

APPENDIX D GUNNERY TESTS

There are three gunnery tests: a diagnostic gunnery test, an intermediate gunnery test, and a gunnery skills test. The instructor is responsible for the conduct of all tests and must ensure that sufficient scorecards or answer sheets are available.

D-1. DIAGNOSTIC GUNNERY TEST

This written test, given before and during preparatory training, evaluates trainees' knowledge of the MK 19. It also serves as an evaluation tool for the instruction. Training units prescribe procedures for the test, and announce scores of those who satisfactorily complete the test. If this test is used, it should be given before range firing. To satisfactorily complete the test, the trainee must earn 80 out of 100 points.

	POINTS
1. Name the five major assemblies of the MK 19.	5
2. Explain how to clear and disassemble the MK 19.	15
3. Explain how to assemble the MK 19.	15
4. Explain how to perform a function check.	5
5. Explain how to apply immediate action to a runaway gun.	5
6. Explain how to apply immediate action when a malfunction occurs.	10
7. Explain one phase of functioning (directed by the examining officer).	10
8. Explain why the weapon should not be fired with the top cover assembly open.	10
9. Explain how to inspect ammunition before loading (belt to have at least one each of the following: short round, bent round, loose bullet, broken link or round not pushed fully into its link).	10
10. Explain how to load to half-load position.	5
11. Explain and demonstrate sight alignment.	10
TOTAL	100

D-2. INTERMEDIATE GUNNERY TEST

This written test, given at the end of preparatory marksmanship training, is used to evaluate the instruction as well as the soldier's gunnery skills. This test has 21 questions: 20 multiple-choice and 1 true or false. Each soldier must correctly answer 17 of the 21 in order to move on to the next phase of training. The instructor is responsible for the conduct of the test. The following is a sample of the standard Intermediate Gunnery Test.

INTERMEDIATE GUNNERY TEST

1. What are the MK 19's five major groups (field strip groups)?
 - a. Receiver assembly, top cover assembly, sear assembly, bolt assembly, and feed slide assembly.
 - b. Top cover assembly, receiver assembly, barrel, sear assembly and feed tray, and bolt and backplate assembly.
 - c. Receiver assembly, feed slide assembly and feed tray, top cover assembly, sear assembly, and bolt and backplate assembly.
 - d. Sear assembly with chargers, receiver assembly, feed tray assembly, top cover assembly, bolt and backplate assembly.

2. Where on the weapon is the safety located?
 - a. On the right side of the receiver assembly.
 - b. On the left side of the receiver assembly.
 - c. On top of the receiver assembly.
 - d. On the sear assembly at the bottom rear of the receiver assembly.

3. In a nonfiring situation to clear the weapon, in which order are the steps below taken?
 - a. 2, 4, 3, 1.
 - b. 1, 3, 4, 2.
 - c. 3, 1, 2, 4.
 - d. 1, 2, 4, 3.
 1. Ensure that the safety switch is in the S (SAFE) position, and the bolt is forward. Open the top cover by rotating the top cover latch counterclockwise. Lift the cover.
 2. Return the bolt to the full forward position. Rotate the charger handles upward.
 3. Inspect the feed tray and extractors on the top of the bolt to make sure no round is in the "pickup" position.
 4. Unlock and pull the charging handles to the rear two to three inches. Inspect the face of the bolt and the chamber.

4. In which substance(s) should you never immerse the bolt and backplate assembly?
 - a. Cleaning solvent.
 - b. Lubricant.
 - c. Bore cleaner.
 - d. All of the above.

5. Under which conditions should you apply a generous second coat of lubricant when cleaning the weapon?
 - a. Hot, wet, salt air, sea spray.
 - b. Hot, dry, sandy, dusty.
 - c. Cold, icy, snow.
 - d. All of the above.

6. Under which conditions should you use a second coat of lubricant?
 - a. Hot, wet, salt air, sea spray.
 - b. Hot, dry, sandy, dusty.
 - c. Cold, icy, snow.
 - d. All of the above.

7. During reassembly, what is the first major group you should place back onto the weapon?
 - a. Sear assembly.
 - b. Bolt and backplate assembly.
 - c. Top cover assembly.
 - d. Receiver assembly.

8. To ensure the primary and secondary drive levers align properly when you close the top cover of the weapon, in what positions should you place the feed slide assembly and bolt?
 - a. Left, to the rear.
 - b. Right, to the rear.
 - c. Left, forward.
 - d. Right, forward.

9. What is the maximum range of the weapon, in meters?
 - a. 1,500.
 - b. 2,212.
 - c. 2,000.
 - d. 1,800.

10. What is the maximum effective range of the weapon, in meters, for point targets?
 - a. 1,500.
 - b. 2,212.
 - c. 2,000.
 - d. 1,800.

11. What is the cyclic rate of fire for the weapon, in rounds per minute?
 - a. 225 to 275.
 - b. 275 to 325.
 - c. 325 to 375.
 - d. 375 to 425.

12. What is the main characteristic(s) of the MK 19?
 - a. Fully automatic.
 - b. Blowback operated.
 - c. Air-cooled.
 - d. All of the above.

13. Which mount(s) should you avoid attaching the weapon to?
 - a. M3 tripod without the T&E mechanism.
 - b. M3 tripod with the T&E mechanism.
 - c. M4 pedestal.
 - d. All of the above.

14. How much armor plating, in inches, can a M430 HEDP round penetrate when fired at zero degrees obliquity?
 - a. 1.
 - b. 2.
 - c. 3.
 - d. 4.

15. Within how many meters must the 40-mm HE round impact to cause casualties to exposed enemy personnel?
 - a. 5.
 - b. 10.
 - c. 15.
 - d. 20.

-
16. What steps must you take to stop a runaway weapon?
 - a. Release the trigger and step away from the weapon.
 - b. Grab and twist the ammunition belt to break it off.
 - c. Unlock and lower one charging handle while keeping control of the weapon.
 - d. None of the above.

 17. When loading the weapon, place the female link end of the ammunition belt through the feed throat and draw the ammunition into the weapon feed area.
 - a. True.
 - b. False.

 18. What term describes an interruption in the functioning cycle caused either by faulty action of the gun or by faulty ammunition?
 - a. Blockage.
 - b. Breakage.
 - c. Malfunction.
 - d. Stoppage.

 19. What steps must you take to perform corrective action?
 - a. Unload and clear the weapon.
 - b. Inspect the weapon and ammunition to find the cause of the problem.
 - c. Correct the problem, reload, and try to fire the weapon.
 - d. All of the above.

 20. When you engage a target, how many rounds should you fire in each burst?
 - a. 3 to 5.
 - b. 5 to 8.
 - c. 7 to 10.
 - d. 9 to 12.

 21. In which position(s) must you place both charger handles before the weapon will fire?
 - a. Forward and down.
 - b. Forward and up.
 - c. To the rear and down.
 - d. None of the above.
-

D-3. GUNNERY SKILLS TEST

This is a guide for unit commanders to standardize and maintain MK 19 gunnery skills. It is a nonfiring, hands-on test given at the end of MK 19 training. The commander may authorize indoor testing if the facilities are available. Seven stations are used for the skill tests. The test is graded on a GO (pass) or NO-GO (fail) basis.

a. **Instructions for the Gunner's Examination.** The following is a guide for giving gunners the skill test.

(1) To organize for testing, assemble the entire unit in one area and orient them as follows:

“During the next _____ hours, you will take part in a performance-type examination to test your knowledge of the MK 19 machine gun. Stay with your assigned group during the entire examination. Initially, we will assign each group to a specific station. At each station, an assistant instructor will explain exactly what task or tasks you will perform. After beginning the task, if you do not know a step or steps, ask the assistant instructor for help. He will tell you how to perform the step. He will deduct the necessary points from your grade, and then you may continue to work. You must achieve a score of seventy percent in order to pass the test.”

(2) Organize the unit into seven equal groups that rotate from station to station until all individuals have been tested. Gunners must wear their helmet and load-bearing equipment (LBE) to be tested. Assign enough assistant instructors to each station to grade and critique each gunner's performance. For ease in marking, give score sheets to each grader and collect the sheets immediately after the test.

(3) At the end of testing for each group, have each grader assemble the soldiers and give them a thorough five-minute critique.

b. **Testing Stations.** There are seven stations for gunnery skills testing. All stations except one, six, and seven have intermediate training objectives.

c. **Scoring.** For tasks at stations one, six, and seven, score the soldier GO if all steps are passed (P). Score the soldier NO-GO if any steps are failed (F). If the soldier fails any steps, show him what was done wrong and how to do it correctly. For stations two through five, score the soldier GO on a task if he receives no more than one intermediate training objective NO-GO.

STATION ONE

TASK: Identify the characteristics of the MK 19.

CONDITIONS: In any environment, the gunner is given a complete tripod-mounted MK 19.

STANDARDS: The gunner will know characteristics of the MK 19.

PERFORMANCE MEASURES	GO	NO-GO
1. General description (nomenclature).		
2. Weapons sight.		
3. Weight of gun.		
4. Maximum effective range for a point target.		
5. Maximum effective range for an area target.		
6. Cyclic rate of fire.		
7. Muzzle velocity.		
8. Types of ammunition.		
9. Weight of the MK 64, MOD 7, gun mount.		
10. Types of mounts.		

STATION TWO

Station Two has seven intermediate training objectives.

TASK: Perform operator’s maintenance on the MK 19.

CONDITIONS: In any environment, the gunner is given a complete MK 19, cleaning equipment, tools, workspace, and TM 9-1010-230-10.

STANDARDS: Disassemble the MK 19 within four minutes. Use the cleaning materials as specified in the operator’s TM to clean the MK 19. Inspect, lubricate, and assemble the MK 19 within four minutes, and perform a function check.

Intermediate Training Objective 1: The gunner must disassemble the MK 19.

CONDITIONS: The gunner is given a location in which to work, an assembled MK 19, weapon-cleaning equipment, lubricant, and TM 9-1010-230-10.

STANDARDS: The gunner must disassemble the MK 19 within four minutes.

PERFORMANCE MEASURES	GO	NO-GO
1. Clear the gun.		
2. Remove the bolt and backplate assembly.		
3. Remove the secondary drive lever.		
4. Remove the feed slide assembly.		
5. Remove the top cover assembly.		
6. Remove the feed tray.		
7. Remove the primary drive lever and vertical cam.		
8. Remove the alignment guide assembly.		
9. Remove the ogive plunger.		
10. Remove the round-positioning block.		
11. Remove the charger assemblies (left hand [LH], right hand [RH]).		
12. Remove the sear assembly.		
13. Complete within four minutes.		

Intermediate Training Objective 2: Clean the MK 19.

CONDITIONS: The gunner is given a disassembled MK 19, with the proper cleaning equipment.

STANDARDS: The gunner must clean the MK 19.

PERFORMANCE MEASURES	GO	NO-GO
<ol style="list-style-type: none"> 1. Receiver assembly: <ol style="list-style-type: none"> a. Wipe or brush away dirt from all parts, especially the interior of the receiver housing, receiver rails, and feeder area. b. Use a rag to apply the cleaning solvent. c. Swab out the bore and chamber using a bore brush and RBC. d. Wipe dry. 2. Sear assembly: <ol style="list-style-type: none"> a. Wipe or brush away dirt. b. Use a rag to apply the cleaning solvent. c. Wipe dry. 3. Alignment guide assembly: <ol style="list-style-type: none"> a. Wipe or brush away dirt. b. Soak assembly in cleaning solvent. c. Wipe dry. 4. Ogive plunger assembly: <ol style="list-style-type: none"> a. Wipe or brush away dirt. b. Use a rag to apply the cleaning solvent. c. Wipe dry. 5. Round-positioning block: <ol style="list-style-type: none"> a. Wipe or brush away dirt. b. Soak in cleaning solvent. 6. Charger assemblies: <ol style="list-style-type: none"> a. Wipe or brush away dirt. b. Use a rag to apply cleaning solvent. c. Wipe dry. 7. Vertical cam assembly: <ol style="list-style-type: none"> a. Wipe or brush away dirt. 		

PERFORMANCE MEASURES	GO	NO-GO
<ul style="list-style-type: none"> b. Soak in cleaning solvent. c. Wipe dry. 8. Primary drive lever: <ul style="list-style-type: none"> a. Wipe or brush away dirt. b. Soak in cleaning solvent. c. Wipe dry. 9. Secondary drive lever: <ul style="list-style-type: none"> a. Wipe or brush away dirt. b. Soak in cleaning solvent. c. Wipe dry. 10. Feed slide assembly: <ul style="list-style-type: none"> a. Wipe or brush away dirt. b. Use a rag to apply the cleaning solvent. c. Wipe dry. 11. Feed tray: <ul style="list-style-type: none"> a. Wipe or brush away dirt. b. Soak in cleaning solvent. c. Wipe dry. 12. Top cover assembly: <ul style="list-style-type: none"> a. Wipe or brush away dirt. b. Use a rag to apply the cleaning solvent. c. Wipe dry. 13. Bolt and backplate assembly: <ul style="list-style-type: none"> a. Wipe or brush away dirt. b. Use a rag to apply the cleaning solvent. c. Wipe dry. 14. Use only authorized cleaning materials. 		

Intermediate Training Objective 3: Inspect the MK 19.

CONDITIONS: The gunner is given a disassembled and cleaned MK 19.

STANDARDS: The gunner must inspect the MK 19.

PERFORMANCE MEASURES	GO	NO-GO
<ol style="list-style-type: none"> 1. Receiver assembly: <ol style="list-style-type: none"> a. Inspect the receiver housing for cracks (even hairline), rust, burrs. b. Inspect the receiver rails for burrs, deformity, or unusual wear. c. Inspect the feeder pawls for spring action, burrs, or broken pawls. d. Inspect the barrel for carbon buildup or pitting in the bore or chamber. e. Inspect the flash suppressor for dents, cracks, or loose pin. f. Inspect the rear sight for rust, and the sight scale for readability. 2. Sear assembly: Inspect for burrs, rust, or wear on sear face, or binding in the safety switch movement. 3. Alignment guide assembly: <ol style="list-style-type: none"> a. Inspect for deformed or cracked spring. b. Inspect for cracks around the pin. c. Inspect for loose pin. d. Inspect for burrs, dents, and cracks. 4. Ogive plunger assembly: Inspect for cracks in the housing. 5. Round-positioning block: <ol style="list-style-type: none"> a. Inspect for burrs, dents, or cracks. b. Inspect for broken, deformed, or missing springs. c. Inspect for bent, cracked, or broken parts. 6. Charger assemblies (LH, RH): <ol style="list-style-type: none"> a. Inspect for burrs on grooved edges. 		

PERFORMANCE MEASURES	GO	NO-GO
<ul style="list-style-type: none"> b. Inspect for chipped, cracked, broken, or missing handle assemblies. c. Inspect for spring tension in the charger handle lock. d. Inspect for spring tension in the lock plunger. e. Inspect for bent charger housing. <p>7. Vertical cam assembly:</p> <ul style="list-style-type: none"> a. Inspect for burrs or buckling. b. Inspect for scratches, chips, or aluminum buildup on the chromed edge. c. Inspect for lock binding. <p>8. Primary drive lever: Inspect for burrs around the pivot post.</p> <p>9. Secondary drive lever:</p> <ul style="list-style-type: none"> a. Inspect for burrs, cracks, chips, or buckling. b. Inspect for missing retaining pin. <p>10. Feed slide assembly:</p> <ul style="list-style-type: none"> a. Inspect for burrs or cracks. b. Inspect for broken feed pawls, binding, or no spring action. c. Inspect for deformed shuttle-spring tip. d. Inspect for loose mounting screws. <p>11. Feed tray:</p> <ul style="list-style-type: none"> a. Inspect for burrs or cracks. b. Inspect for lack of spring action. <p>12. Top cover assembly:</p> <ul style="list-style-type: none"> a. Inspect for burrs, cracks, or rust. b. Inspect for loose or missing latch. c. Inspect for bent pins, and for missing or broken cross pins. <p>13. Bolt and backplate assembly:</p> <ul style="list-style-type: none"> a. Inspect overall for burrs, rust, or cracks. 		

PERFORMANCE MEASURES	GO	NO-GO
b. Inspect handles for cracks. c. Inspect for broken or bent recoil springs. d. Inspect for bent or broken guide rods. e. Inspect for missing safety wire. f. Inspect for broken or worn cocking lever. g. Inspect for cracked or chipped bolt sear. h. Inspect for cracked or binding cam followers. i. Inspect for cracked or chipped bolt fingers. j. Inspect for chipped or broken firing pin tip. k. Inspect for chipped, cracked, or missing extractors. l. Inspect for bent or cracked backplate or missing retaining ring.		

Intermediate Training Objective 4: Lubricate the MK 19.

CONDITIONS: The gunner is given a disassembled, cleaned, and inspected MK 19, and lubricant and brush.

STANDARDS: The gunner must lubricate the weapon.

PERFORMANCE MEASURES	GO	NO-GO
1. Receiver assembly: Apply a light coat of lubricant on the receiver rails, feeder, and feeder pawls.		
2. Sear assembly: Apply a light coat to all parts.		
3. Alignment guide assembly: Apply a light coat to all parts.		
4. Round-positioning block: Apply a light coat to the springs.		
5. Charger assemblies (LH, RH): Apply a light coat to all parts, especially the grooved edges of the rails.		
6. Vertical cam: Apply a light coat to all parts, especially the chromed edge.		
7. Primary drive lever: Apply a light coat to all parts, especially the pivot posts.		
8. Secondary drive lever: Apply a light coat to all parts, especially the pivot post and forked end.		
9.		
10. Feed slide assembly: Apply a light coat to all parts, especially the feed pawls.		
Feed tray: Apply a light coat to all parts, especially the pawl and guide rails.		
11. Top cover assembly: Apply a light coat to all parts, especially the latch, the pivot post hole, and the pin holes.		
12. Bolt and backplate assembly: Apply a light coat to all parts, especially the bolt face, bolt sear, guide rods, recoil springs, bolt rails, cam followers, and cocking lever.		

Intermediate Training Objective 5: Assemble the MK 19.

CONDITIONS: The gunner is given a disassembled, cleaned, inspected, and lubricated MK 19.

STANDARDS: The gunner must assemble the weapon in the proper sequence within four minutes.

PERFORMANCE MEASURES	GO	NO-GO
1. Assemble the sear assembly.		
2. Assemble the charger assemblies (LH, RH).		
3. Assemble the round-positioning block.		
4. Insert the ogive plunger assembly.		
5. Insert the alignment guide assembly.		
6. Attach the vertical cam.		
7. Attach the primary drive lever.		
8. Attach the feed tray.		
9. Attach the feed slide assembly.		
10. Attach the top cover assembly.		
11. Attach and engage the secondary drive lever.		
12. Insert the bolt and backplate assembly.		
13. Complete within four minutes.		

Intermediate Training Objective 6: Perform a function check.

CONDITIONS: The gunner is given an assembled MK 19.

STANDARDS: The gunner must perform a function check on the weapon.

PERFORMANCE MEASURES	GO	NO-GO
1. Close the top cover. 2. Charge the weapon. 3. Lock the charging handles forward. 4. Place the gun on S (SAFE). 5. Press the trigger. 6. If the weapon fires, notify the supervisor. 7. If the weapon does not fire, continue. 8. Move the safety to F (FIRE). 9. Press the trigger. Bolt should spring forward. 10. Open the top cover. 11. Check the tip of the firing pin. It should be exposed. 12. Move the feed slide to the left. 13. Close the top cover. 14. Move the safety to S (SAFE).		

Intermediate Training Objective 7: Clean, inspect, and lubricate the MK 64, MOD 7, gun cradle.

CONDITIONS: The gunner is given a gun cradle, TM 9-1010-231-13&P, and lubricant.

STANDARDS: The gunner must clean, inspect, and lubricate the gun cradle.

PERFORMANCE MEASURES	GO	NO-GO
<ol style="list-style-type: none"> 1. Clean the gun cradle. <ol style="list-style-type: none"> a. Brush or wipe away dirt. b. Use a rag to apply cleaning solvent. c. Wipe dry. 2. Inspect the gun cradle for: <ol style="list-style-type: none"> a. Bent or cracked retaining pins. b. Damaged threads on depression stop. c. Damage to mounting surface on the gun cradle. d. Loss of mounting hardware (nuts, bolts, pins, or chains). e. Depression stop in place (training use only). f. Frozen pintle lock. g. Missing cotter pins. 3. Lubricate the gun cradle. Apply a light coat to all pins and pivot points. 		

STATION THREE

Station Three has four intermediate training objectives.

TASK: Load, unload, correct malfunctions, and clear the MK 19.

CONDITIONS: The gunner is given a location in which to work, a complete M3 tripod-mounted MK 19, and 10 rounds of linked 40-mm ammunition (dummy).

STANDARDS: The gunner must load, unload, and clear the MK 19, and take immediate and remedial action according to TM 9-1010-230-10 and this training program.

Intermediate Training Objective 1: Clear the MK 19.

CONDITIONS: The gunner is given an M3 tripod-mounted weapon in a designated location and 10 rounds of linked 40-mm ammunition (dummy).

STANDARDS: The gunner must clear the MK 19.

PERFORMANCE MEASURES	GO	NO-GO
1. Place the gun on S (SAFE).		
2. Lock the bolt to the rear.		
3. Remove the live round or spent case from the bolt face.		
4. Catch the live round as it falls out.		
5. Open the top cover.		
6. Remove the rounds from the feeder.		
7. Move the safety to F (FIRE).		
8. Ride the bolt forward.		
9. Move the safety to S (SAFE).		
10. Move the feed slide assembly to the left.		
11. Close the top cover.		

Intermediate Training Objective 2: Load the MK 19.

CONDITIONS: The gunner is given an M3 tripod-mounted weapon in a designated location and 10 rounds of linked 40-mm ammunition (dummy).

STANDARDS: The gunner must load the weapon.

PERFORMANCE MEASURES	GO	NO-GO
<ol style="list-style-type: none"> 1. Place the weapon on S (SAFE). 2. Ride the bolt forward. 3. Return the charger assemblies to the original upright position. 4. Open the top cover. 5. Slide the rounds, female link first, through the feed throat. 6. Insert the first round into the feeder and across the first pawl. 7. Move the feed slide assembly to the left. 8. Close the top cover. 9. Charge the weapon. 10. Lock the charger handles forward. 11. Move the safety to F (FIRE). 12. Press the trigger (bolt goes forward). 13. Move the safety to S (SAFE). 14. Charge the weapon (live round on bolt face). 15. Lock the charger handles forward. 		

Intermediate Training Objective 3: Correct malfunctions.

CONDITIONS: The gunner is given an M3 tripod-mounted weapon in a designated location, 10 rounds of linked 40-mm ammunition (dummy), and a simulated stoppage.

STANDARDS: The gunner must correct the malfunction.

PERFORMANCE MEASURES	GO	NO-GO
<ol style="list-style-type: none"> 1. In a training situation, wait ten seconds after any stoppage. 2. Charge the weapon and try to fire. 3. If the weapon fails to fire, recharge and try to fire. If the weapon fails to fire (or when told that the gun did not fire) after the second attempt, take remedial action: 4. Unload and clear the weapon. 5. Inspect the weapon and ammunition and try to find the cause of the stoppage. 6. If possible, correct the cause of the stoppage, reload, and try to fire the weapon. 		

Intermediate Training Objective 4: Stop a runaway gun.

CONDITIONS: The gunner is given an M3 tripod-mounted weapon in a designated location, ten rounds of linked 40-mm ammunition (dummy), and a simulated runaway gun.

STANDARDS: The gunner must stop the runaway gun.

PERFORMANCE MEASURES	GO	NO-GO
Lower one of the charging handles.		

STATION FOUR

Station Four has four intermediate training objectives.

TASK: Mount and dismount the MK 19 onto one of the following: M3 tripod, M4 pedestal on a 1/4-ton vehicle, HMMWV with weapon platform, or commander's cupola on a M113.

CONDITIONS: The gunner is given a complete MK 19, a complete MK 64, MOD 7, gun cradle, a location in which to work, TM 9-1010-231-13&P, and one or more of the following: M3 tripod, 1/4-ton vehicle with an M4 pedestal, HMMWV with weapon platform, or M113.

STANDARDS: The gunner must mount and dismount the MK 19 on the gun cradle, mount the gun on other mounts as directed. The time limit for moving the MK 19 from one mount to another is four minutes.

TRAINING NOTE: When the MK 19 is mounted on a unit's organic carrier or the M3 tripod, it is called a weapon system. The weapon system is mounted using the three-man concept. The gunner is responsible for ensuring that it is mounted correctly, with the aid of the other two-team members. The steps for securing the MK 19 to the gun cradle are the same. The MK 19 is moved from one mount to another with the MK 64, MOD 7, gun cradle attached.

Intermediate Training Objective 1: Mount the MK 19 on the M3 tripod.

CONDITIONS: The gunner is given a location in which to work, an M3 tripod with T&E mechanism, the gun cradle, and TM 9-1010-231-13&P.

STANDARDS: The gunner must mount the gun cradle on the M3 tripod.

PERFORMANCE MEASURES	GO	NO-GO
<p><i>MOUNTING:</i></p> <ol style="list-style-type: none"> 1. Set up the M3 tripod. 2. Secure the MK 64, MOD 7, gun cradle onto the M3 tripod. 3. Lift the gun into the gun cradle. 4. Slide the front portion of the receiver into the gun cradle. 5. Secure the rear of the gun to the gun cradle. 6. Attach the T&E mechanism to the M3 tripod. 7. Attach the T&E mechanism to the gun cradle. 8. Attach the feed throat. 		

PERFORMANCE MEASURES	GO	NO-GO
<p><i>DISMOUNTING:</i></p> <ol style="list-style-type: none"> 9. Remove the T&E mechanism retaining pin. 10. Insert the gun cradle stow pin (left side). 11. Unlock the M3 tripod pintle lock release cam. 12. Lift the MK 19, with the MK 64, MOD 7, gun cradle attached, from the M3 tripod. 		

Intermediate Training Objective 2: Mount and dismount the MK 19 from the M4 pedestal.

CONDITIONS: The gunner is given a location in which to work, a vehicle with an M4 pedestal mount, an M3 tripod-mounted MK 19, the T&E mechanism, pintle adapter, ammunition container bracket, and tools.

STANDARDS: The gunner must remove the MK 19 from the M3 tripod, mount it on the M4 pedestal within four minutes, and dismount it from the M4 pedestal within four minutes.

PERFORMANCE MEASURES	GO	NO-GO
<p><i>MOUNTING:</i></p> <ol style="list-style-type: none"> 1. Remove the T&E mechanism-retaining pin. 2. Insert the cradle stow pin (left side). 3. Unlock the M3 tripod pintle lock lever. 4. Move the MK 19 to the M4 pedestal. 5. Loosen the locking lever on the M4 pedestal. 6. Insert the pintle adapter into the top part of the M4 pedestal. 7. Remove the quick-release pin from the pintle adapter. 8. Tighten the locking lever on the M4 pedestal. 9. Lift up the MK 19 and insert the gun cradle pintle into the top of the pintle adapter. 10. Insert the quick-release pin into the pintle adapter from either side. 11. Attach the T&E mechanism to the gun mount. 12. Center the elevation handwheel. 13. Remove the stow pin. 14. Attach the T&E mechanism clamp to the M4 pedestal. 15. Attach the two support clamps to the M4 pedestal. 16. Attach the ammunition container bracket (right side). 17. Attach the empty case catch bag. <p><i>DISMOUNTING:</i></p> <ol style="list-style-type: none"> 18. Remove the ammunition container bracket (right side). 19. Remove the pin securing the T&E mechanism to the gun cradle. 20. Insert the gun cradle stow pin. 21. Remove the quick-release pin from the pintle adapter. 		

PERFORMANCE MEASURES	GO	NO-GO
22. Lift the MK 19 from the M4 pedestal.		
23. Loosen the locking lever on the M4 pedestal.		
24. Lift the pintle adapter from the M4 pedestal.		

Intermediate Training Objective 3: Mount and dismount the MK 19 from the HMMWV weapon platform.

CONDITIONS: The gunner is given a mounted MK 19, a location in which to work, a HMMWV with weapon platform, pintle adapter assembly, T&E mechanism, and TM 9-1010-231-13&P.

STANDARDS: The gunner must remove the MK 19 from its mount and install it on the HMMWV weapon platform within four minutes.

PERFORMANCE MEASURES	GO	NO-GO
<p><i>MOUNTING:</i></p> <ol style="list-style-type: none"> 1. Remove the MK 19 from its mount. 2. Loosen the locking screws on the HMMWV pedestal. 3. Insert the pintle adapter into the HMMWV pedestal. 4. Tighten the locking screws. 5. Remove the quick-release pin from the pintle adapter. 6. Lift the MK 19, with MK 64, MOD 7, gun cradle attached to the pintle adapter and insert the gun cradle pintle into the pintle adapter. 7. Insert the pintle adapter quick-release pin. 8. Attach the train and elevating assembly to the gun cradle. 9. Center the elevating handwheel. 10. Remove the gun cradle stow pin. 11. Attach the train and elevating mechanism to the HMMWV pedestal. 12. Attach the ammunition container bracket. <p><i>DISMOUNTING:</i></p> <ol style="list-style-type: none"> 13. Remove the ammunition container bracket. 14. Remove the train and elevating mechanism from the HMMWV pedestal. 15. Remove the T&E mechanism from the gun cradle. 16. Insert the gun cradle stow pin. 		

PERFORMANCE MEASURES	GO	NO-GO
17. Remove the quick-release pin from the pintle adapter assembly.		
18. Lift the MK 19 from the HMMWV pedestal.		
19. Remove the pintle adapter from the HMMWV pedestal.		

Intermediate Training Objective 4: Mount and dismount the MK 19 from the commander's cupola of an M113.

CONDITIONS: The gunner is given a mounted MK 19, a location in which to work, an M113 with the commander's cupola, pintle adapter, ammunition bracket, and TM 9-1010-231-13&P.

STANDARDS: The gunner must remove the MK 19 from its mount and install it on the commander's cupola of the M113 within four minutes.

PERFORMANCE MEASURES	GO	NO-GO
<p><i>MOUNTING:</i></p> <ol style="list-style-type: none"> 1. Insert the pintle adapter into the mount receptacle. 2. Remove the pintle adapter quick-release pin. 3. Lift the MK 19 to the pintle adapter and insert the cradle pintle into the pintle adapter. 4. Insert the pintle adapter quick-release pin. 5. Attach the ammunition bracket. <p><i>DISMOUNTING:</i></p> <ol style="list-style-type: none"> 6. Insert the gun cradle stow pin. 7. Remove the ammunition bracket. 8. Remove the pintle adapter quick-release pin. 9. Lift the MK 19 from the commander's cupola. 		

STATION FIVE

TASK: Identify characteristics of a defensive position for the MK 19.

CONDITIONS: The gunner is given an M3 tripod, a complete MK 19, a location in which to work, a direction of fire, and a partially dug fighting position.

STANDARDS: The gunner must identify the actions needed to complete the fighting position.

PERFORMANCE MEASURES	GO	NO-GO
1. Check assigned direction of fire.		
2. Check gun traverse.		
3. Check overhead cover.		
4. Check fighting position camouflage.		
5. Check for protection against small-arms fire.		
6. Check for protection against indirect fire fragments.		
7. Check for protection from aerial observation.		
8. Check for mutual support with other fighting positions.		
9. Check for a good field of fire.		

STATION SIX

TASK: Prepare a range card for the MK 19.

CONDITIONS: During daylight, in a defensive position, the gunner is given a tripod-mounted MK 19, a principal direction of fire and secondary sector of fire (both with recognizable targets), paper, pencil, and compass.

STANDARDS: The gunner must prepare range cards that include a data and sketch section for each sector of fire, with appropriate sketches and military symbols.

PERFORMANCE MEASURES	GO	NO-GO
1. Orient the range card.		
2. Sketch the terrain that is to the front of the position (prominent and man-made, including terrain features).		
3. Fill in or construct the marginal data section.		
a. Gun number.		
b. Unit designation.		
c. Date.		
d. Magnetic north arrow.		
4. Sketch machine gun symbol.		
5. Specify gun location in relation to prominent terrain feature or eight-digit grid coordinate.		
a. Determine azimuth in mils from the terrain feature to the gun.		
b. Determine distance between the terrain feature and the gun.		
c. Sketch and identify the terrain feature on the card.		
d. Connect the feature and gun with a barbed line.		
e. Write the distance in meters above the line.		
f. Write the azimuth in mils below the line from the feature to the gun.		
6. Sketch in the TRPs, if any.		
7. Label TRPs, if any.		

STATION SEVEN

TASK: Mount, place into operation, and dismount the AN/TVS-5 NVD from the MK 19.

CONDITIONS: The gunner is given a mounted MK 19 and an AN/TVS-5.

STANDARDS: The gunner must mount the AN/TVS-5 on the MK 19, place the sight into operation, and dismount the AN/TVS-5 from the MK 19.

PERFORMANCE MEASURES	GO	NO-GO
1. Mount the M2 mounting bracket onto the MK 19.		
2. Mount the AN/TVS-5 onto the M2 bracket.		
3. Install the batteries in the device.		
4. Press your eye against the eye guard.		
5. Turn the ON-OFF/TUBE BRIGHTNESS control to ON.		
6. Adjust the ON-OFF/TUBE BRIGHTNESS control, as needed.		
7. Turn the ON-OFF/RETICLE BRIGHTNESS control to ON.		
8. Turn the diopter focus ring until the clearest image of the reticle pattern is obtained.		
9. Turn the objective focus ring until the target in the field of view is sharply defined.		
10. Turn the ON-OFF/RETICLE BRIGHTNESS control to OFF.		
11. Turn the ON-OFF/TUBE BRIGHTNESS control to OFF.		
12. Remove the batteries from the AN/TVS-5.		
13. Remove the AN/TVS-5 from the M2 bracket.		
14. Remove the M2 bracket from the MK 19.		