanced Course, C&GS, etc.).
- _____ 10. The Army should train the way it will fight.

USE THE SPACE BELOW TO RECORD YOUR SELECTED COURSE OF ACTION FOR EACH OF THE 10 SCENARIO'S LISTED IN THE EXERCISE BOOKLET. PLEASE DO NOT WRITE OR MARK IN THE EXERCISE BOOKLET.

SCENARIO	COURSE OF ACTION CHOSEN		
1.	A___	B___	C___
2.	A___	B___	C___
3.	A___	B___	C___
4.	A___	B___	C___
5.	A___	B___	C___
6.	A___	B___	C___
7.	A___	B___	C___
8.	A___	B___	C___
9.	A___	B___	C___
10.	A___	B___	C___

AT THIS TIME, PLEASE TURN IN YOUR PRETEST (THIS DOCUMENT) TO THE PERSON ADMINISTERING THE EXERCISE AND EXIT TO THE BREAK AREA.

LEAVE YOUR EXERCISE BOOKLET CONTAINING THE TACTICAL SCENARIO'S ON YOUR TABLE.

PLEASE DO NOT DISCUSS YOUR ANSWERS OF ANY ASPECT OF THE PRETEST OR EXERCISE DURING THE BREAK. THANK YOU.

APPENDIX E
EXERCISE BOOKLET

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SCENARIO NUMBER ONE

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup Eastern Europe, the progressive leadership of the Soviet Union was overthrown by old "hard line" Communists. In an effort to shift attention from domestic problems, unit the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION

Opposing forces have been stopped and are preparing defensive positions. US forces are presently preparing to go on the offensive. A bridge site across an unfordable river has been identified as critical to the US force's advance. The bridge has recently been secured by a motorized rifle platoon. A motorized rifle company reinforced with tanks was spotted yesterday moving into an assembly area approximately 7 kilometers from the bridge, in the next valley. Intelligence indicates they are still in place, apparently awaiting resupply and performing maintenance.

MISSION

Seize the bridge NLT 0800 tomorrow morning and hold it. (Brigade is expected to launch attack using the bridge as a primary avenue of approach within 24 hours.) (NOTE: The time is now 1332.)

ENEMY

The enemy is reported to be at approximately 60% strength and low on food, ammunition, and POL. Morale is extremely low. Troops are tired, having been generally on the move for approximately 6 weeks.

TERRAIN

Rolling hills with relatively flat open areas near rivers, heavy forest on hill tops. Few roads in direction of travel (cross corridor). Weather: Low lying clouds and fog developing at night and clearing by mid-day. Temperatures 50 - 75 F. BMNT 0535, EENT 1945. No moon.

TROOPS AVAILABLE

The battalion's Troops are well trained, well equipped, and at almost full strength. They are fresh, well rested, and morale is high, but few of the troops have any combat experience. The supporting aviation unit, however, has been heavily committed for several days. Maintenance and availability of aircraft is still good, and most pilots are familiar with the terrain and flying conditions, however, pilots are fatigued. You have priority of support for your mission but aircraft may be required to perform other missions until two hours before your assault (T-2).

TIME

The time is now 1332. The aviation unit commander has stated that he requires at least 3 hours lead time (two hours to rearm, refuel, inspect aircraft, and brief crews and one hour to recall aircraft from other missions).

REQUIREMENT

You are the infantry battalion commander. Based on the brigade frag order and your estimate, your staff has prepared three courses of action. You are to select the course of action which offers the greatest probability of successfully completing your mission.

OR

You are the aviation unit commander. The battalion commander has invited you to come over for a frag order and to discuss the mission. He shows you the three courses of action that his staff has prepared. You are to recommend the course of action which offers the greatest probability of successfully completing the mission.

SCENARIO NUMBER ONE

COURSE OF ACTION A

Attack at 0200 hours with three task forces. TFA moves dismounted along route "TOUGH" to occupy position "YORK" NLT 0145. TFB launches airmobile assault into LZ "CAT" and TFC executes airmobile assault into LZ "DUCK" at 0155 hours.

All movements will use blackout conditions and Night Vision Devices. Radio silence will be in effect until 0155.

Assume local air superiority, enemy artillery and air defenses suppressed by counter-battery fire and tactical air strikes.

Aviation unit provides two attack helicopter gun teams (2 aircraft each) to escort each airmobile force and screen woodlines and suppress objective.

1 battery of SP 8" howitzers in direct support to prep objective at 0145 shifting fires to enemy reserve unit at 0155.

A hand-drawn map on a grid background. The map shows several wavy dashed lines representing topography or geological boundaries. A central point is marked with a black square. From this point, three arrows originate: one pointing up-left labeled 'TFC', one pointing down-left labeled 'TFA', and one pointing right labeled 'YORK'. There are also labels 'CAT' and 'DUCK' near the central point. A scale bar at the bottom indicates '1" = 2 km (SCALE APPROXIMATE)'. The text 'CA1A' is written vertically on the left side.

1" = 2 km
(SCALE APPROXIMATE)

SCENARIO NUMBER ONE

COURSE OF ACTION B

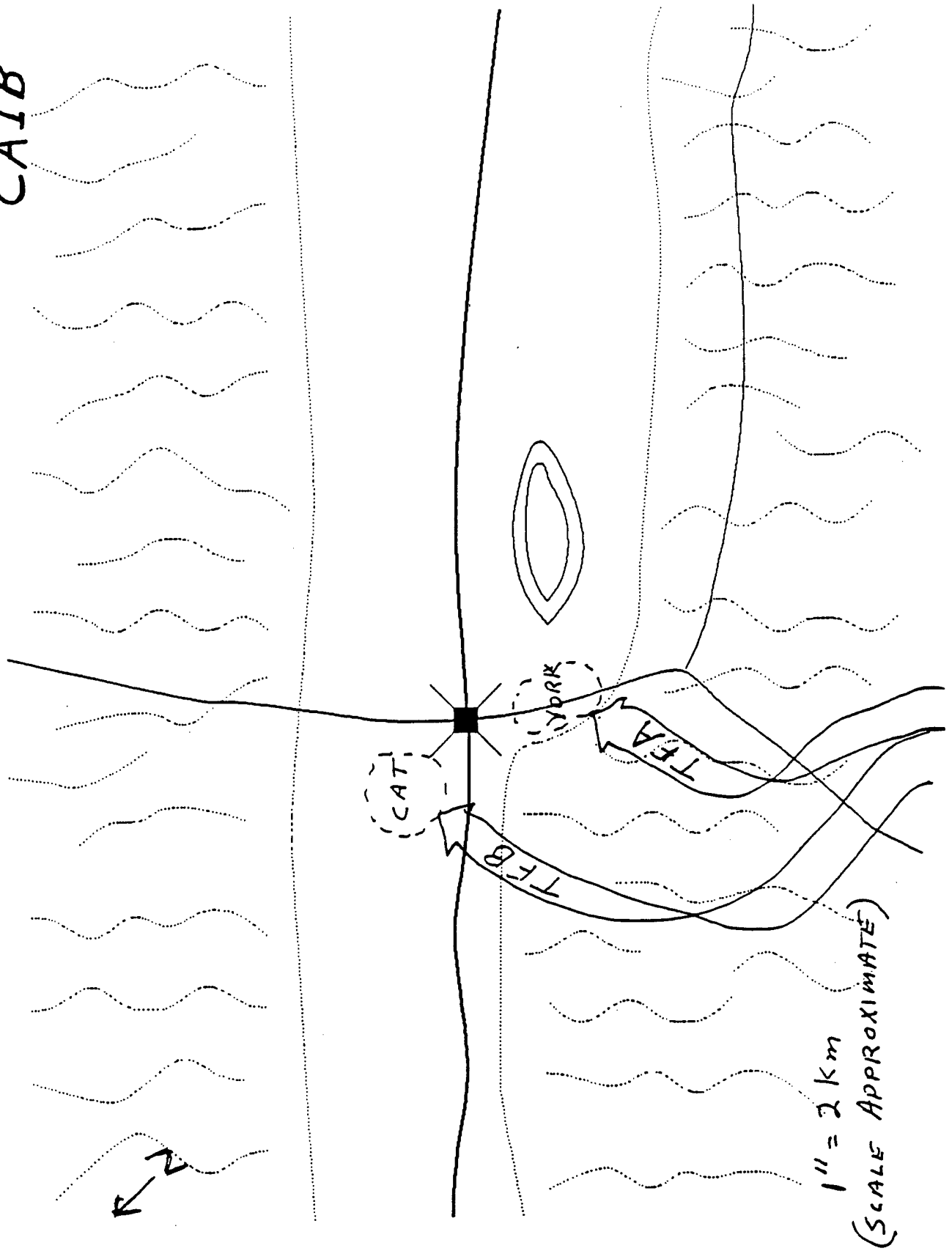
Attack at 1800 hours with two task forces. TFA conducts airmobile assault into LZ "YORK" and TFB conducts airmobile assault into LZ "CAT" at 1755 hours.

Assume local air superiority, enemy artillery and air defenses suppressed by counter-battery fire and tactical air strikes.

Aviation unit provides two attack helicopter gun teams (2 aircraft each) to escort each airmobile force and screen woodlines and suppress objective.

1 battery of SP 8" howitzers in direct support to fire harassing and interdiction fires on enemy reserve unit beginning at 1800 hours.

CA1B



SCENARIO NUMBER ONE

COURSE OF ACTION C

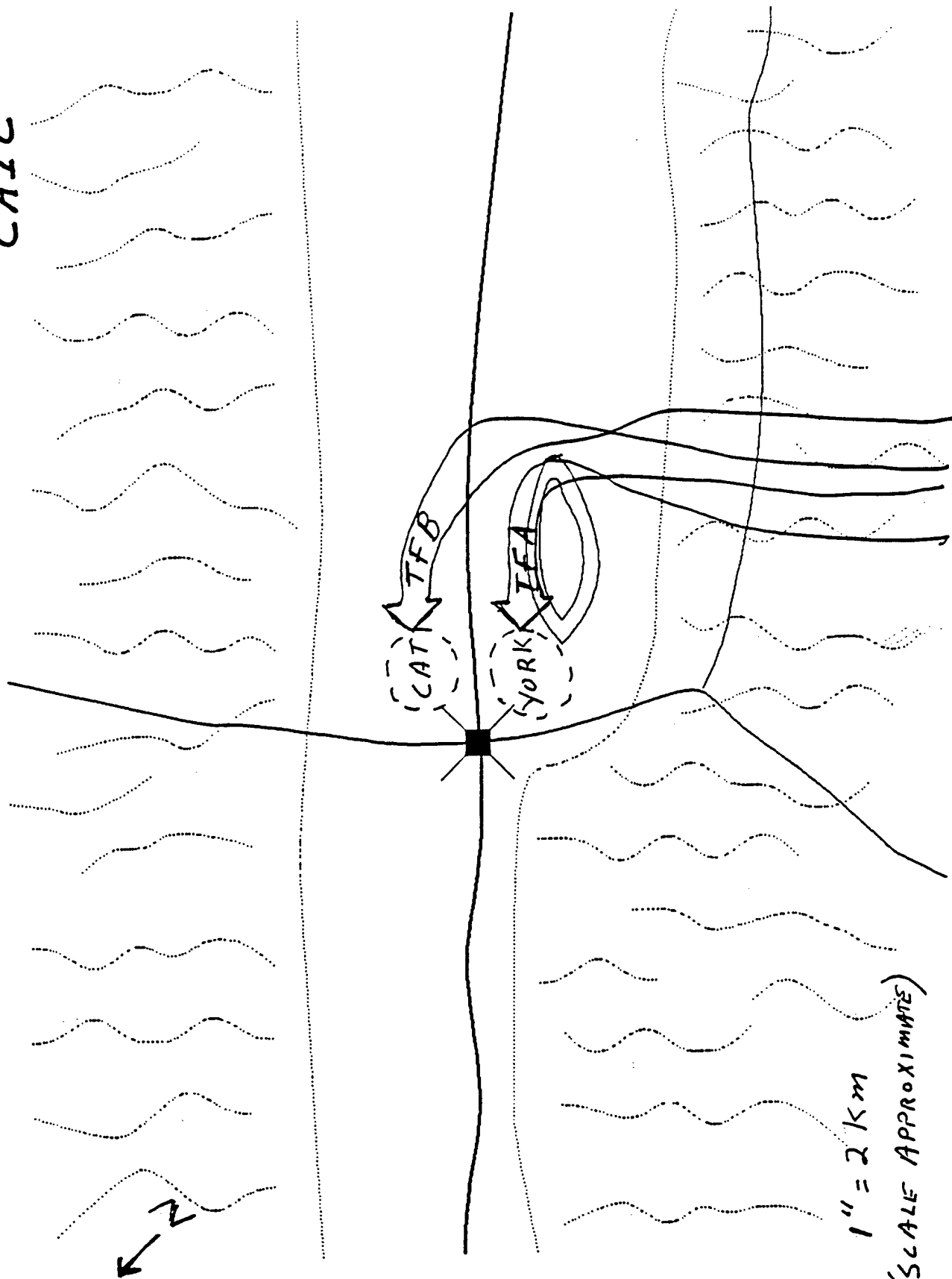
Attack at 0535 hours with two task forces. TFA conducts airmobile assault into LZ "YORK" and TFB conducts airmobile assault into LZ "CAT" at 0530 hours.

Assume local air superiority, enemy artillery and air defenses suppressed by counter-battery fire and tactical air strikes.

Aviation unit provides two attack helicopter gun teams (2 aircraft each) to escort each airmobile force and screen woodlines and suppress objective.

1 battery of SP 8" howitzers in direct support to fire harassing and interdiction fires on enemy reserve unit beginning at 1800 hours.

CAIC



SCENARIO NUMBER TWO

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup Eastern Europe, the progressive leadership of the Soviet Union was overthrown by old "hard line" Communists. In an effort to shift attention from domestic problems, unit the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION (Continued from Scenario Number One)

Your battalion successfully captured a key bridge and held it against two hasty counterattacks, however the planned brigade attack was delayed by Corps.

Intelligence reports indicate the opposing force has completed a large-scale build-up and is going to conduct a deliberate attack. The attack is expected to begin with large-scale artillery barrages within 12 hours. The opposing force's equipment includes BMP personnel carriers, tanks, antiarmor weapons, and scout vehicles. The brigade commander has determined that your unit's position is untenable and ordered you to withdraw to new and more defensible positions. The battalion will withdraw at night, executing a passage of line through part of the brigade, and occupy secondary defensive positions.

MISSION

Conduct night withdrawal and passage of lines, to occupy secondary defensive position NLT 0600. (NOTE: The time is now 1700.)

ENEMY

3 Motorized Rifle Regiments estimated at 70% strength. Resupply in progress. Low morale, fatigued. These units have been in combat for approximately 6 weeks. Many are veterans of Afganistan.

TERRAIN

Rolling hills with relatively flat open areas near rivers, heavy

forest on hill tops. Few roads in direction of travel (cross corridor). Weather: Low lying clouds and fog developing at night and clearing by mid-day. Temperatures 50 - 75 F. BMNT 0534, EENT 1947. No moon.

TROOPS AVAILABLE

Troops are well trained, well equipped, and at 95% strength. However during the last 30 hours they have conducted an airmobile assault, prepared defensive positions, and repelled two hasty counterattacks. This has been the first actual combat for most of these troops. Despite orders to provide rest, especially to drivers, few have had much sleep. The battalion has lost 6 kia and 22 wia in the last 30 hours. The brigade units through which the battalion must pass are well rested, well trained, and at near full strength but have little or no combat experience. Morale is high.

TIME

Current time is 1700 hours.

REQUIREMENT

Based on the brigade frag order and your estimate, your staff has prepared three courses of action. You are to select the course of action which offers the greatest probability of successfully completing your mission.

SCENARIO NUMBER TWO
COURSE OF ACTION A

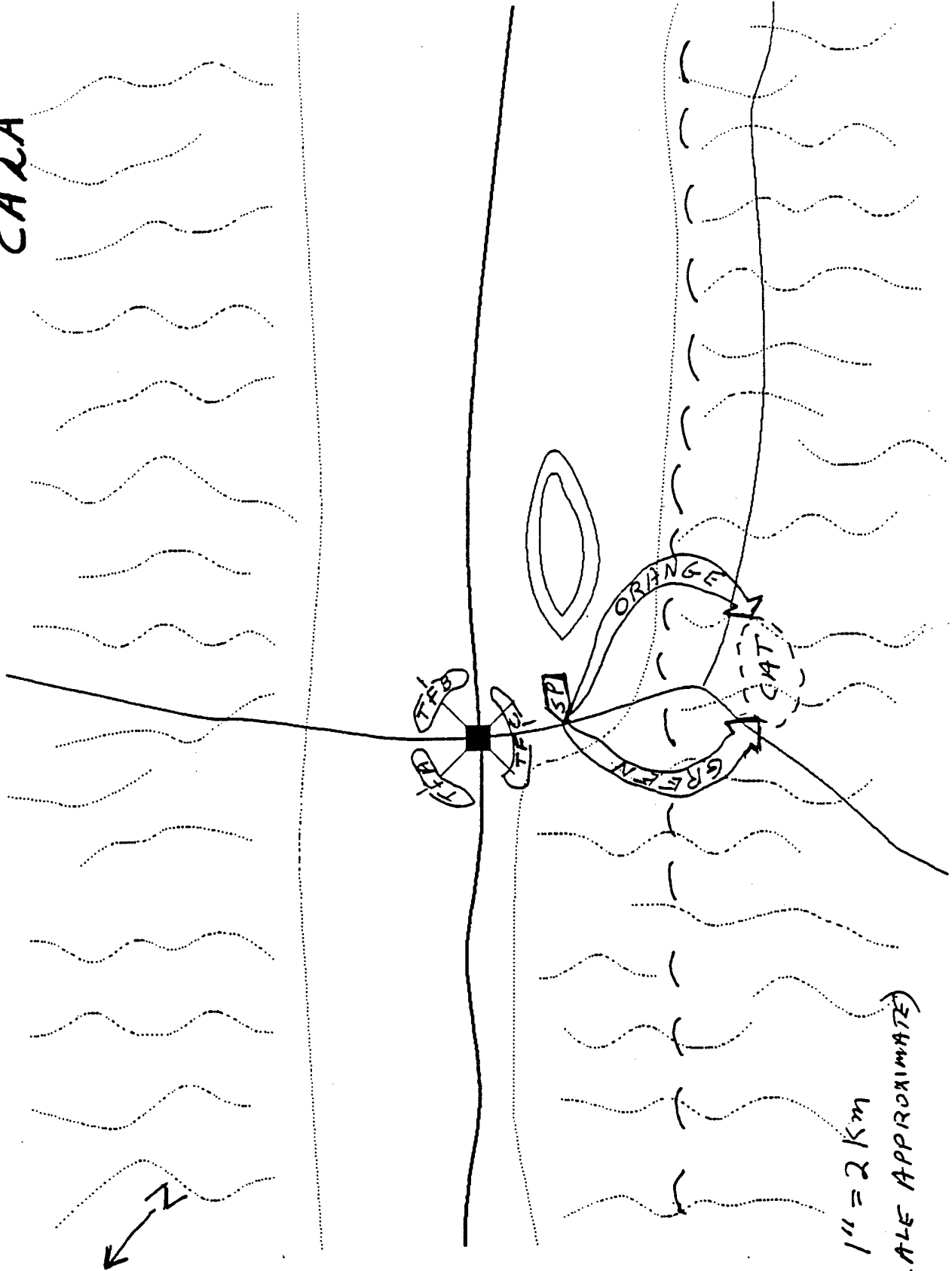
Withdraw, dismounted, across bridge. TFA at 2400 followed by TFB at 0030 and TFC at 0045.

Mount at SP with TFA moving over Route ORANGE to occupy southern portion of defensive position "CAT", TFB and TFC moving over Route GREEN to occupy northern half of "CAT".

All movements are to be made under blackout conditions. Radio silence will be maintained.

NOTE: Friendly lines are approximately 1 km below (NE) the topographic crest of the ridgeline which parallels the river.

CARLA



1" = 2 Km
(SCALE APPROXIMATE)

SCENARIO NUMBER TWO

COURSE OF ACTION B

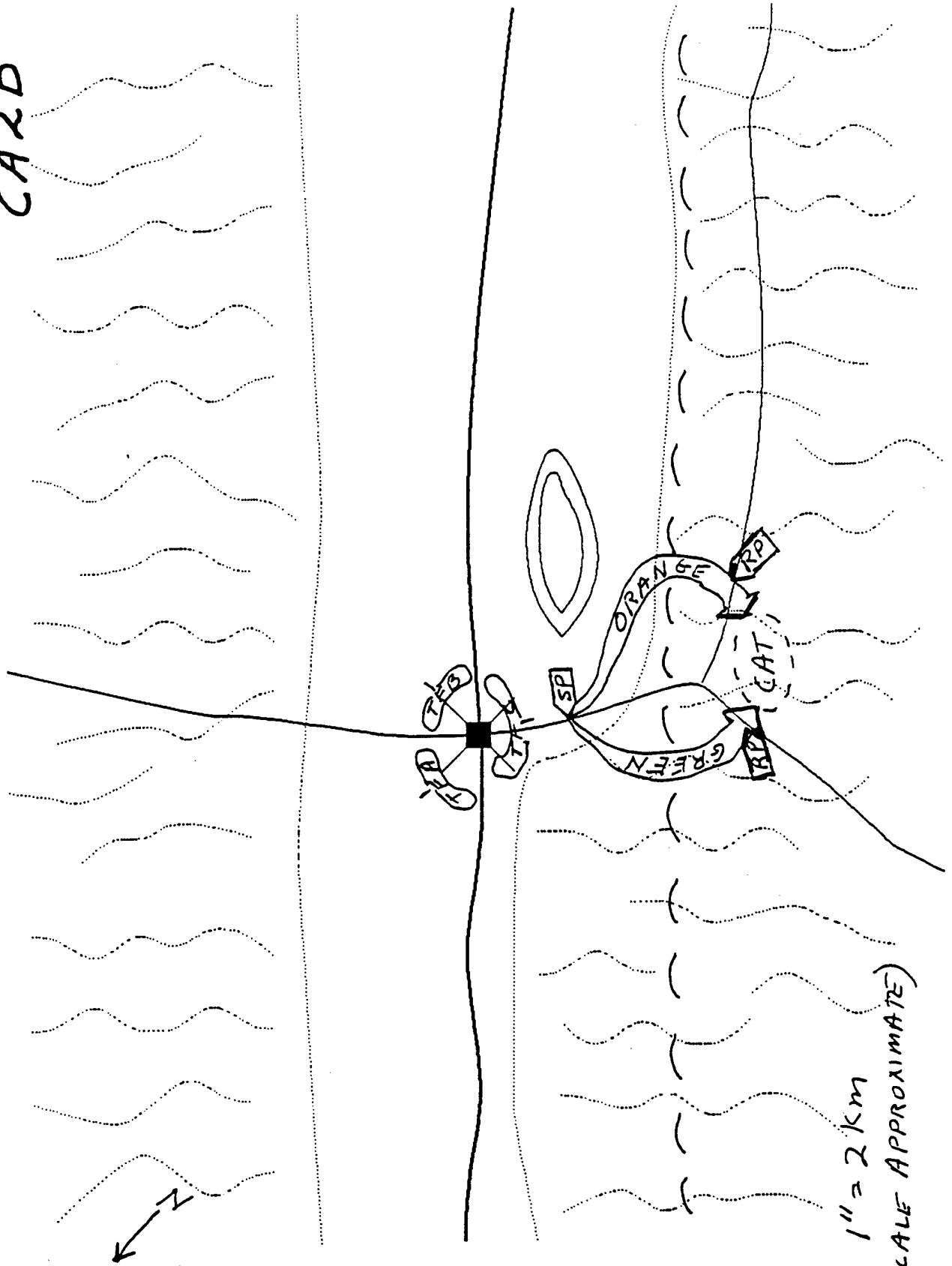
Withdraw, mounted, at 0400 with TFC leading, followed by TFB, over Route Orange to occupy south half of defensive position "Cat".

TFA provides rear security to SP then moves over Route Green to occupy northern half of "CAT".

All movements are to be made under blackout conditions until reaching SP, then blackout markers may be used.

Radio contact, using low power, will be used to establish contact with friendly unit approximately 2 KM from friendly lines and will be used as necessary until linkup is complete.

CA2B



SCENARIO NUMBER TWO

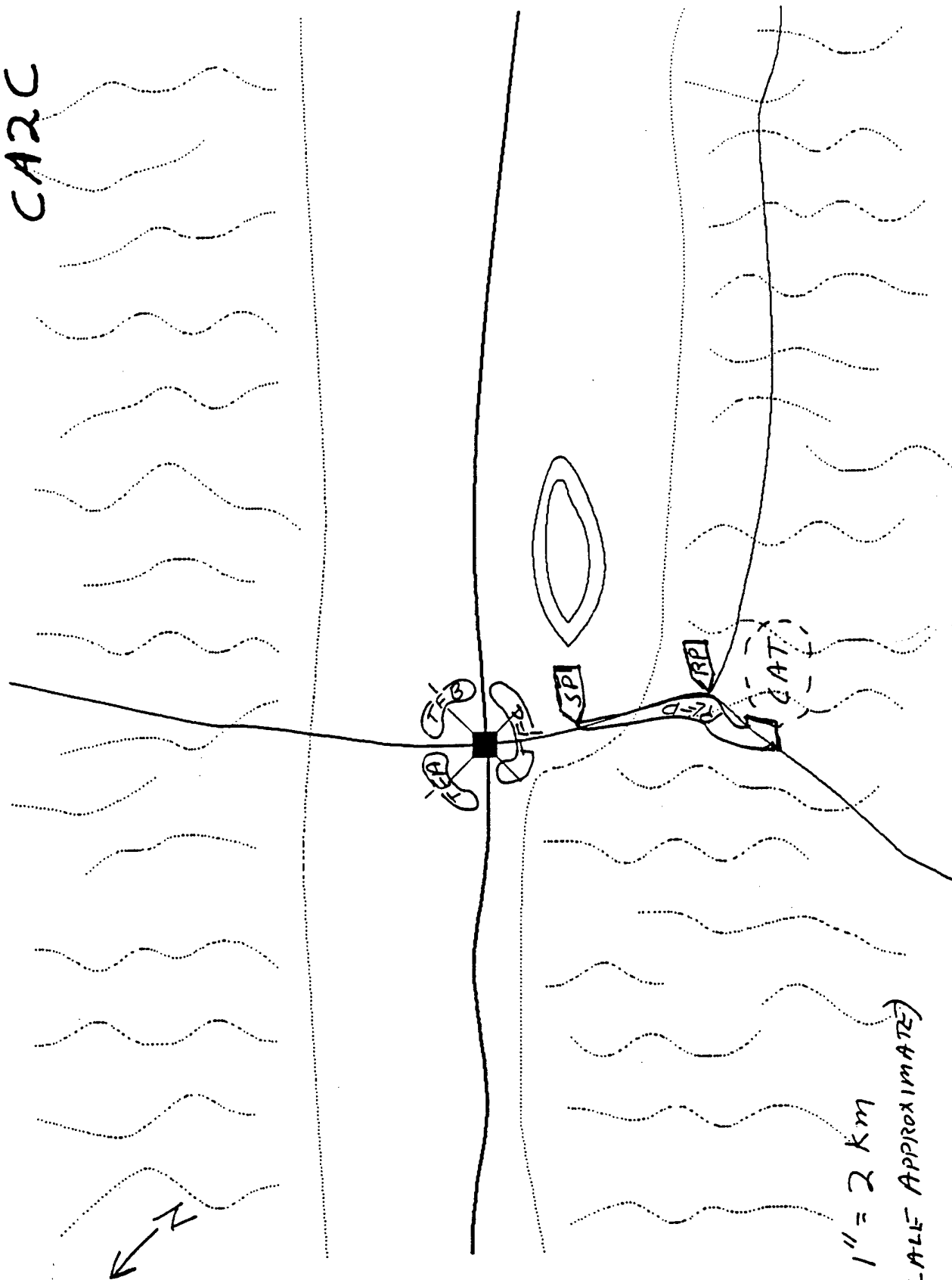
COURSE OF ACTION C

Withdraw, dismounted, at 2000 across bridge and mount at SP with TFC leading followed by TFB and TFA. Move over Route Red to occupy position "CAT". With South as 12 o'clock, move counter-clockwise so that TFC occupies 6-9, TFB occupies 9-12, and TFA occupies 12-6.

All movements are to be under blackout conditions until reaching SP. All vehicles are to be ground guided to SP. Blackout markers will be used between the SP and RP.

Radio contact, using low power, will be used to establish contact with friendly unit approximately 2 KM from friendly lines and will be used from the RP until all vehicles are parked in position in "Cat". Vehicles will be positioned in Cat by ground guides using flashlights as necessary.

CARC



SCENARIO NUMBER THREE

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup Eastern Europe, the progressive leadership of the Soviet Union was overthrown by old "hard line" Communists. In an effort to shift attention from domestic problems, unite the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION (Continued from Scenario Number Two)

Your battalion successfully withdrew and occupied secondary defensive positions. With the aid of considerable tactical air support, the brigade defeated the opposing force's deliberate attack. However, it was necessary to destroy the bridge in order to prevent the opposing force from crossing the river. The brigade is currently resupplying and preparing for a deliberate night attack on the weakened opposing force. The main attack will be a two battalion air assault supported by massed artillery and tactical air. The main attack is planned to commence at 0430.

MISSION

Your battalion, with appropriate engineer support from Corps, will conduct a river crossing and constitute the brigade reserve. You are to complete the river crossing and occupy an assembly area 3 kilometers beyond the river NLT 0900. (NOTE: The time is now 1800.)

ENEMY

The opposing force suffered heavy casualties during the aborted attack. Remaining elements of two regiments are continuing to withdraw apparently moving to defensive positions approximately 16 kilometers from the river. Two motorized rifle companies, estimated to be at no more than 60% strength, are in defensive positions on the high ground approximately 2 kilometers from the river. Their mission apparently is to conduct rear guard operations by defending and/or conducting delaying actions. The troops are battle weary and their morale is low, however, they are well trained and experienced.

TERRAIN

Rolling hills with relatively flat open areas near rivers, heavy forest on hill tops. Few roads in direction of travel (cross corridor). Crossing sites have steep slopes on both sides requiring engineer support (grading). The slopes will, however, shield the actual crossing site from observation and direct fire weapons. The river current varies from slightly above to slightly below the maximum speed for APC's to swim. The river ranges from approximately 80 meters to over 130 meters in width, with most crossing sites averaging about 90 meters. Depth is estimated at over 8 meters.

Weather: Low lying clouds and fog developing at night, usually clearing by noon. Temperatures range from 50 - 75 degrees (F). BMNT 0532, EENT 1948. No moon.

TROOPS AVAILABLE

The battalion's troops are somewhat rested, having seen only light action during the attack. You have been resupplied and replacements have returned you to near full strength. Morale remains relatively high.

TIME

The time is now 1800 hours.

REQUIREMENT

Based on the brigade order and your estimate, your staff has prepared three courses of action. You are to select the course of action which offers the greatest probability of successfully completing your mission.

OR

You are the engineer unit commander. The battalion commander is briefing you on the courses of action developed by his staff. You are to recommend the course of action which offers the greatest probability of successfully completing the mission.

SCENARIO NUMBER THREE

COURSE OF ACTION A

At 0200, TFA moves over Route RED to occupy position "COW", TFB moves over Route WHITE to occupy position "SHEEP", and TFC moves over Route BLUE to occupy position "HORSE".

Engineering support is split evenly between company teams.

One crossing site is prepared for each company team. Preparation begins as soon as practical after positions "COW", "SHEEP", and "HORSE" have been occupied.

Blackout conditions and radio silence are to be maintained throughout the operation.

All company teams are to commence river crossings at 0500 with TFA moving over Route BLACK to occupy position "PIG", TFB moving over Route GRAY to occupy position "CHICKEN", and TFC moving over Route GOLD to occupy position "GOAT".

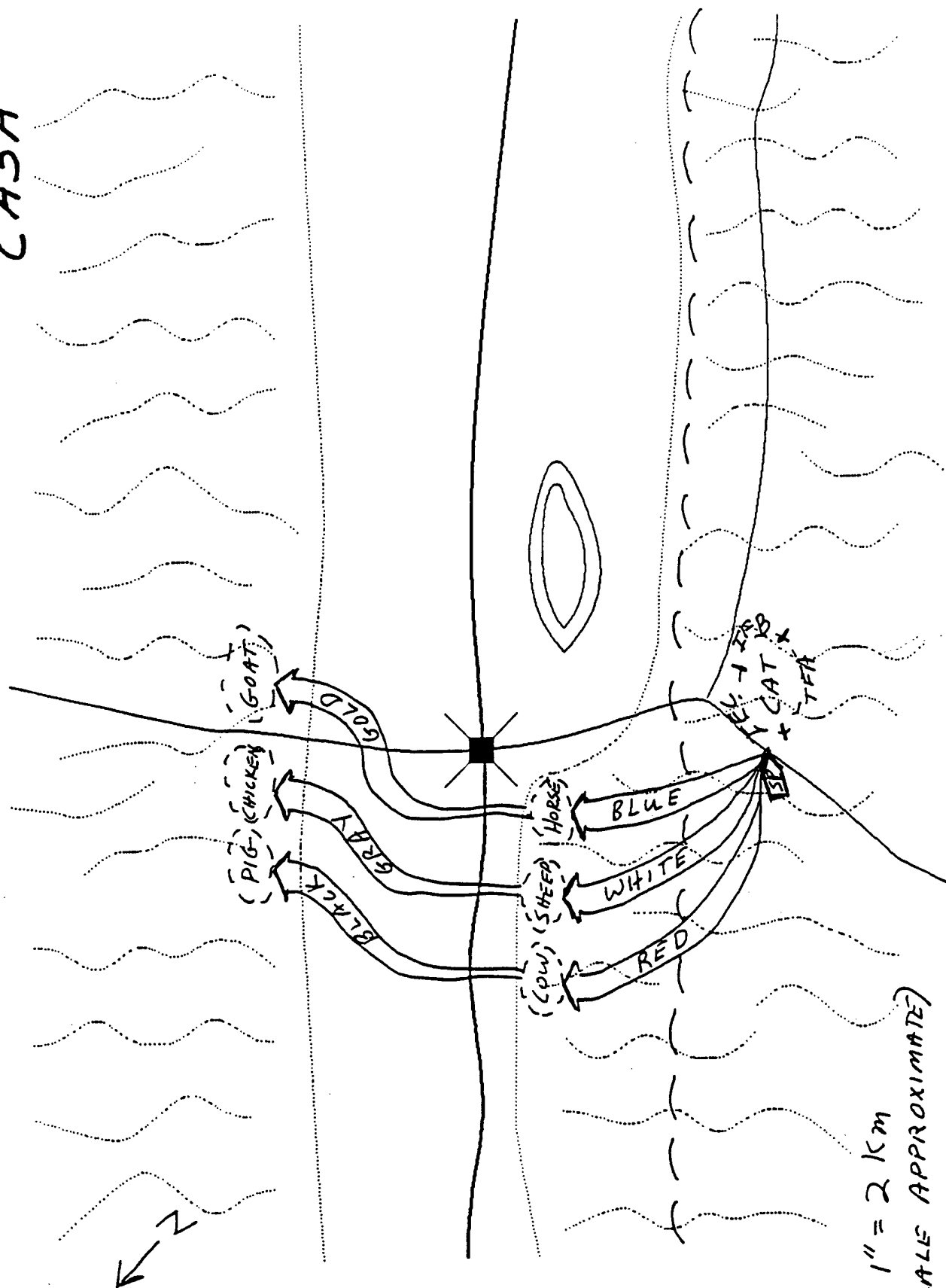
NOTE: There is no significant difference in the river speed, depth, width, bank angles, or general trafficability at any of the proposed crossing sites within 5 kms of the bridge.

In all cases, engineers remain at crossing sites with local security and support to be provided by others.

Due to the artillery support requirements for the main attack, you do not have direct support artillery. However, the plan for the main attack includes heavy artillery barrages on the opposing forces located on the high ground approximately 2 kms beyond the river and on opposing artillery. This artillery attack will begin at 0430 and continue until 0500.

Assume local air superiority. The Enemy has virtually no capability to reinforce.

CA3A



SCENARIO NUMBER THREE

COURSE OF ACTION B

At 0100, battalion movers over route Blue (TFA leading, followed by Engineers, TFC and TFB) to occupy position "HORSE".

Engineering support is consolidated at the battalion crossing site. Preparation begins as soon as "HORSE" has been occupied.

Blackout conditions and radio silence are to be maintained throughout the operation.

Battalion commences river crossing at 0430 and moves to occupy "GOAT" via Route GOLD (TFC leading, followed by TFB and TFA).

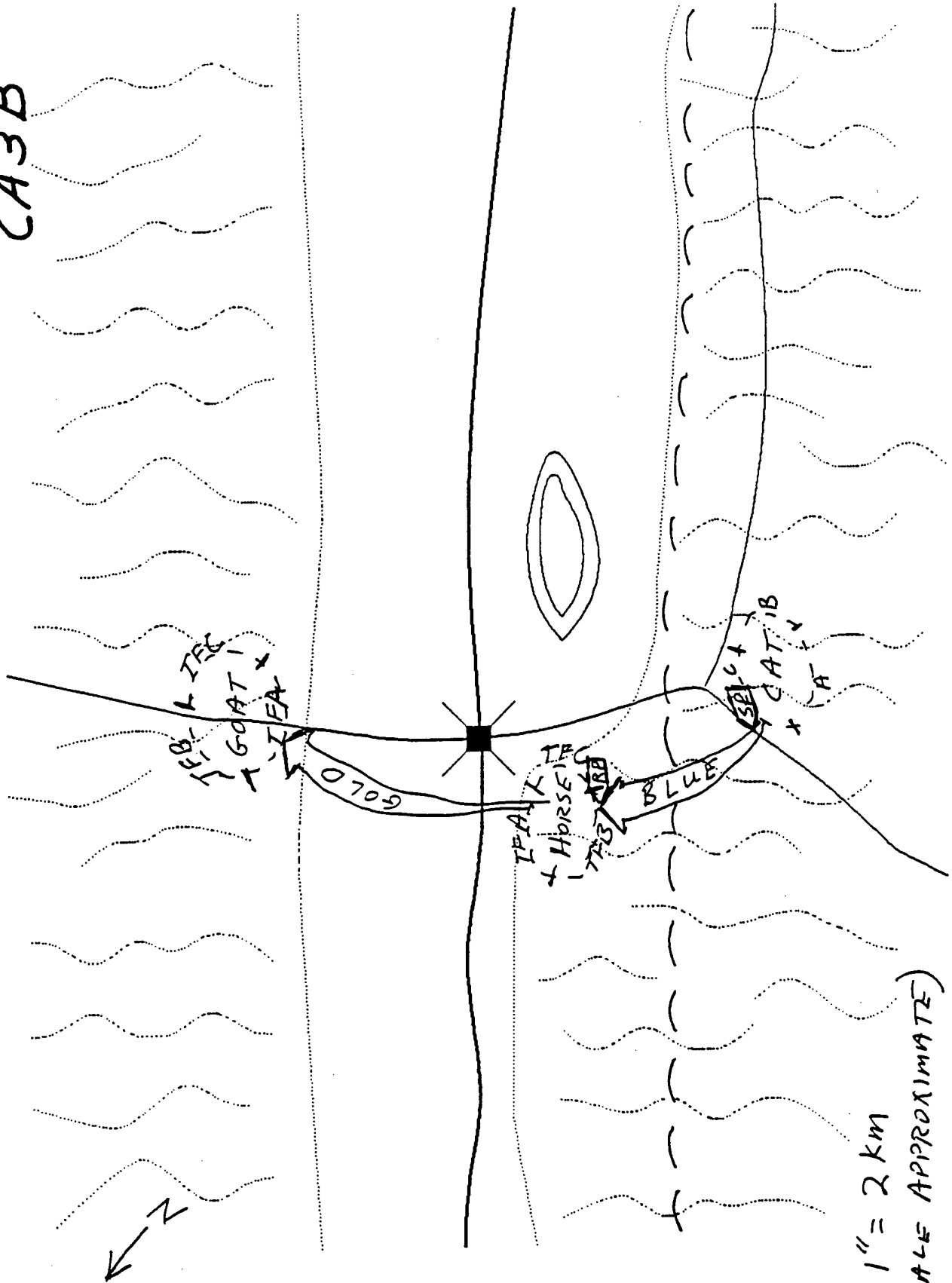
NOTE: There is no significant difference in the river speed, depth, width, bank angles, or general trafficability at any of the proposed crossing sites within 5 kms of the bridge.

In all cases, engineers remain at crossing sites with local security and support to be provided by others.

Due to the artillery support requirements for the main attack, you do not have direct support artillery. However, the plan for the main attack includes heavy artillery barrages on the opposing forces located on the high ground approximately 2 kms beyond the river and on opposing artillery. This artillery attack will begin at 0430 and continue until 0500.

Assume local air superiority. The Enemy has virtually no capability to reinforce.

CA3B



1" = 2 km
(SCALE APPROXIMATE)

SCENARIO NUMBER THREE

COURSE OF ACTION C

At 0435, battalion movers over route Blue (TFA leading, followed by Engineers, TFC and TFB) to occupy position "HORSE".

Engineering support is consolidated at the battalion crossing site. Preparation begins as soon as "HORSE" has been occupied.

Artificial illumination, radios, and other controls may be used.

Battalion commences river crossing at 0530 and moves to occupy "GOAT" via Route GOLD (TFC leading, followed by TFB and TFA).

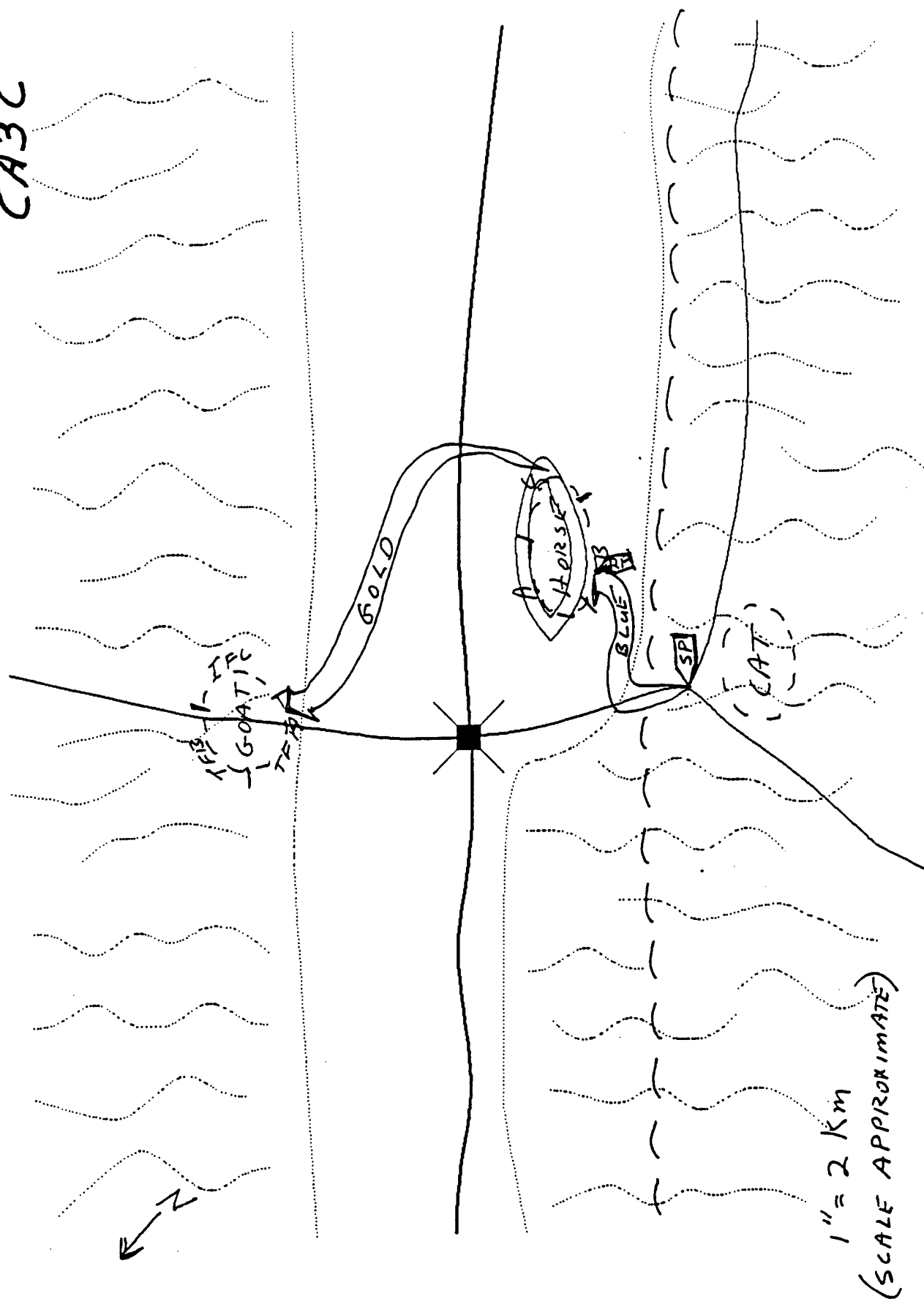
NOTE: There is no significant difference in the river speed, depth, width, bank angles, or general trafficability at any of the proposed crossing sites within 5 kms of the bridge.

In all cases, engineers remain at crossing sites with local security and support to be provided by others.

Due to the artillery support requirements for the main attack, you do not have direct support artillery. However, the plan for the main attack includes heavy artillery barrages on the opposing forces located on the high ground approximately 2 kms beyond the river and on opposing artillery. This artillery attack will begin at 0430 and continue until 0500.

Assume local air superiority. The Enemy has virtually no capability to reinforce.

CA3C



SCENARIO NUMBER FOUR

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup Eastern Europe, the progressive leadership of the Soviet Union was overthrown by old "hard line" Communists. In an effort to shift attention from domestic problems, unite the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION (Continued from Scenario Number Two)

With the aid of considerable tactical air support, the brigade defeated the opposing force's deliberate attack. However, it was necessary to destroy the bridge in order to prevent the opposing force from crossing the river. The brigade is currently resupplying and preparing for a deliberate night attack on the weakened opposing force. The main attack will be a two battalion air assault supported by massed artillery and tactical air. The main attack is planned to commence at 0430.

MISSION

Conduct, as part of the brigade attack, a night air assault to seize and hold the high ground vicinity "Can Can". Attack begins with artillery preparation and air attacks at 0430. Be prepared to continue attack on order. (NOTE: The time is now 1800.)

ENEMY

The opposing force suffered heavy casualties during the aborted attack. Remaining elements of two regiments are continuing to withdraw apparently moving to defensive positions approximately 16 kilometers from the river. Two motorized rifle companies, estimated to be at no more than 60% strength, are in defensive positions on the high ground approximately 2 kilometers from the river. Their mission apparently is to conduct rear guard operations by defending and/or conducting delaying actions. The troops are battle weary and their morale is low, however, they are well trained and experienced.

TERRAIN

Rolling hills with relatively flat open areas near rivers, heavy forest on hill tops. Few roads in direction of travel (cross corridor). Adequate pick up zones and landing zones are available in the area.

Weather: Low lying clouds and fog developing at night, usually clearing by noon. Temperatures range from 50 - 75 degrees (F). BMNT 0532, EENT 1948. No moon.

TROOPS AVAILABLE

The battalion's troops are moderately rested, having had some time to rest during the afternoon, but fought hard during the night. You have been resupplied and replacements have returned you to near full strength. Morale remains relatively high.

TIME

The time is now 1800 hours.

REQUIREMENT

Based on the brigade order and your estimate, your staff has prepared three courses of action. You are to select the course of action which offers the greatest probability of successfully completing your mission.

OR

You are the aviation unit commander. The battalion commander is briefing you on the courses of action developed by his staff. You are to recommend the course of action which offers the greatest probability of successfully completing the mission.

SCENARIO NUMBER FOUR

COURSE OF ACTION A

At 0430, massed artillery preparation begins against opposing forces located along phase line Duck and phase line Goose.

Helicopters land in pick up zones Lead, Tin, and Copper and load task forces.

Tactical air attacks enemy artillery and air defense locations, interdicts reinforcement routes, and provides local air superiority.

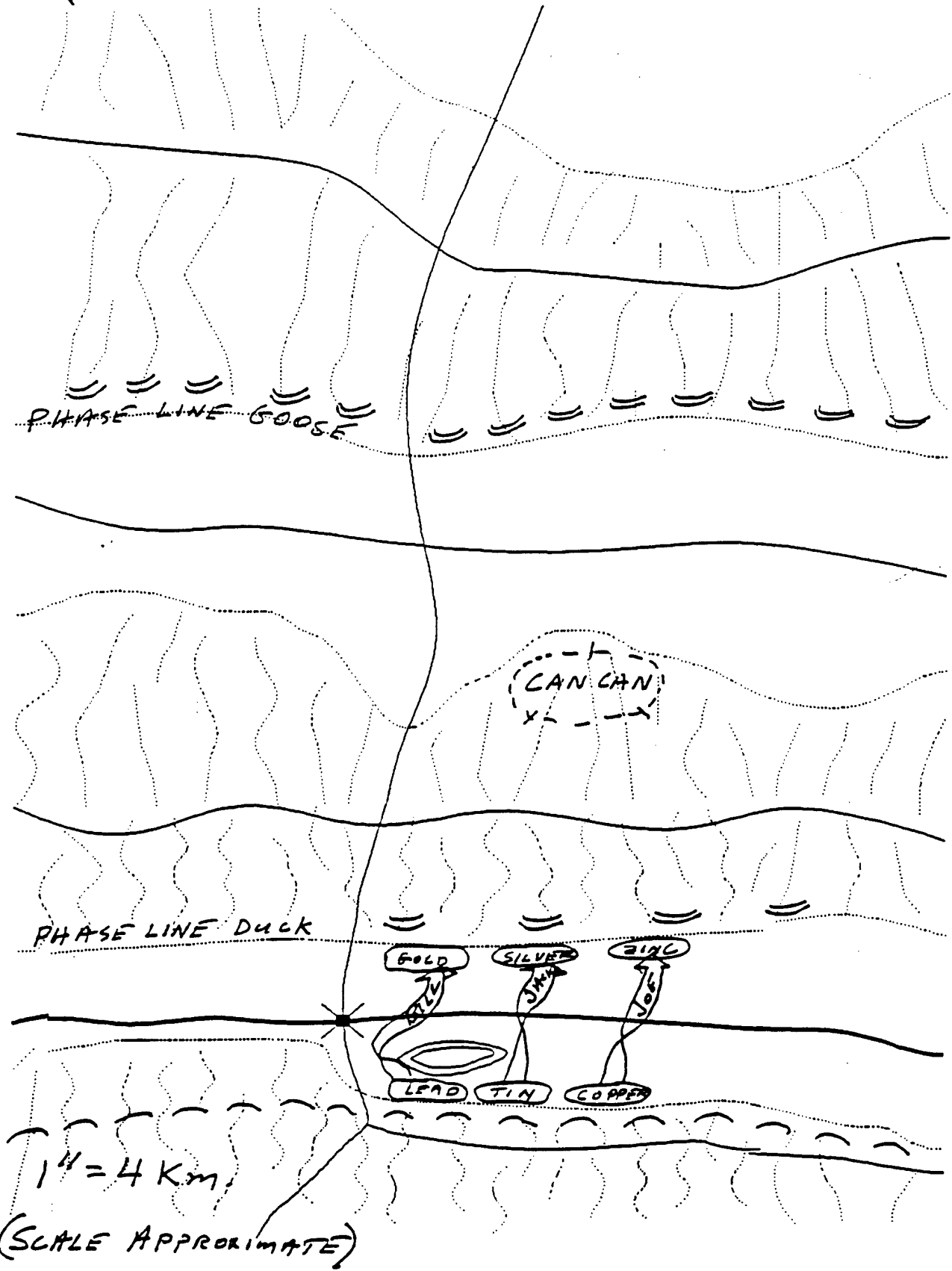
At 0445, all fires shift to phase line Goose and Air Assault forces move over routes Bill, Jack, and Joe to LZ's Gold, Silver, and Zinc, respectively.

Air assault is conducted nap-of-the-earth with all forces maintaining radio silence until troops are on the ground in LZ's.

Artillery shifts to secondary targets (enemy artillery and reinforcement routes) on command (after tactical air strikes are complete).

Forces continue attack and consolidate "CAN CAN" as shown.

CA 4A



SCENARIO NUMBER FOUR

COURSE OF ACTION B

At 0430, massed artillery preparation begins against opposing forces located along phase line Duck and phase line Goose.

Helicopters land in pick up zones Lead, Tin, and Copper and load task forces.

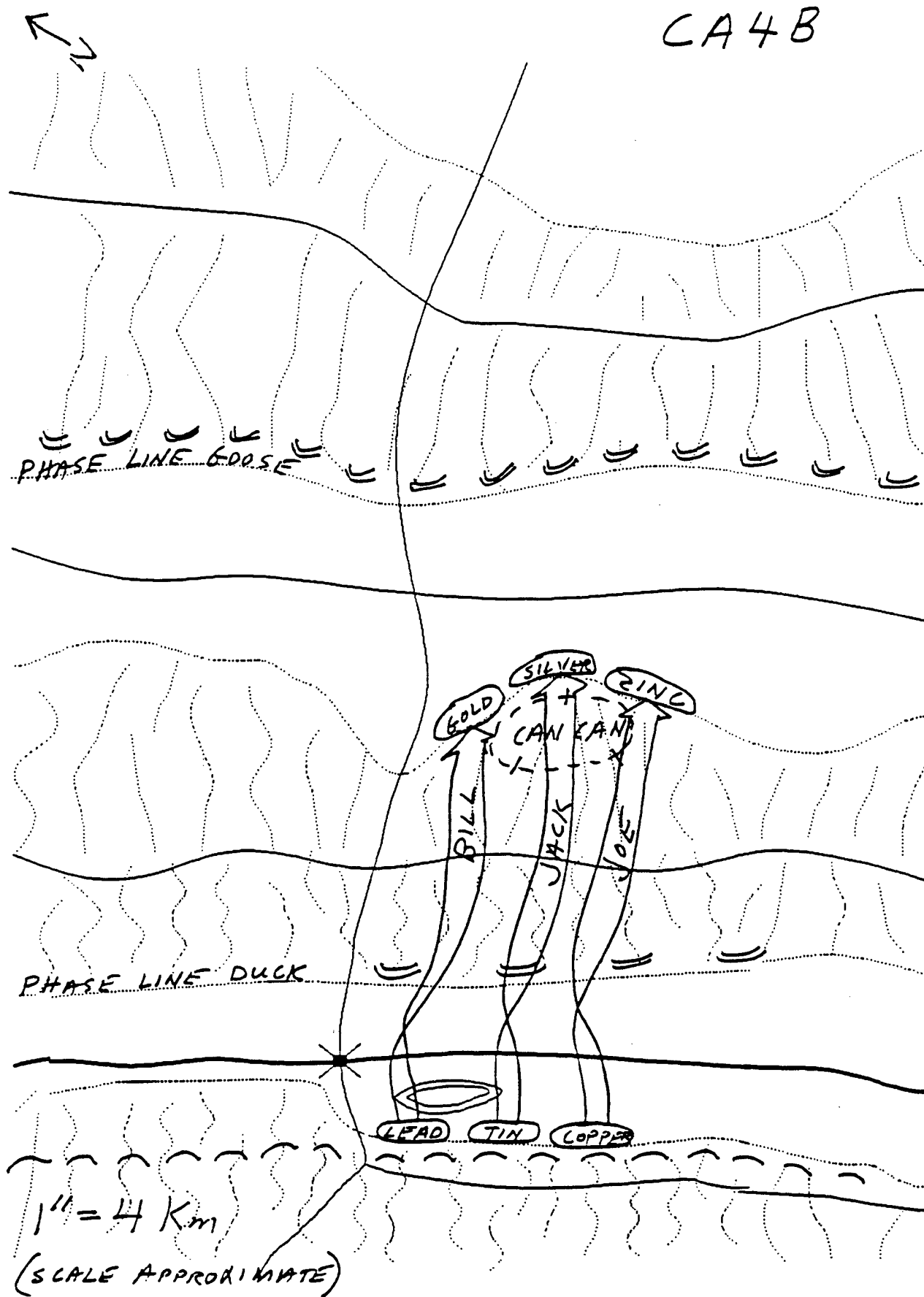
Tactical air attacks enemy artillery and air defense locations, interdicts reinforcement routes, and provides local air superiority.

At 0445, all fires shift to phase line Goose and Air Assault forces move over route Bill, Jack, and Joe to LZ's Gold, Silver, and Zinc, respectively.

Air assault is conducted nap-of-the-earth, with forces maintaining radio silence until troops are on the ground in LZ's.

Artillery shifts to secondary targets (enemy artillery and reinforcement routes) on command (after tactical air strikes are complete).

Forces continue attack and consolidate "CAN CAN" as shown.



SCENARIO NUMBER FOUR

COURSE OF ACTION C

At 0430, massed artillery preparation begins against opposing forces located along phase line Duck and phase line Goose.

Helicopters land in pick up zones Lead, Tin, and Copper and load task forces.

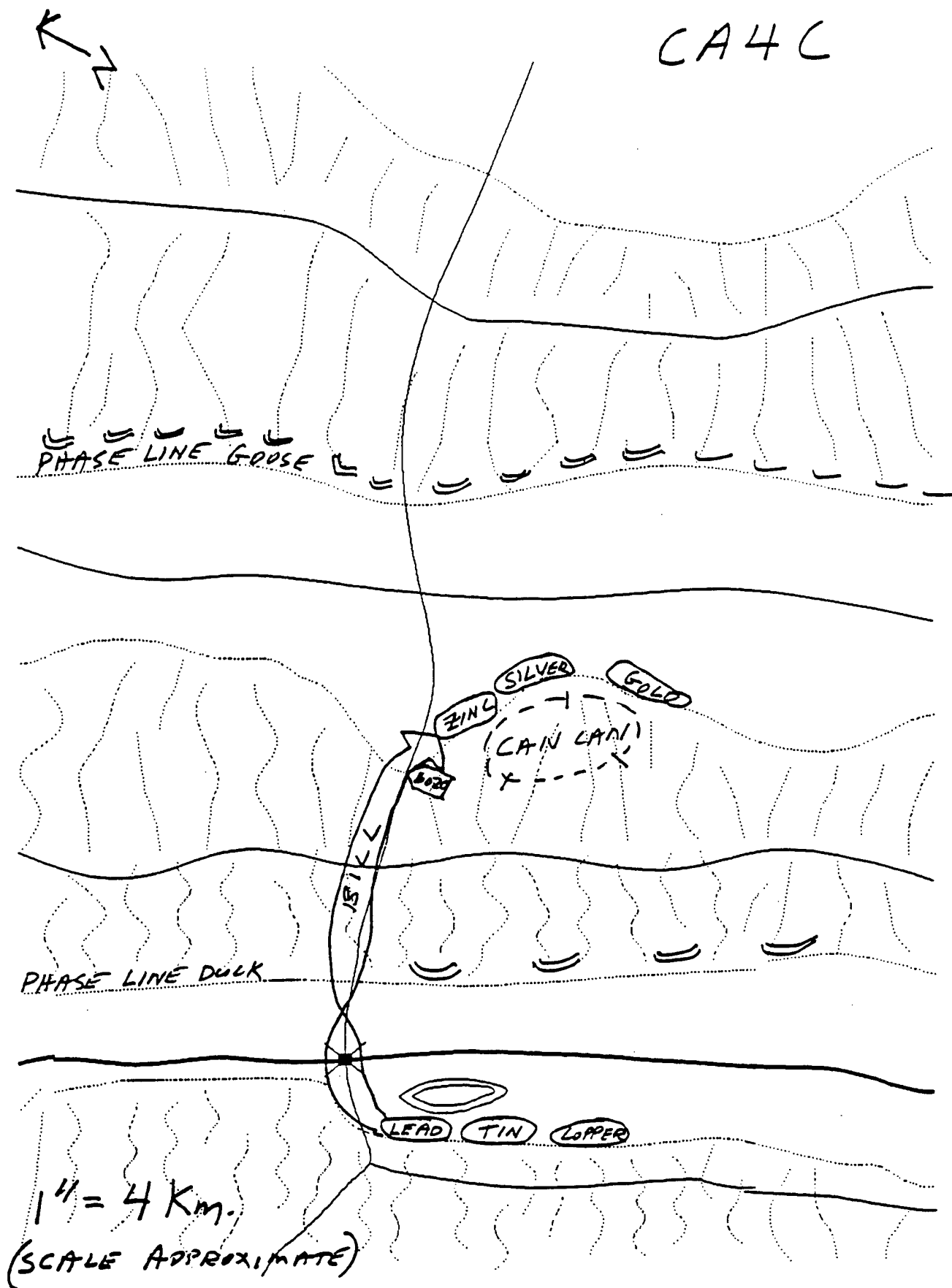
Tactical air attacks enemy artillery and air defense locations, interdicts reinforcement routes, and provides local air superiority.

At 0445, all fires shift to phase line Goose and Air Assault forces move over route Bill to LZ's Gold, Silver, and Zinc.

Air assault is conducted at 100 feet AGL until reaching BOZO, with forces maintaining radio silence until troops are on the ground in LZ's.

Artillery shifts to secondary targets (enemy artillery and reinforcement routes) on command (after tactical air strikes are complete).

Forces continue attack and consolidate "CAN CAN" as shown.



SCENARIO NUMBER FIVE

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup Eastern Europe, the progressive leadership of the Soviet Union was overthrown by old "hard line" Communists. In an effort to shift attention from domestic problems, unite the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION (Continued from Scenario Number four)

The brigade's attack defeated the opposing force rear guard. The brigade has regrouped and is preparing to continue the attack against a disorganized enemy. A river crossing site has been established and secured. You are the artillery battalion commander. Rapid advances by the attacking force may outdistance artillery support if artillery units are not repositioned.

MISSION

Move to forward fire support base vicinity "bird" and be prepared to provide fire support NLT 1500. (NOTE: The time now is 0930.)

ENEMY

The two motorized rifle companies conducting delaying actions were quickly defeated and their remaining elements are in full retreat. Two motorized rifle regiments are attempting to reorganize and establish defensive positions. Some resupply has been accomplished but units are still at less than 60% strength.

TERRAIN

Rolling hills with relatively flat open areas near rivers, heavy forest on hill tops. Few roads in direction of travel (cross corridor). There are adequate pick up zones and landing zones and overland routes available.

Weather: Low lying clouds and fog developing at night, usually clearing by noon. Temperatures range from 50 - 75 degrees (F). BMNT 0530, EENT 1949. No moon.

TROOPS AVAILABLE

The battalion's troops are well trained and well equipped, however, they are physically exhausted, having supported the brigade attack. Few have had any rest or sleep in the last 16 hours. Fire missions are still being received at a moderate level.

A medium helicopter company is available to provide support but only from 1100 to 1200 hours. The helicopter crews are also exhausted, having also been supporting the brigade attack.

Engineer elements remain located at the river crossing site to expedite crossing and provide local security.

Cavalry units are also providing route and rear area security.

TIME

The time is now 0930 hours.

REQUIREMENT

Based on the brigade order and your estimate, your staff has prepared three courses of action. You are to select the course of action which offers the greatest probability of successfully completing your mission.

SCENARIO NUMBER FIVE

COURSE OF ACTION A

Move and occupy "BIRD", with 1 firing battery moving by air at 1100 and the remainder of the battalion moving by convoy over route Red (SP at 1100).

COURSE OF ACTION B

Move entire battalion, minus quartering party, to occupy "BIRD" via route Red (SP 1030).

Quartering party to be transported by single aircraft to "BIRD" at 1100 hours.

COURSE OF ACTION C

Move entire battalion in convoy over route Red to "BIRD" (SP 1130).



SCENARIO NUMBER SIX

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup Eastern Europe, the progressive leadership of the Soviet Union was overthrown by old "hard line" Communists. In an effort to shift attention from domestic problems, unite the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION (Continued from Scenario Number Five)

The brigade's attack defeated the opposing force rear guard. The brigade has regrouped and is preparing to continue the attack against a disorganized enemy. A river crossing site has been established and secured. Your battalion made the river crossing and constituted the reserve during the attack.

MISSION

Conduct a hasty attack on opposing force defensive positions NLT 1930, occupy and hold defensive positions, and be prepared to continue attack on order. (NOTE: The time is now 1130.)

ENEMY

The two motorized rifle companies conducting delaying actions were quickly defeated and their remaining elements are in full retreat. Two motorized rifle regiments are attempting to reorganize and establish defensive positions. Some resupply has been accomplished but units are still at less than 60% strength.

TERRAIN

Rolling hills with relatively flat open areas near rivers, heavy forest on hill tops. Few roads in direction of travel (cross corridor). There are adequate pick up zones and landing zones and overland routes available.

Weather: Low lying clouds and fog developing at night, usually clearing by noon. Temperatures range from 50 - 75 degrees (F). BMNT 0530, EENT 1949. No moon. Wind West SouthWest at 3 to 5 knots.

TROOPS AVAILABLE

The battalion's troops are well trained and well equipped, and relatively well rested. Morale is high. The brigade's second battalion will be on your left flank during the attack. They are somewhat fatigued, having just completed the successful night attack, however, they sustained only light casualties and morale is high. The third battalion sustained moderate casualties and will constitute the brigade reserve. Attack helicopter and artillery support troops are also exhausted, having supported the attack and continued to provide fire missions throughout the day. Fire missions are still being received at a moderate level.

Two battalions of 105mm artillery (towed) will be in direct support effective immediately until 1930. Both of the battalions, however, supported the brigade attack and are currently relocating and not required to be in position and resupplied until 1500.

You will also have considerable tactical air support available. You may assume to continue to have local air superiority throughout the operation. Starting at 1200 hours and continuing until 2000 you will have 6 tactical air strikes allocated to your operation.

Aircraft will generally consist of flights of 4 A-10's or F-4's with mixed ordnance, capable of attacking either point or area targets. Flights can attack predesignated targets at predetermined times (with 1 hour notice) or can attack targets of opportunity or targets designated by the ground commander. Flights on strip alert can respond to calls in approximately 20 minutes. Flights on "Air Cap" can respond within two minutes during any given 1 hour window.

Additionally, Air Cavalry units will screen flanks.

TIME

The time is now 1130 hours.

REQUIREMENT

Based on the brigade order and your estimate, your staff has prepared three courses of action. You are to select the course of action which offers the greatest probability of successfully completing your mission.

SCENARIO NUMBER SIX

COURSE OF ACTION A

Conduct air strikes at 1200, 1330, 1500, and 1630 on enemy positions vicinity phase line Bear. Also strike targets of opportunity north and east of Bear (but south of Pig) with priority to artillery/air defense units, resupply efforts, and reserve units.

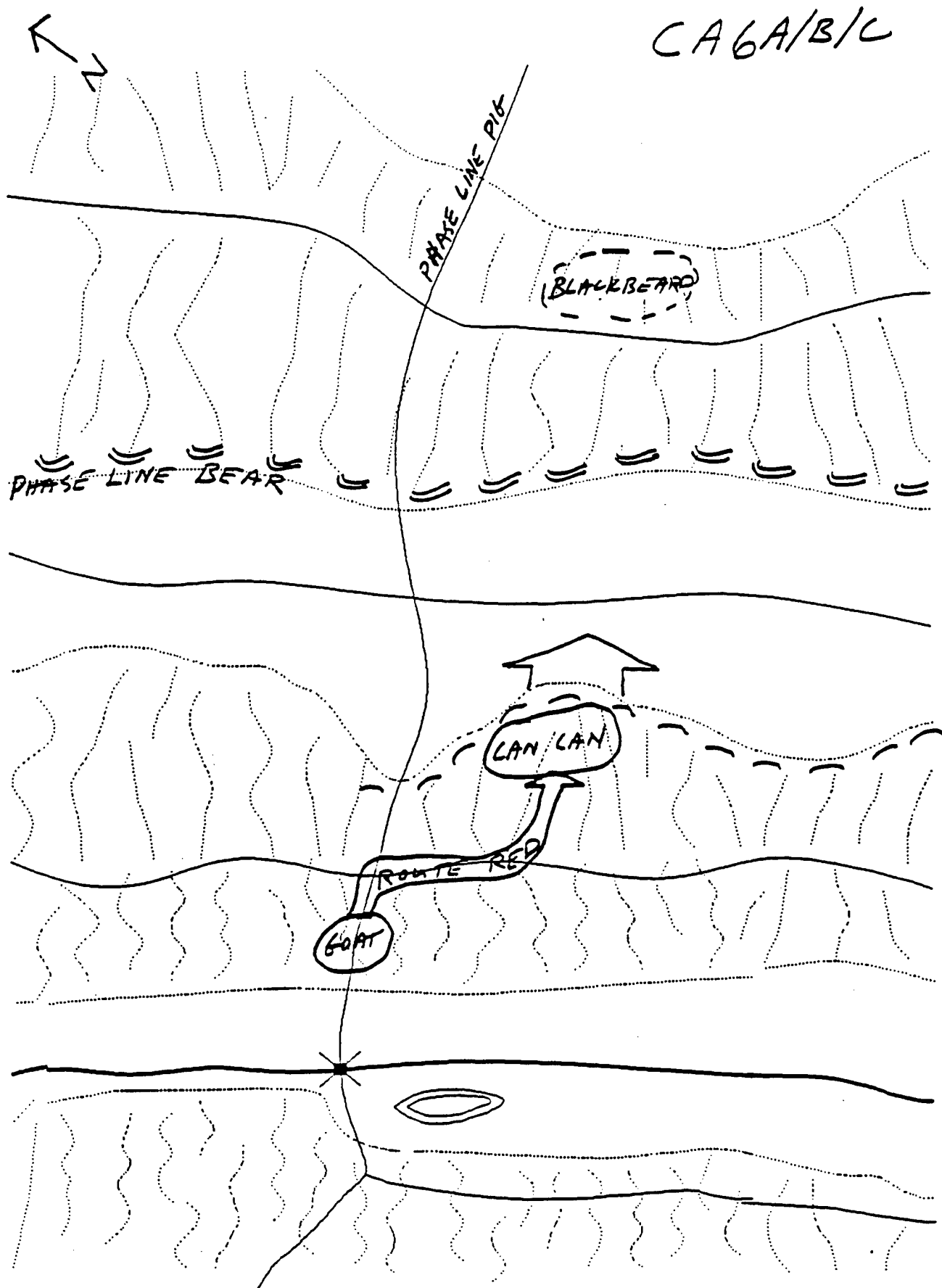
1700 air cap on station and remaining flight on strip alert.

Supporting artillery begin regular H & I fires and registration at 1500, concentrated artillery attack on enemy positions along phase line Bear beginning at 1645 with heavy smoke 500 meters south of Bear beginning at 1655.

Fires shifting to "Blackbeard" on order.

Move via convoy over route Red into attack position "Can Can", now occupied by the third battalion (SP 1230).

Attack, with three company teams abreast, at 1700, to seize and occupy "Blackbeard".



SCENARIO NUMBER SIX

COURSE OF ACTION B

Conduct air strikes at 1200, 1300, 1400, 1500, and 1600 on enemy positions vicinity phase line Bear. Also strike targets of opportunity north and east of Bear (but south of Pig) with priority to artillery/air defense units, resupply efforts, and reserve units.

Air cap on station at 1700.

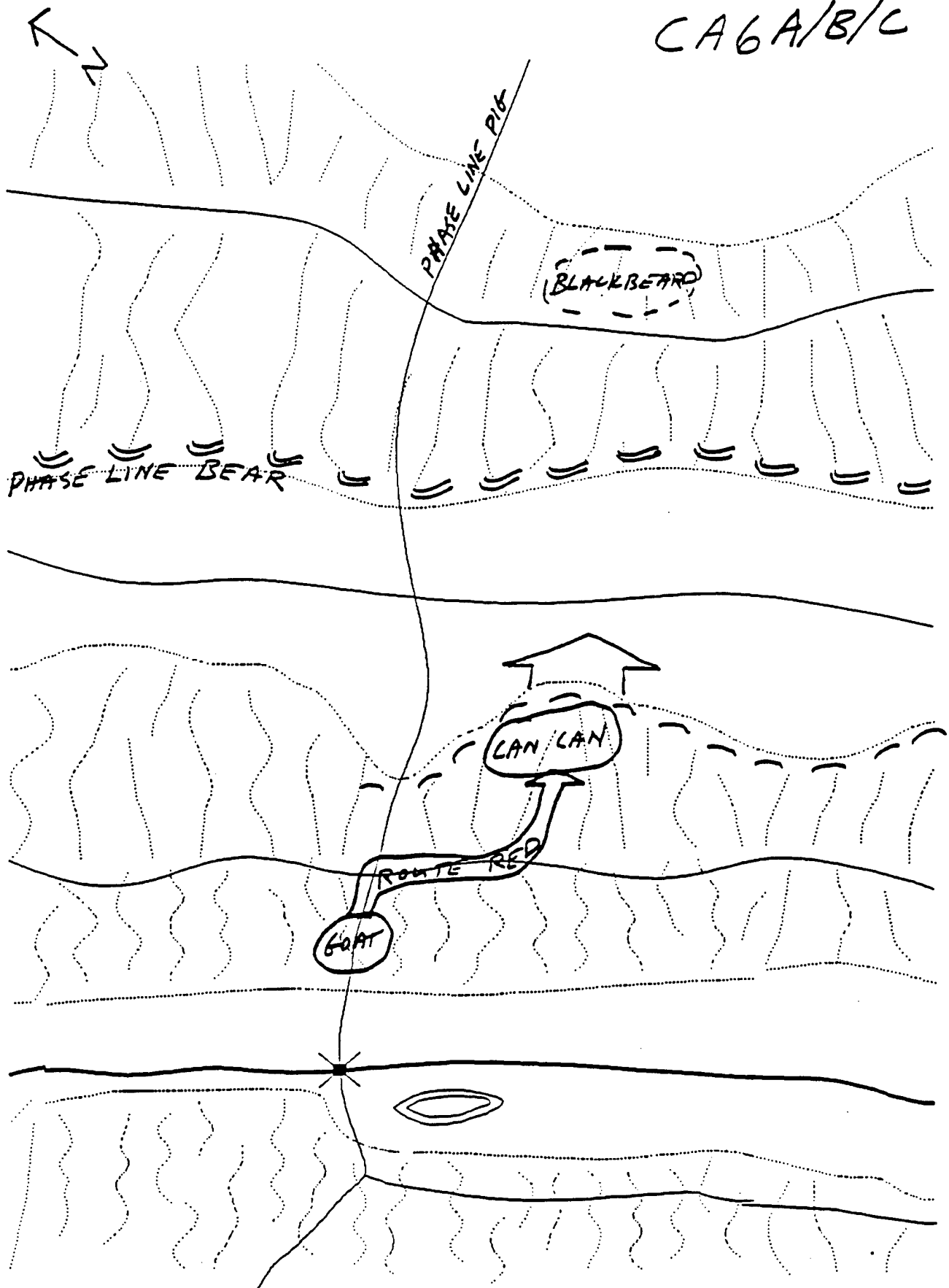
Concentrated artillery attack on enemy positions along phase line Bear beginning at 1630 with heavy smoke 500 meters south of Bear beginning at 1655.

Fires shifting to "Blackbeard" on order.

Move via convoy over route Red into attack position "Can Can", now occupied by the third battalion (SP 1230).

Attack, with three company teams abreast, at 1700, to seize and occupy "Blackbeard".

CA 6A/B/C



SCENARIO NUMBER SIX

COURSE OF ACTION C

Conduct air strikes at 1630, 1640, 1650, 1700, and 1710 on enemy positions vicinity phase line Bear. Also strike targets of opportunity north and east of Bear (but south of Pig) with priority to artillery/air defense units, resupply efforts, and reserve units.

Air cap on station at 1700.

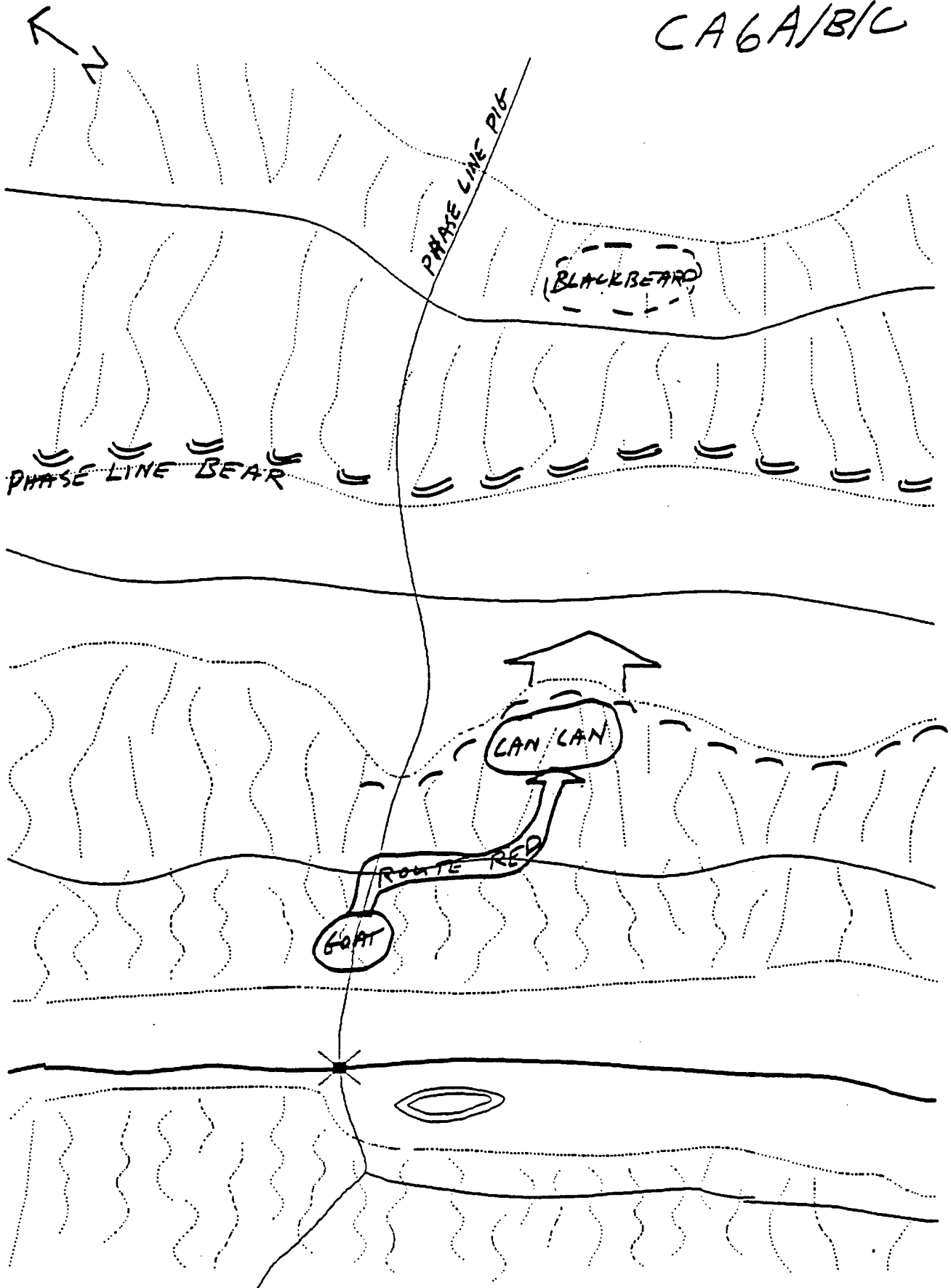
Concentrated artillery attack on enemy positions along phase line Bear beginning at 1700.

Fires shifting to "Blackbeard" on order.

Move via convoy over route Red into attack position "Can Can", now occupied by the third battalion (SP 1230).

Attack, with three company teams abreast, at 1700, to seize and occupy "Blackbeard".

CA 6A/B/C



SCENARIO NUMBER SEVEN

BACKGROUND

As a result of assistance in freeing Western hostages and other overtures to improve relations, the United States freed up most of the Iranian assets frozen during the early 1980's. Unfortunately, soon after the assets were released, militant Ayatollah's gained control of the country. Most of the new assets were used to strengthen the military and to sponsor terrorist activities to renew the Islamic Revolution. High level intelligence sources indicate that the Iranians are planning an air attack on the oil storage tanks and oil exporting facilities at Ras Tanura, on the East coast of Saudia Arabia. This is the collecting point for all oil exported by Saudia Arabia. Loss of this facility would cripple the world economy by creating an energy crisis in several Western countries, including the United States, and in Japan. Additionally, the Iranians have targeted Americans for terrorist attacks. Hard evidence links the Iranian government with terrorist attacks which have claimed the lives of 15 Americans in the last 3 months and they are suspected on several other attacks. As a result of this terrorist activity and requests for action by Saudia Arabia and Isreal, the United States initiated a preemptive attack to neutralize Iranian airfields and to eliminate terrorist training facilities in Iran.

SITUATION

Your battalion is part of a task force designated to capture a relatively small civilian airfield in Southern Iran. The airfield itself has little tactical significance except that it is only 16 kilometers from a terrorist training camp. Plans are to use the airfield as a staging area for operations in the area. Also, capture of the airfield will prevent terrorists from using it as an escape route. Assets are available to conduct either an airborne or an air mobile operation or a combination.

MISSION

Conduct an airmobile/airborne assault on target airfield, secure and hold, prepare to continue attack, on order, to seize terrorist camp. Airfield is to be secured within 36 hours. (NOTE: The time is now 1000.)

ENEMY

Opposing forces in the target area consist primarily of local militia and armed civilian populace. Weapons consist primarily of small arms with no more than a handful of automatic weapons. No significant radar or antiaircraft capabilities are believed to exist.

TERRAIN

Semiarid mountainous terrain. Small town adjacent to airfield. Airfield consists of one East-West runway approximately 4000' x 60' paved with 1000' dirt overrun on each end. There is no paved taxiway but clear flat desert extends for approximately 300' each side of the runway and there is a 400' x 200' parking apron located 100' off the runway near midfield (North side). The Town near the airfield is estimated to have 200-300 one/two story buildings with a population of less than 1000. Scrub type vegetation, small tree (3' - 5'), rocky rough terrain with scattered larger trees surround the airfield area and town. There is one 2 lane North-South road through the town and several dirt trails. There are high (8000') mountains to the East and North of the town. The terrorist training camp is located in extremely mountainous terrain East/North-East of the town. The weather is generally clear with Westerly winds of 10-15 knots gusting to 20 knots with blowing sand and dust. Temperature 70-95 degrees (F). BMNT - 0605 EENT - 1848.

TROOPS AVAILABLE

Troops available include: 2 Ranger Battalions, 1 Airborne Battalion, 2 Airmobile Battalions, 1 Signal Battalions, 1 Engineer Battalion, 1 Medium Helicopter Battalion, 1 Air Cavalry Squadron, 1 Combat Aviation Battalion, and 1 Attack Helicopter Battalion. All troops are well trained, well equipped, and fresh. Few have combat experience, none are familiar with this terrain but most have trained in similar terrain. Morale is high. C-130 support is available for airlift/airdrop of troops, equipment or supplies. Naval gunfire and naval close air support are readily available. U.S. air attacks and naval gunfire have effectively eliminated the opposing force's aviation assets. All of these assets are available to support this high priority mission, however, only the resources required should be committed.

TIME

Time is now 1000 hours. 36 hours are available to plan and conduct this operation.

REQUIREMENT

The Task Force Commander has asked you and other unit commanders involved in the operation to aid him in reviewing and evaluating the courses of action suggested by his staff.

Select the course of action with the greatest probability of accomplishing the mission.

SCENARIO NUMBER SEVEN

COURSE OF ACTION A

Conduct an early morning (0605 takeoff) airborne operation consisting of a one battalion drop from C-130's using target airfield as drop zone.

After airfield perimeter has been secured and opposition, if any, has been overcome, use Medium Helicopter Battalion and Combat Aviation Battalion Assets to transport remaining 2 Infantry Battalions to airstrip to expand and reinforce perimeter.

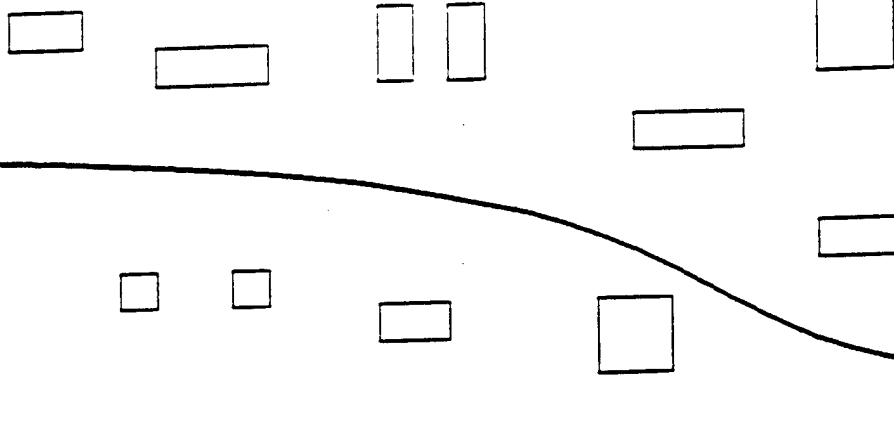
Note: Friendly Task Force is currently located approximately 75 km. southwest of objective area (target airfield).

NOT TO SCALE

LANDING ZONE/DROP ZONE
AREA IS APPROXIMATELY 2 KM. X 3 KM.

↑
N

CA 7A/B/C



SCENARIO NUMBER SEVEN

COURSE OF ACTION B

Conduct early morning (0605 liftoff) airmobile operation using airfield area as landing zone, with initial air assault lift made using aviation battalion assets and follow on lifts made using medium helicopters.

Air Cavalry troop to escort each lift and to provide screening between airfield and town.

Follow on supplies and equipment to be delivered by C-130 after area is secured.

No restrictions on use of radio's.

Airmobile movements conducted at or above 1000' above ground level (AGL) until within sight of landing zone (objective airfield).

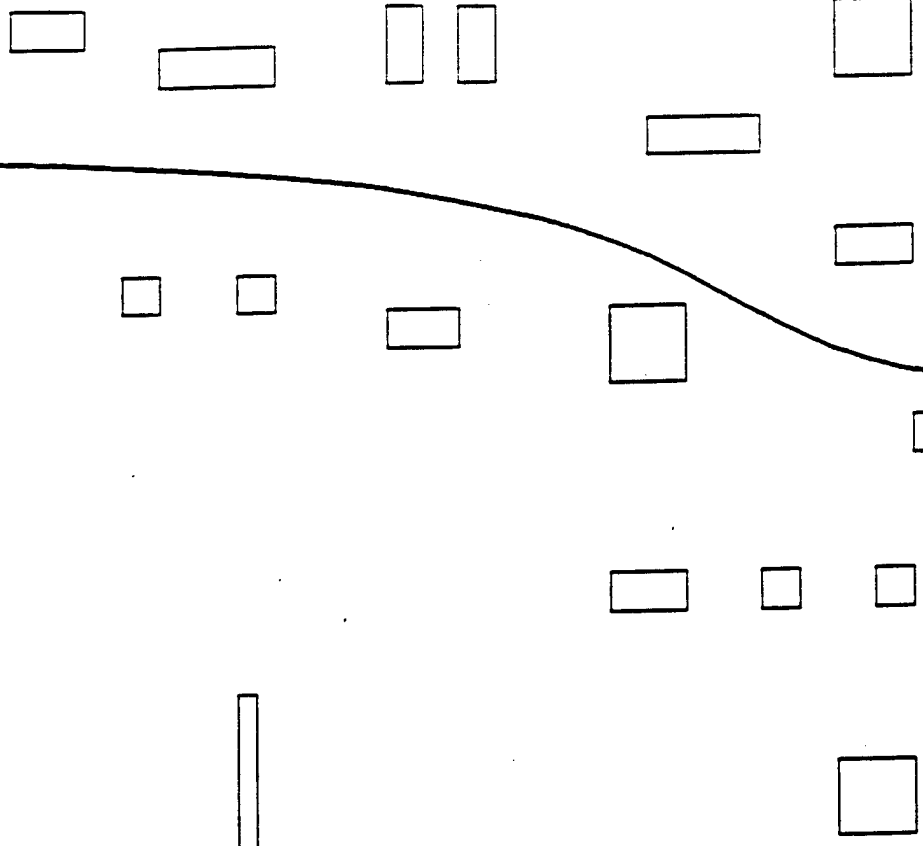
Air Cavalry elements operate at or above 500' AGL until within 5 nm of landing zone, then no restrictions.

NOTE: Friendly task force is currently located approximately 75 km. southwest of objective area (airfield).

NOT TO SCALE
LANDING ZONE/DROP ZONE
AREA IS APPROXIMATELY 2 KM. X 3 KM.

↑
N

CA 7A/B/C



SCENARIO NUMBER SEVEN

COURSE OF ACTION C

Conduct night (0300 liftoff) airmobile operation using airfield area as landing zone, with initial air assault lift made using aviation battalion assets and follow on lifts made using medium helicopters.

Air Cavalry troop to escort each lift and to provide screening between airfield and town.

Follow on supplies and equipment to be delivered by C-130 after area is secured.

Radio silence until first troops are on the ground or until fire is received.

Airmobile movements conducted at 500' above ground level (AGL) until 5 nm from LZ, then descend to 200' AGL.

Air Cavalry elements operate below 200' AGL within 5 nm of landing zone.

NOTE: Friendly task force is currently located approximately 75 km. southwest of objective area (airfield).

NOT TO SCALE

LANDING ZONE/DROP ZONE
AREA IS APPROXIMATELY 2 KM. X 3 KM.

↑
N

CA 7A/B/C



SCENARIO NUMBER EIGHT

BACKGROUND

As a result of assistance in freeing Western hostages and other overtures to improve relations, the United States freed up most of the Iranian assets frozen during the early 1980's. Unfortunately, soon after the assets were released, militant Ayatollah's gained control of the country. Most of the new assets were used to strengthen the military and to sponsor terrorist activities to renew the Islamic Revolution. High level intelligence sources indicate that the Iranians are planning an air attack on the oil storage tanks and oil exporting facilities at Ras Tanura, on the East coast of Saudia Arabia. This is the collecting point for all oil exported by Saudia Arabia. Loss of this facility would cripple the world economy by creating an energy crisis in several Western countries, including the United States, and in Japan. Additionally, the Iranians have targeted Americans for terrorist attacks. Hard evidence links the Iranian government with terrorist attacks which have claimed the lives of 15 Americans in the last 3 months and they are suspected on several other attacks. As a result of this terrorist activity and requests for action by Saudia Arabia and Isreal, the United States initiated a preemptive attack to neutralize Iranian airfields and to eliminate terrorist training facilities in Iran.

SITUATION (Continued from Scenario Number Seven)

You successfully captured the airfield with minimum resistance and very light casualties. A FARP has been established. Local security is being provided by the Airmobile Battalion. Two Ranger Battalions, an Engineer Company, Two Aviation Companies, a Medium Helicopter Company, and an Air Cavalry Troop are located in the vicinity of the airfield.

MISSION

Conduct a deliberate attack/raid on the terrorist camp and capture Abdul Hassan Al-Yami and other members of his terrorist group. Commence the attack within 24 hours. (NOTE: The time is now 1000.)

ENEMY

This fanatical band of terrorists is believed to be the most ruthless on Earth. They are heavily armed with automatic weapons and explosives but are not believed to have any crew served weapons, antiarmor, or anti aircraft capabilities. They have relied primarily on secrecy and the remoteness of their hideout for security. The attack on Iran and on other terrorist camps were anticipated, but this elite band felt secure in their

mountain hideout. Access to the camp, primarily hidden in caves, is extremely limited, but there are few escape routes. Only about 30 terrorists are believed to be in this camp but they are considered to be extremely dangerous and unpredictable. There is a small mountain village only 5 kilometers from the camp. The families of the terrorists are believed to live in this village and the entire populace should be considered hostile. Weapons consist primarily of small arms with no more than a handful of automatic weapons. No significant radar or antiaircraft capabilities are believed to exist. For political reasons, the terrorists, especially Al-Yami, are to be captured alive if possible. Artillery and air strikes are not to be used against the town. The town is estimated to have a population of approximately 600 with no more than 120 adult males. Intelligence indicates that the terrorists are in the mountain retreat, apparently still confident that the U.S. Forces do not know their location. They have few options at this point.

TERRAIN

Semiarid mountainous terrain. There are high (8000') mountains to the East and North of the target. The terrorist training camp is located in extremely mountainous terrain at about the 6000' level. The weather is generally clear with Westerly winds of 10-15 knots gusting to 20 knots. Temperature 60-85 degrees (F).
BMNT - 0603 EENT - 1849.

TROOPS AVAILABLE

Troops available include: 2 Ranger Battalions, 1 Airmobile Battalion, 1 Signal Detachment, 1 Engineer Company, 1 Medium Helicopter Company, 2 Combat Aviation Companies, and 1 Air Cavalry Troop. All troops are well trained, well equipped, and relatively well rested, except for the security force. Few have combat experience, none are familiar with this terrain but most have trained in similar terrain. Morale is high. U.S. has virtually total air superiority.

TIME

Time is now 1000 hours. 24 hours are available to plan and conduct this operation.

REQUIREMENT

The Task Force Commander has asked you and other unit commanders involved in the operation to aid him in reviewing and evaluating the courses of action suggested by his staff.

Select the course of action with the greatest probability of accomplishing the mission.

SCENARIO NUMBER EIGHT

COURSE OF ACTION A

Conduct an airmobile operation to airlift 2 Ranger Battalions to seize, seal, and search the small town (Bad Kobar) near the terrorist camp. Because of the mountainous terrain, no real landing zones are available. Even though single aircraft may find scattered areas allowing touchdown or low hover, most troops will have to rappel.

Liftoff of initial lift is at 1200 hrs. Multiple lifts may be required but objective area is only approximately 7 miles from airfield.

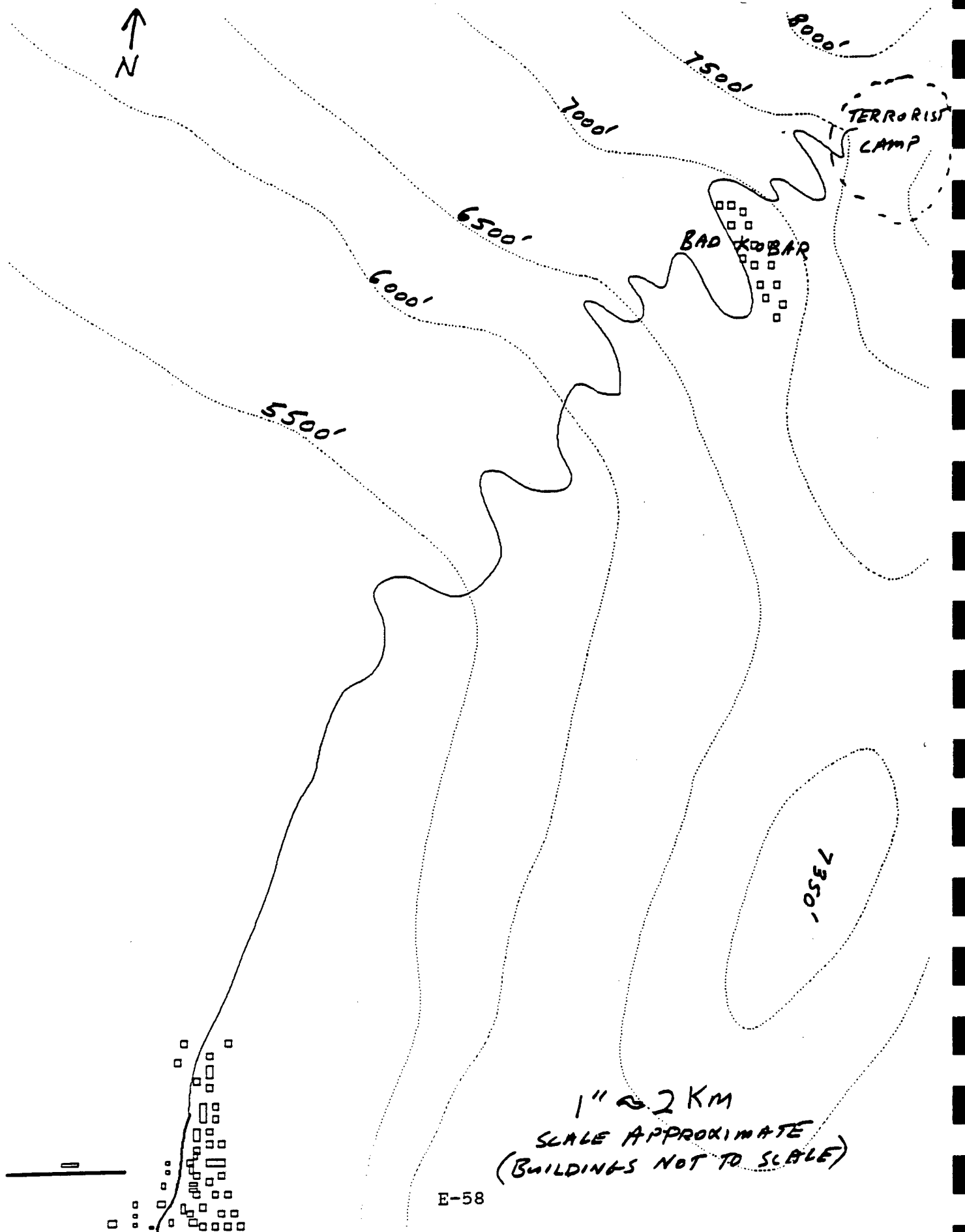
Air Cavalry troop provides escort and screening.

Priority task is to seal all possible escape routes, then to systematically search the town, disarm population, and to capture any terrorists or suspected terrorists in the town.

After town has been seized, searched, and sealed, one Ranger battalion continues to terrorist camp, sealing all escape routes and systematically searching the caves that house the terrorists, capturing Abdul Hassan Al-Yami and other members of his group.

This operation may take several hours and may continue through the night.

Air Cavalry units will screen possible escape routes, especially those above (north and east) of the terrorist camp.



SCENARIO NUMBER EIGHT

COURSE OF ACTION B

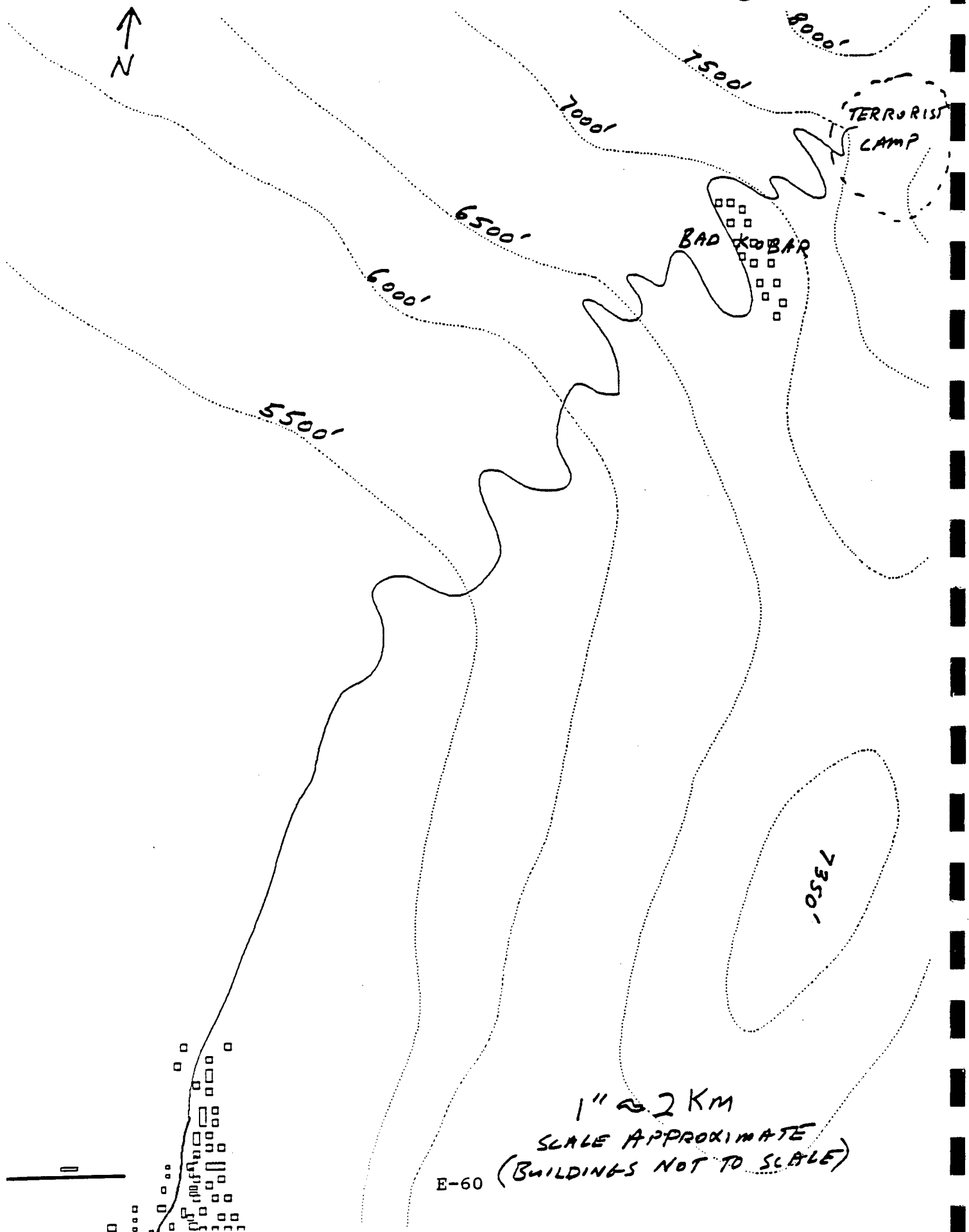
2 Ranger Battalions depart, dismounted, at 1200 hrs., to seize, seal, and search the small town (Bad Kobar) near the terrorist camp.

Priority task is to seal all possible escape routes, then to systematically search the town, disarm population, and to capture any terrorists or suspected terrorists in the town.

After town has been seized, searched, and sealed, one Ranger battalion continues to terrorist camp, sealing all escape routes and systematically searching the caves that house the terrorists, capturing Abdul Hassan Al-Yami and other members of his group.

This operation may take several hours and may continue through the night.

On order, Air Cavalry units will screen possible escape routes, especially those above (north and east) of the terrorist camp.



SCENARIO NUMBER EIGHT

COURSE OF ACTION C

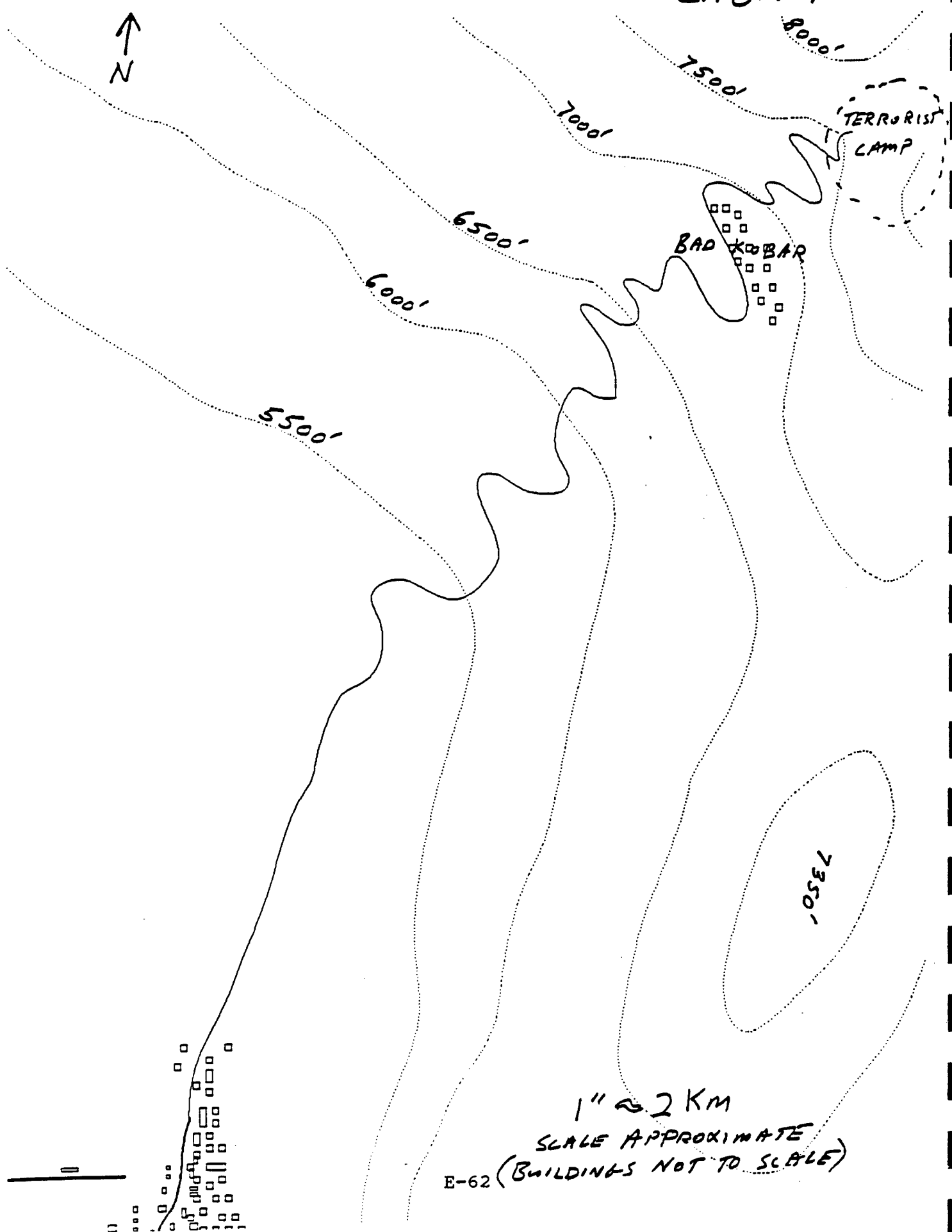
2 Ranger Battalions depart, dismounted, at 2000 hrs., to seize, seal, and search the small town (Bad Kobar) near the terrorist camp.

Priority task is to seal all possible escape routes, then to systematically search the town, disarm population, and to capture any terrorists or suspected terrorists in the town.

After town has been seized, searched, and sealed, one Ranger battalion continues to terrorist camp, sealing all escape routes and systematically searching the caves that house the terrorists, capturing Abdul Hassan Al-Yami and other members of his group.

This operation may take several hours and may continue through the night.

On order, Air Cavalry units will screen possible escape routes, especially those above (north and east) of the terrorist camp.



1" ≈ 2 KM
SCALE APPROXIMATE
E-62 (BUILDINGS NOT TO SCALE)

SCENARIO NUMBER NINE

BACKGROUND

For several years, drug lords in a South American country have been conducting an undeclared war against law enforcement officials and the judicial system. Recently, this war has escalated to the point that the President of the country, after surviving an attack on his life in which several members of his family were injured, asked for direct military aid from the United States.

SITUATION

U. S. Forces have landed and established a base of operations at and near a major airport in the Capital City. Opposing forces have fled to rural strongholds but have not had the opportunity to leave the area due to a naval and air blockade and extensive efforts to seal off borders and known escape routes. You are the commander of the Air Cavalry Squadron assigned to the U. S. Task Force.

Local drug enforcement officials have identified four suspected locations within your area of operations and have prioritized them with suspected location (SL) 1 being the most likely location and SL4 being the least likely location to be occupied. The drug lord (Big Slimeball) is believed to have all of his forces at one location.

Rules of engagement are to fire only at positively identified targets and then only if fired upon or to prevent the enemy from fleeing.

MISSION

Conduct a night reconnaissance in force to locate and fix the drug lord (Big Slimeball) and his armed mercenaries. (Time is now 1600 hrs.)

ENEMY

The armed forces of the drug lords are armed with state-of-the-art automatic weapons, explosives, and communications equipment. They are generally extremely well trained, combat seasoned soldiers of fortune from all over the world, supplemented by well armed locals. Their numbers and resources are adequate to conduct terrorist type attacks and to intimidate the local population, however they generally lack the weaponry to engage conventional forces in pitched battles.

TERRAIN

Varies from relatively open rolling terrain to mountainous rain forests and urban settings, ranging from small villages to modern cities. The specific area of this mission includes primarily sparsely populated foothills with open pasture land, coffee plantations, and small towns. The area of operations is approximately 40 miles by 200 miles and is bordered by a river on the south and a main highway on the north, with several secondary roads generally paralleling these terrain features. (Your current location is just south of the main highway which runs along the northern edge of the AO, approximately midway between the eastern and western boundaries of your area of operations.)
Weather: Generally clear with heavy, locally isolated thundershowers in the afternoon. Temperature 60 - 95 (F). BMNT - 0630 EENT - 1755. Fog develops in low areas at night. Moon is almost full and offers good natural illumination.

TROOPS AVAILABLE

Air Cavalry Squadron is at full strength, well equipped and relatively well trained. Virtually no combat experience. 25% of pilots have less than 500 hours and less than 100 hours of night flying time. All have at least limited experience with night vision goggles. The squadron has lost 3 aircraft and 4 pilots to night flying accidents in the last 120 days.

Local drug enforcement agents are available to identify the four separate suspected locations within the area of operations and to serve as interpreters. They are generally capable of identifying key personnel within the drug organizations and of locating suspected locations from the air. 6 agents are available.

TIME

The time is now 1600. You are to continue operations until Big Slimeball is located, or until 0700.

REQUIREMENT

Your staff has proposed three different courses of action. You are to select the course of action which provides the greatest probability of mission success.

SCENARIO NUMBER NINE

COURSE OF ACTION A

Launch all three Air Cavalry Troops at 1900 hrs. (Order of takeoff: A, B, C) with A Troop proceeding to SL1, B Troop proceeding to SL2 and then, if necessary, to SL4, and C Troop proceeding to SL3.

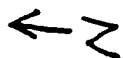
Proceed by most direct route at altitude not to exceed 200' above ground level. Maintain radio silence until over SL.

Once Big Slimeball has been located, other troops return to airport to refuel and standby to relieve or reinforce on order.

If no contact is made in any of the SL's, Troop A will conduct reconnaissance of area bordered by PL's YELLOW, ORANGE, BLUE, AND GREEN, moving from east to west. Troop B will conduct reconnaissance of area bordered by PL's RED, YELLOW, BLUE, AND GREEN, moving from west to east. Troop C will search area bordered by PL's RED, ORANGE, PURPLE, AND GREEN, moving from west to east.

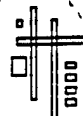
Troop commanders will manage resources to provide continuous reconnaissance (provisions for refueling/relief on station as required).

CA 9A/B/C



1" ≈ 20 MILES
(SCALE APPROXIMATE)

CAPITAL
CITY



AIRPORT
(NOT TO SCALE)

RED

YELLOW

BLUE

ORANGE

GREEN

PURPLE

1

3

2

4

E-66

SCENARIO NUMBER NINE

COURSE OF ACTION B

Launch A Troop at 1900 to proceed to SL 1 along a route generally south along PL GREEN and then east along PL ORANGE.

Launch B Troop at 1915 to proceed to SL 2 along a route generally south along PL GREEN and then west along PL YELLOW.

Troop C will remain on strip alert to relieve/reinforce troop making contact.

If Big Slimeball is not located in SL 1, Troop A will proceed by most direct route to SL 3.

If Big Slimeball is not located in SL 2, Troop B will proceed by most direct route to SL4.

Once Big Slimeball has been located, other troops return to airport to refuel and standby to relieve or reinforce on order.

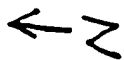
If no contact is made in any of the SL's, Troop A will return to base airport to refuel and remain on strip alert. Troop C will conduct reconnaissance of area bordered by PL's RED, ORANGE, BLUE, AND GREEN, moving from east to west. Troop B will search area bordered by PL's RED, ORANGE, PURPLE, AND GREEN, moving from west to east. Troop C will then relieve Troop B on order.

Troop commanders will manage resources to provide continuous reconnaissance (provisions for refueling/relief on station as required).

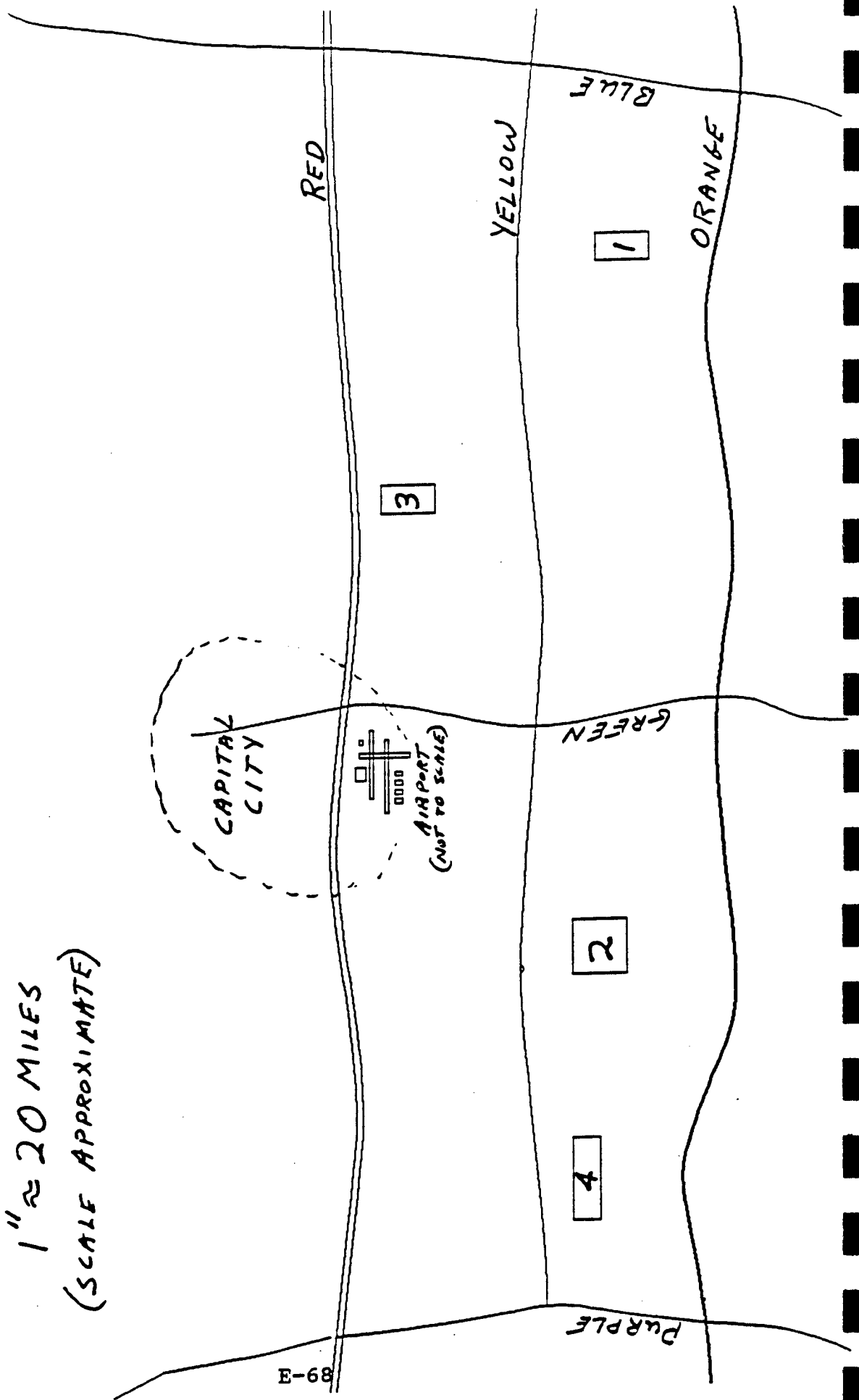
All movements will be made at or above 500' above ground level (AGL) except for scouts which will lead formations at 200'AGL. Movements will be monitored and courses altered if necessary by a command and control aircraft from each troop operating at or above 1000'AGL. These restrictions apply to movements between the airport and the Suspected Locations. Searches and actions over the SL's will be as specified in Operations Order and SOP's.

During movements, radio transmissions will be made by command and control ship only and will consist of essential route corrections and position reports as outlined in Op Order. Radio restrictions lifted on contact and over SL's.

CA 9A/B/C



1" ≈ 20 MILES
(SCALE APPROXIMATE)



SCENARIO NUMBER NINE

COURSE OF ACTION C

Launch A Troop at 0100 to proceed to SL 1 along a route generally south along PL GREEN and then east along PL ORANGE.

Launch B Troop at 0200 to proceed to SL 2 along a route generally south along PL GREEN and then west along PL YELLOW.

Troop C will remain on strip alert to relieve/reinforce troop making contact.

If Big Slimeball is not located in SL 1, Troop A will proceed by most direct route to SL 3.

If Big Slimeball is not located in SL 2, Troop B will proceed by most direct route to SL4.

Once Big Slimeball has been located, other troops return to airport to refuel and standby to relieve or reinforce on order.

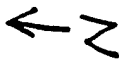
If no contact is made in any of the SL's, Troop A will return to base airport to refuel and remain on strip alert. Troop C will conduct reconnaissance of area bordered by PL's RED, ORANGE, BLUE, AND GREEN, moving from east to west. Troop B will search area bordered by PL's RED, ORANGE, PURPLE, AND GREEN, moving from west to east. Troop C will then relieve Troop B on order.

Troop commanders will manage resources to provide continuous reconnaissance (provisions for refueling/relief on station as required).

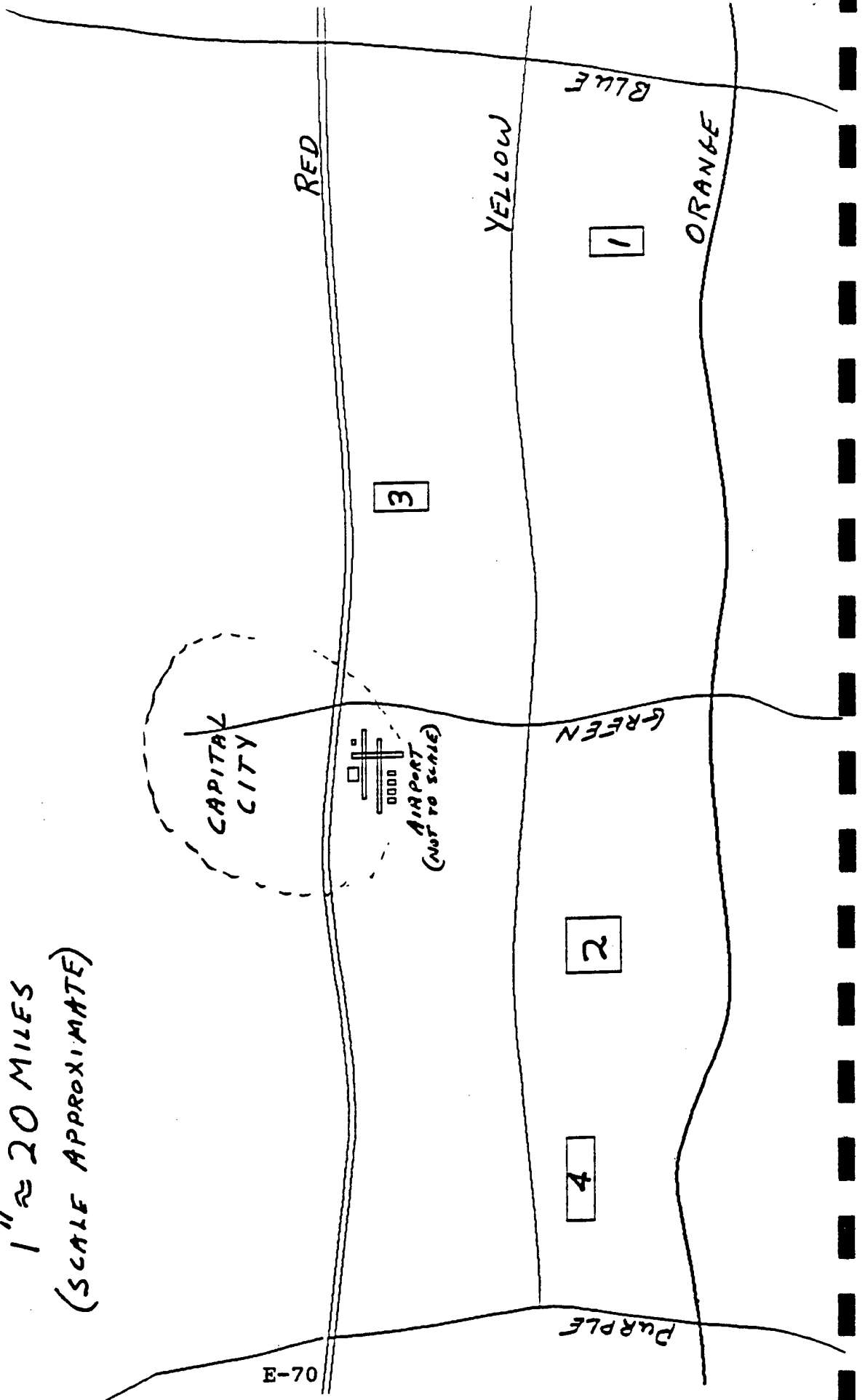
All movements will be made at or below 200' above ground level (AGL). These restrictions apply to movements between the airport and the Suspected Locations. Searches and actions over the SL's will be as specified in Operations Order and SOP's.

During movements, radio silence will be maintained. Radio silence lifted on contact and over SL's.

CA 9A/B/C



1" ≈ 20 MILES
(SCALE APPROXIMATE)



SCENARIO NUMBER TEN

BACKGROUND

For several years, drug lords in a South American country have been conducting an undeclared war against law enforcement officials and the judicial system. Recently, this has escalated to the point that the President of the country, after surviving an attack on his life in which several members of his family were injured, asked for direct military aid from the United States.

SITUATION (Continued from Scenario Number Nine)

U. S. Forces have landed and established a base of operations in the Capital City. Opposing forces have fled to rural strongholds but have not had the opportunity to leave the area due to a naval and air blockade and extensive efforts to seal off borders and known escape routes. You are the commander of the Cavalry Squadron assigned to the U. S. Task Force. The Air Cavalry Squadron has located a major drug dealer at a suspected stronghold only 30 miles from the airport (your location). The squadron has cut off escape routes and has the area isolated. The area of containment is approximately two miles wide by six miles long with a village of approximately 90 houses at one end of the area. The Air Cavalry Squadron commander is confident of his ability to keep the area sealed for up to three hours by using all available assets. The proximity of refueling/rearming facilities makes relief on station relatively easy, however, all pilots have already violated crew rest requirements. Several bursts of automatic weapons fire have been received from a ranch house just south of the village (Scum Ranch). Two scout helicopters have received minor damage.

MISSION

Conduct a hasty attack, including an attack of the urban area, to eliminate or capture the opposing force. Attack to begin NLT 0630. (NOTE: The time is now 0400.)

ENEMY

The armed forces of the drug lords are armed with state-of-the-art automatic weapons, explosives, and communications equipment. They are generally extremely well trained, combat seasoned soldiers of fortune from all over the world, supplemented by well armed locals. Their numbers and resources are adequate to conduct terrorist type attacks and to intimidate the local population, however they generally lack the weaponry to engage conventional forces in pitched battles. This particular drug lord is reported to employ over 100 mercenaries and may have

another 50 armed "employees" or sympathizers in the area.

TERRAIN

The area consists primarily of the small village and a large hilltop ranch complex with up to 20 buildings. It is believed to have interconnecting underground passages between some of the larger buildings on the ranch complex. The boundaries of the area are well defined by open areas which provide good observation and fields of fire, making it possible to contain the opposing force, especially on three sides, with relatively few troops and/or with aviation assets. The most likely escape routes would be out of the village. Even these routes would require crossing a main road and several hundred feet of relatively open terrain. The first ten miles of your route out of the airport area is though a congested business area.

Weather: Generally clear with heavy, locally isolated thundershowers in the afternoon. Temperature 60 - 95 (F). BMNT - 0630 EENT - 1755. Fog develops in low areas at night.

TROOPS AVAILABLE

Cavalry Squadron is at full strength, well equipped and relatively well trained. Virtually no combat experience. An Attack Helicopter Company is OPCON for this operation and a mechanized infantry company is attached.

TIME

The time is now 0400. You and your supporting units were briefed on this operation at 1600 hours yesterday and issued a warning order to be prepared to move within 30 minutes. Even though allowed to sleep, troops are located adjacent to their vehicles/aircraft and vehicles/aircraft are combat loaded.

REQUIREMENT

Your staff has proposed three different courses of action. You are to select the course of action which provides the greatest probability of mission success.

SCENARIO NUMBER TEN

COURSE OF ACTION A

Depart airport via main highway, in convoy, at 0430. Order of March: A Troop, B Troop, Mech Inf, C Troop. D troop provide one scout section escort for convoy.

RP at 0530.

A Troop continue south on road from RP, deploying along road and establishing Check Points at COW and BULL, turning back traffic at COW and BULL to seal area.

B Troop continue on road east from RP through Dopeville, establishing a check point at HORSE and deploying in the woodline south from HORSE to DEER.

Mech Inf and C Troop deploy in open area north of Dopeville between COW and HORSE.

Troops in position by 0600.

D Troop and Attack Helicopters depart airport at 0600.

D Troop screens north edge of area between COW and HORSE and provides support on order to Mech Inf/C Troop.

Attack Helicopters Screen south portion of AO between DEER and BULL and provides support on order to A and/or B Troops.

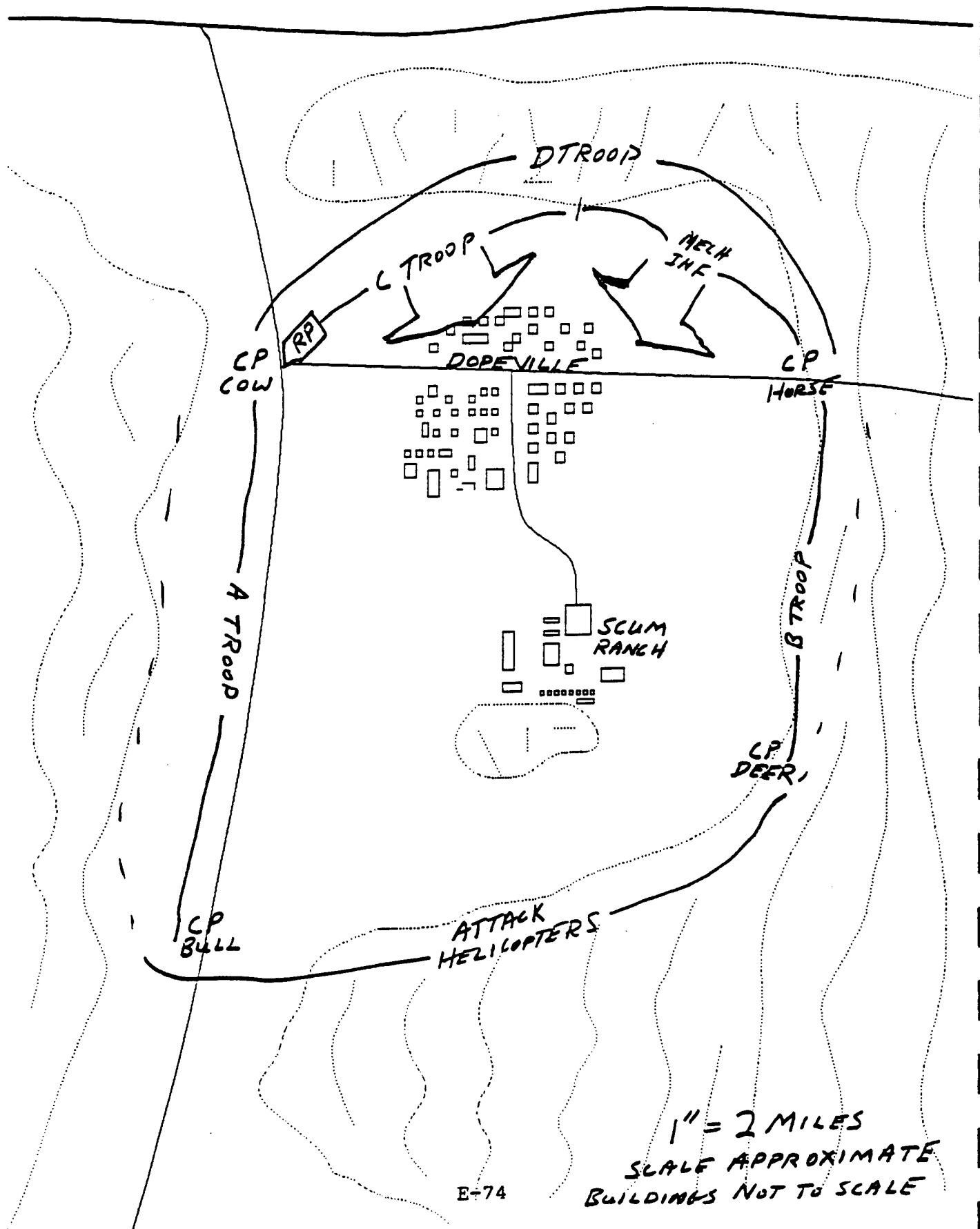
Air Cavalry Squadron released as soon as D Troop and Attack Helicopters are on station.

Aviation unit commanders manage resources to insure continuous coverage (plan refueling and relief on station).

At 0630, Mech Inf/ C Troop task force, supported by D Troop, begins north to south assault through Dopeville, conducting house to house search, and continues to capture and search Scum Ranch, capturing or killing Big Slimeball and his supporters.

A Troop, B Troop and Attack Helicopters seal east, south, and west flanks and capture or attack persons trying to escape the area.

CA 10A



SCENARIO NUMBER TEN

COURSE OF ACTION B

Depart airport via main highway, in convoy, at 0430. Order of March: A Troop, B Troop, Mech Inf, C Troop.

RP at 0530.

A Troop continue south on Route RED from RP, deploying in woodline west of road.

B Troop continue on Route White, east from RP the south and finally west, deploying in the woodline south of the target area.

Mech Inf and C Troop follow B Troop along Route White, with C Troop deploying in the woodline on the east side of the target area and the Mech Inf Co deploying in the woodline to the north.

Troops in position by 0630.

D Troop and Attack Helicopters depart airport at 0615.

D Troop screens north edge of area and provides support on order to Mech Inf/C Troop.

Attack Helicopters Screen south portion of AO and provide support on order to A and/or B Troops.

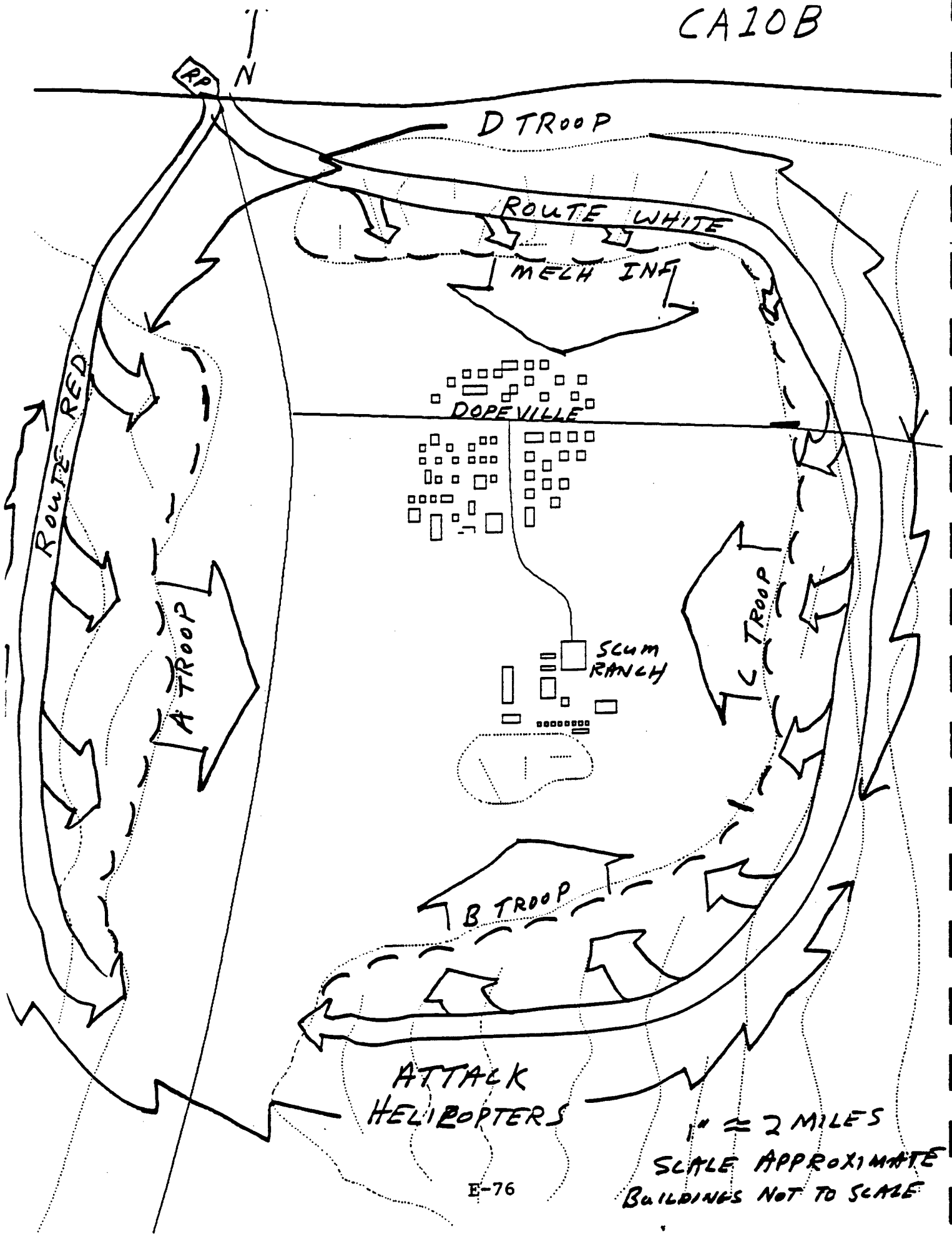
Air Cavalry Squadron released as soon as D Troop and Attack Helicopters are on station.

Aviation unit commanders manage resources to insure continuous coverage (plan refueling and relief on station).

At 0630, All forces advance to form tight, sealed perimeter around Dopeville and Ranch buildings, demanding the surrender of Big Slimeball and his supporters.

If necessary, troops continue advance, making house to house search to capture or attack enemy force.

CA10B



SCENARIO NUMBER TEN

COURSE OF ACTION C

Depart airport via main highway, in convoy, at 0430. Order of March: A Troop, B Troop, C Troop, Mech Inf. D troop provide one scout section escort for convoy.

RP at 0530.

A Troop continue east then south from RP on Route RED, deploying in woodline along eastern side of target area.

B Troop follow A Troop on Route RED, deploying in the woodline north of Dopeville.

C Troop continue south on road, turning east, and assaulting Scum Ranch from west to east, making a detailed search of buildings and underground tunnel complex.

Mech Inf continue south on road, turning east, coming on line, and assaulting Dopeville from west to east, making house to house searches to disarm the populace and capture Big Slimeball supporters.

A and B Troops in position by 0615.

D Troop and Attack Helicopters depart airport at 0600.

D Troop screens south edge of area and support Mech Inf and C Troop.

Attack Helicopters screen west, north, and east of AO and provide support on order to A and/or B Troops.

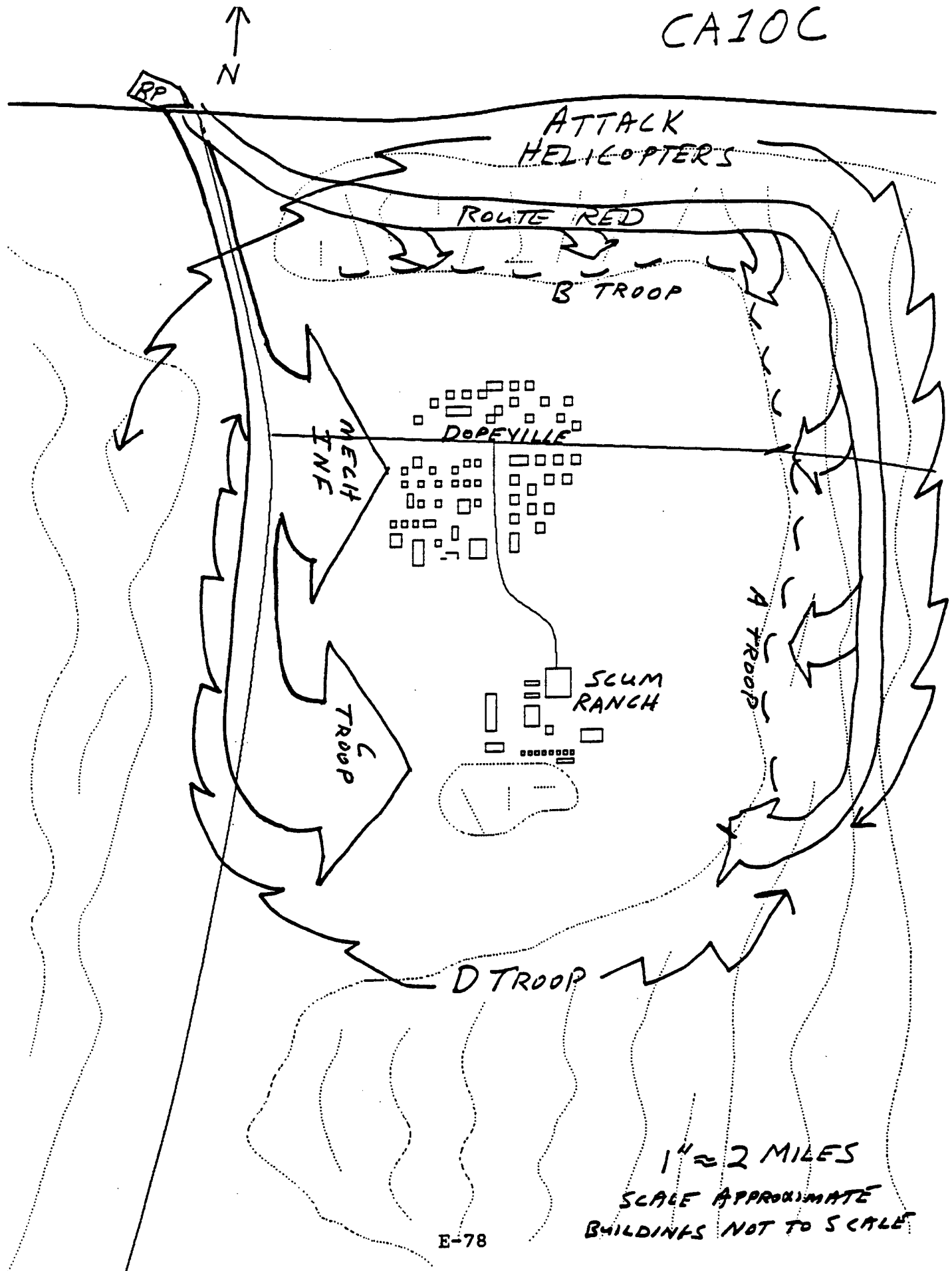
Air Cavalry Squadron released as soon as D Troop and Attack Helicopters are on station.

Aviation unit commanders manage resources to insure continuous coverage (plan refueling and relief on station).

At 0630, Mech Inf/ C Troop task force, supported by D Troop, begins west to east assault through Dopeville and Scum Ranch.

A Troop, B Troop and Attack Helicopters seal north and east flanks and capture or attack persons trying to escape the area.

CA10C



SCENARIO NUMBER ELEVEN

BACKGROUND

Despite bettering relations in Europe and other parts of the world, relations between North and South Korea have continued to deteriorate. However, domestic economic pressures in the U. S. and the political climate in Korea were such that 2/3's of the U. S. forces stationed in Korea were withdrawn. Within a month, North Korea crossed the 38th parallel with 4 divisions. U. S. forces are now aiding South Korean troops in establishing defensive positions and conducting delaying operations to "buy time" until U. S./U. N. reinforcements can arrive.

SITUATION

Opposing forces are making rapid progress to the South. Friendly forces are too thinly spread to halt the attack. One of the possible ways to slow the attack is believed to be an attack on headquarters and supply areas supporting the attack. You are the Ranger Battalion Commander, currently located approximately 5 miles behind the forward line of troops.

MISSION

Conduct a raid on the headquarters/logistics complex located approximately 25 miles behind enemy lines, near the main supply route. (NOTE: The time is now 1400.)

ENEMY

The enemy is believed to be near 100% strength and well supplied. Morale is high. The objective area is believed to contain Front headquarters (General Kim, Yung-Ik, and his staff) and large quantities of ammunition and fuel. There is an extensive network of air defenses protecting the position, but few combat ground troops.

TERRAIN

Generally mountainous, difficult terrain with road through valleys. Weather: Temperatures 10-40F. Forecase "clear" for the next 48 hours. BMNT 0744, EENT 1512. Full moon. There are no good drop zones of landing zones in the objective area and only a few small (one to three ship) landing zones within 5 miles of the area.

TROOPS AVAILABLE

The battalion's troops are well trained and well equipped, but

have suffered losses of approximately 10% during the past 13 days of withdrawals and delaying actions. Morale is beginning to decay. Maintenance is good but beginning to deteriorate as troops become more fatigued, more rapid movements are required, and supplies began to dwindle.

Assets are available for airmobile or airborne insertions.

Artillery and tactical air support are very limited, but you have priority for 1 air strike and have 1 battery of 155's in direct support.

TIME

The next 48 hours are critical to the survival of the force. The brigade commander wants the raid conducted within the next 18 hours. It is now 1400.

REQUIREMENT

You are the Ranger battalion commander. Based on the brigade frag order and your estimate, your staff has prepared three courses of action. You are to select the course of action which offers the greatest probability of successfully completing your mission.

SCENARIO NUMBER ELEVEN

COURSE OF ACTION A

Conduct a night, airmobile insertion into available landing zones approximately 4 to 5 miles from the target area, generally at higher elevations in unpopulated area, shielded by terrain from the target area's air defenses, attempting to land the battalion, in small groups and by rappelling if necessary, undetected.

Proceed, on foot, to the objective, launching a mortar attack and assault, destroying communications equipment, fuel and ammunition and senior commanders and staff and capturing as much intelligence data as possible, withdrawing after 1 hour, using escape and evade tactics and returning, in small groups, to the original drop sites.

(Note: One platoon size force will remain in the landing zone area to aid ground troops and aircraft in finding the landing zones and linking up for extraction. This force will also provide local security for the extraction and the landing zone area and will be the last troops withdrawn.)

Air mobile operation to be conducted using radio silence and nap-of-the-earth and low level flight.

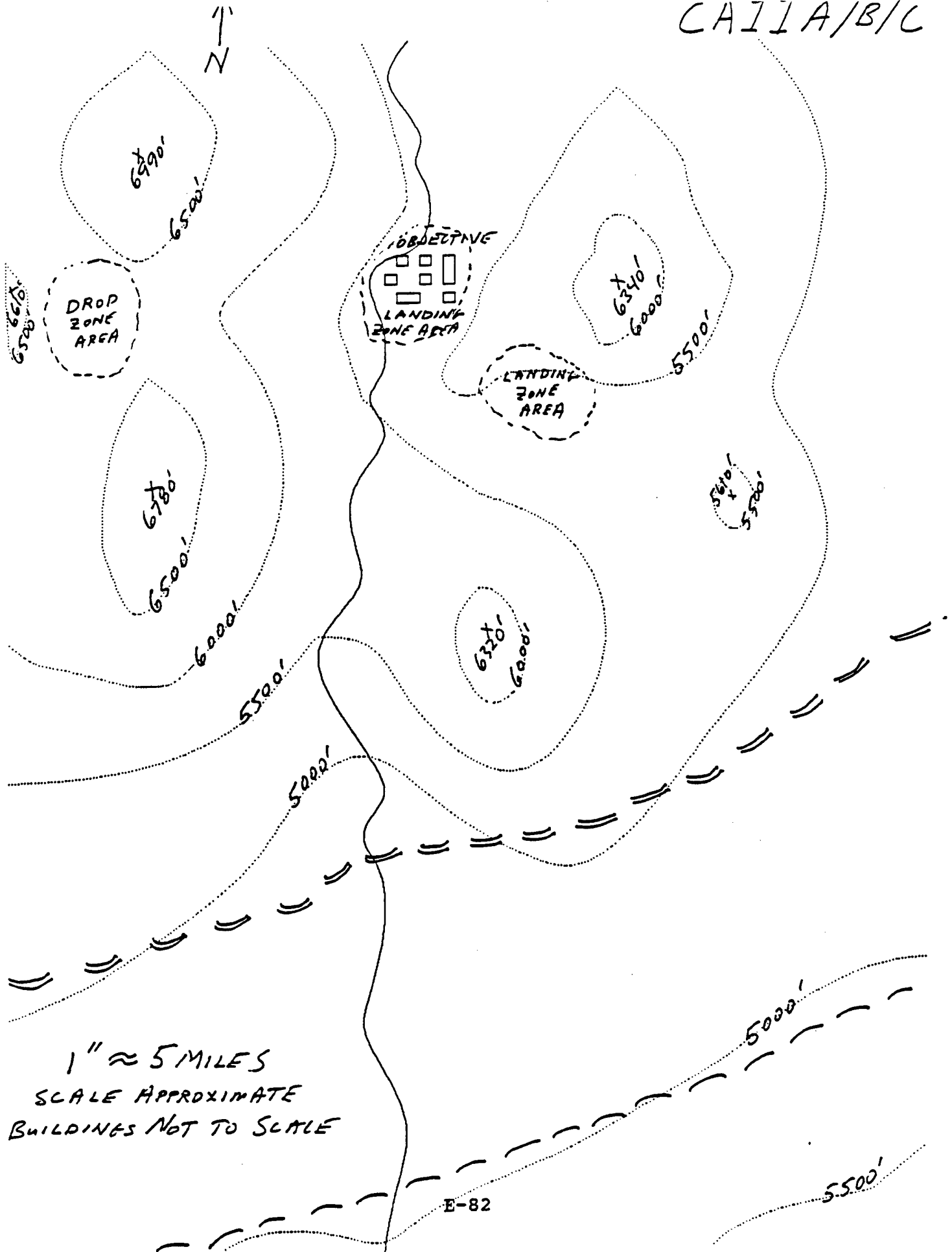
Artillery to be used at point of penetration of enemy lines, with continual (if necessary, intermittent) fires throughout the operation.

Air strike to be used immediately prior to initial penetration of airmobile force.

Timing of the operation as follows:

- 0005 Artillery begins attack on enemy lines at point of penetration. Airmobile force lifts off pick-up zone.
- 0015 Air Strike on enemy lines approximately 1 mile west of airmobile penetration point. Artillery switches to delay fuses and splits fires to create 100 meter corridor between fires. Airmobile force penetrates enemy positions.
- 0030 Troops land (or rappel) into landing zones and consolidate. Aircraft return to rearm and refuel via insertion route.
- 0230 Conduct raid (mortar attack and assault) on objective.
- 0330 Withdraw from objective area, escape and evade back to original landing zones.
- 0530 Aircraft return to landing zones via insertion routes and extract troops, returning via original routes.

CA11A/B/C



SCENARIO NUMBER ELEVEN

COURSE OF ACTION B

Conduct a night, airborne insertion into drop zone approximately 8 miles from the target area, at higher elevation in unpopulated area, shielded by terrain from the target area's air defenses. (Note: Company size DZ, requiring four separate passes to insert entire battalion.)

Proceed, on foot, to the objective, launching a mortar attack and assault, destroying communications equipment, fuel and ammunition and senior commanders and staff and capturing as much intelligence data as possible, withdrawing after 1 hour, using escape and evade tactics and returning, in small groups, to the original drop site.

Extraction will be by helicopter, using the original drop zone as the pick up zone.

(Note: One platoon size force will remain in the drop zone area to aid ground troops and aircraft in finding the pick up zone and linking up for extraction. This force will also provide local security for the extraction and the pick up zone area and will be the last troops withdrawn.)

Air mobile extraction to be conducted using radio silence and nap-of-the-earth and low level flight.

Artillery to be used at point of penetration of enemy lines, with continual (if necessary, intermittent) fires throughout the operation.

Air strike to be used immediately prior to initial penetration of airmobile force.

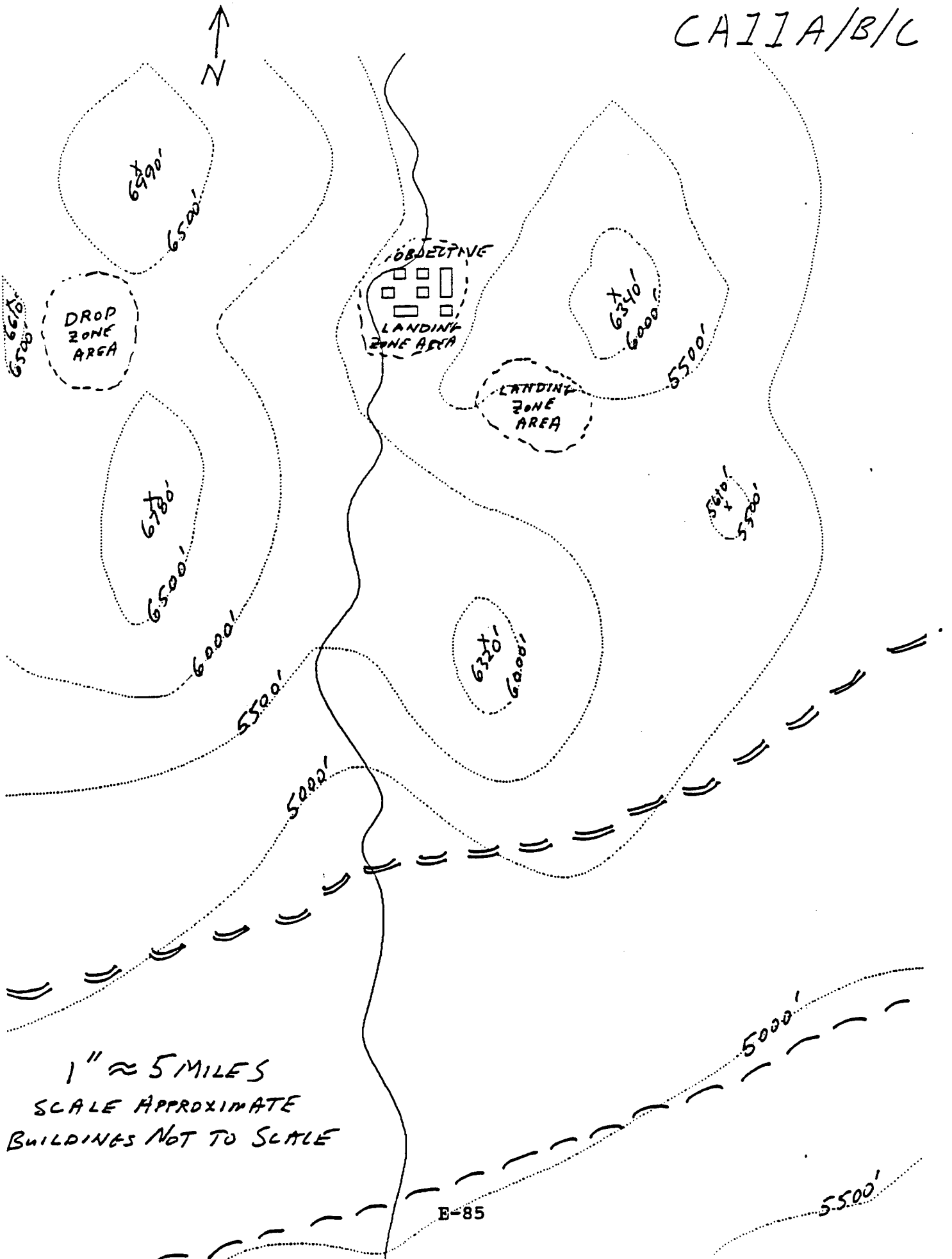
Timing of the operation as follows:

2200	Artillery begins attack on enemy lines at point of penetration. Airborne force takes off.
2220	Troops parachute into landing zones and consolidate.
0200	Conduct raid (mortar attack and assault) on objective.
0300	Withdraw from objective area, escape and evade back to original drop zone.
0600	Airmobile extraction force lifts off enroute to pick up zone. Artillery switches to delay fuse and splits fires to open 100 meter corridor for extraction aircraft.
0630	Aircraft extract Ranger battalion from pick up zone.

0630 Air attack on enemy lines at area of airmobile force
return. (Artillery ceases during air attack)

0645 Airmobile force returns to friendly lines via original
route.

CA11A/B/C



COURSE OF ACTION C

Conduct a night, airmobile assault of the objective, landing forces as near the objective as possible, with the assault to be preceded by an air strike on the objective area and its air defenses.

Destroy communications equipment, fuel and ammunition and senior commanders and staff and capture as much intelligence data as possible within 15 minute period, then return to aircraft for extraction.

Aircraft to land, hover, or circle as appropriate during the raid and support by fire using door guns, insuring that aircraft are at drop/pickup locations exactly 15 minutes after initial landing of troops.

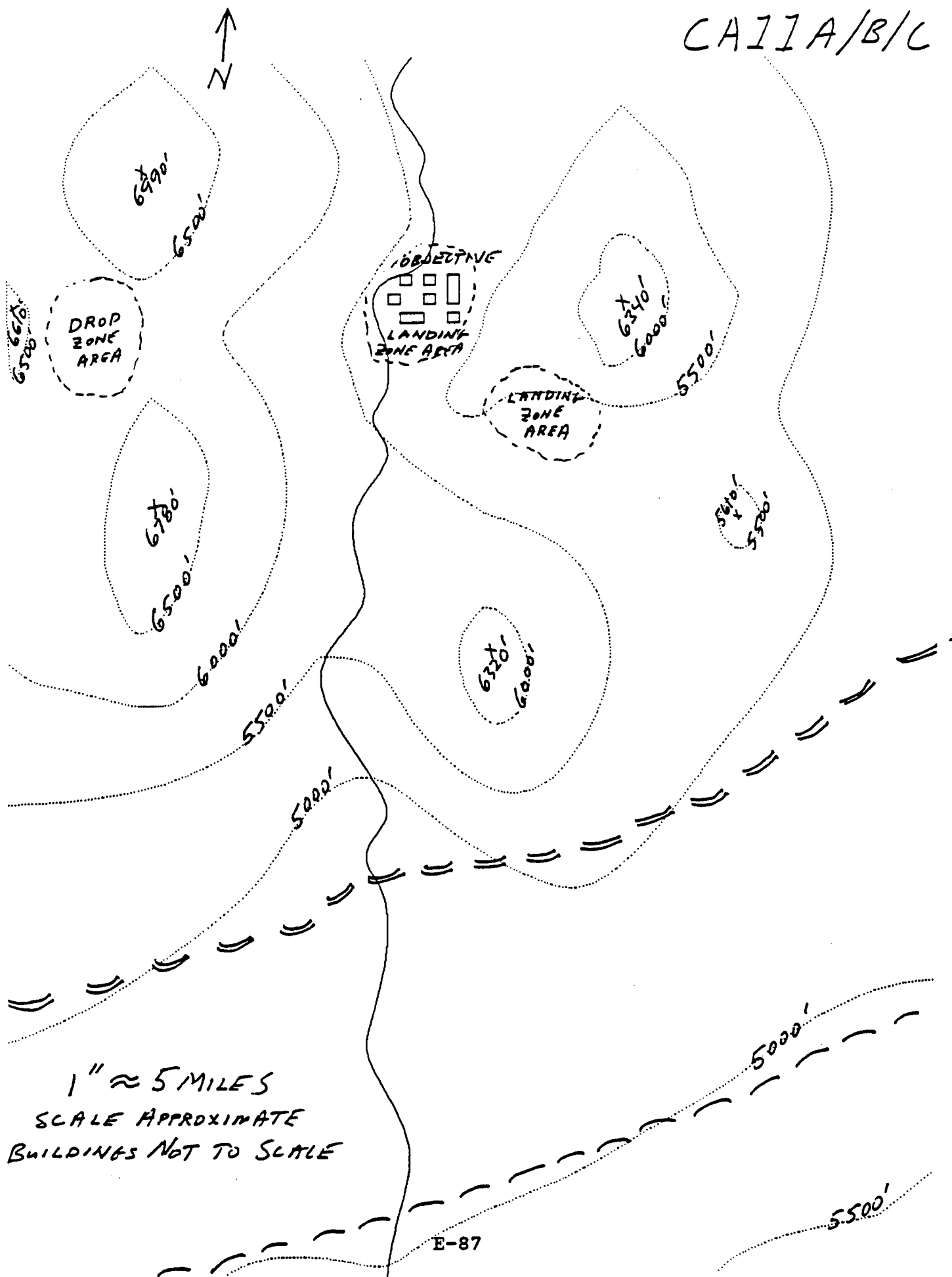
Air mobile operation to be conducted using radio silence and nap-of-the-earth and low level flight until all aircraft have penetrated enemy line and lead aircraft are with sight of the objective.

Artillery to be used at point of penetration of enemy lines, with continual (if necessary, intermittent) fires throughout the operation.

Timing of the operation as follows:

- 0005 Artillery begins attack on enemy lines at point of penetration. Airmobile force lifts off pick-up zone.
- 0015 Air Strike on enemy air defenses near objective and on objective area. Artillery switches to delay fuses and splits fires to create 100 meter corridor between fires. Airmobile force penetrates enemy positions.
- 0030 Troops land (or rappel) into landing zones and attack preassigned targets and targets of opportunity.
- 0045 Withdraw from objective area, returning to insertion aircraft for extraction.
- 0050 Aircraft withdraw, returning via original routes.

CA11A/B/C



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APPENDIX F
POSTTEST

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POSTTEST

NAME _____ DATE _____

RANK _____ MOS _____ SSN _____ BRANCH _____

In addition to the exercise booklet used during the pretest, you should also have a booklet entitled "Risk Assessment Worksheets".

Please complete a worksheet for each course of action for each scenario using the instructions presented on the video and the instructions in the booklet.

Use the space below to record the total risk score calculated for each course of action and your selected course of action for each of the 10 scenarios listed in the exercise booklet. (Note that you are not required to select the course of action with the lowest risk score). Again, please do not write or mark in the exercise booklet.

Scenario	Course of Action Risk Scores				Course of Action Chosen		
1.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
2.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
3.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
4.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
5.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
6.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
7.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
8.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
9.	A _____	B _____	C _____	D _____	A _____	B _____	C _____
10.	A _____	B _____	C _____	D _____	A _____	B _____	C _____

Please continue...

(If desired, you may take a short break at any time during the remainder of the exercise. Please leave all materials on your desk or table and please do not discuss any aspect of the exercise with others.)

Based on the information presented during this exercise and your previous military education and experience, please express your relative agreement with each statement using the following scale:

- 1 = Strongly Agree
- 2 = Agree
- 3 = Neutral
- 4 = Disagree
- 5 = Strongly Disagree

- _____ 1. Safety constraints may be necessary in training situations but have no place in combat.
- _____ 2. In combat, the course of action which offers the greatest element of surprise will almost always offer the greatest chance of success.
- _____ 3. Accidents (including friendly fire) and illnesses historically account for less than 10% of war deaths.
- _____ 4. Accidents (including friendly fire) and illnesses historically account for 10% to 30% of war deaths.
- _____ 5. Accidents (including friendly fire) and illnesses historically account for 30% to 50% of war deaths.
- _____ 6. Accidents (including friendly fire) and illnesses historically account for more than 50% of war deaths.
- _____ 7. The probability of accidents in a combat environment are about the same as they are in a training situation.
- _____ 8. Accidents are not as important in a combat environment as they are in peacetime.
- _____ 9. Risk management and safety should be taught at all levels of officer military education (Basic Course, Advanced Course, C&GS, etc.).
- _____ 10. The Army should train the way it will fight.

Please Continue...

QUESTIONNAIRE

1. Were the instructions provided for this exercise clear?
(If not, please explain)
2. Were the scenarios adequate for this type of exercise?
(If not, please explain)
3. Were the course of action adequate? (If not, please explain)
4. What is your opinion of the value of the Risk Assessment Worksheet?
5. Did you learn anything of value from this exercise?
6. What courses, if any, would you recommend inclusion of this or similar exercises?
7. Please list any additional comments about any aspect of this exercise.

WHEN YOU HAVE COMPLETED THE POSTTEST, PLEASE LEAVE ALL MATERIALS ON YOUR DESK OR TABLE, AND EXIT.

THIS COMPLETES THE EXERCISE. THANK YOU FOR YOUR PARTICIPATION.

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ENCLOSURE 3
REVISED STUDY PACKAGE

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APPENDIX G
INSTRUCTIONS FOR TEST ADMINISTRATORS

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INSTRUCTIONS FOR TEST ADMINISTRATORS

1. Establish contact with the designated POCs at Ft. Sill and Ft. Benning.

a. Verify the availability of two very similar groups of at least 30 NCOs each. Note: Two groups chosen randomly (every other student, alphabetically, or some similar method) from an ANCOC will be excellent.

b. Assure two classrooms are available. They ideally should be close but not immediately adjacent.

c. Ensure the facilities are comfortable and have desks and chairs. Be sure to have a supply of pencils for those that need them.

2. Arrive at the test site at least 30 minutes before the prescribed time to verify that the facility is satisfactory. Prepare test materials for distribution.

3. If possible provide coffee and doughnuts.

4. Call the test group into their facility first. Pass out the appropriate scenario (artillery at Ft. Sill, infantry at Ft. Benning) and questionnaire package and read the test group instruction sheet. Answer any administrative instructions. If students ask questions about the scenario reply as follows: "You should make your best effort to meet the requirement with the materials provided. Answering specific questions may bias the test results. You may make any assumptions you judge appropriate."

5. As soon as the test group is underway, proceed to the control group area and start the control group by reading the control group instructions. Monitor both groups and use the person provided by the POC to assist.

6. Allow the control group a reasonable length of time to complete the requirement. Note: this should not take more than forty minutes.

7. Collect all materials and dismiss the control group in accordance with the instruction of the local POC.

8. Allow the test group a reasonable length of time to complete the requirement (scenario and questionnaire).

9. Collect all materials. Dismiss the test group in accordance with the instruction of the POC.

10. Send or carry all materials to:

COBRO

RISK MANAGEMENT STUDY

101 E FANNIE MORRIS DRIVE

DALEVILLE, ALABAMA 36322

11. If you encounter problems in these tasks at any point contact Charlie Mingus or Mike Duffy at (205) 598-5054 or Joe Stephenson at (702) 295-7398.

APPENDIX H
INSTRUCTIONS FOR USE
OF RISK ASSESSMENT WORKSHEET

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INSTRUCTIONS FOR USE OF THE RISK ASSESSMENT WORKSHEET

The risk assessment worksheet is intended as a job aid. Nothing more. As leaders you are well aware of your responsibility to assure that the risks to your soldiers during operations are minimized. Next only to mission accomplishment, a leader's first responsibility is to his subordinates. The worksheet assists in this process of reducing risk in four separate ways.

- First, it helps a leader identify risks by providing a checklist covering the full range of risk sources. Look at the left hand column. There are five sections down the page. The first asks you to consider various kinds of enemy posed risks. The next requires consideration of risk from friendly fires. You are all aware of this factor from Desert Storm. Section three asks you to consider accident risk. You do this by considering the scenario of the operation and evaluating risks in both planned events and potential unplanned events. Section four covers other mission risks, things like weather, equipment factors, and soldier status issues, like fatigue and morale. These are risks too because they can cause the mission to fail. Last in Section 5, you are asked to consider the potential costs of risks on the unit and on individuals. All these risks together represent the total risk of operation.

- Second, the worksheet helps in assessing risks. Once you have identified risks. the "Likelihood" and "Severity" columns help you to assess how important the area of risk is. Likelihood is indicated as either very likely (VL), somewhat likely (SL), or not likely (NL). Severity (how serious the risk may be) is stated as very severe (VS), medium severe (MS), or not severe (NS). For example, if we were involved in a river crossing operation and the river was cold, deep, and fast moving, we could conclude that the likelihood of an accident is at least somewhat likely and maybe even very likely. An accident could easily involve drowning, so the severity would be very severe. By focusing on the Very Likely and Very Severe columns, effort will be directed at the most serious overall risks. Obviously things that rate both very likely and very severe should have the most attention of all.

- Third, the worksheet serves as a tool in managing the reduction of risk. By using the fifth column, Risk Minimal/Controlled, and the sixth column, Working Risk Issue, you can track progress in controlling risk. It works this way. When you find a risk you assess it and consider various controls. If you are comfortable that the risks have been controlled as much as possible, you put a penciled X in the Risk/Minimal Controlled column. If you are not satisfied yet with your control options, put an X in the Working Risk Issue column. Then you focus your attention on the Working Risk Issue column until all the Xs have been moved to the Risk Minimal/Controlled column. When all the Xs are in the Risk Minimal/Controlled column, you are ready to make a final go/no go risk decision. The worksheet is just a job aid, but

it is a real help in preventing a death or injury just because something slipped through the crack.

- Fourth, and finally, the entire worksheet can be used to help convince your boss that an operation is ready. When your boss or a reg says "Do a risk assessment", you complete the second column, Method Used, so the reviewer can see how you arrived at your risk assessment, and turn in the completed worksheet. In training, the special interest will often be on Section 3, Accidents. To provide additional detail, you can provide an enclosure to the worksheet that lists the individual risks that were considered under the two headings "During mission activities" and "During potential mission interruptions".

The worksheet is primarily intended for use in schoolhouse and unit training. It helps develop risk management skills and builds a "sixth sense of safety". It helps assure a high degree of safety in training operations. However, it can also be used in combat whenever the situation allows sufficient time to use it. Worksheets like this have been proven in studies to double risk management effectiveness. If the worksheet can achieve results like that, why not use it in combat when time and circumstances allow? When we examine military history and see the number of operations "screwed up" by poor risk management, the answer is that it should be used.

RISK ASSESSMENT WORKSHEET

RISK FACTOR	METHOD USED	LIKELIHOOD (circle one)	SEVERITY (circle one)	RISK MINIMAL/ CONTROLLED	WORKING RISK ISSUE	REMARKS
SECTION 1 - ENEMY						
Fire from ground unit	_____	VL SL NL	VS MS NS	_____	_____	_____
Supporting fires	_____	VL SL NL	VS MS NS	_____	_____	_____
- Artillery	_____	VL SL NL	VS MS NS	_____	_____	_____
- Air	_____	VL SL NL	VS MS NS	_____	_____	_____
- Reinforcements	_____	VL SL NL	VS MS NS	_____	_____	_____
Obstacles (specify)	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 2 - FRIENDLY FIRE						
Own Force	_____	VL SL NL	VS MS NS	_____	_____	_____
Artillery	_____	VL SL NL	VS MS NS	_____	_____	_____
Air (Army, USAP, etc.)	_____	VL SL NL	VS MS NS	_____	_____	_____
Other maneuver units	_____	VL SL NL	VS MS NS	_____	_____	_____
Mines, barriers	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 3 - ACCIDENTS						
During mission activities	_____	VL SL NL	VS MS NS	_____	_____	_____
During potential mission interruptions	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 4 - OTHER MISSION RISKS						
Environmental						
- Bad Weather	_____	VL SL NL	VS MS NS	_____	_____	_____
- Poor Visibility	_____	VL SL NL	VS MS NS	_____	_____	_____
- Temperature Extremes	_____	VL SL NL	VS MS NS	_____	_____	_____
Terrain Hazards	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor Maintenance	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor navigation	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor supply/equipment	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor Command/Control	_____	VL SL NL	VS MS NS	_____	_____	_____
Soldier Status/Weaknesses						
- Poor Physical Condition	_____	VL SL NL	VS MS NS	_____	_____	_____
- Poor Morale	_____	VL SL NL	VS MS NS	_____	_____	_____
- Poorly Prepared/Trained	_____	VL SL NL	VS MS NS	_____	_____	_____
Other (specify)	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 5 - ORGANIZATION/LEADER RISK						
Organization consequences						
- Chain of Command	_____	VL SL NL	VS MS NS	_____	_____	_____
- Adverse Publicity	_____	VL SL NL	VS MS NS	_____	_____	_____
- Liability	_____	VL SL NL	VS MS NS	_____	_____	_____
Leader consequences	_____	VL SL NL	VS MS NS	_____	_____	_____

PRELIMINARY RISK DECISION

GO _____

NO GO _____
H-5

RISK ASSESSMENT WORKSHEET INSTRUCTIONS

1. Use this worksheet as a tool to support development of the estimate phase of operations planning. Evaluate each possible course of action using this worksheet and use the completed worksheets to assist in selecting from among those alternatives.
2. Complete only the sections that apply to the particular operation/activity.
3. Indicate the risk assessment method (procedure) used by placing one of the following abbreviations in the first column of the worksheet (Method): personal review(PR); hazard analysis(HA); SME input(SME); data search(DS); standards search(SS).
4. If risk has been minimized and is acceptable, place an X in the controlled column (Risk Minimal/Controlled).
5. If more work needs to be done on risk control or a risk acceptance decision is needed, place an X in the working column (Working Risk Issue).
6. Determine the likelihood of occurrence (very likely, somewhat likely, not likely) and the severity of occurrence or consequence (very severe, medium severity, not severe) of each risk factor identified and circle the correct response in each column.

LIKELIHOOD OF OCCURRENCE:

- VL Very Likely. Will almost certainly occur.
SL Somewhat Likely. May occur.
NL Not Likely. Not expected to occur. Chances of occurrence slim.

SEVERITY OF OCCURRENCE/CONSEQUENCE:

VS Very Severe:

Will result in severe injury to friendly personnel (death or total/partial disability, destruction or major damage to equipment, mission abort/failure, or personnel being relieved of duty).

MS Medium Severe:

Will result in lost time injury to friendly personnel, moderate damage to equipment (\$2000-5000), mission delay of more than 6 hours, personnel receiving formal disciplinary action.

NS Not severe:

Will result in minor (first aid) or no injury to personnel, minor damage to equipment (less than \$2000), mission delay of less than 6 hours, personnel receiving no more than informal disciplinary action.

SECTION 1: Consider all sources of enemy imposed risk raised by intelligence sources and how these risks can be minimized through AirLand Battle doctrine (e.g., protection, maneuver, etc.).

SECTION 2: Consider all sources of friendly fire risk and the actions needed to minimize these risk (e.g., coordination, marking, commo, command and control, etc.).

SECTION 3: Wargame all sources of potential accidents associated with planned mission activities and potential mission interruptions that can reasonably be anticipated. Use supplementary analysis techniques (e.g., SME, sequence of events, standards, etc.) as desired.

SECTION 4: Consider how other factors as indicated could create risk to mission performance (not through accidents but in any way).

SECTION 5: Assess the consequences of mission failure due to the risks above on the organization overall and on you and other leaders personally.

Consider the total risk of the operation against the total benefit and make a preliminary go/no go risk recommendation at the bottom of the worksheet. The final risk decision should be made as part of the formal operational planning process.

APPENDIX I
TEST GROUP INSTRUCTIONS

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TEST GROUP INSTRUCTIONS

Read the following to the test group.

"The Army is conducting a study designed to improve the support provided to the Army leaders in the task of detecting and controlling all kinds of risk. If successful, this test will directly support efforts of leaders to prevent the loss of soldier's lives in accidents occurring in training and in combat."

"Your role in this project is simple, but important. You have in front of you a brief tactical scenario. First enter your name, rank, and MOS on the top of all your materials. Then you are to read the scenario and complete the requirement that it contains. Please turn now to the second page of the scenario and review the requirement with me. "Based on the information above and the course of action attached, you are to identify ALL types of risk (e.g. tactical, accident, administrative) that could threaten your mission success. Use the Risk Assessment Worksheet to assist you. Use all five sections on the left side of the worksheet (i.e. Enemy, Friendly fire, Accidents, Other Mission Risks Organization/Leader Risks). Go step-by-step through each section, reviewing the scenario and using the points under each section to help you detect risks. List these risks briefly, but clearly, on the attached sheet provided. For example, under Section 1 - Enemy "Fire from ground unit" we know there are enemy SOF units in the area, so we can expect that there is a risk of an enemy SOF attack on the section. You should enter "Attack by enemy SOF force" on the form.

"Are there any questions on the requirement?"

You should have been provided a Risk Assessment Worksheet to assist you in completing the requirement. Use this risk assessment worksheet in accordance with the instruction in the scenario and the guidance I will provide you shortly. You have been provided a form on which to make your responses. If you need more forms, simply raise your hand and I will provide them for you. I will answer any administrative questions you have and any questions on the use of the risk assessment worksheet, however, I can not answer any questions intended to provide more detail on the scenario. Use your experience and best judgement to determine your responses. Make whatever assumptions you believe are needed in order to make your responses."

"When you finish the scenario, proceed to the questionnaire. Place your name, rank, and MOS at the top. Choose and circle the response that most closely represents your views on each question. Add any comments you may have to clarify your response or express your ideas. When you have responded to all questions, simply raise your hand and I will pick up your materials from you. You must then wait quietly until all personnel have finished."

"At this time please direct your attention to the Risk Assessment Worksheet in front of you." NOTE: At this point read the separate instructions provided for the Risk Assessment Worksheet.

After completing the separate instruction for the Risk Assessment Worksheet, proceed as follows:

"At this time using your Risk Assessment Worksheet as a job aid, complete the requirement for your scenario. After you have finished the scenario, you may proceed to the questionnaire. Are there any questions?"

NOTE: After all students have completed the requirements and you have completed all materials, release the students in accordance with the instructions of the local POC.

APPENDIX J
TEST GROUP EXERCISE BOOKLET

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NAME _____ DATE _____ MOS _____

SCENARIO NUMBER ONE

BACKGROUND

As a result of the unsuccessful efforts to improve the economy and the failure of efforts the breakup of Eastern Europe, the progressive leadership of the Soviet Union was overthrown by "hard line" Communists. In an effort to shift attention from domestic problems, unite the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION

Your artillery battery (105mm towed) is participating in an active defense of sector. The battery has received a warning order to support a special operation approximately 15 KM from the current battery location. The battery commander has ordered you to prepare to move the section you lead from your current location to a position from which you can provide support for the special operation. To do this you will have to move your section a total distance of about 20 KM parallel to the FLOT. You are to be ready to move in four hours.

MISSION

Conduct direct artillery support for a special operation to be conducted between 2400 and 0400 hours. (NOTE: the time is now 1600.)

ENEMY

Enemy strength in the area facing the route of your movement is estimated as a motorized rifle regiment with the usual artillery support and other combined arms support. Units are estimated at 85% of strength. Resupply is in progress. The enemy retains some airstrike capability. Morale is generally low and troops have been fighting for several weeks and are fatigued. Many soldiers are veterans of Afghanistan. Enemy regular and irregular SOF are operating behind friendly lines.

TERRAIN

The area is rolling hills with relatively flat open areas near rivers. There is heavy forest on hill slopes. Roads are limited in the direction of travel and some cross country movement will be required. Many areas to be crossed are open and are subject to direct enemy observation. Weather: Low lying clouds are common at

night, normally clearing by midday. Temperatures are 20 - 40 F.
BMNT 0534, EENT 1947. No moon.

TROOPS AVAILABLE

Troops are well trained, well equipped, and at 95% strength. However, during the last 30 hours they have been involved in more or less continuous fire missions and have had little sleep or rest. The section has had two serious WIA in the last 30 hours. These were the first casualties for the unit. Replacements from outside the battery have been provided. The friendly troops in the areas through which the section will pass are well rested and trained but have little or no combat experience.

TIME

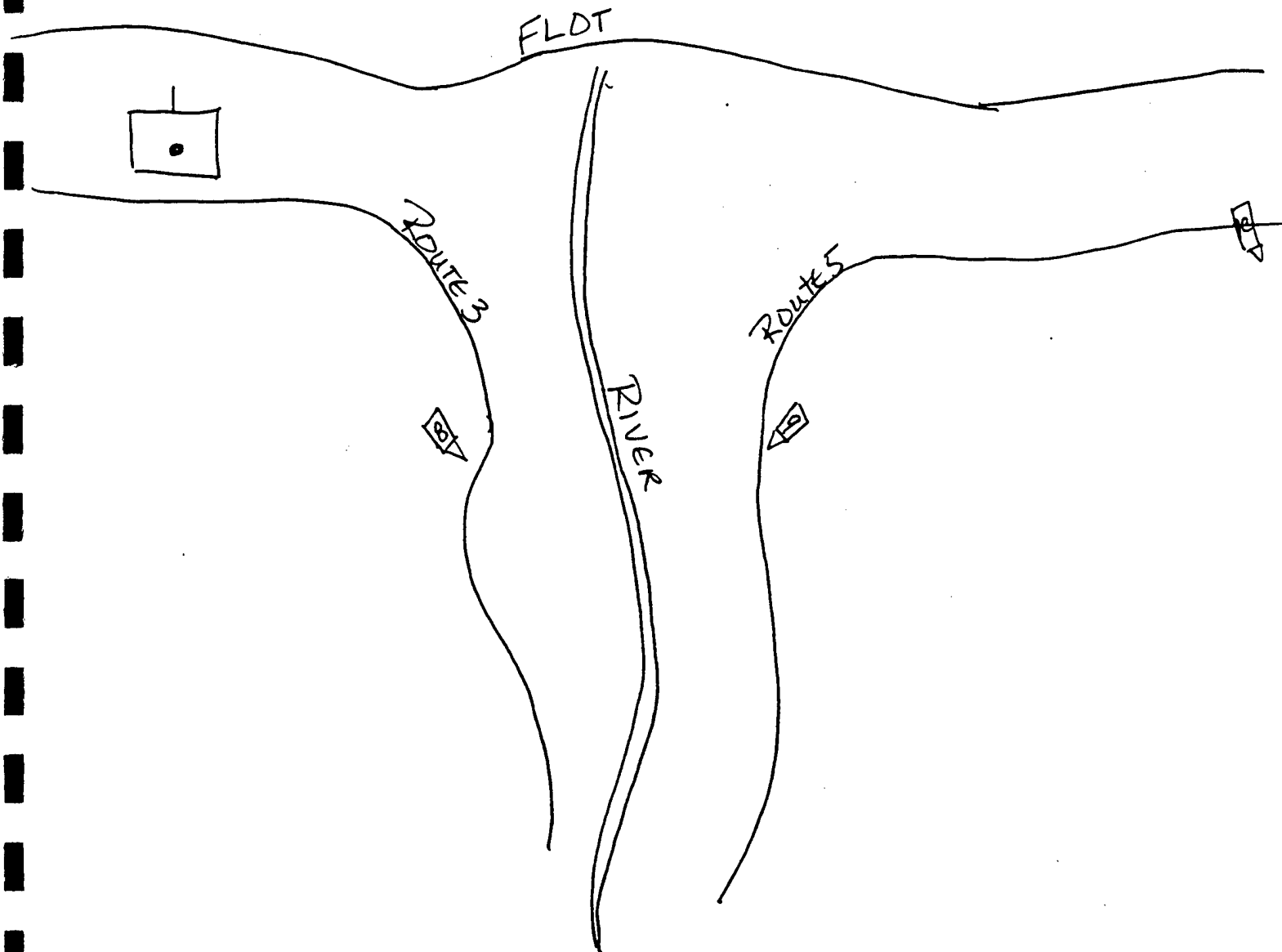
Current time is 1600 hours.

REQUIREMENT

Based on the information above and the course of action attached, you are to identify ALL types of risk (e.g. tactical, accident, administrative) that could threaten your mission success. Use the Risk Assessment Worksheet to assist you. Use all five sections on the left side of the worksheet. Go step-by-step through each section, reviewing the scenario and using the points under each section to help you detect risks. List these risks briefly, but clearly, on the attached sheet provided. For example, under Section 1 - Enemy "Fire from ground unit", we know there are enemy SOF units in the area, so we can expect that there is a risk of an enemy SOF ground force attack on the section. You should enter "Attack by enemy SOF force" on the form.

SCENARIO NUMBER ONE
COURSE OF ACTION

Proceed along route #3, traversing cross country at checkpoint 8 and then using route #5 at checkpoint 9. Ford the river as required. Make all movements under blackout conditions maintaining radio silence. Conduct all fire missions from checkpoint 10 which provides excellent cover. Enhanced cover with protective emplacements.



NAME _____

DATE _____

MOS _____

SCENARIO NUMBER TWO

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup of Eastern Europe, the progressive leadership of the Soviet Union was overthrown by "hard line" Communists. In an effort to shift attention away from domestic problems, unite the general public against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION

Your mechanized infantry platoon successfully captured a key bridge and held it against two hasty counterattacks, however the planned battalion attack across the bridge was delayed by Corps.

Intelligence reports indicate the opposing force has completed a local build-up and is expected to begin with an artillery barrage within 12 hours. The opposing force's equipment includes BMP personnel carriers, tanks, antiarmor weapons, and scout vehicles. The battalion commander has determined that your unit's position is untenable and ordered you to withdraw to new and more defensible positions. The platoon will withdraw at night, executing a passage of lines through part of the battalion and occupy secondary defensive positions.

MISSION

Conduct night withdrawal and passage of lines, to occupy secondary defensive positions NLT 0600. (NOTE: The time is now 1700.)

ENEMY

One motorized rifle company estimated at 70% strength. Some armor augmentation resupply in progress. Low morale, fatigued. These units have been in combat for approximately six weeks. Many are veterans of Afghanistan.

TERRAIN

Rolling hills with relatively flat, open areas near rivers, heavy forest on hill tops. Few roads in direction of travel (cross corridor). Weather: Low lying clouds with fog developing at night and clearing by mid-day. Temperatures: 20 - 40 F. BMNT 0534, EENT 1947. No moon.

TROOPS AVAILABLE

Troops are well trained, well equipped, and at 95% strength. However, during the last 30 hours, they have conducted an airmobile assault, prepared defensive positions, and repelled two hasty counterattacks. This has been the first actual combat for most of these troops. Despite orders to provide rest, especially to drivers, few have had much sleep. The platoon has lost one kia and four wia in the last 30 hours. The battalion units, through which the platoon must pass, are well rested, well trained, and at near full strength, but have little or no combat experience. Morale is high.

TIME

Current time is 1700.

REQUIREMENT

Based on the battalion frag order, you have prepared the course of action attached. You are to identify ALL types of risks (e.g. tactical, accidental, administrative) that could threaten your mission success. Use the Risk Assessment Worksheet to assist you. Use all five sections on the left side of the worksheet. Go step-by-step through each section, reviewing the scenario and using the points under each section to help you detect risks. List these risks briefly, but clearly, on the attached sheet provided. For example, under Section 1 - Enemy "fire from ground unit" we know there are enemy SOF units in the area, so we can expect that there is a risk of an enemy SOF ground force attack on the platoon. You should enter "Attack by enemy SOF force" on the form.

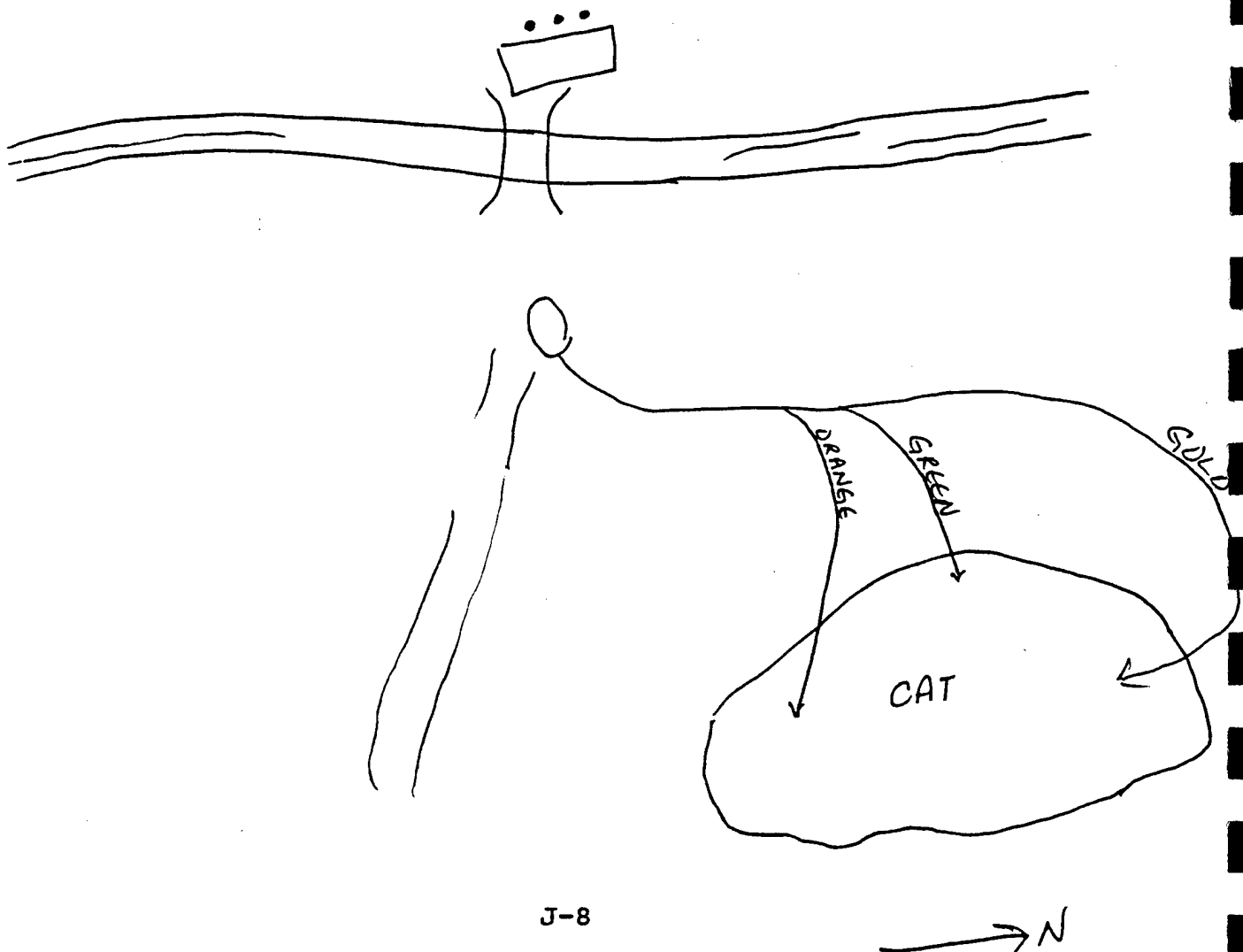
SCENARIO NUMBER TWO

COURSE OF ACTION

Withdraw, dismount, across the bridge: first squad at 2400, followed by second squad at 0015, and third squad at 0330.

Mount at SP5 with first squad moving over route ORANGE to occupy southern portion of defensive position "CAT", second squad move over route GREEN to occupy the middle portion of "CAT", and third squad move over route GOLD to occupy the northern portion of "CAT".

All movements are to be made under blackout conditions. Radio silence will be maintained.



NAME _____

DATE _____

MOS _____

LIST OF RISKS

1. _____
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NAME _____ DATE _____ MOS _____

LIST OF RISKS

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RISK ASSESSMENT WORKSHEET

RISK FACTOR	METHOD USED	LIKELIHOOD (circle one)	SEVERITY (circle one)	RISK MINIMAL/ CONTROLLED	WORKING RISK ISSUE	REMARKS
SECTION 1 - ENEMY						
Fire from ground unit	_____	VL SL NL	VS MS NS	_____	_____	_____
Supporting fires	_____	VL SL NL	VS MS NS	_____	_____	_____
- Artillery	_____	VL SL NL	VS MS NS	_____	_____	_____
- Air	_____	VL SL NL	VS MS NS	_____	_____	_____
- Reinforcements	_____	VL SL NL	VS MS NS	_____	_____	_____
Obstacles (specify)	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 2 - FRIENDLY FIRE						
Own Force	_____	VL SL NL	VS MS NS	_____	_____	_____
Artillery	_____	VL SL NL	VS MS NS	_____	_____	_____
Air (Army, USAF, etc.)	_____	VL SL NL	VS MS NS	_____	_____	_____
Other maneuver units	_____	VL SL NL	VS MS NS	_____	_____	_____
Mines, barriers	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 3 - ACCIDENTS						
During mission activities	_____	VL SL NL	VS MS NS	_____	_____	_____
During potential mission interruptions	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 4 - OTHER MISSION RISKS						
Environmental						
- Bad Weather	_____	VL SL NL	VS MS NS	_____	_____	_____
- Poor Visibility	_____	VL SL NL	VS MS NS	_____	_____	_____
- Temperature Extremes	_____	VL SL NL	VS MS NS	_____	_____	_____
Terrain Hazards	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor Maintenance	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor navigation	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor supply/equipment	_____	VL SL NL	VS MS NS	_____	_____	_____
Poor Command/Control	_____	VL SL NL	VS MS NS	_____	_____	_____
Soldier Status/Weaknesses						
- Poor Physical Condition	_____	VL SL NL	VS MS NS	_____	_____	_____
- Poor Morale	_____	VL SL NL	VS MS NS	_____	_____	_____
- Poorly Prepared/Trained	_____	VL SL NL	VS MS NS	_____	_____	_____
Other (specify)	_____	VL SL NL	VS MS NS	_____	_____	_____
SECTION 5 - ORGANIZATION/LEADER RISK						
Organization consequences						
- Chain of Command	_____	VL SL NL	VS MS NS	_____	_____	_____
- Adverse Publicity	_____	VL SL NL	VS MS NS	_____	_____	_____
- Liability	_____	VL SL NL	VS MS NS	_____	_____	_____
Leader consequences	_____	VL SL NL	VS MS NS	_____	_____	_____

PRELIMINARY RISK DECISION

GO _____ NO GO _____

RISK ASSESSMENT WORKSHEET

INSTRUCTIONS

1. Use this worksheet as a tool to support development of the estimate phase of operations planning. Evaluate each possible course of action using this worksheet and use the completed worksheets to assist in selecting from among those alternatives.
2. Complete only the sections that apply to the particular operation/activity.
3. Indicate the risk assessment method (procedure) used by placing one of the following abbreviations in the first column of the worksheet (Method): personal review(PR); hazard analysis(HA); SME input(SME); data search(DS); standards search(SS).
4. If risk has been minimized and is acceptable, place an X in the controlled column (Risk Minimal/Controlled).
5. If more work needs to be done on risk control or a risk acceptance decision is needed, place an X in the working column (Working Risk Issue).
6. Determine the likelihood of occurrence (very likely, somewhat likely, not likely) and the severity of occurrence or consequence (very severe, medium severity, not severe) of each risk factor identified and circle the correct response in each column.

LIKELIHOOD OF OCCURRENCE:

- VL Very Likely. Will almost certainly occur.
SL Somewhat Likely. May occur.
NL Not Likely. Not expected to occur. Chances of occurrence slim.

SEVERITY OF OCCURRENCE/CONSEQUENCE:

- VS Very Severe:
Will result in severe injury to friendly personnel (death or total/partial disability, destruction or major damage to equipment, mission abort/failure, or personnel being relieved of duty).
- MS Medium Severe:
Will result in lost time injury to friendly personnel, moderate damage to equipment (\$2000-5000), mission delay of more than 6 hours, personnel receiving formal disciplinary action.
- NS Not severe:
Will result in minor (first aid) or no injury to personnel, minor damage to equipment (less than \$2000), mission delay of less than 6 hours, personnel receiving no more than informal disciplinary action.

- SECTION 1: Consider all sources of enemy imposed risk raised by intelligence sources and how these risks can be minimized through AirLand Battle doctrine (e.g., protection, maneuver, etc.).
- SECTION 2: Consider all sources of friendly fire risk and the actions needed to minimize these risk (e.g., coordination, marking, commo, command and control, etc.).
- SECTION 3: Wargame all sources of potential accidents associated with planned mission activities and potential mission interruptions that can reasonably be anticipated. Use supplementary analysis techniques (e.g., SME, sequence of events, standards, etc.) as desired.
- SECTION 4: Consider how other factors as indicated could create risk to mission performance (not through accidents but in any way).
- SECTION 5: Assess the consequences of mission failure due to the risks above on the organization overall and on you and other leaders personally.

Consider the total risk of the operation against the total benefit and make a preliminary go/no go risk recommendation at the bottom of the worksheet. The final risk decision should be made as part of the formal operational planning process.

NAME _____ DATE _____ MOS _____

QUESTIONNAIRE

1. The Risk Assessment Worksheet helps me spot various kinds of risks and hazards.

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Comments: _____

2. The Risk Assessment Worksheet would be a useful tool to improve risk assessment skills in classroom instruction.

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Comments: _____

3. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during field training.

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Comments: _____

4. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during after action reviews (AARs).

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Comments: _____

5. The Risk Assessment Worksheet would be a useful tool to improve risk assessment during combat actions.

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Comments: _____

6. The Risk Assessment Worksheet can be used effectively by leaders down to the grade of (circle one):

1 2 3 4
Corporal, Sergeant, Staff Sergeant, Platoon Sergeant,

5 6 7
First Sergeant, Sergeant Major, Officer

Comments: _____

7. I suggest that the Risk Assessment Worksheet be improved by (add your suggestions for any kind of improvement in the worksheet or in its use):

APPENDIX K
CONTROL GROUP INSTRUCTIONS

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CONTROL GROUP INSTRUCTIONS

Read the following to the control group.

"The Army is conducting a study designed to improve the support provided to Army leaders in the test of detecting and controlling all kinds of risk. If successful, this test will directly support efforts of leaders to prevent the loss of soldier's lives in accidents occurring in training and in combat."

"Your role in this project is simple but important. you have in front of you a brief tactical scenario. You are to read the scenario and then complete the requirement that it contains. Turn now to the second page of the scenario and follow along with me as I read the instructions.

"Based on the information above and the course of action attached, you are to identify ALL types of risk (e.g. tactical, accident, administrative) that could threaten your mission success. List these factors briefly, but clearly, on the attached sheet provided. For example, we know from the scenario there are enemy SOF units in the area so we can expect the realistic possibility of an enemy SOF ground force attack on the section. You should enter "Attack by enemy SOF unit" or similar words on the form.

"Are there any questions on the requirement? You have been provided a form on which to make your responses. If you need more forms, simply raise your hand and I will provide them for you. Do not share your work with your neighbor. I will answer any administrative questions you have, however, I cannot answer any questions intended to provide more detail on the scenario. Use your experience and best judgement to determine your responses. Make whatever reasonable assumptions you believe are needed in order to make your responses.

"When you finish, simply raise your hand and I will pick up your materials. You must then remain in the room quietly until all personnel have finished. Your cooperation is appreciated and may help save soldier's lives in the future.

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APPENDIX L
CONTROL GROUP EXERCISE BOOKLET

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NAME _____ DATE _____ MOS _____

SCENARIO NUMBER ONE

BACKGROUND

As a result of the unsuccessful efforts to improve the economy and the failure of efforts the breakup of Eastern Europe, the progressive leadership of the Soviet Union was overthrown by "hard line" Communists. In an effort to shift attention from domestic problems, unite the general populace against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION

Your artillery battery (105mm towed) is participating in an active defense of sector. The battery has received a warning order to support a special operation approximately 15 KM from the current battery location. The battery commander has ordered you to prepare to move the section you lead from your current location to a position from which you can provide support for the special operation. To do this you will have to move your section a total distance of about 20 KM parallel to the FLOT. You are to be ready to move in four hours.

MISSION

Conduct direct artillery support for a special operation to be conducted between 2400 and 0400 hours. (NOTE: the time is now 1600.)

ENEMY

Enemy strength in the area facing the route of your movement is estimated as a motorized rifle regiment with the usual artillery support and other combined arms support. Units are estimated at 85% of strength. Resupply is in progress. The enemy retains some airstrike capability. Morale is generally low and troops have been fighting for several weeks and are fatigued. Many soldiers are veterans of Afghanistan. Enemy regular and irregular SOF are operating behind friendly lines.

TERRAIN

The area is rolling hills with relatively flat open areas near rivers. There is heavy forest on hill slopes. Roads are limited in the direction of travel and some cross country movement will be required. Many areas to be crossed are open and are subject to direct enemy observation. Weather: Low lying clouds are common at

night, normally clearing by midday. Temperatures are 20 - 40 F.
BMNT 0534, EENT 1947. No moon.

TROOPS AVAILABLE

Troops are well trained, well equipped, and at 95% strength. However, during the last 30 hours they have been involved in more or less continuous fire missions and have had little sleep or rest. The section has had two serious WIA in the last 30 hours. These were the first casualties for the unit. Replacements from outside the battery have been provided. The friendly troops in the areas through which the section will pass are well rested and trained but have little or no combat experience.

TIME

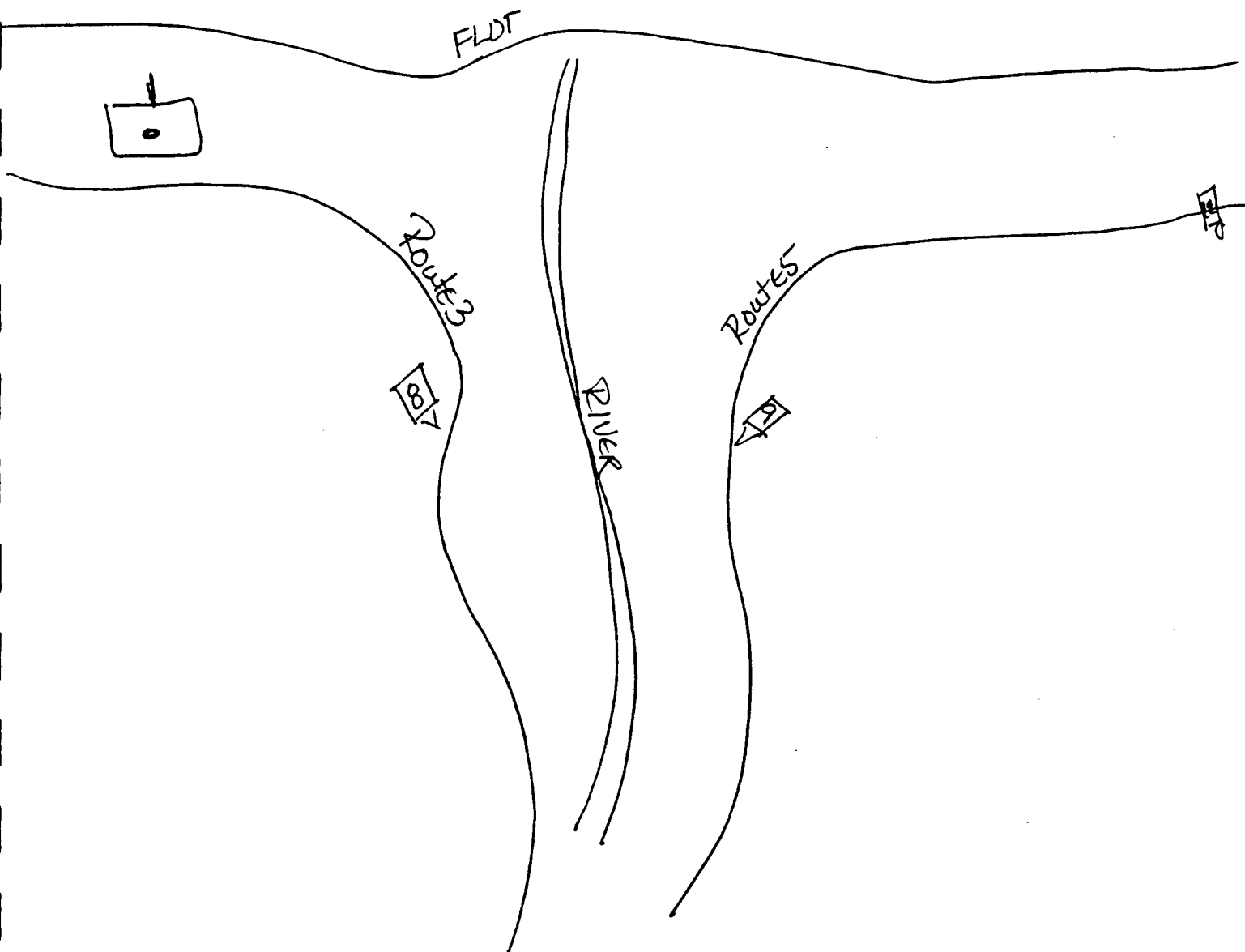
Current time is 2000 hours.

REQUIREMENT

Based on the information above and the course of action attached, you are to identify ALL types of risk (e.g. tactical, accident, administrative) that could threaten your mission success. Use the Risk Assessment Worksheet to assist you. Use all five sections on the left side of the worksheet. Go step-by-step through each section, reviewing the scenario and using the points under each section to help you detect risks. List these risks briefly, but clearly, on the attached sheet provided. For example, under Section 1 - Enemy "Fire from ground unit", we know there are enemy SOF units in the area, so we can expect that there is a risk of an enemy SOF ground force attack on the section. You should enter "Attack by enemy SOF force" on the form.

SCENARIO NUMBER ONE
COURSE OF ACTION

Proceed along route #3, traversing cross country at checkpoint 8 and then using route #5 at checkpoint 9. Ford the river as required. Make all movements under blackout conditions maintaining radio silence. Conduct all fire missions from checkpoint 10 which provides excellent cover. Enhanced cover with protective emplacements.



NAME _____ DATE _____ MOS _____

SCENARIO NUMBER TWO

BACKGROUND

As a result of unsuccessful efforts to improve the economy and the failure of efforts to control the breakup of Eastern Europe, the progressive leadership of the Soviet Union was overthrown by "hard line" Communists. In an effort to shift attention away from domestic problems, unite the general public against a common enemy, gain support of hard line senior military commanders, and reestablish Communist controlled governments in Eastern Europe, the Soviet Union invaded Lithuania, Poland, and Rumania. The attacks were brutal and sudden and met little resistance. East Germany, already in the process of reunification with West Germany, has now been attacked and NATO forces have counterattacked.

SITUATION

Your mechanized infantry platoon successfully captured a key bridge and held it against two hasty counterattacks, however the planned battalion attack across the bridge was delayed by Corps.

Intelligence reports indicate the opposing force has completed a local build-up and is expected to begin with an artillery barrage within 12 hours. The opposing force's equipment includes BMP personnel carriers, tanks, antiarmor weapons, and scout vehicles. The battalion commander has determined that your unit's position is untenable and ordered you to withdraw to new and more defensible positions. The platoon will withdraw at night, executing a passage of lines through part of the battalion and occupy secondary defensive positions.

MISSION

Conduct night withdrawal and passage of lines, to occupy secondary defensive positions NLT 0600. (NOTE: The time is now 1700.)

ENEMY

One motorized rifle company estimated at 70% strength. Some armor augmentation resupply in progress. Low morale, fatigued. These units have been in combat for approximately six weeks. Many are veterans of Afghanistan.

TERRAIN

Rolling hills with relatively flat, open areas near rivers, heavy forest on hill tops. Few roads in direction of travel (cross corridor). Weather: Low lying clouds with fog developing at night and clearing by mid-day. Temperatures: 20 - 40 F. BMNT 0534, EENT 1947. No moon.

TROOPS AVAILABLE

Troops are well trained, well equipped, and at 95% strength. However, during the last 30 hours, they have conducted an airmobile assault, prepared defensive positions, and repelled two hasty counterattacks. This has been the first actual combat for most of these troops. Despite orders to provide rest, especially to drivers, few have had much sleep. The platoon has lost one kia and four wia in the last 30 hours. The battalion units, through which the platoon must pass, are well rested, well trained, and at near full strength, but have little or no combat experience. Morale is high.

TIME

Current time is 1700.

REQUIREMENT

Based on the battalion frag order, you have prepared the course of action attached. You are to identify ALL types of risks (e.g. tactical, accidental, administrative) that could threaten your mission success. Use the Risk Assessment Worksheet to assist you. Use all five sections on the left side of the worksheet. Go step-by-step through each section, reviewing the scenario and using the points under each section to help you detect risks. List these risks briefly, but clearly, on the attached sheet provided. For example, under Section 1 - Enemy "fire from ground unit" we know there are enemy SOF units in the area, so we can expect that there is a risk of an enemy SOF ground force attack on the platoon. You should enter "Attack by enemy SOF force" on the form.

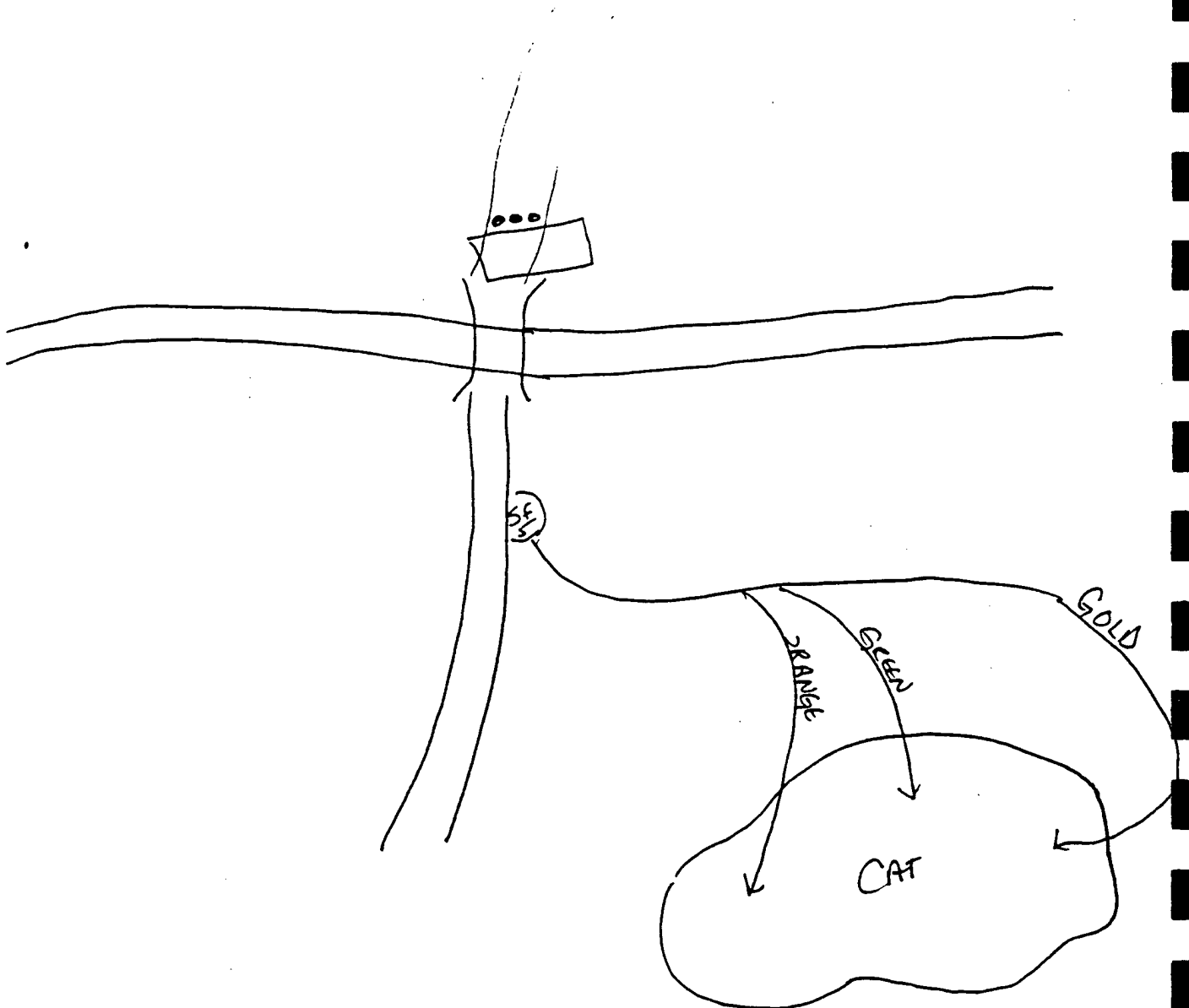
SCENARIO NUMBER TWO

COURSE OF ACTION

Withdraw, dismount, across the bridge: first squad at 2400, followed by second squad at 0015, and third squad at 0330.

Mount at SP5 with first squad moving over route ORANGE to occupy southern portion of defensive position "CAT", second squad move over route GREEN to occupy the middle portion of "CAT", and third squad move over route GOLD to occupy the northern portion of "CAT".

All movements are to be made under blackout conditions. Radio silence will be maintained.



NAME _____ DATE _____ MOS _____

LIST OF RISKS

1. _____
2. _____
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