

TRAINING TESTS

Dept of the Army

ARMY TRAINING TEST)
No. 6-1)

DEPARTMENT OF THE ARMY
Washington 25, D. C., 28 February 1951

TRAINING TEST
FOR
FIELD ARTILLERY BATTERY

	Paragraph	Page
Section I. General - - - - -	1-4	1
II. Test - - - - -	5-17	4
III. Umpiring - - - - -	18-25	13

SECTION I
GENERAL

1. General. This test is designed to determine the proficiency of artillery batteries, except 8" gun and 240-mm howitzer, in the occupation of position, the prompt delivery of observed fire, communications, survey, preparation of firing data, application of corrections, and the transfer of fire. (Many of the operations prescribed herein are ordinarily performed by the battalion, but the battery should be capable of performing them independently when necessary.)

2. Maps. Any available map of a scale of approximately 1/25,000.

3. The program consists of--

- a. The march forward, occupation and organization of position.
- b. Prompt delivery of fire on one target.
- c. Location of the battery center.
- d. Determination of map data, corrected by meteorological data, for fire on one target. (Fire will not be delivered.)
- e. Registration, including determination of adjusted time.
- f. Determination of a GFT setting and deflection correction.
- g. Application of registration corrections.
- h. Transfer of fire to one of the targets designated by the chief umpire.

*This training test supersedes AFF TT 6-1, 24 August 1949, including addenda dated 1 November 1949.

4. Preparation prior to test.

a. A tactical situation will be assumed in which the battery is operating as a part of its battalion, but the remainder of the battalion will not move up for some time. Prior to the test, all elements of the battery, less two observer parties (for light units--one for medium and heavy units), should be in a tactical assembly area approximately two miles from the position area.

b. The chief umpire, acting as the battalion commander, will meet the battery commander and the battery executive at the assembly area at a designated time. He will issue each a map of the area, explain the tactical situation, and point out on the map the following information:

- (1) Location of friendly front lines.
- (2) Location of supported infantry battalion command post.
- (3) Boundaries of supported units.

c. The chief umpire will lead the battery commander and his party (not to exceed three vehicles) forward on reconnaissance for a position area. In the vicinity of the position area, he will give the battery commander the following information, either verbally or pointed out on the ground:

- (1) The general area in which the battery will occupy position delimiting the area by ground features.
- (2) A compass reading on which to lay the battery initially for the approximate center of the battery sector.
- (3) Instructions to lay the following wire lines in addition to normal battery wire net:

- (a) Light batteries. To the battalion OP being established by his observer party.
- (b) Heavy batteries. From a forward switch, installed by umpire previous to start of problem, to the battalion OP being established by his observer party.
- (c) All batteries. A normal battery wire net necessary for proper functioning of a battery

operating alone. Wires will not be laid to any assumed positions such as battalion FDC, etc. (See paragraph 16.)

Note. In addition to the line to a forward switch, (b, above) the chief umpire may augment heavy batteries with an additional radio and crew where distances are likely to require a relay station. For light batteries, the chief umpire will lay, previous to problem, the line from the battery position area to the infantry battalion CP and install a liaison switch into which the battery forward observer party will connect their lines.

(4) The coordinates and altitude of two targets.

(5) The coordinates and altitude of a survey control point.

Note. The exact location of this point will be indicated on the ground to the battery commander. The distance of the point from the battery position area will depend upon the terrain of the testing area. In general, this distance should be from 500 to 700 yards. In any case, it should be selected to give a fair test on the ability of the battery to run an accurate instrument survey.

(6) The Y-azimuth from the control point to a clearly defined and visible distant point.

(7) Informs the battery commander that the problem starts soon as he has definitely identified the survey control point on the ground and is ready to commence his detailed reconnaissance for a battery position.

d. At the same time the chief umpire is meeting the battery commander, an assistant chief umpire, acting as the artillery liaison officer at the supported infantry battalion command post, (an additional OP umpire for light batteries will be required), will meet 2 observer parties for light batteries (either one of which will be equipped to man a battalion OP or to act as a forward observer party), or one observer party for medium or heavy batteries. He will explain, in the case of the two observers, that the type observation each is to provide will be decided by drawing lots. The one drawing the forward observer mission will fire one area fire mission on a target of opportunity which will be indicated by the assistant umpire on the ground. The one drawing the battalion OP mission will select a battalion base point in the zone of action of the supported unit (see par. 5b and 12) and register the battery. (In the case of medium or heavy batteries, both missions will be fired by the one observer from the battalion OP.) The assistant umpire will issue maps, explain the tactical situation and give the observers the following information either from the map or verbally as appropriate.

- (1) Location of friendly front lines and the zone of action of the supported unit for which artillery support is to be furnished.
- (2) The area in which the observer (or observers) is to reconnoiter for an observation post, and a suggested route forward to that area.
- (3) Each observer will establish radio communication with the battery FDC set prior to moving forward and will receive further instruction from the battery regarding maintenance of contact or time for checking in later.
- (4) Any local ground rules made necessary due to restriction of the training area that may affect the observer.
- (5) Informs the observer (or observers) that the problem starts, as far as he is concerned, as soon as he moves forward on reconnaissance.

Note: Where both a forward observer and a battalion OP are used, they should be selected, where possible, to give an Angle T for the forward observer of approximately 600 to 1000 mils; and for the battalion OP, of approximately 300 to 600 mils. Where only one OP is used, it should have an Angle T of approximately 300 to 600 mils.

SECTION II

TEST

5. Conduct of test.

- a. The chief umpire is responsible for the over-all preparation, coordination, and conduct of the test. He will umpire activities of the battery commander and such other activities as he deems necessary or desirable. Just previous to the registration mission, he will give the exact coordinates of the battalion base point to the battery FDC. In addition, he is responsible for safety.
- b. Umpires will not interfere with the operations of the battery in any way once the test has started, except in the interest of safety. This applies particularly to the operation of the battery FDC. All umpire checks will be made after completion of the test.
- c. In the case of light batteries, the assistant chief umpire at the infantry battalion command post will go forward with the party

that is to fire the area mission. As soon as the observer has determined that the battery is ready to fire, the umpire will designate a target of opportunity and direct the observer to take it under fire, using radio communication only. The other OP umpire will go forward with the party that is to fire the registration mission (light batteries only). He will determine the battalion base point selected by this observer and grade him (see paragraph 12) as his selection, based on requirements as laid down in appropriate FM's for the selection of suitable battalion base points. The observer will be required to identify his selection during the time the area mission is being fired from the forward observer OP. After the area mission is completed and the battery reports ready to register, this umpire will identify, on the ground, the same battalion base point which was given in exact coordinates to the battery FDC by the chief umpire. The registration will proceed at once.

d. In the case of medium or heavy batteries, the assistant chief umpire will accompany the battalion OP party and umpire both missions from the same OP in the same manner indicated in paragraph c, above.

6. Performance of battery will be graded on a basis of 100. Seventy is considered satisfactory. The following weights will be given the various operations:

a. March forward, occupation and organization of position.	20
b. Speed (time until completion of adjustment on target of opportunity only).	10
c. Fire on target of opportunity.	15
d. Accuracy of battery survey of the location of the battery center.	10
e. Determination of map data corrected.	5
f. Registration.	12.5
g. Determination of GFT setting and deflection correction.	5
h. Application of correction.	2.5
i. Transfer of fire.	10
j. Communication.	10
Total	100

7. March forward, occupation and organization of position. (20 points)

a. The battery will be graded on preparation for and execution of the march forward to the position area, to include march discipline, column control, security on the march, and tactical dispersion of vehicles as warranted by the terrain.

b. The position should be occupied in a quiet and orderly manner. The need for speed and prompt delivery of fire will be emphasized.

c. Improvement of the position will be continuous from the time of occupation until the end of that test. Time permitting, guns will be camouflaged and dug in, local security measures will be taken, plans for perimeter defense will be completed, and defensive works for all batteries and installations will be completed.

d. All tactical installations of the battery will be judged for adequacy, concealment, and protection from hostile fire.

e. The accuracy of the executive and gun squads will be judged.

8. Speed (until adjustment is completed on target of opportunity only). (10 points)

a. Time will be taken from the time the battery commander starts reconnaissance of the battery position (after the survey control point has been definitely identified on the ground) until the adjustment on the target of opportunity is completed by the first observer. Under favorable conditions, this time should not exceed forty minutes for light artillery and self-propelled batteries of all calibers. Ten additional minutes should be allowed for 155-mm howitzer, towed, and twenty-five additional minutes (a total of 65 minutes) for all towed batteries of larger calibers. The chief umpire will decide in each case the grade for speed and will explain this grade in his report of the test.

b. For each full five minutes, or fraction thereof, over the time listed in paragraph a, above, a cut of 2 points will be given in the grade for speed (paragraph 6b). A maximum cut of 10 points can thus be assessed against a battery regardless of where loss of time occurred.

9. Fire on target of opportunity. (15 points)

One area type mission will be fired by a regularly assigned officer of the battery acting as a Forward Observer for batteries of

light artillery or as an OP observer for medium and heavy units. It will be graded as follows:

	Observer	FDC	Firing Battery	Total
Accuracy of Initial Data	0.5	0.5	-	1.0
Speed of Adjustment	-	-	-	3.0
Judgement and Procedure	-	-	-	2.0
Effect	-	-	-	7.0
Firing Battery Functioning	-	-	2.0	2.0
				15.0

a. Accuracy of initial data.

(1) Observer.

The observer's initial fire request should place the first round within a radius of 500 yards of the target. Over 500 yards - No credit.

(2) FDC.

The initial data computed by the fire direction should be accurate; i.e., from the initial plot, the HCO should read the deflection within one mil and the range within twenty-five yards; the computer should read the elevation within one mil.

b. Speed of adjustment.

This item will be graded as a whole regardless of where the delay occurred or which element of the battery was responsible.

In judging time for observed fire, times shown in the following table will be used for targets at short and medium ranges. Time will start when first round or volley is "on the way." Time will stop when the battery has fired the first round or volley in fire for effect.

Type of Problem	Rating	TIMES			
		From announcement of initial "on the way" by FDC until first round in FFE "on the way"			
Low Angle Fire		75mm	105mm	155mm H	8" H-155mm Gun
Precision & Area	Full Credit	10:00"	10:30"	11:00"	12:00"
	No Credit	Over	Over	Over	Over
		11:00"	10:30"	11:00"	12:00"

Note. If the time exceeds that allowed for full credit, a full cut will be made depending on the type problem and total points allotted. Time required for determination of zero height of burst will not be counted against individual problem, but will be included in over-all time.

c. Judgement and procedure. 2.0

Sensings must be accurate and correct procedures followed by both observer and FDC. This may be assessed against either observer or FDC, or both.

d. Effect. 7.0

This item will be graded as a whole (total 7 points) regardless of which element of the battery is responsible for an error. Grading will be as follows:

Effect of fire should be determined by plotting observations made by lateral observers to a scale not smaller than 1/10,000. Range and deflection errors will be determined therefrom and graded as follows: Only 1/2 of the grade for effect will be allowed if percussion fire with instantaneous fuzes is used when suitable time fuzes are available for those targets calling for time fire. Two battery salvos will be fired in fire for effect for determination of center of impact. These salvos are for use of umpire only. The observer will not be given opportunity to correct fire for effect.

- (1) Range. 3.0 points. Effect for range measured along the gun-target line will be graded as follows:

Range Error of CI from target	Credit
50 yds / 2 PE	3.0
50 yds / 3 PE	2.3
50 yds / 4 PE	1.5
50 yds / 5 PE	0.8
50 yds / 6 PE	0.0

(2) Deflection. 2.0 points. Full credit for deflection will be given if the deflection error (measured from the CI perpendicular to the gun-target line) does not exceed 40 yards. When deflection exceeds 40 yards, cut 0.3 points for each ten yards in excess of 40 yards.

(3) Height of Burst. 2.0 points. When time fire or ricochet fire is employed, -grade for effect will be determined as follows:

Height of Burst in Time Fire (Exclusive of VT Fuzes)	Air Bursts in Ricochet Fire	Credit
0 to 40 yds	75 to 100%	2.0
40 to 50 yds	50 to 75%	1.5
50 to 60 yds	30 to 50%	0.6
Over 60 yds	Less than 30%	No credit
Below 0 yds (All graze bursts)		1.5

e. Firing battery functioning. 2.0

Includes transmission of fire commands, speed and accuracy of execution.

10. Battery survey. (10 points)

The coordinates and latitude of the battery center will be located by survey and results reported to the chief umpire. The true coordinates and altitude of the battery center will then be furnished the battery and the firing chart corrected accordingly. A suitable orienting line will be established, its azimuth determined and an orienting station suitable to the battery position will be located and marked. Using coordinates of the base point and battery center given by the chief umpire, the base angle will be computed. The survey will be graded as follows:

<u>Coordinates of Battery Center</u>	<u>Credit</u>
Radial error of 10 yards	6 points
Radial error of 10-15 yards	3 points
Radial error over 15 yards	0 points

Suitability of Orienting Line and Station	1 point
Azimuth of Orienting Line	1 point
Full credit for 5 m or less error.	
No credit for over 5 m error.	
Base Angle	2 points
Full credit for 5 m or less error.	
Half credit for 6 - 10 m error.	
No credit for over 10 m error.	

Surveying data should be submitted within two hours after start of test. Local conditions will govern the length of time necessary to complete this survey. The chief umpire will increase the time given above where conditions, in his opinion, justify a longer time. No cut will be given for speed on this requirement unless the time allotted is exceeded by over 50%; in which case a full cut of 10 points will be assessed.

11. Determination of map data, corrected by meteorological data for fire on one target (fire not to be delivered). (5 points)

The battery fire direction will be furnished a meteorological message. Map data corrected will be computed for one of the targets for which coordinates and altitude were given. A cut of two points will be made if an old VE (furnished by the board) is not included in the computation. Final solution to requirement 11 will be in terms of a deflection correction which would be applied to a measured chart deflection and a proper quadrant elevation (which would be used to fire on this target). For correct procedure and error in computation, cut 3 points. Error can be either in deflection correction or quadrant elevation. For error in procedure, cut 5 points.

12. Registration. (12.5 points)

a. The registration observer will be told to register with fuze quick followed by fuze time. It will be graded as follows:

Selection of Base Point	1.0
Speed of Registration	3.0
Judgement and Procedure	2.5
Effect	6.0
	<u>12.5</u>

b. Speed of registration. 3 points

Graded as in paragraph 9b.

c. Judgement and procedure. 2.5 points

Graded as in paragraph 9c.

d. Effect.(1) Deflection.

0.2 points

For Angles T less than 500 m, allowable error is 2 m.
Cut 0.5 point per mil in excess of 2 m.

For Angles T greater than 500 m, allowable error is 4 m.
Cut 0.5 point per mil in excess of 4 m.

(2) Range. 3.0 points. No allowable error in adjusted elevation. Cut 0.8 point per mil in error.(3) Adjusted time of burning. 1.0 point.

Allowable error is 1/10 second. Cut 0.3 point per 1/10 second in excess of available error.

Example: Precision registration is completed with 4 m deflection (Angle T less than 500 m), adjusted elevation error of 1 m and an error in time setting of 0.3 second.

Cut for deflection error - $2.0 \times 0.5 = 1.0$

Cut for range error - $1.0 \times 0.8 = 0.8$

Cut for time setting error - $2.0 \times 0.3 = 0.6$

Total Cut = $\underline{2.4}$

Grade - $6.0 - 2.4 - 3.6$

13. Determination of a GFT setting, deflection correction scale, and construction of deflection index based on registration. (5.0 points)

(GFT setting, 2 points; deflection correction scale, 1 point; deflection index, 2 points.)

14. Application of registration corrections.

(2.5 points)

After calculation, registration corrections will be applied to the target for which map data corrected is figures.

15. Transfer of fire.

(10 points)

Fire will be transferred, using fuze time, by using the corrections determined in paragraphs 12 and 13 to the second of the two targets for which coordinates and altitudes were given and graded as follows:

Computation of data.
Effect (see below)

4 points

6 points

Effect will be graded as follows:

Range. 4.0 points

Error of CI from Target

(In probable errors)

	Cuts
0 - 2	0
2 - 4	0-11
4 - 6	1-2
6 - 8	2 - 4

(Cuts will be interpolated.)

Deflection. 3.0 points

Proportionate cut will be made based on percentage of target not covered effectively by sheaf.

Height of Burst. 3.0 points

Height	Credit
0 to 40 yards	3.0
40 to 50 yards	2.5
50 to 60 yards	1.0
Over 60 yards	0.0
Below 0 yards or all graze bursts	2.25

16. Communications. (10 points)

a. Communication performance will be judged on the proper employment of communication equipment, adherence to communication security, and the use of proper radiotelephone and telephone switchboard procedure.

b. Normal battery, wire, and radio nets will be established applicable to a battery operating alone. (No communication will be established with any assumed battalion elements.) The wire net should include a switchboard, local lines within battery position, and the battery FDC, and to the battalion OP established by the battery.

17. All firing charts, survey notes, computation, etc., will be turned in to the chief umpire at the end of the problem. The umpire will check all charts for accuracy.

SECTION III UMPIRING

18. This battery test will be conducted by corps, group, or division artillery headquarters.

19. The chief umpire will be responsible for safety.

20. There will be no restriction on the use of any type of communication, except as prescribed in paragraph 5c, above.

21. Time required by any safety officer or umpire for checking or verifying safety or control will not be counted against the battery.

22. In some parts of the test; for example, organization of the position, several subjects are grouped under one subhead. These subjects are all important. It is not desired, however, that proportionate credit be given for proper performance in subjects listed. Rather it is desired that severe cuts be given for poor performance in any one subject.

23. Umpires will not give instructions or advice to battery personnel other than that necessary for the conduct of the test or to assure safety. This applies particularly to FDC umpire.

24. Umpires will be prepared to run a survey to check final location of the battery center in the position as selected by the battery commander.

25. Scoring.

Grade

a. Batteries will be scored on the basis of 100.

- | | |
|---|-------|
| (1) March forward, occupation, and organization of position (max. 20 points) | _____ |
| (2) Speed (10 points) | _____ |
| (3) Fire on target of opportunity (15 points) | _____ |
| (4) Accuracy of battery survey of the location of the battery center. (10 points) | _____ |
| (5) Determination of map data corrected (5 points) | _____ |
| (6) Registration (12.5 points) (see paragraph 12) | _____ |

ATT 6-1

(7) Determination of a GFT setting and deflection correction (5 points) _____

(8) Application of corrections (2.5 points) _____

(9) Transfer of fire (10 points) (see paragraph 15) _____

(10) Communication (10 points) _____

Total _____

b. Where grade for this test is below passing (70 points), unit should be retested. Retest should be given approximately one month after failure occurred.

[AG 353 (20 Feb 51)]

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

EDWARD F. WITSELL
Major General, USA
The Adjutant General

J. LAWTON COLLINS

Chief of Staff, United States Army

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- (1) The general area in which the battery will occupy position delimiting the area by ground features.
- (2) A compass reading on which to lay the battery initially for the approximate center of the battery sector.
- (3) Instructions to lay the following wire lines in addition to normal battery wire net:

- (a) Light batteries. To the battalion OP being established by his observer party.
- (b) Heavy batteries. From a forward switch, installed by umpire previous to start of problem, to the battalion OP being established by his observer party.
- (c) All batteries. A normal battery wire net necessary for proper functioning of a battery

operating alone. Wires will not be laid to any assumed positions such as battalion FDC, etc. (See paragraph 16.)

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e. Determination of map data corrected.	5
f. Registration.	12.5
g. Determination of GFT setting and deflection correction.	5
h. Application of correction.	2.5
i. Transfer of fire.	10
j. Communication.	10
Total	100

7. March forward, occupation and organization of position. (20 points)

a. The battery will be graded on preparation for and execution of the march forward to the position area, to include march discipline, column control, security on the march, and tactical disposition of vehicles as warranted by the terrain.

b. The position should be occupied in a quiet and orderly manner. The need for speed and prompt delivery of fire will be emphasized.

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e. The accuracy of the executive and gun squads will be judged.

8. Speed (until adjustment is completed on target of opportunity only). (10 points)

a. Time will be taken from the time the battery commander starts reconnaissance of the battery position (after the survey control point has been definitely identified on the ground) until the adjustment on the target of opportunity is completed by the first observer. Under favorable conditions, this time should not exceed forty minutes for light artillery and self-propelled batteries of all calibers. Ten additional minutes should be allowed for 155-mm howitzer, towed, and twenty-five additional minutes (a total of 65 minutes) for all towed batteries of larger calibers. The chief umpire will decide in each case the grade for speed and will explain this grade in his report of the test.

b. For each full five minutes, or fraction thereof, over the time listed in paragraph a, above, a cut of 2 points will be given in the grade for speed (paragraph 6b). A maximum cut of 10 points can thus be assessed against a battery regardless of where loss of time occurred.

9. Fire on target of opportunity. (15 points)

One area type mission will be fired by a regularly assigned officer of the battery acting as a Forward Observer for batteries of

light artillery or as an OP observer for medium and heavy units. It will be graded as follows:

	Observer	FDC	Firing Battery	Total
Accuracy of Initial Data	0.5	0.5	-	1.0
Speed of Adjustment	-	-	-	3.0
Judgement and Procedure	-	-	-	2.0
Effect	-	-	-	7.0
Firing Battery Functioning	-	-	2.0	2.0
				15.0

a. Accuracy of initial data. 1.0

(1) Observer. 0.5

The observer's initial fire request should place the first round within a radius of 500 yards of the target. Over 500 yards - No credit.

(2) FDC. 0.5

The initial data computed by the fire direction should be accurate; i.e., from the initial plot, the HOO should read the deflection within one mil and the range within twenty-five yards; the computer should read the elevation within one mil.

b. Speed of adjustment. 3.0

This item will be graded as a whole regardless of where the delay occurred or which element of the battery was responsible.

In judging time for observed fire, times shown in the following table will be used for targets at short and medium ranges. Time will start when first round or volley is "on the way." Time will stop when the battery has fired the first round or volley in fire for effect.

Range Error of 100 Yds	Credit
50 yds ± 2 PE	0.0
50 yds ± 3 PE	0.3
50 yds ± 4 PE	1.5
50 yds ± 5 PE	0.8
50 yds ± 6 PE	0.0

Type of Problem	Rating	TIMES			
		From announcement of initial "on the way" by FDC until first round in FFE "on the way"			
Low Angle Fire		75mm	105mm	155mm H	8" H-155mm Gun
Precision & Area	Full Credit	10:00"	10:30"	11:00"	12:00"
	No Credit	Over	Over	Over	Over
		11:00"	10:30"	11:00"	12:00"

Note. If the time exceeds that allowed for full credit, a full cut will be made depending on the type problem and total points allotted. Time required for determination of zero height of burst will not be counted against individual problem, but will be included in over-all time.

c. Judgement and procedure. 2.0

Sensings must be accurate and correct procedures followed by both observer and FDC. This may be assessed against either observer or FDC, or both.

d. Effect. 7.0

This item will be graded as a whole (total 7 points) regardless of which element of the battery is responsible for an error. Grading will be as follows:

Effect of fire should be determined by plotting observations made by lateral observers to a scale not smaller than 1/10,000. Range and deflection errors will be determined therefrom and graded as follows: Only 1/2 of the grade for effect will be allowed if percussion fire with instantaneous fuzes is used when sutiable time fuzes are available for those targets calling for time fire. Two battery salvos will be fired in fire for effect for determination of center of impact. These salvos are for use of umpire only. The observer will not be given opportunity to correct fire for effect.

- (1) Range. 3.0 points. Effect for range measured along the gun-target line will be graded as follows:

Range Error of CI from target	Credit
50 yds / 2 PE	3.0
50 yds / 3 PE	2.3 (points)
50 yds / 4 PE	1.5
50 yds / 5 PE	0.8
50 yds / 6 PE	0.0

- (2) Deflection. 2.0 points. Full credit for deflection will be given if the deflection error (measured from the CI perpendicular to the gun-target line) does not exceed 40 yards. When deflection exceeds 40 yards, cut 0.3 points for each ten yards in excess of 40 yards.

- (3) Height of Burst. 2.0 points. When time fire or ricochet fire is employed, -grade for effect will be determined as follows:

Height of Burst in Time Fire (Exclusive of VT Fuzes)	Air Bursts in Ricochet Fire	Credit
0 to 40 yds	75 to 100%	2.0
40 to 50 yds	50 to 75%	1.5
50 to 60 yds	30 to 50%	0.6
Over 60 yds	Less than 30%	No credit
Below 0 yds		1.5
(All graze bursts)		

- e. Firing battery functioning. 2.0

Includes transmission of fire commands, speed and accuracy of execution.

10. Battery survey. (10 points)

The coordinates and latitude of the battery center will be located by survey and results reported to the chief umpire. The true coordinates and altitude of the battery center will then be furnished the battery and the firing chart corrected accordingly. A suitable orienting line will be established, its azimuth determined and an orienting station suitable to the battery position will be located and marked. Using coordinates of the base point and battery center given by the chief umpire, the base angle will be computed. The survey will be graded as follows:

<u>Coordinates of Battery Center</u>	<u>Credit</u>
Radial error of 10 yards	6 points
Radial error of 10-15 yards	3 points
Radial error over 15 yards	0 points

Suitability of Orienting Line and Station 1 point

Azimuth of Orienting Line 1 point

Full credit for 5 m or less error.

No credit for over 5 m error.

Base Angle 2 points

Full credit for 5 m or less error.

Half credit for 6 - 10 m error.

No credit for over 10 m error.

Surveying data should be submitted within two hours after start of test. Local conditions will govern the length of time necessary to complete this survey. The chief umpire will increase the time given above where conditions, in his opinion, justify a longer time. No cut will be given for speed on this requirement unless the time allotted is exceeded by over 50%; in which case a full cut of 10 points will be assessed.

11. Determination of map data, corrected by meteorological data for fire on one target (fire not to be delivered). (5 points)

The battery fire direction will be furnished a meteorological message. Map data corrected will be computed for one of the targets for which coordinates and altitude were given. A cut of two points will be made if an old VE (furnished by the board) is not included in the computation. Final solution to requirement 11 will be in terms of a deflection correction which would be applied to a measured chart deflection and a proper quadrant elevation (which would be used to fire on this target). For correct procedure and error in computation, cut 3 points. Error can be either in deflection correction or quadrant elevation. For error in procedure, cut 5 points.

12. Registration. (12.5 points)

a. The registration observer will be told to register with fuze quick followed by fuze time. It will be graded as follows:

Selection of Base Point	1.0
Speed of Registration	3.0
Judgement and Procedure	2.5
Effect	6.0
	12.5

b. Speed of registration. 3 points

Graded as in paragraph 9b.

c. Judgement and procedure. 2.5 points

Graded as in paragraph 9c.

d. Effect.

6 points

(1) Deflection.

2 points

For Angles T less than 500 m, allowable error is 2 m.
Cut 0.5 point per mil in excess of 2 m.

For Angles T greater than 500 m, allowable error is 4 m.
Cut 0.5 point per mil in excess of 4 m.

(2) Range. 3.0 points. No allowable error in adjusted elevation. Cut 0.8 point per mil in error.(3) Adjusted time of burning. 1.0 point.

Allowable error is 1/10 second. Cut 0.3 point per 1/10 second in excess of available error.

Example: Precision registration is completed with 4 m deflection (Angle T less than 500 m), adjusted elevation error of 1 m and an error in time setting of 0.3 second.

Cut for deflection error - $2.0 \times 0.5 = 1.0$

Cut for range error - $1.0 \times 0.8 = 0.8$

Cut for time setting error - $2.0 \times 0.3 = 0.6$

Total Cut = 2.4

Grade - 6.0 - 2.4 - 3.6

13. Determination of a GFT setting, deflection correction scale, and construction of deflection index based on registration. (5.0 points)

(GFT setting, 2 points; deflection correction scale, 1 point; deflection index, 2 points.)

14. Application of registration corrections. (2.5 points)

After calculation, registration corrections will be applied to the target for which map data corrected is figures.

15. Transfer of fire. (10 points)

Fire will be transferred, using fuze time, by using the corrections determined in paragraphs 12 and 13 to the second of the two targets for which coordinates and altitudes were given and graded as follows:

Computation of data.

4 points

Effect (see below)

6 points

Effect will be graded as follows:

Range. 4.0 points

Error of CI from Target

(In probable errors)

0 - 2

2 - 4

4 - 6

6 - 8

0

0 - 1

1 - 2

2 - 4

(Cuts will be interpolated.)

Deflection. 3.0 points

Proportionate cut will be made based on percentage of target not covered effectively by sheaf.

Height of Burst. 3.0 points

Height

Credit

0 to 40 yards

3.0

40 to 50 yards

2.5

50 to 60 yards

1.0

Over 60 yards

0.0

Below 0 yards or

2.25

all graze bursts

16. Communications. (10 points)

a. Communication performance will be judged on the proper employment of communication equipment, adherence to communication security, and the use of proper radiotelephone and telephone switchboard procedure.

b. Normal battery, wire, and radio nets will be established applicable to a battery operating alone. (No communication will be established with any assumed battalion elements.) The wire net should include a switchboard, local lines within battery position, and the battery FDC, and to the battalion OP established by the battery.

17. All firing charts, survey notes, computation, etc., will be turned in to the chief umpire at the end of the problem. The umpire will check all charts for accuracy.

SECTION III UMPIRING

18. This battery test will be conducted by corps, group, or division artillery headquarters.

19. The chief umpire will be responsible for safety.

20. There will be no restriction on the use of any type of communication, except as prescribed in paragraph 5c, above.

21. Time required by any safety officer or umpire for checking or verifying safety or control will not be counted against the battery.

22. In some parts of the test; for example, organization of the position, several subjects are grouped under one subhead. These subjects are all important. It is not desired, however, that proportionate credit be given for proper performance in subjects listed. Rather it is desired that severe cuts be given for poor performance in any one subject.

23. Umpires will not give instructions or advice to battery personnel other than that necessary for the conduct of the test or to assure safety. This applies particularly to FDC umpire.

24. Umpires will be prepared to run a survey to check final location of the battery center in the position as selected by the battery commander.

25. Scoring.

Grade

a. Batteries will be scored on the basis of 100.

- | | |
|---|-------|
| (1) March forward, occupation, and organization of position (max. 20 points) | _____ |
| (2) Speed (10 points) | _____ |
| (3) Fire on target of opportunity (15 points) | _____ |
| (4) Accuracy of battery survey of the location of the battery center. (10 points) | _____ |
| (5) Determination of map data corrected (5 points) | _____ |
| (6) Registration (12.5 points) (see paragraph 12) | _____ |

(7) Determination of a GFT setting and deflection correction (5 points) _____

(8) Application of corrections (2.5 points) _____

(9) Transfer of fire (10 points) (see paragraph 15) _____

(10) Communication (10 points) _____

Total _____

b. Where grade for this test is below passing (70 points), unit should be retested. Retest should be given approximately one month after failure occurred.

[AG 353 (20 Feb 51)]

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

EDWARD F. WITSELL
Major General, USA
The Adjutant General

J. LAWTON COLLINS

Chief of Staff, United States Army

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ARMY TRAINING TEST)
NO. 6-2)

DEPARTMENT OF THE ARMY
Washington 25, D. C., 28 February 1951

TRAINING TEST
FOR
FIELD ARTILLERY BATTALION FIRING

	Paragraph	Page
Section I. General - - - - -	1-6	1
II. Test I --Field artillery battalion of all calibers - - - - -	3-23	2
Part I --Light, medium, and heavy battalions, except those having counter-mortar radar teams and 8-inch gun and 240- mm howitzer battalions - - -	4-11	2
Part II--Battalions having counter- mortar radar sections- - - -	12-15	20
Part III--8-inch gun and 240-mm howitzer battalions- - - - -	16-23	24
III. Test II --Field artillery battalion of division artillery and group	24-28	31
IV. Umpiring - - - - -	29-30	39
V. Reports - - - - -	31	43
VI. Ammunition - - - - -	32	45

SECTION I

GENERAL

1. General. This test is prepared in two portions, and applies to Field Artillery units of the several types as shown below:

a. Test I. For all calibers of field artillery battalions.
This test is divided into three parts applicable as follows:

- (1) Part I. For all light, medium, and heavy battalions, except those having counter-mortar radar teams, and except 8-inch gun and 240-mm howitzer battalions.
- (2) Part II. For all battalions having counter-mortar radar teams.
- (3) Part III. For 8-inch gun and 240-mm howitzer battalions.

*This training test supersedes AFF TT 6-2, 15 July 1948.

b. Test II. For division artillery and groups.

c. Tests I and II are based on the use of the "Target Grid Procedure of Gunnery." Current reference: TC No. 1, DA, 31 January 1949, entitled "Observed Fire Procedure."

2. Purpose. The purpose of this test is to determine the capabilities of a particular field artillery battalion by evaluating technique, tactical employment, and combat efficiency of the battalion as a whole.

SECTION II

TEST I--FA BATTALIONS OF ALL CALIBERS

3. General. Test I supersedes Test I and Test II of AFF TT 6-2, 15 July 1948, for all battalions; and, in addition, supersedes AFF TT 6-6 (Field Artillery Radar Counter-Mortar teams), 5 October 1948, by revising and including it in Part II for those battalions having a counter-mortar radar team.

PART I

LIGHT, MEDIUM, AND HEAVY BATTALIONS, EXCEPT THOSE HAVING COUNTER-MORTAR RADAR TEAMS AND 8-INCH GUN AND 240MM HOWITZER BATTALIONS.

4. Nature of test. This test is designed to determine the capabilities and combat efficiency of an artillery battalion when operating in its normal role in a logical tactical situation. It stresses a rapid occupation of position; the use of the observed fire chart; the transfer from the observed fire chart to a battle map (or photomap); and the execution of surprise fire. The test consists of two phases as follows:

a. Phase I.

- (1) Maps. Of a scale not less than 1/62,500 for tactical use only.
- (2) This phase covers the employment of a battalion in a situation calling for a rapid occupation of position from a tactical rendezvous, and the rendering of prompt fire support. Any available map (scale 1/62,500 or smaller) will be used for tactical purposes. Firing will be conducted by use of a time plot observed fire chart throughout this phase.

b. Phase II:

- (1) Maps. Battle map or photomap.
- (2) This phase covers the employment of the battalion in a continuation of the tactical situation of Phase I. It requires a completion of necessary survey to accomplish the missions of the test; the transfer from the observed fire chart to a battle map (or photomap) supplemented as necessary by vertical air photographs; and the prompt delivery of surprise fire on observed and unobserved targets.

c. All movements and installations will be tactically sound. Combat realism will be emphasized throughout the test.

5. Fire missions required by test.a. Phase I.

- (1) Part 1. Two battery area type missions. Two ground observers.
- (2) Part 2. Registration of three batteries, percussion, and fuze time. One ground observer from battalion OP with angle T 300 to 600 μ .
- (3) Part 3. One area mission - adjust one battery and mass battalion. Use battery and one ground observer not used in (1), above.

b. Phase II.

- (1) Part 1. No firing requirements. Completion of survey; transfer from observed fire chart to battle-map fire chart.
- (2) Part 2.
 - (a) Precision adjustment for destruction. One air observer required.
 - (b) CI registration--battalion survey section.
- (3) Part 3.
 - (a) Transfer. Surprise fire using percussion fuze, long angle, one battery. One ground observer.

- (b) Registration on a check point for high-angle corrections. One ground observer at battalion OP. (All weapons inherently incapable of firing high-angle fire and gun battalions will use low-angle methods.)
- (c) Transfer. Surprise percussion fire, high-angle, one battery, unobserved. (Those units exempt in (b), above will fire low-angle fire.)

c. Each phase is broken down into separate parts. This breakdown is used for clarity and to simplify control by umpires. This division of the test into phases will not be construed to mean that certain missions and operations listed must be performed in the order given within phases. In fact, careful pre-planning by a battalion to execute simultaneously as many missions and operations as possible, within the limits as given, is encouraged in order that a battalion may accomplish satisfactorily all the missions given in the shortest possible time.

6. Observers.

a. Three ground observer parties are required, each of which will be equipped to man a battalion OP or to act as a forward observer party. There will be two officers with each party, each of which will conduct at least one mission (par. 5), except heavy battalions will be required to have only one officer with each party.

b. Light battalions will employ 2 forward observer parties and 1 battalion OP party. Medium and heavy battalions will employ 1 forward observer party and 2 battalion OP parties.

c. Ground observers will draw lots to determine areas, or zones, in which to establish observation and the type of fire mission each will conduct.

d. All observer locations will be tactically sound and will be selected and established by the officer in charge of each observer party within the area, or zone, drawn by lot and in accordance with the tactical situation given by the umpires.

e. One air observer is required for precision mission (par. 5b(2)(a)) and will function as described in paragraph 7d.

7. Preparation prior to test.

a. General. Prior to the test, all elements of the battalion, less the ground observer parties, should be in a tactical rendezvous

about two miles from the position area. (For pack (truck-drawn) airborne battalions, or battalions with animal transport, this distance may be reduced.)

b. Battalion commander and staff. The chief umpire, acting as division artillery or group commander, will meet the battalion commander, accompanied by not more than two staff officers, at a predesignated place and time. (The place selected should be somewhere near the rendezvous convenient for the problem.) He will issue sufficient maps for the first phase of the test, explain the tactical situation, and give the battalion commander the following data:

- (1) Tactical situation. (The following will be pointed out, or marked, on a map for the battalion commander.)
 - (a) Battalion position area.
 - (b) Location of survey control point (this will be given in exact coordinates and will include the elevation of the point) and a direction to a known visible point.
 - (c) Location of friendly front lines.
 - (d) Boundaries of supported units and zone of operation and observation of the battalion.
 - (e) Location of friendly installations, including infantry regimental and battalion CP or other units with which the battalion is concerned.
- (2) Problem information. (The following will be given verbally to the battalion commander.)
 - (a) Role of the battalion; i.e., direct support, general support, or reinforcing.
 - (b) Information that the test starts as soon as he rejoins his battalion in the rendezvous area where he will issue necessary orders and instructions to his battery commanders and staff prior to going forward on reconnaissance.

c. Ground observers. The assistant chief umpire will meet all ground observer parties and observer umpires at a place designated at the infantry regimental CP at the same time the chief umpire meets the battalion commander. He will issue maps for the first phase, give

the observers the situation, cause them to draw lots for observation areas or zones (see par. 6c), and give them the following data:

(1) Tactical Situation. (The following will be pointed out, or marked, on maps for the observers.)

(a) Location of friendly front lines and the zones of action of supported units.

(b) Boundaries of supported units.

(c) Location of areas in which to reconnoiter and establish observation according to the drawing made and suggested routes forward to those areas.

(d) Zone of observation for each party.

(e) Location of any friendly installations pertinent to the situation as given including the infantry battalion CP at which liaison wire head will be established by the battalion.

(2) Problem information. (The following will be given verbally to the observers.)

(a) Assignment of an umpire to each observer party.

(b) Advises them that the test starts, as far as they are concerned, when they leave infantry regiment CP location to go forward on reconnaissance.

(c) Advises of any local ground rules due to restrictions of the training area, or any information on control and checks to be used by umpires that may effect an observer.

d. Air observer. A battery officer designated to conduct the precision adjustment for destruction (par. 5b(2)(a)) will be in rendezvous with the battalion and will move forward with the battalion headquarters. He will know the location of the air strip and will have arranged for a regularly assigned pilot-observer to be at the field ready to fly a mission on call. At an appropriate time during the test, an umpire will deliver to the battalion commander, or an appropriate staff officer, a sealed envelope containing a single vertical photograph on which the target for the air mission is marked. This envelope

will, in turn, be given to the air observer unopened. He will go immediately to the air strip without further instruction and conduct the mission.

8. Conduct of the test.

a. Phase I. Reconnaissance and occupation of position followed by area fire on two targets of opportunity and registration of all batteries. This phase starts with the orders and instructions of the battalion commander in the rendezvous area prior to going forward on reconnaissance. It will be conducted in three parts as follows:

(1) Part 1.

- (a) Reconnaissance of position area. The battalion commander's party should not exceed two reconnaissance vehicles for the battalion commander, one for the headquarters battery, and one for each firing battery. The chief umpire will accompany the reconnaissance party. Upon arrival at the position area, the chief umpire will point out on the ground to the battalion commander, the exact location of the survey control point and the Y-azimuth of a line from that point. The battalion commander and his battery commanders will then proceed with their reconnaissance and selection of positions on which they will be graded. The chief umpire will then point out the exact positions to be occupied in order to facilitate control of safety (the chief umpire will have had these positions surveyed and safety cards prepared in advance of test).
- (b) No movement other than that described above will be made prior to the time the battalion commander completes his reconnaissance and issues his order for the occupation of position.
- (c) The test, having started when the battalion commander issued orders and instructions at the rendezvous area, will proceed in the usual manner of a rapid occupation of position for the prompt delivery of fire. One battery will fire on each of the area targets. (No battery may be used on more than one target.) Adjustment on either of the two targets may commence as soon

as a battery is ready to fire and communication has been established with either of the two ground observers conducting the area missions.

(d) The condition of the test requires these two targets be taken under fire as quickly as possible, using the most effective type fire. The type of ammunition employed will be dictated by nature of target.

(e) Part 1 will end upon the completion of fire on these two targets.

(2) Part 2.

(a) Registration of all batteries on the base point and completion of time plot observed fire chart. This registration will include determination of the time setting for zero height of burst and will be executed as follows:

1. The observer umpire at this OP will identify the base point to the observer conducting the registration. This will be an object that can be identified on the battle map (or photomap) for Phase II.
2. All batteries will be registered by the one observer who drew by lot the observation area or zone from which the registrations will be made.
3. Any battery not firing will be available for registration at any time the FDC can handle the mission without regard to completion of Part 1, above.

(b) The completion of the time plot observed fire chart.

(c) Part 2 ends with the completion of the operations listed above.

(3) Part 3.

(a) Using area fire, an adjustment will be made using the battery not fired in Part 1, above,

on a target, followed by a battalion concentration. The adjustment will be made by the observer having drawn, by lot, the observation area or zone from which this target will be observed. The adjustment will be made using time fire (M67 or VT fuze will not be used for the adjustment).

(b) Part 3 ends with the completion of this mission.

b. Phase II: Continues the same tactical situation as given in Phase I. This phase starts when all requirements of phase I have been completed and the umpires have issued battle maps (or photomaps) supplemented when necessary by single vertical photographs. Sufficient copies will be issued for the use of the FDC (at least three copies), the battalion commander, and to those observers (by observer umpires) taking part in this phase. It will be conducted in three parts, as follows:

(1) Part 1.

- (a) Completion of necessary survey.
- (b) The identification and location of the battle map (or photomap) of the battalion base point (previously registered upon). In case the location is in error, it is not intended that the true coordinates of the base point be furnished by the umpires.
- (c) Transfer from the observed fire chart to the battle map (or photomap) firing chart.
- (d) Part 1 ends when the battalion FDC is prepared to accept the fire missions required in Part 2.

(2) Part 2.

- (a) A precision adjustment for destruction conducted by the air observer (par. 7d).
- (b) A center of impact registration observed from surveyed OP's. The observers may be the survey section or such other observers as the battalion commander may designate.
- (c) The data secured from this registration will be used in solving the requirements of Part 3,

(3)(a) below. The target location for the mission required in paragraph 5b(3)(a) will be furnished by an umpire previous to time of firing the CI to assure that the CI will be within transfer limits. However, the CI will not be fired at the target furnished by the umpire.

(d) This part ends with the completion of the CI registration.

(3) Part 3.

(a) Using corrections obtained from the CI registration, a transfer will be made to a target to obtain surprise effect. This will be located on the battle map (or photomap) by a ground observer and identified to the FDC. One battery only will fire low-angle, using percussion fuze battery salvo with a parallel sheaf.

(b) The registration of one battery on a check point (ground and chart location will be given by an umpire) to determine a GFT setting for high-angle fire. (Those weapons exempt from firing high-angle fire in previous paragraphs will register using low-angle methods.)

(c) Using data obtained from the check point adjustment, a transfer will be made to a target to obtain surprise effect on which observation is lacking. This target will be identified to the FDC by an umpire. He will furnish coordinates by means of a battle map (or photomap) with the targets marked thereon. The battery used in b(3)(b), above, will fire high-angle, instantaneous percussion, battery salvo with a parallel sheaf. (Those units exempt in b(3)(b), above, will fire low-angle fire.)

(d) The actual firing of transfers (a) and (c), above, will be on call of the chief umpire after the battalion has indicated they are ready to fire.

(e) Part 3 ends with the completion of the firing of the transfer in (c), above.

9. Speed.

a. Time will be recorded by the umpires on the test as a whole. Time will start with the orders of the battalion commander in the rendezvous area and will end with the last round of the final transfer.

b. Time chargeable to the battalions will be elapsed time only. All time required by the umpires for checking, control, safety, verifying fire for effect or other causes will be deducted.

c. The length of time required to complete the tasks of this test will depend on many factors and will have to be adjusted by the umpires to fit types of equipment and training areas. Normally, it should be accomplished within 6 hours. This should be increased to 6-1/2 hours for 155-mm gun and 8" howitzer towed battalions.

d. For every full five minutes overtime required, the total earned points will be reduced two points. Under any circumstances a unit will not be considered to have passed the test if more than one hour and fifteen minutes is required for completion of the test over the time as determined to be adequate by the chief umpire prior to the test.

10. Charts and records. All firing charts, fire commands, and records of battery recorders will be turned in to the umpires at the conclusion of the test. GFT settings will be determined at time of registration and data turned into the umpire at that time.

11. Grading of Part I.

a. General. The battalion will be graded on the basis of 100. 70 is considered satisfactory. Weights will be given various operations as follows:

(1) Reconnaissance and selection of positions for the battalion and batteries, orders and instruction of battalion and battery commanders for moving units from rendezvous.	<u>10</u>
(2) March from rendezvous to position area.	<u>2</u>
(3) Occupation and organization of position.	<u>5</u>
(4) Two area missions.	<u>10</u>
(5) Registration of three batteries.	<u>18</u>

(6)	Observed fire chart and one battalion concentration.	<u>15</u>
(7)	Transfer to map (or photomap) firing chart and location of battalion base point.	<u>10</u>
(8)	Precision adjustment for destruction.	<u>4</u>
(9)	CI registration and check point registration.	<u>5</u>
(10)	Determination of high-angle GFT setting, or low-angle for exempt weapons.	<u>3</u>
(11)	Two transfers.	<u>10</u>
(12)	Communications.	<u>8</u>
	<u>Total</u>	100

b. Detailed grading.

- (1) Reconnaissance and selection of position for battalion and batteries, orders and instruction of battalion and battery commanders for move from rendezvous (10 points) will be judged as follows:
 - (a) Selection of battalion area and orders, and instructions of battalion commanders. 6 points
 - (b) Selection of battery position and orders and instructions of battery commanders. 4 points
- (2) March from rendezvous to position area (2 points) will be judged as follows:
 - (a) March discipline, column control. 1 point
 - (b) Security on the march, dispersion, use of sentries, familiarity of all personnel with warning signals, and preparation against ground or air attack. 1 point

- (3) Occupation and organization of position (5 points)
will be judged as follows:

(a) Orderliness. 2 points

Officers and noncommissioned officers should function quietly and effectively. Transport should clear in an orderly fashion. Wire, observation, and other details should work without confusion.

(b) Organization of battery positions. 3 points

Judging should include sights and quadrants; accuracy of laying, alinement of, knowledge of how to realine aiming posts, accuracy of recorder and telephone operator; camouflage and care of materiel; and care of ammunition, including segregation of separate ammunition lots and preparation for taking powder temperature. Organization of position should continue as time is available.

- (4) Two area missions on targets of opportunity (10 points).
Five points to be allotted to each mission. They
will be graded as follows:

	<u>Obsr</u>	<u>Total</u>
Accuracy of initial data.	1.0	1
Speed of adjustment.	See below	
Effect.	No breakdown	4
		<u>5</u>

(a) Accuracy of initial data.

Observer 1 point

The observer's initial fire request should place the first volley within the observer's field of observation. If the first volley is sensed as "Lost"--No credit.

(b) Speed of adjustment.

In judging time for observed fires, times shown in the following table will be used for targets at short and medium ranges. Time will start when first round or volley is on the way. Time will stop when the battery has fired the first round or volley in fire for effect.

Type of Problem	Rating	TIMES				
		From announcement of initial "on the way" by FDC until first round in FFE "on the way"				
Low-angle fire		75mm	105mm	155mm H	8" H - 155mm G	
Precision & Area	Full Credit	10:00"	10:30"	11:00"	12:00"	
	No Credit	10:00"	10:30"	11:00"	12:00"	
	Over		Over	Over	Over	

Note. If the time exceeds that allowed for full credit, a full cut will be made depending on the type problem and total points allotted.

For high-angle fire, add the amount of the increase in the time of flight to the above times.

Time required for determination of zero height of burst will not be counted against individual problem, but will be included in over-all time.

(c) Effect.4 points

Effect of fire should be determined by plotting observations made by lateral observers to a scale not smaller than 1/10,000. Range and deflection errors will be determined there from and graded as follows: Only 1/2 of the grade for effect will be allowed if percussion fire with instantaneous fuze is used when suitable time fuzes are available for these targets calling for time fire. One battery salvo will be fired in fire for effect for determination of center of impact. This salvo is for use of umpires only. (Time will stop with report of ready to fire for effect.)

1. Range (2.0 points). Effect for range (measured along gun-target line) will be graded as follows:

Range error of
CI from target

Credit

50 yds + 2 PE	2.0
50 yds + 3 PE	1.6
50 yds + 4 PE	1.2
50 yds + 5 PE	0.3
50 yds + 6 PE	0.0

2. Deflection (2.0 points). Full credit for deflection will be given if the deflection error (measured from the CI perpendicular to the gun-target line) does not exceed 40 yards. When the deflection error exceeds 40 yards, cut 0.5 points for each 10 yards in excess of 40 yards.

- (5) Registration of three batteries. 18 points

6 points for each registration. A full cut will be made if the time exceeds the time allowed in paragraph 11b(4)(b).

Effect (6.0 points)

- (a) Deflection 2.0 points

For angles T less than 500 m, allowable error is 2 m. Cut 0.5 point per mil in excess of 2 m.

For angles T greater than 500 m, allowable error is 4 m. Cut 0.5 point per mil in excess of 4 m.

- (b) Range (3.0 points)

No allowable error in adjusted elevation.
Cut .05 point per mil in error.

- (c) Adjusted time of burning (1.0 point)

Allowable error is 1/10 second.
Cut 0.5 point per 1/10 second in excess of 1/10 second in error.

- (6) Observed fire chart and one battalion concentration. 15 points

The observed fire chart and battalion concentration

will be graded as follows:

(a) Construction (1 point). Includes techniques prescribed in FM 6-40. Any serious deficiency in chart construction and location of points thereon will be cause for a total cut and not a proportional cut.

(b) Organization and functioning of fire direction center (1 point).

Includes adequacy of organization; smoothness of operations, efficiency of horizontal and vertical control operators; battery computers, and functioning as a team. Assess total cut for poor training, lack of efficiency, lack of team work, etc.

(c) Speed (3 points). Nonadjusting batteries should fire for effect within 2-1/2 minutes from time of completion of adjustment by adjusting battery. Time count starts when observer calls "Fire for Effect" and ends when last battery has announced "Ready" to the fire direction center. (Fire must be AMC for umpires to determine effect.) Cut 1 point per minute (or fraction of minute greater than 1/2) for overtime in excess of 2-1/2 minutes.

(d) Effect (10 points).

1. Effect of adjusting battery (5 points) will be graded as prescribed in paragraph 13.

2. Effect of nonadjusting batteries will be graded (5 points) as follows:

Effect will be determined by plotting observations made by lateral observers to a scale of not smaller than 1/10,000. Range and deflection errors of nonadjusting batteries will be determined in relation to CI of adjusting battery.

Distance of CI of nonadjusting Battery
from CI of adjusting battery. (See
note below)(In range probable errors) Cut

0-2	0
2-4	0-1
4-6	1-3
6-8	3-5

Cuts will be interpolated; for example, for
an error of 5 probable errors, cut 2 points.

3. Height of burst. When time fire or ricochet
fire is employed, grade for effect as deter-
mined above will be modified for any error
in height of burst in fire for effect as
follows:

<u>Credit</u>	<u>Height of Burst in Time Fire (**Exclusive of VT Fuzes)</u>	<u>Air Bursts in *Ricochet Fire (Time Fuzes Available)</u>	<u>Air Bursts in *Ricochet Fire (Time Fuzes Not Available)</u>
100%	0 to 40 yards	75 to 100%	50 to 100%
75%	40 to 50 yards	50 to 75%	25 to 50%
30%	50 to 60 yards	30 to 50%	
No credit	Over 60 yards	Less than 30%	Less than 25%
75%	Below 0 yards (All graze bursts)		

* When ricochet fire is attempted and fails, no cut should be made provided, in the opinion of the umpire, conditions indicated a reasonable assurance of success and, upon the failure of an effective percentage of ricocheting rounds, fire was immediately changed to a more effective type. No additional time will be allowed. When ricochet fire is attempted and fails and when, in the opinion of the umpire, conditions did not indicate a reasonable assurance of success, a cut of 5 points should be made for poor judgment.

** Since the height of burst of the VT fuzed ammunition cannot be controlled by the unit, height of burst will not be considered in grading problems when VT fuzes are used, except as follows:

Erratic functioning of fuzes.	No cut.
Failure to clear friendly occupied crest. (For failure to observe combat realism.)	Cut <u>5 points</u> , plus <u>1 point</u> for each round

bursting short to the limit of the credit allowed on the problem.

Note. A maximum cut of 5 points to be assessed. Each nonadjusting battery to be graded, but the maximum cut for problem to be 5 points.

(7) Transfer to map (or photomap). 10 points

Firing chart and location of battalion base point:

(a) Accuracy of location of base point. (4 points)

(b) Verification. Regardless of assurance with which the base point is picked by inspection, its location should be verified.

(c) Construction of firing chart. (3 points)

Includes techniques prescribed in FM 6-40. Any serious deficiency in chart construction and location of points thereon will be cause for a maximum cut.

(d) Transfer of targets. (3 points)

Includes techniques prescribed in FM 6-40. AN erroneous location of a target of over 50 yards will be cause for a cut of 2 points. Maximum cut of 3 points.

(8) Precision adjustment for destruction 4 points

This mission will be considered complete after the fire direction center has determined six range sensings suitable for computation of the first adjusted elevation and after proper commands to continue firing has been given.

This mission will be graded for time according to same scale prescribed for precision registration. (See par. 11b(4)(b)).

A cut of 1 point will be made for each missensing, either in range or deflection, regardless whether made by observer of fire direction center.

A cut of 1 point will be made for each failure of fire direction center to improve deflection based on sensings made by observer. This cut will not be assessed until problem has been completed and an analysis made of how final deflection was obtained. If analysis shows that final deflection could not have been improved, no cut for deflection will be made.

- (9) Center of impact registration. 5 points

Center of impact to be graded as follows:

- (a) Suitability of instrument location: (1 point)
- (b) Orienting of instruments: (1 point)
- (c) Conduct of fire and accuracy of computation of center of impact registration: (3 points)
- (d) Location by inspection or by short traverse from points located by inspection are sufficiently accurate for instrument locations.

- (10) Determination of high-angle GFT setting (or low-angle for exempt weapons.) 3 points

- (11) Two transfers. 5 points for each transfer to be graded as follows: 10 points

- (a) Accuracy of fire: (5 points)

Distance of CI from location of target
(In range probable errors)

	Cut
0 -- 2	0
2 -- 4	0 -- 1
4 -- 6	1 -- 3
6 -- 8	3 -- 5

Cuts will be interpolated.

- (b) If it appears from the functioning of the battalion that full credit should be given, check preparation of data. If work is accurate, no cut for effect will be given.
- (c) If the credit for effect on the unobserved high-angle transfer is to be cut, a check of the preparation of the data and the work of the battery

will be made. If the data and the work of the battery are accurate, no cut will be given.

(12) Communications (8 points) will be judged as follows:

- (a) General performance (4 points). Development of communication plan, reconnaissance and selection of proper routes, utilization of personnel, care and adequacy of equipment, and adherence to principles of communication security.
- (b) Radio (2 points). Proper location of sets, adherence to rules of radio procedure, accuracy and speed of transmission, and availability when wire goes out.
- (c) Wire (2 points). Proper location and installation of equipment procedure, servicing of lines, and speed and accuracy of transmission.

PART II

BATTALIONS HAVING COUNTER-MORTAR RADAR SECTIONS

12. Nature of test. This test is the same as that given in Part I for light battalions with the following additions and exceptions:

- a. The counter-mortar team will be tested as an integral part of the battalion.
- b. An additional umpire will be required to umpire the activities of the counter-mortar radar section.
- c. The umpires will arrange for a mortar, preferable 81-mm, to be emplaced and registered on a known target location prior to the test. This mortar will fire, as directed by the chief umpire, for the mission of search and location by the counter-mortar radar section. The mortar will be emplaced in friendly territory well forward of the location where the radar will eventually go into position. This location should be from 3000 to 4000 yards from the radar site, and must be as far forward as possible. In order to obtain this amount of range in front of the radar site, it will be necessary to emplace the mortar in a flank position, in what would ordinarily be the front lines of an adjacent infantry unit. The target on which it is registered and which will represent the enemy mortar when fired upon, should be at a range that would be normal for an enemy mortar and close to the center of the sector of the supported infantry unit.

d. The same number of missions will be fired as given in Part I. However, the low-angle, transfer surprise fire mission (See par. 8b(3).) will be fired on a radar location of target in place of observer location from map (or photomap).

e. Grading is modified to reflect the activities of the counter-mortar radar section.

13. The counter-mortar radar team will be in the tactical rendezvous with the battalion and will go forward with the headquarters battery. The radar officer will go forward with the battalion commander's party on reconnaissance. The battalion commander will release the radar officer in the battalion area after giving him necessary orders for the employment of his section and the area of search to be covered based on the tactical situation. The counter-mortar radar section will function as follows during this test:

a. Phase I.

- (1) After release by the battalion commander, the radar officer will reconnoiter, select, and supervise occupation of position. He will report the location of position to the battalion FDC, and will arrange for necessary survey of the radar location with the battalion survey officer.
- (2) He will select and establish a radar OP and arrange for adequate communications.
- (3) He will supervise emplacing and the firing of the 60-mm mortar for orientation of the radar in elevation.
- (4) He will advise the battalion S-2 as soon as the section is ready to function. All the foregoing will be completed in the time allotted for Phase I.

b. Phase II.

The section will be given a search and location mission under paragraph 8b(3). This will be accomplished as follows:

- (1) Upon completion of the CI registration (par. 8b(2)), battalion commander will indicate to the chief umpire that the battalion is ready for the radar search mission. The chief umpire will cause the 81-mm mortar to be fired, using a minimum of six rounds. This will be fired at a target of known location,

previously selected and registered upon by the mortar. The counter-mortar radar section will determine the location of the enemy mortar by taking the place of the mortar burst as the location of the enemy mortar.

(2) As soon as determined, the enemy mortar location will be reported to the battalion S-2, who in turn will give the location to the S-3.

(3) Using the location as reported by the counter-mortar radar section and corrections obtained from the CI registration, the S-3 will fire the battery transfer called for under paragraph 8b(3).

14. Grading of Part II. Grading for this part of the test will be the Part I grading (General) scale, modified as follows:

The battalion will be graded on the basis of 100. 70 is considered satisfactory. Weight will be the same as given in paragraph 11a, except as noted below:

	<u>Points</u>
(1) Change from 10 points to--	<u>8</u>
(2) No change.	<u>2</u>
(3) No change.	<u>5</u>
(4) No change.	<u>10</u>
(5) Change from 8 points to--	<u>15</u>
(6) No change.	<u>15</u>
(7) Change from 10 points to--	<u>8</u>
(8) No change.	<u>4</u>
(9) No change.	<u>5</u>
(10) No change.	<u>3</u>
(11) No change.	<u>10</u>
(12) No change.	<u>8</u>
(13) Radar Team Functioning (Added).	<u>7</u>
<u>Total</u>	100

Points

15. Grading of Part II (Detailed). The grading for each item listed above will be the same as given in paragraph 11b, except where changes are shown below:

<u>a.</u>	Paragraph 11b--Change from 10 points to	<u>8</u>
	(1) Paragraph 11b(1)(a)--Change from 6 points to--	<u>5</u>
	(2) Paragraph 11b(1)(b)--Change from 4 points to--	<u>3</u>
<u>b.</u>	Paragraph 11b(2)--No change.	<u>2</u>
<u>c.</u>	Paragraph 11b(3)--No change.	<u>5</u>
<u>d.</u>	Paragraph 11b(4)--No change.	<u>10</u>
<u>e.</u>	Paragraph 11b(5)--From 18 points to (<u>5 points</u> for each registration.)	<u>15</u>
	(1) Paragraph 11b(5)(a)--No change.	<u>2</u>
	(2) Paragraph 11b(5)(b)--Change from 3 points to-- Cut <u>0.3 point</u> per mil in error.	<u>2</u>
	(3) Paragraph 11b(5)(c)--No change.	<u>1</u>
<u>f.</u>	Paragraph 11b(6)--No change.	<u>15</u>
<u>g.</u>	Paragraph 11b(7)--Change from 10 points to	<u>8</u>
	(1) Paragraph 11b(7)(a)--Change from 4 points to--	<u>2</u>
	(2) Paragraph 11b(7)(b)--No change.	<u>1</u>
	(3) Paragraph 11b(7)(c)--Change from 3 points to--	<u>2</u>
	(4) Paragraph 11b(7)(d)--No change.	<u>3</u>
<u>h.</u>	Paragraph 11b(8)--No change.	<u>4</u>
<u>i.</u>	Paragraph 11b(9)--No change.	<u>5</u>
<u>j.</u>	Paragraph 11b(10)--No change.	<u>3</u>
<u>k.</u>	(1) Paragraph 11b(11)--No change.	<u>10</u>
	(2) Paragraph 11b(11)(a)--Change as follows:	

Effect of transfer on mortar location to be graded on the distance of CI from location of target as reported by the radar section:

	<u>Points</u>
<u>1.</u> Paragraph 11b(12)--No change.	<u>8</u>
<u>m.</u> Counter-Mortar Radar Team Functioning.	<u>7</u>
(1) Occupation and Organization of Position.	<u>2</u>
(2) *Accuracy of Location of Target.	<u>5</u>

Full credit to be given when the target is located within a radius of 100 yards.

No credit to be given when the target is located within a radius greater than 200 yards.

Apply proportional weights for locations in between these above.

*In the event radar cannot determine the mortar burst location because of equipment difficulties, a cut of five (5) points will be assessed. (Under accuracy of location of target.)

PART III

8-INCH GUN AND 240-MM HOWITZER BATTALIONS

16. Nature of test. The battalions taking this part of Test I are not concerned with the use of an observed fire chart. Therefore, this part is modified to omit any reference to the observed fire chart. A battle map, or photomap, supplemented where necessary by single vertical photographs will be used throughout the test. Unless otherwise noted, the provisions of Part I will apply. This part of Test I stresses the value of surprise effect on observed and unobserved targets when these targets can be accurately identified and located on maps or map substitutes. The test will be conducted in one phase only, as follows:

Phase I.

- (a) Maps. Battle map or photomap will be used. Unless ready identification and location of targets on the map or photomap is practical, air photographs will be used as supplements.

- (b) This one phase is divided into three parts for purposes of clarity and to simplify control by the umpires. It covers the employment of a battalion from a tactical rendezvous; the preparation for, and the execution of, transfers of fire; necessary survey to accomplish the assigned missions and certain other missions ordinarily assigned these types of weapons.

17. Changes in umpiring for part III.

a. Chief umpire. No change.

b. Assistant chief umpire. No change, except he will be required to select locations for only two OP's, one of which should provide an Angle T of less than 300 m, and the other 300 m to 600 m. Targets selected and assigned to OP's must be such that they can be identified on the map, photomap, or single verticals.

c. Observer umpires. No change.

d. Assistant umpires. As required.

18. Fire missions required by part III.

a. Part 1.

- (1) Selection and identification of the battalion base point by one ground observer.
- (2) The registration of one battery on the base point by the observer ((1), above) and the determination of GFT setting.
- (3) The laying of the batteries of the battalion on their base point lines.

b. Part 2.

- (1) Two Transfers: Surprise effect on two observed targets; one battery each target, percussion fire. One ground observer.
- (2) Two Transfers: Surprise effect on two unobserved targets; one battery each target, VT Fuze at discretion of umpire if available, otherwise percussion.

c. Part 3.

- (1) Precision adjustment for destruction. One air observer.

- (2) CI registration; preparation for night high burst registration - battalion survey section.

d. Simultaneous Operations (see par. 5c, Part I).

19. Observers.

a. Two ground observer parties are required, each of which will man a battalion OP.

b. Ground observers will draw lots for OP locations which will determine the missions each will fire (par. 6c, Part I).

c. One air observer for precision mission (see par. 7d, Part I).

20. Preparation prior to test.

a. General. No change, Part I.

b. Battalion commander and staff. No change, except for maps issued and used throughout the test.

c. Ground observers. No change, except for maps issued and used.

d. Air Observer. No change.

21. Conduct of the test.

a. Phase I. Divided into three parts. It covers reconnaissance and occupation of position and survey, followed by missions as given below. Time for the test starts with the orders and instructions of the battalion commander in the rendezvous area prior to going forward on reconnaissance.

(1) Part 1.

(a) Reconnaissance of position area: No change.

(b) No change.

(c) The ground observer, who drew the OP from which the battalion will be registered, will select a battalion base point and identify it either on map or photomap to the battalion FDC. He will then register one battery, using percussion fuze. When registration is complete, the batteries of the battalion will be laid on their

base point lines, GFT settings will be determined and the necessary data plotted on the firing chart.

- (d) Part 1 ends when the battalion is ready to execute transfers of fire.

(2) Part 2.

- (a) The other ground observer will have two targets pointed out on the ground to him by the observer umpire at his OP. The observer will locate these on battle map or photomap and identify them to the FDC with a request for fire for effect. Two batteries will fire, one on each target, with a battery salvo parallel sheaf. This will be low-angle, percussion fuze.

- (b) An umpire will, at a convenient time, furnish the FDC the coordinates of two targets by means of a portion of a battle map, or photomap, with the targets marked thereon. These will be fired with one battery firing on each target using salvo, parallel sheaf, using VT fuze at discretion of umpire if available, otherwise percussion fuze.

- (c) Actual firing on the target, paragraphs a and b, above, will be on call of the chief umpire.

(After the battalion has indicated they are ready to fire.) Only the time of preparing the transfers and the actual firing will be chargeable to the battalion.

- (d) Part 2 ends with the completion of the transfer of fire missions listed above.

(3) Part 3.

- (a) A precision adjustment for destruction conducted by the air observer. This will be conducted as in paragraph 7d, Part I, and may be conducted at any time during the test, after registration is completed, agreeable to the chief umpire and battalion commander.

- (b) A center of impact registration observed from surveyed OP's. The observer may be the battalion

survey section or such others as the battalion commander may designate.

- (c) Preparation for night high burst registration. This will include the proper location, sighting and referring of instruments.
- (d) This part ends when the umpires have checked the preparation made by the battalion for the night high burst.

22. Speed.

a. Time will be recorded by the umpires on the test as a whole. It will start with the orders of the battalion commander in the rendezvous area and will end upon completion of assigned fire missions and when the battalion commander has indicated that the preparations for the night high burst registration are complete.

b. Time chargeable to the battalion will be elapsed time only. All time required by the umpires for checking, control, safety, verifying fire for effect, or other causes, will be deducted.

c. The length of time required to complete this test will vary since it is dependent on many factors. It will have to be adjusted by the umpires to fit conditions and training areas. Normally, it should be accomplished within four hours if a minimum of survey is required.

d. Cuts for overtime. See paragraph 9d, Part I.

23. Grading of Part III.

a. General. The battalion will be graded on the basis of 100. 70 is considered satisfactory. Weights will be given various operations as follows:

(1) Reconnaissance and selection of positions for the battalion and batteries, orders and instruction of battalion and battery commanders for moving units from rendezvous.	10
(2) March from rendezvous to position area.	5
(3) Occupation and organization of position.	5
(4) Selection and identification of base point by ground observer.	10

(5)	Registration of battery and GFT settings.	<u>10</u>
(6)	Laying batteries of battalion for direction on their base line.	<u>10</u>
(7)	Correctness of location on map or photo-map of visible targets by observer.	<u>10</u>
(8)	Effectiveness of fire on four concentrations.	<u>10</u>
(9)	Precision adjustment.	<u>10</u>
(10)	CI registration and preparation for night high burst.	<u>10</u>
(11)	Communications.	<u>10</u>
<u>Total</u>		100

b. Detailed grading.

- (1) Reconnaissance and selection of positions for the battalion and batteries, orders, and instructions of battalion and battery commanders for moving units from rendezvous (10 points). These factors will be judged in the manner prescribed in paragraphs 11b(1)(a) and (b).
- (2) March from rendezvous to position area (5 points). This factor will be judged in the manner prescribed in paragraph 11b(2), substituting three (3) points in 11b(2)(a) for one (1) point, and two (2) points in 11b(2)(b) for one (1) point.
- (3) Occupation and organization of position (5 points). These factors will be judged in the manner prescribed in paragraphs 11b(3)(a) and (b).
- (4) Selection and identification of base point by ground observer (10 points) will be judged as follows:
 - (a) Accuracy. (7 points). Accuracy can be readily verified in the target area at the conclusion of firing.
 - (b) Suitability. (2 points). Judged on relation of base point to front lines, zone of observation, and zone of fire of the battalion.

(c) Verification. (1 point). Regardless of assurance with which the base point is picked by inspection, its location should be verified.

(5) Registration of battery and GFT settings (10 points) will be judged as follows:

(a) Registration. (6 points)

1. Deflection. (3 points)

For Angles T less than 500 m, allowable error is 2 m. Cut 0.75 point per mil in excess of 2 m.

For Angles T greater than 500 m, allowable error is 4 m. Cut 0.75 point per mil in excess of 4 m.

2. Range. (3 points)

No allowable error in adjusted elevation. Cut 0.75 point per mil in error.

(b) GFT Settings. (4 points) As prescribed in FM 6-40.

(6) Laying batteries of battalion for direction on their base lines (10 points) will be judged on the method used and the accuracy of the work performed, depending on whether the battle map or photomap is used as the firing chart. (FM 6-40)

(7) Correctness of location on map or photomap of visible targets by observer (10 points). Five points for each target. Depending on whether the battle or photomap is used and the observer target range, the targets will be judged on the accuracy of the location.

(8) Effectiveness of fire on four concentrations (10 points) will be judged as follows: 2.5 points for each observation.

(a) Effectiveness to be graded on the location of target as sent in by observer.

(b) Accuracy of Fire: (2 points). See paragraphs 20a and 20b, and apply cuts proportionately.

- (c) Execution of fire, proper functioning of firing battery, communication personnel and FDC: (0.5 points).
- (9) Precision adjustment. (10 points) will be judged as prescribed in subparagraph 11b(8), except that a cut of two (2) points will be made in each case, and there is no time limit on the individual problem.
- (10) CI registration and preparation for night high burst registration (10 points) will be judged as follows:
 - (a) Suitability of instrument location. (2 points)
 - (b) Orientation of instruments, including means for orienting at night. (2 points)
 - (c) Conduct of fire and accuracy of center of impact registration. (6 points)
 - (d) Location by inspection or by short traverse from points located by inspection are sufficiently accurate for instrument locations.
- (11) Communications. (10 points) See paragraph 11b(12) and apply cuts proportionately.

SECTION III

TEST II--FA BATTALIONS OF DIVISION ARTILLERY AND GROUP

24. General.

a. Nature of the test. Test II applies to a division artillery as a whole (less AAA), but is graded by battalion. Nondivisional battalions will be tested as components of groups, or directly under headquarters and headquarters battery, corps artillery. It stresses the survey necessary before metro data can be used to maximum advantage, the value of the old VE's and registrations, and demonstrates the massing of fire of many battalions. The execution of this test requires daylight reconnaissance and survey preparatory to a night occupation of position, followed by night occupation of position. Each battalion is registered by night high burst, after which it is called on to fire two one-battery concentrations. Each battalion is again registered by high burst just before daylight and immediately after daylight they will be called on to fire two more one-battery concentrations similar to the ones fired during the night. Following these concentrations, one battery will be adjusted on a target on which all battalions will mass their fire. After this, a TOT will be fired on a target selected by chief umpire.

b. Maps. None. Single verticals covering both position and target areas will be furnished. If single verticals are not available, a photomap may be substituted. The firing chart will be a grid sheet.

c. Safety. The senior artillery commander is responsible for safety.

25. Preparation prior to test.

a. The artillery commander and his party with his battalion commanders and their parties will meet the chief umpire at a point designated by him in the vicinity of the position area at 0800, or other suitable hour on the day the test opens. There the artillery commander will be furnished the following:

- (1) The tactical situation including the location of the supported units and our most advanced elements.
- (2) The coordinates and altitude of a survey control point and a direction in terms of Y-azimuth from this mark to a distant, clearly defined object. This data will vary from any known data and bear no relation to any map or photomap, except that the Y-azimuth shall not be in error by more than 100 mils.
- (3) The location of the battalion position areas (by symbol on a photomap or photograph).
- (4) Air photographs or photomaps covering both position and target areas.

b. Division artillery or groups not organized with survey sections will be furnished in addition to the above, a survey control point and a direction in each battalion position area. Those not equipped with metro sections will be furnished metro data by the chief umpire.

c. The artillery being tested, less those elements used in the daylight reconnaissance and survey, will ordinarily be moved during the day to a tactical assembly area approximately 5 miles from the position area.

d. Personnel and equipment used in the daylight reconnaissance and survey will be held to a realistic minimum. It will be the minimum essential to accomplish the required reconnaissance and survey and may be exceeded only by that amount of personnel and equipment which may be safely employed without violating the security requirements of the assumed tactical situation, having due regard to conditions of terrain and weather.

26. Conduct of the test. Test II is conducted in three phases as follows:

a. Phase I (Daylight Phase). Having received the data and information in paragraphs 25a and b, above, the artillery commander makes his reconnaissance and then issues his order. Execution of the daylight phase requires the accomplishment of the following:

- (1) Establishment of battalion survey control points.
- (2) Establishment of battery survey control points.
- (3) The location of the guns and organization of positions for occupation at night.
- (4) The location of OP's by battalions. These OP's should be adequate for location of points in the target area.
- (5) The location of an adequate number of points by battalion or higher headquarters, or both, to permit restitution of targets from the air photographs to the grid sheet firing chart.
- (6) The location and orientation of observing instruments for a night high burst registration by each battalion.

b. Phase II (Night Phase). Immediately after dark, the chief umpire will furnish each battalion a photo of the target area on which two targets are marked (these targets will not be the same for any two battalions), and a photo to higher headquarters on which targets for all battalions are marked. The photos furnished will be identical with those furnished at the opening of the test (par. 25a(4)). Execution of Phase II requires the accomplishment of the following:

- (1) The occupation and organization of position.
- (2) A night high burst registration and determination of a VE by each battalion.
- (3) Firing of the two one-battery concentrations on call of the chief umpire by each battalion during the night. Concentrations will be fired with metro data corrected with the VE determined in (2), above. Time fuze cut to detonate on impact will be used and batteries will fire converged sheaf, center range. One of these concentrations will be fired on a target which was restituted by the battalion and one on a target which was restituted by higher headquarters.

- (4) A night high burst registration and determination of a new VE by each battalion just before daylight. Time setting for zero height of burst will also be determined.

c. Phase III(-After-daylight Phase): Execution of the daylight phase required the accomplishment of the following:

- (1) Firing of two concentrations as in b(3), above, but with the new VE immediately after daylight using time fire. Batteries will fire converged sheaf, center range. (VT fuzes are considered inadequate for these problems.) (Pending the issuance of a 35-second fuze, 8-inch gun and 240-mm howitzers, battalions may fire these concentrations using percussion or VT fuze.)
- (2) Adjustment on an observed target, designated by an umpire, by one battery from a battalion selected by the senior artillery commander, and a rapid massing of fire of all batteries of all battalions after adjustment. (This will be fired with parallel sheaf at center range. The most effective type of fire will be employed.)
- (3) Firing of one TOT concentration of one round per gun from all battalions, except battalion designated to fire high-angle missions, on a target indicated by the chief umpire. The target will be indicated by false coordinates, on a photo, by overlay or by pointing it out on the ground, at the discretion of the umpire. To gain surprise effect all fires will be transfers fired with the best data available. Batteries will fire parallel sheaf, center range. (If in the opinion of the chief umpire the time between the high burst registration fired in Part II just before daylight and the TOT is such that errors may occur because of change in weather effects, a new registration will be permitted to allow determination of the latest corrections.)
- (4) Firing high angle center of impact adjustment, by a battalion selected by the chief umpire, to determine a GFT setting for high-angle fires followed by a high-angle adjustment on an observed target selected by the chief umpire and a rapid massing of fire of all batteries of the battalion. Batteries will fire parallel sheaf, center range. (All self-propelled, 155-mm guns, and 8-inch gun battalions eliminate this paragraph.)

- (5) During the night or morning after going into position, the division artillery or group survey officer will determine the true azimuth from the division survey control point to the distant, clearly defined object (furnished by umpire--see par. 25a(2), above), by a star or sun shot. In case visibility prevents an astronomical observation, this phase of the test may be held another time. After the firing required for Phase III of this test, the true coordinates and altitude of the survey control point (Point A) will be furnished to the senior artillery commander. Using these true coordinates, and the true azimuth determined by a star shot (corrected by the umpire in case of error), the firing charts will be corrected to true coordinates. Firing charts when turned in will show corrected data.

27. Grading.

a. Each battalion will be graded on the basis of 100. 70 is considered satisfactory. Weights will be given various operations as follows:

	<u>Points</u>
(1) Survey	<u>15</u>
(2) Occupation, camouflage, and organization of position	<u>15</u>
(3) Preparation of fire	<u>15</u>
(4) Effect of fire (5 per concentration)	<u>30</u>
(5) Night high burst and high-angle center of impact registration	<u>10</u>
(6) Operation of fire direction center	<u>10</u>
(7) Communications	<u>5</u>
<u>Total</u>	<u>100</u>

b. Survey (15 points) will be judged on methods and accuracy.

- (1) Field survey should be so planned as to provide a double check on all operations.
- (2) Computation or plotting should be checked by alternate methods or duplications.

- (3) Vertical control should be carried throughout.

c. Occupation, camouflage, and organization of position (15 points) will be judged as follows:

- (1) Organization of tactical assembly area; concealment, dispersion, local security, and preparation for plans for night march. (2 points)
- (2) Amount of circulation and exposure of personnel and transportation during daylight. (3 points)
- (3) Smoothness of night march, speed of occupation, and light discipline. (3 points). Battalion should be able to open fire within one hour for light and medium artillery and two hours for heavy artillery after reaching position (three hours for 8-inch gun and 240-mm towed battalions). A cut of .6 of the score for this phase (smoothness, speed, and light discipline) for each 15 minutes overtime will be made.
- (4) Camouflage and camouflage discipline. (3 points)
- (5) Completeness of organization of position, protection of personnel, materiel and ammunition, adjustments of sights and quadrants, etc. (4 points)

d. Preparation of fire (15 points) will be judged on method, accuracy, and completeness. Distribution and use of metro messages will be included under this heading.

e. Effect of fires (5 points for each - total 30 points) will be graded as follows:

- (1) Effect (5 points)

Distance CI is from target
(In range probable errors)

0 - 2
2 - 4
4 - 6
6 - 8

Cuts

0
0 - 1
1 - 3
3 - 5

(Credit will be interpolated: i.e., for an error of 7 probable errors, credit would be 1.)

- (2) Observations of at least two of four rounds fired are needed to establish locations of the center of impact,

and the pieces from which these two rounds were fired must be identified. Firing a salvo at 10- to 20-second intervals makes this possible.

f. Firing required by subparagraphs 26c(2) and (4) will be graded as follows:

- (1) Adjustment will not be graded separately.
- (2) Effect of each battalion including adjusting battalion (par. 26c(2)) and for the battalion as a whole including adjusting battery (par. 26c(4)) will be graded as follows:

Effect: (5 points)

Distance of CI from Location of Target
(In range probable errors)

CUT

0 - 2

0

2 - 4

0 - 1

4 - 6

1 - 3

6 - 8

3 - 5

g. Firing required by subparagraph 26c(3), will be graded as follows:

- (1) Time: (2 points)

(a) Credit for all rounds arriving within 10 seconds: (2 points)

(b) Credit for all rounds arriving within 15 seconds: (1 point)

(c) Credit for all rounds arriving within 20 seconds: (0.5 point)

- (2) Effect. (3 points)

(a) Graded as in paragraph 27e, above.
(Corresponding cuts being 0: 0-1; 1-2; 2-3)

(b) In order to determine the center of impact for each battalion, the chief umpire may fire one round per gun at any time interval between rounds with the same data as in the TOT concentration. This time will not be charged against the tested unit.

ATT 6-2

h. Night high burst and high angle center of impact registration (10 points) will be judged on suitability of instrument locations and orientation procedure, VE determination, determination of time setting for zero height of burst, and adjustment of calibration of instruments for measuring vertical angles.

i. Operation of the fire direction center (10 points) will be judged as follows;

- (1) Organization. (2 points)
- (2) Methods. (4 points)
- (3) Accuracy for computing data for concentrations. (4 points)

j. Communications. (5 points). To be judged on communication plan, reconnaissance and selection of routes, adherence to security principles, and to rules of radio and telephone procedure, and servicing of wire.

28. Higher headquarters will be given a general rating (unsatisfactory, satisfactory; very satisfactory; excellent; superior) based on:

a. The work of the meteorological sections, particularly for their ability to operate at night. Where practicable, work of this section should be judged by the results obtained by a similar section from another unit working nearby.

b. The work of the survey sections. There is no objection to umpires correcting coordinates and azimuth direction assigned battalion survey control points when they are in error in order to prevent penalizing battalions unjustly.

c. Accuracy of determination of the true azimuth by astronomical observation and computation using a star or sun shots.

d. Coordination of survey and accuracy of restitution of targets accomplished at higher headquarters.

e. Speed and accuracy of fire direction for firing directed in paragraph 26c(2) and (3).

SECTION IV

UMPIRING

29. Umpiring for Test I.a. Umpires. Their functions and responsibilities.

- (1) Chief umpire. Responsible for overall preparation, coordination, and conduct of the test. He will umpire activities of the battalion commander and such other activities as he deems necessary or desirable. In addition, he is responsible for safety.
- (2) Assistant chief umpire. Responsible for the preparation of the target area to include any marking or location of targets prior to the test for purposes of control or checking accuracy of fires; location of flash OP's; necessary control survey, umpire communications, and for the control and coordination of the umpiring of all ground observer installations. Prior to the test, he will select the target for each fire mission and the observer installation which will conduct the mission. The base point selected will be such that it can be identified and located on the battle map (or photomap) used in Phase II. Targets and observer locations will be selected and matched together to assure a variation in the Angle T between the various observers and the general battalion area of less than 300 m for one location, 300 to 600 m for another, and over 900 m for the other. Where possible the base point registration will be made from the location with Angle T of 300 to 600 m.
- (3) Observer umpires. One for each ground observer installation. Each is responsible for umpiring all activities of his installation, including reconnaissance and occupation of the OP; tactical sufficiency; communication; the firing of missions allocated to his OP.
- (4) Assistant umpires. As required by the chief umpire for other installations and activities such as battery positions, communications, FDC, etc.

b. Additional details of umpire control. See the following references:

- (1) Pertaining to Part I.

6d	8a(2)(a)1	8b(3)(c)
7b	8b	8b(3)(d)
7c	8b(1)(b)	9
7d	8b(2)(c)	10
8a(1)(a)	8b(3)(b)	11

(2) Pertaining to Part II:

Paragraphs 12b and 12c

(3) Pertaining to Part III:

Paragraphs	17	21a(2)(b)	21a(3)(d)
	18b(2)	21a(2)(c)	22
	21a(2)(a)	21a(3)(a)	

c. Umpire notes.

- (1) This test will be conducted by a headquarters higher than that to which the battalion is assigned.
- (2) Where practicable, tests will be run in an area other than one in which the unit being tested usually holds service practice.
- (3) Units being tested will be limited to T/O&E strength. Individuals will operate in regularly assigned T/O&E positions. Specific comment in the umpire's final report will indicate where the unit is under T/O&E strength and where assigned personnel are not present for duty during the test or have not been present prior to taking the test. Proper substitutions of personnel within the battalion being tested will be allowed where a T/O&E position is vacant because of understrength or absence.
- (4) The smooth-running of the test requires careful planning on the part of umpires, especially in regard to selection of targets and OP areas and their matching together and the necessity of choosing targets, in certain instances, that can be identified and located on the battle maps or photomaps being used.
- (5) The chief umpire and the battalion commander should coordinate their plans for the test during the planning stage in order that umpire control can be timed and fitted to the order in which the battalion desires to execute operations and missions.

- (6) A flash platoon from an observation battery or its equivalent is needed to provide survey, communications for umpires, and observation of fire to include the plotting of rounds fired for effect when required. In any case, a complete and separate communications system for umpires must be provided from sources outside the battalion being tested.
- (7) The placing of restrictions on units being tested which are not required either directly or by implication in the directive, should be avoided unless such restrictions are essential to safety or to proper grading.
- (8) In some parts of the test, several subjects are grouped under one subhead. These subjects are all important. It is not desired, however, that proportionate credit be given for proper performance in the subjects listed. Rather, it is desired that severe cuts be given for poor performance in any one subject.
- (9) Emphasis will be placed on combat realism and local security in rendezvous and position areas. Rendezvous areas, positions, OP's and CP's will be tactical. Serious violation of sound artillery procedure not specifically covered above will be penalized by a cut of not to exceed 10 percent in the grade given.
- (10) After the completion of a faulty registration which will affect subsequent firing, the chief umpire may, if requested by the battalion commander, allow the registration to be corrected. The grade for the faulty registration will be determined as specified for the grading.
- (11) There will be no restrictions on the types of communications used for any part of this test.
- (12) Armored, airborne, pack, and other specialized artillery will take this test with appropriate modifications to provide for differences in organization and equipment. This applies particularly to wire nets for armored units where equipment may be limited.
- (13) Where practicable, the chief umpire will conduct a critique of the test with all battalion officers and key enlisted personnel present. This critique will bring out any departure from combat realism necessitated by umpire control, safety, limitations of

terrain, and specific comments on the functioning of the units.

- (14) Where good battle maps and photomaps are available, the survey required for this test will be a minimum and will ordinarily be completed in sufficient time to be used as required. Where this is not the case, the chief umpire will adjust, as necessary, the overall time to fit the additional requirements of survey.

30. Umpiring for Test II:

a. Umpires. Their functions and responsibilities in connection with Test II, generally parallel these laid down for Test I in paragraph 29a, above.

b. Additional details of umpire control. See the following references:

Paragraphs	24a	26c(3)
	25a and b	26c(4)
	26b	26c(5)
	26b(3)	27g(2)(b)

c. Umpire notes:

- (1) The following subparagraphs of umpire notes, paragraph 29c, Test I, apply to this test: (2), (3), (6), (7), (8), (9), (11), (12), and (13).
- (2) The battalion to fire the high-angle mission (par. 26c(4)) will be designated by the chief umpire during Phase I of this test. Approximate coordinates within 500 yards of the target will be given to the battalion at the beginning of Phase II to enable them to plan the location of the CI. This is to enable the battalion to fire the "will adjust" mission with the same charge as the CI.
- (3) The number of umpires required for this test may vary according to types of units being tested and the training and availability. However, it is desirable to have:
 - (a) Umpire with each battalion.
 - (b) Umpires with each higher headquarters.
 - (c) Survey umpire.

SECTION V

REPORTS

31. Reports.

a. Reports should be submitted approximately as indicated below. Tests will be weighted as follows:

ALL BATTALIONS-TESTS I AND II

TEST I

	Grade
(1) Reconnaissance and selection of positions for the battalion and batteries, orders, and instruction of battalion and battery commanders for moving units from rendezvous. (Parts I and III--10 points; Part II--8 points.)	_____
(2) March from rendezvous to position area. (Parts I and II--2 points; Parts III--5 points.)	_____
(3) Occupation and organization of position. (Parts I, II and III--5 points.)	_____
(4) Two area missions. (Parts I and II only--10 points.)	_____
(4a) Selection and identification of the battalion base point by ground observer. (Part III only--10 points.)	_____
(5) Registration. Part I--18 points; Part II--15 points; Part III--10 points.)	_____
(6) Observed fire chart and one battalion concentration. (Parts I and II only--15 points.)	_____
(6a) Laying of batteries of battalion for direction on their base lines. (Part III only--10 points.)	_____
(7) Transfer to map or photomap. (Part I--10 points; Part II--8 points.)	_____
(7a) Correctness of location on map or photomap of visible targets by observer. (Part III only--10 points.)	_____

	Grade
(7b) Effectiveness of fire on four concentrations. (Part III only--10 points.)	_____
(8) Precision adjustment for destruction. (Parts I and II--4 points; Part III--10 points.)	_____
(9) CI registration. (Parts I and II--5 points; Part III--10 points.)	_____
(10) Determination of GFT setting. (Parts I and II only--3 points.)	_____
(11) Two transfers. (Parts I and II only-- 10 points.)	_____
(12) Counter-mortar radar team functioning. (Part II only--y points.)	_____
(13) Communications. (Part I and II--8 points; Part III--10 points.)	_____
Battalion grade for Test I. (Possible 100 points)	_____

TEST II

(1) Survey. (15 points)	_____
(2) Occupation, camouflage, and organization of position. (15 points)	_____
(3) Preparation of fire. (15 points)	_____
(4) Effect of fire. (30 points)	_____
(5) Night high burst and high-angle CI registration. (10 points)	_____
(6) Operation of fire direction center. (10 points)	_____
(7) Communications. (5 points)	_____
Battalion Grade for Test II (Possible 100 points)	_____

BATTALION GRADE FOR TWO TESTS.

Grade for Test I. (Times weighting factor in a, above.) _____

Grade for Test II. (Times weighting factor in a, above.) _____

Total 10

b. Brief comments will be submitted to accompany the report of grades for each unit. These comments will cover the outstanding performances and major deficiencies observed during the conduct of the tests. Comments will be arranged in accordance with the principal subdivisions of grading as shown above.

c. Battalion reports should be consolidated on similar forms for groups, headquarters corps artillery, or divisional artillery. Consolidated report will contain efficiency ratings for higher artillery headquarters (para 28) on the following subjects;

(1) Meteorological Sections. _____

(2) Survey Sections. _____

(3) Determination of Azimuth by Astronomical Observation and Computation. _____

(4) Survey and Coordination and Target Restitution. _____

(5) Speed and Accuracy of Fire Direction. _____

d. When weighted grade for both tests is below passing, unit should be retested in both tests. Retests should be given approximately three months after failing occurred, unless urgent reasons require that unit be tested earlier.

SECTION VI

AMMUNITION

32. Ammunition estimates.

Rounds Required by Battalion

	Light	Medium	Heavy
<u>a</u> . <u>Test I.</u>	<u>Arty</u>	<u>Arty</u>	<u>Arty</u>

(1) Part I:

Registration and
Destruction.

100

73

73

	Rounds Required by Battalion		
	<u>Light</u> <u>Arty</u>	<u>Medium</u> <u>Arty</u>	<u>Heavy</u> <u>Arty</u>
Area Fire Missions and Transfers.	90	90	70
Battalion Concentrations.	24	24	16
CI Registration.	<u>7</u>	<u>7</u>	<u>7</u>
	221	194	166

(2) Part II.

Same as part I for applicable calibers.

(3) Part III.8" Gun and 240-mm Howitzers

Precision Adjustments	22
CI Registration	7
Concentrations	16

Note. Above estimates are based on the batteries and battalions firing 2 volleys in fire for effect on area targets.

b. Test II.

	<u>Light</u> <u>Arty</u>	<u>Medium</u> <u>Arty</u>	<u>Heavy</u> <u>Arty</u>
High Burst Registrations.	14	14	14
*High-Angle Area Missions.	36	36	
Concentrations.	48	48	32
**TOT.	18	18	12
***Massed Fire.	36	36	24

Note.

* The adjusting battery will be issued ten (10) extra rounds for adjustment. One battery will be issued seven (7) extra rounds to fire high-angle CI. These extra rounds not included in the above figures.

** Based on four (4) gun batteries.

*** Adjusting battery will be issued ten (10) extra rounds not included in above.

[AG 353 (20 Feb 51)]

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

EDWARD F. WITSELL
Major General, USA
The Adjutant General

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Chief of Staff, United States Army

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ARMY TRAINING TEST) DEPARTMENT OF THE ARMY
NO. 6-5) Washington 25, D. C., 28 February 1951

TRAINING TEST
FOR
LIGHT AND MEDIUM FIELD ARTILLERY BATTALIONS
INVOLVING DISPLACEMENT AND CONTINUOUS FIRE SUPPORT

	Paragraph	Page
Section I. General- - - - -	1-2	1
II. Test - - - - -	3-7	1
III. Umpiring - - - - -	8	10
IV. Reports - - - - -	9	11
V. Ammunition - - - - -	10	12

SECTION I

GENERAL

1. General.
 - a. This test applies to all light and medium artillery battalions.
 - b. The test will be conducted in three phases as is outlined in Section II.
 - c. Maps. 1/62,500 or smaller scale for tactical use.
 - d. All problems will be fired by officers of battery grade and no officer will fire more than one problem.
 - e. The chief umpire will be responsible for safety.

2. Purpose. The purpose of this test is to determine the state of training of a light or medium field artillery battalion in a situation requiring continuous fire support and involving displacement by echelon.

SECTION II

TEST

3. Description of test. This test stresses the continuity of fire support within a battalion during displacement by echelon. Ex-

*This training test supersedes AFF TT 6-5, 1 September 1950.

execution of the test will require a rapid occupation of position by one battery for the purpose of taking under fire a target of opportunity. This will be followed by the prompt occupation of position by the remainder of the battalion, the registration of each battery, and the setting up of observed fire chart. When this has been accomplished, the battalion will be given a battalion mission requiring the adjustment of one battery and the massing of the battalion for effect. Following this mission, the battalion will be required to displace forward by echelon, the number of batteries in the first echelon being dictated by the tactical situation. While the first echelon is displacing, the second echelon will fire a mission, adjusted by a forward observer, using all available fire. As soon as the first echelon is in position and ready to fire and while the second echelon is displacing, a forward observer will be assigned a target requiring high-angle fire. Weapons inherently incapable of firing high-angle fire will fire low-angle fire. The Battalion will set up an observed fire chart in the new position by registering one battery on a base point and locating the other two batteries by means of a position area survey. The battalion will mass its fire on a target located by an air observer.

4. Preparations prior to test. When the test opens the battalion will be located in a suitable tactical rendezvous about two miles from the initial position area. The chief umpire will meet the battalion commander with his party. After giving the initial tactical situation, the chief umpire will determine by lot which battery is to be the leading battery. He will then cause this battery to take its position in the column of the combat team, after which he will guide the battery commander and his party to the assumed tactical location of the advance guard commander. The test starts at this point. Umpires will represent the infantry units. Normal forward observer and liaison parties will be sent out. After the leading battery has been determined, the battalion commander will maintain command liaison with the combat team commander (represented by the chief umpire). The other battalion and battery officers will rejoin their respective organizations.

5. Conduct of test. The test is conducted in three parts as follows:

a. Part 1.

- (1) At the tactical location of the advance guard commander, the chief umpire will indicate to the battery commander of the leading battery, the immediate tactical situation. An umpire will designate to a forward observer the location of a target which is holding up the advance. The forward observer will

request fire on the target. The leading battery will go into position and take the target under fire. The chief umpire will make such change in the position as is required by safety. The target designated should require time fire (VT fuze will not be used). Time commences when the target is designated to the forward observer.

(2) Upon the completion of the finding in (1), above, the chief umpire will develop the tactical situation so as to cause the remainder of the battalion to occupy position at once in the vicinity of the leading battery. Batteries will be registered on a base point selected by the battalion and the observed fire chart, time plot, will be built up. Batteries may be registered from such OP's and by such officers of battery grade as the battalion commander may designate, subject to the overall restriction that no officer will fire more than one problem.

(3) When the observed fire chart has been built up and communications have been established, the battalion will be assigned a target requiring time fire (VT fuze not to be used) on which it will adjust one battery and mass the battalion for effect. Part 1 ends with the completion of this concentration.

b. Part 2.

(1) Immediately upon the completion of Part 1, the chief umpire will further develop the tactical situation so as to cause the battalion to displace forward by echelon. The amount of displacement should be governed by the range of the weapon involved. The tactical situation should be varied from test to test so as to require the battalion commander to make a decision as to whether his first echelon should consist of one or two batteries. The battalion commander will reconnoiter the forward area, select positions, and issue orders for the displacement. The chief umpire will at this time make any changes in positions selected, including the position of a registering piece if the battalion commander elected to include one in his reconnaissance party, which are necessary to meet the requirements of safety.

(2) While the orders issued in (1), above, are being carried out, the battalion will be called on to fire a mission requiring all available fire. For

this mission, one of the remaining, or the remaining battery in case two batteries displace in the first echelon, will be adjusted by a forward observer on this target using fuze time or percussion. The second battery, if any, will be brought in for effect.

- (3) Part 2 will end when the first echelon has occupied position in the forward area and is ready to fire, provided the firing in (2), above, has been completed, otherwise on the completion of the firing.

c. Part 3.

- (1) Upon completion of Part 2, Part 3 starts. The battalion commander will issue the necessary orders for displacing the remainder of his battalion. While the remainder of the battalion is displacing, the umpires will designate one target to be taken under fire immediately. This target will be fired on by a single battery only and will require high-angle fire. VT fuze will not be used. For weapons exempt from firing high-angle fire (par. 3), a target suitable for low-angle fire will be designated.

- (2) Without interfering with the fire required in (1), above, the battalion will register one battery and build up the observed fire chart by use of battalion position area survey (See FM 6-40). The battalion will select the base point, and an officer of battery grade will be designated by the battalion commander to conduct the registration using cavitized shell. If a registering piece was included in the battalion commander's reconnaissance party as indicated in b(1), above, this registration may be made during Phase II. After the observed fire chart has been built up, one battery will be adjusted on a target from an air OP by one of the regularly assigned air observers. This adjustment will be followed by a battalion concentration. The target will be indicated to the observer by any suitable means such as by smoke puffs set off by remote control if possible. Part 3 will end with the completion of this mission.

6. Charts and records. The observed fire charts, any records of preparation of fire, or of fire commands kept at the FDC, and records of the battery recorders at the howitzer positions should be turned in to the chief umpire at the conclusion of the test.

7. Grading.

a. The performance of the battalion will be graded on the basis of 100. 70 is considered satisfactory. In grading the battalion, the following weights will be given the various parts of the test:

(1) Speed	15
Part 1	5
Part 2	5
Part 3	5
Total	15
(2) Reconnaissance, selection, occupation, and organization of position	15
Part 1	5
Part 2	6
Part 3	4
Total	15
(3) Communications	15
(4) Firing: Three battery missions (6 points ea.)	18
Four registrations	12
Two battalion missions	20
(5 points for adjusting battery and 5 points for effect of nonadjusting batteries in each case).	
Total	50
(5) Functioning of FDC	5
Total	100

b. Times will be recorded by umpires and used in judging speed as follows:

- (1) Part 1--two hours, full credit. For each 10 minutes or fraction thereof over two hours, cut 1 point.
- (2) Part 2--40 minutes, full credit. For each 10 minutes or fraction thereof over 40 minutes, cut 1 point.
- (3) Part 3--one hour and twenty minutes, full credit. For each 5 minutes, or fraction thereof over one hour and 20 minutes, cut 1 point.

c. Reconnaissance, selection, occupation, and organization of position will be judged on promptness and completeness of execution of the march, suitability of selection, orderliness of occupation, and smoothness and completeness of organization. All of the above elements should be judged in the light of the assumed tactical situation. Promptness in the opening of fire, and speed and accuracy in the delivery of the fire are paramount. Displacement must be planned so as to provide continuous fire support.

d. Communication (15 points) will be judged in all phases on the following:

- (1) General performance (5 point.) Communication plan, reconnaissance, utilization of personnel, care, and adequacy of equipment, and adherence to the principles of communication security.
- (2) Radio (5 points). Location of sets, adherence to rules of radio procedure, accuracy and speed of transmission, and availability when wire goes out.
- (3) Wire (5 points). Locations and installation of equipment, voice procedure, servicing of wire, and speed and accuracy of transmission.

e. Three battery area fire missions (one in each part) (18 points). Six points to be allotted to each mission. They will be graded as follows:

	<u>Obsr.</u>	<u>FDC</u>	<u>Total</u>
Accuracy of initial data	1	1	2
Speed of adjustment	See below		
Effect	No breakdown		4
Total			6

(1) Accuracy of initial data.

(a) Observer. 1 point

The observer's initial fire request should place the first volley within the observer's field of observation. If the first volley is sensed as "Lost" - No credit.

(b) FDC

1 point

The initial data computed by the fire direction should be accurate; i.e., from the initial plot, the HCO should read the deflection within two mils, and the range within twenty-five yards; the computer should read the elevation within one mil.

(2) Speed of adjustment.

In judging time for observed fires, time shown in the following table will be used for targets at short and medium ranges. Time will start when first round or volley is on the way. Time will stop when the battery has fired the first round of volley in fire for effect.

Type of Problem	Rating	TIMES		
		From announcement of initial "on the way" by FDC until first round in FFE "on the way"		
Low Angle Fire		75mm	105mm	155mm H
Precision & Area	Full Credit	10:00"	10:30"	11:00"
	No Credit	over	over	Over
		10:00"	10:30"	11:00"

Note. If the time exceeds that allowed for full credit, a full cut will be made depending on the type problem and total points allotted.

For high-angle fire, add the amount of the increase in the time of flight to the above times.

Time required for determination of zero height of burst will not be counted against individual problem, but will be included in overall time.

(3) Effect.

4 points

Effect of fire should be determined by plotting observations made by lateral observers to a scale not smaller than 1/10,000. Range and deflection errors will be determined therefrom and graded as follows: Only 1/2 of the grade for effect will be allowed if percussion fire with instantaneous fuze is used when suitable time fuzes are available for those targets calling for time fire. One battery salvo will be fired in fire for effect for determination of center of impact. This salvo is for use of umpires only. (Time will stop with report of ready to fire for effect).

- (a) Range (2.0 points). Effect for range (measured along gun-target line) will be graded as follows:

<u>Range error of CI from target</u>	<u>Credit</u>
50 yds + 2 PE	2.0
50 yds + 3 PE	1.6
50 yds + 4 PE	1.2
50 yds + 5 PE	0.3
50 yds + 6 PE	0.0

- (b) Deflection (2.0 points). Full credit for deflection will be given if the deflection error (measured from the CI perpendicular to the gun-target line) does not exceed 40 yards. When the deflection error exceeds 40 yards cut 0.5 points for each ten yards in excess of 40 yards.

- f. Four registrations. 12 points

Three points for each registration.

A full cut will be made if the time exceeds the time allowed in e(2), above.

Effect.

3 points

- (1) Deflection.

1 point

For Angles T less than 500 μ , allowable error is 2 μ .
Cut 0.25 point per mil in excess of 2 μ .

For Angles T greater than 500 μ , allowable error is 4 μ .
Cut 0.25 point per mil in excess of 4 μ .

- (2) Range.

1 point

No allowable error in adjusted elevation.
Cut 0.2 point per mil in error.

- (3) Adjusted time of burning.

1 point

Allowable error is 1/10 second.
Cut 0.5 point 1/10 second in excess of 1/10 second in error.

- g. Two battalion Missions.

20 points

Will be graded as follows:

Effect (each mission). 10 points

(a) Effect of adjusting battery (5 points) will be graded as prescribed in paragraph e above.

(b) Effect of non-adjusting batteries will be graded (5 points) as follows:

Effect will be determined by plotting observations made by lateral observers to a scale of not smaller than 1/10,000. Range and deflection errors relative to CI of adjusting battery will be determined therefrom, range errors being measured along the gun CI line, and deflection errors being measured from the CI of the non-adjusting battery perpendicular to the gun CI line.

Distance of CI of non-adjusting battery from CI of adjusting battery. (See note below)

(In range probable errors)	Cut
0-2	0
2-4	0-1
4-6	1-3
6-8	3-5

Cuts will be interpolated; for example, for an error of 5 probable errors, cut 2 points.

(c) Height of burst. When time fire or ricochet fire are employed, grade for effect as determined above will be modified for any error in height of burst in fire for effect as follows:

Credit	Height of Burst in Time Fire (**Exclusive of VT Fuzes.)	Air Burst in *Ricochet Fire (Time Fuzes Available)	Air Bursts in *Ricochet Fire (Time Fuzes Not Available)
100%	0 to 40 yards	75 to 100%	50 to 100%
75%	40 to 50 yards	50 to 75%	25 to 50%
30%	50 to 60 yards	30 to 50%	
No credit	Over 60 yards (All graze bursts)	Less than 30%	Less than 25%

ATT 6-5

*When ricochet fire is attempted and fails, no cut should be made provided, in the opinion of the umpire, conditions indicate a reasonable assurance of success and, upon the failure of an effective percentage of ricocheting rounds, fire was immediately changed to a more effective type. No additional time will be allowed. When ricochet fire is attempted and fails and when, in the opinion of the umpire, conditions did not indicate a reasonable assurance of success, a cut of 5 points should be made for poor judgment.

**Since the height of burst of the VT fuze ammunition cannot be controlled by the unit, height of burst will not be considered in grading problems when VT fuzes are used, except as follows:

Erratic functioning of fuzes.	No cut.
Failure to clear friendly occupied crest. (For failure to observe combat realism.)	Cut 5 points.

Note. A maximum cut of 5 points to be assessed. Each non-adjusting battery to be graded, but the maximum cut for problem to be 5 points.

h. In the event the mission fired during Part 2 is fired with two batteries, it will be graded on the basis of:

Area fire adjustment.	5 points.
Effect of non-adjusting battery	1 point.

i. Functioning of the fire direction center will be judged on teamwork, methods, accuracy, and speed.

SECTION III

UMPIRING

8. Umpiring.

a. Instructions to umpires contained in ATT 6-2 where applicable, apply to this test.

b. Where times are given, they are based on an assumption of favorable conditions of terrain and weather. The chief umpire will make suitable allowance for adverse conditions of terrain and weather that affect the performance of the battalion.

c. All requirements for high-angle fire indicated in this test will be changed to low-angle fire for those weapons inherently incapable of firing high-angle fire.

d. For additional details of umpire control see following the paragraphs: 1e, 4, 5a(1), 5a(2), 5b(1), 6, 7b, 7c.

SECTION IV

REPORTS9. Reports.

a. Reports will be submitted showing the grading of the battalion as indicated below.

Speed.

Part 1 (5)

Part 2 (5)

Part 3 (5)

Reconnaissance, selection, occupation, and organization of position.

Part 1 (5)

Part 2 (6)

Part 3 (4)

Communications (15)

Firing.

Three battery missions (18)

Four registrations (12)

Two battalion missions (20)

Functioning of fire direction center (5)

Total (Possible 100)

b. Brief comments, arranged in accordance with the principal subdivisions of grading as shown above, will be submitted to accompany the report of grades. Comments will cover the outstanding performances and major deficiencies observed during the conduct of the test.

SECTION V

AMMUNITION

10. Ammunition estimates: For estimated quantities of ammunition required for test see pertinent parts of paragraph 32 of ATT 6-2.

/AG 353 (20 Feb. 51)7

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

EDWARD F. WITSELL
Major General, USA
The Adjutant General

J. LAWTON COLLINS

Chief of Staff, United States Army

DISTRIBUTION:

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ARMY TRAINING TEST)
NO. 8-1)

DEPARTMENT OF THE ARMY
Washington 25, D. C., 28 February 1951

TRAINING TEST
FOR
BASIC MEDICAL SUBJECTS

	Paragraph	Page
General - - - - -	1	1
Nature - - - - -	2	1
Testing team - - - - -	3	1
Method of conducting test - - - - -	4	1
Grading - - - - -	5	3
Retests - - - - -	6	3

1. General. All companies and similar units will be tested.

2. Nature of test.

a. To determine proficiency of units and individuals in basic medical subjects set forth in current Army Training Program 21-1.

b. The test is divided into four parts--

(1) Part 1--Practical test of march and bivouac hygiene and sanitation.

(2) Part 2--Practical test in first aid.

(3) Part 3--Theoretical test in hygiene, sanitation, and communicable diseases.

(4) Part 4--Personal adjustment.

3. Testing team. The testing team will include at least one medical officer. No member of unit being tested will be detailed to the team.

4. Method of conducting test.

a. Part 1. The unit conducts a march of at least 10 miles to a previously reconnoitered area, establishes an overnight tactical bivouac, and strikes the bivouac the following day. The bivouac area is selected by the company commander within a general prescribed area which is assumed to be malarious and out of range of hostile artillery fire. Enemy air is active. Available water is assumed not to be potable.

At least two hot meals will be served in bivouac. The unit will be graded on the following:

- (1) Preparation and conduct of the march.
- (2) Selection of camp site.
- (3) Layout and sanitation of bivouac, mess and latrines.
- (4) Water discipline.
- (5) Malaria discipline.
- (6) Striking camp, police, filling and marking of pits.

b. Part 2. Realistic day and night situations will require the prompt application of appropriate first aid measures. In each situation, approximately the same casualties should be assessed in each platoon or other subdivision. The umpire assessing the casualty will describe symptoms to those individuals in immediate vicinity. It should be impressed on each individual that the number of casualties assessed are far in excess of battle experience and are for the purpose of test only.

- (1) First situation. During the march, unit is attacked by mustard gas from airplane. Casualties should require first-aid measures for minor and major burns. Some clothing and equipment is contaminated.
- (2) Second situation. During the night the bivouac is raided by a hostile patrol. The enemy employs both small arms and WP grenades. Shortly after unit occupies defensive positions, the raiding party withdraws. Casualties will include various gunshot wounds, lacerations, simple and compound fractures, and phosphorus burns.

c. Part 3. The situation will be nontactical during this part of test. Each subdivision of unit will be given an oral examination in first aid and sanitation as contained in current Military Training Program 21-1. Answers will be required primarily of privates and privates first class. In case of an incomplete or unsatisfactory answer, an officer or noncommissioned officer of unit will be required to give brief instructions to unit in that subject.

d. Part 4. The personal adjustment rating is based on the AWOL, venereal, and psychoneurosis rate for the preceding six months. A company which has an abnormally high rate, considering the type of personnel and the environment, will be rated unsatisfactory.

5. Grading. Companies will be graded satisfactory or unsatisfactory in each part of the test. A grade of 70 per cent in Parts 1, 2, and 3 is considered satisfactory.

6. Retests. A company which fails in Part 1, 2, and 3 will be given additional instructions and will be retested within one month, or as soon thereafter as practicable. If a company is rated unsatisfactory in Part 4, the officers and noncommissioned officers will be given additional instructions. Such other corrective action will be taken as indicated.

AG 353 (20 Feb 51)

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

EDWARD F. WITSELL
Major General, USA
The Adjutant General

J. LAWTON COLLINS

Chief of Staff, United States Army

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(5); Special distribution.

ARMY TRAINING TEST)
NO. 17-1)

DEPARTMENT OF THE ARMY
Washington 25, D. C., 28 February 1951

TRAINING TEST
FOR
TANK PLATOON, MEDIUM
OR HEAVY TANK COMPANY (T/O&E 17-27N and 17-37N)

	Paragraph	Page
SECTION I. General - - - - -	1-5	1
II. Test- - - - -	6-9	2
Part 1--Offense - - - - -	6-7	2
Part 2--Defense - - - - -	8-9	4
III. Umpiring- - - - -	10-12	5

SECTION I

GENERAL

1. Reference. FM 17-32.

2. Purpose. The purpose of this test is to determine the status of training of tank platoons under conditions which simulate those of a typical combat mission.

3. Application. This test applies to tank platoons, medium or heavy, of tanks companies of armored division, armored cavalry regiments (light), and separate tank battalions.

4. Nature of test. This test is divided into two parts:

a. Part 1. The reinforced tank platoon, as part of a battalion maneuver force, makes an attack of an enemy-held terrain feature, mops up remaining enemy resistance, and reorganizes on the objective. This part will include a combat firing test with live ammunition.

b. Part 2. The reinforced tank platoon, as part of a reinforced tank company, organizes a critical terrain feature as a platoon strong point, and prepares to take part in a mobile defense by the larger unit. This will be a nonfiring part.

5. Administrative details.

a. Maps. The preferred scale of the maps used in the exercise is 1:25,000. Aerial photos, if available.

*This training test supersedes AFF TT 17-27(P) (37P), 8 January 1951.

b. Troops.

- (1) Tank platoon which is to be tested.
- (2) Infantry rifle platoon, armored infantry rifle platoon, or reconnaissance platoon.
- (3) Artillery battery, if available. Forward observer with company.
- (4) Control and range personnel.

c. Ammunition and Targets.

- (1) Ammunition. Ammunition to be issued to tank platoon as follows: cartridge, caliber .30, ball and tracer, 4 to 1, MLB, 500 rounds per tank; 5 rounds HE per tank gun if facilities permit firing, (to be used only during offensive part).
- (2) Targets. (To be used only during offensive part.)
 - (a) Targets representing enemy infantry will be prone-type silhouettes.
 - (b) Targets representing enemy machine guns will be two prone-type silhouettes placed side by side.
 - (c) Targets representing enemy antitank guns will be kneeling-type silhouettes.

d. Completion of test. The offensive part terminates after the reinforced tank platoon captures its portion of the objective and organizes to defend against an enemy counterattack. The defensive part terminates after the reinforced tank platoon has been placed in position to defend the strong point against enemy attack.

SECTION II
TEST
PART 1--OFFENSE

6. General.

a. The reinforced tank battalion has been given the mission of seizing a hill mass which is defended by strong enemy forces. The battalion commander decides to attack with two reinforced tank companies abreast and a base of fire furnished by the remainder of the reinforced battalion and the artillery.

b. The tank platoon, with a platoon of infantry attached, is an interior platoon of one of the maneuvering companies. The reinforced tank platoon has the mission of advancing and seizing its assigned portion of the objectives (separate hill, if terrain permits), which is approximately 2000 yards to its front from the line of departure. Reconnaissance elements have reported that the intervening ground is defended by enemy infantrymen and antitank gun positions. One antitank gun and one machine gun position have been definitely located.

7. Conduct of test and requirements. The tank platoon leader receives the company oral attack order from the chief umpire. The company order will require decisions, plans, and orders of the platoon leader for the employment of the reinforced tank platoon. The platoon leader should alert his unit, and, together with the infantry platoon leader, go forward on a reconnaissance. Following this reconnaissance, he should return to the platoon area, issue his oral order, and move out in the attack on order of the chief umpire. The tanks should lead the attack, firing at definitely located targets and targets of opportunity. After reaching the objective, the tanks cease firing and clear guns, the attached infantry pass through the tanks to mop up remaining resistance, and the reinforced platoon takes appropriate positions to meet enemy counterattacks. The tank platoon will be tested for--

- a. Warning order.
- b. Reconnaissance and plan of attack.
- c. Attack order.
- d. Control.
- e. Accuracy and distribution of fire.
- f. Use of cover and concealment.
- g. Concentrations of fire on known and suspected enemy locations.
- h. Action on the objective.
- i. Reporting of situations to company commander.

PART 2--DEFENSE

8. General.

a. The reinforced tank battalion has been attacking through enemy territory. It has now been halted and ordered to take up a defensive position. The battalion commander decides to establish a series of strong points with two reinforced tank companies, and to hold the remainder of the battalion in a mobile reserve.

b. The tank platoon, with a platoon of infantry attached, is given the mission of organizing a strong point in the outpost system. A critical terrain feature is designated for the location of this strong point. This should be on different terrain than that used in offensive part.

9. Conduct of test and requirements. The tank platoon leader receives the company oral order from the chief umpire. The company order will require decisions, plans, and order of the platoon leader for the employment of the reinforced tank platoon. Information has been received that a strong force of enemy tanks and infantry is concentrating for an attack. The tank platoon leader alerts his unit, and, together with the infantry platoon leader, goes forward on a reconnaissance to the designated critical terrain feature. He then returns to his area and issues his oral order, after which the reinforced platoon moves to occupy the strong point on order of the chief umpire. The defensive position is organized to include the placing of tanks, dismounted infantry, and carries in their proper locations. The tank platoon will be tested for--

- a. Warning order.
- b. Reconnaissance and plan of defense.
- c. Defense order.
- d. Movement from assembly area to designated strong point.
- e. Selection of positions.
- f. Occupation of positions.
- g. Coordination with adjacent strong points.
- h. Establishment of observation post.
- i. Reporting status and dispositions to company commander.

SECTION III

UMPIRING

10. General.

a. The test is umpired by one officer, chief umpire, one officer, assistant umpire, for the tank platoon and one officer, assistant umpire, for the attached infantry rifle platoon. Umpires will not be from the same unit being tested nor from units scheduled to take the same test over the same terrain. Umpires should have experience with armor.

b. Explosive noises will be used under umpire control to represent enemy artillery fire during the offensive phase.

c. Umpire control will be in accordance with FM 105-5.

d. Paragraph 12 (umpire check list) will be studied by all umpires prior to the start of the test and is to be used as a guide in rating.

e. Tank platoons being tested will be rated excellent, satisfactory, or unsatisfactory.

f. Rating will not be done while a part of the test is in progress, but at the end of each part umpires will confer, determine, and record the rating. The umpire check lists (par. 12) used as a guide in preparing the reports required, will be submitted with the rating report.

g. Senior umpires will conduct a critique following completion of the test. All participating troops will attend this critique.

11. Reports and retests. The performance of each tank platoon is rated and a report submitted covering the following:

a. A general rating of excellent, satisfactory, or unsatisfactory and for each of the two parts.

b. A brief description of the over-all performance of the tank platoon.

c. A brief statement of outstanding performance.

d. A brief statement of major deficiencies.

e. Recommendations for further training if needed.

ATT 17-1

f. A brief report of realism in the actual performance of the test.

g. Consolidation of comments from all umpires.

h. A report of attached infantry and how utilized by the tank platoon leader.

i. A tank platoon which fails in either part (offense or defense) will be retested on different terrain in the part which it fails.

12. Umpire check lists.

a. Part 1--Offense.

<u>Item</u>	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(1) <u>Tactics.</u>			
(a) <u>Troop leading.</u>			
<u>1.</u> Warning order.	5	—	—
<u>2.</u> Reconnaissance.	10	—	—
<u>3.</u> Decision.	10	—	—
<u>4.</u> Time required to make decision, formulate plan, and issue attack order.	10	—	—
<u>5.</u> Brevity, clearness, and practicability of attack order.	15	—	—
<u>6.</u> Did all members of reinforced platoon understand when, where, and how the attack was to be made? Did each man know the particular part he was to play?	25	—	—
<u>7.</u> Control of attack by proper formation, fragmentary orders by radio, and arm and hand signals.	25	—	—

Item	Weight	Cut	Score
8. Actions and orders at objective.	25	—	—

(b) Execution by unit as a whole.

1. Speed of execution of orders.	15	—	—
2. General character of execution.	15	—	—
3. Prompt engagement of targets.	15	—	—
4. Maintaining of platoon formation.	15	—	—
5. Selection and occupation of positions on objective.	15	—	—

(2) Technique.

(a) Use of cover and concealment.	25	—	—
(b) Maintaining of radio discipline.	25	—	—
(c) Fire orders.	15	—	—
(d) Fire control.	20	—	—
(e) Distribution of fire.	20	—	—
(f) Proper use of attached infantry.	20	—	—

(3) Effectiveness of fire.

(a) Percent of targets hit.	150	—	—
1. Antitank and machine gun targets:			

No of targets hit = _____
 No of targets

2. Personnel targets:

No of targets hit x 3 = _____
 No of targets _____

(Maximum % is 100. Therefore, any % greater than 100 will be recorded as 100).

3. Score = average of percentages in 1 and 2 x $1\frac{1}{2}$ _____.

- (b) The remaining 25 points will be awarded the platoon as a bonus on the basis of total number of hits on all targets; taking in consideration the number of rounds of ammunition fired, and the manner in which the silhouette targets were positioned in the area of advance and on the objective. 25 _____

Total Part 1 - -500
 Excellent - -425
 Satisfactory - -350
 Unsatisfactory,
 Below- - - -350

b. Part 2--Defense.

Item	Weight	Cut	Score
(1) Troop leading.			
(a) Warning order.	5	—	—
(b) Reconnaissance.	10	—	—
(c) Decision.	10	—	—
(d) Time required to make decision, formulate plan, and issue defense order.	10	—	—
(e) Brevity, clearness, and practicability of defense order.	15	—	—

<u>Item</u>	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(f) Did all members of reinforced platoon understand why, when, where, and how the mobile defense was to be executed? Did each man know the particular part he was to play?	25	—	—
(g) Control of movement from assembly area to platoon strong point.	15	—	—
(h) Supervision of occupation of positions by tanks and infantry.	25	—	—
(i) Coordination with adjacent strong points.	25	—	—
(j) Establishment of observation post.	10	—	—
(k) Routes to be used in supporting adjacent strong points or when evacuating strong point.	10	—	—
(l) Reporting of status and dispositions to company commander.	15	—	—
(2) <u>Execution by reinforced tank platoon.</u>			
(a) Movement from assembly area to platoon strong point.	100	—	—
(b) Speed in occupying positions.	25	—	—
(c) Use of defiladed positions by tank crews.	25	—	—
(d) Use of cover and concealment.	25	—	—
(e) Selection of alternate and supplementary positions by tank commanders.	25	—	—
(f) Tank fields of fire.	25	—	—

ATT 17-1

ATT 17-1

Score	Weight	Item	Weight	Cut	Score
		(g) Mutual support between tanks.	25	—	—
		(h) Coordination of fires with attached infantry.	25	—	—
		(i) Preparation of range cards.	25	—	—
		(j) Covering of road blocks, mine fields, and other obstacles by tank fire.	25	—	—
		Total Part 2 - - - - -	500		
		Excellent - - - - -	425		
		Satisfactory - - - - -	350		
		Unsatisfactory, Below -	350		

/AG 353 (20 Feb 51)7

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL: J. LAWTON COLLINS
 EDWARD F. WITSELL Chief of Staff, United States Army
 Major General, USA
 The Adjutant General

DISTRIBUTION:
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ARMY TRAINING TEST)
NO. 17-2)

DEPARTMENT OF THE ARMY
Washington 25, D. C., 28 February 1951

TRAINING TEST
FOR
TANK COMPANY (T/O&E 17-27N and 17-37N)

		Paragraph	Page
SECTION	I. General-----	1-5	1
	II. Test-----	6-11	3
	Part 1--Movement-----	6-7	3
	Part 2--Offense-----	8-9	6
	Part 3--Defense-----	10-11	8
	III. Umpiring-----	12-14	10

SECTION I

GENERAL

1. References. FM's 7-17, 17-32, and 17-33.
2. Purpose. The purpose of this test is to determine the status of training of tank companies under conditions which simulate those of a typical combat mission.
3. Application. This test applies to all medium and heavy tank companies organic to the armored division. When modified by substituting motorized infantry or reconnaissance units for armored infantry, this test is applicable to tank companies of nondivisional tank battalions and to tank companies of reconnaissance battalions.
4. Nature of test. This test is divided into three parts and must be proceeded by the test for the tank platoon and armored infantry platoon.
 - a. Part 1. This part of the tank company test includes preparation for and conduct of a tactical march to an assembly area, occupation of the assembly area, preparation for the attack, and movement to the attack position.
 - b. Part 2. This part includes the fire and maneuver of the reinforced tank company in the attack of assigned objectives as part of the reinforced tank battalion, the use of supporting fires, and the reorganization of the reinforced tank company on the objective.

*This training test supersedes AFF TT 17-27 (37), 8 January 1951.

c. Part 3. This part includes the organization, occupation, and conduct of the mobile defense by the reinforced tank company, and the use of supporting artillery fires.

5. Administrative details.

a. Maps. Maps of scale 1/25,000 and air photos of the same or larger scale should be used.

b. Troops.

- (1) 1 medium (or heavy) tank company.
- (2) 1 armored infantry platoon.
- (3) 1 artillery forward observer.
- (4) Control and range personnel.
- (5) Necessary umpire personnel.

c. Ammunition and targets.

- (1) Basic load of ammunition should be issued to the tank and armored infantry elements; specified number of rounds to be issued to the supporting artillery.
- (2) Targets simulating enemy tanks as well as silhouette targets should be placed in suitable places between the attack position and the first assigned objective, as well as on the flanks and the objective proper.
- (3) Explosives should be buried along the zone of attack, to simulate enemy fires and enemy antitank mines.
- (4) Blank ammunition of a specified number of rounds should be issued to the tank and armored infantry elements and to the Aggressor tank platoon.

d. Supply.

- (1) Part 1. In this part, the problem of supplying tanks and armored infantry personnel and equipment should be played from an ammunition, gasoline and lubricant, ration and water aspect, as the normal procedure prior to attacking an organized position.

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- (2) Part 2. In this part, the resupply of ammunition to the tanks and armored personnel carriers, and the evacuation of disabled vehicles should be played.
- (3) Part 3. In this part, emphasis should be placed on normal resupply of ammunition and rations during hours of darkness.

e. Miscellaneous.

- (1) Prisoners of war. This problem should be played in the second and third parts of the test.
- (2) Evacuation of disabled vehicles. This problem should be played in the second part of the test, and repeated in the third part.
- (3) Maintenance. This problem should be played in the first and third parts of the test, as applies to vehicles, weapons, and radios.
- (4) Communication. This problem should be played throughout the test, to insure that the company is trained to establish proper communication by radio and other means prior to the attack, and to re-establish communication during the attack and during the reorganization on the objective.

f. Completion of test. This test terminates on umpire signal only after the reinforced company commander has indicated satisfactorily to the umpire what his actions and orders will be when the mobile reserve of the higher commander counterattacks a hostile threat being made against a strong point on the reinforced tank company's flank.

SECTION II

TEST

PART 1--MOVEMENT

6. General.

a. Initially the test will concern itself with the intact medium (or heavy) tank company alone, without attachments. The general situation at the beginning of the test is as follows: The armored division, of which the tank company being tested is a part, has been refitting in a rear area, performing necessary resupply, maintenance, and rehabilitation activities prior to resuming the offense. Throughout the test, the tank company being tested will be considered to be

operating as part of a tank battalion or reinforced tank battalion. Upon arrival in the designated battalion assembly area, one armored infantry rifle platoon will be attached to the intact medium (or heavy) tank company being tested, thereby forming a reinforced tank company.

b. The tank battalion commander (chief umpire) will assign the following mission to the tank company being tested:

- (1) Conduct of a tactical march under battalion control from present rest area position to an assigned portion of a designated battalion assembly area.
- (2) Prepare for an attack through forward infantry elements after arrival in the assigned assembly area.
- (3) Move under battalion control to a designated company attack position on battalion order.

7. Conduct of test and requirements. Immediately prior to starting the test, the company commander of the tank company being tested should be appraised of the over-all sequence of events of this part of the test, which are as follows:

Note. Chief umpire will refer to appropriate umpire check list for scoring and for essential actions and orders expected of the tested company commander.

a. Receipt of warning order. The tank company is in the rest area performing resupply, maintenance, and rehabilitation activities. The tank company commander receives a warning order from the tank battalion commander (the chief umpire) to the effect that the battalion will make a tactical march from the rest area to an assembly area within the next _____ hours, and that company commanders will report to the battalion CP at _____ hours to receive the battalion commander's oral march order.

b. Receipt of battalion march order. At the appointed time and place, the chief umpire will then issue the battalion oral march order, to include the following items: enemy and friendly situation, mission, route to the assembly area, composition of advance party and time of reporting to battalion CP, marking of route by battalion, march formation wherein the company being tested is designated to follow another company, designation of the battalion IP, rate of march, security measures during the march, methods of resupply during the march, designation of battalion regulating point, and disposition of trains. It will be noted that the tested unit's SOP will govern on the following: march distances between vehicles, use of phase lines, and halts during the march to the assembly area.

Note. An assistant umpire should accompany the advance party from the company, using the appropriate umpire check list for scoring and for essential actions expected of the company advance party in the assembly area.

c. Issuance of company march order. Upon completion of the tank battalion commander's march order and completion of necessary reconnaissance and planning by the company commander and his assistants, the tank company commander will be required by the umpire (only if the company commander neglects or otherwise indicates that he has no intention of so doing on his own initiative) to issue a complete oral march order to the following minimum key personnel: the company executive or motor officer, the platoon leaders, and the first sergeant.

d. Conduct of tactical march. Either by prearranged signal or time prescribed by the battalion commander (chief umpire) or on signal from the company liaison agent with the preceding company of the battalion column, the tank company being tested should be formed and ready to cross the battalion IP. The tactical march will be considered terminated when the last vehicle of the company crosses the designated battalion regulating point.

e. Occupation organization of assembly area. Members of the company advance party meet the company at the previously designated battalion regulating point and lead the company into its assigned portion of the battalion assembly area.

f. Preparation for the attack. As soon as the chief umpire is satisfied with the tactical organization of the company in the assembly area, he (acting as the tank battalion commander) will issue his oral attack order. The following situation will apply throughout the preparation for and conduct of the attack phases: Forward infantry elements are to seize critical terrain features through which the armored division will attack with combat commands abreast, with the mission of seizing and securing a relatively close-in objective (10,000-15,000 yards), prepared to continue to the corps objective on corps order; enemy positions are strongly organized, but lack depth except for reserve elements well in rear of the present line of contact; identified enemy reserves which can affect the armored division's attack consist of one infantry regiment reinforced with one battalion of 25 medium tanks; unconfirmed enemy reserves include one tank regiment of 75 medium tanks. The reinforced tank battalion, of which the reinforced tank company being tested is a part will lead one of the combat commands, employing two reinforced tank companies abreast and the third reinforced company in reserve. Based upon this situation, the oral attack order should clearly indicate the following items; the task organization of the battalion and reinforced companies, to include the attachment in the assembly area or one armored infantry rifle platoon to the tank company being tested; the enemy situation and the friendly situation, to include

flank units operating adjacent to the tested company, supporting artillery and air, and the infantry unit through which the tested company will attack, as well as any supporting fires prearranged with this infantry unit; the battalion mission, time and place of attack, and general scheme of maneuver for accomplishing the mission; necessary details of coordination, such as location of attack position, formation, line of departure, axis or zone, employment of the battalion reconnaissance platoon to guide the tested company through the forward infantry elements; the specific tactical task assigned the tested company, to include intermediate or successive objectives as well as final objective for the company and for the battalion; the tasks of all other organic or attached tactical elements of the battalion; supply and administrative matters such as location of the aid station; and signal communication instructions as well as location of the battalion command group during the attack. Upon completion of his oral attack order, the reinforced battalion commander (chief umpire) will assign an assistant umpire to accompany the armored infantry rifle platoon attached to the tank company being tested. Also, if possible, a forward observer from the direct support armored artillery should be with the tank company. If this is not possible, another assistant umpire should act as the artillery forward observer. At either a prescribed time or at the discretion of the chief umpire, the now-reinforced tank company commander will be required to issue his company oral attack order to his assembled key subordinates.

g. Movement to the attack position. The reinforced tank battalion commander (chief umpire) will initiate movement of the reinforced tank company from the assembly area along the prescribed route to the designated attack position by means of a message carried to the company commander by the company liaison agent. As soon as the entire reinforced tank company is closed in the assigned attack position and local security measures have been taken, the first part of the test (movement) will be considered terminated.

PART 2--OFFENSE

8. General.

a. The situation discussed in paragraph 7f will apply in this part of the test. The reinforced tank company is in the assigned attack position, ready to attack on order from the reinforced tank battalion commander (chief umpire). Guides will have been prearranged by battalion to direct the company through frontline infantry elements, preferably through infantry platoon or company gaps.

b. The reinforced tank battalion commander (chief umpire) assigned the reinforced tank company being tested the following mission in his oral attack order:

- (1) Attack in line formation on battalion order through forward infantry elements to seize and secure objective 1 (blank ammunition only).
- (2) Be prepared to continue the attack on battalion order to seize and secure objective 2 (tanks firing live ammunition).
- (3) Be prepared to continue the attack from objective 2 to seize and secure a portion of the corps objective on battalion order (blank ammunition only).

9. Conduct of test and requirements. Immediately prior to ordering the reinforced tank company to move out from the attack position, the chief umpire will ensure that the company commander understands clearly his mission and also that the company commander has positively identified on the map (or ground, if possible) his first assigned objective. Then, the chief umpire will ensure that the company commander is aware of the following sequence of events in this part of the test.

a. Movement out of the attack position. On signal from the reinforced tank battalion commander (chief umpire) the reinforced tank company will move out of the attack position, pass through the front-line infantry elements, and cross the line of departure.

b. Attack on first assigned objective. Immediately upon crossing the line of departure, the fire and maneuver phase begins. It will be noted that the company being tested is assumed to be attacking as part of the battalion maneuvering force, and will consequently be concerned with movement in mass as a deployed company, that is maneuvering its platoons over the best available terrain approaches to seize and secure the first assigned objective. However, to cause the company to employ movement by bounds before finally seizing the first assigned objective, a platoon of Aggressor-marked tanks (or several self-propelled guns) should be located in tactically sound positions to simulate enemy tanks or antitank guns by firing blank ammunition. An assistant umpire should be located with these simulated enemy tanks or antitank guns.

c. Use of supporting fires. During the preparation for the attack phase, certain coordination was (or should have been) made concerning the use of supporting weapons, to include fires from the uncommitted tank company if so planned, and assault gun and artillery fires as well as any fires available from the front-line infantry mortars, tanks, and machine guns in the initial attack by the reinforced tank company. The purpose of this part of the test is to insure that the reinforced tank company commander knows how to obtain these supporting fires, and secondly that he knows how and when to use them in mass to assist him in seizing and securing his objective.

d. Reorganization on the first assigned objective. The purpose of this phase of the test is to ensure that the company being tested takes the proper action on the objective and that it rapidly reorganizes so that it can hold the objective against enemy counter-attack or continue the attack to the next assigned objective, if so ordered by the battalion commander. A platoon of tanks with Aggressor markings and supplied with blank ammunition should at this time simulate an enemy counterattack against the reinforced tank company on the first objective.

e. Continuation of the attack. On signal from the reinforced tank battalion commander (chief umpire) the reinforced tank company will be ordered to attack objective 2. During this phase, tanks will fire live ammunition, as will supporting artillery. The chief umpire will prior to this time explain to the company commander that the right (or left) flank company of the battalion has secured its objective and has been ordered by the battalion commander to support by fire from present position the attack on objective 2 to be made by the company being tested.

f. Reorganization on the second assigned objective. Upon completion of the reorganization on the second assigned objective, the reinforced tank battalion commander (chief umpire) will order the reinforced tank company being tested to assume the mobile defense of an assigned area, thereby concluding the offensive part of the test. Resupply of ammunition and evacuation of disabled vehicles are to be played in this part.

PART 3--DEFENSE

10. General.

a. At an early time during the reorganization on the second assigned objective, the reinforced tank battalion commander (chief umpire) will inform the reinforced tank company commander that the following mobile defense situation now exists: The reinforced tank battalion has been ordered by the combat command commander to hold a portion of the sector assigned the combat command by the armored division commander; that the mission requires that all companies of the battalion be employed to organize and defend the assigned area from strong points which the battalion commander will designate; that the combat command will hold out one reinforced battalion as the mobile reserve (counter-attack force), and that the enemy is capable of attacking at any time with a force of 75 medium tanks reinforced with infantry, supported by 2 battalions of light artillery and one battalion of mortars.

b. The reinforced tank battalion commander (chief umpire) will

assign the following mission to the reinforced tank company: Organize and defend without delay from the three strong points indicated in the vicinity of objective 2.

11. Conduct of test and requirements. The chief umpire will inform the reinforced tank company commander of the following sequence of events in the defensive part of the test:

a. Organization and occupation of strong points. As soon as the reinforced tank battalion commander (chief umpire) has selected and designated the three strong points to be organized by the reinforced tank company, the company will be ordered to begin the defensive part of the test. The three strong points selected by the chief umpire should dominate the likely enemy approaches into the area to be defended, should be located on critical terrain features, and from right flank to left flank the assigned company sector should be at least 2000 yards wide to ensure that all three strong points are not mutually supporting by fire. In as much as three strong points are desired, the area selected should provide sufficient avenues of enemy approach to require three strong points.

b. Supporting artillery fires. The purpose of this phase of the test is to insure that the reinforced tank company commander knows how and where to employ the available supporting fires of the direct-support artillery. During this phase of the test, an assistant umpire should accompany the artillery forward observer while the reinforced tank company commander plans his defensive fires.

c. Conduct of the mobile defense. At a given signal the chief umpire will cause a reinforced tank platoon (representing a larger force) bearing Aggressor markings to attack one of the reinforced tank company strong points. For this phase of the test, the reinforced tank company will be supplied with blank ammunition. At an appropriate time during the attack by the Aggressor force, the chief umpire will indicate to the reinforced company commander that the combat command mobile reserve is moving to counterattack this simulated strong Aggressor force threatening to penetrate the company area. After pointing out the direction of the mobile reserve's counterattack, the chief umpire will ask the company commander for his actions and orders.

d. Termination of test. The chief umpire will inform the reinforced tank company commander and all other necessary personnel that the test is officially terminated.

SECTION III

UMPIRING

12. General.

a. Qualifications and detailed assignments of umpire personnel follow:

- (1) Senior umpire. Qualified armored officer of field grade with responsibility for testing the status of training of the tank company.
- (2) Assistant umpire. To accompany the armored infantry rifle platoon when attached to the tank company in the assembly area; should be qualified armored infantry captain.
- (3) Assistant umpire. To accompany the armored field artillery forward observer; should be qualified armored field artillery 1st Lt or Captain.
- (4) Assistant umpire. To accompany the company advance party; should be qualified armored lieutenant.
- (5) Assistant umpire. To accompany the Aggressor reinforced tank platoon in the Aggressor attack and counterattack, and also to accompany the Aggressor tanks or self-propelled guns located in the vicinity of objective 1; should be qualified armored lieutenant.
- (6) Assistant umpires. To accompany each of the tank platoons; should be qualified armored lieutenant or captain.

b. Explosive noises will be used under umpire control to represent enemy artillery fire, etc. (Simulated enemy action will be controlled by the senior umpire.)

c. Umpire control will be in accordance with FM 105-5.

d. Paragraph 14 (umpire check list) will be studied by all umpires prior to the start of the test and is to be used as a guide in rating.

e. The tank company being tested will be rated excellent, satisfactory, or unsatisfactory.

f. Rating will not be done while a part of the test is in progress but at the end of each part, umpires will confer, determine

and record the rating. The umpire check lists (par. 14) used as a guide in preparing the reports required will be submitted with the rating report.

g. Senior umpires will conduct a critique following completion of the test. All participating personnel of the tank company, the attached armored infantry rifle platoon, the armored field artillery forward observer, and other desired participating personnel will attend this critique.

13. Reports and retests.

a. The performance of the tank company is rated and a report submitted covering the following:

- (1) A general rating of excellent, satisfactory, or unsatisfactory and for each part.
- (2) A brief description of the over-all performance of the tank company.
- (3) A brief statement of outstanding performance.
- (4) A brief statement of major deficiencies.
- (5) Recommendations for further training if needed.
- (6) A brief report of realism in the actual performance of the test.
- (7) Consolidation of comments from all umpires.
- (8) A report of the armored infantry rifle platoon and the supporting armored field artillery and how utilized by the tank company commander.

b. A tank company which fails in any part will be retested on different terrain in the part in which it fails.

14. Umpire check list.

a. Part 1--Movement.

- | <u>(1) Tactical Marches.</u> | <u>Weight</u> | <u>Cut</u> | <u>Score</u> |
|--|---------------|------------|--------------|
| (a) For failure of the company commander to issue a warning order to key personnel | | | |

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
promptly upon receipt of the battalion warning order.	<u>10</u>	<u>5-10</u>	<u> </u>
(b) For failure of the company commander to use his key subordinates in preparing for the march.	<u>5</u>	<u>5</u>	<u> </u>
(c) For failure to use company liaison agent to contact the preceding company or unit in the battalion march column prior to its moving out.	<u>5</u>	<u>5</u>	<u> </u>
(d) For failure of the company commander either personally to make or otherwise have made a reconnaissance of the route from present position to the designated battalion IP.	<u>10</u>	<u>10</u>	<u> </u>
(e) For failure of the company commander to check or have checked by the platoon leaders the maintenance, supply, and loading of vehicles prior to the march.	<u>5</u>	<u>5</u>	<u> </u>
(f) For failure of the company commander to make a <u>map</u> reconnaissance of the route of march.	<u>5</u>	<u>5</u>	<u> </u>
(g) For failure to issue a march order, or for the march order to include: (give credit for items included in the unit SOP) formation, destination, time, date, advance party, I.P., R.P., route, rate of march, maximum speeds, distances, halts, and measures for air security, ground security, communications security, supply, maintenance,			

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
vehicular evacuation, refueling, and medical evacuation.	<u>50</u>	<u>5-50</u>	<u> </u>
(h) For each vehicle commander who is not alert during the march or at a halt.	<u>20</u>	<u>5</u>	<u> </u>
(i) For each failure of a vehicle to keep the specified distance during the march.	<u>20</u>	<u>5</u>	<u> </u>
(j) For each failure of a vehicle to maintain the specified distance at a halt.	<u>20</u>	<u>5</u>	<u> </u>
(k) For each failure of a vehicle commander or driver to relay signals.	<u>15</u>	<u>5</u>	<u> </u>
(l) For each vehicle that exceeds the maximum rate of speed.	<u>20</u>	<u>5</u>	<u> </u>
(m) For each failure to halt at the specified time.	<u>5</u>	<u>5</u>	<u> </u>
(n) For each vehicle that blocks the route of march when halted.	<u>10</u>	<u>5</u>	<u> </u>
(o) For each failure of a platoon leader and motor officer to go forward to investigate the causes of an unscheduled halt.	<u>10</u>	<u>5</u>	<u> </u>
(p) For failure to accomplish refueling in the scheduled time.	<u>20</u>	<u>5</u>	<u> </u>
(q) For each failure of per-			

		Weight	Cut	Score
	sonnel to perform first echelon maintenance when halted.	20	5	
(r)	For each failure of an air guard being posted or alert.	5	5	
(s)	For each failure to post ground guards at the halt.	15	5-10	
(t)	For each violation of communications security.	10	5	
(u)	For each failure of a vehicle commander to have his radio receiver on when listening silence is in effect.	10	5	
(v)	For each disabled vehicle which delays the column by blocking the route of march.	10	5	
(w)	For each previously disabled vehicle that regains its position in the column by passing other vehicles while they are moving.	15	5	
(2)	<u>Occupation and organization of assembly area.</u>			
(a)	For failure to contact guide from company advance party at the regulating point.	10	5	
(b)	For each failure of vehicle to clear the road without halting or unnecessarily slowing down.	50	5	
(c)	For each failure to by-pass disabled vehicles when entering assembly area.	30	5	

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(<u>d</u>) For failure of company commander to supervise the movement into the assembly area.	<u>10</u>	<u>10</u>	<u> </u>
(<u>e</u>) For failure of company commander and company officers to supervise the organization of the assembly area.	<u>15</u>	<u>15</u>	<u> </u>
(<u>f</u>) For failure to disperse vehicles in the assembly area.	<u>50</u>	<u>5-50</u>	<u> </u>
(<u>g</u>) For each failure of a vehicle to make the best use of cover in the assigned area.	<u>25</u>	<u>5</u>	<u> </u>
(<u>h</u>) For failure to establish local security as quickly as possible.	<u>20</u>	<u>5-20</u>	<u> </u>
(<u>i</u>) For failure of company commander to report his personnel and vehicular status promptly to battalion.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>j</u>) For failure to establish a perimeter defense.	<u>30</u>	<u>5-30</u>	<u> </u>
(<u>k</u>) For failure of company commander to coordinate local security.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>l</u>) For each failure to camouflage a vehicle.	<u>25</u>	<u>5</u>	<u> </u>
(<u>m</u>) For each failure to select a position which provides good fields of fire.	<u>25</u>	<u>5</u>	<u> </u>
(<u>n</u>) For each failure to dig a foxhole (where required).	<u>25</u>	<u>5</u>	<u> </u>
(<u>o</u>) For each failure to man defensive weapons.	<u>10</u>	<u>5</u>	<u> </u>

		Weight	Cut	Score
(p)	For failure to post air and ground alert guards.	10	5-10	
(q)	For failure to provide guides for resupply vehicles.	10	10	
(r)	For each failure to resupply a vehicle.	20	5	
(s)	For each failure to perform necessary maintenance.	30	5	
(t)	For failure to post a marker at entrance to company area.	10	10	
(u)	For failure of a company commander to promptly report to battalion headquarters by sketch or overlay showing disposition of company in area.	10	5-10	
(v)	For failure to improve the assembly area during available time.	10	10	
(w)	For each unnecessary movement of vehicles within the assembly area.	20	5	
(x)	For each violation of light discipline during night occupation of assembly area.	10	5	
(3)	<u>Preparation for the attack.</u>			
(a)	For failure of the company commander to coordinate with the battalion staff, the supporting artillery liaison officer, the assault gun platoon leader, and with the company commander attacking on his flank within the bat-			

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
talion zone at the time the battalion commander issues his oral attack order.	<u>10</u>	<u>5-10</u>	<u> </u>
(<u>b</u>) For failure of the com- pany commander to coordi- nate with the attached armored infantry rifle pla- toon leader when attachment effective in the assembly area.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>c</u>) For failure of the company commander to plan his re- connaissance from a map prior to making his actual ground reconnaissance.	<u>5</u>	<u>5</u>	<u> </u>
(<u>d</u>) For failure of the company commander to ensure coordi- nation with the front-line infantry elements through which his company will at- tack, either through battal- ion or directly with the front-line infantry if so authorized or directed by the battalion order.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>e</u>) For failure of the company commander to take the at- tached armored infantry rifle platoon leader with him on his ground recon- naissance.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>f</u>) For failure of the company commander to take the artil- lery forward observer with him on his ground reconnais- sance.	<u>15</u>	<u>5-15</u>	<u> </u>
(<u>g</u>) For failure of the company commander to issue his oral attack order in the assembly			

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
area or at advantage point to his assembled key subordinates.	<u>15</u>	<u>5-15</u>	<u> </u>
(<u>h</u>) For failure of the company commander to explain clearly and unmistakably to his key subordinates (1) the situation, (2) the company's mission, (3) platoon missions, (4) supporting fires available, (5) objectives, (6) time, route or axis of attack, and line of departure, (7) organization of company, company and platoon formations, (8) axis of supply and evacuation, (9) means of and restrictions on communication, (10) over-all battalion scheme of maneuver.	<u>75</u>	<u>15-75</u>	<u> </u>
(<u>i</u>) For failure of the platoon leaders to make their reconnaissance after receiving the company commander's oral attack order.	<u>50</u>	<u>25-50</u>	<u> </u>
(<u>j</u>) For failure of tank commanders to know the plan of attack and how their platoon will attack the objective.	<u>50</u>	<u>5-50</u>	<u> </u>
(<u>k</u>) For failure of the platoon leaders to know the company plan of attack and what their platoons are to do in the attack.	<u>50</u>	<u>25-50</u>	<u> </u>
(<u>l</u>) For failure of the company commander to employ the attached armored infantry platoon properly in the reinforced tank company organization for combat.	<u>50</u>	<u>25-50</u>	<u> </u>

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(<u>m</u>) For failure of the company commander to use the designated route to the attack position.	<u>25</u>	<u>25</u>	<u> </u>
(<u>n</u>) For unnecessary delay in moving to the attack position, once ordered to move out of the assembly area by the battalion commander.	<u>20</u>	<u>20</u>	<u> </u>
(<u>o</u>) For failure of the company commander to dispose the company properly in the attack position, considering the combat formation in which the company will attack, concealment and cover, dispersion, and all around security.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>p</u>) For failure of the company commander to provide for local security as soon as possible within the attack position.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>q</u>) For failure of the company officers to make last minute checks and establish necessary coordination prior to moving out in the attack.	<u>25</u>	<u>5-25</u>	<u> </u>
(<u>r</u>) For failure of the company commander to report readiness of the company to attack to the battalion commander.	<u>10</u>	<u>5-10</u>	<u> </u>

Total Part 1 - - - - 1345
 Excellent - - - - 1125
 Satisfactory - - - - 925
 Unsatisfactory - below 925

b. Part 2--Offense.Weight Cut Score(1) Conduct of attack.

<u>(a)</u>	For failure of the company to cross the line of departure at the prescribed time in the combat formation designated for the initial attack.	<u>10</u>	<u>10</u>	<u> </u>
<u>(b)</u>	For failure of the company commander to use best available covered or concealed routes and/or best terrain in his attack to seize and secure the first objective.	<u>15</u>	<u>5-15</u>	<u> </u>
<u>(c)</u>	For failure of the company commander to move and control the attack of the company, changing the tactics and formation to meet the situation and terrain conditions.	<u>15</u>	<u>5-15</u>	<u> </u>
<u>(d)</u>	For failure of the company officers to use supporting fires to best advantage during the attack.	<u>20</u>	<u>5-20</u>	<u> </u>
<u>(e)</u>	For failure of the company officers to use reconnaissance by fire when so indicated during the attack.	<u>15</u>	<u>5-15</u>	<u> </u>
<u>(f)</u>	For failure of the company commander to react properly to the Aggressor tanks or self-propelled guns short of the first assigned objective.	<u>20</u>	<u>5-20</u>	<u> </u>
<u>(g)</u>	For failure of the company commander to employ his armored infantry rifle platoon properly during the attack.	<u>20</u>	<u>10-20</u>	<u> </u>

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(h) For failure of the company commander to keep the battalion commander informed of the situation during the attack.	<u>10</u>	<u>5-10</u>	<u> </u>
(i) For failure of the company officers to supervise actively, to lead the attack when necessary, to use initiative to keep the attack from bogging down.	<u>20</u>	<u>5-20</u>	<u> </u>
(j) For failure of the company to attack the proper objective.	<u>25</u>	<u>25</u>	<u> </u>
(k) For failure of the company to employ fire and maneuver when taken under fire by the Aggressor tanks or self-propelled guns.	<u>15</u>	<u>5-15</u>	<u> </u>
(l) For failure of the company commander to ensure that all available weapons are fired during the advance as soon as within effective range.	<u>20</u>	<u>10-20</u>	<u> </u>
(m) For failure of the company commander to move where he can best influence the action of the company and not become completely involved in fighting simply his own tank.	<u>15</u>	<u>5-15</u>	<u> </u>
(n) For failure of the company commander to secure his flanks, either by designated formation, by observation, or by contact with the flank unit.	<u>15</u>	<u>5-15</u>	<u> </u>
(o) For failure of the company commander to cause support-			

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
ing fires to be lifted or to be changed to time fire at the proper time near or on the objective.	<u>15</u>	<u>5-15</u>	<u> </u>
(<u>p</u>) For failure of the company commander to have planned ahead for disposition of the company on the objective, thereby eliminating or reducing the confusion at this critical point of the attack.	<u>15</u>	<u>5-15</u>	<u> </u>
(<u>q</u>) For failure of platoons to move to assigned sectors and take up positions from which they can defend the objective.	<u>10</u>	<u>5-10</u>	<u> </u>
(<u>r</u>) For failure of the company to establish all around security of the objective as soon as practicable.	<u>15</u>	<u>15</u>	<u> </u>
(<u>s</u>) For failure of the company to keep off the skyline and failure to eliminate unnecessary movement and cruising on the objective.	<u>10</u>	<u>5-10</u>	<u> </u>
(<u>t</u>) For failure of the company to reorganize rapidly, prepared to hold the objective against counterattack or to continue the attack if so ordered.	<u>20</u>	<u>5-20</u>	<u> </u>
(<u>u</u>) For failure to set up supporting defensive fires.	<u>20</u>	<u>10-20</u>	<u> </u>
(<u>v</u>) For failure to have the armored infantry platoon prepare defensive positions.	<u>15</u>	<u>5-15</u>	<u> </u>
(<u>w</u>) For failure of the company			

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
to repulse the simulated Aggressor tank platoon counterattack.	<u>20</u>	<u>10-20</u>	<u> </u>
(<u>x</u>) For failure of the company commander to report (simulate) losses, ammunition expenditure, fuel status, and vehicle condition to the battalion commander.	<u>5</u>	<u>5</u>	<u> </u>
(<u>y</u>) For failure of the company commander to make such necessary readjustments of personnel, radios, and ammunition as may be necessary.	<u>10</u>	<u>5-10</u>	<u> </u>
(<u>z</u>) For failure of the company commander to dispose of captured Aggressor troops properly.	<u>5</u>	<u>5</u>	<u> </u>
(<u>aa</u>) For failure of the company commander to evacuate personnel and vehicle casualties properly.	<u>5</u>	<u>5</u>	<u> </u>
(<u>ab</u>) For failure of the company commander to warn the company promptly, when ordered to continue the attack to the second assigned objective.	<u>5</u>	<u>5</u>	<u> </u>
(<u>ac</u>) For failure of the company commander to issue a new order or such fragmentary orders as are necessary to coordinate the attack of the company on the second objective.	<u>15</u>	<u>5-15</u>	<u> </u>
(<u>ad</u>) For failure of the company commander to take advantage of and coordinate with the			

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
supporting efforts of the reinforced tank company in position to assist by fire from the flank.	<u>10</u>	<u>10</u>	<u> </u>
(ae) For failure of the company to use proper tactics in the attack on the second objective.	<u>20</u>	<u>10-20</u>	<u> </u>
(af) For failure of the company to attack the proper second objective.	<u>25</u>	<u>25</u>	<u> </u>
(ag) For failure of the company to take proper action on the second objective.	<u>10</u>	<u>5-10</u>	<u> </u>
(ah) For failure of the company to reorganize rapidly on the second objective.	<u>15</u>	<u>5-15</u>	<u> </u>
Total Part 2 - - - - -	500		
Excellent - - - - -	425		
Satisfactory - - - - -	350		
Unsatisfactory - below	350		

c. Part 3--Defense.

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(1) For failure of company to organize critical terrain features and best available ground in areas designated by the battalion commander for the three strong points.	<u>25</u>	<u>10-25</u>	<u> </u>
(2) For failure of the company to take advantage of all natural obstacles available.	<u>15</u>	<u>5-15</u>	<u> </u>
(3) For failure of the company to establish artificial obstacles such as road blocks, unit minefields, etc.	<u>10</u>	<u>5-10</u>	<u> </u>

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(4) For failure of the company commander to establish defensive fires with the artillery forward observer and with the assault gun platoon leader.	<u>25</u>	<u>5-25</u>	<u> </u>
(5) For failure of the company commander to employ his armored infantry properly.	<u>25</u>	<u>5-25</u>	<u> </u>
(6) For failure of the company commander to locate his platoons so as best to defend the company sector.	<u>25</u>	<u>5-25</u>	<u> </u>
(7) For failure of the company commander to establish contact by patrols, communication, visual means, or other means with units on his company flanks.	<u>15</u>	<u>5-15</u>	<u> </u>
(8) For failure of the company commander to provide and plan for counterattack plans against possible weak enemy penetrations along the lines of platoon-sized patrols.	<u>20</u>	<u>5-20</u>	<u> </u>
(9) For failure of the company to establish observation posts on proper tactical terrain features, and to establish communication with these OP's.	<u>25</u>	<u>5-25</u>	<u> </u>
(10) For failure of the company to establish all around security measures.	<u>25</u>	<u>5-25</u>	<u> </u>
(11) For failure of the company commander to make a detailed ground reconnaissance, time permitting.	<u>20</u>	<u>5-20</u>	<u> </u>

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
(12) For failure of the company commander to assign platoon-size units to the strong points wherever practicable.	<u>20</u>	<u>10-20</u>	<u> </u>
(13) For failure of the company take maximum advantage of cover and concealment, to dig in automatic weapons, and to use camouflage.	<u>25</u>	<u>5-25</u>	<u> </u>
(14) For failure of the company officers to supervise the active defense of the strong points.	<u>25</u>	<u>5-25</u>	<u> </u>
(15) For failure of the company commander to inform the battalion commander of the company's defenses.	<u>15</u>	<u>5-15</u>	<u> </u>
(16) For failure of the company commander to ensure that artificial obstacles established by the company will not hinder the counterattack by the mobile reserve of the higher commander.	<u>10</u>	<u>5-10</u>	<u> </u>
(17) For failure of company communication between company and platoons or between company and battalion.	<u>25</u>	<u>5-25</u>	<u> </u>
(18) For failure during periods of poor visibility to cover vulnerable areas previously covered only by fire or observation during periods of good visibility.	<u>25</u>	<u>5-25</u>	<u> </u>
(19) For failure of the company observation posts to give warning of the approach of enemy forces, to maintain contact visually, to adjust			

	<u>Weight</u>	<u>Cut</u>	<u>Score</u>
supporting fires, and to withdraw back to the company strong points.	<u>25</u>	<u>5-25</u>	<u> </u>
(20) For failure of the company strong points to make every effort to delay an approaching enemy force, to cause it to deploy, to stop it, and to destroy the enemy force within the company's capabilities.	<u>30</u>	<u>15-30</u>	<u> </u>
(21) For failure of the company to hold its position until forced to withdraw, and then to withdraw only on order of the battalion commander.	<u>45</u>	<u>15-45</u>	<u> </u>
(22) For failure of the company to assist by fire the counterattack of the higher commander's mobile reserve, thereby serving to assist in containing the enemy force.	<u>25</u>	<u>5-25</u>	<u> </u>
Total Part 3 - - - - -	500		
Excellent - - - - -	425		
Satisfactory - - - - -	350		
Unsatisfactory - below	350		

AG 353 (20 Feb 51) 7

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

EDWARD F. WITSELL

Major General, USA

The Adjutant General

J. LAWTON COLLINS

Chief of Staff, United States Army

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ARMY TRAINING TEST)
NO. 21-1)

DEPARTMENT OF THE ARMY
Washington 25, D. C., 28 February 1951

TRAINING TESTS
FOR
PHYSICAL FITNESS TEST

	Paragraph	Page
General - - - - -	1	1
References - - - - -	2	1
Nature of test - - - - -	3	1
Method of conducting physical fitness tests - - - - -	4	2
Scoring - - - - -	5	8
Score sheets - - - - -	6	8

1. General. The test applies to all ground force personnel. Physical fitness is that overall degree of body condition necessary for efficient functioning of the individual. The highest level of physical condition cannot be attained by one who shows disease or organic and structural weakness. To detect and correct such conditions is the function of the medical services. Physical Fitness Tests will not be used for this purpose.

2. References.

- a. FM 21-20.
- b. WD Pamphlet No. 21-9.

3. Nature of test.

a. In order to understand and interpret the physical status of personnel some form of testing is necessary. Upon the results of such tests depends the type and degree of activity in which men shall participate.

b. To be of value tests must have a definite purpose such as screening of men into groups for programming of activity, testing the ability and physical condition of the personnel, increasing the interest in physical training and athletic activities, as well as evaluating the program being conducted. These tests require very little equipment. When uniformly administered and impartially conducted the result will have objectivity, the validity will not be questioned, the data will be reliable, the men tested will be better satisfied, and the programming and classification of the men can be properly arranged and allocated for athletic activities.

*This training test supersedes AFF 21-1, 15 July 1948.

4. Method of conducting physical fitness tests. The following is a suggested method of organization and administration of physical fitness tests for large groups. (See diagram under e)

a. Area.

- (1) Indoors. The space will be somewhat more restricted in the layout.
- (2) Outdoors. Where a larger area is available the chinning bars may be off to one side or at the end near the activity area so as not to interfere with the use of the space for other scheduled activities.
- (3) Lanes. If conducted indoors, chalk lines should be marked on the floor; when administered outdoors, lime lines should be marked for sufficient distance to show the men their place for that test event. As the lanes for the 300-yard run are used at either end for the squat jump, pushups and pullups, they may be run the full length of the 60-yard shuttle course. The lanes should be four feet wide.

b. Equipment.

(1) For tests.

- (a) Chinning bars. These can be made of 1-1/2 inch pipe, (outside diameter), or may be commercially produced horizontal bars if for indoor purpose. Twelve such chinning bars are necessary for handling a company, using the squad as the testing unit.
- (b) Number markers. Placed on the lanes as shown (T). A cardboard with painted number is attached to a small wood pedestal or to a lane stake. When conducted indoors, and a flush wall is used, the numbers may be fastened on the wall at the end of the lanes for the 300-yard run. These numbers identify the lanes for participation when moving from one event to another.
- (c) Platform. A large platform should be provided and placed before each event in turn to be used by those giving the explanation and demonstration of that event. Pullups will be demonstrated on the chinning bar and the 300-yard run in a lane.

(d) Mats. Where a wall is close to the finish of the 300-yard run, mats should be hung for protection.

(e) Instruction cards. Large cardboards upon which are printed the principal points to be noted by judges and contestants should be placed on standards easily viewed at each event.

(f) Whistle, gong or gun. One of these devices should be provided to be used for starting and ending the situps and for starting the 300-yard run.

(g) Stop watch. A timing device is necessary for the situps and the 300-yard run.

(h) Pencils. Enough to be provided for the recording of the raw scores by the judges of each participating squad unit.

(2) For participants.

(a) Athletic clothing. Issue athletic clothing should be worn.

(b) Jerseys or ribbons. These should be provided in various colors for the first man of each team or squad to distinguish them, particularly when all the men in a line are not of the same team, or when teams may follow one another.

(c) Score cards. These shall be carried by participants throughout the tests, from event to event, being distributed at the pullups and collected after the run.

c. Events.

'1) Demonstration. Each event will be demonstrated upon the platform by an instructor while being explained by another instructor, just before conducting the event. To shorten the time between events, particularly for the second test, the pullups, squat jumps and pushups may be demonstrated prior to pullups. If this is done for the second test, more judges and scorers will be required as the first three events will then be conducted concurrently by remaining in the regular order.

(2) Participation.

- (a) Seated. The men will be seated in lanes during testing to prevent moving around and disturbing others.
- (b) Testing. For testing, the man will move forward from his seated line position to be checked and scored. This procedure applies to pullups, squat jumps, and pushups. For the situps, half of the men will be tested at a time, the other half of the men will be holding their feet and counting the score. For the 300-yard run, the men may be run in heats of twelve men each.
- (c) Rotation. The men will move forward from one event to another and in the same numbered lane as before. Following the pushups, they will fall in at the back of the same lane awaiting the situps test.
- (d) Medical excuses. Men who cannot take part in any of the tests will be used to assist in duties of handling equipment. These men partly handicapped by disability will participate in those events approved by the director unless procedure at the post requires otherwise. Men to be eliminated entirely from participation should observe from the side and not be permitted to move about except to assist with equipment. It will be found that excusing men from participation for reasons other than medical greatly interferes with the interest and spirit within the group.

(3) Order of events. Uniformity of testing requires that all units use the following events in the prescribed sequence:

- (a) Pullups. Start from straight arm hang.
- (b) Squat jumps. Start from full knee bend.
- (c) Pushups. Start from front leaning rest, arms straight.
- (d) Situps. Two minute test, start lying on back, legs straight, feet held.

(e) 300-yard run. Regular 5 lengths of 60-yards each. Start from behind line. The men for this event, when conducted outdoors, will be seated at the end near the starting line and move to positions heats. If conducted indoors they will be seated on the sides of the lane area.

(f) Optional. When space indoors is limited, a 250 yard, 10 length, indoor shuttle run may be conducted; or the 60 seconds squat thrust (Burpee) event may be conducted. In no case shall the order of events be changed if the test is to be considered valid.

(4) Duration. For a company size group of 200 or more men two hours should be allotted to this test. The events are all to be conducted on one day. As the squad is the unit of organization, twelve lanes should be provided, otherwise the test will be slowed down. Teams with names or numbers may be organized and used as the unit when testing is being made competitive. In this case the teams should be alternated in respective lanes to add to the spirit of competition and aid further when the situps event is reached, so that no team mate counts for a member of his team.

d. Administrative personnel. The following is a list of the officials necessary for the proper conduction of the physical fitness test with a brief explanation of their responsibilities. These officials will be necessary whether for indoor or outdoor testing--

- (1) Instructor in charge (@ thus marked). One individual can direct the testing for a company and should be free from specific duties during testing, so that he may properly supervise, and make adjustment of situations as they may arise.
- (2) Supervisors (* thus marked as to position). When trained personnel within the company or post is used for the purpose of speeding the testing procedure, or for instructional experience purposes, one instructor can supervise the work of the judges for as many as three lanes of men.
- (3) Judges and recorders (O thus marked). These men may be of the staff or selected from within the company and shall be one to each lane. If one event only is conducted at a time fewer men will be needed, but where events are conducted concurrently, or lap, the

assistance to be provided will be tripled. This is usually the procedure for the second test. The judges shall require the participants to do the events, as specified in FM 21-20, Physical Training, and carefully and verbally inform the men of error or improper participation during testing. The raw score number is recorded on the score cards, received from each participant, upon completion of that event.

(4) Scorers. Experience has shown that converting the raw scores into point scores during the time of testing or following an event is apt to slow the test procedure and for accuracy can be better done by the staff or other assigned and trained individuals following the completion of testing.

(5) Starter and timer. An instructor will be assigned to start and time the two-minute situps and will call the time every half minute or oftener. He will use a starting and stopping device which can be distinctly heard by the men. For the 300-yard run he will start the heats and shall start calling the time by seconds as the first man is within a reasonable distance from the finish line. He shall continue calling until the last man finishes, so that the judges may pick up the time of a runner as he crosses the finish line.

E.

Finish &
Shuttle

Shuttle line - - - - -

Squad 2	XXXXXX
Squad 1	XXXXXX

[illegible]

Pullups Ø

இ.

Platform

Instruction Chart on standard

Note: Description in Part
4 of Conducting
Physical Fitness
Tests

Starter

&

Timer

Start &

Shuttle line

[illegible]

e. 300 Yd Run

Mats on walls
if indoors

ATT 21-1

5. Scoring. All possible use and analysis should be made of the test results.

a. Computing.

- (1) Raw scores will be converted to point scores, as shown on pages 343-345, Table III, FM 21-20.
- (2) Total scores will be figured.
- (3) Individual scores will be arranged in numerical order and the men's complete results posted on score sheets.

b. Analysis.

- (1) Comparisons to be made of teams, groups, etc.
- (2) The overall average to be computed.
- (3) The highest scorers total, both for the group and the individual, to be figured.
- (4) The percentage improvement scores between the first and second test to be shown for the unit and the individual.

6. Score sheets.

a. General. An individual score card should be used in connection with the scoring tables to maintain interest. The presence of "average" and "excellent" point scores on the card is to allow the individual to know how he has performed without referring to the scoring tables.

b. Score card. As shown on pages 346-347, paragraph 150, FM 21-20.

c. Physical fitness competition. A physical fitness tournament can be conducted within a regiment to determine the company with the highest degree of physical efficiency. Such a type of tournament stimulates interest in fitness and will assist in motivating men to improve their physical condition. Each company must test not less than 90 percent of its total personnel. The company performing the poorest in any one test will score one point, the next highest will score two and so on. Thus, if twelve companies are entered, the unit with the best performance will score twelve points. The company with the highest number of points for the five tests is the winner.

/AG 353 (20 Feb 51)/

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