TC 3-20.31-10

COMMANDER'S ARMOR MAINTENANCE SKILLS TEST PROGRAM

MARCH 2026

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Training Circular
No. 3-20.31-10

Headquarters
Department of the Army
Washington, DC, 17 March 2026

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Preface

The purpose of TC 3-20.31-10 is to establish a standardized program for assessing and improving the maintenance proficiency of armor crews on the M1A2 SEPv2, M1A2 SEPv3, M2A3, M2A4, and M2A4E1 and M2A3 platforms. Developed in accordance with AR 750-1 and utilizing the 8-step training model outlined in FM 7-0, this book provides commanders with the tools necessary to plan, execute, and evaluate Maintenance Skills Testing (MST). It details the origin and importance of MST for sustained readiness, and offers practical, scenario-based performance checklists for critical maintenance tasks. Through consistent application of this program, commanders can ensure their formations maintain a high level of technical competence and operational capability.

The principal audience for TC 3-20.31-10 is all members of the profession of arms. Commanders and staffs of Army headquarters serving as joint task force or multinational headquarters should also refer to applicable joint or multinational doctrine concerning the range of military operations and joint or multinational forces. Trainers and educators throughout the Army will also use this publication.

Commanders, staffs, and subordinates ensure that their decisions and actions comply with applicable United States, international, and in some cases host-nation laws and regulations. Commanders at all levels ensure that their Soldiers operate in accordance with the law of war and the rules of engagement. (See FM 6-27.)

The use of a trade or brand name does not constitute endorsement of any specific commercial product, commodity, service, or enterprise by the United States Army.

TC 3-20.31-10 applies to the Active Army, Army National Guard/Army National Guard of the United States and United States Army Reserve unless otherwise stated.

The proponent for TC 3-20.31-10 is the United States Maneuver Center of Excellence. The preparing agency is the Department of Training and Doctrine, United States Maneuver Center of Excellence. Send comments and recommendations on DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) to Commander, United States Army Maneuver Center of Excellence and Fort Benning, ATZK-TDD (TC 3-20.31-10), 1 Karker St., Fort Benning, GA 31905-5410; by email to usarmy.benning.mcoe.mbx.doctrine@army.mil; or submit an electronic DA Form 2028.

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Chapter 1

Overview and Organization of MST

Chapter one covers the origin of the concept of Maintenance Skills Testing (MST), explains why it is important for maintaining readiness in armored formations, and explains its structure. It also explains how to plan for and conduct MST according to the 8-step training model (see FM 7-0).

SECTION I – ORIGIN OF MST

1-1. In September 2024 1st Armored Division (1AD) was assigned by III Armored Corps and the U.S. Army Armor School to lead the operator maintenance training line of effort in support of the Armor Training Standardization Initiative (ATSI). The operator maintenance training line of effort was added to the ATSI due to the III Armored Corps and U.S. Army Armor School commanders' joint assessment that there is a lack of published operator maintenance training standards for the armored force. As the proponent for the operator maintenance line of effort in the ATSI, 1AD developed a program to establish standards for maintenance proficiency and certification by skill level for Soldiers in the 19C, 19D, and 19K military occupational specialties.

1-2. MST is 1AD's program to establish operator maintenance standards and was developed and piloted in the 1st Armored Brigade Combat Team (Ready First!) of the 1AD from October 2024 to March 2025. Development began with a thorough review of published doctrine on operator maintenance, which revealed that operator maintenance proficiency in Armored formations is only formally assessed during drivers training (with no standardized, vehicle specific, tables of equipment and organization [also called T&EO] on the preventative maintenance checks and services [PMCS] portion) and gunnery skills testing (robust platform specific tables of equipment and organization, limited to weapons systems). The standards for operator maintenance are well established and easily referenced in any equipment's -10 technical manual, but 1AD assessed that there is a lack of a formal method for training and evaluating a Soldier's ability to perform those operator maintenance tasks.

1-3. The lack of a system for formal evaluation of operator maintenance proficiency has created a situation in today's armored force where leaders and Soldiers frequently perform operator maintenance tasks, but are rarely trained to perform those tasks, and are never formally evaluated on their ability to perform those tasks to a doctrinal standard. The result is pockets of excellence across the armored force, carried throughout the force as tribal knowledge, rather than published best practice. There are few other examples of critical technical skills that are required for success in combat which are not formally trained or evaluated.

1-4. Because the current operations tempo in the armored force is very high, and Armored brigade combat teams (ABCT) training calendars are generally packed with large-scale collective training events such as crew gunnery, platoon (PLT) situational training exercise/live fire exercise, combat training centers, and PLT services, the MST development team assessed that any operator maintenance training should be tied to an already existing event on ABCT training calendars, rather than creating an entirely new standalone event.

1-5. The maintenance tasks and proficiencies targeted by the MST were developed in a series of working groups composed of master gunners, senior operators, and senior maintainers. After the maintenance skills to be trained were selected, the MST program was developed using the model of Gunnery Skills Testing (GST) to speed development and ease adoption. In November 2024, the first MST pilot evaluated the efficacy of conducting MST training and testing in conjunction with a normal gunnery Table 1 GST training event. This first pilot test validated that using GST as the model for MST resulted in engaging and effective training but revealed that gunnery Table 1 was already too congested to effectively integrate additional tasks.

1-6. TC 3-20.31-9 details how to plan and conduct PLT services on M1 and M2 equipped PLTs by step of the 8-step training model but contains a noticeable gap on techniques for effectively conducting step 2: Training and Certifying Leaders prior to PLT services. Pilot number 2, in February 2025, tested the integration of MST into PLT services, as a sort of maintenance Table 1 prior to the collective training event

of PLT services. This pilot was better received by both Soldiers and leaders, improved the efficiency of the following PLT services density, and is currently the recommended model for MST.

SECTION II – MST STRUCTURE

1-7. MST is broken into three pillars: leader training, hands-on training, and written testing. These three pillars are meant to form a comprehensive approach to training operator maintenance skills. The pillars are complementary to one another, and the MST is meant to be conducted as a training event including elements of all three pillars.

PILLAR ONE: LEADER TRAINING

1-8. Leader training in MST aims to achieve three objectives: enhance leader expertise, certify leaders in training Soldiers on MST hands-on tasks, and instill a sense of ownership in leaders regarding their equipment.

1-9. The first objective is to provide leaders with tools, training, and study material to increase their technical expertise on their platform. MST assumes that by increasing leaders' technical expertise on their platform, they will be better able to supervise, prioritize, and lead operator maintenance.

1-10. The second objective of leader training is to build in a process for training and certifying leaders (step 2 of the 8-Step technical manual) prior to MST hands-on training. Because MST is a new type of training event, but is conceptually very similar to gunnery skills testing, it is simple for leaders to execute without much preparation. Training and certifying leaders on MST hands-on are very similar to doing so for GST.

1-11. The third objective is to help leaders take ownership of and responsibility for maintaining their platforms. MST leader training aims to educate leaders on how their actions, and those of their Soldiers, affect higher echelon maintenance systems. This understanding empowers leaders to take a more active role in improving systems.

1-12. MST leader training also seeks to reduce the impact of the black-box effect that is common amongst junior Soldiers and leaders. The black-box effect is the tendency for operators to attribute the origin of faults on their vehicle to something that is outside their ability to control, understand, or prevent. This effect is caused by the technical complexity of combat platforms like the M1 or M2, dense and difficult to reference technical manuals, and generally low operator mechanical literacy. MST leader training increases operator agency in maintenance operations by training leaders on the linkage between their and their subordinates' actions and commonly occurring faults on their platform.

PILLAR TWO: HANDS-ON TRAINING AND TESTING

1-13. Hands-on training in MST is most directly modeled on the already commonly understood GST conducted in ABCTs. Hands-on training uses the same approach as GST by targeting training to address the highest risk (defined by both frequency of occurrence and severity of consequences) operator maintenance tasks. Training these tasks to the standards dictated in the equipment's technical manual increases operator maintenance proficiency by reducing instances of improperly performed operator maintenance resulting in additional faults or misdiagnosis of an existing fault.

1-14. Hands-on training is meant to be conducted by all crewmembers assigned to an M1 or M2 platform. Experienced operators and maintainers are the recommended trainers for hands-on training tasks. All MST hands-on training tasks, conditions, and standards can be found within the MST draft booklet.

PILLAR THREE: WRITTEN TESTING

1-15. Written testing is meant to assess leaders and Soldiers on critical operator maintenance, administrative, and diagnostic skills that are difficult or impossible to assess using hands-on training.

1-16. Work is underway on the development of written tests (multiple choice and short answer) that will form the bulk of this pillar in the future. At end state, commanders will be able to choose from a bank of questions, grouped by area of concern, to automatically generate and proctor a written test addressing the maintenance concerns most relevant to their formation.

1-17. In support of accurately targeting the correct tasks/concerns with MST written testing, the MST will also include references to be used to identify which maintenance tasks/concerns are most commonly associated with certain units, locations, or environmental concerns.

SECTION III – PLANNING AND CONDUCTING MST

1-18. This section of the chapter will provide detailed guidance for planning and conducting MST according to the 8-step technical manual.

STEP 1: PLAN THE TRAINING

1-19. MST, like GST, should be planned and coordinated through the annual training calendar, quarterly training briefs, and routine training meetings. The MST should be tied to an already existing event on ABCT training calendars, with large-scale collective training events such as Gunnery, PLT situational training exercise/live fire exercise, combat training centers, and PLT Services.

1-20. MST is a training program that is designed to be planned at the battalion/squadron level for execution by their subordinate company/troop. MST recommends a 5-day model to conduct all critical leader and hands-on training. Planning MST at the battalion/squadron enables units to pull the best possible instructors from across the formation to ensure that MST is a success. It also provides units with capability to perform an internal evaluation similar in scope and rigor to an external evaluation, similar to GST. Despite being designed for planning at the battalion/squadron level, because MST is based on a familiar training model, it can easily be planned as a cohesive training event at the company/troop level. Portions of the MST (individual tasks, for example) can also easily be conducted as PLT or even crew level training events.

1-21. The training audience for MST is all crewmembers (including leaders) assigned to M1 and M2 platforms. All crewmembers will be trained and evaluated on their ability to meet the standards for the hands-on training. Leaders, defined as vehicle commanders and higher, take part in the MST leader-training in addition to MST hands-on training.

1-22. The recommended trainers for MST are senior operators, master gunners, and senior maintainers in the formation. Pilot tests in 1AD revealed that hands-on training is best facilitated by senior operators and master gunners, while the leader training is most valuable if the trainers are senior maintainers.

1-23. The doctrinal template for MST developed in 1AD recommends allocating five training days to complete MST hands-on and leader training. In a compressed schedule, Day 4: hands-on practice, can be cut to save time. MST written testing has not been integrated into this doctrinal template. The five-day MST training model is broken down as follows:

- Day 1: Leader technical training.
- Day 2: Leader hands-on validation and rehearsal.
- Day 3: Soldier hands-on instruction/demonstration.
- Day 4: Soldier hands-on practice.
- Day 5: Soldier hands-on testing.

STEP 2: TRAIN AND CERTIFY LEADERS

1-24. Training and certifying leaders in MST have two goals: to certify leaders on their ability to train and evaluate Soldiers on MST hands-on tasks, and to train and certify the ability of leaders to supervise and manage operator level maintenance. To achieve these goals, the doctrinal template for MST allocates two days for MST leader certification.

1-25. Day one of leader training is oriented on certifying leaders to supervise and manage operator maintenance. The first portion of day one consists of classroom instruction oriented on the Army's maintenance management system functions at echelon, and how operator maintenance actions interact with that system. The latter portion of day one focuses on increasing leader technical expertise on their platform by introducing leaders to instructional material that will increase their understanding of how their platform functions and how to evaluate whether their subordinates have done operator maintenance tasks (specifically PMCS) to standard.

1-26. 1-26. This model is recommended as it provides ample time for leaders to be around their platforms in maintenance setting, generally with access to a powerpack on the ground and maintenance subject matter experts (SMEs) available.

1-27. Day two of leader training is oriented on certifying leaders to train and evaluate Soldiers on the MST hands-on tasks. Day two of leader training uses a round robin style training model, with the available time split according to group size and task length. SMEs, whose expertise is verified by the commander, demonstrate to leaders how to conduct all the MST tasks to the standards dictated in the MST booklet (derived directly from the equipment's -10 technical manual). After having been shown the standards for the MST task, the leaders are then evaluated by the SME on their ability to complete the task to standard. Once a leader has demonstrated that they understand the standards for the task, they then evaluate the SME as they perform the task. The SME makes deliberate mistakes while performing the task and the leaders must inform the SME of their NO-GOs. This certifies leaders' on their ability to evaluate Soldiers on MST hands-on.

1-28. In addition to training and certifying leaders on training and evaluating MST, Day two also serves as a rehearsal for the setup and flow of events and training during MST hands-on training. Leader training day 2 should validate that all of the required resources are present at each station, that each station is clearly marked, and that the flow of traffic between stations and timeline enables efficiently completing all training in the given time period.

STEP 3: RECON THE SITE

1-29. MST is designed to be conducted in a unit's own motorpool, with minimal set-up or additional resources required. MST leader training is facilitated by having vehicles in a maintenance facility with their powerpacks removed, but this is not required. The only requirement to conduct MST is a minimum of three of the appropriate combat platforms, access to the correct technical manuals, and the basic issue item (BII) for the equipment.

1-30. The unit will conduct a safety assessment for the test site according to the unit standard operating procedure (SOP), installation, and division requirements. Safety must come before all training needs.

STEP 4: ISSUE ORDERS

1-31. It is recommended that all MST products (booklets, station setup guides, after operations maintenance (also called AOM) checklists, concept of operations, and so on) except the theory of operations worksheets are distributed to the crew level as far in advance as possible to allow subordinates the maximum amount of time to plan. The Theory of Operations Worksheets should be held at the company/troop level as they will be used to evaluate leaders, and the digital files contain the answers by default.

STEP 5: REHEARSE

1-32. Rehearsing MST Leader Training is crucial to a successful MST training period. MST leader training rehearsal should serve as a validation by the owning commander of all classes to be taught, an approval of the leader training station concept and timeline, and a validation of the expertise of all SMEs who will teach leader training classes. A simple conditions-check meeting a few days prior to leader training, with all SMEs and the owning and participating subordinate commanders present is sufficient rehearsal for MST leader training if the above topics are covered.

STEP 6: EXECUTE THE TRAINING

1-33. Execution of MST hands-on training, as the main component of the MST, should be done in the same manner as rehearsed on day two of MST leader training. Pilot tests in 1AD have shown that a round robin style execution of hands-on training, where pre-determined groups of Soldiers move between stations on a set schedule is the best model for the execution of leader training. Having an open concept where Soldiers move between stations on their own is not recommended as some stations generate very long lines.

1-34. It is recommended that each testing Soldier have a copy of their platform's chapter of the MST booklet which they will present to graders prior to beginning testing. For crew level tasks, the vehicle commander's booklet will be used. The grader will then annotate GOs/NO-GOs in this booklet as the Soldier/crew is evaluated. Graders will terminate testing as soon as a Soldier is a NO-GO, inform them of their NO-GO, and

allow them to conduct on the spot retraining and retesting as time allows. If a Soldier/crew achieves all GOs at a station, the instructor will initial in the GO column on the first page of the platform's cover in the platform task list section. This will allow the Soldier's supervisors to easily assess the Soldier's test results and direct retraining as necessary.

STEP 7: EVALUATE THE TRAINING

1-35. Evaluating the training is the most important step of the 8-step training model for furthering the development of the MST training strategy. Units are encouraged to conduct informal hot-wash style after action reviews after each MST training day to get feedback on that specific day's instruction, organization, and content.

STEP 8: CONDUCT RETRAINING

1-36. MST retraining can be conducted at the crew level, with an MST certified leader retraining their subordinate and validating their ability to perform the failed task to standard. MST individual tasks with the booklet contain tasks, conditions, and standards and can be successfully executed by any echelon with access to the required equipment. Units are encouraged to use leaders time training to retrain Soldiers on MST tasks they failed as necessary.

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Chapter 2

M1A2 SEPv2

Maintaining combat readiness of the M1A2 SEPv2 and M1A2 SEPv3 requires a highly skilled and proficient crew. This chapter details the standardized procedures for assessing those skills through the Commander's Armor Maintenance Skills Test Program. Specifically, this chapter focuses on practical, task-based evaluations covering critical maintenance functions on the M1A2 SEPv2 and M1A2 SEPv3, including track maintenance, emergency start procedures, recovery preparation, and inspections of vital systems like fire suppression and air induction. Commanders will utilize these procedures to objectively verify crewmember proficiency in accordance with established standards, ensuring a consistently high level of maintenance capability within their units.

REFERENCES FOR THE M1A2 SEPV2 MST AND M1A2 SEPV3 MST

Below is the list of reference publications recommended for and required for conducting testing of crewmembers on M1A2 SEPv2 and M1A2 SEPv3 maintenance proficiency:

- TM 9-2350-388-10-1.
- TM 9-2350-388-10-2.
- TM 9-2350-388-10-3.
- TM 9-2350-388-10-4.
- TM 9-2350-412-10-1.
- TM 9-2350-412-10-2.
- TM 9-2350-412-10-3.
- TM 9-2350-412-10-4.

M1A2 SEPV2 AND M1A2 SEPV3 TASK LIST

Note. Instructors will initial in GO or NO-GO column as evaluated Soldier completes each task.

	GO	***NO-GO***
TASK 1: Maintain Track		
TASK 2: Slave Start Tank		
TASK 3: Prepare M1 for Recovery (Crew)		
TASK 4: Inspect Fire Suppression System		
TASK 5: Inspect Air Induction System		
TASK 6: Replace Track Section		

SECTION I – TASK 1: MAINTAIN TRACK

ACTION

Maintain the track on an M1A2 SEPv2 and M1A2 SEPv3.

CONDITION

Given a fully operational, parked M1A2, and TM 9-2350-388-10-4 (TM 9-2350-412-10-4 for M1A2 SEPv3).

STANDARD

Within 5 minutes the crewmember will—

- Open front fender.
- Inspect outside end connector.
- Inspect inside end connector.
- Inspect center guide.
- Inspect cooling tubes.
- Inspect track pad.
- Close front fender.

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one- crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	5 minutes
Total time (per crewmember):		10 minutes

INSTRUCTIONS TO THE CREWMEMBER

To evaluate crewmembers, the following instructions will be provided: "In front of you is an M1A2 Abrams tank. You must open the front fender, inspect the serviceability of the track, and close the front fender within five minutes. When inspecting the serviceability of the track you must state the name of all track components and describe what would make the component unserviceable. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 1

MAINTAIN TRACK

	GO	NO-GO
1. Open front fender (WP 0538 M1A2 SEPv2, WP 0550 M1A2 SEPv3).		
a. Removed torsion bar from bracket.		
b. Folded front fender back.		
c. Propped front fender open or tied it to the rear.		
2. Inspect outside end connector (after PMCS step 35).		
a. Identifies one outside end connector.		
b. States unserviceability criteria (missing/loose wedge bolt, more than 1/8 inch away from track pad, cracks, or worn to less than 3/16 inch).		
3. Inspect inside end connector (after PMCS step 35).		
a. Identifies one inside end connector.		
b. States unserviceability criteria (missing/loose wedge bolt, more than 1/8 inch away from track pad, cracks, or worn to less than 3/16 inch.		
4. Inspect center guide (after PMCS step 35).		
a. Identifies one center guide.		
b. States unserviceability criteria (loose bolts, two or more consecutive center guides missing, worn to less than 1/2 inch thick).		
5. Inspect cooling tubes (after PMCS step 35).		
a. Identifies one set of cooling tubes (connected by an end connector or center guide).		
b. States unserviceability criteria (bent, cracked, or broken).		
6. Inspect track pad (after PMCS step 35).		
a. Identifies track pad.		
b. States unserviceability criteria (worn to height of metal, out of line).		
c. Explains how to replace track pads.		
7. Closes front fender (WP 0539 M1A2 SEPv2, WP 0551 M1A2 SEPv3).		
a. Unties string or un-props the front fender.		
b. Lowers front fender into position.		
c. Replaces torsion bar in bracket.		
8. Completed all steps within 5 minutes.		

SECTION II – TASK 2: SLAVE START TANK (CREW)

ACTION

Demonstrate proper slave start procedures on two M1A2 SEPv2/M1A2 SEPv3 tanks.

CONDITION

Given two fully operational, parked M1A2s with their turrets oriented to the side, a slave cable that reaches between the rear slave receptacles of both vehicles, a clean rag, and TM 9-2350-388-10-3 (TM 9-2350-412-10-3 for M1A2 SEPv3). Soldiers must not be wearing wedding rings or dog tags/necklaces. An operational portable fire extinguisher must be on hand.

STANDARD

Within 10 minutes the crew will—

- Prepare dead tank (WP 0355 M1A2 SEPv2, WP 0383 M1A2 SEPv3).
- Service batteries on dead tank (WP 0521 M1A2 SEPv2, WP 0384 M1A2 SEPv3).
- Prepare live tank (WP 0355 M1A2 SEPv2, WP 0400 M1A2 SEPv3).
- Start dead tank (WP 0356 M1A2 SEPv2, WP 0384 M1A2 SEPv3).

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one- crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	10 minutes
Total time (per crew):		15 minutes

INSTRUCTIONS TO THE CREW

To evaluate crewmembers, the following instructions will be provided: "In front of you are two M1A2 Abrams tanks, one is FMC and the other has dead batteries. You must prepare both vehicles for slave start procedures, conduct a slave start, and then disconnect the slave cables. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 2

SLAVE START TANK

	GO	NO GO
1. Prepare dead tank (WP 0355 M1A2 SEPv2, WP 0383 M1A2 SEPv3).		
• Ensured dead tank parking brake is applied.		
• Ensured dead tank is in neutral.		
• Ensured dead tank TAC IDLE light is off.		
• Ensured dead tank master power is off.		
• Open primary and auxiliary batter compartments.		
• Service AUX and primary batteries on dead tank (WP 0521 M1A2 SEPv2, WP 0384 M1A2 SEPv3).		
▪ Check for foreign objects in battery boxes.		
▪ Clean tops of batteries with a clean rag.		
▪ Remove rubber covers from tops of batteries.		
▪ Checks for corrosion on any exposed metal parts.		
▪ Ensures that battery retainer brackets and power cables do not touch. Inspects for evidence of arcing.		
▪ Check power cables for tightness at connection to the PPC or PPM.		
▪ Check all electrical cables, retaining clamps, battery retainers, and battery terminals for tightness.		
▪ Make sure that felt washers are underneath terminals.		
▪ Check all electrical cables for cracked or worn insulation.		
▪ Replaced all rubber covers onto battery tops.		
• Disconnected power cable from stowage receptacle and reconnected it to slave power receptacle in battery box.		
• Explain that the next step would be to close battery boxes, traverse turret over the rear, and engage the turret lock. (Do not actually do this in interest of time.)		
2. Prepare live tank (WP 0355 M1A2 SEPv2, WP 0383 M1A2 SEPv3).		
• Ensured that live tank engine and master power are off.		
• Opened live tank primary battery box.		
• Disconnected power cable from stowage receptacle and reconnected it to slave power receptacle in battery box.		
• Explained that the next step would be to close battery box, traverse turret over the rear, engage the turret lock. (Do not actually do this in interest of time.)		
3. Start dead tank (WP 0356 M1A2 SEPv2, WP 0384 M1A2 SEPv3).		
• Installed slave cable on external (rear) slave receptacle of live tank first.		
• Turned on master power on dead tank (notional).		
• Turned on master power on dead tank.		
• Ensured that parking brake was set on dead tank and there were no engine, transmission, or fire warning messages.		
• Set live tank TAC IDLE to on (notional).		
• Ensured that NATO utility power on both tanks was set to M (M1A2 SEPv2).		

	GO	NO GO
• Set battery start on dead tank to A.		
• Let live tank run on TAC IDLE for 15 minutes to charge the batteries on the dead tank. (Notional)		
• Disconnected slave cable from both vehicles.		
• Ensured NATO utility power on both tanks was set to A.		
• Opened battery box on both vehicles.		
• Moved power cable from slave power cable to stowage receptacle.		
• Closed battery box on both vehicles.		
4. Completed all steps within 15 minutes.		

SECTION III – TASK 3: PREPARE M1 FOR RECOVERY (CREW)

ACTION

Prepare an M1A2 SEPv2 or M1A2 SEPv3 for recovery using tow bars and tow cables.

CONDITION

Given three M1A2 tanks, one fully operational to be used as the tow tank, the second notionally disabled, and the third fully operational to be used as the brake tank, and TM 9-2350-388-10-3 (TM 9-2350-412-10-3 for M1A2 SEPv3). All three tanks should be staged in such a way that the crew being evaluated will not need to start or move any vehicles to complete this task. The tow bar will be staged on the ground in front of the disabled tank, there will be four chock blocks present, four tow hooks on the front slope of the disabled tank, exhaust deflector on bustle rack of tow tank, and two tow cables installed in the brackets of the disabled tank's turret.

STANDARD

Within 15 minutes the vehicle crew will—

- Install exhaust deflector on tow tank (WP 0358 M1A2 SEPv2, WP 0386 M1A2 SEPv3).
- Disconnect final drives on disabled tank (WP 0359 M1A2 SEPv2, WP 0387 M1A2 SEPv3).
- Connect tow bar (WP 0360 M1A2 SEPv2, WP 0388 M1A2 SEPv3).
- Connect brake tank (WP 0363 M1A2 SEPv2, WP 0389 M1A2 SEPv3).
- Remove exhaust deflector from tow tank (WP 0358 M1A2 SEPv2, WP 0386 M1A2 SEPv3).
- Disconnect tow bars from tow tank (WP 0362 M1A2 SEPv2, WP 0390 M1A2 SEPv3).
- Disconnect tow cables from brake tank (WP 0365 M1A2 SEPv2, WP 0393 M1A2 SEPv3).
- Connect final drives on disabled tank.

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crew on a roster. The evaluator uses the crewmember with all required materials and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	15 minutes
Total time (per crew):		20 minutes

INSTRUCTIONS TO THE CREW

To evaluate crewmembers, the following instructions will be provided: "In front of you are three M1A2 Abrams tanks. Two are operational and one has been notionally disabled. You must prepare the disabled tank for recovery and then connect it to the tow and brake tanks within 15 minutes. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 3

PREPARE M1 FOR RECOVERY (CREW)

	GO	NO-GO
1. Install exhaust deflector on tow tank (WP 0358 M1A2 SEPv2, WP 0386 M1A2 SEPv3).		
• Aligned upper hooks of exhaust deflector with top exhaust grate louver.		
• Aligned lower hooks with eighth exhaust grate louver.		
• Pushed forward, down, and back to seat the exhaust deflector.		
2. Disconnect both final drives on disabled tank (WP 0359 M1A2 SEPv2, WP 0387 M1A2 SEPv3).		
• Ensured chock blocks were in place in front and rear of both the left and right tracks.		
• Released the parking brakes.		
• Removed four final drive cover bolts.		
• Removed final drive cover.		
• Removed final drive cam locking bolt.		
• Moved cam to opposite side ("OUT," disengaged final drives).		
• Reinstalled cam locking bolt.		
• Inspected final drive cover to ensure O-ring was present.		
• Installed final drive cover with notch revealing 'OUT'.		
• Installed four final drive cover bolts.		
3. Connect tow bar (WP 0360 M1A2 SEPv2, WP 0388 M1A2 SEPv3).		
• Inspected tow bar for serviceability (cracked, broken welds, missing pins, missing cotter pins).		
• Ensured turret was traversed to the left rear on the disabled tank (over the back left corner).		
• Locked the turret lock on disabled tank (WP 02720272 M1A2 SEPv2, WP 0215 M1A2 SEPv3).		
• Removed pins from tow bar.		
• Aligned tow bar with tow lugs on disabled tank.		
• Installed pins on tow bar to connect to tow lugs on disabled tank.		
• Installed cotter pins on tow bar.		
• Removed cotter pin from pintle of tow tank.		
• Locked pintle open.		
• Propped up tow bar to match height of pintle on tow tank.		

	GO	NO-GO
• Ensured main gun of tow tank was facing forward.		
• Locked turret lock on tow tank.		
• Crew explained procedures for connecting tow tank to tow bar (NOTE: do not actually move tow tank).		
4. Connect brake tank (WP 0363 M1A2 SEPv2, WP 0389 M1A2 SEPv3).		
• Removed tow cables from the turret of the disabled tank.		
• Installed tow hooks on rear tow lugs of disabled tank and front tow lugs of tow tank.		
• Ensured two cotter pins were installed on each tow hook.		
• Connected tow cables to brake tank.		
• Connected tow cables to disabled tank.		
• Ensured cables were connected in a cross patter (cable runs from left front tow hook on brake tank to rear right tow hook on disabled tank).		
5. Removed exhaust deflector from tow tank (WP 0358 M1A2 SEPv2, WP 0386 M1A2 SEPv3).		
• Removed exhaust deflector.		
• Stowed exhaust deflector on bustle rack of tow tank.		
6. Disconnect tow bars (WP 0362 M1A2 SEPv2, WP 0390 M1A2 SEPv3).		
• Removed cotter pin from tow tank pintle.		
• Locked tow pintle open.		
• Removed cotter pins from tow bar.		
• Removed pins from tow bar and tow lugs.		
• Removed tow bar from tow lugs.		
• Reinstalled pins and cotter pins in tow bar.		
• Closed tow pintle on tow tank.		
• Reinstalled cotter pin on tow pintle of tow tank.		
7. Disconnect tow cables (WP 0365 M1A2 SEPv2, WP 0393 M1A2 SEPv3).		
• Disconnect all tow cables from tow hooks.		
• Removed all tow hooks from disabled tank and brake tank.		
• Returned tow hooks to front slope of disabled tank. Ensured that all pins and cotter pins were present.		
• Stowed tow cables on side of disabled tank turret.		
8. Reconnect both final drives on disabled tank (WP 0359 M1A2 SEPv2, WP 0387 M1A2 SEPv3).		
• Removed four final drive cover bolts.		
• Removed final drive cover.		
• Removed final drive cam locking bolt.		
• Moved cam to opposite side (“IN”, engaged final drives).		
• Reinstalled cam locking bolt.		
• Inspected final drive cover to ensure O-ring was present.		
• Installed final drive cover with notch revealing ‘IN’.		
• Installed four final drive cover bolts.		
9. Completed all steps within 15 minutes.		

SECTION IV – TASK 4: INSPECT FIRE SUPPRESSION SYSTEM

ACTION

Inspect the fire suppression system of an M1A2 SEPv2 or M1A2 SEPv3 for proper functionality.

CONDITION

Given a fully operational, parked M1A2, and TM 9-2350-388-10-4 (TM 9-2350-412-10-4 for M1A2 SEPv3).

STANDARD

Within five minutes the crewmember will—

- Inspect all emergency fire extinguisher handles (Before PMCS step 3).
- Inspect all fire sensor lenses (WP 0500 M1A2 SEPv2, WP 0516 M1A2 SEPv3).
- Inspect all fire bottles (Before PMCS step 18).
- Inspect all portable fire extinguishers (Before PMCS steps 23, 24).

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on – and only one- crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	10 minutes
Total time (per crewmember):		15 minutes

INSTRUCTIONS TO THE CREWMEMBER

To evaluate crewmembers, the following instructions will be provided: "In front of you is an M1A2 Abrams tank. You must identify and inspect all fire extinguisher emergency handles, fire sensors lenses, fire bottles, and portable fire extinguishers. As you inspect each component, you must check for NO-GOs and verbally state what the NO-GO criteria are. You are not required to perform this task in any specified order, so long as you identify and inspect all fire suppression components on the tank. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 4

INSPECT FIRE SUPPRESSION SYSTEM

	GO	NO-GO
1. Inspect emergency fire extinguisher handles (Before PMCS step 3, 23, 24, WP 0500 M1A2 SEPv2, WP 0516 M1A2 SEPv3).		
• Exterior handle.		
▪ Handle is fully pushed in.		
▪ Handle has does not have restraining cable.		
• Driver's compartment handles.		
▪ Handle is fully pushed in.		
▪ Handle has does not have restraining cable.		
• Second shot switch on I-DID.		
▪ Switch has safety cover installed.		
▪ Switch is not engaged.		
2. Inspected all fire sensor lenses (WP 0500 M1A2 SEPv2, WP 0516 M1A2 SEPv3) [NO-GO for all checks in this category is loose on bracket, dusty, painted over, visibly broken, or missing].		
• Driver's compartment sensor.		
• Tank commander's station sensor.		
• Loader's sensor #1(near ammo door).		
• Loader's sensor #2 (near commander's independent thermal viewer).		
• Engine compartment #1 (near Scavenger fan).		
• Engine compartment #2 (near front of engine).		
• Engine compartment #3 (near quick disconnect panel).		
• Engine compartment #4 (near hydraulic pump).		
3. Inspected all fire bottles (Before PMCS step 18) [NO-GO is pressure outside of green zone on pressure gauge, improper mounting {damaged/missing bracket, strap, or support pad}, safety pins are NOT installed].		
• Crew compartment halon bottle.		
• First shot fire bottle.		
• Second shot fire bottle.		
4. Inspected all portable fire extinguishers (Before PMCS steps 23, 24) [NO-GO criteria is safety pin NOT installed, pressure gauge shows outside GREEN zone, stamped date is older than 12 years].		
• Tank commander's station portable fire extinguisher [NOTE: this fire extinguisher may also NO-GO if the mounting bracket is missing or damaged].		
• Loader's sponson box portable fire extinguisher.		
5. Completed all steps within 10 minutes.		

SECTION V –TASK 5: INSPECT AIR INDUCTION SYSTEM

ACTION

Inspect all components that impact the air induction system of an M1A2 SEPv2 or M1A2 SEPv3.

CONDITION

Given a fully operational, parked and running M1A2 with a driver in the driver's seat, with the turret oriented over the side, and TM 9-2350-388-10-4 (TM 9-2350-412-10-4 for M1A2 SEPv3).

STANDARD

Within five minutes the crewmember will—

- Inspect #7 skirts.
- Inspect belly plates.
- Inspect pre-cleaner.
- Inspect the Scavenger fan duct and seals.
- Inspect plenum seal.
- Verify proper operation of the pulse jet system.

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	10 minutes
Total time (per crewmember):		15 minutes

INSTRUCTIONS TO THE CREWMEMBER

To evaluate crewmembers, the following instructions will be provided: "In front of you is an M1A2 Abrams tank. You must inspect all components that are part of the air induction system and that contribute to the prevention of foreign object damage. As you inspect each component, you must explain the role each component has in the air induction system. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 5

INSPECT AIR INDUCTION SYSTEM

	GO	NO-GO
1. Inspect #7 skirts (Before check #1).		
• Ensured #7 skirts were present on left/right side of tank.		
• Ensured #7 skirts were pinned closed.		
• Ensured rubber seal at top of skirt was in place and properly seated.		
• Explained the role of the #7 skirt in the air induction system (#7 skirt prevents debris/dust coming off the sprocket from rising to the level of the air induction inlet).		
2. Inspect belly plates (before check #1).		
• Inspected saddle plates, ensured bolts were present and tightly fastened.		
• Inspected engine compartment belly plate.		
• Inspected crew compartment belly plate.		
• Explained that belly plates prevent dirt/dust from bypassing the air filters and getting close to the plenum seal.		
3. Inspect/service pre-cleaner (monthly check 3, WP 0505 M1A2 SEPv2, WP 0521 M1A2 SEPv3).		
• Open pre-cleaner grille doors.		
• Remove any debris (including BII) from on top of the pre-cleaner.		
• Ensure that all four latches on the pre-cleaner are present, undamaged, and completely latched.		
• Inspect the top of the precleaner for any large cracks or dents in the wire mesh covering or tubes underneath.		
• Ensure that the precleaner body is not ruptured, punctured, cracked, missing rivets, or otherwise damaged greater than 3/16 inch.		
• Explains that the pre-cleaner filters large particles out of the air intake.		
4. Inspect Scavenger fan duct and seals.		
• Ensured that the seal and clamp connecting the Scavenger fan duct to the plenum box were properly installed		
• Ensured that the seal and clamp connecting the Scavenger fan duct to the Scavenger fan were properly installed.		
• Ensured that there were no rips, holes, or tears in the Scavenger fan duct.		
• Explained that the Scavenger fan system provides suction to the plenum box to suck out dirt and dust that is dislodged by the pulse jet system.		
5. Inspect plenum seal.		
• Identifies the plenum seal and explains that if it is improperly seated then any debris in the engine compartment could be sucked directly into the engine.		
• Checks for proper seating of the plenum seal by verifying that the seal is seated to the same depth on all sides.		
6. Verify proper operation of the pulse jet system (before check 31, WP 0068 M1A2 SEPv2, WP 0071 M1A2 SEPv3).		
• Asks driver to raise RPM above 1550 for at least 2 minutes.		
• Stands near air intake and listens for pulses after 2 minutes.		

	GO	NO-GO
• Verifies that pulses fires about every 10 seconds and that at least 9 consecutive pulses are heard.		
• Checks to see if any dust/debris is ejected from the back left of tank as pulse jets fire.		
• Explains that the pulse jets fire compressed air into the inside of the V-Packs to dislodge any dust/debris caught inside them, which automatically cleans them.		
7. Completed all steps within 10 minutes.		

SECTION VI – TASK 6: REPLACE TRACK SECTION (CREW)

ACTION

Replace a track section on an M1A2 SEPv2 or M1A2 SEPv3.

CONDITION

Given a fully operational, parked M1A2, an extra track section, all M1A2 BII, and TM 9-2350-388-10-4 (TM 9-2350-412-10-4 for M1A2 SEPv3).

STANDARD

Within 30 minutes the crew will—

- Disconnect track (WP 0550 M1A2 SEPv2, WP 0562 M1A2 SEPv3).
- Remove track shoe (WP 0551 M1A2 SEPv2, WP 0563 M1A2 SEPv3).
- Install track shoe (WP 0553 M1A2 SEPv2, WP 0565 M1A2 SEPv3).
- Connect track (WP 0554 M1A2 SEPv2, WP 0566 M1A2 SEPv3).

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one- crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	30 minutes
Total time (per crewmember):		35 minutes

INSTRUCTIONS TO THE CREWMEMBER

To evaluate crewmembers, the following instructions will be provided: "In front of you is an M1A2 Abrams tank. You must disconnect the track, remove a track section, replace it with a different track section, and reconnect the track. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 6

REPLACE TRACK SECTION

	GO	NO-GO
1.Disconnects track (WP 0550 M1A2 SEPv2, WP 0562 M1A2 SEPv3).		
• Moves tank so that track section to be removed is in between the idler wheel and #1 roadwheel.		
• Shuts down engine.		
• Opens fender, #1, and #6 skirts.		
• Installs track support assembly (WP 0556 pages 12-14 for M1A2 SEPv3) NOTE: Track support assembly should not be completely taught when installed correctly.		
• Releases track tension.		
▪ Chocks both tracks.		
▪ Releases parking brake.		
▪ Uses wire brush and rage to clean the shaft of the track adjusting link. Greases track adjusting link shaft.		
▪ Remove rear vent plug.		
▪ Allows grease to flow out.		
▪ Reinstalls rear vent plug.		
• Removes inside end connector FIRST (WP 0548 M1A2 SEPv2, WP 0560 M1A2 SEPv3), [can use end connector puller pump or conduct by hand].		
▪ Removes wedge bolt.		
▪ Loosens end connector enough to install track connecting fixture (track jack).		
▪ Tightens track connecting fixture.		
▪ Removes end connector.		
• Removes outside end connector SECOND [can use end connector puller pump or conduct by hand].		
▪ Removes wedge bolt.		
▪ Loosens end connector enough to install track connecting fixture (track jack).		
▪ Tightens track connecting fixture.		
▪ Removes end connector.		
• Removes centerguide (WP 0546 M1A2 SEPv2, WP 0558 M1A2 SEPv3).		
• Crewmember uses pry bar to support track beneath the compensating idler wheel.		
• Loosens the tracks connecting fixtures slowly, alternating between sides until the track connecting fixtures are completely loose.		
• Removes track connecting fixtures.		
• Removes pry bar supporting the track.		
2.Removes track shoe (WP 0551 M1A2 SEPv2, WP 0563 M1A2 SEPv3).		
• Removes inside end connector.		
• Removes outside end connector.		
• Removes centerguide.		
• Removes track shoe to be replaced.		
3.Installs new track shoe (WP 0553 M1A2 SEPv2, WP 0565 M1A2 SEPv3).		

	GO	NO-GO
• Places new track shoe in line with track.		
• Installs centerguide (WP 0547 M1A2 SEPv2, WP 0559 M1A2 SEPv3).		
• Installs both end connectors (WP 0549 M1A2 SEPv2, WP 0555 M1A2 SEPv3).		
4.Connects Track (WP 0554 M1A2 SEPv2, WP 0560 M1A2 SEPv3).		
• Opens track connecting fixtures as wide as they will go.		
• Crewmember props upper end of track (side hanging on idler wheel) up with a prybar.		
• Installs track connecting fixture on outside of track.		
• Installs track connecting fixture on inside of track.		
• Tightens track connecting fixtures until they are snug.		
• Crewmember removes pry bar.		
• Continue tightening track connecting fixtures until track pins are close enough for end connectors.		
• Install centerguide.		
• Install both end connectors (WP 0549 M1A2 SEPv2, WP 0561 M1A2 SEPv3).		
▪ Sets end connectors onto track pins.		
▪ Removes track connecting fixtures.		
▪ Fully seats end connectors.		
▪ Install wedge bolts.		
• Removes track support assembly.		
• Adjusts track tension (WP 0544 M1A2 SEPv2, WP 0556-1 M1A2 SEPv3).		
▪ Using a clean rag, cleans grease fitting on track adjusting link.		
▪ Connects a grease gun to grease fitting.		
▪ Pumps grease until grease releases from the top of the track adjusting link.		
▪ Disconnects grease gun.		
5.Closes fender, #1, #6 skirts.		
6.Completes all steps within 30 minutes.		

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Chapter 3

M2A3/M2A4/4E1 Bradley

This document details the reference publications and a task list for evaluating crewmember proficiency in M2A3, M2A4, and M2A4E1 Bradley fighting vehicle (BFV) maintenance. This information is intended to support U.S. Military professionals involved in BFV maintenance training and assessment across all echelons. The provided materials outline specific tasks, conditions, standards, and evaluation procedures designed to ensure BFV systems are maintained to required levels of operational readiness. Commanders will utilize these procedures to objectively verify crewmember proficiency in accordance with established standards, ensuring a consistently high level of maintenance capability within their units.

REFERENCES FOR THE M2A3 BRADLEY MST

Below is the list of reference publications recommended for and required for conducting testing of crewmembers on M2A3 BFV maintenance proficiency.

- TM 9-2350-438-10-1.
- TM 9-2350-438-10-2.
- TM 9-2350-441-10-1.
- TM 9-2350-441-10-2.

M2A3 TASK LIST

Note. Instructors will initial in GO or NO-GO column as evaluated Soldier completes each task.

	GO	***NO-GO***
Task 1: Maintain track		
Task 2: Maintain and operate personnel heater		
Task 3: Engine compartment after OPS checks		
Task 4: Slave start BFV		
Task 5: Tow disabled BFV		
Task 6: Check AFES System		

SECTION I –TASK 1: MAINTAIN TRACK

ACTION

Maintain the track on an M2A3/M3A3/M2A4/M2A4E1 BFV.

CONDITION

Given a fully operational, parked M2 with double-pin track, and TM 9-2350-438-10-1 (TM 9-2350-441-10-2 for M2A4 and M2A4E1).

STANDARD

Within five minutes the crewmember will—

- Inspect double pin track (After PMCS step 4).
- Adjust track tension (WP 0089 M2A3, WP 0177-1 M2A4/M2A4E1).

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on – and only one- crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	10 minutes
Total time (per crewmember):		15 minutes

INSTRUCTIONS TO THE CREWMEMBER

To evaluate crewmembers, the following instructions will be provided: "In front of you is an M2 series Bradley Fighting Vehicle. You will inspect the track for serviceability and ensure the track has proper tension. When inspecting the serviceability of the track you must state the name of all track components and describe what would make the component unserviceable. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 1

MAINTAIN TRACK

	GO	NO-GO
1. Inspect Double Pin Track (After PMCS Step 4).		
• Inspected sprockets.		
▪ Identified drive sprockets.		
▪ Checked sprockets for cracks, broken/missing teeth.		
▪ Identified and explained wear indicator on sprocket.		
▪ Identified sprocket carrier.		
▪ Checked sprocket carrier for loose, broken, or missing bolts.		
• Track shoe pads.		
▪ Identified track shoe pads.		
▪ Ensured track shoe pads were present.		
▪ Ensured track shoe pads were NOT worn down to being even with the metal of the grouser.		
▪ Ensured track shoe pads were fully seated in the groove.		
▪ Checked for dead track shoes (After PMCS, step 8).		

	GO	NO-GO
• End Connectors.		
▪ Identified end connectors.		
▪ Ensured that end connectors were a minimum of 3/16 inches thick.		
▪ Checked end connectors for presence and proper seating of wedge bolts. Explained that bolt should protrude through wedge when properly seated.		
• Track pins.		
▪ Identified track pins.		
▪ Checked for bent, crack, or broken track pins.		
• Identified roadwheel path.		
▪ Checked roadwheel path for damage (severe cutting, chunking, or blowout of rubber).		
• Center guides.		
▪ Identified center guides.		
▪ Checked to ensure center guides were not cracked, bent, broken or missing.		
▪ Checked center guide wear indicator. Explained NO-GO criteria for center-guide wear.		
• Bushings.		
▪ Identified track bushings.		
▪ Checked for worn or damaged bushings. Ensured there was no metal-to-metal contact.		
• Track grousers.		
▪ Identified track grousers.		
▪ Checked that track grousers were a minimum of 2 inches thick.		
2. Adjusted track tension (WP 0089).		
• Verbally stated that the first step of adjusting track tension is to allow the vehicle to coast to a stop without using the brake pedal.		
• Ensured vehicle was blocked with at least two chock blocks.		
• Attempted to spin rear track support roller.		
• Inspected clearance of track from rear support roller using a machinist rule. Stated that track tension requires adjustment if clearance is greater than 3/4in. or roller does not spin freely.		
• Inspected track adjuster. Ensured no more than 3-1/2 inches of chrome piston was showing.		
• Demonstrated and explained how to increase track tension if required.		
▪ Demonstrated how to clean dirt from lubrication fitting and grease gun nozzle.		
▪ Demonstrated how to ensure bleed valve of track adjuster was closed.		
▪ Explained how to pump grease into the track adjusted until track was tensioned until it rose 3/4 inch above rear support roller OR 3-1/2 inches chrome was showing on track adjuster.		
▪ Explained that if more than 3-1/2 inches of chrome plating is showing on the track adjuster, but track is not lifted 3/4 inches above rear support roller, a track shoe must be removed.		

GO	NO-GO

- Explained how to decrease track tension if required.
  - Identified track adjuster bleed valve.
  - Explained that if clearance between rear support roller and track is more than 3/4 inches crew would release grease from the bleed valve until the track was 3/4 inches above rear support roller.

3. Completed all steps within 10 minutes.

SECTION II – TASK 2: MAINTAIN AND OPERATE PERSONNEL HEATER

ACTION

Maintain and demonstrate proper operation of the personnel heater on an M2 BFV.

CONDITION

Given a fully operational, parked M2 and TM 9-2350-438-10-1 and TM 9-2350-438-10-2 (TM 9-2350-441-10-1 and TM 9-2350-441-10-2 for M2A4 and M2A4E1). The turret of the BFV should be at 5200 mils.

STANDARD

Within five minutes the crewmember will—

- Inspect personnel heater functionality (before PMCS step 31).
- Operate personnel heater (WP 0029 M2A3, WP 0017-1 M2A4/M2A4E1).

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one- crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	10 minutes
Total time (per crewmember):		15 minutes

INSTRUCTIONS TO THE CREWMEMBER

To evaluate crewmembers, the following instructions will be provided: "In front of you is an M2 series Bradley fighting vehicle. Inspect the personnel heater for serviceability and demonstrate proper startup and shutdown procedures for the heater. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 2

MAINTAIN AND OPERATE PERSONNEL HEATER

	GO	NO-GO
1. Identified heater exhaust port		
2. Ensured that heater exhaust port was not covered or obstructed		
3. Inspected personnel heater air duct pipe for proper insulation and seals.		
4. Turned on personnel heater (WP 0029 M2A3, WP 0017-1 M2A4/M2A4E1)		
• Ensured heater switch was in the OFF position.		
• Pressed the indicator light to ensure indicator light comes on.		
• Moved the heater switch to START for at least four seconds then moved switch to RUN.		
• Verbally stated that the heater indicator light will come on within 3-1/2 minutes. If indicator light does not come on, turn heater off and allow to purge for 4 minutes.		
• Verbally stated that after 4 minutes of purging, crew will reattempt to start the heater. If after 3 tries the heater still fails to start, notify FMT.		
5. Ensured turret was at 5200 mils (M2A3 only).		
6. Checked around squad area duct outlet for steady heat output.		
7. Checked around personnel heater for smoke or strong diesel fumes. Verbally stated that if an exhaust leak is found M2 is NMC		
8. Manually traversed turret to 4100 mils (Turret WP 0062 M2A3 only).		
• Moved turret traverse drive select lever to manual position		
• Released turret travel lock (Turret WP 009 M2A3 only).		
• Turned turret to 4100 mils.		
• Set turret travel lock (Turret WP 009 M2A3 only).		
• Moved turret traverse drive select lever to power position.		
• Installed spring on turret traverse handwheel.		
9. Checked fuel lines, fittings, and personnel heater for fuel leaks.		
10. Checked for flashing light on personnel heater. If light was flashing, recorded pattern of flashing light on DA Form 5988-E (*Equipment Maintenance and Inspection Worksheet [EGA]*).		
11. Manually traversed turret to 5200 mils (M2A3 only).		
12. Turned off personnel heater.		
13. Completed all steps within 10 minutes.		

SECTION III – TASK 3: ENGINE COMPARTMENT AFTER OPS CHECKS

ACTION

Demonstrate proper performance of after operations checks in and around the BFV's engine compartment.

CONDITION

Given a fully operational, parked M2 and TM 9-2350-438-10-1 (TM 9-2350-441-10-1 for M2A4 and M2A4E1). The power unit access door must be open and held in place by the safety latch. The power unit access panels should be removed. The left and right front hull access covers (propeller shaft covers) must be removed. The vehicle must have a drip pan present.

STANDARD

Within five minutes the crewmember will—

- Inspect engine compartment (After PMCS Step 7).
- Inspect power unit access Door (After PMCS Step 8).
- Inspect final drives (After PMCS Step 9).
- Inspect transmission (After PMCS Step 10).
- Inspect oil levels (After PMCS Step 11).
- Inspect cooling system (After PMCS Step 12).
- Inspect fuel system (After PMCS Step 13).

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one—crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	15 minutes
Total time (per crewmember):		20 minutes

INSTRUCTIONS TO THE CREWMEMBER

To evaluate crewmembers, the following instructions will be provided: "In front of you is an M2 series Bradley fighting vehicle. You will perform After PMCS steps 7 to 12 and demonstrate the ability to complete those checks to the standards dictated in the training manual. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 3

ENGINE COMPARTMENT AFTER OPS CHECKS

	GO	NO-GO
1.Checked engine compartment (After PMCS Step 7).		
• Identified engine compartment.		
• Identified bilge area.		
• Checked all hoses, clamps, and fittings for any kind of fluid leak. Stated that NO-GO criteria is a Class III leak.		
• Explained what a Class III leak is.		
• Checked engine oil level.		
▪ Pulled engine oil dipstick.		
▪ Instructor prompts "If the oil level reads Full, what do you do?"		
▪ Soldier states "Put the dipstick back" or "nothing".		
▪ Instructor prompts "If the oil level reads Add 4 QT or below, what do you do?"		

	GO	NO-GO
▪ Soldier states “Add 4 quarts of oil if in the add 4 QT zone. Add oil as needed until the dipstick reads full.”		
▪ Instructor prompts “What kind of oil do you fill the engine of the M2 with?”		
▪ Soldier states “15W40.”		
▪ Instructor prompts “what do you do if the oil on the dipstick looks milky or bubbly?”		
▪ Soldier states “Annotate on DA 5988-E and notify field maintenance.”		
• Checked power unit access panel insulation.		
▪ Identified the power unit access panels.		
▪ Check the insulation panels on the power unit access panels for rips/tears/punctures.		
2.Checked the power unit access door (After PMCS Step 8).		
• Ensured that safety latch was installed correctly.		
• Checked hoses, fittings, cylinders, tubes, and hydraulic pump on the access door for leaks.		
• Checked hydraulic reservoir by viewing through sight glass. Added fire resistant hydraulic if fluid not visible in sight glass.		
3.Checked finals drives (After PMCS Step 9)		
• Identified final drives.		
• Identified propeller shafts.		
• Checked universal joint bolts on ends of the propeller shafts for presence and looseness.		
4.Checked transmission (After PMCS Steps 10,11).		
• Check transmission oil filter indicator protective cover for damage.		
• Pulled transmission dipstick. Explained which side of the dipstick they were reading and why.		
▪ Instructor prompts “What kind of oil do you fill the transmission of the M2 with?”		
▪ Soldier states “15W40.”		
5.Checked right angle drive fan gearbox (After PMCS Step 11).		
• Identified right angle fan drive gearbox and checked for oil leaks.		
• Removed gearbox dipstick and wiped dry. Reinstalled dipstick.		
• Pulled dipstick again and read level.		
• Instructor prompts “What kind of oil do you fill the right angle fan drive gearbox with?”		
• Soldier states “15W40.”		
6.Checked cooling system (After PMCS Step 12).		
• Identified major components of the Cooling system. (Figure 57).		
▪ Hoses.		
▪ Clamps.		
▪ Bilge areas.		
▪ Fill cap.		
▪ Radiator.		
• Inspected all components for any Class III coolant leak.		

	GO	NO-GO
• Instructor prompts “What kind of fluid do you fill coolant system of the M2 with and what does that fluid look like?”		
• Soldier states “Coolant. It is bright green”.		
7.Checked fuel system (After PMCS Step 13).		
• Identified major components of the fuel system (Figure 58).		
▪ Fuel pump.		
▪ Fuel shutoff cable.		
▪ Quick disconnects.		
▪ Drain hose.		
▪ Fuel filter hose fittings.		
• Verified that the shutoff cable was not broken or binding.		
• Checked all components for any Class of fuel leak.		
• Moved MASTER POWER switch to ON.		
• Moved ENGINE ACCESSORY switch to ON.		
• Drained fuel from drain hose into drain pan until clear fuel comes out.		
• Re-engaged fuel shutoff.		
• Moved ENGINE ACCESSORY switch to OFF.		
• Moved MASTER POWER switch to OFF.		
• Checked drained fuel for contaminants.		
8.Completed all steps within 15 minutes.		

SECTION IV – TASK 4: SLAVE START BRADLEY FIGHTING VEHICLE (CREW)

ACTION

Demonstrate proper slave start procedures on both a dead and live BFV.

CONDITION

Given two fully operational, parked BFVs parked next to each other, a slave cable that reaches between the vehicles, and TM 9-2350-438-10-1 (TM 9-2350-441-10-1 for M2A4 and M2A4E1). Soldiers must not be wearing wedding rings or dog tags/necklaces. An operational portable fire extinguisher must be on hand.

Within 5 minutes the crewmember will—

- Prepare dead BFV for slave start (WP 0023, 2-8 M2A3, WP 0029 M2A4/M2A4E1).
- Prepare live BFV for slave start (WP 0023, 2-8 M2A3, WP 0029 M2A4/M2A4E1).
- Connect slave cables (WP 0023 M2A3, WP 0029 M2A4/M2A4E1).
- Start dead BFV (WP 0022 M2A3, WP 0029 M2A4/M2A4E1).
- Disconnect slave cables (WP 0023 M2A3, WP 0029 M2A4/M2A4E1).

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember’s performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on – and only one- crewmember at a time.
- Procedures used when personnel receive a NO-GO—If a crewmember fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to

the crewmember what they did wrong and how to correct their mistakes. Then, the crewmember retests according to the local SOP.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	10 minutes
Total time (per crew):		15 minutes

INSTRUCTIONS TO THE CREW

To evaluate crewmembers, the following instructions will be provided: "In front of you are two Bradleys, one disabled (dead) and one FMC (live). You will demonstrate the ability to slave start the dead BFV by using the live BFV as an external power source. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 4

SLAVE START BFV

	GO	NO-GO
1.Prepared live BFV (WP 0023, steps 2-8 M2A3, WP 0029 M2A4/M2A4E1).		
• Checked that MASTER POWER switch was off.		
• Checked that ENGINE ACCESSORY switch was off.		
• Checked that TURRET POWER switch was off.		
• Checked that STARTER CUTOUT OVERRIDE switch was off.		
• Checked that forward bilge pump was off (WP 0004 M2A3, WP 0183 M2A4/M2A4E1, Crewmember must identify the indicator light and announce it to the grader).		
• Checked that rear bilge pump was off (WP 0004 M2A3, WP 0183 M2A4/M2A4E1, Crewmember must identify the indicator light and announce it to the grader).		
• Checked that smoke screen generator was off (WP 0004 M2A3, WP 0183 M2A4/M2A4E1, Crewmember must identify the indicator light and announce it to the grader).		
• Checked that COLD START switch was off.		
2.Prepared dead BFV (WP 0023 M2A3, WP 0029 M2A4/M2A4E1, steps 2 to 8).		
• Checked that MASTER POWER switch was off.		
• Checked that ENGINE ACCESSORY switch was off.		
• Checked that TURRET POWER switch was off.		
• Checked that STARTER CUTOUT OVERRIDE switch was off.		
• Checked that forward bilge pump was off (WP 0004 M2A3, WP 0183 M2A4/M2A4E1, Crewmember must identify the indicator light and announce it to the grader).		
• Checked that rear bilge pump was off (WP 0004 M2A3, WP 0183 M2A4/M2A4E1, Crewmember must identify the indicator light and announce it to the grader).		
• Checked that smoke screen generator was off (WP 0004 M2A3, WP 0183 M2A4/M2A4E1, Crewmember must identify the indicator light and announce it to the grader).		
• Checked that COLD START switch was off.		
3.Installed slave cable.		
• Removed cap from DVDB slave receptacle on dead vehicle.		

	GO	NO-GO
• Plugged slave cable into slave receptacle on dead vehicle FIRST.		
• Removed cap from DVDB slave receptacle on live vehicle.		
• Plugged slave cable into slave receptacle on live vehicle SECOND.		
4.Moved MASTER POWER Switch to ON in live BFV.		
5.Checked slave receptacle power light in both vehicles.		
• Pressed the ENERGIZE SLAVE RECEPTACLE button in the operational vehicle.		
• Checked the color of both slave receptacle lights (crew must announce the color of both lights to the grader).		
• Explained to the grader what to do in the case either light is read (WP 0023 M2A3, WP 0029 M2A4/M2A4E1, Step 12-c).		
6.(ONLY IF BOTH LIGHTS FROM STEP 5 ARE GREEN) Started operational vehicle (WP 0022 M2A3, WP 0028 M2A4/M2A4E1).		
• Check power unit access panels in drivers compartment to ensure they were flush and securely fastened.		
• Moved the MASTER POWER switch to on.		
• Checked that AFES system is operational (WP 0032 M2A3, WP 0036 M2A4/M2A4E1).		
▪ After 10 seconds, verified that AFES CEP SYSTEM ON light is illuminated.		
▪ Verified that no fault lights on AFES CEP panel were illuminated		
• Moved ENGINE ACCESSORY switch to ON.		
• Checked the DTD to ensure that: (Verbally announces to grader what they are checking for).		
▪ ENGINE OIL PRES LOW indicator IS flashing.		
▪ FUEL gauge is in green zone.		
▪ Battery voltage gauge reads in yellow zone.		
▪ COOLANT LEVEL LOW indicator is NOT flashing.		
▪ TRANS OIL PRES LOW indicator IS flashing.		
▪ Checked that the Malfunction Advisory list on the DTD was at 0.		
• Pushed the FUEL CONTROL HANDLE in to turn on fuel.		
• Moved gear selector to START and held until engine started.		
• Checked the transmission electronic controlled fault indicator light (Explained to grader what to do if the light does not turn off after 22 seconds).		
• Checked the DTD to ensure that: (Verbally announces to grader what they are checking for).		
▪ ENGINE OIL PRES LOW indicator stops flashing and indicator is in green zone.		
▪ TRANS OIL PRES LOW indicator stops fleshing and indicator is in green zone.		
▪ That the volts gauge indicator is in the green zone.		
• Allowed engine to warm up to operating temperature.		
7.Moved ENGINE ACCESSORY to ON in dead BFV.		
8.Pushed fuel control handle in to turn ON in dead BFV.		
9.Moved gear selector of dead BFV to start and held until the engine started.		
10.Moved ENGINE ACCESSORY switch to off in dead BFV.		
11.Moved ENGINE ACCESSORY switch to off in live BFV.		

	GO	NO-GO
12.Moved MASTER POWER switch to OFF in live BFV.		
13.Moved ENGINE ACCESSORY switch to ON in dead BFV.		
14.Moved MASTER POWER switch to ON in live BFV.		
15.Moved ENGINE ACCESSORY switch to ON in live BFV.		
16.Removed slave cable.		
• Unplugged slave cable from dead BFV.		
• Installed cap on DVDB of dead BFV.		
• Unplugged slave cable from live BFV.		
• Installed cap on DVDB of live BFV.		
17.Moved MASTER POWER switch to ON in dead BFV.		
• Checked the DTD to ensure that: (Verbally announces to grader what they are checking for).		
▪ ENGINE OIL PRES LOW indicator stops flashing and indicator is in green zone.		
▪ TRANS OIL PRES LOW indicator stops fleshing and indicator is in green zone.		
▪ That the volts gauge indicator is in the green zone.		
• Checked that the warning lamp on the driver's switch and indicator panel is OFF.		
18.Checked the VOLTS gauge to ensure it is in the green or yellow zone.		
Note. If VOLTS gauge is red, perform the following items. If not, crew explains how to perform the following steps.		
▪ Checked ENGINE ACCESSORY switch.		
▪ Fully depressed accelerator pedal.		
▪ Moved ENGINE ACCESSORY switch to OFF for 5 seconds.		
▪ Moved ENGINE ACCESSORY switch to ON.		
▪ Released accelerator pedal and allowed engine to idle.		
▪ Checked VOLTS gauge to ensure it was in yellow or green zone.		
19.Completed all steps within 10 minutes.		

SECTION V – TASK 5: TOW DISABLED BRADLEY FIGHTING VEHICLE (CREW)

ACTION

Demonstrate how to prepare to tow a disabled BFV using both tow cables and tow bar.

CONDITION

Given two fully operational, parked BFVs parked one in front of the other, with all BII, and TM 9-2350-438-10-1 (TM 9-2350-441-10-1 for M2A4 and M2A4E1). The tow cable hooks, pins, and retainer clips BII for both Bradleys should be easily accessible.

STANDARD

Within five minutes the crew will—

- Connect vehicles with tow cables.
- Prepare disabled vehicle to be towed.

- Tow disabled vehicle.
- Disconnect tow cables.

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on—and only one- crew at a time.
- Procedures used when personnel receive a NO-GO—If a crew fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crew what they did wrong and how to correct their mistakes.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	15 minutes
Total time (per crew):		20 minutes

INSTRUCTIONS TO THE CREW

To evaluate crewmembers, the following instructions will be provided: "In front of you are two Bradleys, one disabled (dead) and one FMC (live). You will demonstrate the ability to connect the vehicles for recovery using tow cables, you will also explain the circumstances under which it is authorized to like-tow Bradley. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 5

TOW DISABLED BFV (CREW)

	GO	NO-GO
1.Read Cautions and warnings (WP 0051 M2A3, WP 0121 M2A4/M2A4E1).		
• Explained to instructor conditions in which Bradley can be towed more than 100 meters.		
• Explained to instructor conditions in which a Bradley can like-tow a Bradley.		
• Turret on disabled vehicle manually traversed to 3200 mils (M2A4/M2A4E1 only).		
2.Read DOs.		
3.Read DON'Ts.		
4.Connected vehicles using tow cables.		
• Removed tow cable from disabled vehicle.		
• Removed tow cable from recovery vehicle.		
• Install tow cable tow cable hooks, pins, and retainer clips into towing eyes on the back of the recovery Bradley and front of disabled Bradley.		
5.Installed tow cables in a X-pattern between Bradleys.		
6.Prepared to tow disabled vehicle.		
• Closed driver's hatch.		
• Moved gear selector to neutral in disabled vehicle.		
• Released hand brake in disabled vehicle.		

	GO	NO-GO
7.Towed disabled vehicle forward at least 10 feet.		
8.Stopped both vehicles without applying brakes in tow Bradley.		
9.Set hand brake in disabled Bradley.		
10.Disconnected tow cables.		
• Reversed tow vehicle to create enough slack to removed tow cables.		
• Removed tow cables from tow hooks.		
• Removed tow cable hooks, pins, and retainer clips from Bradleys. Stowed them as directed by evaluator.		
• Stowed tow cables on both vehicles.		
• Completed all steps within 15 minutes.		

SECTION VI – TASK 6: CHECK AFES SYSTEM

ACTION

Demonstrate how to properly check BFV AFES systems, components and sensors.

CONDITION

Given a fully operational, parked, with all BII, and TM 9-2350-438-10-1 (TM 9-2350-441-10-1 for M2A4 and M2A4E1).

STANDARD

Within 10 minutes the crewmember will—

- Check engine compartment first shot fire extinguisher (Before PMCS Step 10).
- Ensure lead seal/wire is present and pressure gauge is charged properly (Before PMCS Step 1).
- Check flame/fire sensor/cable in hell hole & engine compartment (5 total).
- Check AFES control electronics panel is functioning properly.
- Check both portable fire extinguishers are sealed & charged.
- Check both squad fire compartment AFES bottles are charged with safety pins present.
- Check internal fire suppression handle.
- Check remaining flame/fire sensors/cables (3 total).
- Check both exterior fire extinguisher handles.

EVALUATION PROCEDURES

- Administrative process—At this task, the evaluator logs information about each crewmember on a roster. The evaluator uses the crewmember with all required material and equipment, displaying them according to the guidance in this manual. The evaluator uses the performance measures to record the crewmember's performance. Afterward, the evaluator tells the crewmember how well they performed on this task and directs the crewmember to the next task or to further training. One evaluator can test on – and only one- crew at a time.
- Procedures used when personnel receive a NO-GO—If a crew fails to achieve the standard on the performance measures, they receive a NO-GO. When this happens, the evaluator explains to the crew what they did wrong and how to correct their mistakes.

TEST PLANNING TIME

Administrative time:		5 minutes
Test time:	+	15 minutes
Total time (per crewmember):		20 minutes

INSTRUCTIONS TO THE CREW

To evaluate crewmembers, the following instructions will be provided: "In front of you is a BFV. You will demonstrate the ability to properly check/PMCS the BFV AFES systems, components and sensors as well as ensure all fire extinguishers and manual pull handles. Do you understand the requirements of this test?" (Answer questions.) "You may begin." (Start the time.)

PERFORMANCE CHECKLIST FOR TASK 6

CHECK AFES SYSTEM

	GO	NO-GO
1.Checked wires and lead seals on external fire extinguisher handles to ensure they were present and intact. (Before PMCS step 1).		
• Checked drivers compartment external handle.		
• Checked right rear sponson handle.		
2.Checked engine compartment fire extinguisher (Before PMCS Step 10).		
• Correctly identified engine compartment fire extinguisher.		
• Checked wire/lead seals on engine compartment fire extinguisher to ensure they were present and intact.		
• Checked that pressure gauge on engine compartment fire extinguisher read the correct pressure (in the green).		
• Check flame sensor cable and sensor box in tunnel for proper installation and to ensure it is intact (fire sensor at rear of hell-hole and cable attached to it).		
3.Checked engine compartment first-shot fire extinguisher (before PMCS Step 11).		
• Correctly identified engine compartment fire extinguisher.		
• Checked pin and recoil plug on engine compartment fire extinguisher to ensure pin WAS NOT INSTALLED.		
• Checked the pressure gauge on the first-shot fire extinguisher to ensure the needle was in the green area.		
• Checked three fire sensors and three sensor cables in the engine compartment for cleanliness and proper installation.		
▪ Explained to instructor what to check for (dirtiness, proper installation, no damage).		
▪ Checked number 1 (Front right of engine compartment).		
▪ Checked number 2 (Back left of engine compartment, lower).		
▪ Checked number 3 (Back left of engine compartment, upper).		
4.Moved master power switch to ON (Before PMCS Step 12).		
5.Checked that the AFES control electronics panel system's (CEP) ON LED remains OFF until after BIT tests complete (Before PMCS Step 12).		
• If fire sensor lights (S1-S8) illuminates solid red, clean indicated fire sensor lens (lens S1 through S8).		
• After lens are cleaned, pressed "Extinguisher discharge status reset" button.		
• If fire sensor LED illuminates red again, explained that equipment is NMC.		

	GO	NO-GO
• Pressed the TEST button on the AFES CEP to ensure that all lights illuminate. Explained that if any lights do not illuminate then equipment is NMC.		
• Checked that AFES CEP SYSTEM ON LED comes on as green (NMC if red).		
• Checked that no fault status LEDs are illuminated on the CEP.		
6.Checked to ensure portable fire extinguishers were operable and correctly installed (before PMCS Step 29).		
• Checked to ensure that #1 portable fire extinguisher was installed to left of the ramp in the crew compartment and that the pressure gauge reads in the green.		
• Checked to ensure that #2 portable fire extinguisher was installed to the right of the ramp in the crew compartment and that the pressure gauge reads in the green.		
7.Checked internal squad/sponson area fire extinguishers (before PMCS Step 20).		
• Checked that the pressure gauges on both fire extinguishers (both in crew compartment located to the right of the turret door) are above the minimum pressure on the chart.		
▪ Estimated temperature and announced temperature to Instructor.		
▪ Explained to instructor the required pressure at that temperature per the chart on the fire extinguishers.		
• Checked that the manual activation cables on the fire extinguishers are installed on both fire extinguishers.		
▪ Checked that cable is installed on fire extinguisher valves.		
▪ Traced cable from fire extinguisher to manual handle to ensure cable was intact.		
▪ Ensured cable was connected to manual fire extinguisher handle.		
• Checked wire and lead seal on manual fire extinguisher handle (right of ramp in crew compartment) to ensure seal and wire are present and intact.		
• Checked both fire extinguishers to ensure that safety pins are NOT INSTALLED.		
• Checked both fire extinguishers to ensure that anti- recoil plugs were properly stowed. (Figures 87 and 88).		
• Checked flame sensor cable and sensor boxes to ensure cables were connected and intact and that sensors were clean and intact.		
▪ Checked lower (TM unclear on location).		
▪ Checked upper (TM unclear on location).		
▪ Checked rear (centered above ramp in crew compartment).		
8.Completed All checks within 10 minutes.		

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Glossary

The glossary lists acronyms and abbreviations.

1AD	1st Armored Division
ABCT	Armored brigade combat team
AFES	Automatic Fire Extinguishing System
AR	Army regulation
ATSI	Armor Training Standardization Initiative
BFV	Bradley fighting vehicle
BII	basic issue item
CEP	control electronics panel
DTD	driver tactical display
DVDB	Digital Vehicle Distribution Box
FM	field manual
FMC	fully mission capable
GST	gunnery skills test
I-DID	Improved Driver's Integrated Display
LED	light emitting diode
MCTP	Marine Corps tactical publication
mils	milliradians
MST	Maintenance Skills Testing
NATO	North Atlantic Treaty Organization
NMC	non-mission capable
OPS	operational
PLT	platoon
PMCS	preventative maintenance checks and services
PPC	performance planning card
PPM	planned preventative maintenance
SEP	system enhancement package
SME	subject matter expert
SOP	standard operating procedure
TC	training circular
TM	technical manual
WP	work package

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These documents must be available to intended users of this publication.

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17 March 2026

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