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USER MANUAL FOR THE MINIATURE ARMOR BATTLEFIELD (MAB). APPENDIX--ETC(U)
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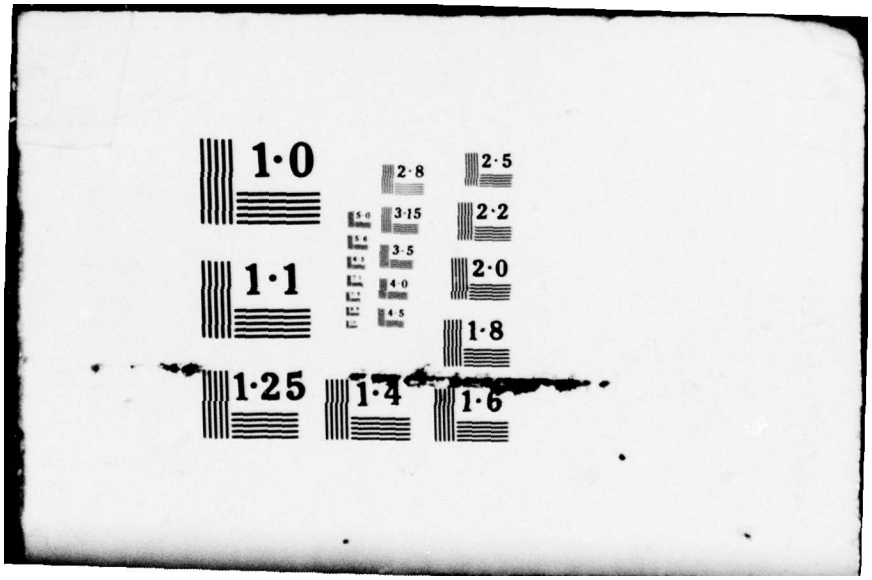
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HumRRO

LEVEL II

U.S. Army Armor Human Research Unit
Fort Knox, Kentucky

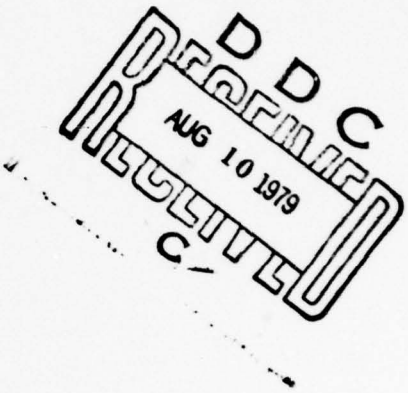
Under the Technical Supervision of

The George Washington University
HUMAN RESOURCES RESEARCH OFFICE
operating under contract with
THE DEPARTMENT OF THE ARMY

U.S. Army Armor Human Research Unit is established under the command of the Commanding General, United States Continental Army Command. The Human Resources Research Office, the George Washington University, operating under contract with the Department of the Army, employs the Director of Research and other civilian staff members who are assigned to the Unit with the approval of Headquarters, United States Continental Army Command. The Human Resources Research Office provides the Unit with technical supervision in the planning and analysis of the research projects.

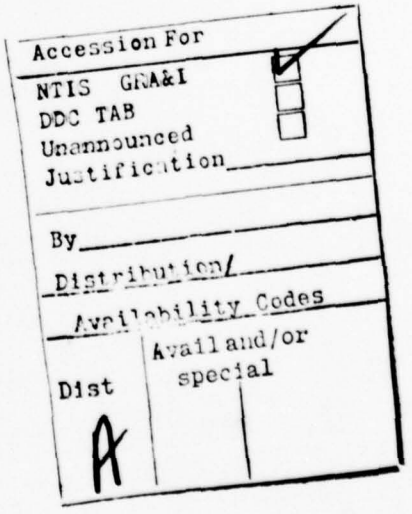
Conclusions stated herein do not necessarily represent the official opinion or policy of Headquarters, United States Continental Army Command, or the Department of the Army.

User Manual for the Miniature Armor Battlefield (MAB). Appendix C. Criterion Tests. Appendix D. How to Construct Terrain Features. Appendix E. Details of Radio Control Equipment. Appendix F. Housing and Training Platform for the MAB.



APPENDIX C: Criterion Tests

The Tank Platoon Combat Readiness Check
Platoon Leader Version



SECTION I. GENERAL

A. REFERENCES. Armor Reference Data, The Armor School, Fort Knox; FM 17-1; FM 17-12; FM 17-33; FM 17-50; FM 17-79; FM 17-100.

B. PURPOSE. To determine the combat readiness of a tank platoon leader.

C. OBJECTIVES.

1. To determine whether or not the tank platoon leader is combat ready.

2. To determine the capability of the tank platoon leader to accomplish his assigned mission when he is operating under the flexibility of mission-type orders and instructions.

3. To isolate and identify specific areas in which the tank platoon leader requires additional training to bring him to a combat readiness state.

4. To provide the tank platoon leader with a realistic combat training problem involving tank platoon functions and actions.

D. ADMINISTRATION.

1. Preparation of Test.

a. Any terrain may be used which will provide an assembly area and two objectives.

b. Platoon leaders will not be briefed, or rehearsed, on the test problem.

c. The procedures outlined under SECTION II and SECTION III will be followed as closely as local conditions will permit.

d. The test problem is a BLANK-FIRING type exercise. Both the tested platoon and the troops representing the aggressor will use blank ammunition (SECTION IV).

e. Score Sheets (SECTION VII) will not be modified, except as noted in Paragraph D2 below.

f. Personnel assigned as Scorers (SECTION VI) will come from organizations other than the unit being tested.

NOTE: The method of scoring is designed to eliminate any need for a scorer to express an opinion or make a decision based on his judgment of a situation.

2. Modifications.

a. Score sheets may be modified only when such modifications are dictated by local conditions. Terrain may differ from that visualized in the test problem, necessitating different platoon formations and tactics. In this event, the headquarters preparing the test site and score sheets are authorized to select the approved platoon formations from the items provided on the score sheet for this purpose.

b. The OIC (officer in charge) will act as Team Commander and as the Aggressor Commander. He will feed messages to the platoon leader being tested and give instructions to the Aggressor Force, in accordance with instructions contained in PROBLEM (SECTION III).

3. Maps. Maps of appropriate scale should be used.

SECTION II. CONCEPT OF THE TEST

A. INTRODUCTION. The tank platoon personnel who are assigned to the testing platoon should be familiar with the test problem. The ideal situation would be to have a provisional test platoon. This platoon would be instructed to perform only those acts and functions ordered to be accomplished by the tested platoon leader. It is imperative that the test platoon be completely responsive to the platoon leader's commands; conversely, the test platoon will not aid the tested platoon leader by accomplishing functions in anticipation of an order.

B. PRETEST ACTIVITIES. The testing platoon has completed "before-

operations" maintenance, and is located in a previously selected combination assembly area and attack position.

C. PREPARATION AND PLANNING BEFORE THE ATTACK. The platoon leader will be given an oral attack order. He will prepare his plan of execution and issue his platoon attack order.

D. ATTACK OF FIRST OBJECTIVE. The platoon moves across the FFD (friendly forward disposition) and attacks the company's first objective. The platoon continues the attack toward the second objective, when the platoon leader receives a message from the OIC informing him that a friendly nuclear weapon will be fired beyond the second objective. The platoon leader will be tested on his actions in attacking the first objective, and his actions before, during, and after the friendly nuclear blast.

E. ATTACK OF SECOND OBJECTIVE. Upon receiving the ALL CLEAR, the platoon will continue the attack on the second objective. The platoon leader will be tested on all aspects of the attack.

F. OCCUPATION AND REORGANIZATION ON THE SECOND OBJECTIVE. The platoon leader will be tested on his reorganization of the platoon on the objective; his provisions for its defense against a counterattack; and his preparations to support the company attack by fire.

G. DELAYING ACTION. Aggressor tanks and infantry, in strength, counterattack. The tested tank platoon leader is ordered to delay back to a delay position. The platoon leader will be tested on all phases of this action.

H. DEFENSE. Upon arriving at the first objective, the platoon leader is ordered to hold this position until 2400 hours. The platoon leader will be tested on all facets of organizing for defense.

I. CRITIQUE. A critique will be held as soon as practicable after the test is terminated.

SECTION III. THE TEST PROBLEM

A. GENERAL.

1. The platoon leader to be tested is now in the combination assembly area and attack position. The platoon leader knows he is going to be committed to combat, but he does not know when. Normal platoon preparation for combat will be performed. Normal security procedures will be followed. The situation is tactical.

2. Regularly assigned platoon call signs will be used in all radio communications.

3. The OIC is also the team commander and aggressor commander, and as such will control the actions of both sides during the test.

4. Sample orders and activating messages are included as examples. Messages will be prepared so that the orders and messages will be appropriate to local terrain conditions.

5. The aggressor has local air superiority.

6. The SOP, FM 17-1, pages 390-401, will be used by all platoons which participate in this platoon leader test. Prior study of this document, and familiarity with it, are mandatory.

7. The scorer will be present at all briefings, and will follow the platoon leader (or ride the platoon leader's tank). The scorer's radio will be set on platoon channel and OIC's channel.

B. ATTACK OF FIRST OBJECTIVE.

1. Scenario and Schedule of Events.

a. The platoon leader reports to the OIC in the combination assembly area - attack position. The OIC will issue the attack order orally.

b. Two tanks, representing the aggressor, should have been positioned behind the first objective. The OIC will contact these two aggressor tanks at the proper time, ordering them to move into hull defilade positions

and to fire upon the advancing platoon.

c. The OIC will, at the proper time, order the two aggressor tanks to withdraw to positions behind the second objective, thus permitting the testing platoon to gain the first objective.

d. Before the attacking platoon (the tested platoon leader's platoon) can continue the attack, the OIC will inform the platoon of the firing of a friendly nuclear weapon, which is scheduled to be fired 15 minutes after the platoon leader's receipt of this message. Then, on schedule, the OIC will order the engineer squad to fire the simulated nuclear weapon.

e. After the blast (10 minutes), the OIC will order the platoon leader to continue the attack on the second objective.

2. The Attack Order. The attack order will be modified so it will conform to the local terrain complex. The order will tell the platoon leader what to do, not how to do it.

"Aggressor armor elements, believed to consist of two tank platoons and one infantry platoon, are located in the vicinity of Hill 555 (here). They moved into this area last night, and are in the process of preparing defensive positions on Hill 555. They have suspected AT (antitank) positions _____ and _____."

"Task Force 1/32 attacks (0900) today, seizes high ground at (555555), Company A and B abreast, Company A on the left. The Task Force mortar platoon will be in direct support of Company B."

NOTE: The tested platoon leader commands 1st Platoon, Company A.

"This company has no attachments or detachments."

"This company attacks (0900) today, seizes Hill 333 (here); continues attack, seizes Hill 444 (here), and Hill 555 (here)."

"This operation will be an attack with the company in column--1st Platoon (testing platoon) leading, followed by the 2d and 3d Platoons."

"1st Platoon attack and seize Hill (333), our first objective; continue attack and seize Hill (444), our second objective. Your platoon will become the base of fire on Hill (444)."

"2d Platoon follow 1st Platoon, prepared to assault Hill (555) on order." (OMITTED)

"3d Platoon follow 2d Platoon, prepare to assault Hill (555) on order." (OMITTED)

"FFD at (222222), leading element across at (0900) hours."

"I will be with the 2d Platoon initially."

"Do you have any questions?"

"The time is now (0700) hours."

3. Scorer. See SECTION VI (DUTIES OF THE SCORER) AND SECTION VII (SCORE SHEETS).

4. Conduct of the Attack. After the attack order is issued, the platoon leader returns to his platoon and prepares the platoon to move out. (See SECTION VII, SCORE SHEETS, for "Attack of First Objective.") The scorer will accompany him. (See SECTION VI, DUTIES OF THE SCORER.)

a. The platoon crosses the FFD. As the platoon approaches to within 600-800 yards of the first objective, the OIC sends this message to the aggressor section of tanks behind the first objective:

"Move into hull defilade and fire at advancing platoon." (Each tank will fire three blank rounds.)

b. The platoon leader will maneuver his platoon and continue the attack. When the testing platoon is within 300-500 yards of the objective, the OIC will send this message to the two tanks representing the aggressor:

"Cease fire and move back quickly to the area behind the tested platoon's objective."

c. After the testing platoon has gained the first objective and

it is obvious to the OIC that the platoon leader is about to continue his advance to the second objective, the OIC will send the following message to the tested platoon leader:

"FLASH--at (0945) hours a friendly 20-KT (kilotons) nuclear weapon will be fired one mile beyond the second objective. Continue the attack on my order. Over."

d. The OIC will not answer any questions or give any guidance, other than the messages, to the tested platoon leader.

e. One minute after the nuclear blast, the OIC will send this message to the tested platoon leader:

"Continue the attack."

C. ATTACK OF THE SECOND OBJECTIVE.

1. Scenario and Schedule of Events.

a. When the tested platoon leader is given the order, "Continue the attack," the platoon leader moves into the attack of the second objective.

b. Regardless of the formation used, or the method of attack employed, as the leading element of the testing platoon approaches to within 800-1000 yards of the objective the OIC will cause the two tanks representing the aggressor to move into hull defilade positions and open fire.

c. When the testing platoon reaches positions about 500 yards from the objective, the OIC will instruct the two aggressor tanks to leave their positions and move back to rejoin their platoon, which is located (depending upon the terrain) about 2000 yards beyond the second objective in a concealed position.

d. The testing platoon moves onto the second objective. The platoon leader should quickly reorganize the platoon. He assigns positions to each tank from which the platoon can support the attack of the remainder of the company by acting as the base of fire.

D. DELAYING ACTION.

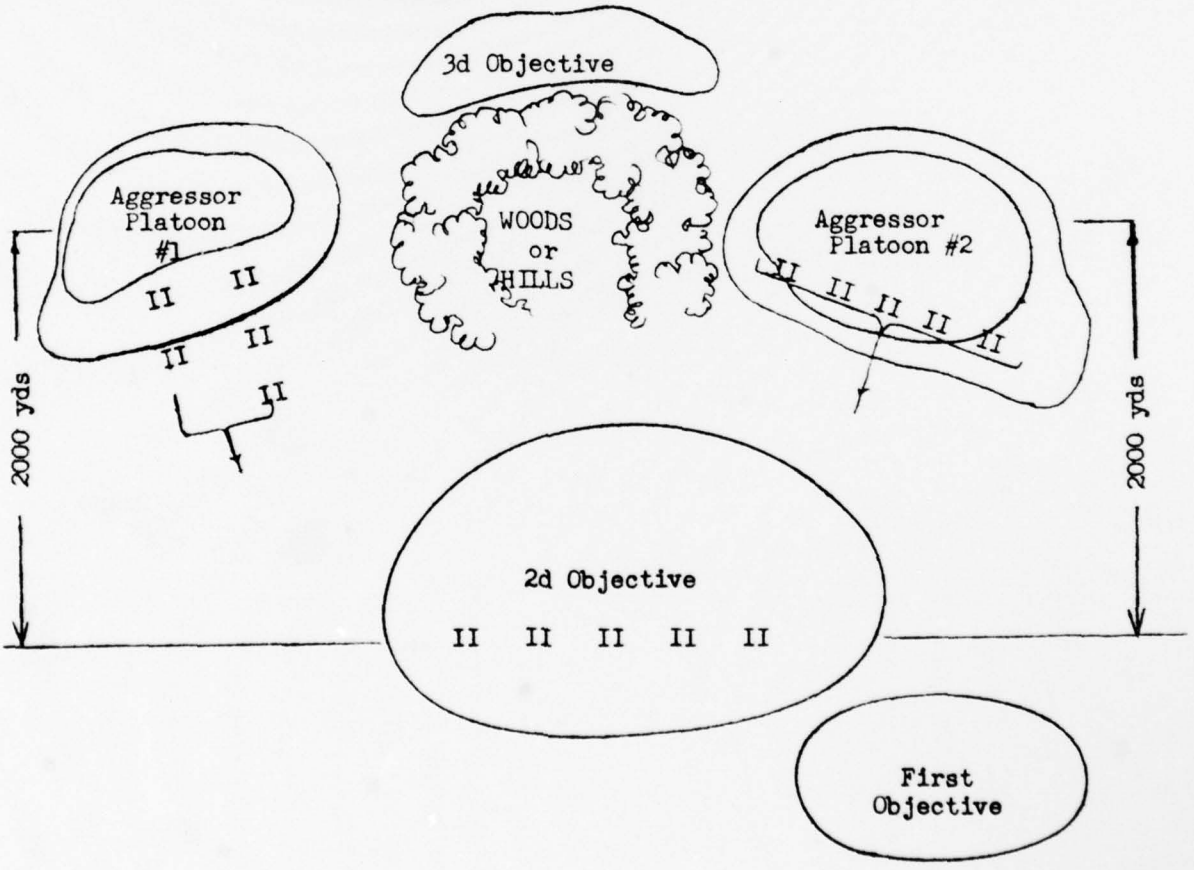
1. General. The stage for this action should be set up as follows:

a. The testing platoon is in the process of selecting tank positions (or in occupying them), as ordered by the platoon leader.

b. The two platoons (as shown in sketch) representing the aggressor are in concealed positions, and are prepared to move immediately upon order from the OIC.

NOTE: The number of aggressor tanks employed at this stage may be modified in accordance with availability.

2. Schematic Diagram of Action. Here is a schematic diagram of the situation as it is visualized:



a. The OIC, at a time when the testing platoon has selected its primary positions, but has not yet selected its alternate positions, will order Aggressor Platoon 1 to advance in two columns toward the testing platoon's left front. The tested platoon leader should not be told of this attack; the platoon leader must observe the attack and take immediate action. Aggressor Platoon 1 will open fire at 1500 yards, unless detected sooner by the tested platoon leader--in which case the aggressor platoon will deploy as soon as it is fired upon by the testing platoon.

b. Aggressor Platoon 1 will slowly advance to about 1000 yards, then will pull back under cover.

c. The OIC will have previously designated two aggressor tanks which will simulate being destroyed. The other three will withdraw, as indicated in b above, on orders from the OIC.

d. As Aggressor Platoon 1 is pulling back, the OIC will order Aggressor Platoon 2 to advance from cover to attack the right front of the testing platoon's position. This aggressor platoon will advance in line formation, and will not fire until it is fired upon by the testing platoon.

e. When the tested platoon leader reports the attack by Aggressor Platoon 2 to the OIC, the OIC will order the tested platoon leader to delay back to the first objective.

f. If the tested platoon leader does not observe Aggressor Platoon 2 by the time this aggressor platoon is within 1000 yards of the testing platoon's position, the OIC will send a message to the tested platoon leader that an aggressor tank - infantry formation is advancing through the contaminated area toward the tested platoon leader's position--and that the platoon will delay back to the first objective.

E. DEFENSE.

1. With the testing platoon on the first objective, the OIC will tell the tested platoon leader that the platoon will hold its present position until daylight.

2. The platoon leader will organize the position for defense. There will be no aggressor action.

3. Allow the platoon leader one hour for this phase. At the end of one hour, the problem will be finished.

F. CRITIQUE.

1. The OIC and the scorer will critique the problem.

2. After the critique, the platoon will be released to the company.

SECTION IV. EQUIPMENT AND PERSONNEL REQUIREMENTS

A. TROOP REQUIREMENTS.

1. One TOE tank platoon to be tested.

2. Tanks and crews to represent the Aggressor Force.

3. One engineer squad to fire the nuclear weapon simulator.

4. Logistical elements as required.

B. AMMUNITION REQUIREMENTS.

1. Ammunition for Tested Platoon.

Nomenclature	Basis of Issue
a. Ammo blank 90mm	10 per tank gun
b. Ctg Blank Caliber .30 MLB	250 per caliber .30 MG
c. Nuclear explosion simulator (3-SA-1)	1 per tested platoon

2. Ammunition for Aggressor Force.

a. Ammo blank 90mm	10 per tank gun (to section acting as aggressor on 1st and 2d objectives)

	5 per tank gun (to tanks representing Aggressor Platoons 1 and 2)
b. Ctg blank Caliber .30 MLB	250 per caliber .30 MG

C. VEHICLE REQUIREMENTS.

1. Scorer.

One ¼-ton truck, with radio

2. Assistant Scorer.

One ¼-ton truck, with radio

3. OIC.

One ¼-ton truck, or track vehicle, with radio

4. Engineer Squad.

One ¼-ton truck, with radio

5. Medics.

One ¼-ton ambulance, with radio

D. MAPS.

Five, issued on the basis of one to each tank commander, platoon sergeant, and platoon leader.

SECTION V. SCORING AND RATING SYSTEM

A. SCORING.

1. General. The score sheets will be prepared by the officer who is responsible for adapting the test problem to local terrain conditions. However, the score sheets accompanying this test problem will not be altered, added to, or subtracted from, except that deletion of scoring items will be accomplished only where authorized and where indicated. This procedure ensures that any platoon leader who is taking the test at any test site or area will be scored identically with any other platoon leader, thereby permitting an accurate score comparison between platoon leaders wherever found.

2. Scoring Method. The scorer and assistant scorer will place opposite the item on the score sheet (in the score column) either a 1 or a 0. No other entry is necessary or desired. All test items have a value of 1. If the platoon leader performs the item, then the scorer or assistant scorer will place the figure 1 in the score column opposite that particular item; if the platoon leader does not perform the item, the 0 is placed in the score column opposite that particular item.

3. Score Achieved. The final score of the tested platoon leader is arrived at by subtracting the 0 scores from the maximum score, or sum of all possible points. Example: A platoon leader has 98 items marked 1, of a possible 113 points. The score sheet will show 15 items scored 0. The platoon leader's score is 98.

B. RATING. (The criteria for relative ratings of platoons will not be determined until sufficient scoring data is available. It is felt at this time that a platoon leader will be rated as COMBAT READY or NOT COMBAT READY.) The ratings, however, will be related to an achieved score, and not to a percentage.

SECTION VI. DUTIES OF THE SCORER

A. GENERAL.

1. The items listed on the score sheet are worded in an objective manner. The scorer at no time needs to use opinion or judgment. Either the platoon leader accomplished the item, or he did not accomplish the item.

2. Although the scorer and assistant scorer do not need to have an intimate knowledge of armor to score this test problem, an elementary knowledge of armor tactical principles and procedures is expected.

3. In the event that a tank in the testing platoon malfunctions to the point where it is not an effective part of the platoon, the scorer will

continue to score the platoon leader as though he had a complete platoon.

B. METHOD OF SCORING.

1. Chief Scorer. The chief scorer will accompany the tank platoon leader. When the platoon leader is dismounted, the chief scorer will be dismounted. When the platoon leader is in his tank, the chief scorer will accompany the platoon leader in a ¼-ton truck, observing the platoon and listening to all radio transmissions (or he may ride the platoon leader's tank). The scorer will score each item he observes or hears.

2. Assistant Scorer. The assistant scorer will accompany any part of the platoon which the chief scorer feels it is necessary to observe. Upon completion of the test, all items scored by the assistant scorer will be transposed to the chief scorer's score sheet.

SECTION VII: SCORE SHEET (PLATOON LEADER)

Performance	Weight	Score
A. Preparation and Planning Before the Attack:		
1. The platoon leader immediately alerted his platoon after receiving the attack order.	1	____
2. The platoon leader immediately gave orders to the platoon to make preparations for the attack.	1	____
3. The platoon leader called his tank commanders (TC's) together and issued his attack orders, to include	1	____
a. Location of the aggressor;	1	____
b. Suspected aggressor AT positions;	1	____
c. Time the platoon crosses the FFD (friendly forward disposition);	1	____
d. Location of the FFD;	1	____
e. Position of platoon in the attack (leading);	1	____
f. Location of first objective;	1	____
g. Location of second objective;	1	____
h. Information that no artillery support is available to the platoon during attack;	1	____
i. That the platoon will not have attachments;	1	____
j. Mission of the platoon after seizing the second objective;	1	____
k. Mission of the company;	1	____
l. Location (initially) of the company commander.	1	____
4. The platoon leader checked each tank commander to ensure that he understood his order.	1	____
5. The platoon leader and platoon sergeant made a reconnaissance of the route to the FFD.	1	____
6. The platoon leader ascertained the exact location of the FFD. (Did he know where it was?)	1	____

Performance	Weight	Score
7. The platoon leader designated to <u>all</u> his TC's the manner in which he would control his platoon	1	____
8. The platoon leader made a final readiness check of each tank in the platoon prior to movement to FFD. (NOTE: He can designate tanks for the platoon sergeant to check and still receive credit for this part; or he can check them all himself.)	1	____
9. Was the final readiness check made at least five minutes before MOVE OUT time?	1	____
10. Designated initial platoon formation for moving to the FFD.	1	____
B. <u>Movement to the FFD</u>.		
1. The platoon moved from its position in a well organized manner; that is,		
a. Did the platoon leader ensure that <u>each</u> tank moved quickly into its assigned position in the march column?	1	____
b. The platoon leader ordered the platoon to maintain the prescribed distance between tanks (50-100 yards).	1	____
c. The platoon leader gave proper arm and hand signals.	1	____
d. The platoon leader ensured that all control signals were relayed without delay.	1	____
e. The platoon leader ensured that all control signals were obeyed.	1	____
2. The platoon reached the FFD on time (____ hours).	1	____
3. The platoon crossed the FFD (____ hours).	1	____
4. The platoon crossed the FFD without stopping.	1	____
5. The platoon leader reported the crossing of the FFD, to the OIC (officer in charge).	1	____

Performance	Weight	Score
C. Conduct of the Attack on First Objective.		
1. The platoon leader utilized the available concealed route toward the first objective.	1	____
2. The platoon leader deployed his platoon when fired upon by the aggressor tanks located on the first objective.	1	____
3. The platoon adopted the line, wedge, echelon formation. (Delete inappropriate formations.)	1	____
4. The platoon advanced by fire and movement (one section the base of fire, the other section the maneuver element).	1	____
5. The platoon leader ordered the base of fire to fire.	1	____
6. The platoon leader instructed the meaeuvering section which route to take.	1	____
7. The platoon leader designated targets for the base of fire tanks.	1	____
8. The platoon leader designated tanks to reconnoiter both suspected aggressor AT positions.	1	____
9. The platoon leader ordered reconnaissance by fire of suspected AT positions with machine guns.	1	____
10. The platoon leader had the tanks which were conducting the reconnaissance by fire "report" after reconnoitering suspected areas.	1	____
11. The platoon leader reported the two aggressor tanks to the OIC.	1	____
NOTE: Questions 12 through 18 are selective, depending upon the opinion of the officer preparing the problem, as to the best method of attack. Deletion of inappropriate questions will not affect the total score. (SEE SECTION V, SCORING AND RATING SYSTEM.)		
12. The platoon leader ordered the base of fire to cease fire and join the maneuvering element in the assault.	1	____
13. The maneuvering section moved into the assault without halting.	1	____

Performance	Weight	Score
a. The platoon leader assigned areas of fire to the maneuvering section.	1	____
b. The platoon leader ordered tanks in the maneuvering section to fire.	1	____
*14. The platoon leader ordered the base of fire to lift its fire when the maneuvering element started its assault.[1]	1	____
*15. The platoon leader ordered the base of fire to shift its fire beyond the first objective as the maneuvering element started its assault.	1	____
16. The platoon leader had the platoon advance by bounds.	1	____
17. The platoon advanced by successive, alternate bounds. (Select proper bound.)	1	____
18. The platoon leader ensured that the platoon obeyed his orders.	1	____
19. The platoon leader reported the withdrawal of the aggressor tanks to the OIC.	1	____
*20. The platoon leader ordered the tanks to maintain 50-100 yards between them while occupying the objective.	1	____
21. The platoon leader ordered platoon to advance to the far side of the objective.	1	____
22. The platoon leader reported seizure of the objective to the OIC.	1	____
23. The platoon leader reorganized his platoon for the continuance of the attack.	1	____
24. The platoon leader refrained from requesting further instructions from the OIC.	1	____
D. Actions Prior to, During, and Immediately After the Nuclear Detonation		
1. The platoon leader relayed the nuclear alert to his platoon.	1	____
2. The platoon leader ordered all tanks to seek a defilade position.	1	____
3. The platoon leader ordered all tanks to face the front of the tank toward the direction of the anticipated blast.	1	____

[1]No scores were given for starred items when the test was administered in this study.

Performance	Weight	Score
4. The platoon leader ordered all tanks to rotate turrets to the rear.	1	____
5. The platoon leader ordered all tanks to close and lock all hatches.	1	____
6. The platoon leader ordered all tanks to lower all periscopes.	1	____
7. The platoon leader ordered all antennas to be tied down. (If they were tied down in the assembly area, give credit.)	1	____
*8. The platoon leader ordered tanks to keep 50-100 yards distance between them.	1	____
9. The platoon leader ordered all crew members to remain in tanks until the ALL CLEAR.	1	____
10. Platoon leader asked for a READY from all tanks of his platoon.	1	____
11. Platoon leader reported a READY to the OIC.	1	____
12. The platoon leader reported ALL CLEAR to the platoon.	1	____
13. Ordered all tanks to prepare to move out and continue mission.	1	____
14. After the blast, the platoon leader checked <u>each</u> crew by radio to ascertain its readiness. (Status report.)	1	____
15. The platoon leader reported NO CASUALTIES to the OIC after the blast.	1	____
16. The platoon leader ordered all hatches to remain closed until the ALL CLEAR.	1	____
E. <u>Attack of the Second Objective</u>		
1. The platoon leader ordered all tank commanders to traverse traverse their gun tubes to the front.	1	____
2. The platoon attacked the second objective in (line, wedge, echelon, column) formation. (Select one.)	1	____
3. The platoon leader set up a base of fire and a maneuvering element when fired upon.	1	____

Performance	Weight	Score
4. The platoon leader designated the direction of maneuver.	1	____
5. The platoon leader moved the maneuver section around the flank of the first objective.	1	____
6. The platoon leader designated areas of fire for the base of fire tanks.	1	____
7. The platoon leader designated specific targets for the base of fire tanks.	1	____
8. The platoon leader ordered the platoon to attack by bounds.	1	____
9. The platoon used (alternating, successive) bounds. (Select one.)	1	____
10. The platoon leader used available cover and concealment in moving the maneuver section.	1	____
*11. The platoon leader ordered the base of fire to join the maneuver element in the assault.	1	____
12. The platoon leader ordered the assaulting section to open fire on the objective.	1	____
13. The platoon leader assigned areas of fire to the assaulting section.	1	____
14. The platoon leader reported seeing aggressor tanks on the objective, to the OIC.	1	____
15. The platoon leader ordered the base of fire to shift its fire (or cease fire) when the maneuver element began the assault.	1	____
16. The platoon leader ordered the base of fire to join the maneuver element on the objective.	1	____
17. The platoon leader positioned his tank on the objective so he could observe all tanks in his platoon.	1	____
18. The platoon leader positioned <u>each</u> tank (either by radio or by physical action) upon completion of the assault.	1	____
19. The platoon leader designated areas of responsibility for <u>each</u> tank to observe for aggressor counterattacks.	1	____

Performance	Weight	Score
20. The platoon leader reported the seizing of the objective, to the OIC.	1	____
21. The platoon leader requested a report from <u>each</u> tank regarding their continued combat readiness status.	1	____
22. The platoon leader ordered the platoon to take up positions on the far side of the objective.	1	____
23. The platoon leader ordered each tank to designate one crew member as the AIR ALERT observer. (If this duty was previously assigned, give credit.)	1	____
24. The platoon leader ordered all tank commanders to reconnoiter for, and select, alternate positions.	1	____
25. The platoon leader gave orders to camouflage all tanks. (The scorer will stop them from actually doing this, but credit is given for the order.)	1	____
26. The platoon leader knew what his mission was while on the objective. (The scorer will ask.)	1	____
27. The platoon leader checked to ensure that <u>all</u> tank commanders knew the platoon's mission while on the objective.	1	____

NOTE: The mission is to be the base of fire for the company attack.

F. <u>Delaying Action (Phase I)</u>

1. The platoon leader noticed the aggressor attack <u>before</u> the aggressor tanks fired.	1	____
2. The platoon leader alerted the platoon as to the aggressor attack.	1	____
3. The platoon leader ordered the tanks, in whose area of responsibility the aggressor was attacking, to open fire on the aggressor.	1	____
4. The platoon leader designated targets for <u>each</u> of the tanks in the platoon.	1	____
5. The platoon leader reported the attack to the OIC.	1	____
6. The platoon leader controlled his platoon so that not <u>all</u> of his tanks were moving to an alternate firing position at the same time.	1	____

Performance	Weight	Score
7. The platoon leader ordered the platoon to keep firing when the attacking aggressor began to pull back.	1	____
8. The platoon leader reported repelling the attack, to the OIC.	1	____
9. The platoon leader reported the two suspected tank KILLS to the OIC.	1	____
10. The platoon leader checked on the combat effectiveness of each tank after the attack was beaten off.	1	____
11. The platoon leader alerted and cautioned the platoon to be prepared for another attack.	1	____

G. Delaying Action (Phase II), Attack of the Second Aggressor Platoon

1. The platoon leader noticed the attack developing before the aggressor platoon was within 1500 yards of the platoon's position.	1	____
2. The platoon leader alerted the platoon to the attack.	1	____
3. The platoon leader ordered the tanks, in whose area of responsibility the attack was coming, to fire.	1	____
4. The platoon leader designated specific targets for each of his tanks.	1	____
5. The platoon leader reported this new attack to the OIC.	1	____
6. The platoon leader controlled the movement of the tanks of his platoon so that not all of his tanks were changing firing positions at the same time.	1	____
7. The platoon leader alerted the platoon to its mission of delaying back to the first objective.	1	____
8. The platoon leader ordered the least engaged section to displace first to the rear.	1	____
9. The platoon leader designated the route he wanted the displacing section to follow.	1	____
10. The platoon leader told the displacing section the positions he wanted them to occupy on the delay position.	1	____

Performance	Weight	Score
11. The platoon leader instructed the displacing section to open fire immediately upon being in position, or on his command as soon as they were in position.	1	____
12. The platoon leader ordered the displacing section to move to the delay position with turrets traversed to the rear.	1	____
13. The platoon leader controlled the fire of the section which was still on the second objective so as to cover all the attacking aggressor tanks.	1	____
14. The platoon leader reported the movement of the displacing section to the OIC.	1	____
15. The platoon leader ordered the remaining section to displace <u>after</u> the section on the delay position began supporting by fire.	1	____
16. The platoon leader ordered the remaining section to move to the delay position with turrets traversed to the rear.	1	____
17. The platoon leader designated individual tank positions for the platoon's tanks, upon his arrival on the delay position.	1	____
18. The platoon leader reported the departure of the second section of tanks from the second objective, to the OIC.	1	____
19. The platoon leader reported the arrival of the second section of tanks on the delay position, to the OIC.	1	____

H. <u>Defense</u>.

1. The platoon leader informed the platoon of the new mission.	1	____
2. The platoon leader designated individual tank positions for <u>each</u> tank.	1	____
3. The platoon leader designated each individual tank areas of responsibility and fire.	1	____
4. The platoon leader ordered <u>each</u> tank commander to select an alternate position.	1	____

Performance	Weight	Score
5. The platoon leader himself ensured that all crew members knew the location of their alternate positions.	1	____
6. The platoon leader checked <u>each</u> tank's alternate position.	1	____
7. The platoon leader checked <u>each</u> tank's route to its alternate position.	1	____
8. The platoon leader ordered and selected supplementary positions for <u>each</u> tank.	1	____
9. The platoon leader ordered tanks to camouflage their positions. (NOTE: The scorer will stop them from actually camouflaging the positions, but credit will be given.)	1	____
10. The platoon leader ordered fields of fire cleared where necessary. (Give credit if <u>not</u> necessary.) (The scorer will stop them from actually clearing fields of fire.)	1	____
11. The platoon leader ordered an AIR ALERT kept on each tank.	1	____
12. The platoon leader ordered <u>each</u> tank commander, including the platoon leader's gunner, to prepare a range card.	1	____
13. The platoon leader indicated for <u>each</u> tank the main targets he wanted placed on the range card.	1	____
14. The platoon leader ordered the TC's to select <u>other</u> targets in their areas of responsibility, in addition to those designated by the platoon leader, for inclusion on their range cards.	1	____
15. The platoon leader checked <u>all</u> range cards.	1	____
16. The platoon leader reported ALL READY to the OIC, when his position was in complete readiness to defend.	1	____

I. <u>Critique</u>.

1. The OIC will make any comments desired.

2. The scorer will give the critique, and the rating attained.

The Tank Platoon Combat Readiness Check
Tank Crew Version

SECTION I. GENERAL

A. REFERENCES. Armor Reference Data, The Armor School, Fort Knox; FM 17-1; FM 17-12; FM 17-33; FM 17-50; FM 17-79; FM 17-100.

B. PURPOSE. To determine the combat readiness of the tank crews of a tank platoon.

C. OBJECTIVES.

1. To determine whether or not the tank crews are combat ready.

2. To determine the capability of the tank crews of a platoon to accomplish their assigned mission.

3. To isolate and identify specific areas in which the tank crews may require additional training to bring them to a combat readiness state.

4. To provide the tank crews with a realistic combat training problem involving tank platoon functions and actions.

D. ADMINISTRATION.

1. Preparation of Test.

a. Any terrain may be used which will provide an assembly area and two objectives.

b. Tank crews will not be briefed, or rehearsed, on the test problem.

c. The procedures outlined under SECTION II and SECTION III will be followed as closely as local conditions will permit.

d. The test problem is a BLANK-FIRING type exercise. Both the tested platoon and the troops representing the aggressor will use blank ammunition (SECTION IV).

e. Score Sheets (SECTION VII) will not be modified, except as noted in Paragraph D2 below.

f. Personnel assigned as Scorers (SECTION VI) will come from organizations other than the unit being tested.

NOTE: The method of scoring is designed to eliminate any need for a scorer to express an opinion or make a decision based on his judgment of a situation.

2. Modifications.

a. Score sheets may be modified only when such modifications are dictated by local conditions. Terrain may differ from that visualized in the test problem, necessitating different platoon formations and tactics. In this event, the headquarters preparing the test site and score sheets is authorized to select the approved platoon formations from the items provided on the score sheet for this purpose.

b. The OIC (officer in charge) will act as Team Commander and as the Aggressor Commander. He will feed messages to the Platoon Leader-Instructor and give instructions to the Aggressor Force, in accordance with instructions contained in SECTION III (THE TEST PROBLEM).

3. Maps. Maps of appropriate scale should be used.

SECTION II. CONCEPT OF THE TEST

A. INTRODUCTION. The five scorers and the aggressor personnel who are assigned to assist in the conduct of the test should be familiar with the test problem. The ideal situation would be to have the test problem run several times before it is used for evaluation purposes.

B. PRETEST ACTIVITIES. The platoon being tested has completed "before operations" maintenance, and is located in a previously selected combination assembly area and attack position.

C. PREPARATION AND PLANNING BEFORE THE ATTACK. The platoon leader will be given an oral attack order. Following the prescribed plan of execution, he then issues the platoon attack order.

D. ATTACK OF FIRST OBJECTIVE. The platoon moves across the FFD (friendly forward disposition) and attacks the company's first objective. The platoon continues the attack toward the second objective, when the platoon leader receives a message from the OIC informing him that a friendly nuclear weapon will be fired beyond the second objective. The tank crews will be tested on their movement to the FFD and their actions in attacking the first objective, as well as their actions before, during, and after the friendly nuclear blast.

E. ATTACK OF SECOND OBJECTIVE. Upon receiving the ALL CLEAR, the platoon will continue the attack on the second objective. The tank crews will be tested on all aspects of the attack.

F. ACTIONS TAKEN IN A COMBAT EMERGENCY. Shortly after the attack of the second objective is begun, aggressor antitank guns open fire on the platoon. This fire kills the platoon leader. The platoon sergeant and another tank commander must assume new roles as platoon leader and platoon sergeant, and continue the attack.

G. OCCUPATION AND REORGANIZATION ON THE SECOND OBJECTIVE. The acting platoon leader and the platoon will be tested on their reorganization of the platoon on the objective; their provisions for its defense against a counterattack; and their preparations to support the company attack by fire.

H. COUNTERATTACK PHASE. Two aggressor tanks counterattack. The tested platoon is required to repel this attack and prepare for a second counterattack.

I. SECOND COUNTERATTACK. The aggressor launches a second counterattack with full platoon strength, and the platoon is again tested on its ability to repel the assault.

J. CREW RATING. At the end of the second counterattack, each scorer

rates the crew on the basis of its performance. This rating is in terms of its comparability to other TOE crews and in terms of specific strengths and weaknesses in the various combat skills.

SECTION III. THE TEST PROBLEM

A. GENERAL.

1. The platoon being tested is now in the combination assembly area and attack position. The platoon knows it is going to be committed to combat, but does not know <u>when</u>. Normal platoon preparation for combat will be performed. Normal security procedures will be followed. The situation is tactical.

2. Regularly assigned platoon call signs will be used in all radio communications.

3. The OIC is both the company commander and aggressor commander, and as such will control the actions of both sides during the test.

4. Sample orders and activating messages are included as examples. Messages will be prepared so that the orders and messages will be appropriate to local terrain conditions.

5. The aggressor has local air superiority.

6. Each of the scorers will be present at all briefings, and will follow the platoon leader (or ride the platoon leader's tank). The scorers' radios will be set on the platoon channel and OIC's channel.

B. ATTACK OF FIRST OBJECTIVE.

1. <u>Scenario and Schedule of Events</u>.

a. The platoon leader reports to the OIC in the combination assembly area - attack position. The OIC will issue the attack order orally.

b. Two tanks, representing the aggressor, should have been

positioned behind the first objective. The OIC will contact these two aggressor tanks at the proper time, ordering them to move into hull defilade positions and to fire upon the advancing platoon.

c. The OIC will, at the proper time, order the two aggressor tanks to withdraw to positions behind the second objective, thus permitting the testing platoon to gain the first objective.

d. Before the attacking platoon (the tested platoon) can continue the attack, the OIC will inform the platoon of the firing of a friendly nuclear weapon, which is scheduled to be fired 15 minutes after the platoon leader's receipt of this message. Then, on schedule, the OIC will order the engineer squad to fire the simulated nuclear weapon.

e. After the blast (10 minutes), the OIC will order the platoon leader to continue the attack on the second objective.

2. The Attack Order. The attack order will be modified so it will conform to the local terrain complex.

"Aggressor armor elements, believed to consist of two tank platoons and one infantry platoon, are located in the vicinity of Hill 555 (here). They moved into this area last night, and are in the process of preparing defensive positions on Hill 555. They have suspected AT (antitank) positions _____ and _____."

"Task Force 1/32 attacks (0900) today, seizes high ground at (555555), Company A and B abreast, Company A on the left. The Task Force mortar platoon will be in direct support of Company B."

NOTE: The tested platoon leader commands 1st Platoon, Company A.

"This company has no attachments."

"This company attacks (0900) today, seizes Hill 333 (here); continues attack, seizes Hill 444 (here), and Hill 555 (here)."

"This operation will be an attack with the company in column--1st Platoon (testing platoon) leading, followed by the 2d and 3d Platoons."

"1st Platoon attack and seize Hill (333), our first objective; continue attack and seize Hill (444), our second objective. Your platoon will become the base of fire on Hill (444)."

"2d Platoon follow 1st Platoon, prepared to assault Hill (555) on order." (OMITTED)

"3d Platoon follow 2d Platoon, prepared to assault Hill (555) on order." (OMITTED)

"FFD at (222222), leading element across at (0900) hours."

"I will be with the 2d Platoon initially."

"Do you have any questions?"

"The time is now (0700) hours."

3. Scorer. See SECTION VI (DUTIES OF THE SCORER) and SECTION VII (SCORE SHEET).

4. Conduct of the Attack. After the attack order is issued, the platoon leader returns to his platoon and prepares the platoon to move out. (See SECTION VII, SCORE SHEET, for Attack of First Objective.) The individual scorers will accompany him. (See SECTION VI, DUTIES OF THE SCORER.)

a. The platoon crosses the FFD. As the platoon approaches to within 600-800 yards of the first objective, the OIC sends this message to the aggressor section of tanks behind the first objective:

"Move into hull defilade and fire at advancing platoon." (Each tank will fire three blank rounds.)

b. The platoon leader will maneuver his platoon and continue the attack. When the testing platoon is within 300-500 yards of the objective, OIC will send this message to the two tanks representing the aggressor:

"Cease fire and move back quickly to the area behind the tested platoon's objective."

c. After the testing platoon has gained the first objective and it is obvious to the OIC that the platoon leader is about to continue his advance to the second objective, the OIC will send the following message to the platoon leader:

"FLASH--at (0945) hours a friendly 20-KT (kiloton) nuclear weapon will be fired one mile beyond the second objective. Continue the attack on my order. Over."

d. About 10 minutes after the nuclear blast, the OIC will send this message to the tested platoon leader:

"Continue the attack."

C. ATTACK OF THE SECOND OBJECTIVE.

1. Scenario and Schedule of Events.

a. When the platoon leader is given the order, "Continue the attack," the platoon moves into the attack of the second objective.

b. As the platoon moves into the attack on the second objective, and at a point where the suspected aggressor AT guns are located, the platoon leader alerts the platoon. Shortly thereafter, the platoon leader--using M80 firecrackers or previously implanted nitrostarch charges--simulates AT gun fire. Immediately thereafter, the platoon leader notifies his gunner that he has been killed by the AT fire and that the gunner and the platoon are now "on their own." The gunner should notify the platoon sergeant, and he in turn should notify the OIC. The OIC then directs the platoon sergeant to assume command and continue the attack.

c. Regardless of the formation used or the method of attack employed, as the leading element of the platoon approaches to within 800-1000

yards of the objective the OIC will cause the two tanks representing the aggressor to move into hull defilade position and open fire.

d. When the platoon reaches positions about 500 yards from the objective, the OIC will instruct the two aggressor tanks to leave their positions and move back to rejoin their platoon, which is located (depending upon the terrain) about 2000 yards beyond the second objective in a concealed position.

e. The platoon moves onto the second objective. The acting platoon leader should quickly reorganize the platoon. He assigns positions to each tank from which the platoon can support the attack of the remainder of the company by acting as the base of fire.

D. COUNTERATTACKS.

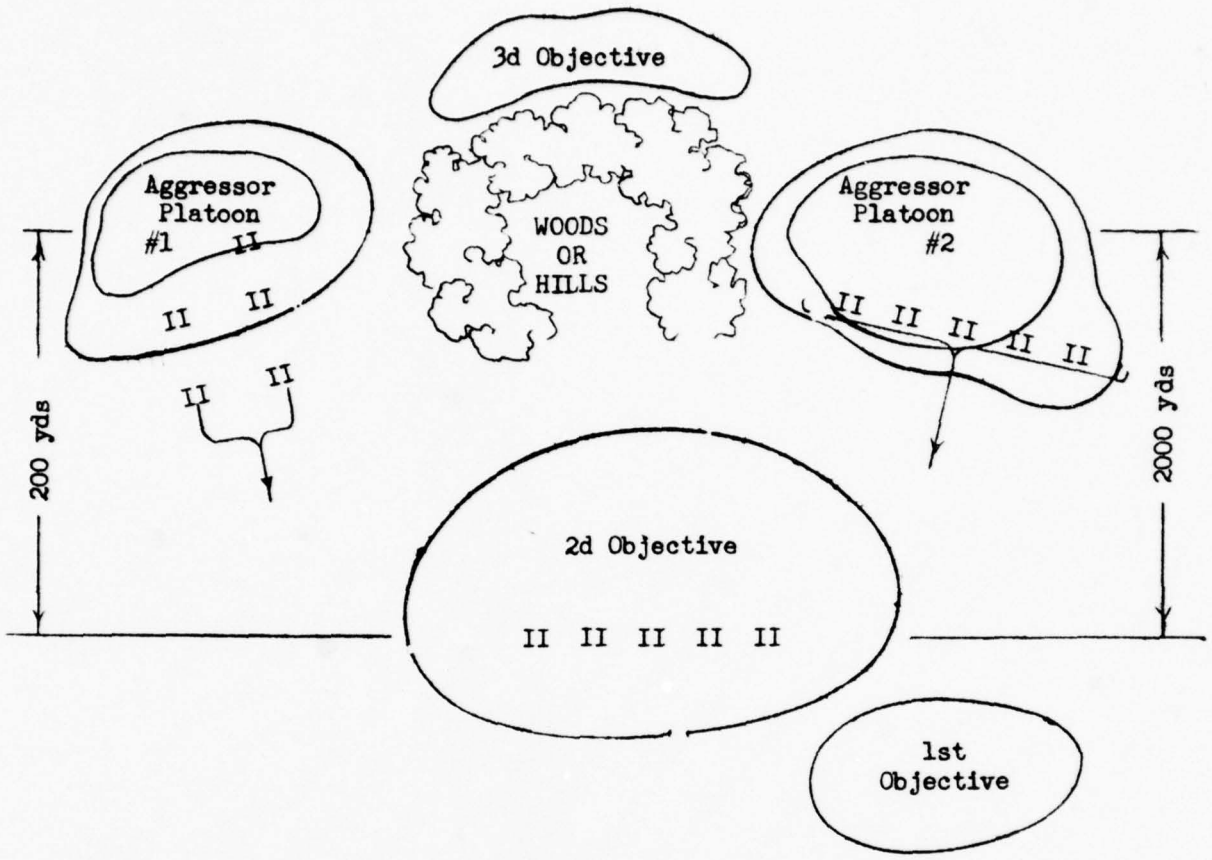
1. General. The stage for this action should be set up as follows:

a. The platoon being tested is in the process of selecting tank positions (or in occupying them), as ordered by the acting platoon leader.

b. The two platoons (as shown in sketch) representing the aggressor are in concealed positions and are prepared to move immediately upon order from the OIC.

NOTE: The number of aggressor tanks employed at this stage may be modified in accordance with availability.

2. Schematic Diagram of Action. Here is a schematic diagram of the situation as it is visualized:



a. The OIC, at a time when the platoon has selected its primary positions but has not yet selected its alternate positions, will order Aggressor Platoon 1 to advance in two columns toward the testing platoon's left front. The acting platoon leader should not be told of this attack; the platoon leader must observe the attack and take immediate action. Aggressor Platoon 1 will open fire at 1500 yards, unless detected sooner by the tested platoon leader—in which case the aggressor platoon will deploy as soon as it is fired upon by the testing platoon.

b. Aggressor Platoon 1 will slowly advance to about 1000 yards, then will pull back under cover.

c. The OIC will have previously designated two aggressor tanks which will simulate being destroyed. The other three will withdraw, as

indicated in b above, on orders from the OIC.

d. As Aggressor Platoon 1 is pulling back, the OIC will order Aggressor Platoon 2 to advance from cover to attack the right front of the tested platoon's position. This aggressor platoon will advance in line formation, and will not fire until it is fired upon by the tested platoon.

e. When the acting platoon leader reports the attack by Aggressor Platoon 2 to the OIC, the OIC will order the acting platoon leader to delay back to the first objective.

f. If the acting platoon leader does not observe Aggressor Platoon 2 by the time this aggressor platoon is within 1000 yards of the testing platoon's position, the OIC will send a message to the acting platoon leader that an aggressor tank-infantry formation is advancing through the contaminated area toward the acting platoon leader's position, and that the platoon will delay back to the first objective.

3. Crew Rating. At the end of the problem, each scorer rates the performance of the crew in terms of its comparability to other trained line tank crews. In addition, the scorer notes specific strengths and weaknesses and makes any other comments on the crew's performance that are deemed necessary.

SECTION IV. EQUIPMENT AND PERSONNEL REQUIREMENTS

A. TROOP REQUIREMENTS.

1. One tank platoon to be tested.
2. Tanks and crews to represent the aggressor force.
3. One engineer squad to fire the nuclear weapon simulator.
4. Logistical elements as required.

B. AMMUNITION REQUIREMENTS.

1. Ammunition for Tested Platoon.

Nomanclature	Basis of Issue
a. Ammo blank 90mm	10 per tank gun
b. Ctg blank caliber .30 MLB	250 per caliber .30 MG
c. Nuclear explosion simulator (3-SA-1)	1 per tested platoon
2. Ammunition for Aggressor Force	
a. Ammo blank 90mm	10 per tank gun (to section acting as aggressor on 1st and 2d objectives) 5 per tank gun (to tanks representing Aggressor Platoons 1 and 2)
b. Ctg blank caliber .30 MLB	250 per caliber .30 MG

C. VEHICLE REQUIREMENTS.

1. Scorer.

One ¼-ton truck, with radio.

2. Assistant Scorer.

One ¼-ton truck, with radio.

3. OIC.

One ¼-ton truck, or track vehicle, with radio.

4. Engineer Squad.

One ¼-ton truck, with radio.

5. Medics.

One ¼-ton ambulance, with radio.

D. MAPS.

Five, issued on the basis of one to each tank commander, platoon sergeant, and platoon leader.

SECTION V. SCORING AND RATING SYSTEM

A. SCORING.

1. General. The score sheets will be prepared by the officer who is responsible for adapting the test problem to local terrain conditions. However, the score sheets accompanying this test problem will not be altered, added to, or subtracted from, except that deletion of scoring items will be accomplished only where authorized and where indicated. This procedure ensures that any tank crew in any platoon which is taking the test at any test site or area will be scored identically with any other tank crew, thereby permitting an accurate score comparison between crews and platoons wherever found.

2. Scoring Method. The scorer on each tank will place opposite the item on the score sheet (in the score column) either a 1 or a 0. No other entry is necessary or desired. All test items have a value of 1. If the tank crew performs the item, then the scorer will place the figure 1 in the score column opposite that particular item; if the tank crew does not perform the item, the 0 is placed in the score column opposite that particular item.

3. Score Achieved. The final score of the tank crew is arrived at by subtracting the 0 scores from the maximum score, or sum of all possible points. Example: A tank crew has 98 items marked 1, of a possible 128 points. The score sheet will show 30 items scored 0. The tank crew's score is 98. The total score of the tank platoon is merely the average of the scores of the five separate tank crews.

B. INTERPRETING THE SCORES.

Until a large number of platoons have been tested and their average scores tabulated, all judgments about the quality of performance should be regarded as tentative. At this time it is believed that the test is most useful as a diagnostic tool for the commanders of armor units. It affords him an overall measure of the combat readiness of his tank crews, as well as specific measures of individual strengths and weaknesses in critical combat skills.

Although none of the individual items are weighted, obviously some of the test items are more important than others. Yet for many items, the relative importance, as well as the value, of the weight that should be assigned is a strictly arbitrary matter. Therefore it is believed best not to weight any item but to give all items equal weight. For purposes of evaluating combat readiness, the failure of the personnel to complete any item should be a matter of concern, and corrective action should be taken. Since the individual commander is responsible for the training of his troops, he of course desires that proficiency be as high as possible under the existing circumstances. It is believed that he is more concerned with the specific strengths and weaknesses in individual crew and team skills than he is with meaningless numbers or grades. Nevertheless, should weighting of individual items or ratings of performance in terms of letter grades or descriptive adjectives be desired, the test does not prohibit their being added by the individual commander.

SECTION VI. DUTIES OF THE SCORER

A. GENERAL.

1. The items listed on the score sheet are worded in an objective manner. The scorer at no time needs to use opinion or judgment. Either the tank crew accomplished the item, or it did not accomplish the item.

2. Although the scorer does not need to have an intimate knowledge of armor to score this test problem, an elementary knowledge of armor tactical principles and procedures is expected.

3. In the event that an individual tank in the platoon malfunctions to the point where it is not an effective part of the platoon, the scorer will notify the OIC and the platoon leader, and the problem should be continued without this particular tank. The platoon score, of course, should be based only on the average scores of those tanks completing the entire problem.

SECTION VII. SCORE SHEET (TANK CREW TEST)

Performance	Weight	Score
A. Preparation in Assembly Area.		
1. Each tank crew immediately began to make preparations for the attack.	1	____
2. Each tank commander (TC) briefed his crew, including the following information:		
a. Location of the aggressor;	1	____
b. Suspected aggressor AT positions;	1	____
c. Time platoon crosses FFD;	1	____
d. Location of FFD;	1	____
e. Position of platoon in the attack (leading);	1	____
f. Location of first objective;	1	____
g. Location of second objective;	1	____
h. Information that no artillery support is available to the platoon during attack;	1	____
i. Information that the platoon will not have attachments;	1	____
j. Mission of the platoon after seizing the second objective;	1	____
k. Mission of the company;	1	____
l. Location (initially) of the company commander.	1	____
B. Movement to the FFD.		
NOTE: Radio silence in effect until reaching FFD.		
1. The platoon moved from its position in a well organized manner; that is,		
a. Each tank moved quickly into its assigned position in the march column.	1	____
b. Each tank maintained the prescribed distance between tanks (50-100 yards).	1	____

Performance	Weight	Score
NOTE: Platoon leader gives the arm and hand signal for HALT.		
c. Each tank commander (TC) relayed the arm and hand signal for HALT.	1	____
d. Each tank obeyed the arm and hand signal for HALT.	1	____
NOTE: Platoon leader gives the arm and hand signal for READY.		
e. Each TC relayed the arm and hand signal for READY.	1	____
f. Each TC signaled that they were ready to move out by using the proper arm and hand signal.	1	____
NOTE: Platoon leader gives the arm and hand signal for FORWARD.		
g. Each TC relayed the arm and hand signal for FORWARD.	1	____
h. Each tank obeyed the arm and hand signal for FORWARD.	1	____
NOTE: Platoon leader gives arm and hand signal for EXTEND.		
i. Each TC relayed the arm and hand signal for EXTEND.	1	____
j. Each tank obeyed the arm and hand signal for EXTEND.	1	____
2. Tanks alternated, covering right and left flanks with gun tubes, while they were in column formation.	1	____
The last tank in the column traversed its gun tube to cover the rear of the column.	1	____
3. Each tank maintained radio silence until it was crossing the FFD.	1	____
NOTE: Platoon leader gives arm and hand signal for LINE.		
4. Each TC relayed the arm and hand signal for LINE.	1	____

Performance	Weight	Score
5. Each tank obeyed the arm and hand signal for LINE formation.	1	____
NOTE: Tank 12 goes to 11's left, and 13 to 12's left. Tank 14 goes to 11's right, and 15 to 14's right.		
NOTE: Platoon leader reports, to the OIC, the crossing of the FFD.		
6. Each tank traversed and searched the area to the immediate front.	1	____
NOTE: Platoon leader assigns each tank area of responsibility.		
7. Each TC assigned areas of responsibility for observation to his crew.	1	____
C. Conduct of the Attack on First Objective.		
1. Each tank utilized the maximum amount of cover and concealment available in moving toward the first objective.	1	____
2. Each tank reconnoitered by fire all suspected enemy positions in its area of responsibility, without being told.	1	____
NOTE: Platoon leader orders platoon to get into good firing positions after being fired upon.		
3. Each tank took evasive action when fired upon by the enemy tanks.	1	____
NOTE: Platoon leader reported enemy tanks to the OIC.		
4. Each tank took up a good firing position.	1	____
5. Both platoon leader and platoon sergeant designated targets for his section in section's area of responsibility.	1	____
6. Each tank fired at enemy tanks without being told to by platoon leader.	1	____
7. TC's reported enemy targets to the platoon leader.	1	____
NOTE: Platoon leader splits platoon into two sections, one attacking from the left, the other from the		

Performance	Weight	Score
right, and keeps his tank back as a base of fire. Platoon leader tells each section to report when it is in position to attack.		
8. ALFA Section advanced by fire and movement.	1	____
a. Each crew responded quickly to the TC's commands.	1	____
b. Each tank fired at the aggressor.	1	____
9. BRAVO Section advanced by fire and movement.	1	____
a. Each crew responded quickly to the TC's commands.	1	____
b. Each tank fired at the aggressor.	1	____
10. Each tank responded quickly to the TC's commands.	1	____
11. Each section moved as a team in a coordinated fashion, mutually supporting each other.	1	____
12. Each section utilized the available terrain to best advantage in attacking the first objective.	1	____
13. Each section reported when in position to attack.	1	____
NOTE: Platoon leader gives order to attack.		
14. Each section leader designated targets to be taken under fire.	1	____
15. Each tank fired while on the move while assaulting the objective.	1	____
16. Each section overran the objective.	1	____
17. Each section reconnoitered by fire to ensure that the enemy had cleared from the objective.	1	____
18. Each tank pulled back into a good defilade position after overrunning the objective.	1	____
19. Each section reported to the platoon leader that the section's objective was secured.	1	____
NOTE: Platoon leader moves his tank up to objective.		

Performance	Weight	Score
20. Each tank maintained 50-100 yards between tanks while occupying the objective.	1	____
NOTE: Platoon leader requests status report from each tank.		
21. Each tank gave a status report to platoon leader after taking positions on the objective.	1	____
22. The platoon sergeant and section leaders refrained from requesting further instructions from the platoon leader.	1	____
D. Actions Before, During, and Immediately After the Nuclear Blast.		
NOTE: Platoon leader relayed the nuclear alert to the platoon.		
1. Each tank deployed to best turret defilade position available.	1	____
2. Each tank crew placed the front of the tank toward the direction of the anticipated blast.	1	____
3. Each tank rotated the turret to the rear.	1	____
4. Each tank closed and locked all hatches.	1	____
5. Each tank reported to the platoon leader that they were READY.	1	____
6. Each tank crew member covered his eyes.	1	____
7. Each crew remained in the tank until the ALL CLEAR.	1	____
NOTE: Platoon leader gives the ALL CLEAR.		
8. All hatches of each tank remained closed until the ALL CLEAR was given.	1	____
9. Each tank made a status report to the platoon leader after the ALL CLEAR.	1	____
NOTE: Platoon leader orders the platoon to prepare to MOVE OUT.		
10. Each tank traversed its gun tubes to the front, and unbuttoned hatches.	1	____
NOTE: Platoon leader orders platoon to MOVE OUT in LINE formation.		
E. Attack on the Second Objective.		

Performance	Weight	Score
NOTE: Platoon leader gives the order for WEDGE formation.		
1. Each tank moved into its correct position for a WEDGE formation.	1	____
NOTE: Platoon leader alerts the platoon as to suspected A1 positions.		
2. Each tank traverses gun tube to left or right to cover location of the suspected AT guns.	1	____
3. Platoon leader designated targets for his tanks.	1	____
a. Each crew responded quickly to the TC's commands.	1	____
b. Each tank fired at the AT guns.	1	____
4. Platoon sergeant designated targets for his tanks.	1	____
a. Each crew responded quickly to the TC's commands.	1	____
b. Each tank fired at the AT guns.	1	____
5. Each tank got into a good firing position to take the AT's under fire.	1	____
NOTE: Platoon leader tells his gunner that he is a casualty.		
6. The platoon leader's gunner reported to the platoon sergeant that the platoon leader is a casualty.	1	____
7. Platoon sergeant (Tank 14) reported to the platoon that the platoon leader is a casualty.	1	____
8. Platoon sergeant reported to the OIC that the platoon leader is a casualty.	1	____
NOTE: OIC has the platoon sergeant (Tank 14) assume command and continue on mission.		
9. Acting platoon leader (14) designated a TC in ALFA section as second in command (Tank 12).	1	____
10. Acting platoon leader (14) designated another TC as potential section leader for BRAVO section.	1	____
11. Acting platoon leader (14) assigned Tank 11 to a section.	1	____
12. Acting platoon leader (14) told gunner to take over as TC of 11.	1	____

Performance	Weight	Score
13. Acting platoon leader (14) reorganized the platoon and continued the attack.	1	____
14. Acting platoon leader (14) reported to the OIC that he was receiving fire from aggressor tanks.	1	____
15. Each tank got into a good firing position after receiving aggressor's fire.	1	____
16. Acting platoon sergeant designated targets for his tanks.	1	____
a. Each crew responded quickly to TC's commands.	1	____
b. Each tank fired at the aggressor.	1	____
17. Acting platoon leader designated targets for his tanks.	1	____
a. Each crew responded quickly to TC's commands.	1	____
b. Each tank fired at the aggressor.	1	____
18. Platoon leader (Tank 14) designated a section to remain as base of fire.	1	____
Each tank in the base of fire actually fired.	1	____
19. Platoon leader (14) went with the maneuver element.	1	____
20. The platoon attacked the objective with the formation best suited to the terrain.	1	____
21. Each tank in the maneuver element fired while on the move.	1	____
22. Each tank in the maneuver section used the available cover and concealment when moving in the assault.	1	____
23. Platoon leader (14) ordered the base of fire to cease fire on beginning the assault.	1	____
24. Each tank in the maneuver element overran the objective.	1	____
25. Each tank in the maneuver element reconnoitered the area to the front to determine if the aggressor had pulled out.	1	____
26. Platoon leader (14) pulled tanks back into good defilade positions after reconnoitering by fire.	1	____

Performance	Weight	Score
27. Platoon leader (14) ordered the base of fire to join the maneuver element.	1	____
28. Platoon leader (14) assigned positions, for the base of fire to assume when they got to the objective.	1	____
29. Platoon leader (14) positioned his tank so he had good observation.	1	____
30. Platoon leader (14) reported seizing the objective, to the OIC.	1	____
NOTE: Platoon leader requests status report from each tank.		
31. Each tank reported their continued combat readiness to the platoon leader (14) (status report).	1	____
32. Each tank designated one crew member as air alert observer. (If this duty was previously assigned, give credit.)	1	____
33. The crew member designated as air alert actually did the job; that is, he stayed on the tank and observed.	1	____
34. Each TC reconnoitered for and selected alternate positions.	1	____
35. Platoon leader (14) knew what his mission was while on the objective. (Scorer will ask.)	1	____
36. Each TC knew the mission of the platoon while on the objective. (Scorer will ask.)	1	____
37. Platoon leader (14) designated positions for his tanks on the objective (by radio or on foot).	1	____
38. Platoon leader (14) assigned areas of responsibility while on the platoon objective.	1	____
39. Platoon leader (14) ordered platoon to make range cards.	1	____
F. Counterattack Phase.		
1. Some member of the tested platoon noticed the aggressor attack before the aggressor tanks fired.	1	____
2. Some member of the platoon alerted the platoon leader (14). (Or if the platoon leader noticed the attack before the aggressor fired, he alerted the platoon.)	1	____

Performance	Weight	Score
3. The tanks in whose area of responsibility the aggressor was attacking opened fire without command from the platoon leader.	1	____
4. The platoon sergeant, upon seeing the attack, designated targets for each tank in his section.	1	____
5. Platoon leader reported the attack to the OIC.	1	____
6. Platoon leader designated specific targets for each of his tanks	1	____
7. Platoon leader controlled his platoon so that all of his tanks were not moving to an alternate firing position at the same time.	1	____
8. The platoon continued to fire when the attacking aggressor began to pull back.	1	____
9. Platoon leader reported repelling the attack, to the OIC.	1	____
10. Each of the engaged tanks reported their combat effectiveness to the platoon leader after the attack was beaten off.	1	____
11. Platoon leader alerted the platoon to be prepared for another attack.	1	____
G. Second Counterattack.		
1. Some member of the platoon saw and notified the platoon leader of the aggressor attack.	1	____
2. Platoon sergeant assigned targets and opened fire, without command from the platoon leader.	1	____
NOTE: OIC informs the platoon leader that a company of aggressor tanks is attacking.		
3. Platoon leader requests permission from the OIC to pull back.	1	____

CREW RATING SCALE

A. On the basis of my experience with tank crewmen and crews in TOE units, I consider this crew to be

1. Superior to the typical TOE crew. _____

2. Above the average TOE crew. _____

3. Equal to the average TOE crew. _____

4. Below the average TOE crew. _____

5. Definitely inferior to the average TOE crew. _____

B. In my opinion, they are definitely weak in the following armor skills. (Put weakest subject first, the next weakest next, etc.)

1. _____

2. _____

3. _____

4. _____

5. _____

C. Additional Comments:

The Tank Platoon Combat Readiness Check
Platoon Version

SECTION I. GENERAL

A. REFERENCES. US Army Armor School: Armor Reference Data; Department of the Army: FM 17-1, FM 17-12, FM 17-33, FM 17-50, FM 17-79, and FM 17-100.

B. PURPOSE. To determine the combat readiness of tank platoons under operational conditions which simulate typical combat type missions.

C. OBJECTIVES.

1. To determine whether or not the tank platoon is combat ready.

2. To determine the capability of the tank platoon to accomplish its assigned mission.

3. To isolate and identify specific areas in which the tank platoon, as a whole unit, requires additional training to bring it to a state of combat readiness.

4. To provide the tank platoon with a realistic combat training problem involving tank platoon functions and actions.

D. ADMINISTRATION.

1. Preparation of the Test.

a. Any terrain may be used which will provide an assembly area and two objectives.

b. Platoon leaders and platoons will not be briefed, or rehearsed, on the test problem.

c. The test problem (SECTION III) will be followed as closely as local conditions will permit.

d. The test problem is a blank-firing type exercise. Both the platoon being tested and the troops which represent the enemy will use blank ammunition (SECTION IV).

e. Score sheets (SECTION VII) will not be modified, except as noted in Paragraph D2 below.

f. Personnel assigned as scorers (SECTION VI) will come from organizations other than the unit being tested.

NOTE: The method of scoring is designed to eliminate any need for a scorer to express an opinion or make a decision based on his judgment of a situation.

2. Modifications.

a. Score sheets may be modified only when modifications are dictated by local conditions. Terrain may differ from that visualized in the

test problem, necessitating different platoon formations and tactics. In this event, the headquarters which prepares the test site and score sheets is authorized to select the approved platoon formations from the items provided on the score sheet for this purpose.

b. The officer in charge (OIC) will act as team commander and as the aggressor commander. He will feed messages to the platoon which is being tested and will give instructions to the aggressor force, in accordance with instructions contained in the test problem (SECTION III).

SECTION II. TEST SYNOPSIS

A. PRETEST ACTIVITIES. The platoon being tested has previously been subjected to Phases I and II of the test, and has returned to a selected bivouac area where after-operations maintenance will be conducted. The platoon will make all necessary preparations to spend the night in the field.

B. NIGHT MOVEMENT TO AN ASSEMBLY AREA AND ATTACK POSITION. Between 2400 hours and 0300 hours, the OIC will give the tested platoon leader a warning order. The tank platoon will make a tactical march from the bivouac area to the assembly area - attack position. The platoon will be tested on all aspects of the night march.

C. OCCUPATION OF THE ASSEMBLY AREA - ATTACK POSITION. The platoon will move into and occupy the assembly area, and will be tested on all phases of the occupation, including preparations for the attack scheduled at dawn.

D. ATTACK OF FIRST OBJECTIVE. The platoon moves across the friendly forward disposition (FFD), and attacks the company's first objective. The platoon continues the attack toward the second objective, when the platoon leader receives a message from the OIC informing him that a friendly nuclear weapon will be fired beyond the second objective. The platoon will be tested on its actions in attacking the first objective, and its actions before, during, and after the friendly nuclear blast.

E. ATTACK OF SECOND OBJECTIVE. Upon receiving the ALL CLEAR, the platoon will continue the attack on the second objective. The platoon will be tested on all aspects of the attack.

F. OCCUPATION AND REORGANIZATION ON THE SECOND OBJECTIVE. The platoon will be tested on its reorganization on the second objective, the provisions for its defense against a counterattack, and its preparations to support the company attack by fire.

G. DELAYING ACTION. Enemy tanks and infantry, in strength, counterattack. The tested tank platoon is ordered to delay back to a designated delay position. The platoon will be tested on all phases of this action.

H. DEFENSE. On arriving at the first objective, the platoon is ordered to hold this position until 2400 hours. The platoon will be tested on all facets of organizing for defense, including repelling an attack.

I. CRITIQUE. A critique will be held as soon as practicable after the test is terminated.

SECTION III. THE TEST PROBLEM

A. GENERAL.

1. The platoon to be tested has previously been through Phases I and II of the test, and is now in a bivouac area. The platoon knows it is going to be committed to combat, but it does not know when. Normal platoon preparations for combat activities will be performed. The platoon will be bedded down for the night. Normal security procedures will be followed. The situation is tactical.

2. The OIC is also team commander and aggressor commander, and as such will control the actions of both sides during the test in accordance with the test problem.

3. Sample orders and activating messages are included as examples. Messages will be prepared so that the orders and messages will be appropriate to local terrain conditions.

4. The enemy has local air superiority.

5. The SOP, FM 17-1, pages 390-401, will be used by all platoons which participate in this platoon test. Previous study of this document, and familiarity with it, are mandatory.

6. A quartering party will be provided to guide the tested platoon into the assembly area.

7. The scorer will be present at all briefings, and will follow the platoon. The scorer's radio will be set on platoon channel and OIC's channel.

B. NIGHT MOVEMENT TO THE ASSEMBLY AREA AND ATTACK POSITION.

1. General. The test begins with the OIC having the platoon leader report to OIC headquarters. Generally, the platoon leader will be given the warning order about 2400 hours, but not later than 0300 hours. The approach march should be long enough to permit adequate and realistic testing of the platoon's manner of movement, (that is, one to five miles at least). The platoon should not remain in the assembly area - attack position longer than is absolutely necessary.

2. The Warning Order. This order should be issued orally by the OIC, and should be accompanied by a map or a map overlay.

3. Scorer. The scorer will stay near the platoon leader, and will try to be as unobstrusive as possible. The scorer will not answer any questions, give any guidance or hints, or help in any way. He merely observes and marks his score sheet. The scorer is not an umpire. (See SECTION VI,

Duties of Scorer; and SECTION VII, Score Sheets.)

4. OIC. The OIC, who also acts as company commander, will supervise the movement to ensure safe conduct and practices. The OIC will refrain from coaching the platoon leader.

C. ATTACK OF FIRST OBJECTIVE.

1. Scenario and Schedule of Events.

a. When the platoon leader reports to the OIC in the combination assembly area - attack position, the scorer will be present also. The OIC will issue the attack order orally.

b. Two tanks, representing the aggressor, should have been positioned in turret defilade behind the first objective. The OIC will contact these aggressor tanks at the proper time by radio, ordering them to move into hull defilade positions and to fire upon the advancing platoon.

c. The OIC will, at the proper time, order the two aggressor tanks to withdraw to positions behind the second objective, thus permitting the tested platoon to gain the first objective.

d. Before the attacking (tested) platoon can continue the attack, the OIC will inform the platoon of the firing of a friendly nuclear weapon, which is scheduled to be fired 15 minutes after the platoon's receipt of this message. Then, on schedule, the OIC will order the engineer squad to fire the simulated nuclear weapon.

e. After the blast (10 minutes), the OIC will order the platoon to continue its attack on the second objective.

2. The Attack Order. The attack order should be modified so it conforms to the local terrain complex. A normal operations order will serve the purpose. For example:

"Aggressor armor elements, believed to consist of two tank platoons and one infantry platoon, are located in the vicinity of Hill 555 (here). They moved into this area last night, and are in the process of preparing defensive positions on Hill 555. They have suspected AT (antitank) Positions _____ and _____.

Task Force 1/32 attacks (0900) today, seizes high ground at (555555), Companies A and B abreast, Company A on the left. The task force mortar platoon will be in direct support of Company B."

NOTE: The tested platoon leader commands the First Platoon, Company A.

"This company has no attachments or detachments.

"This company attacks (0900) today, seizes Hill 333 (here); continues attack, seizes Hill 444 (here), and Hill 555 (here).

"This operation will be an attack with the company in column—the First Platoon (tested platoon) leading, followed by the Second and Third Platoons.

"First Platoon attack and seize Hill (333), our first objective; continue the attack and seize Hill (444), our second objective. Your platoon will become the base of fire on Hill (444).

"Second Platoon follow First Platoon, prepared to assault Hill (555) on order." (Omitted)

"Third Platoon follow Second Platoon, prepare to assault Hill (555) on order." (Omitted)

"FFD at (222222), leading element across at (0900) hours.

"I will be with the Second Platoon initially.

"Do you have any questions?

"The time is now (0700) hours."

3. Conduct of the Attack. After the attack order is issued, the platoon leader returns to his platoon and prepares the platoon to move out. (See SECTION VII, Score Sheet, Paragraph C.)

a. The platoon crosses the FFD. As the platoon approaches to within 600 to 800 yards of the first objective, the OIC sends this message to the aggressor section of tanks behind the first objective: "Move into hull defilade and fire at the advancing platoon." (Each tank will fire three blank rounds.)

b. The platoon will maneuver and continue the attack. When the platoon is within 300 to 500 yards of the objective, the OIC will send this message to the two tanks which represent the aggressor: "Cease fire and move back quickly to the area behind the tested platoon's objective."

c. After the platoon has gained the first objective, and it is now obvious to the OIC that the platoon leader is about to continue his advance to the second objective, the OIC will send the following message to the platoon leader: "Flash—at (0945) hours a friendly 20-KT (kiloton) nuclear weapon will be fired one mile beyond the second objective. Continue the attack on my order. Over."

d. One minute after the nuclear blast, the OIC will send this message to the platoon leader: "Continue the attack."

D. ATTACK OF THE SECOND OBJECTIVE.

1. Scenario and Schedule of Events.

a. When the platoon leader is given the order, "Continue the attack," the platoon moves into the attack of the second objective.

b. Regardless of the formation used, or the method of attack employed, as the leading element of the platoon approaches to within 800 to 1000 yards of the objective the OIC will cause the two tanks which represent the aggressor to move into hull defilade positions and open fire.

c. When the platoon reaches positions about 500 yards from the objective, the OIC will instruct the two aggressor tanks to leave their positions and move back to rejoin the aggressor platoon, which is located (depending upon the terrain) about 2000 yards beyond the second objective in a concealed position.

d. The platoon moves onto the second objective. The platoon leader should quickly reorganize the platoon, and the platoon should take up positions from which it can support the attack of the remainder of the company by acting as the base of fire.

E. DELAYING ACTION.

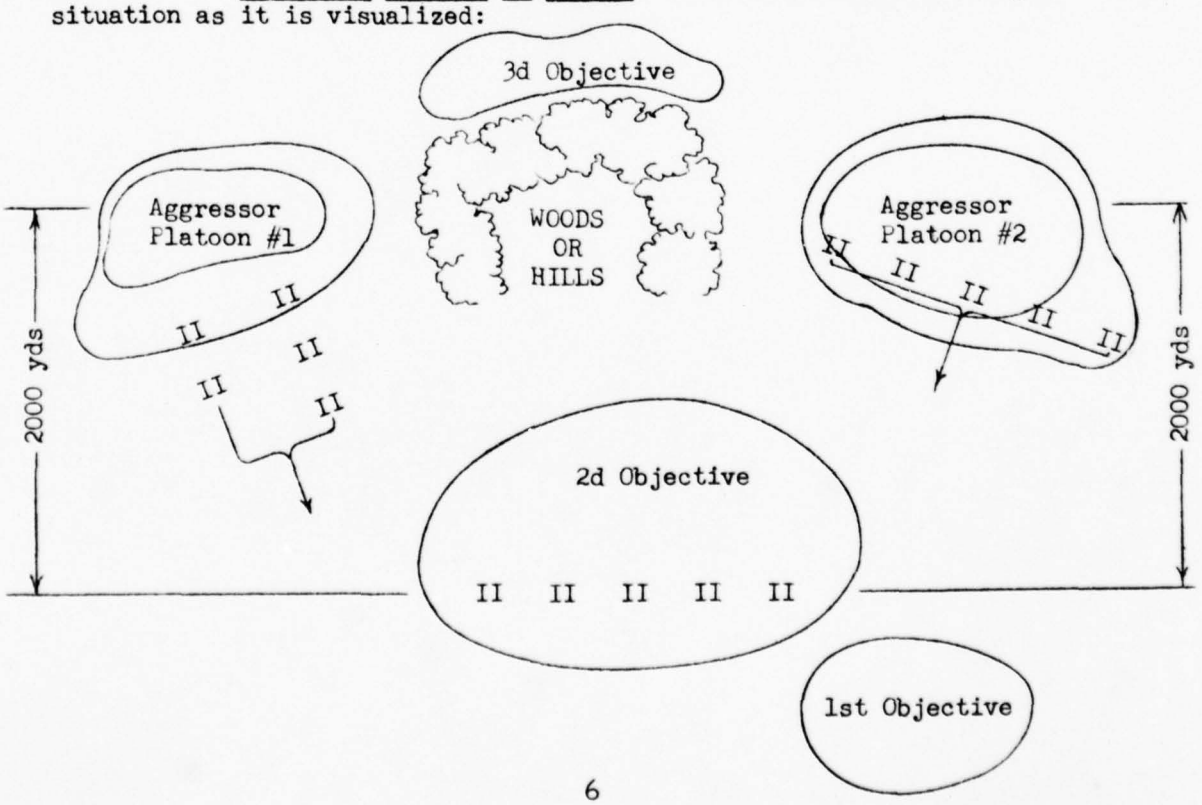
1. General. The stage for this action should be set up as follows:

a. The tested platoon is in the process of selecting tank positions (or in occupying them).

b. The two platoons (as shown in the sketch) representing the aggressor are in concealed positions, and are prepared to move immediately on order from the OIC.

NOTE: The number of aggressor tanks employed at this stage may be modified in accordance with availability.

2. Schematic Diagram of Action. Here is a schematic diagram of the situation as it is visualized:



a. The OIC, at a time when the tested platoon has selected its primary positions, but has not yet selected its alternate positions, will order Aggressor Platoon 1 to advance in two columns toward the tested platoon's left front. The tested platoon should not be told of this attack; the platoon must observe the attack and take immediate action. Aggressor Platoon 1 will open fire at 1500 yards, unless detected sooner by the tested platoon—in which case the aggressor platoon will deploy as soon as it is fired upon by the tested platoon.

b. Aggressor Platoon 1 will slowly advance to about 1000 yards, then will pull back under cover.

c. The OIC will have previously designated two aggressor tanks which will simulate being destroyed. The other three will withdraw, as indicated in b above, on orders from the OIC.

d. As Aggressor Platoon 1 is pulling back, the OIC will order Aggressor Platoon 2 to advance from cover to attack the right front of the tested platoon's position. This aggressor platoon will advance in line formation, and will not fire until it is fired upon by the tested platoon.

e. When the tested platoon leader reports the attack by Aggressor Platoon 2 to the OIC, the OIC will order the tested platoon to delay back to a designated delay position.

f. If the tested platoon does not observe Aggressor Platoon 2 by the time this aggressor platoon is within 1000 yards of the tested platoon's position, the OIC will send a message to the tested platoon leader that an aggressor tank - infantry formation is advancing through the contaminated area toward the tested platoon's position, and that the platoon will delay back to the first objective.

F. DEFENSE.

1. With the tested platoon at the delay position, the OIC will tell the tested platoon leader that the platoon will hold its present position until daylight.

2. The platoon leader will organize the position for defense. There will be no aggressor action.

3. Allow the platoon leader sufficient time for this phase. At the end of one hour, the problem will be finished.

G. CRITIQUE.

1. The OIC and the scorer will hold a critique on the problem.

SECTION IV. EQUIPMENT AND PERSONNEL REQUIREMENTS

A. TROOP REQUIREMENTS.

1. One TOE tank platoon to be tested.

2. Tanks and crews to represent the aggressor force.

3. One engineer squad to fire the nuclear weapon simulator.

4. Logistical elements as required.

B. AMMUNITION REQUIREMENTS.

1. Ammunition for Tested Platoon

Nomenclature	Basis of Issue
a. Ammo blank 90mm	10 per tank gun
b. Ctg blank .30 caliber MLB	250 per .30 caliber MG
c. Nuclear explosion simulator (3-SA-1)	1 per tested platoon

2. Ammunition for Aggressor Force

a. Ammo blank 90mm	10 per tank gun (to section acting as aggressor on 1st and 2d objectives) 5 per tank gun (to tanks representing Aggressor Platoons 1 and 2)
b. Ctg blank .30 caliber MLB	250 per .30 caliber MG

C. VEHICLE REQUIREMENTS.

1. Scorer.

One ¼-ton truck, with radio

2. Assistant Scorer.

One ¼-ton truck, with radio

3. OIC.

One ¼-ton truck, or track vehicle, with radio

4. Engineer Squad.

One ¼-ton truck, with radio

5. Medics.

One ¼-ton ambulance, with radio

D. MAPS. Five, issued on the basis of one to each tank commander,

platoon sergeant, and platoon leader.

SECTION V. SCORING AND RATING SYSTEM

A. SCORING.

1. General. The score sheets will be prepared by the officer who is responsible for adapting the test problem to local terrain conditions. However, the score sheets which accompany this test problem will not be altered, added to, or subtracted from, except that deletion of scoring items will be accomplished only where authorized and where indicated. This procedure ensures that any platoon leader who is taking the test at any test site or area will be scored identically with any other platoon leader, thereby permitting an accurate score comparison between platoon leaders wherever found.

2. Scoring Method. The scorer and assistant scorer will place opposite the item on the score sheet (in the score column) either a 1 or a 0. No other entry is necessary or desired. All test items have a value of 1. If the platoon performs the item, then the scorer or assistant scorer will place the figure 1 in the score column opposite that particular item; if the platoon does not perform the item, the 0 is placed in the score column opposite that particular item.

3. Score Achieved. The final score of the tested platoon is arrived at by subtracting the 0 scores from the maximum score, or sum of all possible points. Example: A platoon has 98 items marked 1, of a possible 113 points. The score sheet will show 15 items scored 0. The platoon score is 98.

B. RATING. (The criteria for relative ratings of platoons will not be determined until enough scoring data are available. It is felt at this time that a platoon will be rated as COMBAT READY or NOT COMBAT READY.) The ratings, however, will be related to an achieved score, and not to a percentage.

SECTION VI. DUTIES OF THE SCORER

A. GENERAL.

1. The items listed on the score sheet are worded in an objective manner. The scorer at no time needs to use opinion or judgment. Either the platoon accomplished the item, or it did not accomplish the item.

2. Although the scorer and assistant scorer do not need to have an intimate knowledge of armor to score this test problem, an elementary knowledge of armor tactical principles and procedures is expected.

3. In the event a tank in the tested platoon malfunctions to the point where it is not an effective part of the platoon, the scorer will score the remaining four tanks as a platoon.

B. METHOD OF SCORING.

1. Chief Scorer. The chief scorer will follow the tank platoon leader in a ¼-ton truck or track vehicle, observing the platoon and listening to all radio transmissions. The scorer will score each item he observes or hears.

2. Assistant Scorer. The assistant scorer will accompany any part of the platoon which the chief scorer considers it necessary to observe. For example: During the friendly atomic explosion, one item is: "Did all tanks traverse the main gun away from the expected direction of the nuclear blast?" The assistant scorer can "troop the line" and score this item for the chief scorer. On completion of the test, all items scored by the assistant scorer will be transposed to the chief scorer's score sheet.

C. SCORING INSTRUCTIONS.

1. In items which include all or each, the scorers will credit the item with a 1 only if all of the tanks (or each tank) accomplished the item.

2. For example: Using the illustration in Paragraph B2 above, if one tank in the platoon does not traverse the gun away from the direction of the blast, the platoon will be scored a 0 for that item. So when the assistant scorer and chief scorer are separated, if one or the other scores an item 0, the item will be scored 0 on the chief scorer's score sheet..

SECTION VII. SCORE SHEET

INFORMATION FORM

Unit Tested _____

Location _____

Date _____

Platoon Leader (Name) _____

OIC (Name) _____

Scorer (Name) _____

A. NIGHT MOVEMENT TO ASSEMBLY AREA - ATTACK POSITION. (Score a 0 for each item which is omitted or incorrectly performed.)

Performance	Weight	Score
1. On receipt of the warning order, the platoon leader alerted his men.	1	____
2. The platoon leader issued a march order.	1	____
3. The march order included the following information:		
a. Time of departure.	1	____
b. Order of march.	1	____
c. Location of IP.	1	____
d. Route of march.	1	____
e. Location of the assembly area	1	____
f. Information relative to the quartering party.	1	____
g. Information relative to possible mission.	1	____
h. The radio silence which will be in effect.	1	____
i. Information that no lights will be used.	1	____
4. The platoon leader reconnoitered the route to the IP.	1	____
5. All five tank commanders reported to the platoon leader when their crews and tanks were ready to roll.	1	____
6. The platoon leader reported to the OIC when his platoon was ready to roll.	1	____
7. The platoon crossed the IP without stopping.	1	____
8. The platoon crossed the IP on schedule.	1	____
9. The platoon marched without lights.	1	____
10. One member from each tank (except the lead tank) contacted the tank ahead at the halt.	1	____
11. Platoon personnel took up positions as ground and air security during the halt.	1	____
12. The platoon relayed signals for resumption of the march.	1	____
13. The NO SMOKING rule was enforced.	1	____

Performance	Weight	Score
14. Toward the end of the halt, each tank was checked to make certain all crew members were awake and ready to march.	1	____
B. OCCUPATION OF THE ASSEMBLY AREA - ATTACK POSITION.		
1. The platoon cleared the route of march without stopping.	1	____
2. The platoon leader checked <u>each</u> tank's position.	1	____
3. The platoon leader checked with <u>each</u> TC to ascertain the condition of readiness of <u>each</u> tank crew and vehicle.	1	____
4. The platoon leader reported the closing of his platoon, and its condition of readiness, to the OIC.	1	____
5. The platoon leader posted security personnel.	1	____
6. The platoon carried out the refueling process without the banging of cans and loud talk.	1	____
7. The platoon performed all at-halt maintenance which could be accomplished during conditions of darkness.	1	____
8. The platoon observed light discipline, for example:		
a. The interior lights in each tank were turned OFF <u>before</u> a hatch was opened.	1	____
b. No member of the platoon smoked.	1	____
c. No member of the platoon struck a match or operated a cigarette lighter.	1	____
9. The platoon leader reported to the OIC, as he was directed to do in the warning order given in the bivouac area.	1	____
C. ATTACK OF FIRST OBJECTIVE.		
1. <u>Preparation and Planning Before the Attack</u>.		
a. The platoon leader immediately alerted his platoon after receiving the attack order.	1	____
b. <u>All</u> platoon members immediately began to make preparations for the attack.	1	____
c. The platoon leader issued his attack order to the tank commanders to include:		
(1) Location of the aggressor.	1	____

Performance		Weight	Score
(2)	Suspected aggressor AT positions.	1	____
(3)	Time platoon crosses the FFD.	1	____
3 (4)	1a Location of the FFD.	1	____
(5)	Location of the platoon in the attack (leading).	1	____
(6)	Location of the first objective.	1	____
(7)	Location of the second objective.	1	____
(8)	Information that no artillery support is available to the platoon during the attack.	1	____
(9)	Information that the platoon will be operating without infantry.	1	____
(10)	The mission of the platoon after seizing the second objective.	1	____
(11)	The mission of the company.	1	____
(12)	Location (initially) of the company commander.	1	____
d.	The platoon leader checked <u>each</u> tank commander to ensure that he understood his order.	1	____
e.	The platoon leader <u>and</u> platoon sergeant made a reconnaissance of the route to the FFD.	1	____
f.	The platoon leader <u>and</u> platoon sergeant ascertained the exact location of the FFD.	1	____
g.	The platoon leader informed all his TC's of his plan for carrying out the mission.	1	____
h.	The platoon leader <u>and</u> platoon sergeant made a final readiness check of each tank in the platoon before movement to the FFD.	1	____
i.	If a final readiness check was made, it was conducted at least 5 minutes before move-out time.	1	____
2.	<u>Movement to the FFD</u>.		
a.	The platoon moved from its position in a well organized manner; that is:		
(1)	<u>Each</u> tank moved quickly into its assigned position in the march column.	1	____

Performance	Weight	Score
(2) The platoon maintained the prescribed distance between tanks (50 - 100 yards).	1	____
(3) All control signals were relayed without delay.	1	____
(4) All control signals were obeyed.	1	____
b. The platoon reached the FFD on time (_____hours).	1	____
c. The platoon crossed the FFD on time (_____hours).	1	____
d. The platoon crossed the FFD without stopping.	1	____
e. The platoon leader reported the crossing of the FFD to the OIC.	1	____
3. Conduct of the Attack on the First Objective.		
a. The platoon utilized all available concealment in its route toward the objective.	1	____
b. The platoon deployed when fired on by the aggressor tanks located on the objective.	1	____
c. The platoon adopted the LINE, WEDGE, ECHELON formation. (Delete inappropriate formations.)	1	____
d. The platoon advanced by fire and movement (one section the base of fire, the other section the maneuver element).	1	____
e. The base of fire actually fired.	1	____
f. The platoon leader instructed the maneuvering section which route to take.	1	____
g. The platoon leader designated targets for the base of fire tanks.	1	____
h. Both suspected aggressor AT positions were fired on.	1	____
i. Reconnaissance by fire was conducted with machine guns.	1	____
j. The tanks which conducted reconnaissance by fire reported the presence or absence of aggressors in the suspected areas.	1	____
k. The platoon leader reported the two enemy tanks to the OIC.	1	____

Performance	Weight	Score

NOTE TO BATTALION S3: *Questions l through r are selective, depending on the opinion of the officer who prepares the problem as to the best method of attack. Deletion of inappropriate questions will not affect the total scoring. See SECTION V (Scoring and Rating System).*

l.	The platoon leader ordered the base of fire to cease fire and join the maneuvering element in the assault.	1	____
m.	The base of fire tanks joined the maneuvering section in the assault.	1	____
n.	The maneuvering section moved into the assault without halting.	1	____
o.	The base of fire lifted its fire when the maneuvering element started its assault.	1	____
p.	The base of fire shifted its fire beyond the first objective as the maneuvering element started its assault.	1	____
q.	The platoon advanced by bounds.	1	____
r.	The platoon advanced by successive, alternate bounds. (Select the proper bound.)	1	____
s.	The platoon obeyed the platoon leader's orders.	1	____
t.	The platoon leader reported the flight of the enemy tanks, to the OIC	1	____
u.	The platoon maintained 50 to 100 yards between tanks while occupying the objective.	1	____
v.	The platoon advanced to the far side of the objective.	1	____
w.	The platoon leader reported seizure of the objective to the OIC.	1	____
x.	The platoon leader reorganized his platoon for the continuance of the attack.	1	____
y.	The platoon leader refrained from requesting further instructions from the OIC.	1	____

D. ACTIONS PRIOR TO, DURING, AND IMMEDIATELY AFTER THE NUCLEAR DETONATION.

1.	The platoon leader relayed the nuclear alert to his platoon.	1	____
2.	The platoon deployed to turret defilade positions (if situation and terrain permit).	1	____

Performance	Weight	Score
3. All tanks faced the front of the tank toward the direction of the anticipated blast.	1	____
4. All tanks rotated the turret to the rear.	1	____
5. All tanks closed and locked all hatches.	1	____
6. All tanks lowered all periscopes.	1	____
7. Tanks were dispersed as much as the terrain and situation would permit.	1	____
8. All tank crew members remained in the tanks until the ALL CLEAR.	1	____
9. The platoon leader obtained a READY from all the tanks of his platoon.	1	____
10. The platoon leader reported a READY to the OIC.	1	____
11. After the blast, each crew reported its readiness, to the platoon leader.	1	____
12. The platoon leader reported NO CASUALTIES to the OIC after the blast.	1	____
13. All hatches remained closed until the ALL CLEAR was given.	1	____
E. ATTACK OF THE SECOND OBJECTIVE.		
1. All tank commanders traversed their gun tubes toward the enemy.	1	____
NOTE: Questions 2 through 10 are selective, depending on the opinion of the officer who prepares the problem as to the best method of attack. Deletion of inappropriate questions will not affect the total score. See SECTION V (Scoring and Rating System.)		
2. The platoon attacked the platoon objective in LINE, WEDGE, ECHELON, COLUMN formation. (Select one.)	1	____
3. The platoon leader set up a base of fire and a maneuvering element when fired on.	1	____
4. The platoon leader designated the route of maneuver.	1	____
5. The platoon leader designated areas of fire for the base-of-fire tanks.	1	____
6. The platoon leader designated specific targets for the base-of-fire tanks.	1	____

Performance	Weight	Score
7. The platoon leader attacked by bounds.	1	____
8. The platoon used ALTERNATING, SUCCESSIVE bounds. (Select one.)	1	____
9. The maneuvering element used the available cover and concealment.	1	____
10. The base of fire joined the maneuvering element in the assault.	1	____
11. The tanks participating in the assault covered the objective with area fire.	1	____
12. The platoon leader reported seeing aggressor tanks on the objective, to the OIC.	1	____
13. The platoon leader ordered the base of fire to shift its fire (or to CEASE FIRE) when the maneuvering element began the assault.	1	____
14. The platoon leader ordered the base of fire to join the maneuvering element on the objective.	1	____
15. The platoon leader positioned his tank on the objective, so he could best control all the tanks in his platoon.	1	____
16. Each tank took up a defensive firing position when the assault was completed.	1	____
17. The platoon leader designated areas of responsibility for each tank to observe for enemy counterattack.	1	____
18. The platoon leader reported the seizing of the objective to the OIC.	1	____
19. The platoon leader requested a report from each tank regarding their continued state of combat readiness.	1	____
20. The platoon took up positions on the far side of the objective.	1	____
21. Each tank had one crew member designated as AIR ALERT observer. (If this duty was previously assigned, give credit.)	1	____
22. The people designated as AIR ALERT observers actually did the job; that is, they stayed on the tank and observed.	1	____
23. All tank commanders reconnoitered for, and selected, alternate positions.	1	____

Performance	Weight	Score
24. An attempt was made to camouflage the tanks.	1	____
25. The platoon leader knew what his mission was while on the objective. (The scorer will ask.)	1	____
26. All the TC's knew the platoon's mission while on the objective. (The scorer will ask.)	1	____

NOTE: Mission is to be the base of fire for the company attack.

F. DELAYING ACTION PHASE.

1. First Aggressor Attack.

	Weight	Score
a. Some member of the tested platoon noticed the aggressor attack before the aggressor tanks fired.	1	____
b. Some member of the platoon alerted the platoon leader. (Or if the platoon leader noticed the attack before the aggressor fired, he alerted the platoon.)	1	____
c. The tanks in whose area of responsibility the aggressors were attacking opened fire without command from the platoon leader.	1	____
d. The platoon leader ensured that all aggressor tanks were taken under fire; that is, he designated specific targets if and when necessary.	1	____
e. The platoon leader reported the attack to the OIC.	1	____
f. The platoon leader controlled his platoon so that not all his tanks were moving to an alternate firing position at the same time.	1	____
g. The platoon continued to fire when the attacking aggressor began to pull back.	1	____
h. The platoon leader reported repelling the attack to the OIC.	1	____
i. The platoon leader reported the two suspected tank "kills" to the OIC.	1	____
j. Each tank reported its combat effectiveness after the attack was beaten off.	1	____
k. The platoon leader alerted and cautioned the platoon to be prepared for another attack.		

Performance	Weight	Score
2. Second Aggressor Attack.		
a. Some member of the platoon noticed the attack developing before the aggressor platoon was within 1500 yards of the platoon's position.	1	____
b. Some member of the platoon alerted the platoon to the attack	1	____
c. The tanks in whose area of responsibility the attack was coming opened fire without command from the the platoon leader.	1	____
d. The platoon leader ensured that all aggressor tanks were taken under fire; that is, he designated specific targets if and when necessary.	1	____
e. The platoon leader reported this new attack to the OIC.	1	____
f. The platoon leader controlled the movement of the tanks of his platoon so that not all his tanks were changing firing positions at the same time.	1	____
g. The platoon leader alerted the platoon to its mission of delaying back to the first objective.	1	____
h. The platoon leader ordered the least engaged section to displace first to the rear.	1	____
i. The platoon leader designated the route he wanted the displacing section to follow.	1	____
j. The platoon leader told the displacing section the positions which he wanted them to occupy on the first objective.	1	____
k. The platoon leader instructed the displacing platoon to open fire immediately on being in position on the first objective.	1	____
l. The platoon leader controlled the fire of the section still on the second objective so as to cover all the attacking enemy tanks.	1	____
m. The platoon leader reported the movement of the displacing section, to the OIC.	1	____
n. The displacing section opened fire on the enemy formation as soon as they were in position on the first objective. (Give credit if the platoon leader ordered them to open fire on his receipt of the message that they are in position.)	1	____

Performance	Weight	Score
o. The platoon leader ordered the remaining section to displace <u>after</u> the section on the <u>first</u> objective began supporting by fire.	1	____
p. On his arrival on the first objective, the platoon leader designated individual tank positions for the platoon's tanks.	1	____
q. The platoon leader reported the departure of the second section of tanks from the second objective, to the OIC.	1	____
r. The platoon leader reported the arrival of the second section of tanks on the first objective, to the OIC.	1	____
G. AREA DEFENSE.		
1. The platoon leader informed the platoon of the new mission.	1	____
2. Each tank took up a defensive firing position.	1	____
3. The platoon leader ensured that <u>all</u> avenues of approach were covered by individual tanks.	1	____
4. <u>Each</u> tank commander selected an alternate position.	1	____
5. Crew members were informed of the location of the alternate positions.	1	____
6. The platoon leader checked <u>each</u> tank's alternate position.	1	____
7. The platoon leader checked <u>each</u> tank's route to its alternate position.	1	____
8. Supplementary positions were selected for <u>each</u> tank.	1	____
9. <u>All</u> tanks attempted to camouflage their positions.	1	____
10. Fields of fire were cleared where necessary. (Give credit if <u>not</u> necessary.)	1	____
11. An AIR ALERT was kept on <u>each</u> tank.	1	____
12. <u>Each</u> TC, including the platoon leader, prepared a range card.	1	____
13. The platoon leader designated for <u>each</u> tank the main targets he wanted to be placed on the range card.	1	____
14. TC's selected <u>other</u> targets in their areas of responsibility, in addition to those designated by the platoon leader, for inclusion of their range cards.	1	____

Performance	Weight	Score
15. The platoon leader checked <u>all</u> range cards as they were completed.	1	____
16. The platoon leader reported ALL READY to the OIC, when his position was in complete readiness to defend to the death.	1	____

H. CRITIQUE.

1. The OIC will make any comments desired.

2. The scorer will give the critique, and the rating attained.

Scenario for Administering the CRC,
6th ACR

HEADQUARTERS
3D BATTALION 6TH ARMORED CAVALRY
Fort Knox, Kentucky

23 October 1959

SUBJECT: Testing of HumRRO Tank Platoon Combat Readiness Test

TO: See Distribution

1. References. Armor Reference Data, The Armor School, May 1959; FM 17-1; FM 17-12; FM 17-33; FM 17-50; FM 17-79; FM 17-100; AR 320-5; DA TC 17-4, 17-5, dtd June 1959 and DA TC 17-6, dtd July 1959.

2. Purpose. To determine the feasibleness and applicableness of "The Tank Platoon Combat Readiness Check".

3. Objectives.

a. To determine whether "The Tank Platoon Combat Readiness Check" can be scored accurately and will provide an actual indication of the readiness status of the tested platoon.

b. To isolate and identify specific areas in which the test should be modified to attain its desired objective.

4. Application. One tank platoon, Tank Company, 3d Battalion. (2d and 3d platoon will be aggressor force for Phase III)

5. Nature of test. The test will be divided into three phases.

a. Phase I. Individual and Individual Crew Phase - Day.

(1) Station # 1 - Before operation check, OVM display.

(2) Station # 2 - Communications check.

(3) Station # 3 - Selection and occupation of positions, range card preparation, at halt maintenance check, preparation for atomic detonation and movement to station # 4 by strip map.

(4) Station # 4 - Preparation to fire, live firing of Cal .30 and .50 MG and 90mm gun.

(5) Station # 5 - After operation maintenance check.

b. Phase II. Individual Tank Crew Phase - Night.

(1) Night movement by strip map of individual tank.

(2) Selection of positions.

(3) Preparation of range cards using 105mm flare illumination.

(4) Live firing of Cal .30, .50 MG and 90mm gun, part from range card and part using 105 illumination.

c. Phase III. Tank Platoon Tactical Operation, Day and Night.

(1) Night march and occupation of attack position.

(2) Attack on intermediate objective.

(3) Firing of friendly atomic device.

(4) Attack on final objective.

(5) Consolidation and reorganization on objective.

(6) Delaying action.

(7) Position defense.

6. Administrative Details.

a. Tank Company will move to and establish administrative bivouac at Dorrets Range by 260900 Oct 1959 and provide mess facilities for test personnel and visitors.

b. Maps; Kentucky 1:25,000, Vine Grove, Colesburg sheets will be furnished by Bn S2.

c. Troop and material requirements: The requirements listed below will be provided as indicated.

DATE & TIME	PERSONNEL & EQUIPMENT	SPECIAL INSTRUCTIONS
260001 Oct	Bn Commo: three (3) FM Freq.	To be used by Umpire, Tested Platoon and Aggressor Force. Issue to Tank Co by 260700.
260700 Oct	Hq 3d Bn: One Umpire Team: Chief Umpire - Maj Rogers Chief Scorer - Capt Guilford Asst Scorer - Sfc Burke Hq Co: Provide: 2 - ¼ ton w/AN/VRQ 1 w/drv 1 - ¼ ton w/ANGRC 7 w/drv	1 - ¼ ton, Maj Rogers 1 - ¼ ton, Capt Guilford 1 - ¼ ton, Sfc Burke Report to Bn Hqs 260700 Oct.
260700 Oct	Support Plt: 2 - 2½ ton 6X6 trks	Pick up 10 man detail from Tk Co and haul ammo from ammo dump to Baum and Dorrets Range. Ammo to be requested by HumRRO.
260700 Oct	Med Det: 1 Medic w/litter jeep	Report to Tk Co.

260700 Oct	Tk Co: Ammo detail - 10 EM	To be picked up by Sfc Hartenfeld, also will be used on Baum and Dorrets Ranges.
260900 Oct	Tk Co: 1 - TOE Tk Plt (To be tested)	Plt to be equipped with M48A1 Phase IV tanks with all OVM & TOE equipment. The personnel in this platoon will remain with it from the start of the test 260900 Oct to the end at (approx.) 271200 Oct. Plt to be at Coord 013859 by 260900 Oct ready to start test.
	5 - EM (E7 or E6) to be used as testers	Report to Bn Asst S3, 231300 Oct for instructions.
	1 - Range Officer	Report to Bn Asst S3, 221600 Oct for instructions.
	1 - NCO w/$\frac{1}{4}$ ton	Report to range officer at Baum Range 261000 Oct to score targets on Baum and Dorrets Ranges.
	5 - stake signs (Station 1 thru 5	Have in place by 260900 Oct Station # 1 - Coord 013859 Station # 2 - Coord 012853 Station # 3 - Coord 012851 Station # 4 - Coord 981870 Station # 5 - Coord 994871
	9 - stake flags (1 red and 8 white)	To be used by umpire and on Baum Range.
	1 - stake sign "Start"	To be used on Baum Range.
	5 - stake signs Points 1 thru 5	To be used by Range OIC on Dorrets Range.
	1 - sign "No light line"	See Asst S3 for disposition instructions.
	2 - Tk Plts and one $\frac{1}{4}$ ton w/ OIC to act as aggressor force	Report to Chief Umpire at Tk Co Bivouac site 261300. Dress in aggressor uniforms and use aggressor vehicle markings.
	2 - EM (Range guards)	Report to Range OIC at Baum range 261400 for instructions.
	POL for tested plt	Request from S4, to be used by tested plt in the assy area atk psn 270400 Oct.

	C Type Rations for tested platoon and aggressor force	Rations to be used for breakfast meal. Issue at start of phase III.
260900	HumRRO: Ammo: 90mm APC.....55 rds 90mm HE.....40 rds 90mm Blank.....310 rds 105mm How Ill.....40 rds 105mm How HE.....10 rds 50 Cal Tracers.....1250 rds 50 Cal 4 & 1.....375 rds 30 Cal 4 & 1 MLB...1625 rds 30 Cal Blank MLB...5000 rds	To be requested by HumRRO for pickup 260700 Oct for use in Phase I,II,III to be picked up by support plt and delivered to Baum and Dorrets Range, and Tk Co Bivouac site.
	HumRRO: One engr squad w/ atomic explosion simulator	Report to Chief Umpire at Tk Co bivouac site (Dorrets Range) 261200 Oct for instructions.
261000 Oct	How Co: 1 - Range Safety O 1 - 105mm How section (2 guns)	Report to Baum Range 261000 Oct (Safety Officer); Report to Dorrets range by 261500 Oct for instructions and night illumination mission (105mm section)
261000 Oct	Range OIC: (Tank Co) 6 - 6X6 panel targets (5 numbered 1 and 1 numbered 2) 9 - Kneeling silhouette targets 9 - standing silhouette targets	To be used on Baum Range
	2 - 6X8 OD Panel targets 6 - Standing silhouette targets 20 - Kneeling silhouette targets	To be used on Dorrets Range.

d. Control.

(1) OIC Phase I and II (Capt Guilford will maintain and operate one unit on tank company freq. and act as coordinator in maintaining control in the field of the tested unit.

(2) OIC, Chief Umpire Phase III (Major Rogers) will act as company commander of tank company, and issue orders to the platoon leaders of the tested platoon and aggressor force. Platoon leader of tested platoon renders all necessary reports to the Chief Umpire.

e. Battlefield conditions will be simulated where possible by use of blank ammo in Phase III.

f. Uniform. Winter field uniforms will be worn by all personnel of the tested platoon. Aggressor personnel will wear aggressor uniform with winter field.

g. Evacuation.

(1) Actual casualties will be evacuated to Ireland Army Hospital via attached medical aid man.

(2) Vehicle evacuation will be administrative. Any actual disable tank of the tested platoon will be replaced and the same crew will continue the test.

h. The SOP, FM 17-1, Page 390-401, will be used by the tested platoon. Prior study of this document, and familiarity therewith, is mandatory.

7. Safety.

a. Range officer will accompany each tank during live firing in Phase I and II and will insure that it is safe to fire prior to any command to "FIRE" being given.

b. Blank ammo will not be fired towards a person or vehicle at less than 100 yards.

c. All Umpire and control personnel will take positive steps to insure there is no physical contact between personnel of the tested unit and the aggressor. All assaults, regardless of the mission will be stopped when force approach within 100 yards of each other.

d. Extreme caution will be exercised when tanks are operating in assembly areas. All tanks operating in assembly areas will be preceded by a man on foot.

e. All unused ammo (blank and live) will be turned in upon completion of firing phase.

8. Umpire and control personnel instructions.

a. Uniform and identification, white tape will be worn around field cap and white flag will be displayed on the right rear of all control vehicles. Field uniform will be worn.

b. OIC Phase I and II and Chief Umpire Phase III will orient the test platoon before the start of each phase of the test and will critique it upon completion of each phase.

9. Aggressor Instructions.

a. The aggressor commander will be thoroughly familiar with the terrain over which his force will maneuver.

b. The aggressor commander will maintain radio contact with the Chief Umpire at all times to maintain control during phase III.

c. A dry-run of aggressor action will be conducted 261300 Oct 59.

10. Reports. The Chief Umpire, OIC, Tester and all control personnel will submit a critique in writing to this headquarters of that portion of the test they are responsible for which will include the following:

a. A brief description of the overall performance of the tested platoon.

b. Statement of any major deficiencies in testing procedures and preparation.

c. Statement of the validity of the test in rating the tested platoon.

d. Statement of any general comments or observations.

e. Recommended changes to the testing and scoring.

FOR THE COMMANDER

LEE H. HARRER
Capt, Armor
Adjutant

DISTRIBUTION:
6 - Tk Co (Less Annexes A & B)
1 - Hq Co
1 - How Co
1 - S1
1 - S2
1 - S4
1 - Maint
1 - Comm
10 - S3
4 - HumRRO

ANNEXES:
Annex A - Sequence of Events
Annex B - The Tank Platoon Combat Readiness Check
Parts I - III

ANNEX A (Sequence of Events) to Testing of HumRRO Tank Platoon Combat Readiness Test

PHASE I

TESTED PLATOON	TESTING & SUPPORT PERSONNEL
Platoon reports to OIC 260900 Oct prepared to start test at coord 013859 (Station # 1).	Tank Company moves to and establishes bivouac by 260900 Oct at Dorrets Run Tank Range. NCO testers will be asgn tank to be tested and will start test.
As individual tanks complete test at station # 1 they will be dispatched to station # 2 by OIC.	NCO testers will accompany individual tested tank thru all five stations of Phase I.
NCO testers will control all movements of individual tanks from dispatch at station # 1 to end of Phase I at station # 5.	Ammo section, support plt, with 10 man ammo detail will deliver ammo to Baum Range by 261000 and to Dorrets Run Tank Range, Tank Companies bivouac area and How Company firing poisition in turn.
As each tank arrives at station # 4 it will remain until called for by range officer to complete firing portion.	Range Officer will prepare Baum Tank Range and open range for firing by 261200 Oct. Med w/jeep will report to range officer at Baum Range by 261200 Oct. Scorer NCO w/$\frac{1}{4}$ ton will report to Baum Range 261200 Oct. Range Safety Officer will report to Baum Range by 261000. Range Officer will fire each tank as it arrives at the range. NCO scorer will score targets after each tank fires.
Noon meal will be taken at station # 4 (Baum Range).	Tank Company will feed noon meal for tested platoon, testers at Baum Range.
Phase I test will terminate upon completion of station # 5 and individual tanks will return to Co bivouac area for evening meal.	How Co firing section will move to Coord 001852 and start registration for Phase II by 261500 Oct. Tank Co will post range guards at coord 009877 and 996871 by 261500 Oct.

PHASE II

Platoon will report to OIC 261800 Oct prepared to start Phase II of test at coord 99208717.	NCO tester will rejoin the same tank they tested in Phase I at coord 261800 and accompany it thru Phase II.
Individual tanks will be dispatched on part one by OIC at 10 minutes interval.	Range Officer will set up and open Dorrets Range by 261900 Oct. Ammo detail will report to Dorrets Range by 261800 Oct. Safety Officer and NCO

	Scorer will report to Dorrets Range by 261800 Oct. Med w/jeep will report to Dorrets Range by 261800 Oct.
At completion of part two all tanks will move on to preselected positions on Dorrets Range.	How Co firing section will be prepared to fire illumination mission "on call" by 261900 Oct.
After completion of part three (range card preparation) four tanks will move to rear approx 100 yards. Tank to remain will be designated by Range OIC. Each tank will fire in turn.	Range Officer will cause four tanks to move to rear and will fire each tank in turn. NCO scorer will score targets after each tank fires.
Upon completion of firing part each tank will return to plt bivouac area coord 988872, conduct after operation maint and prepare for Phase III.	Upon completion of firing range will be closed and range details released. Spt plt will provide truck to haul brass and boxes.

PHASE III

SEQUENCE OF EVENTS	UMPIRE AND SCORER	AGGRESSOR
The tested platoon is now in a bivouac area coord 988872. The plt is aware it is going to be committed to combat, but not when. The situation is tactical.	Umpire Hqs is at Tk Co Administrative bivouac area (Dorrets Range)	Aggressor is at Tk Co Administrative bivouac area (Dorrets Range)
(262400 Oct 59) - Part 1 - Night March and Occupation of Attack Position		
Tank Plt Ldr receives warning order at Umpire Hqs 262400 Oct.	Chief Umpire issues warning order to Tk Co Comdr, to include control measures and strip map.	No aggressor activity prior to 270400.
Plt Ldr issues order to subordinates.	Check Plt Ldr order (See Score Sheet)	
	(Approx 270400 Oct 59)	
Plt conducts night march and arrives in attack position.	Chief Umpire will supervise the movement to insure safe conduct and practice. Scorer checks preparation, movement and occupation of the Assy Area, Atk Psn by the plt (See Score Sheet).	Aggressor moves and occupies position at coord 008877, 997885 and 988883.

Plt Ldr receives atk order in attack psn.	Chief Umpire issues attack order. Scorer will be present when order is issued.	
Plt Ldr issues attack order.	Scorer checks actions and orders of Plt Ldr and actions of platoon (See Score Sheet).	

(Approx 270630 Oct) - Part 2 - Attack on Intermediate Objective

Plt crosses LD and proceeds in the attack.	As plt approaches to within 600-800 yds of intermediate obj. Umpire orders aggressors to fire 3 rounds each at tested plt. Scorer checks orders of plt ldrs and actions of plt (See Score Sheet).	Aggressor takes plt under fire from intermediate obj. On order from Chief Umpire.
Plt routs aggressor & secures intermediate objective.	Chief Umpires orders agg to withdraw. Scorer checks actions & orders of Plt Ldr and actions of Plt (See Score Sheet).	Aggressor withdraws to final obj on order of Chief Umpire.

Part 3 - Firing of Friendly Atomic Devices

Plt secures intermediate objective and prepares to continue attack.	Chief Umpire issues "FLASH" message (Detonation of Friendly Atomic Device) to Plt Ldr. Eng squad prepare to detonate atomic device.	Aggressor is in position on final objective.
Plr Ldr issues order & prepares plt for detonation of atomic device.	Scorer checks preparation of Plt for detonation of atomic device (See Score Sheet). Chief Umpire gives count down for atomic device detonation. Issues all clear 10 minutes after detonation.	

Part 4 - Attack on Objective

Plt continues attack to secure final objective.	Chief Umpire issues order to continue attack. Scorer checks orders of Plt Ldr and actions of Plt. (See Score Sheet)	Aggressor force fire on Plt as they approach to within 800-1000 yds of the objective.

Part 5 - Consolidation & Reorganization of Objective

Plt secures objective	Umpire orders aggressor to	Aggressor withdraws to

and reorganizes.	withdraw. Scorer checks reorganization & position on the objective (See Score Sheet).	coord 991889 and 993891.
	Part 6 - Delaying Action	
Plt receives counter-attack from the left.	Chief Umpires orders one aggressor plt to atk from left. Scorer checks order of plt ldr and action of plt (See Score Sheet)	The aggressor Plt at coord 993891 and 988883 atks the tested plt left front.
	Chief Umpire will order aggressors to stop attack on left and withdraw.	Agg will not advance closer than 800 yds to the position and they withdraw leaving two tks simulated knockout.
Plt receives counter-attack from the right.	Chief Umpire orders one agg plt to atk from the right, orders tested plt to conduct delay back to vic intermediate obj. Scorer checks orders of Plt (See Score Sheet).	The agg plt at coord 993891 atks the tested plt right flank. Agg will not fire until fired upon, agg will not advance any closer than 500 yards to the tested platoon.
	Part 7 - Position Defense	
Plt occupies intermediate objective and prepares for position defense.	Scorer will check the order of Plt Ldr and action of plt in preparing for position defense. (See Score Sheet)	Agg will not advance any closer than final obj, but will maintain presure by fire.
Platoon will assemble for critique.	Chief Umpire will terminate problem and hold a critique on intermediate objective.	Agg will assemble on intermediate obj for critique.

The Armor Combat Decisions Test

Problem Nr 1

SITUATION (See Figure 1):

You are platoon leader of a tank platoon. Your platoon is presently located at "A". Your mission is to overcome a hostile force occupying Ridge "X". Upon your arrival at "A" you learn of an enemy antitank gun and dismounted elements of the enemy near house at "C". Your battalion mortar platoon is in support of your operation. You determine your plan of attack; then you assemble your tank commanders to give them your instructions.

REQUIREMENT: Issue your initial instructions.

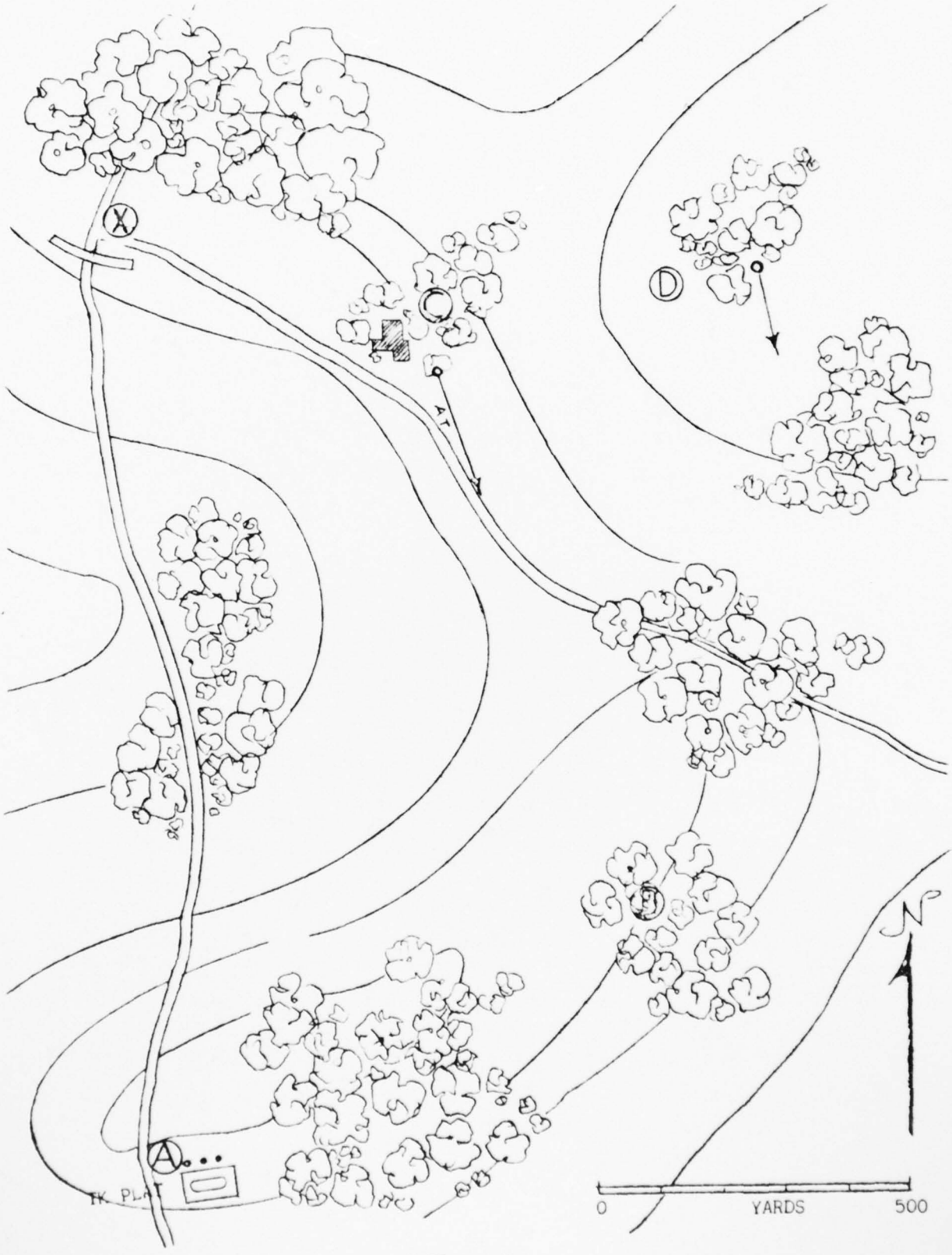


Figure 1

Problem Nr 2

SITUATION:

You are platoon leader of a tank platoon with the mission of providing flank security for the leading reinforced tank battalion of a combat command in the exploitation. Your platoon is in column, 1st Section leading; you are in the third tank in the column. Suddenly, you observe to your right flank approximately 250 enemy troops and five airplanes at an improvised air field, where preparations for an air movement are being made. Their only visible security appears to be two self-propelled antiaircraft automatic weapons (probably 40mm) positioned between your platoon and the airplanes. You estimate the airplanes to be about 1400 yards from your position. You are apparently unnoticed.

REQUIREMENT: What would you do in this situation?

Problem Nr 3

SITUATION:

You are the platoon leader of a tank platoon which is part of a tank company engaged in an offensive operation. Your platoon is deployed and is advancing by sections. You are under enemy fire. As you advance, one of the tanks in the leading section is disabled by an antitank mine. The tank commander of the disabled tank reports that an enemy minefield extends across the entire front and is covered by enemy fire from both flanks. In order to accomplish your mission you must pass through the minefield. Engineers and Armor infantry are not available to you; however, you have available on call the fire support of one battalion of artillery and the battalion 4.2 mortar platoon. A mild breeze from your right flank favors your use of smoke.

REQUIREMENT:

How would you accomplish the crossing of the minefield?

Problem Nr 4

SITUATION (See Figure 2):

Team ABLE, 1st Tank Battalion, Reinforced, has been advancing rapidly through scattered resistance to seize crossings over the ARROYO RIVER. Team ABLE has priority of fires of the battalion 4.2-inch mortar platoon, and the battalion has priority of fires of an armor field artillery battalion. You are platoon leader, 1st platoon. Your platoon's mission is to seize the bridge at TERRELLO. Enemy antitank guns have stopped you 1500 yards south of the village TERRELLO. From your position you observe enemy troops and vehicles withdrawing across the bridge. You also see a long dust column moving east on the road about a mile west of the 3d Platoon's objective.

REQUIREMENT:

How would you accomplish your mission?

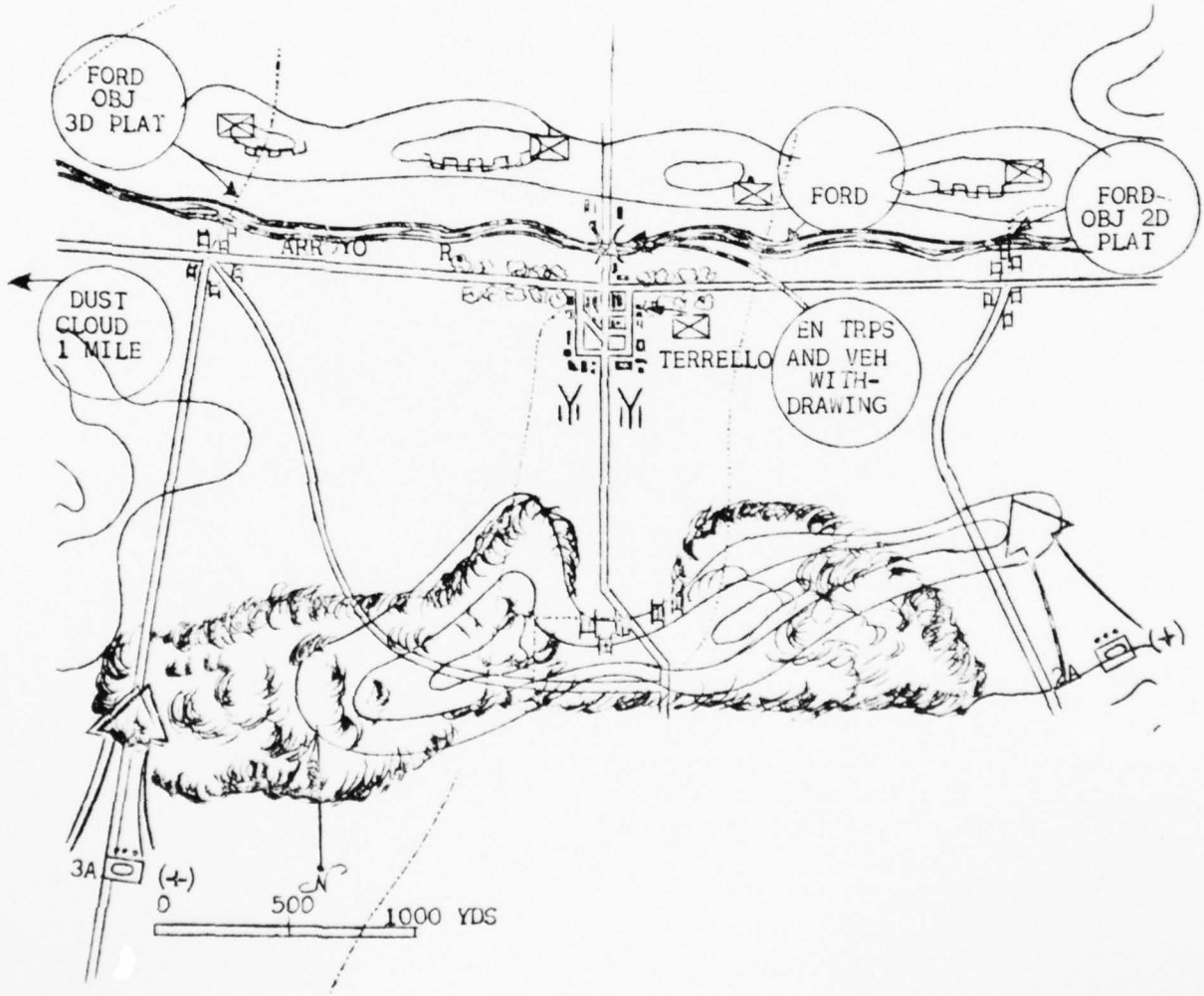

FORD
OBJ
3D PLAT
FORD
FORD-
OBJ 2D
PLAT
ARROYO
DUST
CLOUD
1 MILE
TERRELLO
EN TRPS
AND VEH
WITH-
DRAWING
3A
(+)
0
500
1000 YDS

Figure 2

Problem Nr 5

SITUATION:

You are platoon leader, 1st Tank Platoon, Company A, 1st Tank Battalion, Reinforced. You are at the Company OP, and are receiving your attack order from your company commander.

"You know the situation (See Figure 3). We will attack at 0600 tomorrow through the 121st Armor Infantry Battalion, Reinforced, with three platoons on line to the right of the road, to seize the objective.

Line of departure is friendly front lines.

Reconnaissance Platoon and friendly infantry will guide us from the attack position to the LD.

1st Platoon attacks on the left. Seize the left portion of objective, reorganize, and coordinate with Company C on the left.

2d Platoon, reinforced with 2d Platoon, Company B, 121st Armor Infantry Battalion, attacks in the center.....

3d Platoon, reinforced with 3d Platoon, Company B, 121st Armor Infantry Battalion, attacks on the right.....

Armor Infantry Platoons, mounted, wedge formation in rear of tanks. One FO in Headquarters tank, the other in ¼-ton truck. Necessary resupply on the objective. Company net opens on my order. My tank will be behind the center tank platoon during attack.

Any questions?

Time is now..... ."

(See Scene 1). After crossing the line of departure, you check your platoon to ensure that it is in proper formation. You observe the terrain and maintain a sharp lookout for enemy. You suspect the woods to your right front, and you locate an AT gun to your left front at about 10 o'clock, and 1500 yards from your position.

FIRST REQUIREMENT:

Issue your orders.

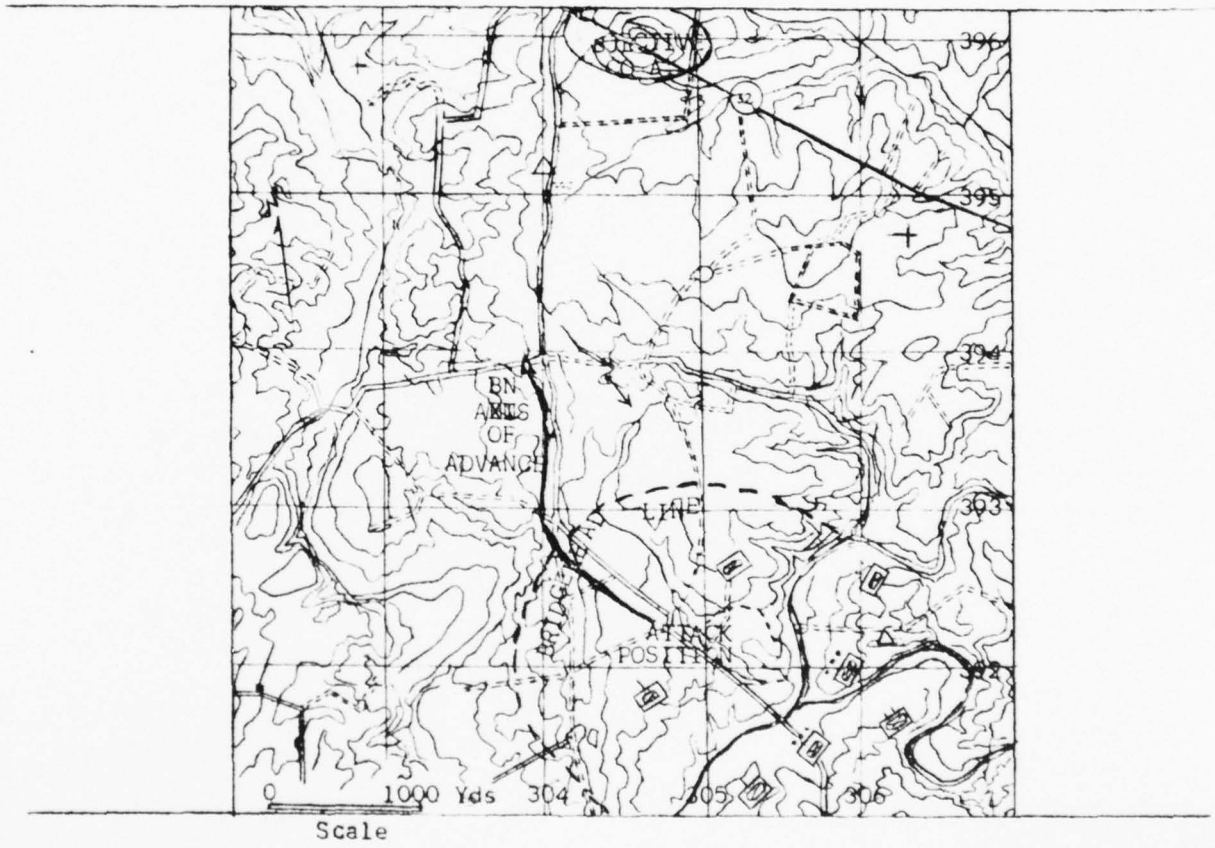

396
395
394
393
392
BN
AXIS
OF
ADVANCE
LINE
ATTACK
POSITION
0
1000 Yds
304
305
306
Scale

Figure 3

Scene 1

SITUATION (Continued):

(See Scene 2.) As your platoon continues the attack, it comes under heavier fire from rocket launchers, mortars, and small arms from the woods to your right front. Enemy artillery also increases.

SECOND REQUIREMENT:

Issue your orders, and take other action deemed necessary.

SITUATION (Continued):

Your platoon has successfully neutralized the enemy strong point, and is continuing on its mission--which is to seize the left portion of the company objective (See Figure 4). As your platoon advances (See Scene 3), it comes under heavy artillery, mortar, and antitank gun fire. Your tank has been hit on the track by artillery fire, and it is disabled.

THIRD REQUIREMENT:

Issue your orders.

SITUATION (Continued):

(See Scenes 4 and 5.) You receive the reports from your sections as depicted in Scene 4. Immediately thereafter, you hear the Artillery Air Observer's report, as given in Scene 5.

FOURTH REQUIREMENT:

Issue your orders and take any other action you deem necessary.

Scene 2

AD-A072 532 HUMAN RESOURCES RESEARCH ORGANIZATION ALEXANDRIA VA F/G 5/9
USER MANUAL FOR THE MINIATURE ARMOR BATTLEFIELD (MAB). APPENDIX--ETC(U)
1962 DA-44-188-ARO-2

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2 OF 2
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DATE
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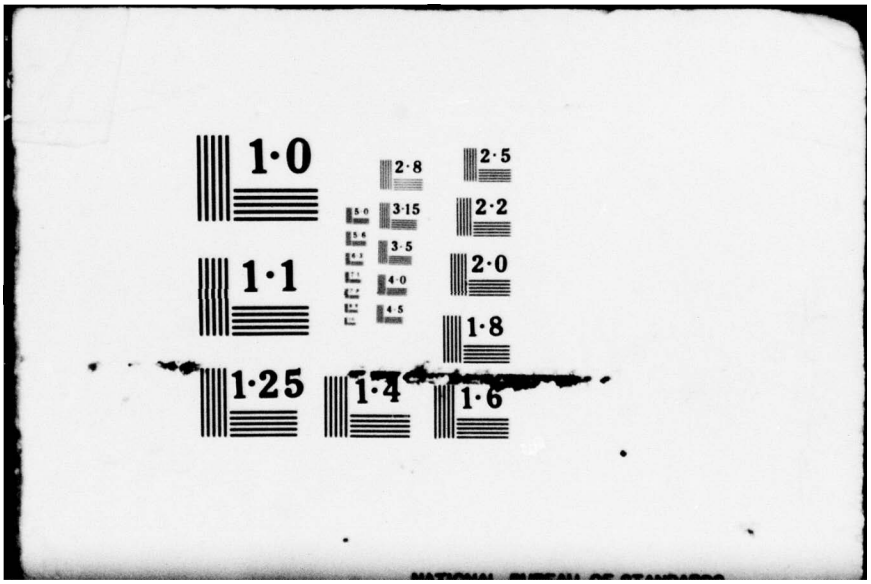
1·0
1·1
1·25
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2·8
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4·5

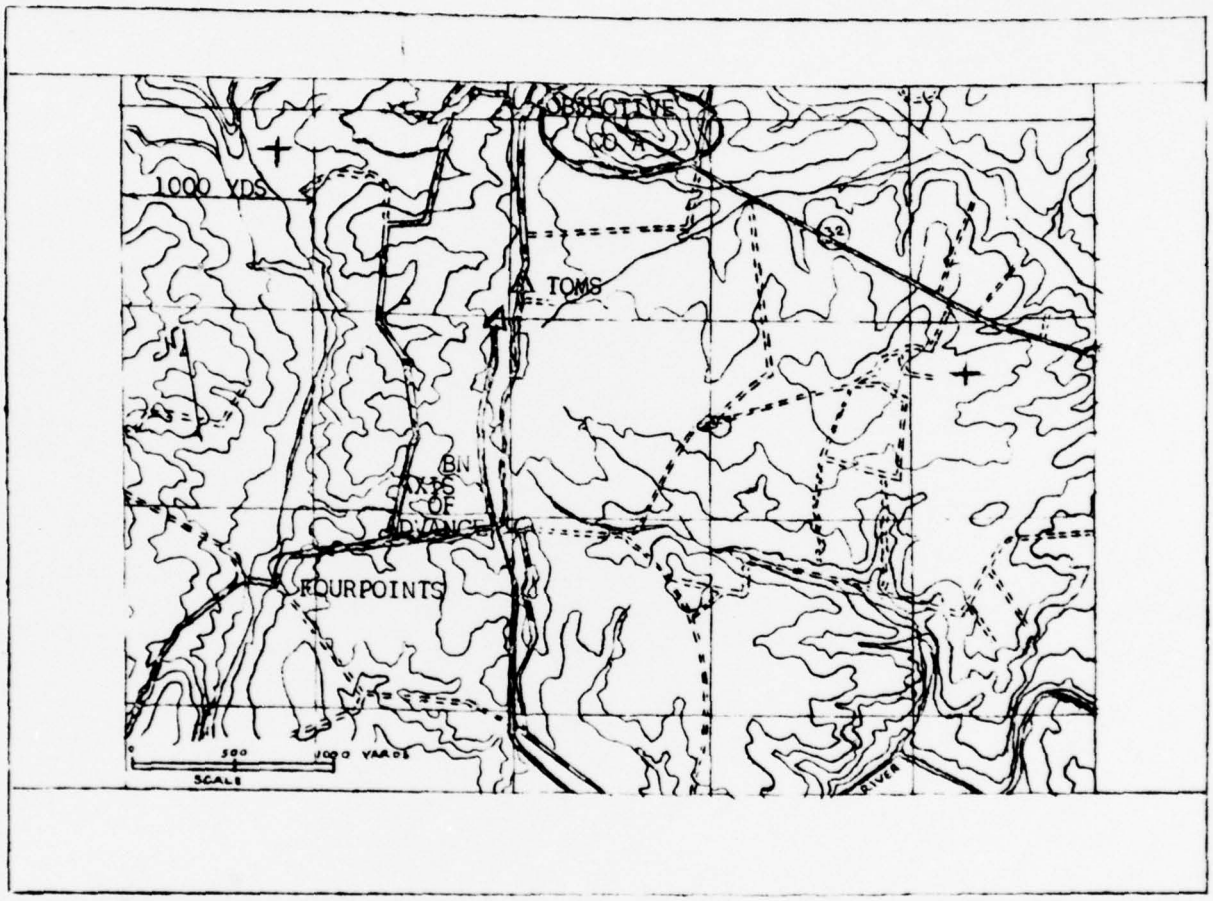
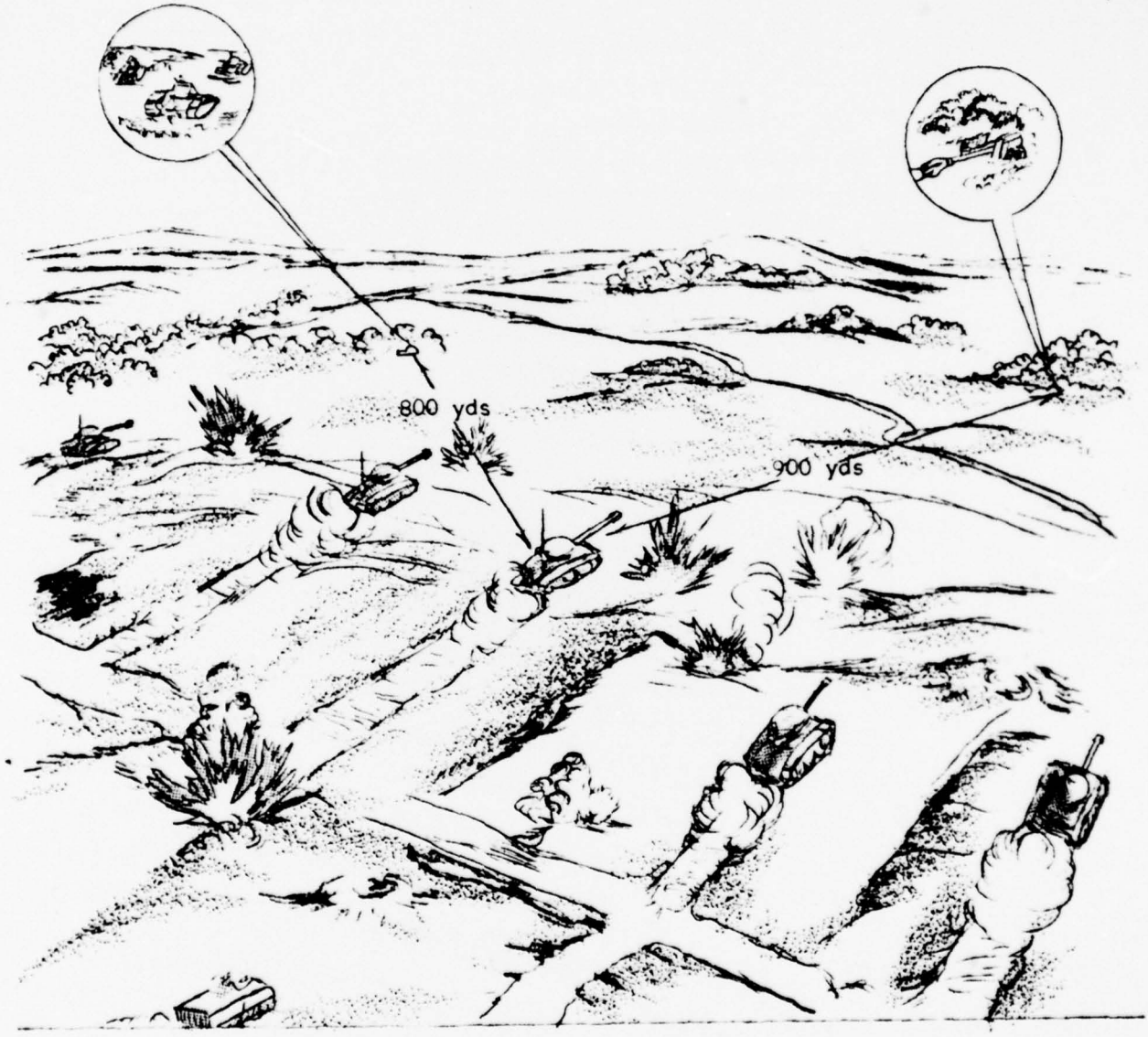
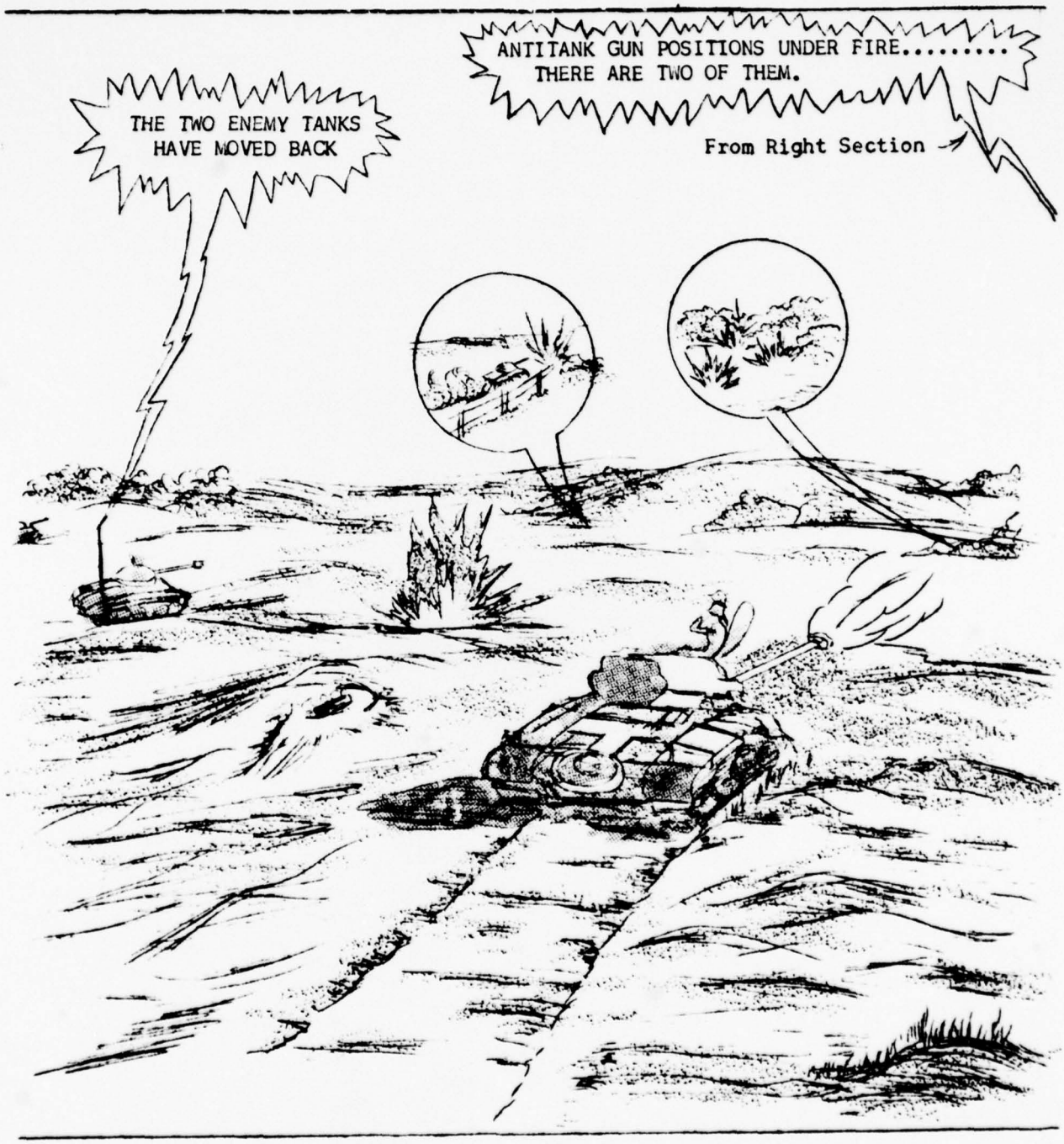

OBJECTIVE
CO A
1000 YDS
32
TOMS
BN
AXIS
OF
ADVANCE
FOURPOINTS
500
1000 YARDS
SCALE
RIVER

Figure 4



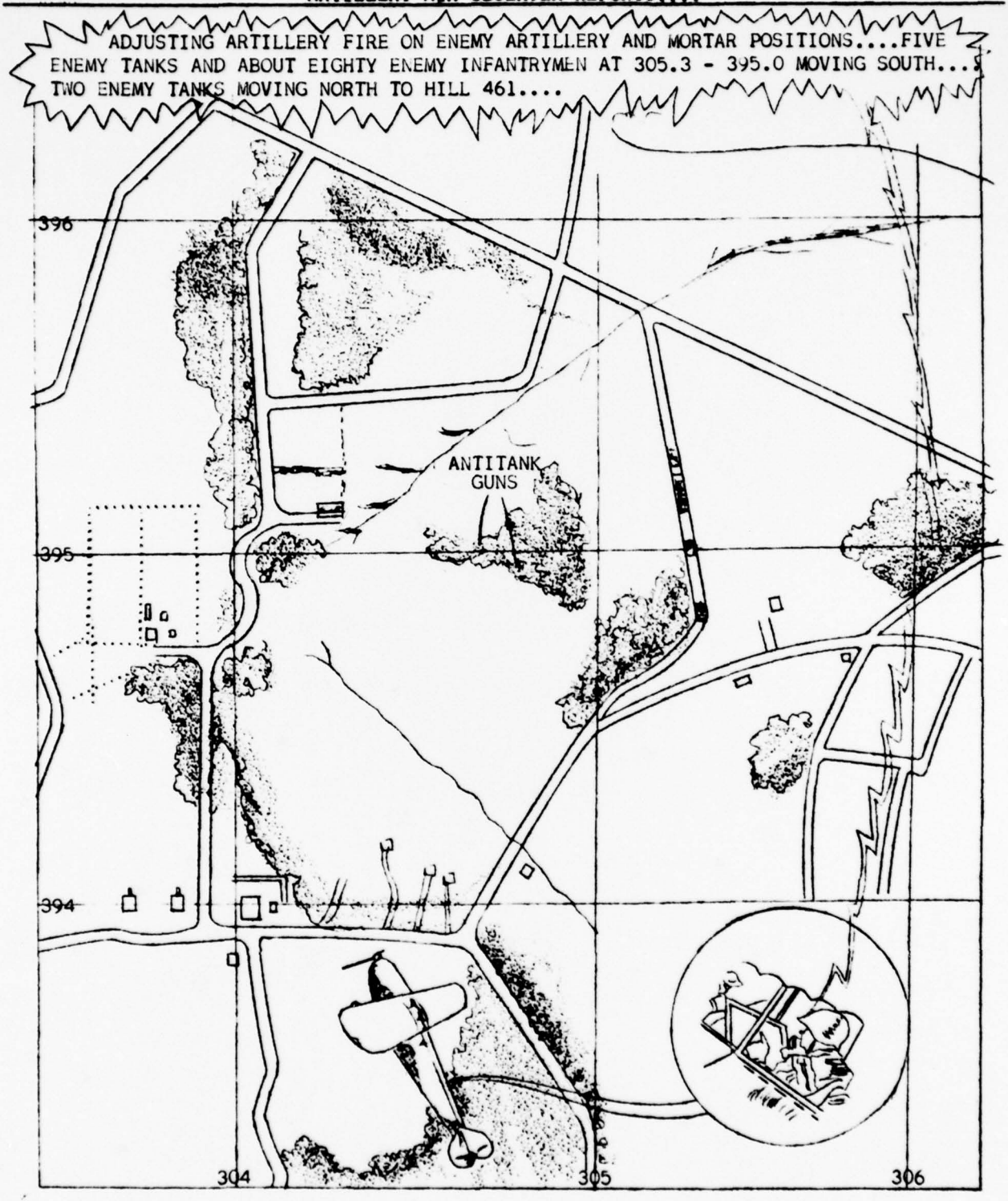
Scene 3

TANK SECTION LEADERS REPORT....



Scene 4

ARTILLERY AIR OBSERVER REPORTS....



Scene 5

SITUATION (Continued):

The two enemy tanks your platoon fired on have withdrawn to vicinity beyond the team objective. The two enemy AT guns were destroyed. Your platoon has successfully assaulted your portion of the objective.

FIFTH REQUIREMENT:

What would you do?

Problem Nr 6

SITUATION:

You are the platoon leader, 2d Platoon, Company A, 21st Medium Tank Battalion, part of CCB. Your platoon is disposed as shown on Figure 5, to defend the assigned strong point within the company sector. Tactical Air Reconnaissance has reported the movement of enemy forces from the Northwest toward the area. Suddenly Platoon Observation Post Nr 1, located in vicinity of RAILROAD CROSSING 576, coordinates 32634050, reports that an enemy force of approximately 12 tanks and a company of infantry is advancing south from vicinity of LOCUST GROVE SCHOOL 32534069. The head of the enemy column is at RJ 32524064.

FIRST REQUIREMENT:

Issue your orders and take any other action you deem necessary.

SITUATION (Continued):

The enemy force continues to advance. Your platoon directs an increasing volume of fire on the approaching enemy. Other company, battalion, and supporting elements add their fires to the defense. The enemy advance is slowed considerably, but is not stopped. Additional enemy forces join the attack. The Combat Command Commander realizes that it will be necessary to counterattack the enemy force with the CCB reserve. He announces he will use Counterattack Plan "A". (See Scene 6.)

SECOND REQUIREMENT:

Issue your orders.

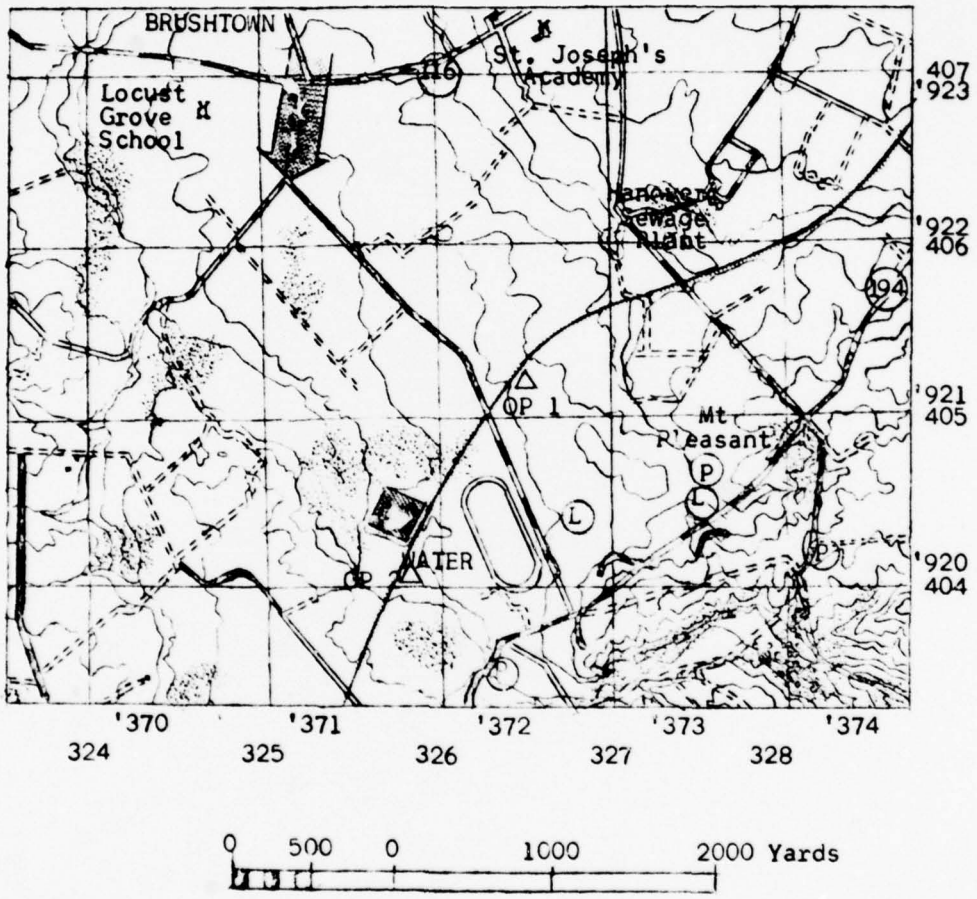

BRUSHTOWN
St. Joseph's Academy
Locust Grove School
Hanover Sewage Plant
OP 1
Mt Pleasant
WATER
116
194
407
'923
'922
406
'921
405
'920
404
'370
'371
'372
'373
'374
324
325
326
327
328
0 500 0 1000 2000 Yards

Figure 5

Scene 6

Problem Nr 7

SITUATION:

You are a tank platoon leader of a tank company organic to an infantry regiment. The situation is depicted in Scene 7 and on Figure 6.

FIRST REQUIREMENT (See Figure 6):

Select the targets you would designate to your platoon. List by number and indicate target by number on overlay on Figure 6.

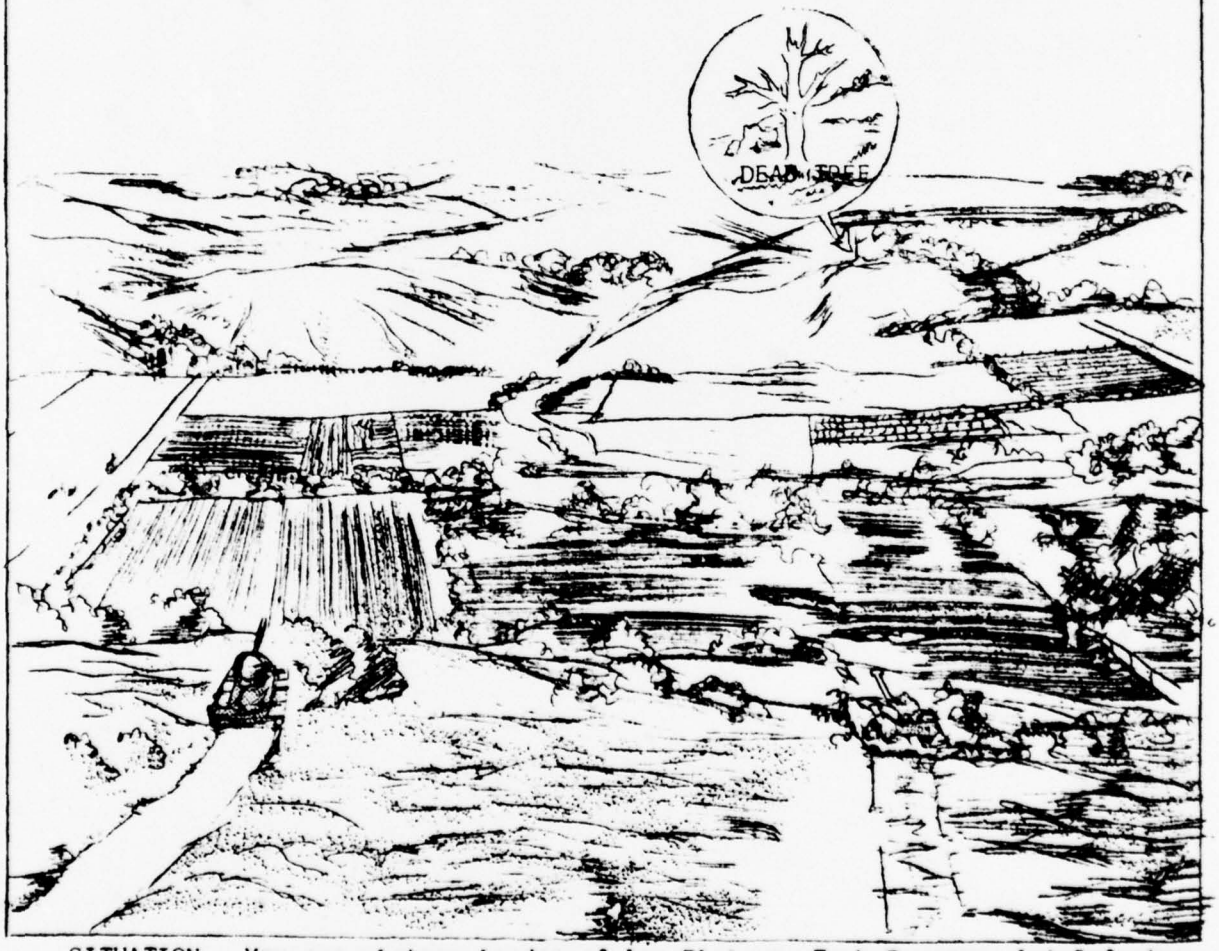
SITUATION (Continued):

You have selected the targets on which you desire to place fire. You now wish to prepare the range card.

SECOND REQUIREMENT:

What method would you use to prepare firing data to be used on the targets you have chosen? List each step.

GENERAL. An important mission of armored units organic to the infantry division is reinforcing the fires of the infantry. Tanks must be prepared to render these reinforcing fires during the hours of darkness as well as daylight. This presents a problem to the tanks, but by using the auxiliary fire control equipment, accurate and effective fire may be placed on targets and likely avenues of approach at night.



SITUATION. You are platoon leader of 1sr Platoon, Tank Company, 1st Infantry. You have been attached to the 2nd Battalion for an offensive operation. During the first day of the attack, the 2nd Battalion secured its objective and is now preparing night defensive positions along the line A-B. The battalion commander tells you that your platoon will remain under battalion control. He also informs you that your platoon must be prepared to fire and reinforce fires on likely avenues of enemy approach throughout the night from your present position. (See sketch.)


VERY STEEP
DEAD TREE
VILLAGE
RJ42
FORDABLE
FORDABLE
A
B
PLAT LDR
FORDABLE
SECONDARY ROAD
0 100 500 1000 YARDS

Figure 6

Problem Nr 8

SITUATION:

You are a tank platoon leader in the left reinforced battalion of a combat command. The combat command is in the exploitation of an operation designed to seize multiple crossings over RIVER "R". The leading reinforced platoon succeeded in seizing the BRIDGE "B" intact (See Figure 7); however, as the tanks of the leading platoon began to cross the river, an enemy air strike damaged the bridge, and the first tank fell through the bridge. The river is unfordable, and no other bridge crossing is available; they have all been destroyed. Supporting engineers have begun work on BRIDGE "B" and estimate that they will have it repaired in two hours. Meanwhile, two armor infantry companies have crossed the river in their armored infantry vehicles, and are digging in on the high ground at "A". The battalion commander, after going up in an Army aircraft, reported an enemy built-up area in the vicinity of ROAD JUNCTION "Y", and ordered that all tanks south of RIVER "R" will fire on this built-up area. Your platoon is located as shown on Figure 7. The area at "Y" cannot be seen from your position; however, the armor infantry commander at "A" and the pilot of the Army aircraft can observe your fire on "Y". From your position at the center (Nr 1) tank, you can see a large radio tower near the town of "M", at a map range of 16,000 yards. You can also see a small strip of road beyond (north of) the ROAD JUNCTION at "Y". The commanders of all tanks in your platoon can see the radio tower, but none can see the strip of road near RJ at "Y".

REQUIREMENT:

Lay your platoon to fire on the target at ROAD JUNCTION "Y". (Give each step you would take to accomplish your mission.)

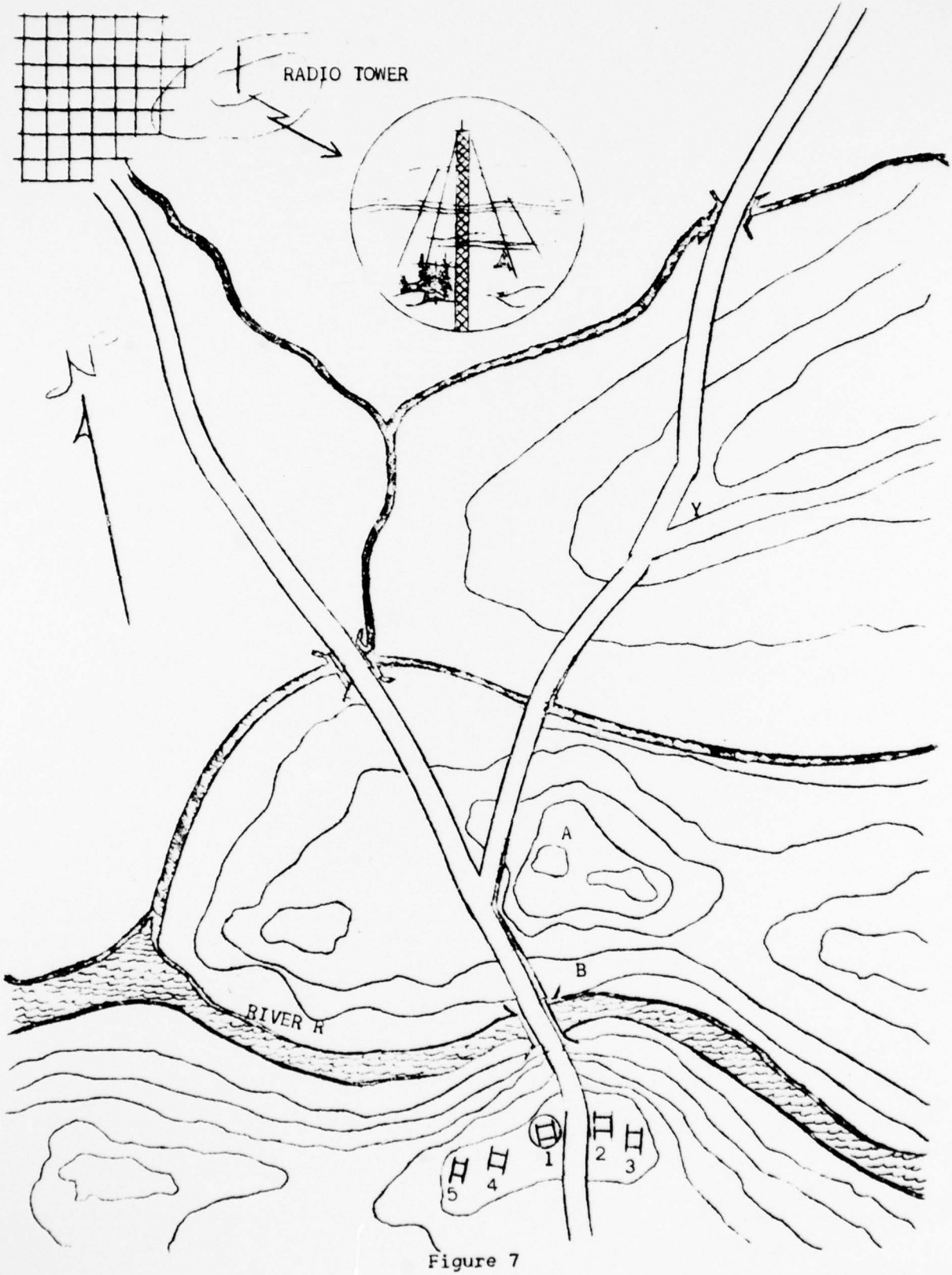


Figure 7

Problem Nr 9

SITUATION:

You are a tank platoon leader, of a medium-gun tank platoon, in the attack position. The company commander has issued the attack order. Your platoon will lead the company attack along axis RED to secure objective CAT. The following information is known to you (See Scene Nr 8).

a. The weather is clear, with excellent visibility.

b. The terrain is wooded and affords good defensive positions.

c. The most probable type of target is an enemy tank.

d. Because of the nature of the terrain, the range at which any tank versus tank engagements are most likely to occur is 500 to 1000 yards.

You are now in the attack position and plan to lead the attack in your tank.

FIRST REQUIREMENT:

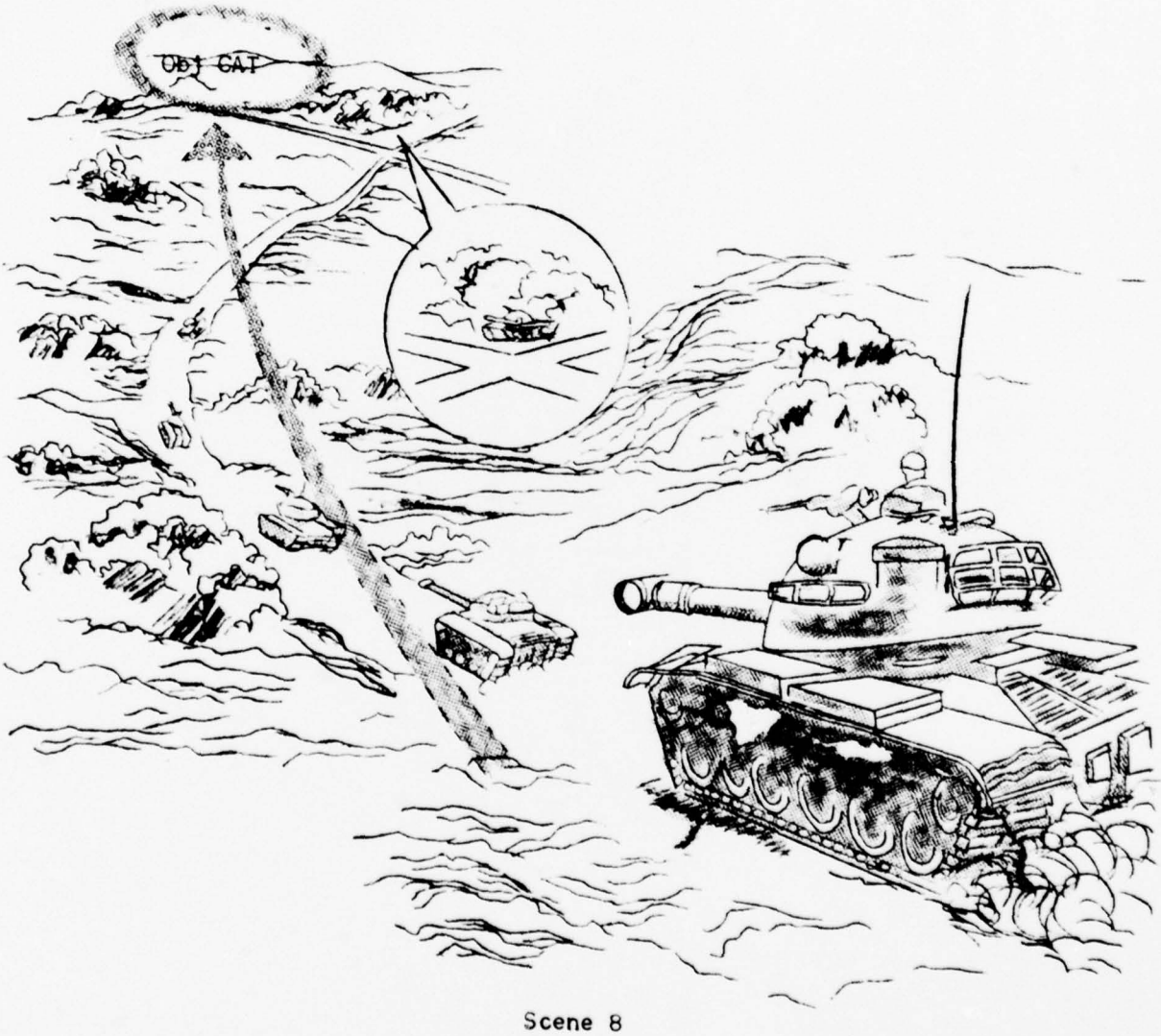
What action would you take in the attack position to ensure that your tank is capable of obtaining a fast first-round hit?

SITUATION (Continued):

You have moved out of the attack position and are moving down the road when, as your tank approaches an open area, you suddenly see the gun flash of an enemy tank which has just fired at you and missed.

SECOND REQUIREMENT:

Issue your orders.



Scene 8

Problem Nr 10

SITUATION:

You are a tank platoon leader in a tank company located in the attack position. Five minutes before H-hour your radio becomes inoperative. Your loader, who has been to Radio Repairman School, says that he thinks he can fix the radio in about three minutes.

REQUIREMENT:

What would you do? How would you do it, and why?

Problem Nr 11

SITUATION:

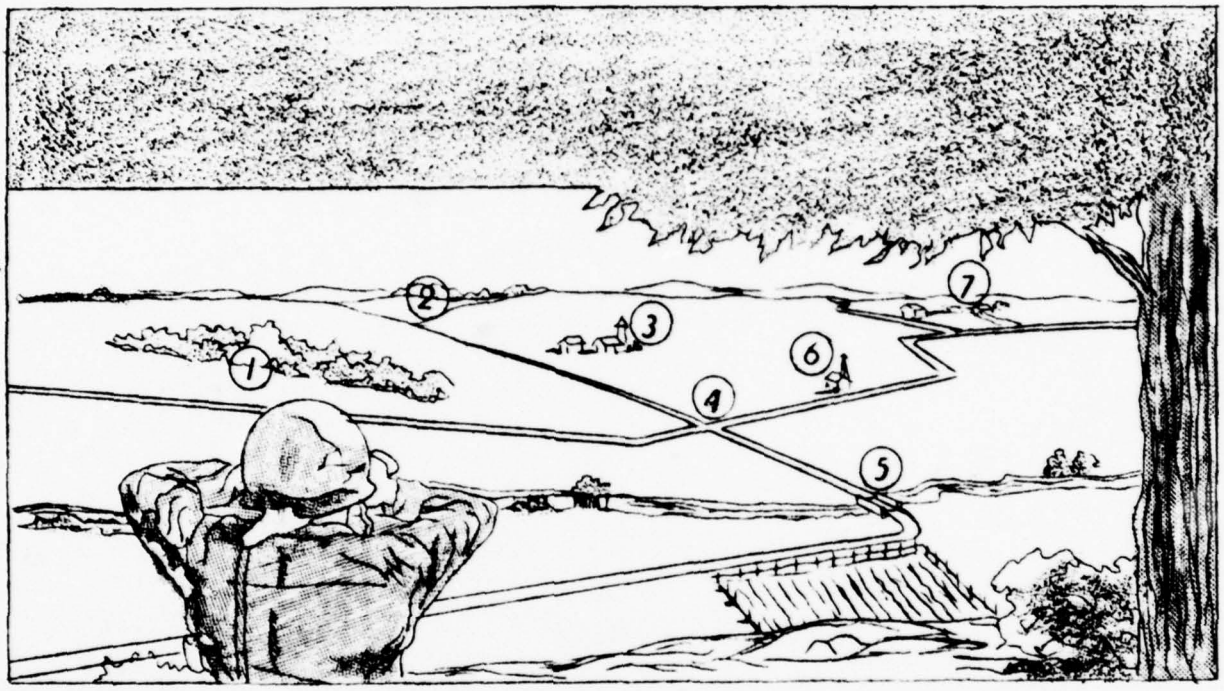
Team B (Company B, 1/1 Armor, with one Armor rifle platoon attached) has been assigned defensive positions overlooking a major road net (See Scene 9), access to which--according to friendly civilians--is covered by numerous enemy antitank guns. In view of this, the commanding officer of Team B has directed that tanks will be kept in turret defilade during daylight and moved into prepared positions after dark. Range cards for each tank and unit fire plans for covering the approaches into the defensive positions are to be prepared and coordinated prior to darkness. You are the platoon leader of the 3d Tank Platoon. Your CO has directed you to keep your tanks in turret defilade during daylight and move them to prepared firing positions after dark. Third platoon targets are numbered 1-7 as shown in Scene 9.

FIRST REQUIREMENT:

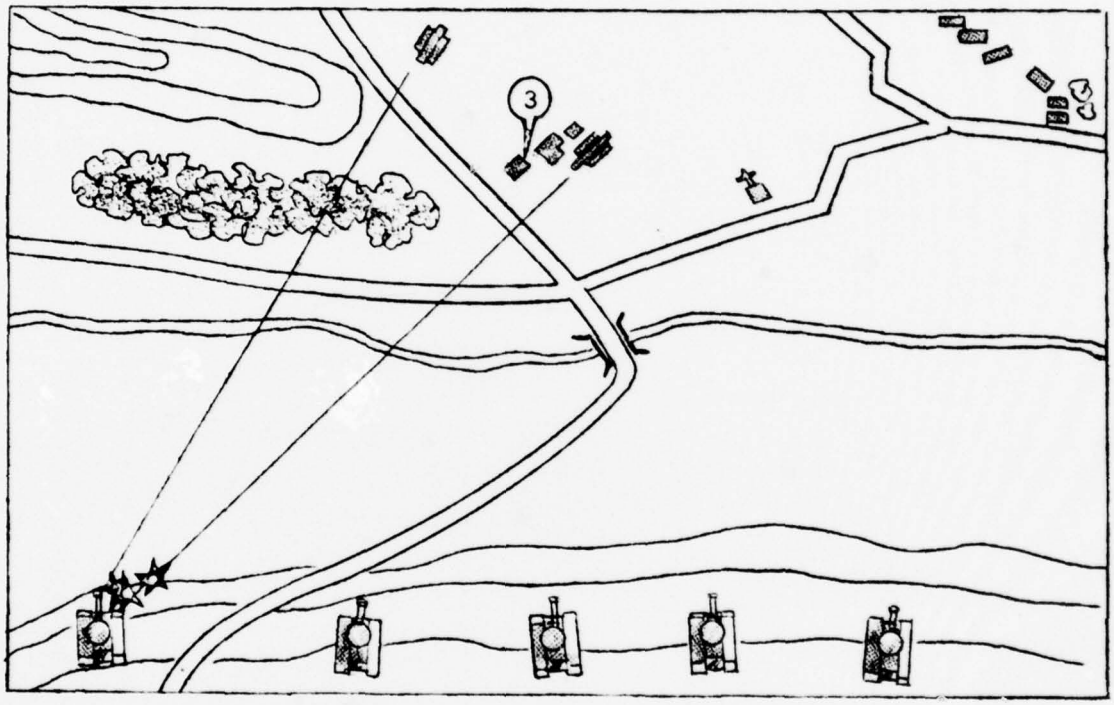
Explain in detail how you will prepare range cards for the tanks of your platoon, and the reason for doing what you do. Also, explain how the tanks will be moved into firing position during darkness.

SITUATION (Continued):

You have selected firing positions and prepared range cards for each tank of your platoon, and, after dark, four tanks moved into position without encountering difficulty. However, at 2025 hours, as your fifth tank was pulling into position, it was fired on by what appeared to be two antitank guns located near Target 3 (See Scene Nr 10). You call for artillery fire on these guns, and are satisfied that at least one of them was destroyed. However, as your crews continue to improve their positions, one of your tanks is fired on and hit by what you determine to be the remaining antitank gun. Your tank commanders report that they observed the muzzle flash of the gun at approximately 50 mils to the left of and at about the same range as Target 3. You decide to engage this weapon. Your Commanding Officer has stated that plans for renewed offensive operations preclude the use of illumination in the area.



Scene 9



Scene 10

SECOND REQUIREMENT:

Explain in detail the method of fire and adjustment you use to engage the antitank gun.

SCORING AND SOLUTIONS

TO

THE COMBAT DECISIONS TEST

PROBLEM I

(Need not be in sequence)	Value	Score
1. Envelopes the enemy left (east) flank.	1	____
2. Move platoon to attack position at point "B".	1	____
3. Destroy enemy at "C", then clear Ridge "X".	1	____
4. Enemy infantry, and at least one AT gun, are located at "C".	1	____
5. Battalion mortar platoon will support by fire.	1	____
6. Platoon will move to "B" in order of march.	1	____
7. Further orders will be issued at "B".	1	____
8. I will be (position in movement to "B").	1	____
9. Any questions?	1	____
10. Move out on my orders.	1	____

TOTAL.....10

PROBLEM II

(Give full credit if action follows scoring sequence. One-half credit for items covered, but not in listed sequence.)

	Value	Score
1. Send over platoon command net the following message:	1	____
a. First section cover front.	1	____
(1) Watch AAA Gun to right front.	1	____
b. Second section cover right flank.	1	____
(1) Watch AAA Gun to right flank.	1	____
c. Fire only on my order, or	1	____
(1) if fired upon.	1	____

PBORLEM II - Continued	Value	Score
2. Send following message to Company Commander:	1	____
a. Five enemy troop carrier planes, and	1	____
b. approximately 250 enemy troops,	1	____
c. preparing to load,	1	____
d. located at improvised airfield,	1	____
e. at coordinate_____.	1	____
f. Two enemy AAA AW guns,	1	____
g. probably 40mm,	1	____
h. located at coordinates _____and	1	____
i. _____.	1	____
j. My platoon is halted at _____,	1	____
k. and has not been observed.	1	____
l. Request instructions.	1	____

TOTAL.....20

PROBLEM III

	Value	Score
1. Halt the platoon immediately.	1	____
2. Order each tank		
a. to take up a hull defilade firing position,	1	____
b. to cover the minefield with fire,	1	____
c. to cover the disabled tank with fire.	1	____
3. Order the disabled tank to protect itself with fire.	1	____
4. Request the supporting artillery battalion to place fire on the enemy positions covering the minefield.	1	____

PROBLEM III - Continued	Value	Score
5. Request the 4.2 mortar platoon to smoke the area,	1	____
a. placing the smoke screen on the right flank of the platoon,	1	____
b. the smoke screen to be between the minefield and the enemy positions.	1	____
6. Order each tank to dismount <u>one</u> man.	1	____
a. The man selected will be the loader.	1	____
b. The gunner becomes the loader.	1	____
c. The tank commander fires the gun from his normal position.	1	____
7. Dismounted men will probe for mines.	1	____
8. Dismounted men will clear a lane 15 ft. wide.	1	____
9. As mines are located, they will be uncovered.	1	____
a. Mines will <u>not</u> be removed as they are located.	1	____
b. After all mines are located and uncovered, within the 15 ft. lane, they will be removed.	1	____
10. The breached line will be clearly marked.	1	____
11. Tanks will pass through the lane one at a time.	1	____
a. All tanks will cover the tank passing through the lane.	1	____
12. Platoon leader to report location of minefield.	1	____
a. Report disabled tank.	1	____
b. Report breaching the minefield.	1	____
c. Report location of the breach.	1	____

PROBLEM III - Continued	Value	Score
13. Request mortar platoon to lift smoke screen as last tank passes through lane.	1	____
14. Request artillery to lift fire.	1	____
15. Continue advance.	1	____

TOTAL.....28

PROBLEM IV

	Value	Score
1. Request mortar platoon to place smoke on AT gun positions.	1	____
a. Mortar platoon to place HE on AT gun positions.	1	____
2. Request artillery to place <u>air bursts</u> on the bridge.	1	____
3. Platoon leader to take one section to the ford.	1	____
a. The other section to follow by bounds, and	1	____
b. to fire overwatching fires to left flank.	1	____
4. Platoon leader's section crosses ford.	1	____
5. The other section ordered into position to support platoon leader's section by direct fire;	1	____
a. to block or destroy any resistance from TERRELLO.	1	____
6. Platoon leader's section rushes to north end of bridge.	1	____
7. Other section ordered to secure south end of bridge,	1	____
a. OR, this section could follow platoon leader's section across ford, then cross bridge to secure south end of bridge (Score <u>either</u> 7 or 7a, but <u>not</u> both).	1	____

PROBLEM IV - Continued	Value	Score
8. Request that the "height-of-burst" of artillery fire be raised as platoon approaches the bridge.	1	____
9. Both ends of bridge must be secured.	1	____
10. Request artillery fire be shifted (not lifted),	1	____
a. to enemy positions north of bridge.	1	____
11. Check the bridge for demolitions;	1	____
a. disconnect lead wires, if any are found.	1	____
12. Report the situation to the team commander.	1	____

TOTAL.....19

PROBLEM V

FIRST REQUIREMENT	Value	Score
1. Call the right flank tank; order it to move up on line.	1	____
a. Call the tank by number--"No. 5" (Give one-half credit if No. 3).	1	____
2. Order right section to reconnoiter by fire.	1	____
a. Order use of .30.	1	____
b. Designate "Woods to right front."	1	____
3. Order left section to fire at enemy AT gun.	1	____
a. Give direction--left front.	1	____
b. Give exact direction--10 o'clock.	1	____
c. Designate ammunition.	1	____
d. Designate HE specifically.	1	____
SECOND REQUIREMENT		
1. Order right section to concentrate fire on woods.	1	____

PROBLEM V, SECOND REQUIREMENT - Continued	Value	Score
a. Specifically alert right section to the rocket launchers.	1	____
2. Order left section to cease fire on AT gun.	1	____
a. Continue reconnaissance by fire to left front.	1	____
b. Specify use of Cal. .30.	1	____
3. Call Company Commander.	1	____
a. Report enemy mortars.	1	____
b. Report rocket launchers.	1	____
c. Report infantrymen (or small arms fire).	1	____
d. Report location of enemy.	1	____
e. Request fire support.	1	____
f. Report intentions (continuing to advance).	1	____
4. Call platoon leader, center (2nd) platoon.	1	____
a. Request 2nd platoon place fire on woods.	1	____
b. Request specifically, "Woods on your left front."	1	____
THIRD REQUIREMENT		
1. Right section, enemy AT gun 900 yards;	1	____
a. your right front.	1	____
2. Left section, enemy tanks 800 yards;	1	____
a. two enemy tanks;	1	____
b. your left front.	1	____
c. Request artillery fire on AT guns.	1	____
d. Two enemy tanks on road to my left front, moving north.	1	____

PROBLEM V, THIRD REQUIREMENT - Continued	Value	Score
e. My tank is disabled.	1	____
f. Am moving to number _____ tank.	1	____

FIFTH REQUIREMENT	Value	Score
1. Move platoon to far side of objective.	1	____
2. Position tanks to cover enemy avenues of approach.	1	____
3. Prepare to continue the attack.	1	____
4. Obtain a report from each tank in the platoon.	1	____
a. Status of personnel (casualties, etc.)	1	____
b. Status of ammunition requirements.	1	____
c. Status of fuel supply.	1	____
d. Mechanical condition of tanks.	1	____
(1) of weapons.	1	____
5. Report condition of platoon to Company Commander.	1	____

TOTAL.....44

PROBLEM VI

FIRST REQUIREMENT	Value	Score
1. Order the Observation Post to request artillery.	1	____
a. Order OP to adjust the artillery,	1	____
b. on the advancing enemy force.	1	____
2. Alert platoon for action.	1	____
a. Nature of enemy force (composition).	1	____
b. Direction of enemy threat (location).	1	____
3. Call "Company Commander",	1	____
a. report presence of enemy.	1	____

PROBLEM VI, FIRST REQUIREMENT - Continued	Value	Score
b. Nature of enemy force (composition).	1	_____
c. Direction of enemy threat (location).	1	_____
SECOND REQUIREMENT		
1. Call the "Platoon."	1	_____
a. Combat Command is going to counter-attack,	1	_____
b. execute Plan A.	1	_____
2. Call Observation Post Nr 1.	1	_____
a. Withdraw within strong point.	1	_____
3. Call Observation Post Nr 2.	1	_____
a. Hold your position,	1	_____
b. adjust artillery fire,	1	_____
c. until I order you to withdraw.	1	_____
4. Other platoon elements, hold your positions,	1	_____
a. support the counterattack by fire.	1	_____

TOTAL.....21

PROBLEM VII

FIRST REQUIREMENT	Value	Score
1. (1)	1	_____
2. (2)	1	_____
3. (3)	1	_____
4. (4)	1	_____
5. (7)	1	_____
6. (8)	1	_____
7. (9)	1	_____
8. (10)	1	_____

PROBLEM VII, FIRST REQUIREMENT - Continued	Value	Score
9. (11)	1	____
10. (12)	1	____
11. (13)	1	____
12. (14)	1	____
SECOND REQUIREMENT		
1. Select a reference point.	1	____
2. All tanks lay on reference point,	1	____
a. with their direct fire sight.	1	____
3. Zero the azimuth indicator.	1	____
4. Traverse to target.	1	____
a. Show target number.	1	____
b. Show target type (hill, bridge, etc.)	1	____
c. Show deflection to target.	1	____
d. Show quadrant elevation.	1	____
e. Show range to target.	1	____

TOTAL.....22

PROBLEM VIII	Value	Score
1. Order gunner to lay on the radio tower.	1	____
a. Have gunner zero the azimuth indicator.	1	____
b. Have gunner traverse turret until gun is laid on the strip of road visible to you just beyond "Y".	1	____
2. Note the deflection reading on azimuth indicator.	1	____
3. From map, determine range to RJ at "Y".	1	____
4. Convert this range to quadrant elevation.	1	____

PROBLEM VIII - Continued	Value	Score
5. Give fire command to the platoon.	1	____
a. PLATOON	1	____
b. HE	1	____
c. QUADRANT (120)	1	____
d. REFERENCE POINT	1	____
(1) RADIO TOWER	1	____
e. DEFLECTION (2717) RIGHT	1	____
f. TROOPS	1	____
g. ONE ROUND	1	____
h. AT MY COMMAND	1	____
i. FIRE	1	____
6. Subsequent commands will be based on observer reports.	1	____

TOTAL.....18

PROBLEM IX

FIRST REQUIREMENT	Value	Score
1. Order gunner to index SHOT (or HYPER-SHOT).	1	____
2. Set a range of 800 yards on computer.	1	____
3. Have loader load a round of ammunition.	1	____
4. Have loader shift the rounds in ready rack,	1	____
a. to make additional (SHOT)(HYPERSHOT) (AMMUNITION) readily available.	1	____
SECOND REQUIREMENT		
1. Driver, Stop.	1	____
2. Gunner,	1	____
3. Battle Sight,	1	____

PROBLEM IX, SECOND REQUIREMENT - Continued	Value	Score
4. Tank.	1	____
5. Fire.	1	____

TOTAL.....10

PROBLEM X

	Value	Score
1. Move to a tank with an operative radio.	1	____
2. Platoon leader must be able to communicate.	1	____
3. Avoid risk of inoperative radio net being repaired in time.	1	____
4. Tank with the inoperative radio can still be fought;	1	____
a. can be commanded by TC that was displaced.	1	____
5. Tank with inoperative radio will accompany the platoon.	1	____

TOTAL.....6

PROBLEM XI

FIRST REQUIREMENT	Value	Score
1. Use the aiming circle,	1	____
a. for each tank.	1	____
2. Select the location for each tank.	1	____
a. Set up the aiming circle at the exact spot,	1	____
b. from which each tank will fire.	1	____
3. Place two stakes in line,	1	____
a. approximately 50-100 yards from aiming circle,	1	____
b. at an angle that prevents the enemy from observing the illumination devices.	1	____

PROBLEM XI, FIRST REQUIREMENT - Continued	Value	Score
4. Each stake will have attached illuminating devices, or filtered flash lights.	1	____
5. Sight through the telescope,	1	____
a. zero the aiming circle,	1	____
b. on the stakes.	1	____
6. The stakes are now the RP (reference point) for the tank (or range card position).	1	____
7. Using the upper (recording) motion of the aiming circle,	1	____
a. traverse to each known target,	1	____
b. to obtain the mil reading.	1	____
8. Subtract the reading on the azimuth scale,	1	____
a. from 3200 mils.	1	____
b. Subtract the micrometer reading,	1	____
c. from 3200 mils.	1	____
(1) The result is the deflection to target,	1	____
(2) and is the actual azimuth indicator reading.	1	____
9. Determine the range to the target,	1	____
a. obtain the mil elevation	1	____
b. for that range,	1	____
c. from the 1) graphical firing table, 2) tabular firing table, 3) firing data chart, or the 4) ballistic computer on the tank. (Give credit if any one of the four is mentioned.)	1	____
10. Using the telescope of the aiming circle,	1	____
a. and the elevation scale,	1	____
b. determine the angle of sight	1	____
c. in mils.	1	____

PROBLEM XI, FIRST REQUIREMENT - Continued	Value	Score
11. Center the bubble,	1	____
a. of the telescope level vial,	1	____
b. and elevate (or depress) telescope	1	____
c. until the cross of the telescope reticle is centered on target.	1	____
12. The reading on the elevation scale is the angle of sight to the target.	1	____
a. If the reading is PLUS, it is added,	1	____
b. to elevation for range.	1	____
(1) If the reading is MINUS, it is subtracted,	1	____
(2) from elevation for range.	1	____
13. The result is the quadrant elevation for the target.	1	____
14. If the result is a fraction, or decimal, it is rounded off to the nearest whole mil.	1	____
15. This procedure must be repeated at each tank firing position,	1	____
a. for each target.	1	____
16. Each firing position is marked with engineer tape or some suitable material,	1	____
a. to form a "T".	1	____
17. Each tank will follow the long axis of the "T" to where the long axis intersects the crossbar.	1	____
18. While the tank is moving into position, the <u>loader</u>,	1	____
a. will sight through the gun tube,	1	____
b. to align the lights on the stakes,	1	____
c. one above the other.	1	____

PROBLEM XI, FIRST REQUIREMENT - Continued	Value	Score
19. When the loader can observe the lights through the tube,	1	____
a. he will take command of the tank, and		
(1) direct the actions of the gunner and	1	____
(2) driver, until the lights are in line.	1	____
20. When the gun is aligned on the stakes, the gunner will zero his azimuth indicator.	1	____
SECOND REQUIREMENT		
1. Uses the two-tank method.	1	____
a. Designates tanks 2 and 4 to fire the problem.	1	____
b. Designates tank 2 (or 4) as the firing tank.	1	____
c. Designates tank 4 (or 2) as the observing tank.	1	____
2. Both tanks lay on muzzle flash of anti-tank gun;	1	____
a. using the illuminated reticles of their direct fire sights.	1	____
3. Gunner of <u>each</u> tank zeros his azimuth indicator.	1	____
4. Tank 2 or 4 (the <u>firing</u> tank) indexes the quadrant elevation,	1	____
a. for target 3,	1	____
b. and centers the quadrant bubble.	1	____
5. Tank 2 or 4 (the <u>firing</u> tank) announces ON THE WAY	1	____
a. over the platoon radio net,	1	____
b. then fires.	1	____

PROBLEM XI, SECOND REQUIREMENT - Continued	Value	Score
6. The TC of tank 2 or 4 (the observing tank) observes the burst	1	____
a. in relation to his aiming cross,	1	____
b. which is on target (antitank gun).	1	____
7. The TC of the observing tank announces a sensing,	1	____
a. and issues a subsequent fire command	1	____
b. to the firing tank.		
8. The gunner of the firing tank makes the correction.	1	____
a. When ready, he announces ON THE WAY,	1	____
b. and fires again	1	____
c. until TARGET is sensed.	1	____

TOTAL.....77

APPENDIX D

APPENDIX D: HOW TO CONSTRUCT TERRAIN FEATURES

1. Hills. The first step is to construct a base frame of heavy but flexible baling wire. This can be braced by cross pieces of light pine or strips of poplar. The contours of the hill are formed by running baling wire from end to end and side to side of the frame. The contours are supported with vertical wood strips of various sizes. When the frame is completed, close-weave fiber glass cloth is draped over the frame and pushed down to conform to the contours. Care should be taken to provide enough excess, so that trailing edges lie flat and so that the slope permits access by tanks (i. e., less than 60^{o}) where it is appropriate. This cloth is then covered with polyester resin (like that used in waterproofing boats), which can be brushed on. Pigment can be added to the resin in various mixtures to give natural mottled terrain hues. The impregnated material will harden in about 12 hours, and the wooden and wire frame can then be removed.

2. Trees and Shrubbery. A tree can be constructed with dowel rods, wire, sheet aluminum, heavy steel wool, and paint. A 4" square of aluminum is cut to form the base of the tree and a hole is drilled in the center. This is fastened to a 1/2" or 3/4" dowel rod, 8" to 10" long. Plastic wood can then be shaped around the base to produce a natural appearance. Small holes are then drilled in the dowel rod, and thin wire is inserted through the holes and twisted around the rod to simulate branches. Steel wool is wound around the wire branches and fluffed, and the whole tree is painted in natural colors.

Both sparse and heavy groves of trees are similarly built, except that a large piece of 1/4" plywood is cut into any irregular shape and the dowel rods are affixed to this. For dense coverage, chicken wire can be strung between the vertical trunks to form a treetop network which serves as a base on which to lay

or hang coils of steel wool. (Smaller shrubs, trees, clumps of bushes, and similar terrain features may be available from a hobby shop or variety store.)

3. Rivers, Roads, and Highways. These can be constructed out of rolls of rubber corrugated floor matting. For rivers, the irregular natural bends can be achieved by cutting the material with a linoleum knife. Wide sweeping bends have to be pieced together from several sections, and care should be taken to insure that all pieces lie flat. Roads can be simulated by the proper use of colors, to suggest various kinds of surfaces from dirt to concrete. Airstrips can also be simulated by using this material.

4. Buildings, Houses, and Bridges. Buildings can be built to almost any degree of realism and accuracy, from those fashioned from boxes to those made from plastic bricks. As long as the scale of 1:25 is used, the degree of sophistication achieved may vary with the time, talent, and money which are available. In building barns, however, access for the tanks should be insured so that they can be hidden during the conduct of certain exercises.

Bridges should be constructed so that they can be "blown up," by building the bridge in three sections—two approaches, and the span, which rests on the approaches. A small charge can then topple the span, which can then be easily reassembled.

5. Miscellaneous Features. A lake can be simulated by using a 6' by 4' section of plywood painted light blue. Plastic wood may be shaped along an irregular shore line, on which small trees, shrubs, and grass may be placed to complete the scene.

Haystacks are made of plywood, wire, canvas, and straw. Cut an 18" circle out of plywood and use heavy baling wire to form the desired shape. Fasten the form to the frame, sew canvas or target cloth to it, and glue straw on it until it is completely covered. Two of the haystacks should be hollow to conceal

aggressor tanks, and should have a small aperture for the tank guns.

Model railroad equipment may be acquired from a hobby shop. The largest gauge available, O gauge, should be used because it is closest to the scale of the MAB. Plastic soldiers to simulate friendly and aggressor troops may also be purchased.

The roadblock is constructed of wooden blocks and dowel rods of various sizes, painted black or brown to resemble logs. First a frame to hold the logs is built, and then the logs can be stacked to give the proper ballast and weight.

A list of terrain features required for training on the MAB is given in Table 1.

Table 1

List of Terrain Features and Components Required for Tactical Training on the Miniature Battlefield

Number Required	Terrain Features	Description	Dimensions,[a] in feet, except as noted
2	Mountains	Single Peak, impassable by tanks, i.e., slope greater than 60°	12 x 6
1	Mountain	Single Peak, but made in two sections to simulate highway cut	12 x 6
2	Hills	Single Peak	10 x 6
2	Hills	Twin Peak	10 x 6
2	Hills	Single Peak	8 x 4
4	Hills	Single Peak	5 x 2
4	Hills	Twin Peak	5 x 2
1	Ridge	Slope 15-20 degrees	12 x 2
3	Woods	Impenetrable Groves	10 x 4
2	Woods	Impenetrable Groves	8 x 2
2	Groves	Penetrable, rectangular	5 x 2
2	Groves	Penetrable, rectangular	3 x 1½
6	Groves	Penetrable, circular	1½ diameter
100	Trees	Individual	Varying sizes and heights
15	Frame Houses	Dwelling type	1 x ½
4	Farm Houses	Rambling, with wings	1 x 1
3	Barns	With silos attached	2 x 1½
8	Farm Outbuildings	Assorted	6 x 8 inches
15	City Buildings	Assorted, e.g., theaters, markets, churches, filling stations	Varying sizes and heights
2	Highway Bridges	Single span	2½ x 1
2	Railroad Bridges	Single span	2 ft. x 8 in.
1	Highway	Straight, single lane	76 x 1
1	Highway	Curved, single lane	76 x 1
1	Highway	Straight, single lane	28 x 1
2	Highways	Curved, single lane	28 x 1
4	Side Roads	Straight, single lane	13 x 1
4	Side Roads	Curved, single lane	13 x 1
2	Rivers	Straight	28 x 1½
2	Rivers	Curved	30 x 1½
2	River Bends	Cut to form a semicircle	40 x 1½
1	Lake	Rectangular	6 x 4
1	Airstrip	Straight	5 x 1
1	Road Block	Square frame	1¼ x 1
10	Haystacks	Circular	1½ diameter
5	Haystacks	Circular, hollow	1½ diameter
1	Railroad track	0 Gauge (or larger)	30
1	Airplane	Jet fighter type	Scale 1:25
50	Soldiers	Plastic, in various positions, e.g., prone, standing, kneeling	Scale 1:25
2	Damaged tanks	Plastic, models of M48 if available, tracks broken and awry	Scale 1:25
20	Clumps of Bushes	Individual	Assorted sizes and colors

[a]These dimensions are those used for the Fort Knox prototype and a terrain board of 76 x 28 feet. The dimensions should be increased if a larger "playing area" is used. But the scale, 1:25 should remain constant. The maximum height of terrain features should be 2½ feet if the movable platform is employed.

APPENDIX E

APPENDIX E: DETAILS OF RADIO CONTROL EQUIPMENT

1. Tank Transmitter. The transmitter is a class C operational type built to the following specifications:

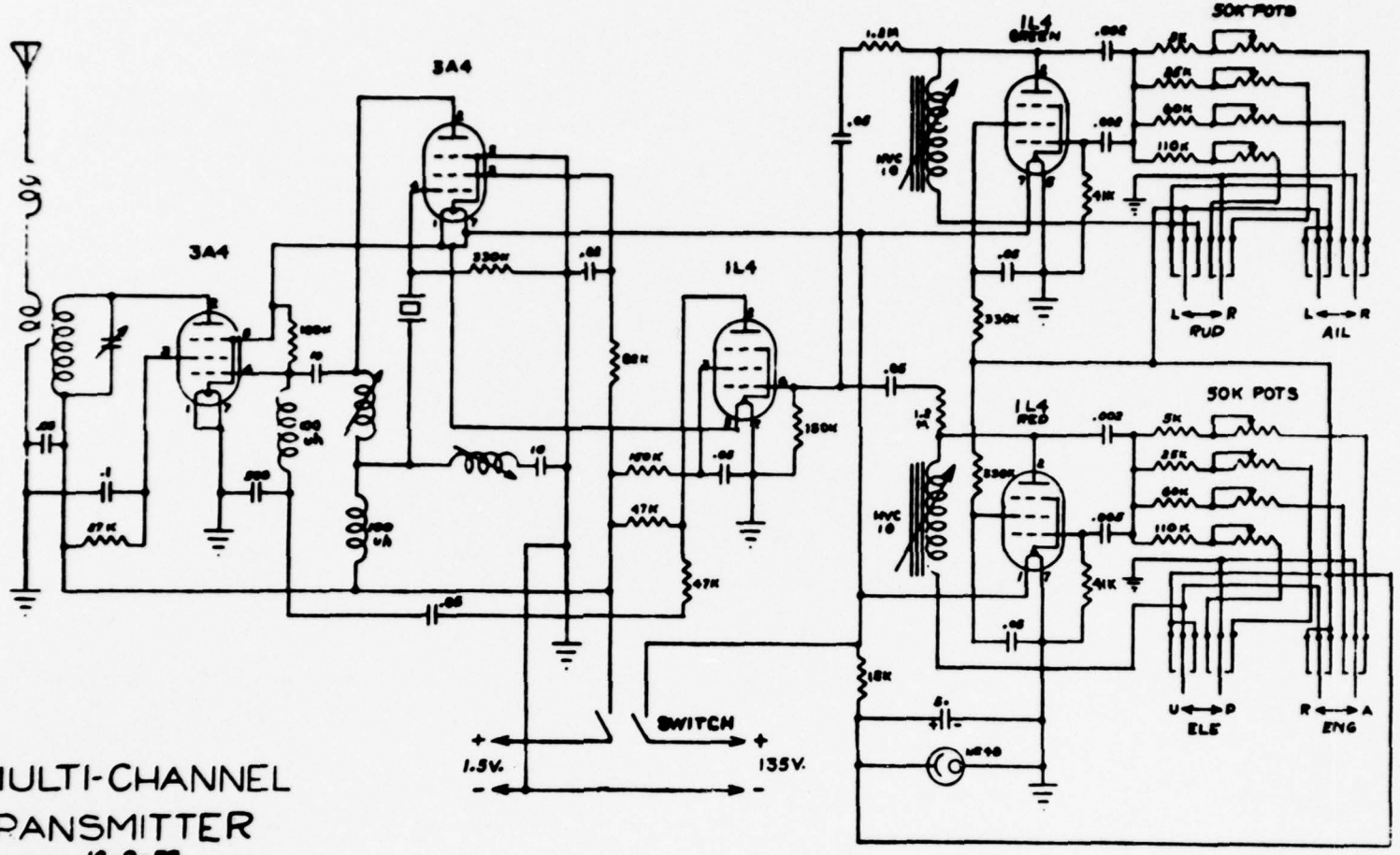
Size	7" by 3½" by 9"
Power Source	Dry cells
RF Output	.25-w. at antenna
Carrier Frequency	26 to 27 mc
Subcarriers	10, AM 200 to 500 cps adjustable
Subcarrier Stability	Plus 1 cps under all conditions
Modulation Percentage	Excess of 95%
Carrier Stability	.001%

A circuit diagram of the transmitter is shown in Figure 3. Since dry cells are used for power, it is necessary to use low filament voltage in all the circuits. By using this type of tube, power consumption is kept to a minimum and battery life is extended. Because of the extreme selectivity of the receiver, the transmitter must be crystal controlled. The RF circuit employed is a straightforward MOPA using one tube as an oscillator multiplier and another tube as an RF amplifier. Grid modulation is used to keep the audio power requirements down.

The audio section consists of two oscillators using a common tube as a modulator. The two oscillators may be operated simultaneously if it is desired, and mixing occurs in the grid network of the modulator. Each audio oscillator is of the phase shift type. Only two sections of the RC phase shift are used, with a variable inductor in the plate load providing the additional required shift. By using this type of oscillator, it is possible to key the intermediate resistor leg for commands. By putting a variable resistor in this leg, the frequency of each command may be adjusted to match the desired reed on the receiver.

Attention should also be called to the variable inductor which makes it possible to adjust the center frequency of the oscillator to the desired range.

Printed circuit techniques are used throughout; all tubes and adjustments



F-M MULTI-CHANNEL
TRANSMITTER
12-9-59

Figure 3

are accessible from the rear. The antenna is a tuned, base loading 60" whip. An NE48 neon lamp is used as a visual indicator telling the user when the unit is live. It is also used as a voltage regulator for the subchannel oscillators.

2. Tank Receiver. Because of the selectivity requirements, a superheterodyne circuit is required. A circuit diagram of the receiver is shown in Figure 4. Since 2.4 volts is the maximum voltage available, transistor circuits are used. Surface barrier type transistors are used because they meet the voltage requirements and require no neutralizing. The 2N223 audio transistors are used because of their high Beta on low voltages which have a good power rating. With few exceptions, the rest ofthe circuit is a standard superheterodyne. To simplify the circuit so that temperature characteristics are negligible, a local oscillator (fixed tuned crystal oscillator), with a third overtone crystal, is installed. This type of oscillator is stable and can be operated over a wide range of voltages and temperatures.

To obtain the required selectivity, 4 tuned circuits are used, the first 3 being de-coupled from the last one for stability. Using a collector type detector enables one to take advantage of the additional gain—thus this stage is used as a driver. Automatic gain control is accomplished by using the diode action of each IF amplifier, the load being the bias resistor in the base circuit. Since the AGC operates on high levels, the last IF amplifier functions first. By the time it reaches saturation, the preceding AGC stage begins to function.

The decoding used for the 10 functions makes use of a resonant reed relay which has 10 vibrating elements—each element being tuned to a separate audio frequency in a range of 250-500 cps. Each reed activates a transistor switch which in turn energizes a relay for each command.

The entire receiver circuit is designed on a print circuit board. The

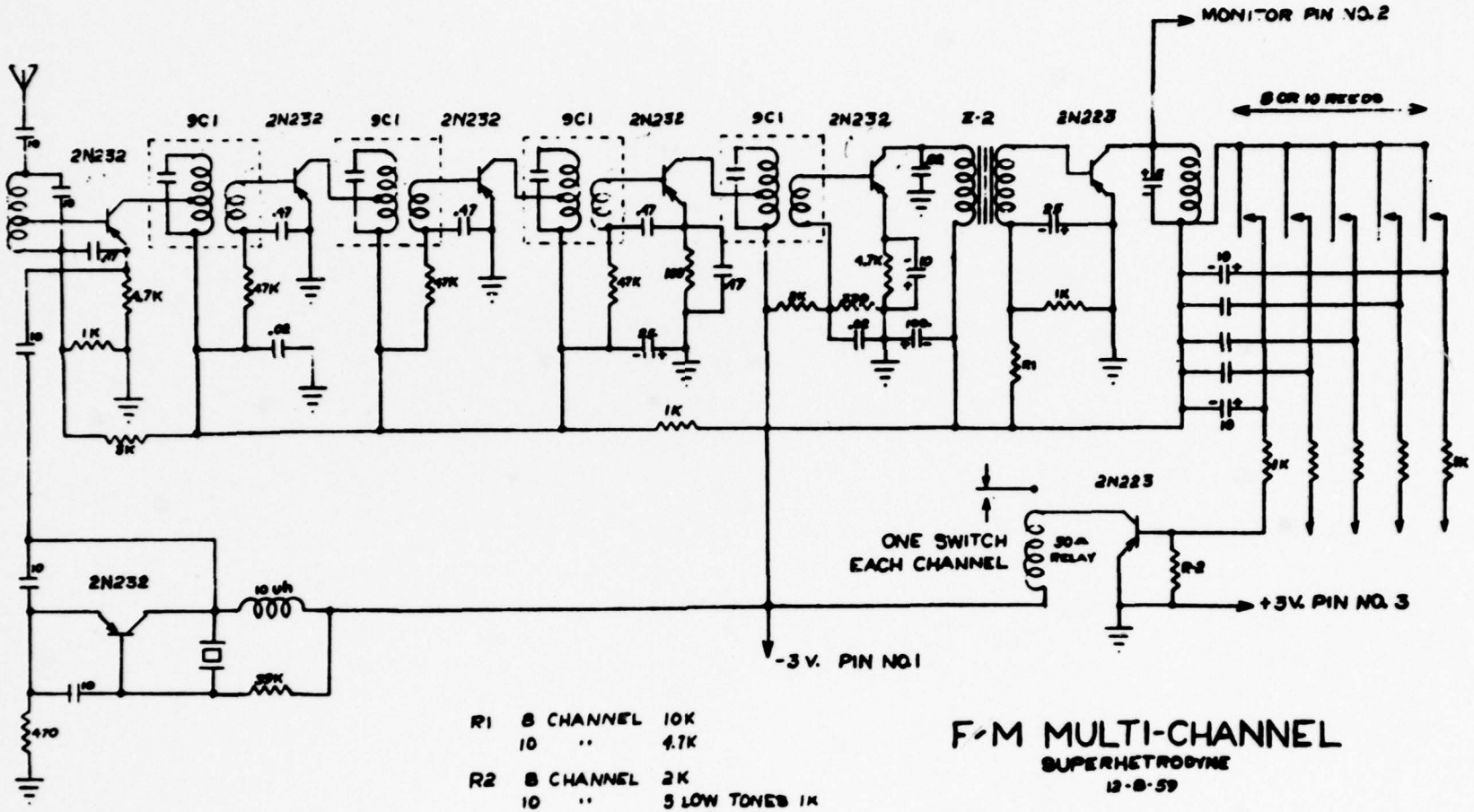

MONITOR PIN NO. 2
8 OR 10 REEDS
9C1
2N232
Z-2
2N223
2N232
4.7K
47K
1K
.05
.47
10
ONE SWITCH
EACH CHANNEL
50Ω
RELAY
+3V. PIN NO. 3
-3 V. PIN NO. 1
10 uh
470
R1 8 CHANNEL 10K
10 " 4.7K
R2 8 CHANNEL 2K
10 " 5 LOW TONES 1K
5 HIGH " 2K
F-M MULTI-CHANNEL
SUPERHETRODYNE
12-8-59

Figure 4

specifications of the receiver are as follows:

Selectivity	Down 6 db at 10 kc points 80 db at 50 kc points
Sensitivity	5 microvolts or better (with 4 v. peak to peak across the reed relay coil)
Size	3 3/4" by 2 1/2" by 2"
Weight	9 oz.
Input level	Saturated above 1 v. at antenna
IF frequency	455 kc

3. Other Construction Features. The tank drive motor and the turret and gun drive motor are Bonner Duramites. Power for the tank system is supplied by 5 1.750 MAH Voltaboc Ni-Cod rechargeable batteries. This furnishes enough power for over 2 hours of continuous tank movement. Since the tank is not continually moving when it is used for training purposes, this battery life is adequate for the needs of a 4-hr. training period. The turret receives the power via an etched circuit slip ring to additional Duramite servos which power all turret movements.

The internal components are the battery pack, motor drive control, receiver, and photocell amplifier—all individually packaged with plastic covers. (See Figure 5.) Arrangement of the components in the vehicle is shown in Figure 6. A wiring diagram of the internal components is given in Figure 7. Each component plugs in by means of a 7-pin Winchester Plug. All parts are interchangeable except the matched transmitters and receivers.

4. Maintenance and Repair Procedures. Each R/C tank requires occasional tuning because of voltage drift from day to day. Tuning is done by inserting a small screwdriver in the tuning notches provided in the transmitter potentiometers for each channel and noting the response of the vehicle.

A small, dry maintenance and storage area, free of dust, should be provided for the tanks. Enough 110-v. outlets should be provided to recharge the battery of each tank independently; 12 hours of charging is required to restore the batteries to full charge. The batteries should be removed from the tank during

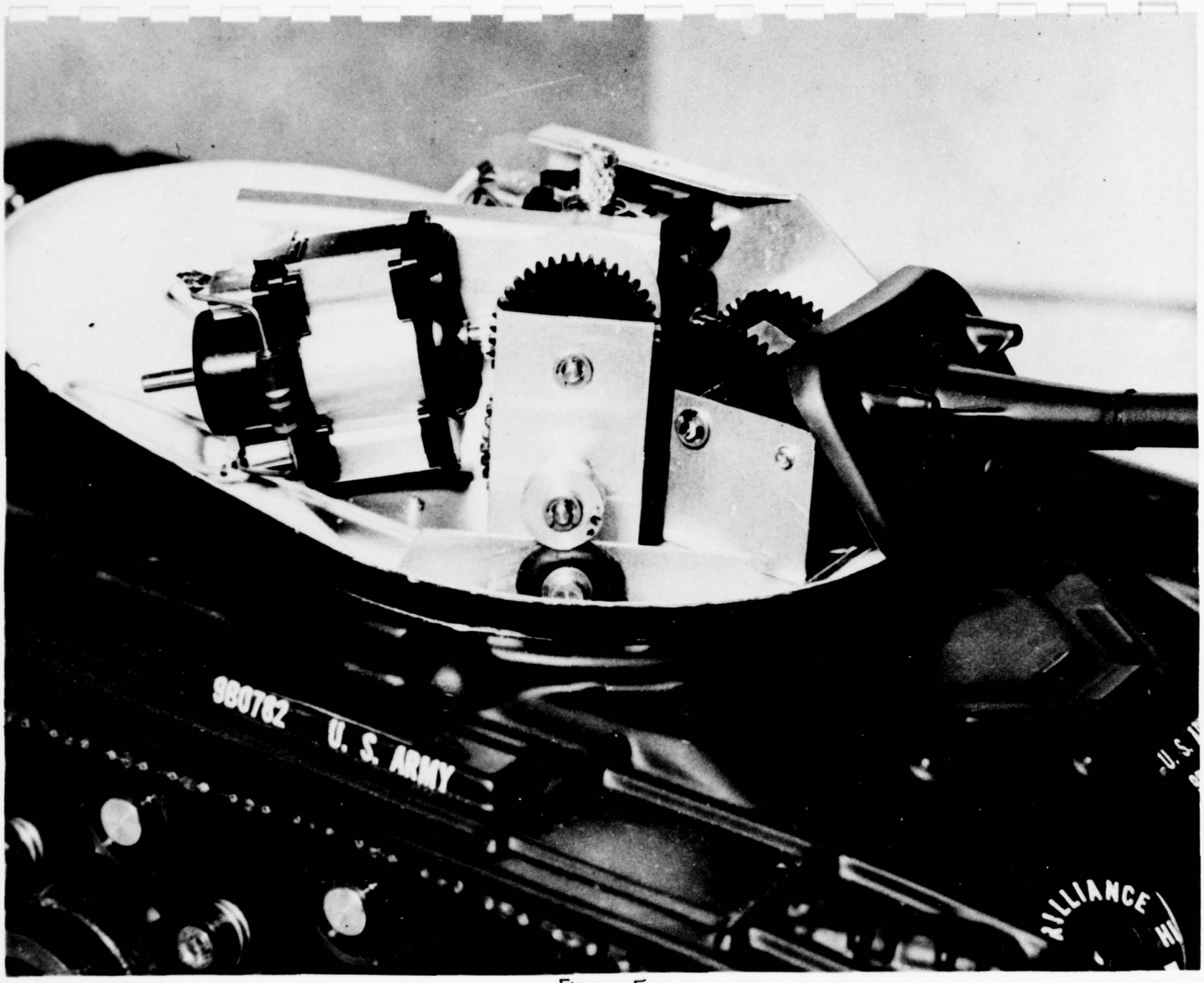


Figure 5

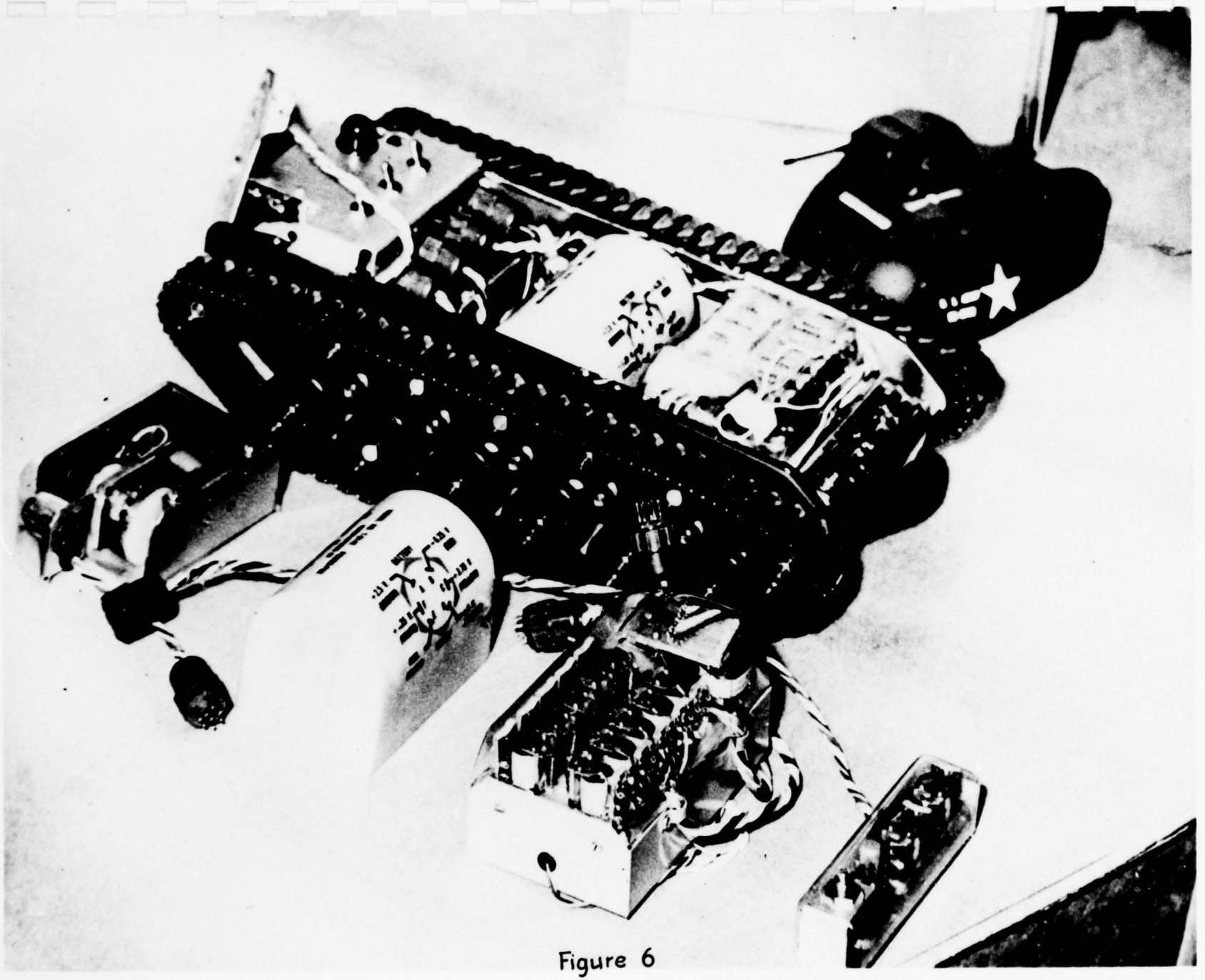
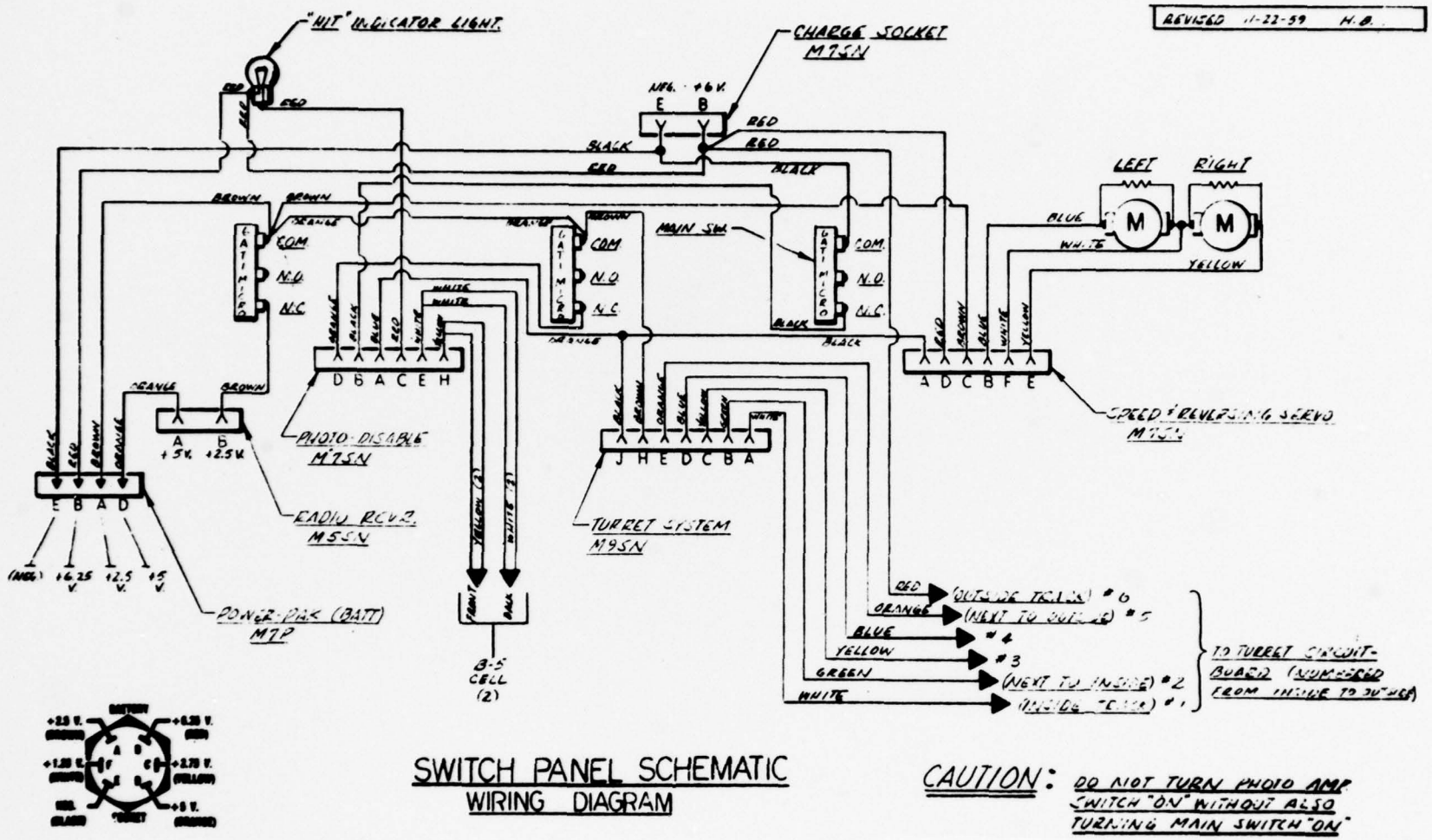


Figure 6



SWITCH PANEL SCHEMATIC WIRING DIAGRAM

CAUTION: DO NOT TURN PHOTO AMP SWITCH "ON" WITHOUT ALSO TURNING MAIN SWITCH "ON"

Figure 7

recharging. A timing circuit should be installed in the 110-v. line to insure that charging is cut off after 12 hrs. (The charging units are provided by the manufacturer.) Care should be taken to keep the battery plug free of corrosion.

If economy is desired, the transmitter batteries can be eliminated by constructing a separate power supply unit for the transmitters and converting regular AC line voltage or the 6-, 12-, and 24-volt power supply for the standard series radios. Serious malfunctions will necessitate returning the tank through specified channels.

To make minor repairs and adjustments, a number of spare parts should be on hand. Table 2 is a list of these parts. A multimeter (TS 297 or equivalent), tube tester, audio signal generator, and RF signal generator are also required to facilitate maintenance of tanks and standard series radios.

Care should be taken to insure that the tank receiver reed banks and relays, and the tank turret ring gear and pick-up arms, are kept clean.

Table 2

List of Spare Parts Required for Local Maintenance and Repair of the R/C Tanks

15	Battery chargers
15	Battery packs
2	Turret assemblies complete
1	Microswitch
100	3/32 Washers (OD)
50	Battery screws
50	"E" rings
5	5-pin plug and socket
5	7-pin plug and socket
5	9-pin plug and socket
1	Lower hull w/wheels, drive motors, gear trains comp.
1	Set of bogie wheels and screws
1	Top cover
5	Turret tops
4	Tracks
3	Sprocket, axles, and gear trains
1	Speed and reversing control complete
5	Sets of turret contacts
5	Hull covers
5	Receiver covers
2	Amplifiers
12	NE 48 bulbs
1	Switch contact arm
5	Tone potentiometers
5	Sets of sprockets and gear
4	Fire bulbs
5	Antenna for tank
5	Lever switches
10	Tubes, 1L4 and 3A4
1	Transmitter crystal 27.095
1	Receiver crystal 27.095
4	High voltage coil, No. 10
2	Transmitter antenna coil
2	Traps, with capacitor
2	Traps, without capacitor
4	Tube, IFT
5	Transistor, FM-1
5	Transistor, 2N223
10	Drive motors and pinions
3	Gear trains for gun tube
2	Rubber drive wheels for turret
5	Bulbs for red light
5	Speed control potentiometers
5	Printed circuit boards for speed reversing
3	Printed circuit boards for turret
25	Male and female battery clip sets

APPENDIX F

APPENDIX F: HOUSING AND TRAINING PLATFORM FOR THE MAB

1. Housing for the MAB. Although the prototype MAB at Fort Knox was installed in a converted barracks, and could be so installed elsewhere, the ideal housing would provide a larger playing area of approximately 70' by 100'. However, any structure providing a minimum area 30' by 70' is sufficient.

Ideally, the battlefield should be housed in a permanent structure devoted exclusively to the training it provides. If so, the wooden or tile floor should be covered with a uniform layer of plastic coating compound (SN 3030-264-5837) and then painted a mottled dark and light green, tan, dark brown, yellow, and copper to simulate natural terrain. Using the plastic compound makes it possible to wire the floor permanently for mines and artillery. When the plastic is ruptured by the blast it can be quickly and easily sealed and painted again.

Although a balcony was provided in the Fort Knox facility, it is not essential. It was provided primarily to give visitors a place from which to observe. If a balcony is available or can be provided, it does enable additional Armor personnel to observe, and provides a convenient place for instructors and support personnel. Attention should be given to the fact that all windows at floor level should be blacked out because the photoelectric cells on the tanks are sensitive to light. Figure 8 is a view of the MAB (Fort Knox prototype) during a tactical training exercise.

2. **The Movable Steel Platform.** In the Fort Knox prototype, a 25' by 4' steel-beam, overhead crane-unit platform was modified to provide a movable base from which the friendly platoon personnel could operate. The platform floor is covered with 3/4" pine boards and vinyl linoleum. The platform is divided into 5 3-man compartments by plywood panels. In each compartment are installed a bench covered with foam rubber, and a desk-type working area. The bench is hinged, and a storage area under it is provided for headsets, clip boards, and

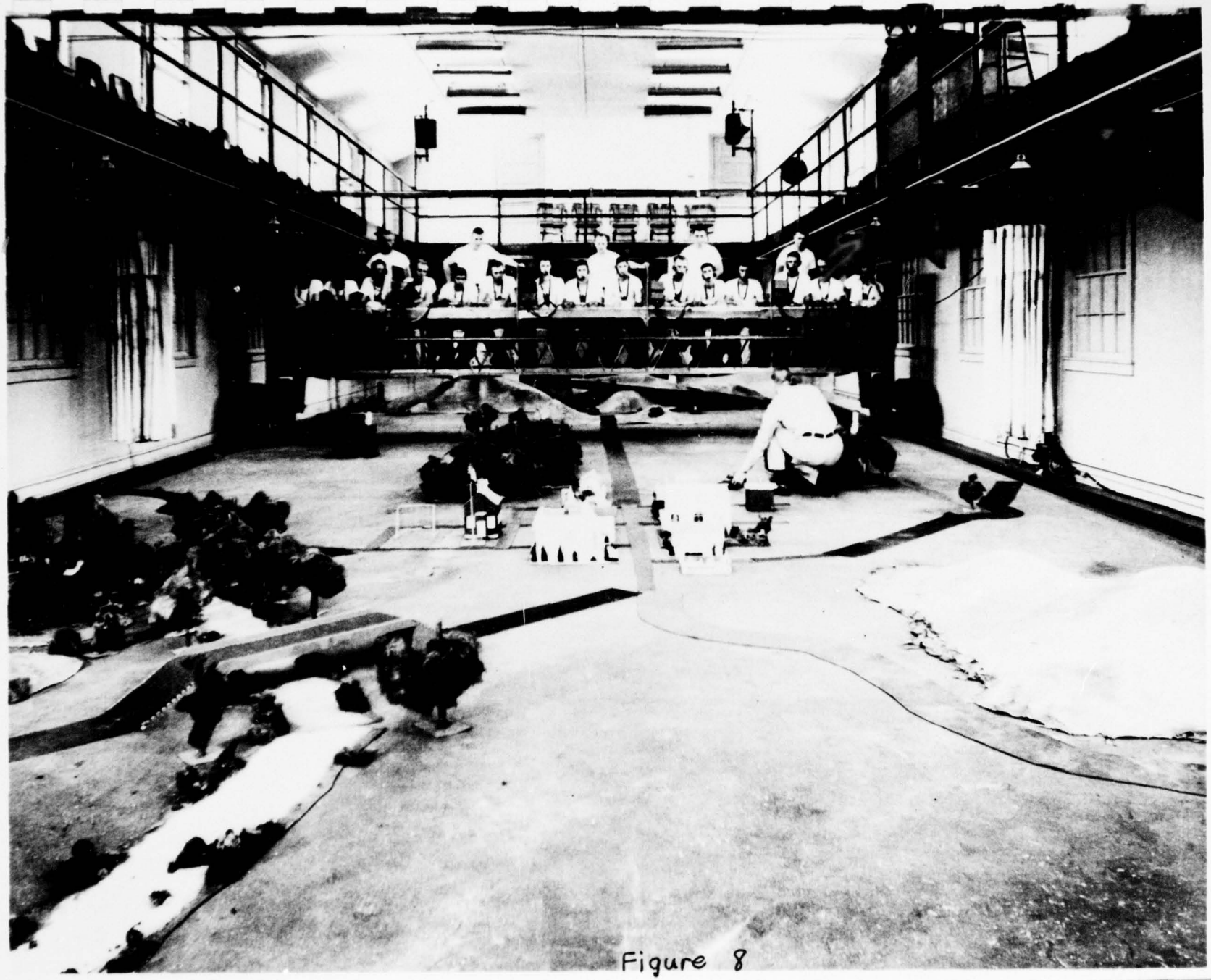


Figure 8

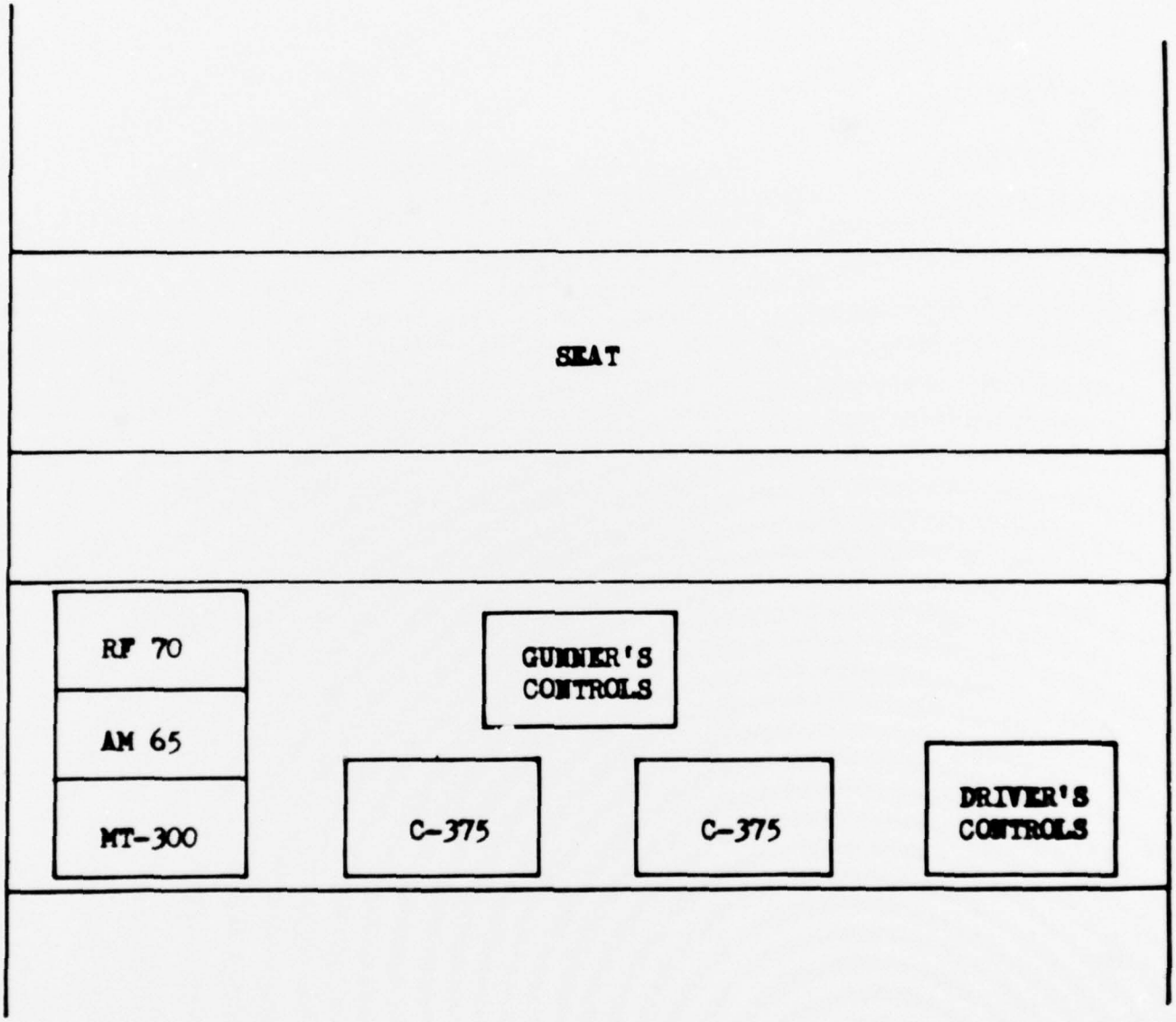

SEAT
RF 70
AM 65
MT-300
GUNNER'S CONTROLS
C-375
C-375
DRIVER'S CONTROLS

Figure 9

personal gear. A diagram of an individual compartment is shown in Figure 9.

The platform, on rubber tires, is moved by means of a three-phase 3/4-hp electric motor mounted on the floor at the aggressor end of the terrain board. By means of a gear reduction box mounted on the motor, the speed of travel of the platform is 1.5 mph. The platform is towed by means of a 1/4" steel cable, on pulleys mounted at each end of the platform. The whole platform can be moved along the terrain board in either direction, and can be operated from any of its compartments. This is accomplished through the use of 5 2-unit, forward-reverse, push-button contact switches and a modified starter-reversing, magnetic 2-pole, single-position relay box ("square D," No. 8702-BG-1, or equivalent). To insure even pulling, two parallel steel floor angle irons (4" by 6" by 5/16") are used as guides for the tires. A diagram of the operation of the platform is shown in Figure 10.

ISOMETRIC DIAGRAM SHOWING HOW THE PLATFORM IS MOVED

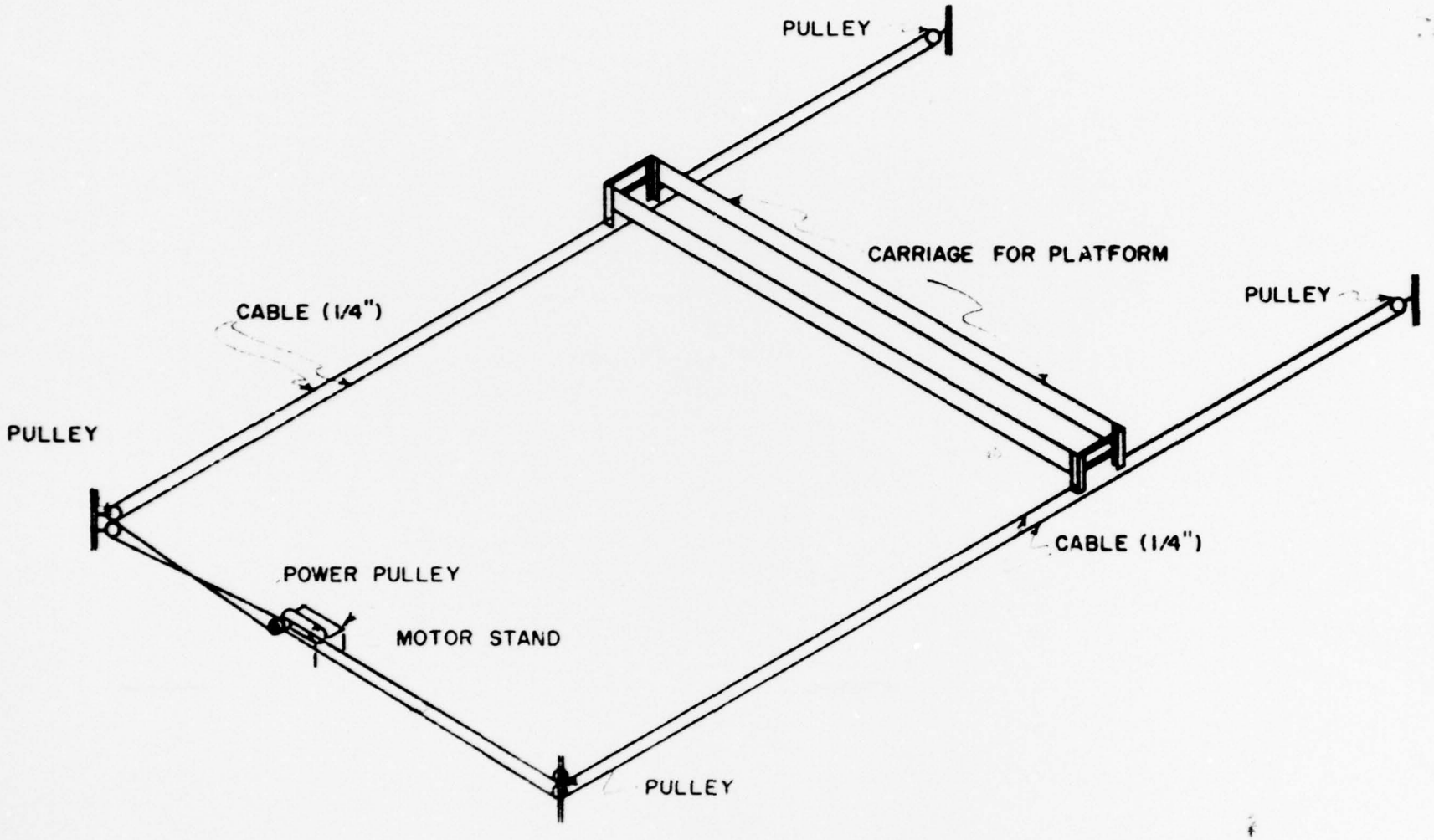


Figure 10