

APPENDIX C

RANGES AND TRAINING EXERCISES

This appendix provides guidance for US Army machine gun exercises. It is designed to be a working guide for trainers and commanders by explaining range layouts, conduct of firing exercises, and qualification standards. The two basic firing ranges will be the multipurpose MG transition range and the multipurpose range complex

Section I. MULTIPURPOSE MACHINE GUN TRANSITION RANGE

All machine gun firing can be conducted on the multipurpose MG transition range. It allows for complete firing of the 10-meter course as well as transition, day, night, and NBC firing. The firing area has 10 lanes; its layout is shown in Figure C-1, page C-2. Details on the setup and target configuration are described in FM 25-7. The minimum personnel required to operate the range are as follows: OIC, NCOIC, safety officer, ammunition NCO, tower operator, lane NCOs, primary instructor, and concurrent training instructors. Local policy may require more personnel.

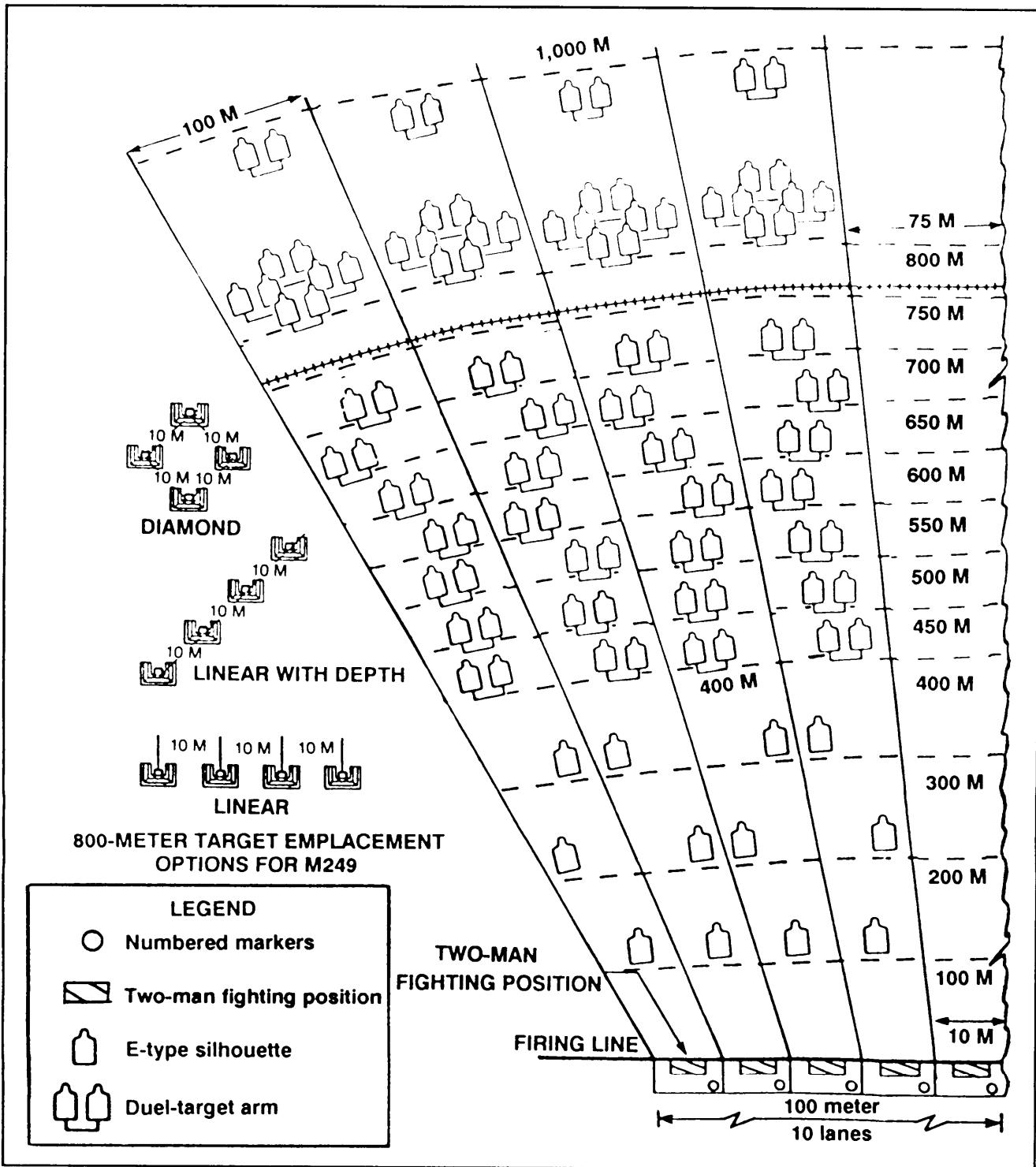


Figure C-1. Multipurpose MG transition range layout.

C-1. TEN-METER RANGE LAYOUT

The standard, basic 10-meter range can accommodate a unit of 200 to 250 soldiers at a time; however, concurrent training may be required. This range (Figure C-2) can be used to zero the M249, M60, and M2 machine guns, and to fire the 10-meter portion of qualification. It is also used to familiarize soldiers with the characteristics, noise, and recoil of the weapon. This is the range used to practice target observation and adjustment of fire, to practice MG traversing and searching, to develop speed during operation, and to obtain an accurate burst.

a. **Characteristics.** The following data applies to the standard 10-meter range.

- Number of firing positions20 lanes.
- Firing lane width60 meters (3 meters per lane).
- Target area width60 meters at the farthest targets (10 meters).
- Firing point configurationNumbered markers on slightly elevated and sodded ground; brass deflectors between lanes.
- Target configurationStandard 10-meter machine gun target stretched over a wooden frame, one on each lane.
- Associated facilitiesStandard facilities, public address system, and bleachers.

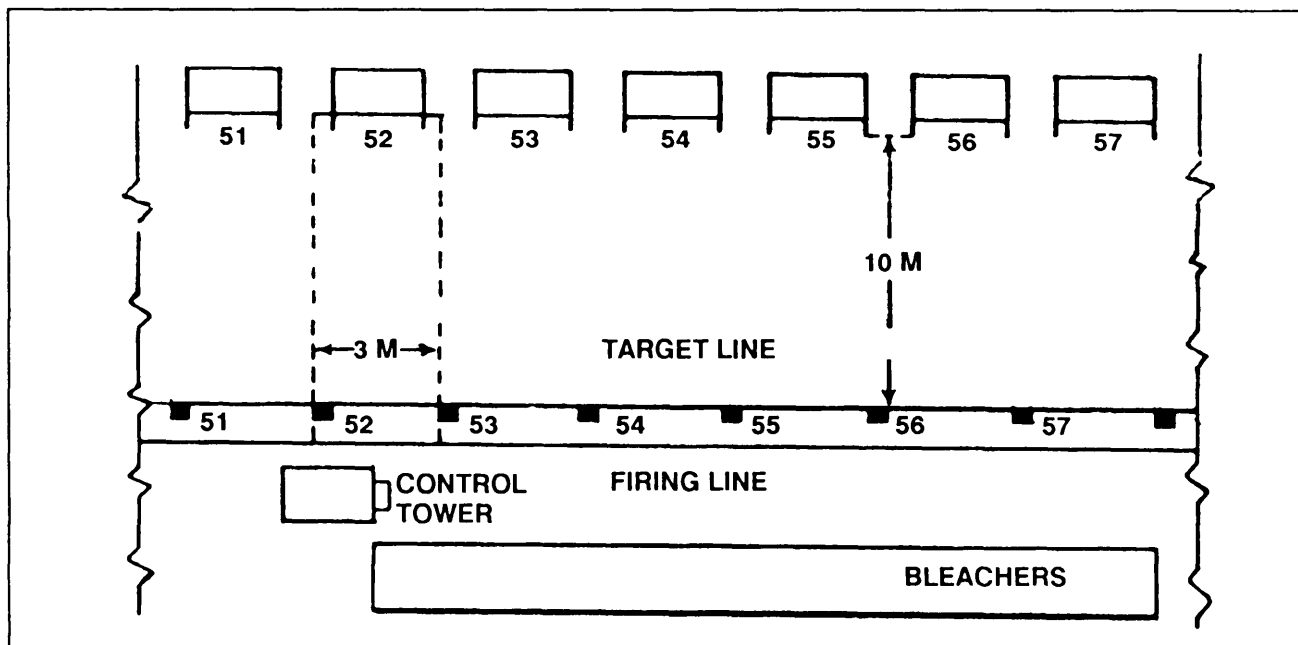


Figure C-2. Ten-meter range layout.

b. **Setup of Range.** The 10-meter range should meet the following requirements:

(1) The firing line should be long enough to emplace 20 MGs, allowing 3 meters between positions. For control, each position should be numbered.

(2) The target line should be 10 meters in front of the firing line. The MG marksmanship target is a paper target pasted onto target cloth that is stretched over a wooden frame. One target is set up for each position and is numbered to correspond with the numbered position.

(3) The instruction site for this range is the bleachers, which should be to the rear of the firing line.

(4) The control tower is located to the immediate rear and center of the firing line.

c. **Personnel Required.** Each range must be staffed with the following personnel:

- One officer in charge.
- Ž One safety officer.
- Ž One principal instructor.
- One assistant instructor for every 10 students.
- One ammunition NCO.
- One tower operator.
- Medical personnel.

d. **Equipment Required.** Although more equipment may be required by local range regulations, safety regulations, or unit SOPs, the minimum equipment required to operate the range is as follows:

- One public address system.
- One MG for each firing lane and one extra gun for every five lanes as a backup.
- One cleaning rod per assistant instructor.
- Ž One scorecard per soldier.
- Ž One asbestos glove for every two weapons.
- Ž One M3 tripod for each lane.
- One caliber .50 pintle for each lane.
- Ž One caliber .50 T&E mechanism for each lane.
- Medical evacuation capability.
- Communication equipment (wire or radio as required to operate the range).

* **C-2. TEN-METER FIRING EXERCISES**

The purpose of 10-meter firing is to develop skills in the delivery of initial bursts on target. When conducted properly, it will train gunners in the basic skills of zeroing, controlling the burst, traversing, and traversing and searching techniques. This paragraph discusses firing the 10-meter exercise on the multipurpose transition range; however, it is conducted the same on a basic 10-meter range except that the groups will be broken down to fit the firing lanes. The course is designed to fire the tripod-mounted M2. The basic MG target is used for all 10-meter firing and it allows four gunners to use it for practice or two gunners for practice and qualification. Those units wanting to fire qualification right after practice should use section A for practice and B for qualification for the first gunner, and sections C and D for the second gunner. Ten-meter firing will be conducted IAW Firing Table I (Figure C-3).

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD _____
1. Zero the M2 machine gun at 10 meters.	Instruct the gunner to engage scoring paster 1 in his assigned section with 6 single rounds in two 3-round shot groups and then paster 2 with the remaining rounds.	12 single rounds of 12.7-mm	Gunner must impact 4 of 6 rounds of the 3-round shot groups within paster 2 of his assigned section. _____
2. Engage a 10-meter target using controlled-burst techniques.	Instruct the gunner to engage paster 3 in his assigned section using controlled bursts, then engage paster 4 in the same manner. Gunner will use 5- to 7-round bursts for this engagement.	two 7-round belts of 12.7-mm	Gunner must impact one controlled burst on pasters 3 and 4 in his assigned section. (No score required.) _____
3. Engage scoring pasters 5 through 6 using the traverse and search technique of fire.	Instruct the gunner to engage pasters 5 through 6 using traverse and search technique of fire. Gunner will use 5- to 7-round bursts for this engagement.	35-round belt of 12.7-mm	Gunner must impact one round on each scoring paster of 5 through 6 in his assigned section. (No score required.) _____
4. Engage scoring pasters 7 through 8 using the traverse and search technique of fire.	Instruct the gunner to engage pasters 7 through 8 using traverse and search technique of fire. Gunner will use 5- to 7-round bursts for this engagement.	56-round belt of 12.7-mm	Gunner must impact one round on each scoring paster of 7 through 8 in his assigned section _____. (No score required.) _____
5. Engage linear target at 10 meters using traverse fire technique.	Instruct the gunner to engage pasters 1 through 4 in his assigned section using traverse fire. Gunner will use 5- to 7-round bursts for this engagement.	28-round belt of 12.7-mm	Gunner must impact at least four rounds on each scoring paster 1 through 4 in his assigned section _____.
6. Engage scoring pasters 7 through 8 using the traverse and search technique of fire.	Instruct the gunner to engage pasters 7 through 8 using traverse and search technique of fire. Gunner will use 5- to 7-round bursts for this engagement.	56-round belt of 12.7-mm	Gunner must impact at least four rounds on each scoring paster 7 through 8 in his assigned section _____.
7. Engage scoring pasters 5 through 6 using the traverse and search technique of fire.	Instruct the gunner to engage pasters 5 through 6 using traverse and search technique of fire. Gunner will use 5- to 7-round bursts for this engagement.	35-round belt of 12.7-mm	Gunner must impact at least four rounds on each scoring paster 5 through 6 in his assigned section _____.

* **Figure C-3. Ten-meter firing table (Firing Table I).**

a. **Objective.** In order for the M2 gunner to become proficient with the machine gun, the following objectives must be considered:

- Obtain an accurate initial burst.
- Master the technique of controlled burst firing.
- Traverse and search the machine gun effectively.
- Observe and adjust fire.
- Operate with speed.

b. **Organization.** The unit is organized into groups of 10. Each group is assigned a firing order number. One order becomes gunners and the other assistant gunners. The gunners and assistant gunners are assigned lanes and required to set up their guns and perform pre-fire checks.

(1) Ten-meter practice fire (Tasks 1 through 4).

(a) The gunner is required to set his rear sight at 500 yards. On command, the first order zeros using scoring pasters 1 and 2 of their assigned section.

(b) At the completion of zeroing, the gunners are required to engage the next two aiming pasters (scoring pasters 3 and 4 of the same section), using controlled bursts, and then area targets 5 through 6 and 7 through 8, using traverse and search techniques. Time is allowed between bursts to permit gunners to observe and adjust their fire.

(c) After the first order has fired, the second order fires the course in the same manner using the next assigned section. After both orders have fired, the guns are cleared.

(2) Ten-meter qualification (Tasks 5 through 7).

(a) The gunner is then required to set his rear sight at 550 yards. On command, the first order fires at scoring pasters 1 through 4 of their assigned section.

(b) At the completion of their linear engagement, commands are given to require the gunners to engage area targets 5 through 6 and then 7 through 8, using traverse and search techniques. Time is allowed between bursts to permit gunners to observe and adjust their fire.

(c) After the first order has fired qualification, the second order fires the course in the same manner using the next assigned section. After both orders have fired, the guns are cleared.

(2) *Ten-meter qualification (Tasks 5 through 7).*

(a) The gunner is then required to set his rear sight at 550 yards. On command, the first order fires at scoring pasters 1 through 4 of their assigned section.

(b) At the completion of their linear engagement, commands are given to require the gunners to engage area targets 5 through 6 and then 7 through 8, using traverse and search techniques. Time is allowed between bursts to permit gunners to observe and adjust their fire.

(c) After the first order has fired qualification, the second order fires the course in the same manner using the next assigned section. After both orders have fired, the guns are cleared.

c. **Target Analysis.** The exercises use the basic machine gun target (FSN 6920-078-5128) (Figure C-4). The following explanation of the target, including the size of the aiming pasters and scoring spaces, will aid in zeroing the M2 and will facilitate control during firing exercises.

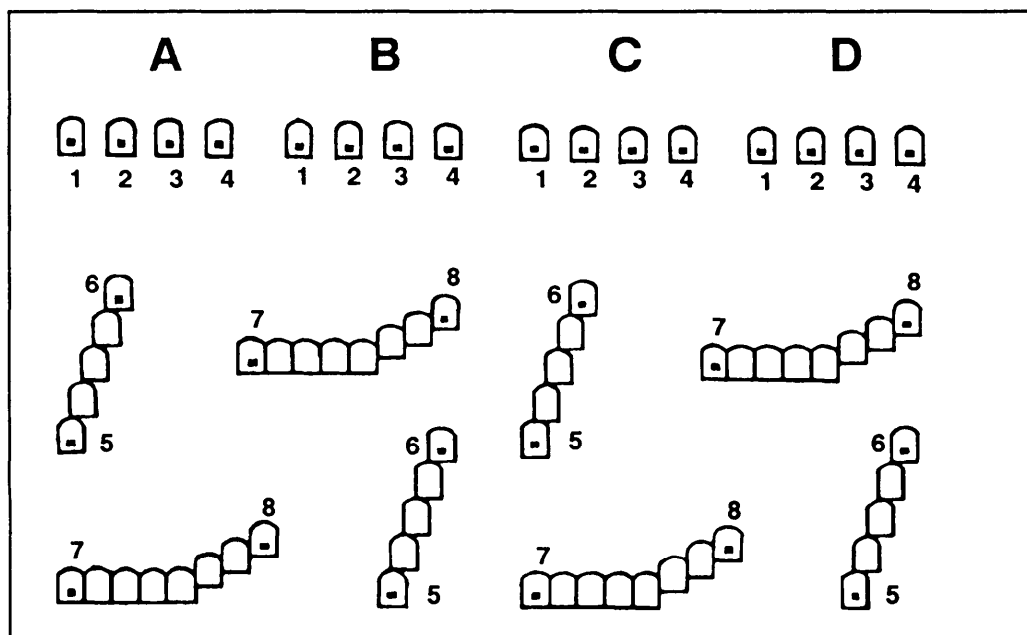


Figure C-4. Basic machine gun target.

(1) The target consists of four sections lettered A, B, C, and D. Each section has four point targets numbered 1, 2, 3, and 4; and two sets of area targets numbered 5 through 6 and 7 through 8. Each space is 4 centimeters wide and 5 centimeters high. The black aiming pasters within some numbered scoring spaces are 1-centimeter squares. Firing at targets 1 through 4 allows the gunner to use the traverse-fire technique

targets 5 through 6 and 7 through 8 give them practice in traverse and search techniques.

(a) Point targets. Point targets on the basic machine gun target are considered to be pasters 1 through 4 of section A, B, C, and D. Firing at point targets exposes the gunner to zeroing techniques and controlled-burst fire techniques. Targets 1 through 4 will also be used as a linear target for qualification.

(b) Area targets. Area targets on the basic machine gun target are considered to be pasters 5 through 6 and 7 through 8 of section A, B, C, and D. Target group 5 through 6 exposes the gunner to T&E manipulation when using the tripod mount and body position changes to engage targets in depth (elbow position changes). This causes him to use a series of aiming points to disburse fire across the target when using the tripod. Target group 7 through 8 exposes the gunner to position changes to engage linear targets with depth. It causes him to control the burst length from the weapon, use a series of aiming points, and disburse fire across the target.

(2) Targets are analyzed and scored to determine the gunner's proficiency and to see if more training is needed in any of the fundamentals of M2 gunnery. During firing with a properly zeroed weapon, a target is best analyzed by considering the common errors of M2 gunnery (Figure C-5).

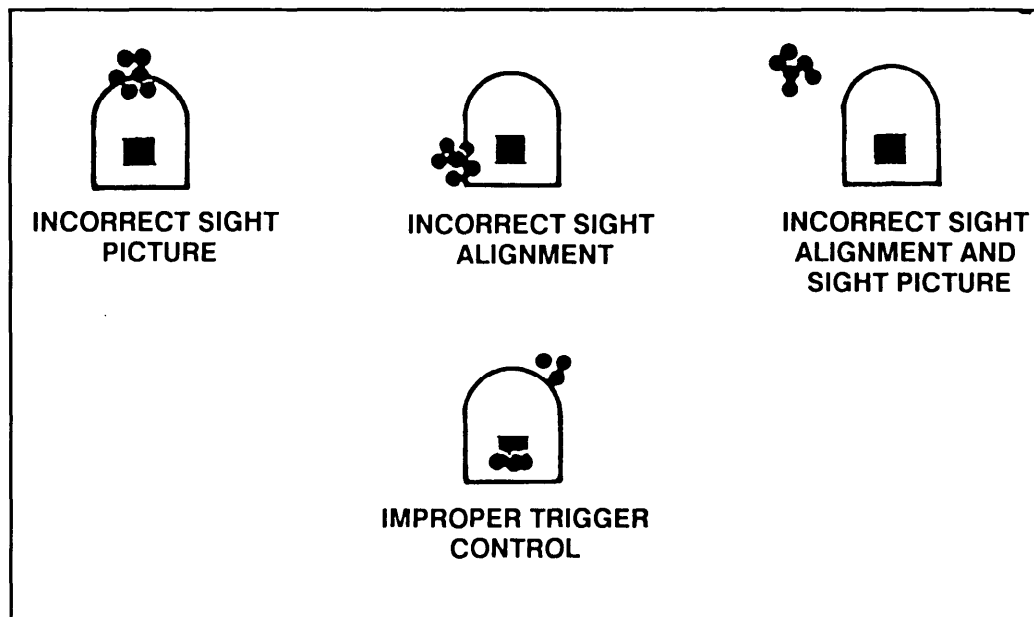


Figure C-5. Common errors found on the basic MG target.

NOTE: Large shot groups are usually caused by incorrect position and grip; small shot groups outside of the scoring space are usually caused by incorrect sight alignment, sight picture, or zero.

d. **The 10-Meter Zero.** Ten-meter zeroing is accomplished by adjusting the rear sight until the strike of the projectile coincides with the point of aim at a given range. On the 10-meter range, the elevation scale must be set at 500 yards so that it can impact on the desired aiming point. Before zeroing the weapon, the gunner must first center the rear sight for windage by aligning the index with the center of the windage scale.

e. **Controlled Burst Firing.** This firing exercise reinforces the dry-fire experience and allows the gunner practice in firing of controlled bursts and in providing the most accurate and tightest shot groups obtainable with the M2.

f. **Ammunition Issue.** The ammunition for the firing of this exercise will be broken down at the ammunition point and issued to each assistant gunner as he is assigned a firing point. The total ammunition for this exercise is 236 rounds (117 for practice and 119 for qualification). Issue will consist of the following rounds or belts:

- Task 1, 12 single rounds
- Task 2, two 7-round belts.
- Task 3, one 35-round belt.
- Task 4, one 56-round belt.
- Task 5, one 28-round belt.
- Task 6, one 56-round belt.
- Task 7, one 35-round belt.

g. **Firing Sequence.** Firing of Table I will be conducted in the following manner. These procedures pertain to firing with a single gunner using sections A and B; if there is a second gunner, he will use C and D.

(1) *Task 1, Zero.*

(a) The gunner will fire 3 rounds, single shot, at paster A1.

(b) The gunner will then move down range to observe the shot group and triangulate it. No adjustments to the weapon will be made at this time.

(c) The gunner will then fire another 3 single rounds at A1.

(d) The gunner then goes down range to observe the shot group, triangulate it, and make necessary adjustments to his weapon.

(e) The gunner repeats steps (c) and (d), but shoots at paster A2.

NOTE: If the gunner is able to zero his weapon using 9 rounds, have him use the remaining 3 to confirm his zero. If the gunner is unable to zero within 12 rounds, remove him from the firing line and give him remedial training.

(2) *Task 2, Controlled Burst Firing.*

- (a) The gunner will fire the first burst of 5 to 7 rounds at paster 3.
- (b) The gunner then goes down range to observe, marks the projectile holes, and analyzes his burst.
- (c) The gunner repeats steps (a) and (b), but fires at paster 4 of same section.

NOTE: The primary purpose of this task is to get the gunner to fire 5- to 7-round bursts. Impact on the target is desired, but not necessary to complete this task. The gunner will fire a 5- to 7-round burst at each paster.

(3) *Task 3, Traverse and Search Fire.*

- (a) The gunner will engage pasters 5 through 6, section A, firing a 5- to 7-round burst for each paster, using the traverse and search technique.
- (b) The gunner will then move down range to observe and analyze his targets.

NOTE: These tasks are fired from the tripod firing position. If the gunner shows difficulty in manipulating the weapon, remove him from the firing line and give him remedial training.

(4) *Task 4, Traverse and Search Fire.*

- (a) The gunner will engage pasters 7 through 8, section A, firing a 5- to 7-round burst at each paster, using the traverse and search technique.
- (b) The gunner will then move down range to observe and analyze his targets.

(5) *Task 5, Traverse Fire.*

- (a) The gunner will engage pasters 1 through 4, section B, firing a 5- to 7-round burst at each paster, using the traverse technique.
- (b) The gunner will then move down range to observe and analyze his targets.

(6) *Task 6, Traverse and Search Fire.*

- (a) The gunner will engage pasters 7 through 8, section B, firing a 5- to 7-round burst at each paster, using the traverse and search technique.
- (b) The gunner will then move down range to observe and analyze his targets.

(7) *Task 7, Traverse and Search Fire.*

(a) The gunner will engage pasters 5 through 6, section B, firing a 5- to 7-round burst at each paster, using the traverse and search technique.

(b) The gunner will then move down range to observe and analyze his targets.

DANGER

Before any gunner goes down range, the lane NCO must ensure that the weapon has been properly cleared. Anyone observing any unsafe acts should immediately call a cease fire and notify range personnel.

h. Scoring Procedures. When scoring the 10-meter target, all scoring spaces are scored (1 through 4, 5 through 6, and 7 through 8). One point is given for each round impacting within each space. Rounds touching the boundary of a scoring space are considered hits, but they can be counted in only one scoring space. When firing at 1 through 4 with 28 rounds, the maximum score is 28 points. In group 5 through 6, five scoring spaces are engaged with 35 rounds with a possible score of 35 points. When firing groups 7 through 8, eight scoring spaces are engaged with 56 rounds with a possible score of 56 points.

(1) The total possible score of both groups is 119 points. A minimum of 84 points is required to pass the 10-meter course of fire.

(2) Soldiers failing to achieve minimum standards must be retrained and retested in a dry-fire mode until proficiency is demonstrated. They may not move on to transition firing. Soldiers should then re-fire the 10-meter portion with close supervision and coaching to ensure that the fundamentals are applied properly during live fire.

C-3. TRANSITION FIRING EXERCISES

Transition firing of the M2 machine gun will teach the gunner some techniques of fire that he may encounter in combat situations. The gunner will field zero his weapon and also incorporate the techniques of fire during limited visibility and NBC environments. The gunner needs to be aware that during certain situations his capabilities will be degraded. He is expected to compensate for these situations by applying all available techniques. Within this training, the gunner will be required to apply all the fundamentals of gunnery learned in preparatory gunnery training and 10-meter firing. Instructors should encourage gunners to perform immediate action if a stoppage occurs during fire. This procedure may be modified if local policies require the gunners to notify the range personnel first.

- a. **Objectives.** The objectives of transition fire are —
- To engage targets at long ranges with the tripod-mounted machine gun.
 - To understand the characteristics of fire.
 - Ž To field zero the M2 machine gun.
 - Ž To use range estimation to determine the distance to targets.
 - Ž To apply the method of adjusted point of aim.

b. **Organization.** Organization of a unit for transition firing is conducted the same as for 10-meter firing. Field zeroing is the first firing task of transition day-fire phase. The transition day-fire portion of the course must be fired to become a qualified M2 gunner.

c. **Ammunition Issue.** The ammunition for the firing of this exercise will be broken down at the ammunition point and issued to each assistant gunner as he is assigned a firing point. The total ammunition for this exercise is 182 rounds, and issue will consist of two belts; one 28-round belt and one 154-round belt.

d. **Firing Sequence.** Firing of Table II (Figure C-6) will be conducted in the following manner. These procedures pertain to firing with a single gunner using a tripod-mounted M2. If there is a second gunner, he will use the same procedures.

(1) *Task 1, Field Zero.*

(a) The gunner must first center the rear sight in the same manner as sight setting for 10-meter firing. He selects the appropriate range mark with his elevation knob.

(b) The gunner will load one 28-round belt of ammunition and fire a burst of 5 to 7 rounds at the 550-meter, double E-type silhouette.

(c) If the impact of the rounds (beaten zone) is over the target, the gunner has probably fired with an incorrect sight picture (too high on the target). He needs to relay the gun on the original point of aim and then he relays back on the target and fires again. If the gunner again fails to zero with a proper sight picture, he should have the unit armorer inspect the weapon before continuing the zeroing procedure.

(d) The gunner will observe the beaten zone and make adjustments to the sights so the round will impact on the target.

(e) After adjustments are made, the gunner will then relay on the center base of the target and fire another 5- to 7-round burst.

(f) The gunner will repeat steps c, d, and e with the remaining rounds.

NOTE: If the gunner is unable to zero within 28 rounds, he is removed from the firing line and given remedial training.

(2) *Task 2 through Task 8, Single and Multiple Engagements.*

(a) The gunner will load one 154-round belt of ammunition and fire bursts of 5 to 7 rounds at double E-type silhouettes at ranges of 800, 400, 700, and 1,000 meters at vehicular targets. He will also engage multiple double E-type silhouettes targets at 400 to 700; 550 and 800; and 400, 550, and 1,000 meters respectively.

(b) The gunner will observe the beaten zone and make adjustments as necessary to hit the targets.

(c) After firing is completed, weapons will be cleared and the gunner critiqued. If there is a second gunner to fire, the entire procedure will be repeated.

NOTE: After both gunners have fired for practice, they will then be assigned new lanes and issued more ammunition for record firing. If possible, the gunner should keep the same weapon he used for practice fire. The only change in the above procedures will be in step (c); here, the gunner will be scored along with the critique. If the gunner is unable to meet standard, he is removed from the firing line, given remedial training, and re-fired.

DANGER

Before any gunner changes lanes, the lane NCO must ensure that the weapon has been properly cleared. Anyone observing any unsafe acts should immediately call a cease fire and notify range personnel.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
1. Zero the M2 machine gun.	Gunner is in stationary tripod firing position and engages a 550-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	28-round belt of 12.7-mm.	Gunner must impact one burst on the 550-meter target.
2. Engage a single, double E-type silhouette.	Gunner is in stationary tripod firing position and engages an 800-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 800-meter target within 20 seconds.

Figure C-6. Practice/Qualification Table II.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
3. Engage a single. double E-type silhouette.	Gunner is in stationary tripod firing position and engages a 400-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm	Gunner must impact one burst on the 400-meter target within 20 seconds.
4. Engage a single. double E-type silhouette.	Gunner is in stationary tripod firing position and engages a 700-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm	Gunner must impact one burst on the 700-meter target within 25 seconds.
5. Engage a single. double E-type silhouette.	Gunner is in stationary tripod firing position and engages a 1,000-meter, vehicle type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm	Gunner must impact one burst on the 1,000-meter target within 25 seconds.
6. Engage multiple double E-type silhouettes.	Gunner is in stationary tripod firing position and engages 400-and 700-meter, double E-type silhouettes. Gunner will use 5-to 7-round bursts for this engagement.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target within 35 seconds.
7. Engage multiple double E-type silhouettes.	Gunner is in stationary tripod firing position and engages 550-and 800-meter, double E-type silhouettes. Gunner will use 5-to 7-round bursts for this engagement.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target within 35 seconds.
8. Engage multiple double E-type silhouettes.	Gunner is in stationary tripod firing position and engages 400-, 550-and 1,000 meter, double E-type and vehicle silhouettes. Gunner will use 5-to 7-round bursts for this engagement.	42 rounds of 12.7-mm.	Gunner must impact one burst on each target within 45 seconds.

Figure C-6. Practice/Qualification Table II, continued.

e. **Scoring Procedures.** One point is given for each target hit with an additional 2-point bonus if the target is hit on the first burst. The total possible points for day fire is 33. A minimum 7 points (7 out of 11 exposures) is required to meet standard on the day-fire course.

C-4. NBC FIRING

Since NBC plays an important part in our preparation for war on the modern battlefield, it is important that each soldier is prepared to accomplish the mission even if the area is contaminated and he must wear protective gear.

a. **Objectives.** The objectives of this training are:

- To teach the gunners to take appropriate action when notified of a contaminated area.

Ž To identify targets while in a contaminated area.

Ž To engage targets while in appropriate NBC gear.

b. **Organization.** The unit is organized the same as in paragraph C-2b, except both the gunner and assistant gunner must wear protective masks. Protective clothing is optional.

c. **Ammunition Issue.** The ammunition for the firing of this exercise will be broken down at the ammunition point and issued to each assistant gunner as he is assigned a firing point. The total ammunition for this exercise is 182 rounds, and issue will consist of two belts; one 28-round belt and one 154-round belt.

d. **Firing Sequence.** Firing of Table III (Figure C-7, pages C-16 and C-17) will be conducted in the following manner. These procedures pertain to firing with a single gunner using a tripod-mounted M2. If there is a second gunner, he will use the same procedures.

(1) *Task 1, Field Zero.*

(a) The gunner must first center the rear sight in the same manner as setting the sights for 10-meter firing. He selects the appropriate range mark with his elevation knob.

(b) The gunner will load one 28-round belt of ammunition and fire a burst of 5 to 7 rounds at the 550-meter, double E-type silhouette.

(c) If the impact of the rounds (beaten zone) is over the target, the gunner has probably fired with an incorrect sight picture (too high on the target). He should re-fire concentrating on the proper point of aim and sight picture. If the impact is still off, have the unit armorer correct the calibration and the gunner repeat the zeroing procedure.

(d) The gunner will observe the beaten zone and make adjustments to the sights so the round will impact on the target.

(e) After adjustments are made, the gunner will then relay on the center base of the target and fire another 5- to 7-round burst at the same target.

(f) The gunner will repeat steps c, d, and e with the remaining rounds.

NOTE: If the gunner is unable to zero within 28 rounds, he is removed from the firing line and given remedial training.

(2) *Task 2 through Task 8, Single and Multiple Engagements.*

(a) The gunner will load one 154-round belt of ammunition and fire bursts of 5 to 7 rounds at double E-type silhouettes at ranges of 800,400,

700, and a 1,000-meter vehicular target. He will also engage multiple, double E-type silhouettes targets at 400 and 700; 550 and 800; and 400, 500, and 1,000 meters, respectively.

(b) The gunner will observe the beaten zone and make adjustments as necessary to hit the targets.

(c) After firing is completed, weapons will be cleared and the gunner critiqued. If there is a second gunner to fire, the entire procedure will be repeated.

NOTE: After both gunners have fired for practice, they will then be assigned new lanes and issued more ammunition for record firing. If possible, the gunner should keep the same weapon he used for practice fire. The only change in the above procedures will be in the last step; here, the gunner will be scored along with the critique. If the gunner is unable to meet standard, he is removed from the firing line, given remedial training, and re-fired.

DANGER
 Before any gunner changes lanes, the lane NCO must ensure that the weapon has been properly cleared. Anyone observing any unsafe acts should immediately call a cease fire and notify range personnel.

e. **Scoring Procedures.** One point is given for each target hit with an additional 2-point bonus if the target is hit on the first burst. The total possible points for day fire is 33. A minimum of 7 points (7 out of 11 exposures) is required to meet standard on the NBC fire course.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
1. Zero the M2 machine gun.	Gunner is in stationary tripod firing position and engages a 550-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	28-round belt of 12.7-mm.	Gunner must impact one burst on the scaled, 550-meter target.
2. Engage a single, double E-type silhouette at 800 meters while wearing a protective mask.	Gunner is in stationary tripod firing position and engages a 800-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 800-meter target within 20 seconds.

Figure C-7. NBC Qualification Table III.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
3. Engage a single, double E-type silhouette at 400 meters while wearing a protective mask.	Gunner is in stationary tripod firing position and engages a 400-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 400-meter target within 20 seconds.
4. Engage a single, double E-type silhouette at 700 meters while wearing a protective mask.	Gunner is in stationary tripod firing position and engages a 700-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 700-meter target within 20 seconds.
5. Engage a single, double E-type silhouette at 1,000 meters while wearing a protective mask.	Gunner is in stationary tripod firing position and engages a 1,000-meter, vehicle type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 1,000 meter target within 25 seconds.
6. Engage multiple, double E-type silhouettes at 400 and 700 meters while wearing a protective mask.	Gunner is in stationary tripod firing position and engages 400-and 700-meter, double E-type silhouettes. Gunner will use 5-to 7-round bursts for this engagement.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target within 35 seconds.
7. Engage multiple, double E-type silhouettes at 550 and 800 meters while wearing the protective mask.	Gunner is in stationary tripod firing position and engages 550-and 800-meter, double E-type silhouettes. Gunner will use 5- to 7-round bursts for this engagement.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target within 35 seconds.
8. Engage multiple, double E-type silhouettes at 400, 500, and 1,000 meters while wearing the protective mask.	Gunner is in stationary tripod firing position and engages scaled 400-,500-, and 1,000-meter, double E-type and vehicle type silhouettes. Gunner will use 5-to 7-round bursts for this engagement.	42 rounds of 12.7-mm.	Gunner must impact one burst on each target within 45 seconds.

Figure C-7. NBC Qualification Table III, continued.

C-5. NIGHT-FIRE EXERCISE

The night-fire exercise gives the soldiers the practical application of engaging targets using the AN/TVS-5 at night or during limited visibility.

a. **Objectives.** The objectives of this training are:

- To teach the gunners to zero the AN/TVS-5 to the M2.
- To engage targets at different ranges using the AN/TVS-5.
- To detect targets using the AN/TVS-5.

b. **Organization.** Organization of a unit for night firing is conducted the same as day fire. AN/TVS-5 zeroing is the first firing task of the night-fire phase. The night-fire portion of the course is also a requirement to become a qualified M2 gunner.

c. **Ammunition Issue.** The ammunition for the firing of this exercise will be broken down at the ammunition point and issued to each assistant gunner as he is assigned a firing point. The total ammunition for this exercise is 180 rounds, and issue will consist of the following rounds or belts:

- Task 1, 12 single rounds and two 7-round belts
- Ž Task 2 through Task 8, one 154-round belt.

d. **Firing Sequence.** Firing of Table IV (Figure C-8) will be conducted in the following manner; these procedures pertain to a single gunner using a tripod-mounted M2 with an AN/TVS-5. If there is a second gunner, he will use the same procedures.

(1) *Task 1, Zero the AN/TVS-5.*

(a) The gunner must first mount the AN/TVS-5 to the weapon and place it into operation. Once the device is mounted, the gunner will fire a 7-round burst to seat the device, then fire another 7-round burst and tighten the device to make sure it is settled.

(b) The gunner must then center the reticle pattern in the field of view of the device. He then places the reticle aiming point on the 50-meter zero target aim point and fires three single rounds.

NOTE: Each click of the azimuth or elevation adjustment actuator moves the strike of the round 1/2 inch at 50 meters. One click of adjustment moves the reticle one square of the target at 50 meters.

(c) If the impact of the round (beaten zone) is over the target, the gunner has probably fired with an incorrect sight picture (too high on the target). He should re-fire concentrating on the proper point of aim and AN/TVS-5 sight picture. If the gunner again fails to zero with a proper device sight picture, he should inspect the sight calibration of the device.

(d) The gunner will observe the beaten zone and make adjustments to the sights so the strike of the round impacts on the target.

(e) After adjustments are made, the gunner will then fire another round at the same target until zero is obtained.

NOTE: If the gunner is able to zero his weapon using 12 rounds, he is then ready to continue the course. If not, he is removed from the firing line and given remedial training.

(2) *Task 2 through Task 8, Single and Multiple Engagements.*

(a) The gunner will load one 154-round belt of ammunition and fire bursts of 5 to 7 rounds at double E-type silhouettes at ranges of 800, 400, 700, and a 1,000-meter vehicular target. He will also engage multiple, double E-type silhouettes targets at 400 to 700; 550 and 800; and 400, 500, and 1,000 meters, respectively.

(b) The gunner will observe the beaten zone and make adjustments as necessary to hit the targets.

(c) After firing is completed, weapons will be cleared and the gunner critiqued. If there is a second gunner to fire, the entire procedure will be repeated.

NOTE: After both gunners have fired for practice, they will then be assigned new lanes and issued more ammunition for record firing. If possible, the gunner should keep the same weapon he used for practice fire. The only change in the above procedures will be in the last step; here, the gunner will be scored along with the critique. If the gunner is unable to meet standard, he is removed from the firing line, given remedial training, and re-fired at the commander's discretion.

DANGER

Before any gunner changes lanes, the lane NCO must ensure that the weapon has been properly cleared. Anyone observing any unsafe acts should immediately call a cease fire and notify range personnel.

e. **Scoring Procedures.** One point is given for each target hit with an additional 2-point bonus if the target is hit on the first burst. The total possible points for night fire is 33. A minimum 7 points (7 out of 11 exposures) is required to meet standard on the night-fire course.

NOTE: Firing Table IV is set up for gunners to engage targets out to 1,000 meters under moonlight. However, if visibility is limited by other conditions, then the commander may use his discretion to alter the ranges for better visibility.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
1. Zero the AN/TVS-5 to the M2 machine gun.	Gunner is in stationary tripod firing position at 50 meters and engages an M16A1/A2 zero target. Gunner will use single shots for this engagement. Two bursts will be used to spot the device.	12 single 12.7-mm rounds and two 7-round belts.	Gunner must impact 4 of 6 rounds of two 3-round shot groups within a 4-cm circle IAW FM 23-26.
2. Engage a single, double E-type silhouette at 800 meters while using the AN/TVS-5.	Gunner is in stationary tripod firing position and engages an 800-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 800-meter target within 20 seconds.
3. Engage a single, double E-type silhouette at 400 meters while using the AN/TVS-5.	Gunner is in stationary tripod firing position and engages a 400-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 400-meter target within 20 seconds.
4. Engage a single, double E-type silhouette at 700 meters while using the AN/TVS-5.	Gunner is in stationary tripod firing position and engages a 700-meter, double E-type silhouette. Gunner will use 5-to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 700-meter target within 25 seconds.
5. Engage a single, double E-type silhouette at 1,000 meters while using the AN/TVS-5.	Gunner is in stationary tripod firing position and engages a 1,000-meter, double E-type silhouette. Gunner will use 5- to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact one burst on the 1,000-meter target within 25 seconds.
6. Engage multiple, double E-type silhouettes at 400 and 700 meters while using the AN/TVS-5.	Gunner is in stationary tripod firing position and engages 400- and 700-meter, double E-type silhouettes. Gunner will use 5- to 7-round bursts for this engagement.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target within 35 seconds.
7. Engage multiple, double E-type silhouettes at 550 and 800 meters while using the AN/TVS-5.	Gunner is in stationary tripod firing position and engages 550- and 800-meter, double E-type silhouettes. Gunner will use 5- to 7-round bursts for this engagement.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target within 35 seconds.
8. Engage multiple, double E-type silhouettes at 400, 550, and 1,000 meters while using the AN/TVS-5.	Gunner is in stationary tripod firing position and engages 400-, 550-, and 1,000-meter, double E-type silhouettes. Gunner will use 5- to 7-round bursts for this engagement.	42 rounds of 12.7-mm.	Gunner must impact one burst on each target within 45 seconds.

Figure C-8. Night Fire Qualification Table IV.

* **C-6. QUALIFICATION STANDARDS**

To qualify on the M2, the gunner must achieve the minimum standards on the firing tables.

a. **Firing Table I.** On this table, a gunner can earn one point for each round that hits in each space. He can earn up to 119 points on this table, but must earn at least 12 points (12 out of 17 pasters).

b. **Firing Tables II, III, and IV.** On each of these tables, the gunner can earn one point for each target hit plus a two-point bonus if he hits each target with the first burst. He can score up to 33 points on each of these tables, but to qualify, he must score at least 23 points on each.

c. **All Tables.** The gunner firing tables I through IV can earn up to 218 points. However, he must earn at least 12 points on Table I plus at least 23 points on each of the other three firing tables. Thus, he needs at least $12 + (3 \times 23) = 12 + 69 = 81$ points to qualify:

FIRING TABLE	POINTS NEEDED TO QUALIFY
Firing Table I	12
Firing Table II	23
Firing Table III	23
Firing Table IV	+ 23
	81 TOTAL POINTS NEEDED TO QUALIFY ON M2

d. **Ratings.** The grader rates each gunner as follows:

MAXIMUM.....	218
EXPERT.....	196 TO 217
FIRST CLASS.....	174 TO 195
SECOND CLASS.....	153 TO 173
UNQUALIFIED.....	152 OR LESS

e. **Scorecard.** This change prescribes a new edition of DA Form 7007-R. This blank, reproducible form may be copied from the back of this manual onto 8 1/2 by 11-inch paper. It is also available on the Army Electronic Library (AEL) CD-ROM (EM0001) and at the USAPA website located at (<http://www.usapa.army.mil>).

MACHINE GUN SCORECARD FOR M2																			
For use of this form, see FM 23-65, Change 1, or the back of this form. The proponent agency is TRADOC.																			
DATA REQUIRED BY THE PRIVACY ACT OF 1974																			
AUTHORITY: 10 USC 3012(g)/Executive order 9397. PRINCIPAL PURPOSE: To aid individual training on targets at various ranges. ROUTINE USE: To evaluate individual proficiency. SSN is used for positive identification purposes only. DISCLOSURE: Voluntary. However, mass rating and scoring require some tracking method. Therefore, only those soldiers who provide their SSNs can receive scores or qualify on weapons or equipment.																			
1a. LAST NAME LEMAY					1b. FIRST NAME CURTIS					1c. MI X		2. DATE (YYYYMMDD) 20021211							
3. SSN 222-22-2222										4. UNIT 2/29TH INF					5. LANE 4				
TSK	6a. FIRING TABLE I			7a. FIRING TABLE II					8a. FIRING TABLE III					9a. FIRING TABLE IV					
	RANGE (M)	HIT	PTS	RANGE (M)	TIME	HIT	PTS	BON	RANGE (M)	TIME	HIT	PTS	BON	RANGE (M)	TIME	HIT	PTS	BON	
1	10	NA	NA	550	None	NA	NA	NA	550	None	NA	NA	NA	550	None	NA	NA	NA	
2	10	NA	NA	800	20 Sec	X	1	2	800	20 Sec	X	1	2	800	20 Sec	X	1	2	
3	10	NA	NA	400	20 Sec	X	1	2	400	20 Sec	X	1	0	400	20 Sec	X	1	2	
4	10	NA	NA	700	25 Sec	X	1	2	700	25 Sec	X	1	2	700	25 Sec	X	1	2	
5	10	X	20	1,000	25 Sec	X	1	2	1,000	25 Sec	X	1	2	1,000	25 Sec	X	1	2	
6	10	X	30	400	35 Sec	X	1	2	400	35 Sec	X	1	2	400	35 Sec	X	1	2	
				700		X	1	2	700		X	1	2	700		X	1	2	
7	10	X	45	550	35 Sec	X	1	2	550	35 Sec	X	1	0	550	35 Sec	X	1	2	
				800		X	1	2	800		X	1	2	800		X	1	2	
8	NA	NA	NA	400	45 Sec	X	1	2	400	45 Sec	X	1	2	400	45 Sec	X	1	2	
				550		X	1	0	550		X	1	2	550		X	1	2	
				1,000		X	1	2	1,000		X	1	2	1,000		X	1	2	
6b. SUBTOTAL FIRING TABLE I				7b. SUBTOTAL FIRING TABLE II					8b. SUBTOTAL FIRING TABLE III					9b. SUBTOTAL FIRING TABLE IV					
95				31					29					33					
10. TOTAL SCORE 188										11. RATING GUNNER FIRST CLASS									
12a. OIC's PRINTED OR TYPED NAME SSG DWIGHT X. EISENHOWER										13a. GRADER'S PRINTED OR TYPED NAME SSG EDWIN X. ROMMEL									
12b. OIC'S SIGNATURE <i>Dwight X. Eisenhower</i>										13b. GRADER'S SIGNATURE <i>Edwin X. Rommel</i>									

DA FORM 7007-R, JAN 2002

DA FORM 7007-R, JUN 1991, IS OBSOLETE.

USAPA V1.00

Figure C-9. Example completed DA Form 7007-R (front).

- The following procedure will be used to fill out the scorecard.
1. **NAME:** Enter last name , first name, and middle initial.
 2. **SSN:** Enter gunner's social security number.
 3. **UNIT:** Enter unit designation.
 4. **DATE:** Enter date of firing.
 5. **LANE:** Enter the lane number for the firing point of your gunner.
 6. **HIT:** When firing Table I, enter the number of rounds impacting within the scoring space in task numbers 5, 6, and 7. For Tables II, III, and IV, enter an X when target is hit.
 7. **POINTS:** Enter 1 point for each round impacting within the scoring space in task numbers 5, 6, and 7 in Table I. Gunners will receive 1 point for each target hit in Tables II, III, and IV.
 8. **BONUS:** Entry is used only for Tables II, III, and IV. Two bonus points are awarded when gunner hits the target on initial burst of each target exposure.
 9. **TOTAL SCORE:** Enter the total of combined hits, points, and bonus scores.
- NOTE:** It is possible that a gunner may score the required points outlined for qualification. However the gunner must also score 70 percent on each firing table before he is considered a qualified gunner.

MAXIMUM	218
EXPERT	196-218
GUNNER FIRST CLASS	174-195
GUNNER SECOND CLASS	153-173
UNQUALIFIED	152 and below

Back, DA Form 7007-R, Jun 91

Figure C-10. Example DA Form 7007-R, back.

Section II. MULTIPURPOSE RANGE COMPLEX

The multipurpose range complex is designed to conduct armor and mobilized machine gun firing. Detailed setup and target configuration is described in FM 25-7; its layout is shown in Figure C-11. This section also discusses the mounted firing exercise, requirements for crews, rating procedures, and standards.

C-7. DESIGN SPECIFICS

The tower and administrative facilities must be positioned so they do not impede tactical maneuver onto or off of the range.

a. Hardened emplacements are for aerial gunnery exercises in addition to tank and BFV gunnery.

b. System calibration targets must be provided at ranges of 950, 1,200, and 1,500 meters, as shown in Figure C-11.

c. Gunnery tasks that require the use of dud-producing ammunition cannot be fired on the range proper. Provisions for these tasks must be made in impact areas adjacent to the range.

d. Double target mechanisms are recommended for use in the first six target groupings for BFV training, or for positioning throughout the range as needed to support local training requirements.

e. The administrative area is not shown in exact location or scale.

f. Additional defilade positions maybe required for BFV gunnery.

g. The addition of battle positions and positioning of personnel targets closer to the baseline may be necessary to permit BFV dismounted infantry training.

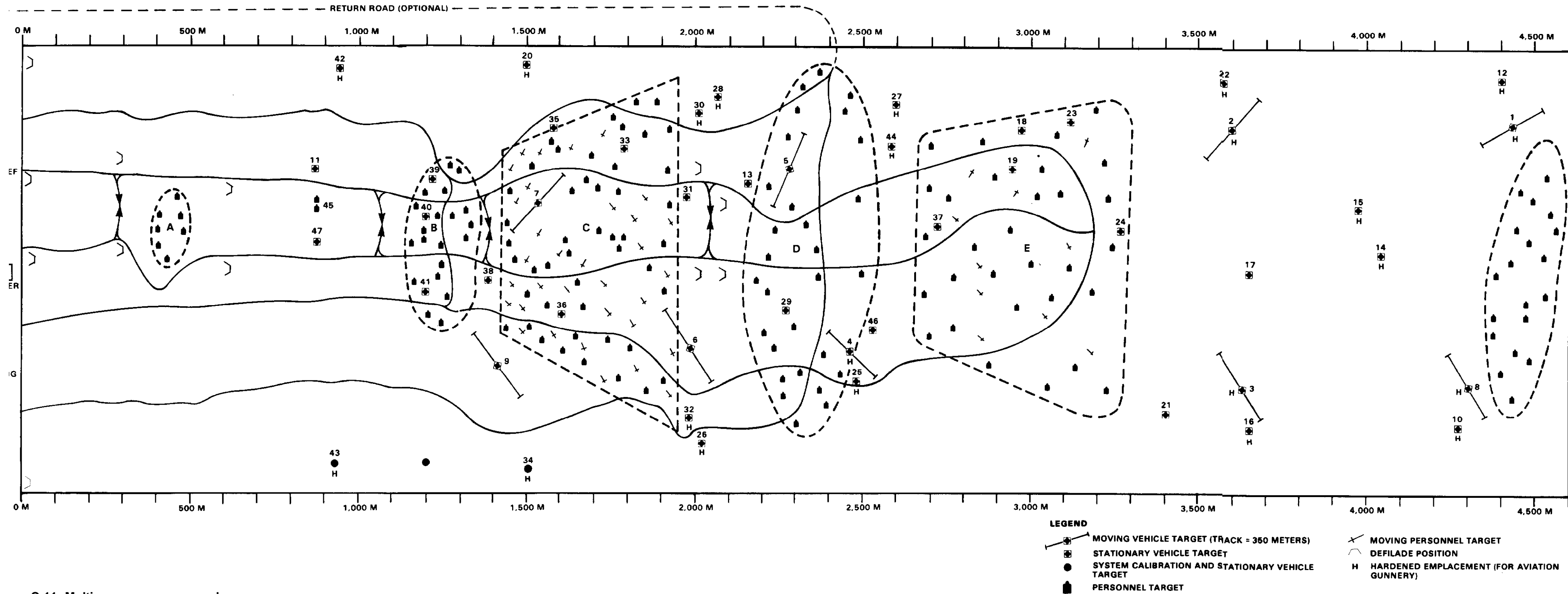


Figure C-11. Multipurpose range complex.

Carrier 2 will upload and wait at the ammunition point. When the course is clear, carrier 2 will move to the initial fire point followed by carrier 4 and proceed as stated. Carrier 3 should now be at the ammunition point for uploading.

(1) *Task 1, Conduct Prefire Inspection.*

(a) The crew will move forward to the initial firing position. Once the carrier is in position, the crew will perform a prefire inspection by setting the headspace and timing, and load a 7-round belt of ammunition.

(b) The gunner will then fire the 7-round belt at a 450-meter target to ensure the machine gun is operational.

NOTE: If the machine gun fails to fire or fires sluggishly, recheck the headspace and timing and attempt to fire again. If the situation continues, clear the weapon and have the carrier move off the firing course and report to the armorer to have the problem corrected.

(c) Upon completion of Task 1, the gunner will clear the weapon and await further instructions.

NOTE: To accomplish Task 2 and Task 3, the gunner will load one 28-round belt of ammunition.

(2) *Task 2, Engage Stationary Target From a Mounted Stationary Firing Position.*

(a) The gunner will engage a 450-meter stationary personnel target from the initial firing location.

(b) The gunner will use a 5- to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make adjustments as necessary to hit the target.

(d) Upon completion of Task 2, the gunner will await further instructions.

(3) *Task 3, Engage Stationary Target From a Stationary Firing Position.*

(a) From the initial firing location, the gunner will engage an 850-meter stationary vehicle target.

(b) The gunner will use a 5- to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make adjustments as necessary to hit the target.

(d) Upon completion of Task 3, the gunner will await further instructions.

NOTE: On command from the grader, the crew will move the carrier to the next predetermined firing location, load one 28-round belt, and conduct Task 4.

(4) *Task 4, Engage Moving and Stationary Targets From a Mounted Stationary Firing Position.*

(a) From the second predetermined firing location, the gunner will engage one moving vehicle target at a range of 800 meters and one stationary vehicle target at a range of 1,000 meters.

(b) The gunner will use a 5-to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make adjustments as necessary to hit the targets.

(d) Upon completion of firing Task 4, the gunner will await further instructions.

NOTE: When conducting Task 5, the gunner will load one 28-round belt and engage targets from a moving carrier along a predetermined route.

(5) *Task 5, Engage Stationary Targets While Firing From a Moving Carrier.*

(a) The carrier will be moving along the predetermined firing route, at which time the gunner will engage stationary vehicle targets at ranges of 300 and 500 meters.

(b) The gunner will use a 5- to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make adjustments as necessary to hit the targets.

(d) Upon completion of Task 5, the gunner will await further instructions.

NOTE: On command from the grader, the crew will move the carrier to the third predetermined firing location, load one 28-round belt, and conduct Task 6.

(6) *Task 6, Engage a Stationary and a Moving Target From a Mounted Stationary Firing Position.*

(a) From the third predetermined firing location, the gunner will engage one 600-meter personnel target and one 800-meter moving vehicle target from a stationary firing position.

(b) The gunner will use a 5- to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make adjustments as necessary to hit the targets.

(d) Upon completion of Task 6, the gunner will await further instructions.

NOTE: From the same firing location as Task 6, the crew will be placed in a chemical environment and be required to go to MOPP4.

(7) *Task 7, React in Chemical Environment.*

(a) Upon command, the crew will be required to react to a chemical agent.

(b) Upon completion of Task 7, the gunner will await further instructions.

NOTE: To accomplish Task 8 through Task 10, the gunner will load one 84-round belt of ammunition.

(8) *Task 8, Engage Stationary Target From a Mounted Stationary Firing Position While in MOPP4.*

(a) From the same firing location as Task 6, the gunner will engage a stationary target at a range of 500 meters from a mounted stationary firing position while in MOPP4.

(b) The gunner will use a 5- to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make adjustments as necessary to hit the target.

(d) Upon completion of Task 8, the gunner will await further instructions.

(9) *Task 9, Engage Moving and Stationary Targets From a Mounted Stationary Firing Position While in MOPP4.*

(a) From the same firing location, the gunner will engage one 800-meter moving vehicle target and personnel targets at 1,000 meters.

(b) The gunner will use a 5- to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make adjustments as necessary to hit the targets.

(d) Upon completion of Task 9, the gunner will await further instructions.

(10) *Task 10, Engage Multiple Stationary Targets in a Mounted Stationary Firing Position While in MOPP4.*

(a) From the same firing location, the gunner will engage one 300-meter personnel target and two stationary vehicle targets at ranges of 500 and 700 meters.

(b) The gunner will use a 5- to 7-round burst for this engagement.

(c) The gunner will observe the beaten zone and make necessary adjustments to hit the target.

(d) Upon completion of firing Task 10, the gunner will clear his machine gun, have it inspected by the safety officer, move from the firing line, and turn in any excess ammunition. Then the crew will be critiqued.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
1. Conduct prefire inspection.	At a stationary position given a 450-meter stationary target, headspace and timing gauge, unit's organic vehicle, and M2 machine gun.	7-round belt of 12.7-mm.	Conduct prefire inspection and fire 7 rounds to confirm operation of machine gun.
2. Engage stationary target from a stationary firing position.	Gunner is in a stationary mounted firing position and engages a 450-meter stationary personnel target. Gunner must use 5- to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact on target.
3. Engage stationary target from a stationary firing position.	Gunner is in a stationary mounted firing position and engages a 850-meter stationary vehicle. Gunner must use 5- to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact on target.
4. Engage moving and stationary targets from another stationary firing position.	Gunner is in a stationary mounted firing position and engages a moving vehicle at 800 meters and stationary vehicle at 1,000 meters. Gunner must use 5- to 7-round bursts for this engagement.	28-round belt of 12.7-mm.	Gunner must impact on each target.
5. Engage stationary targets while firing from a moving vehicle.	While the gunner's vehicle is moving, the gunner engages stationary vehicles at 300 and 500 meters. gunner must use 5- to 7-round bursts for this engagement.	28-round belt of 12.7-mm.	Gunner must impact on each target.
6. Engages a stationary and moving target from a stationary firing position.	Gunner is in a stationary firing position and engages a 600-meter personnel and 800-meter moving vehicle targets. gunner will use 5- to 7-round bursts for this engagement.	28-round belt of 12.7-mm.	Gunner must impact on each target.
7. React to chemical agent.	While in a stationary position, given protective mask and protective clothing, crew must react to chemical agent.	N/A	In accordance with FM 3-3.
8. Engage stationary target from a stationary firing position while in an upgraded NBC posture.	Gunner is in a stationary firing position and engages a 500-meter vehicle target. gunner will use 5- to 7-round bursts for this engagement.	14 rounds of 12.7-mm.	Gunner must impact on target.

Figure C-12. Mounted Firing Exercise Table VI.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
9. Engage moving and stationary targets while in a stationary firing position in an upgraded NBC posture.	Gunner will engage 800-meter moving vehicle target and personnel targets at 1,000 meters. Gunner will use 5- to 7-round bursts for this engagement.	28 rounds of 12.7-mm.	Gunner must impact on targets.
10. Engage multiple stationary targets while in a stationary firing position in an upgraded NBC posture.	Gunner will engage 300-meter personnel targets, 500-and 700-meter vehicle targets. Gunner will use 5- to 7-round bursts for this engagement.	42 rounds of 12.7-mm.	Gunner must impact on each target.

Figure C-12. Mounted Firing Exercise Table VI, continued.

e. **Scoring Procedures.** The mounted firing exercise is graded on a Go/No Go basis. Commanders may increase the difficulty of any or all tasks to align the exercise with the unit's mission.

C-9. PREDETERMINED FIRING EXERCISE

The predetermined firing exercise is for the gun crew that has demonstrated proficiency during the basic phase of gunnery. Emphasis will be on developing range cards and confirming range-card data during day and night firing.

a. **Objectives.** The objective of this training is to reinforce what was developed in the fundamental gunnery phases. It is designed to increase the effectiveness of the M2 MG crew by building their confidence to quickly and accurately deliver a large volume of fire on a prescribed target.

b. **Organization.** The unit is assembled in the bleachers, given instructions, and briefed on training that will be conducted while they are on the range. After briefing, they will be organized into gun crews and moved to firing lanes. Lanes will be used IAW local range policies.

c. **Ammunition.** This exercise requires 168 rounds of 12.7-mm linked ammunition. The gunner is allotted two bursts per target during the day phase and one burst per target during the night phase. Each gunner will be issued two belts of ammunition; one 112-round belt for the day phase and one 56-round belt for the night phase.

d **Firing Sequence.** The sequence of firing will be conducted IAW Firing Table VII (Figure C-13, page 33). The suggested sequence of firing is as follows:

(1) *Day phase.*

(a) Task 1, Prepare a Range Card. Once the gunner is assigned his firing point, he must prepare a range card for that position. Range cards must be prepared IAW paragraph E-2.

(b) Task 2, Obtain Direction and Elevation Readings for the Final Protective Line. During this task, the gunner is allotted 28 rounds to obtain and record the direction and elevation reading of his FPL.

(c) Task 3, Obtain Direction and Elevation Readings for Point Targets. The gunner will be required to obtain and record direction and elevation readings for point targets located at 400, 600, 800, and 1,000 meters. He is allotted 56 rounds for this task.

(d) Task 4, Obtain Direction and Elevation Readings for Linear Targets. The gunner will be required to obtain and record direction and elevation readings for linear targets located at 600 and 800 meters. He is allotted 28 rounds for this task.

(2) *Night phase.*

NOTE: Each crew is scored as a group in the night phase. (The day phase is not scored.) The crew applies the data obtained during the day and engages their targets. Each crew receives 10 points for each target engagement. A minimum of 40 out of a possible 70 is required. This exercise is not a requirement for qualification; however, commanders can use this training to test their gun crews' proficiency.

(a) Task 5, Engage Point Targets Using Range-Card Data. The gunner must engage point targets located at 400, 600, 800, and 1,000 meters using range-card data. He is allotted 28 rounds for this task. The grader will announce the sequence of engagements.

(b) Task 6, Engage Area Targets Using Range-Card Data. The gunner must engage linear targets located at 600 and 800 meters using range-card data. He is allotted 14 rounds for this task. The grader will announce the sequence of engagements.

(c) Task 7, Fire Final Protective Line. The gunner will fire his FPL to obtain grazing fire. He is allotted 14 rounds for this task.

e. **Conduct of Firing.** The gunner, assistant, and leader will prepare a range card for that position. Once complete, each crew will be given 168 rounds as prescribed in a predetermined firing table.

(1) Each gunner initially lays on his target by using the dry-fire technique. Each crew is issued 168 rounds of ammunition, and the gunner is ordered to load by the group NCO. When all the gunners of a group are ready, the NCO announces, "Up," to the officer in charge.

(2) When all groups are ready to fire, the OIC announces, "Give me an 'Up' when you have engaged all targets and have obtained the correct data to all targets. You are clear to fire."

(3) When the gunner has correctly engaged his target (FPL), the leader records the information from the T&E mechanism and traversing bar onto a range card. Then, the assistant gunner becomes the gunner, the gunner becomes the leader, and the leader becomes the assistant gunner.

(4) As each member of the crew becomes the gunner, he fires at a different preselected target (order number 2, a linear target; order number 3, a point target).

(5) After each crew member has been a gunner, assistant gunner, and leader and all data on the three targets have been obtained, the group NCO clears and checks the machine guns of his group and announces to the OIC, "Group cleared and checked."

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
1. Prepare a range card for the M2 machine gun.	The gunner is given a range card, a selected firing position, M2 machine gun, M3 tripod, and silhouette targets located from 400 to 1,000 meters.	N/A	Gunner must prepare a range card IAW Appendix E, FM 23-65.
2. Determine and record direction and elevation for final protective line.	The gunner is allotted 12.7-mm linked ammo, and a sector of fire with limits.	28 rounds of 12.7-mm.	Gunner must record the direction and elevation for his range card.
3. Determine and record direction and elevation for point targets.	The gunner is allotted 12.7-mm linked ammo, four E-type silhouettes located at 400, 600, 800, and 1,000 meters.	56 rounds of 12.7-mm.	Gunner must impact one burst on each target.
4. Determine and record direction and elevation for area targets.	The gunner is allotted 12.7-mm linked ammo, two E-type silhouettes located at 600 and 800 meters.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target.
5. Engage point targets using range card data.	The gunner is allotted 12.7-mm linked ammo, the same firing position, and his prepared range card.	28 rounds of 12.7-mm.	Gunner must impact one burst on each target.

Figure C-13. Predetermined Firing Table VII.

TASK	CONDITIONS TARGET/SITUATION	AMMO	STANDARD
6. Engage area targets using range card data.	The gunner is allotted 12.7-mm linked ammo, and his prepared range card.	14 rounds of 12.7-mm.	Gunner must impact one burst on each target.
7. Fire final protective line.	The gunner is allotted 12.7-mm linked ammo, and his prepared range card.	14 rounds of 12.7-mm.	Gunner must obtain grazing fire when firing his FPL.

Figure C-13. Predetermined Firing Table VII, continued.