

STP 9-44E14-SM-TG

SOLDIER'S MANUAL/TRAINER'S GUIDE

MACHINIST

SKILL LEVELS 1,2,3,4

MOS 44E

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

SOLDIER'S MANUAL and TRAINER'S GUIDE

MOS 44E

SOLDIER'S MANUAL AND TRAINER'S GUIDE, MOS 44E, MACHINIST

Skill Levels 1, 2, 3 and 4

TABLE OF CONTENTS

	<u>PAGE</u>
Table of Contents	i
PREFACE	vi
Chapter 1. Introduction	1-1
Chapter 2. Training Guide	2-1
2-1. General.....	2-1
2-2. Subject Area Codes.....	2-3
2-3. Duty Position Training Requirements.....	2-4
2-4. Critical Tasks List.....	2-5
Chapter 3. MOS/Skill Level Tasks	3-1
Skill Level 1	
Subject Area 1: BASIC TASKS	
091-44E-2266 Perform Shop Mathematics.....	3-1
091-44E-2002 Maintain Assigned Equipment.....	3-2
091-44E-2006 Prepare DA Forms.....	3-3
091-44E-2077 Prepare Shop Drawings/Sketches.....	3-4

*DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Supersedes STP 9-44E12-SM dated October 1989 & STP 9-44E34-SM-TG dated October 1989

091-44E-2007	Identify Metals	3-5
Subject Area 2: BENCH OPERATIONS TASKS		
091-44E-2059	Grind Toolbit.....	3-6
091-44E-2211	Lay Out a Workpiece.....	3-7
091-44E-2061	Perform Hand Threading	3-8
091-44E-2015	Sharpen Twist Drills	3-9
091-44E-2060	Hand Drill Materials.....	3-10
091-44E-2267	Operate a Bench Utility Grinder	3-11
091-44E-2062	Perform Installation/Removal of Inserts	3-12
Subject Area 3: BAND SAW OPERATIONS TASKS		
091-44E-2016	Perform Straight/Contour Sawing Using the Band Saw	3-13
091-44E-2018	Perform Internal Sawing Using the Band Saw.....	3-14
091-44E-2020	Perform Friction Sawing Using the Band Saw	3-15
091-44E-2019	Perform Filing/Polishing Using the Band Saw	3-16
091-44E-2017	Perform Angular Sawing Using the Band Saw	3-17
091-44E-2021	Weld Saw Band with Butt Welding Attachment	3-18
Subject Area 4: LATHE OPERATIONS TASKS		
091-44E-2029	Perform Threading Operations on a Lathe	3-19
091-44E-2026	Perform Filing/Polishing Using a Lathe.....	3-20
091-44E-2031	Perform Eccentric Turning Using a Lathe.....	3-21
091-44E-2028	Perform Taper Turning Using a Lathe	3-22
091-44E-2030	Perform Knurling Using a Lathe.....	3-23
091-44E-2024	Perform Parting and Grooving Using a Lathe.....	3-24
091-44E-2023	Perform Facing, Straight, and Shoulder Turning Using a Lathe.....	3-25
091-44E-2025	Perform Drilling, Reaming, and Boring Using a Lathe.....	3-26
Subject Area 5: MILLING MACHINE OPERATIONS TASKS		
091-44E-2038	Perform Sawing/Parting Using a Milling Machine.....	3-27
091-44E-2034	Perform Plain/Face Milling Using a Milling Machine.....	3-28
091-44E-2033	Perform Indexing Using a Milling Machine.....	3-29
091-44E-2037	Perform Straddle/Spline Milling Using a Milling Machine	3-30
091-44E-2035	Perform Angular Milling Using a Milling Machine	3-31
091-44E-2041	Perform Drilling/Boring Using a Milling Machine.....	3-32
091-44E-2040	Perform Milling Keyway Using a Milling Machine	3-33
091-44E-2039	Perform Gear Cutting/Repair Using a Milling Machine.....	3-34
Subject Area 6: VERSA-MIL OPERATIONS TASKS		
091-44E-2053	Perform Drilling Operations Using the Versa-Mil	3-35
091-44E-2052	Perform Grinding Operations Using the Versa-Mil	3-36
091-44E-2050	Perform Gear Cutting/Repair Using the Versa-Mil.....	3-37
091-44E-2049	Perform Milling Keyways Using the Versa-Mil	3-38
091-44E-2046	Perform Angular Milling Using the Versa-Mil	3-39
091-44E-2044	Perform Indexing Using the Versa-Mil	3-40
091-44E-2045	Perform Plain/Facing Milling Using the Versa-Mil.....	3-41
Subject Area 7: DRILLING OPERATIONS TASKS		
091-44E-2057	Perform Drilling Operations.....	3-42
091-44E-2056	Perform Counterboring Using a Drilling Machine	3-43
091-44E-2055	Perform Countersinking Using a Drilling Machine	3-44

Skill Level 2

Subject Area 6: VERSA-MIL OPERATIONS TASKS

091-44E-2048 Perform Straddle/Spine Milling Using the Versa-Mil 3-45
 091-44E-2047 Perform Form Milling Using the Versa-Mil 3-46

Skill Level 3

Subject Area 8: COMMON LOGISTICS TASKS

091-CLT-3012 Manage the Standard Army Maintenance System (SAMS) 3-47
 091-CLT-3011 Deploy Maintenance Support Teams 3-48
 091-CLT-3010 Interpret Maintenance Operational Overlay..... 3-49
 091-CLT-3006 Manage Key Control Procedures 3-50
 091-CLT-3003 Establish Maintenance Facilities 3-51
 091-CLT-3002 Maintain a Publications Library..... 3-52
 091-CLT-3001 Manage a Shop Safety Program 3-54
 091-CLT-3004 Assist in Preparing a Standing Operating Procedure..... 3-55
 091-CLT-3007 Manage the TMDE Calibration Program 3-56
 091-CLT-3005 Manage Tool Control Procedures..... 3-57
 091-CLT-3008 Recon Terrain/Route 3-58
 091-CLT-3009 Supervise Maintenance Operations 3-59

Subject Area 9: 44E TECHNICAL TASKS

091-44E-3029 Supervise Cutting/Grinding Laminated Glass..... 3-61
 091-44E-3018 Supervise All Position GMAW Ferrous/Nonferrous/Titanium Metal 3-63
 091-44E-3008 Supervise Soldering Operations 3-65
 091-44E-3004 Supervise All Oxy-Fuel Cutting Operations 3-66
 091-44E-3003 Supervise All Positions Oxy-Fuel Welding, Ferrous Metal 3-67
 091-44E-3183 Supervise All Position GTAW, Ferrous / Nonferrous / Titanium Metal 3-69
 091-44E-3181 Supervise SMAW Armor Plate..... 3-71
 091-44E-3041 Supervise Radiator Repair 3-72
 091-44E-3111 Supervise Interpretation of Welding Symbols..... 3-73
 091-44E-3053 Supervise Control of Expansion and Contraction of Metals 3-74
 091-44E-3047 Supervise Analyzing a Repair Sequence..... 3-75
 091-44E-3044 Supervise Hydraulic Body Jack Operations..... 3-76
 091-44E-3054 Supervise Repair/Replacing Structural Components 3-77
 091-44E-3180 Supervise All Position SMAW, Ferrous Metal..... 3-79
 091-44E-3040 Supervise Inspection of Radiators 3-80
 091-44E-3036 Supervise Fuel Tanks/Containers Repair 3-81
 091-44E-3035 Supervise Preparing Fuel Tanks/Containers for Repair 3-82
 091-44E-3123 Supervise Composite Material Repair 3-83

Subject Area 10: 44B TECHNICAL TASKS

091-44E-3140 Supervise Removing Bolts and Studs..... 3-84
 091-44E-3120 Supervise Sharpening Twist Drills 3-85
 091-44E-3119 Supervise Preparation of Shop Drawings/Sketches 3-86
 091-44E-3107 Supervise Installing/Removing Screw Thread Inserts 3-87
 091-44E-3106 Supervise Performing Hand Threading..... 3-88
 091-44E-3100 Supervise Counterboring on a Drilling Machine 3-89
 091-44E-3095 Supervise Grinding Operations on a Versa-Mil 3-90
 091-44E-3093 Supervise Cutting/Repair of Gears on a Versa-Mil..... 3-91
 091-44E-3092 Supervise Milling Keyways on a Versa-Mil 3-93

091-44E-3091	Supervise Straddle/Spline Milling on a Versa-Mil	3-95
091-44E-3090	Supervise Form Milling on a Versa-Mil	3-96
091-44E-3089	Supervise Angular Milling on a Versa-Mil	3-97
091-44E-3088	Supervise Plain/Face Milling on a Versa-Mil	3-98
091-44E-3087	Supervise Indexing on a Versa-Mil	3-99
091-44E-3084	Supervise Milling Keyways on a Milling Machine	3-100
091-44E-3083	Supervise Drilling/Boring on a Milling Machine.....	3-101
091-44E-3082	Supervise Cutting/Repair of Gears on a Milling Machine	3-103
091-44E-3081	Supervise Sawing/Parting on a Milling Machine.....	3-104
091-44E-3080	Supervise Straddle/Spline Milling on a Milling Machine	3-105
091-44E-3078	Supervise Angular Milling on a Milling Machine	3-107
091-44E-3077	Supervise Plain/Face Milling on a Milling Machine.....	3-108
091-44E-3075	Supervise Eccentric Turning on a Lathe	3-110
091-44E-3074	Supervise Knurling on a Lathe	3-112
091-44E-3073	Supervise Taper Turning on a Lathe	3-114
091-44E-3071	Supervise Filing/Polishing on a Lathe.....	3-116
091-44E-3099	Supervise Countersinking on a Drilling Machine	3-117
091-44E-3070	Supervise Drilling, Reaming, and Boring on a Lathe	3-118
091-44E-3069	Supervise Parting and Grooving on a Lathe.....	3-119
091-44E-3068	Supervise Facing, Straight, and Shoulder Turning on a Lathe.....	3-121
091-44E-3108	Supervise Installing/Removing Inserts.....	3-122
091-44E-3066	Supervise Welding a Saw Band with a Butt Welding Attachment	3-123
091-44E-3064	Supervise Filing/Polishing on a Bandsaw	3-125
091-44E-3063	Supervise Internal Sawing on a Bandsaw	3-126
091-44E-3141	Supervise Grinding Threading Toolbits.....	3-127
091-44E-3062	Supervise Angular Sawing on a Bandsaw	3-129

Subject Area 11: 44E/B TECHNICAL TASKS

091-44E-3148	Supervise Setting Up the Trailer Mounted Welding Shop	3-130
091-44E-3147	Supervise Versa-Mil Operations (Advanced Applications)	3-131
091-44E-3146	Supervise Milling Operations (Advanced Applications)	3-132
091-44E-3145	Machine a Workpiece (Advanced Applications)	3-133
091-44E-3144	Supervise Lathe Milling Operation Using the Lathe Attachment (Advanced Applications).....	3-134
091-44E-3115	Supervise Identification of Metals	3-135
091-44E-3112	Supervise Visual Weld Inspection.....	3-136
091-44E-3105	Supervise Laying Out a Workpiece.....	3-137
091-44E-3096	Perform Cutter Grinding on a Versa-Mil.....	3-138
091-44E-3027	Supervise Air Arc Cutting/Gouging Operations	3-140

Skill Level 4

Subject Area 12: COMMON LOGISTICS MANAGEMENT TASKS

091-CLT-4006	Coordinate Support for the Maintenance Platoon/Section	3-141
091-CLT-4005	Enforce Compliance With the Shop Safety Program	3-142
091-CLT-4004	Ensure Maintenance Operations are in Compliance With the Army Environmental Program	3-143
091-CLT-4003	Manage Combat Stress.....	3-144
091-CLT-4002	Supervise Platoon/Section Administrative Procedures	3-145
091-CLT-4001	Perform Senior Rater Responsibilities for a Maintenance Section	3-146
091-CLT-4028	Provide Maintenance Support During Tactical Operations	3-147

091-CLT-4027	Manage Maintenance Operations at a Maintenance Collection Point	3-148
091-CLT-4026	Perform Support Operations NCO Duties	3-149
091-CLT-4025	Manage Battlefield Maintenance Support.....	3-150
091-CLT-4024	Conduct an Area Reconnaissance for a Maintenance Mission.....	3-151
091-CLT-4023	Conduct a Route Reconnaissance for a Maintenance Mission.....	3-152
091-CLT-4021	Prepare Standing Operating Procedures for Maintenance Operations.....	3-153
091-CLT-4020	Maintain Property Accountability	3-154
091-CLT-4019	Analyze Shop Workload Summary Listing	3-155
091-CLT-4018	Analyze Shop Deadline and Deferred Workload Listing	3-156
091-CLT-4017	Analyze Completed Shop Workload Summary	3-157
091-CLT-4016	Analyze Open Work Request Reconciliation Listing	3-158
091-CLT-4015	Analyze Bench Stock Listing	3-159
091-CLT-4014	Monitor Quality Control Program	3-160
091-CLT-4022	Supervise the Deployment of Company Maintenance Team/Recovery Support Team/Maintenance Support Team.....	3-161
091-CLT-4013	Analyze the Prescribed Load List (PLL) Report	3-162
091-CLT-4012	Monitor the Preparation and Disposition of the Army Materiel Status System (AMSS) Reports.....	3-163
091-CLT-4011	Plan Logistics Support for Maintenance Operations	3-164
091-CLT-4010	Integrate Automated Logistics Support Systems	3-165
091-CLT-4009	Control Flow of Work Through the Maintenance Shop	3-166
091-CLT-4008	Prepare an Operational Overlay for Maintenance Operations	3-167
091-CLT-4007	Select a Field Maintenance Site	3-168
APPENDIX A -		A-1
APPENDIX B -		B-1
Glossary		C-1
Supporting References.....		D-1

PREFACE

This soldier training publication (STP) is intended for soldiers holding MOS 44E, Skill Levels 1, 2, 3, and 4, their supervisors, trainers, and commanders. It contains an MOS Training Plan providing information needed to plan, conduct, and evaluate unit training, one of the most important jobs of military leaders. It includes standardized training objectives in the form of task summaries that can be used to train and evaluate soldiers on critical tasks supporting unit missions during wartime.

Soldiers holding MOS 44E should have access to this publication. Trainers and firstline supervisors should actively plan for soldiers' access, making it available in work areas, unit learning centers, and unit libraries. However, it is not intended for an individual copy to be provided to each MOS holder. The STP is obtainable on line from the Reimer Digital Library (RDL).

Tasks in this manual apply to both Active and Reserve Component soldiers.

The proponent of this publication is HQ TRADOC. Submit comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Department of the Army, Training Directorate, Ordnance Training Division, ATTN: ATCL-AO, 401 First Street, Suite 227, Fort Lee, VA 23801-1511.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

CHAPTER 1

Introduction

1-1. General. This soldier training publication (STP) identifies individual MOS training requirements for soldiers holding MOS 44E. Commanders, trainers, and soldiers should use it to plan, conduct, and evaluate individual training in units. The STP is the primary MOS reference for supporting self-development, evaluating MOS proficiency, and training of 44E soldiers. Commanders employ two primary methods to evaluate soldiers' proficiency:

- Commander's evaluation. Commander's evaluations are local tests or assessments of soldiers' performance of MOS-specific and common tasks critical to the unit mission. They may be conducted year-round.
- Common task test (CTT). CTTs are hands-on tests used to evaluate proficiency on common tasks. Alternate written tests are provided if equipment is not available for hands-on testing.

This publication is the soldier's primary reference to prepare for a commander's evaluation of MOS-specific tasks. It contains task summaries for all critical tasks specific to the MOS and skill level (SL). Commanders and trainers will use this soldier's manual/trainer's guide (SM/TG) to plan and conduct training and commander's evaluations.

Chapter 2, Trainer's Guide, contains information needed to plan training requirements for this MOS. The trainer's guide

- Identifies subject areas in which soldiers must be trained.
- Identifies critical tasks for each subject area.
- Specifies where soldiers are initially trained on each task.
- Recommends how often each task should be trained to sustain proficiency.
- Recommends a strategy for cross-training soldiers.
- Recommends a strategy for training soldiers to perform higher-level tasks.

Use this STP along with STP 21-1-SMCT (Soldier's Manual of Common Tasks, Skill Level 1), STP 21-24-SMCT (Soldier's Manual of Common Tasks, Skill Levels 2-4), Army training and evaluation programs (ARTEPs), FM 25-4 (How to Conduct Training Exercises), FM 25-5 (Training for Mobilization and War), FM 25-100 (Training the Force), and FM 25-101 (Battle-Focused Training) to establish effective training plans and programs that integrate soldier, leader, and collective tasks.

1-2. Task Summaries. Task summaries outline wartime performance requirements for each critical task in the STP. They provide both soldier and trainer with the information necessary to prepare, conduct, and evaluate critical task training. As a minimum, task summaries include information soldiers must know and skills they must perform to standard for each task. Following is the task summary format:

- Task number. The task number is a 10-digit number that identifies the task and skill level. Include the task number and title in any correspondence relating to the task.
- Task title. The task title identifies the action to be performed.
- Conditions. The task conditions statement describes the field or garrison conditions under which the task will be performed and identifies the equipment, tools, references, job aids, and supporting personnel that the soldier needs to perform the task in wartime.

- **Standards.** The task standards describe how well and to what level of proficiency the soldier must perform the task under wartime conditions. Standards are typically expressed in terms of accuracy, completeness, duration, sequence, speed, and tolerance.
- **Performance measures.** This section identifies specific actions that the soldier must accomplish to complete the task successfully. Performance measures appear in a GO/NO-GO rating format for easy evaluation. Some tasks may also include detailed training information in a Training Information Outline and an Evaluation Preparation Section. The Evaluation Preparation Section indicates necessary modifications to task performance in order to train and evaluate a task that can not be trained to the wartime standard under wartime conditions. It may also include special training and evaluation preparation instructions to accommodate these modifications and any instructions that should be given to the soldier before evaluation.
- **References.** This section identifies references that provide more detailed explanations of task performance requirements than are given in the task summary.
- **Warnings.** Warnings alert users to the possibility of immediate personal injury or equipment damage.
- **Notes.** Notes provide additional supportive explanations or tips relating to task performance.

1-3. **Soldier's Responsibilities.** Each soldier is responsible for performing individual tasks identified by the first-line supervisor based on the unit's mission-essential task list (METL). Soldiers must perform tasks to the standards included in the task summary. If soldiers have questions about tasks or which tasks in this manual they must perform, they are responsible for asking their first-line supervisor for clarification. First-line supervisors know how to perform each task or can direct soldiers to appropriate training materials, including current field manuals, technical manuals, and Army regulations. Soldiers are responsible for using these materials to maintain performance. They are also responsible for maintaining performance of all common tasks listed in the SMCTs at their current skill level and below.

Periodically, soldiers should ask their supervisor or another soldier to check their performance to ensure that they can perform the tasks.

1-4. **NCO Self-Development and the STP.** Self-development is a key component of leader development. Leaders follow planned, progressive, sequential self-development programs developed by the individual NCO and his or her first-line supervisor to enhance and sustain military competencies. Self-development consists of individual study, research, professional reading, practice, and self-assessment. The self-development concept requires NCOs, as Army professionals, to take responsibility for remaining current in all phases of their MOS. The STP is the NCO's primary source for maintaining MOS proficiency.

Another important resource for self-development is the Army Correspondence Course Program (ACCP). Refer to DA Pamphlet 351-20 (Army Correspondence Course Program Catalog) for detailed eligibility requirements and enrollment information. The catalog is available at local education centers or on line through the Army Institute for Professional Development (AIPD) web site, <http://www.atsc.army.mil/accp/aipd.htm>. The web site offers on-line enrollment.

1-5. **Commander's Responsibilities.** Commanders must ensure that their unit training plans prepare the unit for war by enabling soldiers to develop and sustain proficiency in their MOS and skill level tasks. Commanders should design unit training programs to provide individual training for all soldiers assigned to the unit and to evaluate soldier proficiency routinely as part of the commander's evaluation program. The unit training program should also integrate individual training with crew drills and other collective training. The MOS training plan provides information on which to base integration, cross-train, train-up, and sustainment training programs. Commanders should use the MOS training plan when developing unit training plans.

1-6. Trainer's Responsibilities. Training is the business of all unit leaders. First-line leaders are the principal trainers in the unit because they directly supervise soldiers and lead crews, squads, sections, and teams.

Trainers can use the MOS training plan to determine the critical tasks each soldier is responsible for. They should tell each soldier which tasks he or she must be able to perform. Trainers should evaluate task performance to determine which tasks each soldier can or cannot perform to standard. Soldiers who cannot perform a task to standard need further training. This STP helps the trainer do what trainers get paid to do; train. Developing effective training is explained in detail in FM 25-100 and FM 25-101.

Every task summary in this STP includes performance measures, which trainers may use year-round to determine if soldiers can perform critical tasks to the specified standards. The performance measures identify what the trainer needs to observe to score a soldier's performance. A blank space is provided for the trainer to check either the GO or NO-GO column for each performance measure. Some tasks require the trainer to watch the soldier perform them (evaluate the process). Other tasks call for the trainer to focus on the results of the soldier's performance (evaluate the product). Comments should not be written on the task summary.

Trainers can monitor the progress of their soldiers by recording task go/no-go results. Trainers may use DA Form 5164-R (Hands-On Evaluation) to record the performance measures a soldier passed or failed. The form, which may be locally reproduced, applies to all tasks in this STP. Trainers may have DA Form 5164-R overprinted with information unique to their training requirements before reproducing it. See Appendix A of this STP for a sample DA Form 5164-R with instructions.

Trainers may use DA Form 5165-R (Field Expedient Squad Book) to record hands-on go/no-go results for a group of soldiers (for example, a crew, section, or squad) having the same MOS and skill level. This form supports conduct of commander's evaluations, and can be used to record training results gathered in the field during slack time for all MOSs and skill levels. Use of this form is optional. See Appendix B for a sample DA Form 5165-R with instructions. Trainers should work with each soldier until tasks can be performed to specific task summary standards.

1-7. Training Support. References have been identified for each task to assist in planning and conducting training. A consolidated list of references identified by type, publication number, and title and a comprehensive glossary of acronyms, abbreviations, and definitions are included in this STP.

CHAPTER 2
Training Guide

44E CAREER FIELD DUTY POSITIONS			
Duty Position	Subject Area	Cross Train	Train-up/Merger
Skill Level 1			
Machinist	1 - 7	NA	44E20/Machinist
Skill Level 2			
Machinist	1 - 7	NA	44E30/Section Chief 44E30/Machinist 44E30/Machine Operator Supervisor 44E30/Precision Machinist 44E30/Welder Supervisor 44E30/Metalworker Supervisor 44E30/Metalworker Inspector 44E30/Technical Inspector
Skill Level 3			
Section Chief Machinist Machine Operator Supervisor Precision Machinist Welder Supervisor Metalworker Supervisor Metalworker Inspector Technical Inspector	8 - 11	NA	44E40/Section Chief 44E40/Platoon Sergeant 44E40/Machine Shop Supervisor
Skill Level 4			
Section Chief Platoon Sergeant Machine Shop Supervisor	12	NA	63Z50/Mechanical Maintenance Supervisor

2-1. General. The MOS Training Plan (MTP) identifies the essential components of a unit training plan for individual training. Units have different training needs and requirements based on differences in environment, location, equipment, dispersion, and similar factors. Therefore, the MTP should be used as a guide for conducting unit training and not a rigid standard. The MTP consists of two parts. Each part is designed to assist the commander in preparing a unit training plan which satisfies integration, cross training, training up, and sustainment training requirements for soldiers in this MOS.

Part One of the MTP shows the relationship of an MOS skill level between duty position and critical tasks. These critical tasks are grouped by task commonality into subject areas.

Section I lists subject area numbers and titles used throughout the MTP. These subject areas are used to define the training requirements for each duty position within an MOS.

Section II identifies the total training requirement for each duty position within an MOS and provides a recommendation for cross training and train-up/merger training.

- **Duty Position column.** This column lists the duty positions of the MOS, by skill level, which have different training requirements.
- **Subject Area column.** This column lists, by numerical key (see Section I), the subject areas a soldier must be proficient in to perform in that duty position.
- **Cross Train column.** This column lists the recommended duty position for which soldiers should be cross trained.
- **Train-up/Merger column.** This column lists the corresponding duty position for the next higher skill level or MOSC the soldier will merge into on promotion.

Part Two lists, by general subject areas, the critical tasks to be trained in an MOS and the type of training required (resident, integration, or sustainment).

- **Subject Area column.** This column lists the subject area number and title in the same order as Section I, Part One of the MTP.
- **Task Number column.** This column lists the task numbers for all tasks included in the subject area.
- **Title column.** This column lists the task title for each task in the subject area.
- **Training Location column.** This column identifies the training location where the task is first trained to soldier training publications standards. If the task is first trained to standard in the unit, the word "Unit" will be in this column. If the task is first trained to standard in the training base, it will identify, by brevity code (ANCOC, BNCOC, etc.), the resident course where the task was taught. Figure 2-1 contains a list of training locations and their corresponding brevity codes.

ANCOC	Advanced NCO Course
BNCOC	Basic NCO Course
AIT	Advanced Individual Training
UNIT	Trained in the Unit
BTC	Basic Technical Course

Figure 2-1. Training Locations

- **Sustainment Training Frequency column.** This column indicates the recommended frequency at which the tasks should be trained to ensure soldiers maintain task proficiency. Figure 2-2 identifies the frequency codes used in this column.

BA	- Biannually
AN	- Annually
SA	- Semiannually
QT	- Quarterly
MO	- Monthly
BW	- Bi-weekly
WK	- Weekly

Figure 2-2. Sustainment Training Frequency Codes

- **Sustainment Training Skill Level column.** This column lists the skill levels of the MOS for which soldiers must receive sustainment training to ensure they maintain proficiency to soldier's manual standards.

2-2. Subject Area Codes.

Skill Level 1

- 1 BASIC TASKS
- 2 BENCH OPERATIONS TASKS
- 3 BAND SAW OPERATIONS TASKS
- 4 LATHE OPERATIONS TASKS
- 5 MILLING MACHINE OPERATIONS TASKS
- 6 VERSA-MIL OPERATIONS TASKS
- 7 DRILLING OPERATIONS TASKS

Skill Level 2

- 6 VERSA-MIL OPERATIONS TASKS

Skill Level 3

- 8 COMMON LOGISTICS TASKS
- 9 44E TECHNICAL TASKS
- 10 44B TECHNICAL TASKS
- 11 44E/B TECHNICAL TASKS

Skill Level 4

- 12 COMMON LOGISTICS MANAGEMENT TASKS

2-3. Duty Position Training Requirements.

See Chapter 2 Training Guide.

2-4. Critical Tasks List.

**MOS TRAINING PLAN
44E14**

CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
Skill Level 1					
1. BASIC TASKS	091-44E-2002	Maintain Assigned Equipment	AIT	AN	1/2
	091-44E-2006	Prepare DA Forms	AIT	AN	1/2
	091-44E-2007	Identify Metals	AIT	AN	1/2
	091-44E-2077	Prepare Shop Drawings/Sketches	AIT	AN	1/2
	091-44E-2266	Perform Shop Mathematics	AIT	AN	1/2
2. BENCH OPERATIONS TASKS	091-44E-2015	Sharpen Twist Drills	AIT	AN	1/2
	091-44E-2059	Grind Toolbit	AIT	AN	1/2
	091-44E-2060	Hand Drill Materials	AIT	AN	1/2
	091-44E-2061	Perform Hand Threading	AIT	AN	1/2
	091-44E-2062	Perform Installation/Removal of Inserts	AIT	AN	1/2
	091-44E-2211	Lay Out a Workpiece	AIT	AN	1/2
	091-44E-2267	Operate a Bench Utility Grinder	AIT	AN	1/2
3. BAND SAW OPERATIONS TASKS	091-44E-2016	Perform Straight/Contour Sawing Using the Band Saw	AIT	AN	1/2
	091-44E-2017	Perform Angular Sawing Using the Band Saw	AIT	AN	1/2
	091-44E-2018	Perform Internal Sawing Using the Band Saw	AIT	AN	1/2
	091-44E-2019	Perform Filing/Polishing Using the Band Saw	AIT	AN	1/2
	091-44E-2020	Perform Friction Sawing Using the Band Saw	AIT	AN	1/2
	091-44E-2021	Weld Saw Band with Butt Welding Attachment	AIT	AN	1/2
4. LATHE OPERATIONS TASKS	091-44E-2023	Perform Facing, Straight, and Shoulder Turning Using a Lathe	AIT	AN	1/2
	091-44E-2024	Perform Parting and Grooving Using a Lathe	AIT	AN	1/2
	091-44E-2025	Perform Drilling, Reaming, and Boring Using a Lathe	AIT	AN	1/2
	091-44E-2026	Perform Filing/Polishing Using a Lathe	AIT	AN	1/2
	091-44E-2028	Perform Taper Turning Using a Lathe	AIT	AN	1/2

CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
	091-44E-2029	Perform Threading Operations on a Lathe	AIT	AN	1/2
	091-44E-2030	Perform Knurling Using a Lathe	AIT	AN	1/2
	091-44E-2031	Perform Eccentric Turning Using a Lathe	AIT	AN	1/2
5. MILLING MACHINE OPERATIONS TASKS	091-44E-2033	Perform Indexing Using a Milling Machine	AIT	AN	1/2
	091-44E-2034	Perform Plain/Face Milling Using a Milling Machine	AIT	AN	1/2
	091-44E-2035	Perform Angular Milling Using a Milling Machine	AIT	AN	1/2
	091-44E-2037	Perform Straddle/Spline Milling Using a Milling Machine	AIT	AN	1/2
	091-44E-2038	Perform Sawing/Parting Using a Milling Machine	AIT	AN	1/2
	091-44E-2039	Perform Gear Cutting/Repair Using a Milling Machine	AIT	AN	1/2
	091-44E-2040	Perform Milling Keyway Using a Milling Machine	AIT	AN	1/2
	091-44E-2041	Perform Drilling/Boring Using a Milling Machine	AIT	AN	1/2
6. VERSA-MIL OPERATIONS TASKS	091-44E-2044	Perform Indexing Using the Versa-Mil	AIT	AN	1/2
	091-44E-2045	Perform Plain/Facing Milling Using the Versa-Mil	AIT	AN	1/2
	091-44E-2046	Perform Angular Milling Using the Versa-Mil	AIT	AN	1/2
	091-44E-2049	Perform Milling Keyways Using the Versa-Mil	AIT	AN	1/2
	091-44E-2050	Perform Gear Cutting/Repair Using the Versa-Mil	AIT	AN	1/2
	091-44E-2052	Perform Grinding Operations Using the Versa-Mil	AIT	AN	1/2
	091-44E-2053	Perform Drilling Operations Using the Versa-Mil	AIT	AN	1/2
7. DRILLING OPERATIONS TASKS	091-44E-2055	Perform Countersinking Using a Drilling Machine	AIT	AN	1/2
	091-44E-2056	Perform Counterboring Using a Drilling Machine	AIT	AN	1/2
	091-44E-2057	Perform Drilling Operations	AIT	AN	1/2
Skill Level 2					

CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
8. VERSA-MIL OPERATIONS TASKS	091-44E-2047	Perform Form Milling Using the Versa-Mil	UNIT	AN	2
	091-44E-2048	Perform Straddle/Spine Milling Using the Versa-Mil	UNIT	AN	2
Skill Level 3					
9. COMMON LOGISTICS TASKS	091-CLT-3001	Manage a Shop Safety Program	BNCOC	AN	3
	091-CLT-3002	Maintain a Publications Library	BNCOC	AN	3
	091-CLT-3003	Establish Maintenance Facilities	BNCOC	AN	3
	091-CLT-3004	Assist in Preparing a Standing Operating Procedure	BNCOC	AN	3
	091-CLT-3005	Manage Tool Control Procedures	BNCOC	AN	3
	091-CLT-3006	Manage Key Control Procedures	BNCOC	AN	3
	091-CLT-3007	Manage the TMDE Calibration Program	BNCOC	AN	3
	091-CLT-3008	Recon Terrain/Route	BNCOC	AN	3
	091-CLT-3009	Supervise Maintenance Operations	BNCOC	AN	3
	091-CLT-3010	Interpret Maintenance Operational Overlay	BNCOC	AN	3
	091-CLT-3011	Deploy Maintenance Support Teams	BNCOC	AN	3
	091-CLT-3012	Manage the Standard Army Maintenance System (SAMS)	BNCOC	AN	3
10. 44E TECHNICAL TASKS	091-44E-3003	Supervise All Positions Oxy-Fuel Welding, Ferrous Metal	BNCOC	AN	3
	091-44E-3004	Supervise All Oxy-Fuel Cutting Operations	BNCOC	AN	3
	091-44E-3008	Supervise Soldering Operations	BNCOC	AN	3
	091-44E-3018	Supervise All Position GMAW Ferrous/Nonferrous/Titanium Metal	BNCOC	AN	3
	091-44E-3029	Supervise Cutting/Grinding Laminated Glass	BNCOC	AN	3
	091-44E-3035	Supervise Preparing Fuel Tanks/Containers for Repair	BNCOC	AN	3
	091-44E-3036	Supervise Fuel Tanks/Containers Repair	BNCOC	AN	3
	091-44E-3040	Supervise Inspection of Radiators	BNCOC	AN	3

CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
	091-44E-3041	Supervise Radiator Repair	BNCOC	AN	3
	091-44E-3044	Supervise Hydraulic Body Jack Operations	BNCOC	AN	3
	091-44E-3047	Supervise Analyzing a Repair Sequence	BNCOC	AN	3
	091-44E-3053	Supervise Control of Expansion and Contraction of Metals	BNCOC	AN	3
	091-44E-3054	Supervise Repair/Replacing Structural Components	BNCOC	AN	3
	091-44E-3111	Supervise Interpretation of Welding Symbols	BNCOC	AN	3
	091-44E-3123	Supervise Composite Material Repair	BNCOC	AN	3
	091-44E-3180	Supervise All Position SMAW, Ferrous Metal	BNCOC	AN	3
	091-44E-3181	Supervise SMAW Armor Plate	BNCOC	AN	3
	091-44E-3183	Supervise All Position GTAW, Ferrous / Nonferrous / Titanium Metal	BNCOC	AN	3
11. 44B TECHNICAL TASKS	091-44E-3062	Supervise Angular Sawing on a Bandsaw	BNCOC	AN	3
	091-44E-3063	Supervise Internal Sawing on a Bandsaw	BNCOC	AN	3
	091-44E-3064	Supervise Filing/Polishing on a Bandsaw	BNCOC	AN	3
	091-44E-3066	Supervise Welding a Saw Band with a Butt Welding Attachment	BNCOC	AN	3
	091-44E-3068	Supervise Facing, Straight, and Shoulder Turning on a Lathe	BNCOC	AN	3
	091-44E-3069	Supervise Parting and Grooving on a Lathe	BNCOC	AN	3
	091-44E-3070	Supervise Drilling, Reaming, and Boring on a Lathe	BNCOC	AN	3
	091-44E-3071	Supervise Filing/Polishing on a Lathe	BNCOC	AN	3
	091-44E-3073	Supervise Taper Turning on a Lathe	BNCOC	AN	3
	091-44E-3074	Supervise Knurling on a Lathe	BNCOC	AN	3
	091-44E-3075	Supervise Eccentric Turning on a Lathe	BNCOC	AN	3
	091-44E-3077	Supervise Plain/Face Milling on a Milling Machine	BNCOC	AN	3
	091-44E-3078	Supervise Angular Milling on a Milling Machine	BNCOC	AN	3
	091-44E-3080	Supervise Straddle/Spline Milling on a Milling Machine	BNCOC	AN	3

CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
	091-44E-3081	Supervise Sawing/Parting on a Milling Machine	BNCOC	AN	3
	091-44E-3082	Supervise Cutting/Repair of Gears on a Milling Machine	BNCOC	AN	3
	091-44E-3083	Supervise Drilling/Boring on a Milling Machine	BNCOC	AN	3
	091-44E-3084	Supervise Milling Keyways on a Milling Machine	BNCOC	AN	3
	091-44E-3087	Supervise Indexing on a Versa-Mil	BNCOC	AN	3
	091-44E-3088	Supervise Plain/Face Milling on a Versa-Mil	BNCOC	AN	3
	091-44E-3089	Supervise Angular Milling on a Versa-Mil	BNCOC	AN	3
	091-44E-3090	Supervise Form Milling on a Versa-Mil	BNCOC	AN	3
	091-44E-3091	Supervise Straddle/Spline Milling on a Versa-Mil	BNCOC	AN	3
	091-44E-3092	Supervise Milling Keyways on a Versa-Mil	BNCOC	AN	3
	091-44E-3093	Supervise Cutting/Repair of Gears on a Versa-Mil	BNCOC	AN	3
	091-44E-3095	Supervise Grinding Operations on a Versa-Mil	BNCOC	AN	3
	091-44E-3099	Supervise Countersinking on a Drilling Machine	BNCOC	AN	3
	091-44E-3100	Supervise Counterboring on a Drilling Machine	BNCOC	AN	3
	091-44E-3106	Supervise Performing Hand Threading	BNCOC	AN	3
	091-44E-3107	Supervise Installing/Removing Screw Thread Inserts	BNCOC	AN	3
	091-44E-3108	Supervise Installing/Removing Inserts	BNCOC	AN	3
	091-44E-3119	Supervise Preparation of Shop Drawings/Sketches	BNCOC	AN	3
	091-44E-3120	Supervise Sharpening Twist Drills	BNCOC	AN	3
	091-44E-3140	Supervise Removing Bolts and Studs	BNCOC	AN	3
	091-44E-3141	Supervise Grinding Threading Toolbits	BNCOC	AN	3
12. 44E/B TECHNICAL TASKS	091-44E-3027	Supervise Air Arc Cutting/Gouging Operations	BNCOC	AN	3
	091-44E-3096	Perform Cutter Grinding on a Versa-Mil	BNCOC	AN	3
	091-44E-3105	Supervise Laying Out a Workpiece	BNCOC	AN	3
	091-44E-3112	Supervise Visual Weld Inspection	BNCOC	AN	3
	091-44E-3115	Supervise Identification of Metals	BNCOC	AN	3

CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
	091-44E-3144	Supervise Lathe Milling Operation Using the Lathe Attachment (Advanced Applications)	BNCOC	AN	3
	091-44E-3145	Machine a Workpiece (Advanced Applications)	BNCOC	AN	3
	091-44E-3146	Supervise Milling Operations (Advanced Applications)	BNCOC	AN	3
	091-44E-3147	Supervise Versa-Mil Operations (Advanced Applications)	BNCOC	AN	3
	091-44E-3148	Supervise Setting Up the Trailer Mounted Welding Shop	BNCOC	AN	3
Skill Level 4					
13. COMMON LOGISTICS MANAGEMENT TASKS	091-CLT-4001	Perform Senior Rater Responsibilities for a Maintenance Section	ANCOC	AN	4
	091-CLT-4002	Supervise Platoon/Section Administrative Procedures	ANCOC	AN	4
	091-CLT-4003	Manage Combat Stress	ANCOC	AN	4
	091-CLT-4004	Ensure Maintenance Operations are in Compliance With the Army Environmental Program	ANCOC	AN	4
	091-CLT-4005	Enforce Compliance With the Shop Safety Program	ANCOC	AN	4
	091-CLT-4006	Coordinate Support for the Maintenance Platoon/Section	ANCOC	AN	4
	091-CLT-4007	Select a Field Maintenance Site	ANCOC	AN	4
	091-CLT-4008	Prepare an Operational Overlay for Maintenance Operations	ANCOC	AN	4
	091-CLT-4009	Control Flow of Work Through the Maintenance Shop	ANCOC	AN	4
	091-CLT-4010	Integrate Automated Logistics Support Systems	ANCOC	AN	4
	091-CLT-4011	Plan Logistics Support for Maintenance Operations	ANCOC	AN	4
	091-CLT-4012	Monitor the Preparation and Disposition of the Army Materiel Status System (AMSS) Reports	ANCOC	AN	4
	091-CLT-4013	Analyze the Prescribed Load List (PLL) Report	ANCOC	AN	4
	091-CLT-4014	Monitor Quality Control Program	ANCOC	AN	4

CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
	091-CLT-4015	Analyze Bench Stock Listing	ANCOC	AN	4
	091-CLT-4016	Analyze Open Work Request Reconciliation Listing	ANCOC	AN	4
	091-CLT-4017	Analyze Completed Shop Workload Summary	ANCOC	AN	4
	091-CLT-4018	Analyze Shop Deadline and Deferred Workload Listing	ANCOC	AN	4
	091-CLT-4019	Analyze Shop Workload Summary Listing	ANCOC	AN	4
	091-CLT-4020	Maintain Property Accountability	ANCOC	AN	4
	091-CLT-4021	Prepare Standing Operating Procedures for Maintenance Operations	ANCOC	AN	4
	091-CLT-4022	Supervise the Deployment of Company Maintenance Team/Recovery Support Team/Maintenance Support Team	ANCOC	AN	4
	091-CLT-4023	Conduct a Route Reconnaissance for a Maintenance Mission	ANCOC	AN	4
	091-CLT-4024	Conduct an Area Reconnaissance for a Maintenance Mission	ANCOC	AN	4
	091-CLT-4025	Manage Battlefield Maintenance Support	ANCOC	AN	4
	091-CLT-4026	Perform Support Operations NCO Duties	ANCOC	AN	4
	091-CLT-4027	Manage Maintenance Operations at a Maintenance Collection Point	ANCOC	AN	4
	091-CLT-4028	Provide Maintenance Support During Tactical Operations	ANCOC	AN	4

CHAPTER 3
MOS/Skill Level Tasks

Skill Level 1
Subject Area 1: BASIC TASKS

Perform Shop Mathematics
091-44E-2266

Conditions: In a field or garrison environment, given a ruler, plain paper, pencil, applicable technical publications, and supervision/assistance.

Standards: Perform shop mathematics IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	_____	_____
2. Select and use applicable materials.	_____	_____
3. Solve shop mathematical problems.	_____	_____
4. Ensure work is checked by supervisor.	_____	_____

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-515

Related

**Maintain Assigned Equipment
091-44E-2002**

Conditions: In a field or garrison environment, given required tools, measuring devices, safety equipment, additional tools, equipment specified in the TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Maintain assigned equipment IAW TM 9-243.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Perform preventive maintenance checks and services (PMCS).	—	—
5. Annotate actions taken on the DA Form 5988-E.	—	—
6. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

- Required**
- TC 9-524
- TM 9-243

Related

**Prepare DA Forms
091-44E-2006**

Conditions: In a field or garrison environment, given DA Forms required for documentation of maintenance and repairs, applicable technical publications, and supervision/assistance.

Standards: Prepare DA Forms IAW DA Pam 738-750.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select applicable form(s).	—	—
2. Select applicable technical publications.	—	—
3. Perform maintenance or repair procedure.	—	—
4. Annotate actions taken on applicable DA Form.	—	—
5. Have entries checked by supervisor.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
DA PAM 738-750

Related

Prepare Shop Drawings/Sketches
091-44E-2077

Conditions: In a field or garrison environment, given a ruler, plain paper, pencil, applicable technical publications, and supervision/assistance.

Standards: Prepare shop drawings and sketches IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable materials.	—	—
3. Make a shop drawing.	—	—
4. Prepare a shop sketch.	—	—
5. Ensure work is checked by supervisor.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
FM 5-553

Related

Identify Metals
091-44E-2007

Conditions: In a field or garrison environment, given carbon steel, cast iron, lead brass, copper, aluminum, stainless steel coupons, oxyacetylene welding set, welder's tool kit, welding apron, sander, grinder, file, safety equipment, additional tools, equipment specified in TMS, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Identify metals IAW TC 9-237 and TC 9-524.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Determine the category of metal (ferrous or nonferrous).	—	—
5. Identify metal by appearance test.	—	—
6. Identify metal by fracture test.	—	—
7. Identify metal by spark test.	—	—
8. Identify metal by torch test.	—	—
9. Annotate findings on applicable form.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

- References**
- Required**
 - TC 9-524
 - TC 9-237

Related

Subject Area 2: BENCH OPERATIONS TASKS

**Grind Toolbit
091-44E-2059**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, bench utility grinder, layout dye, job cutter, type wheel dresser, 1/4-inch key stock, 1/16-inch toolbit blank, water, additional tools, equipment specified in TMS, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Grind toolbit IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up utility grinding machine.	—	—
NOTE: The tool bit should be quenched in water frequently during grinding to prevent it from overheating and losing its temper.		
5. Determine tool bit needed for the material and type of operation being performed.	—	—
6. Grind correct end clearance angle.	—	—
7. Grind correct end back rake angle.	—	—
8. Grind correct side rake and side clearance angles.	—	—
9. Hone all cutting edges.	—	—
10. Measure finished ground tool bit for correct angles.	—	—
11. Annotate actions taken on the DA Form 5988-E.	—	—
12. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

Lay Out a Workpiece
091-44E-2211

Conditions: In a field or garrison environment, given a work bench, machinist bench vise, machinist's tool kit, aluminum stock, layout dye, file, hacksaw blades with various pitches, shop drawings, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Lay out a workpiece IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Prepare workpiece for layout.	—	—
5. Apply layout fluid to workpiece.	—	—
6. Lay out workpiece.	—	—
7. Check for accuracy.	—	—
8. Annotate actions taken on the DA Form 5988-E.	—	—
9. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
FM 5-553
TC 9-524

Related

Perform Hand Threading
091-44E-2061

Conditions: In a field or garrison environment, given a machinist's tool kit; workbench; table vise; UNC, UNF, and NPT threading sets; aluminum; steel round stock; steel pipe; metal stock; cutting oil; solvent; hand oiler; shop drawing; additional tools; equipment specified in TMS; repair parts; applicable maintenance forms and technical publications; and supervision/assistance.

Standards: Perform hand threading IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Cut external threads on workpieces using a hand die.	—	—
5. Annotate actions taken on the DA Form 5988-E.	—	—
6. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524
TM 9-243

Related

**Sharpen Twist Drills
091-44E-2015**

Conditions: In a field or garrison environment, given a bench utility grinder, machinist's tool kit, twist drills, wheel dresser, drill point gauge, water quench, safety equipment, shop drawing, additional tools, equipment specified in TMS, repair parts, applicable maintenance forms and technical , and supervision/assistance.

Standards: Sharpen twist drills IAW TC 9-524.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up utility grinding machine.	—	—
5. Grind lips to correct point angle.	—	—
6. Grind lips to equal length.	—	—
7. Grind correct relief angle.	—	—
8. Grind correct chisel edge angle.	—	—
9. Thin web if required.	—	—
10. Measure the angles and length of both lips.	—	—
11. Annotate actions taken on the DA Form 5988-E.	—	—
12. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

Hand Drill Materials
091-44E-2060

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, hand drill, drill bits, measuring device, additional tools, equipment specified in TMS, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Hand drill materials IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Select appropriate drill bit.	—	—
5. Install drill bit.	—	—
6. Perform hand drilling.	—	—
7. Measure finished workpiece for accuracy.	—	—
8. Annotate actions taken on the DA Form 5988-E.	—	—
9. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Operate a Bench Utility Grinder
091-44E-2267**

Conditions: In a field or garrison environment, given a bench utility grinder, selected grinding wheels, welder's tool kit, safety equipment, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Operate a bench utility grinder IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up bench utility grinder.	—	—
5. Select grinding wheel.	—	—
6. Install grinding wheel.	—	—
7. Perform bench grinder operations.	—	—
8. Visually inspect results.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Perform Installation/Removal of Inserts
091-44E-2062**

Conditions: In a field or garrison environment, given a workpiece, machine shop field maintenance equipment, drill press with attachments, insert kit, cutting oil, safety equipment, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform installation/removal of inserts IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Determine thread size to be repaired.	—	—
5. Mount and secure workpiece.	—	—
6. Redrill the threaded hole, using cutting oil, as required.	—	—
7. Select correct oversize tap.	—	—
8. Retap the hole.	—	—
9. Select correct size insert.	—	—
10. Wind insert into threaded hole to the correct depth.	—	—
11. Remove tang on bottom of insert with tang breakoff tool.	—	—
12. Select extracting tool.	—	—
13. Remove the insert.	—	—
14. Inspect the internal thread for damage.	—	—
15. Annotate actions taken on the DA Form 5988-E.	—	—
16. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524
TM 9-243

Related

Subject Area 3: BAND SAW OPERATIONS TASKS

**Perform Straight/Contour Sawing Using the Band Saw
091-44E-2016**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, band saw with attachments, shop drawing, workpiece, layout fluid, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform straight/contour sawing using the band saw IAW TC 9-524.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Layout workpiece.	—	—
5. Set up bandsaw for straight or contour sawing.	—	—
6. Select and set speeds and feeds.	—	—
7. Machine workpiece.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3419-224-10
- TM 9-3419-227-10
- TM 9-3419-228-10

Related

**Perform Internal Sawing Using the Band Saw
091-44E-2018**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, band saw with attachments, shop drawing, workpiece, layout fluid, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform angular sawing using the band saw IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Layout workpiece.	—	—
5. Set up bandsaw.	—	—
6. Select and set speeds and feeds.	—	—
7. Machine workpiece.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3419-224-10
- TM 9-3419-227-10
- TM 9-3419-228-10

Related

**Perform Friction Sawing Using the Band Saw
091-44E-2020**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, band saw with attachments, shop drawing, workpiece, layout fluid, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform filing/polishing using the band saw IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Layout workpiece.	—	—
5. Set up bandsaw.	—	—
6. Select and set speeds and feeds.	—	—
7. Perform friction sawing.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3419-224-10
- TM 9-3419-227-10
- TM 9-3419-228-10

Related

**Perform Filing/Polishing Using the Band Saw
091-44E-2019**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, band saw with attachments, shop drawing, workpiece, layout fluid, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform filing/polishing using the band saw IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Layout workpiece.	—	—
5. Set up bandsaw for filing/polishing.	—	—
6. Select and set speeds and feeds.	—	—
7. Perform filing/polishing.	—	—
8. Inspect results.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3419-224-10
- TM 9-3419-227-10
- TM 9-3419-228-10

Related

**Perform Angular Sawing Using the Band Saw
091-44E-2017**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, band saw with attachments, shop drawing, workpiece, layout fluid, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform angular sawing using the band saw IAW applicable technical manual and TC 9-524.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Layout workpiece.	—	—
5. Set up bandsaw for angular sawing.	—	—
6. Select and set speeds and feeds.	—	—
7. Machine workpiece.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3419-224-10
- TM 9-3419-227-10
- TM 9-3419-228-10

Related

**Weld Saw Band with Butt Welding Attachment
091-44E-2021**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, band saw with butt welder, safety glasses, band saw blade stack, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Weld saw band with butt welding attachment IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Prepare band saw blade for welding.	—	—
5. Set butt welder to weld band saw blade.	—	—
6. Align and secure band saw blade in jaws of welder.	—	—
7. Weld band saw blade.	—	—
8. Grind the weld.	—	—
9. Check weld with weld thickness gauge.	—	—
10. Anneal the weld.	—	—
11. Inspect the weld.	—	—
12. Prepare band saw blade for mounting on the band saw.	—	—
13. Annotate actions taken on the DA Form 5988-E.	—	—
14. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3419-224-10
- TM 9-3419-227-10
- TM 9-3419-228-10

Related

Subject Area 4: LATHE OPERATIONS TASKS

Perform Threading Operations on a Lathe
091-44E-2029

Conditions: In a field or garrison environment, given a machinist's tool kit, lathe with attachments, 8-13 pitch screw thread micrometer, set of .072-inch wires, small 13 pitch screw, large 8 pitch screw, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/ assistance.

Standards: Perform threading operations using a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up lathe.	—	—
5. Calculate thread dimensions.	—	—
6. Perform threading operations.	—	—
7. Measure finished work for accuracy.	—	—
8. Annotate actions taken on the DA Form 5988-E.	—	—
9. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
 TC 9-524
 TM 9-3416-225-12

Related

**Perform Filing/Polishing Using a Lathe
091-44E-2026**

Conditions: In a field or garrison environment, given a lathe, machinist's tool kit, 1 inch diameter aluminum stock, required stock, dial indicator, test bar, marker, cutting oil, 100 grit abrasive cloth, 1-2 inch outside micrometer, shop drawing, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform filing/polishing using a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up lathe for filing and polishing.	—	—
5. File workpiece on a lathe.	—	—
6. Polish material on a lathe.	—	—
7. Visually inspect results.	—	—
8. Measure results.	—	—
9. Annotate corrective actions taken on the DA Form 5988-E.	—	—
10. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

**Perform Eccentric Turning Using a Lathe
091-44E-2031**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, lathe with attachments, machinist's tool kit, aluminum stock, surface plate, vernier height gauge, V-block and clamp, layout dye, wiggler bar, 1-2 inch outside micrometer, 3/8-inch end square end toolbit, cutting fluid, hand oiler, shop drawing, workpiece, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform eccentric turning using a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Lay out workpiece center holes and drill as required.	—	—
5. Select holding device for straight turning main center diameters.	—	—
6. Mount workpiece. (Use dead center in tailstock as required.)	—	—
7. Determine and set speeds and feeds.	—	—
8. Apply cutting oil; straight and shoulder turn workpiece to dimensions.	—	—
9. Mount holding device necessary to offset workpiece. (Use adapter for tailstock, if required).	—	—
10. Mount workpiece to offset throw center.	—	—
11. Apply cutting oil; straight and shoulder turn workpiece to dimensions.	—	—
12. Measure finished workpiece for accuracy.	—	—
13. Annotate actions taken on the DA Form 5988-E.	—	—
14. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
TC 9-524	
TM 9-3416-225-12	

**Perform Taper Turning Using a Lathe
091-44E-2028**

Conditions: In a field or garrison environment, given a machinist's tool kit, lathe with attachments, meal stock, test bar, 1/2-inch drills, 3/4-inch drill, drill indicator, micrometer, No. 3 Morse taper plug gauge, layout dye, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform taper turning using a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the lathe for tapers.	—	—
5. Turn a taper using the taper attachment.	—	—
6. Set up the lathe to cut an external taper using the tailstock offset method.	—	—
7. Cut an external taper on a lathe using the tailstock offset method.	—	—
8. Set up the lathe for boring an internal taper using the taper attachment.	—	—
9. Bore an internal taper on the lathe using the taper attachment.	—	—
10. Set up the lathe to cut an external taper using the compound rest.	—	—
11. Cut an external taper on a lathe using the compound rest.	—	—
12. Measure finished work for accuracy.	—	—
13. Annotate actions taken on the DA Form 5988-E.	—	—
14. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524
 TM 9-3416-225-12

Related

**Perform Knurling Using a Lathe
091-44E-2030**

Conditions: In a field garrison environment, given machine shop maintenance equipment, lathe with attachments, workpiece, 1-2 inch outside micrometer, hand oiler, shop drawings, machinist's tool kit, additional tools, equipment specified in TMs, repair parts, applicable forms and technical publications, and supervision/assistance.

Standards: Perform knurling using a lathe IAW applicable technical references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select an use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Determine knurling pattern.	—	—
5. Drill center hole for tailstock.	—	—
6. Install applicable holding device and center support, as required.	—	—
7. Mount workpiece.	—	—
Note: Mounted workpiece in chuck should be supported by a dead center, tailstock, or steady rest, as required.		
8. Select, mount, and center knurling tool.	—	—
9. Adjust knurling tool 90 degrees to workpiece axis.	—	—
10. Lay out length to be knurled.	—	—
11. Set the lathe to the lowest spindle speed.	—	—
12. Determine and set feed.	—	—
13. Machine workpiece; apply cutting oil, as required.	—	—
14. Check knurled pattern.	—	—
15. Measure finished workpiece for accuracy.	—	—
16. Annotate actions taken on the DA Form 5988-E.	—	—
17. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

- | | |
|------------------|----------------|
| Required | Related |
| TC 9-524 | |
| TM 9-3416-225-12 | |

**Perform Parting and Grooving Using a Lathe
091-44E-2024**

Conditions: In a field or garrison environment, given a lathe, machinist's tool kit, 1-inch diameter aluminum stock, required stock, dial indicator, test bar, marker, cutting oil, 100-grit abrasive cloth, 1-2 inch outside micrometer, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform parting and grooving using a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the lathe for parting.	—	—
5. Part material on the lathe.	—	—
6. Set up lathe to machine form grooves.	—	—
7. Machine form grooves on the lathe.	—	—
8. Measure results.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

- References**
- Required**
 - TC 9-524
 - TM 9-3416-225-12

Related

**Perform Facing, Straight, and Shoulder Turning Using a Lathe
091-44E-2023**

Conditions: In a field or garrison environment, given a lathe, machinist's tool kit, steel stock, hand oiler, surface gauge, dial test indicator, test bar, surface plate, aluminum steel, 1-2 inch outside micrometer, depth micrometer, shop drawings, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform facing, straight, and shoulder turning using a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up lathe.	—	—
5. Align lathe centers.	—	—
6. Perform facing and center drilling on the lathe.	—	—
7. Perform straight turning on the lathe.	—	—
8. Perform shoulder turning on the lathe.	—	—
9. Measure results.	—	—
10. Annotate actions taken on the DA Form 5988-E.	—	—
11. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
 TC 9-524
 TM 9-3416-225-12

Related

**Perform Drilling, Reaming, and Boring Using a Lathe
091-44E-2025**

Conditions: In a field or garrison environment, given a lathe, machinist's tool kit, steel stock, hand oiler, surface gauge, dial test indicator, test bar, surface plate, aluminum steel, 1-2 inch outside micrometer, depth micrometer, shop drawings, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform drilling, reaming, and boring using a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up lathe.	—	—
5. Align lathe centers.	—	—
6. Perform drilling.	—	—
7. Perform reaming.	—	—
8. Perform boring.	—	—
9. Measure results.	—	—
10. Annotate actions taken on the DA Form 5988-E.	—	—
11. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524
TM 9-3416-225-12

Related

Subject Area 5: MILLING MACHINE OPERATIONS TASKS

Perform Sawing/Parting Using a Milling Machine

091-44E-2038

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, milling machine with attachments, machinist's tool kit, angle milling cutter, 1-1/2-inch shell end milling cutter, depth micrometer, dial indicator, lead or composition hammer, parallels, paper shims of a known thickness, shop drawing, workpiece, cutting oil, aluminum stock, slitting saw, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform sawing/parting using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Lay out workpiece for parting/sawing.	—	—
5. Select and mount slitting saw.	—	—
6. Select and mount holding device(s).	—	—
7. Determine and set speeds, feeds, and direction of cutter rotation.	—	—
8. Machine workpiece; apply cutting oil, as required.	—	—
9. Measure finished workpiece for accuracy.	—	—
10. Annotate actions taken on the DA Form 5988-E.	—	—
11. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

TC 9-524

TM 9-3417-210-10

Related

**Perform Plain/Face Milling Using a Milling Machine
091-44E-2034**

Conditions: In a field or garrison environment, given a milling machine, machinist's tool kit, aluminum stock, plain and side milling cutters, dial indicator, 1-2 inch outside micrometer, 2-3 inch outside micrometer, parallels, shop drawing, cutting oil, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform plain/face milling using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the machine for plain and face milling.	—	—
5. Lay out workpiece.	—	—
6. Mount milling cutter.	—	—
7. Mount workpiece in holding device.	—	—
8. Select cutting oil.	—	—
9. Determine and set speeds and feeds.	—	—
10. Set direction of cutter rotation.	—	—
11. Set table trip dogs for length of cut.	—	—
12. Reference cutter for depth of cut.	—	—
13. Perform plain milling.	—	—
14. Perform face milling.	—	—
15. Measure finished workpiece for accuracy.	—	—
16. Annotate corrective actions on the DA Form 5988-E.	—	—
17. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3416-225-12

Related

**Perform Indexing Using a Milling Machine
091-44E-2033**

Conditions: In a field or garrison environment, given a milling machine, indexing head, machinist's tool kit, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform indexing using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the milling machine for indexing.	—	—
5. Perform indexing.	—	—
6. Annotate actions taken on the DA Form 5988-E.	—	—
7. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
TC 9-524	
TM 9-3416-225-12	

**Perform Straddle/Spline Milling Using a Milling Machine
091-44E-2037**

Conditions: In a field or garrison environment, given a milling machine, machinist's tool kit, parallels, two 3/8-inch by 3-inch side milling cutters (matching set), 0.508-thick spacer, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform straddle/spline milling using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up a milling machine for straddle milling.	—	—
5. Perform straddle milling.	—	—
6. Set up a machine for spline milling.	—	—
7. Perform spline milling.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

TC 9-524
TM 9-3417-210-10

Related

**Perform Angular Milling Using a Milling Machine
091-44E-2035**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, milling machine with attachments, machinist's tool kit, angle milling cutter, 1-1/2 inch shell end milling cutter, depth micrometer, dial indicator, lead or composition hammer, parallels, paper shims of a known thickness, shop drawing, workpiece, cutting oil, aluminum stock, slitting saw, materials, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform angular milling using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the milling machine to angle mill material.	—	—
5. Select and mount appropriate milling cutter.	—	—
6. Select holding device(s); then mount and align workpiece (if vise is used, align vise first).	—	—
7. Determine and set speeds, feeds, and direction of cutter rotation.	—	—
8. Reference workpiece to cutter using paper shims.	—	—
9. Angle mill material.	—	—
10. Measure finished workpiece for accuracy.	—	—
11. Annotate actions taken on the DA Form 5988-E.	—	—
12. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	Required	Related
	TC 9-524	
	TM 9-3417-210-10	

**Perform Drilling/Boring Using a Milling Machine
091-44E-2041**

Conditions: In a field or garrison environment, given a milling machine, machinist's tool kit, offset boring head, aluminum stock, boring bar, assorted drills, 3/8 inch by 6 inch side cutter, dial indicator, telescoping gauge set, 1-2 inch outside micrometer, parallels, cutting oil, hand oiler, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform drilling/boring using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the milling machine to perform drilling.	—	—
5. Perform drilling on the milling machine.	—	—
6. Set up the milling machine to perform boring.	—	—
7. Perform boring on the milling machine.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524
TM 9-3417-210-10

Related

**Perform Milling Keyway Using a Milling Machine
091-44E-2040**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, a milling machine with attachments, machinist's tool kit, aluminum stock, dial indicator, 1-2 inch outside micrometer, parallels, 1/4 inch by 3 inch side milling cutter, No. 807 Woodruff key-slot cutter, 1/2 inch by 6 inch side milling cutter, 3/16 inch by 1/4 inch by 1/2 inch flat section, round-ends key, 1/4 inch by 1/4 inch by 1/2 inch square key, No. 807 Woodruff key, shop drawing, lead or composition hammer, paper shims of known thickness, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform milling keyway using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Compute keyway dimensions.	—	—
5. Set up a milling machine for milling keyways.	—	—
6. Select and mount milling cutter.	—	—
7. Align table of universal milling machine, as required.	—	—
8. Select holding device(s); then mount and align workpiece.	—	—
9. Determine and set speeds, feeds, and direction of cutter rotation.	—	—
10. Reference workpiece to cutter using paper shims.	—	—
11. Set up trip dogs for length of keyway, if automatic feed is used.	—	—
12. Machine workpiece; apply cutting oil, as required.	—	—
13. Measure finished workpiece for accuracy.	—	—
14. Annotate actions taken on the DA Form 5988-E.	—	—
15. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	
Required	Related
TC 9-524	
TM 9-3417-210-10	

**Perform Gear Cutting/Repair Using a Milling Machine
091-44E-2039**

Conditions: In a field or garrison environment, given machine shop field maintenance equipment, a milling machine, machinist's tool kit, gear blank, mandrel, involute gear cutter, 1-2 inch outside micrometer, 2-3 inch outside micrometer, vernier gear tooth caliper, dial indicator, small diameter test bar, shop drawing, lead or composition hammer, paper shims of a known thickness, cutting oil, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform gear cutting/repair using a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Determine gear dimensions.	—	—
5. Select and install cutter.	—	—
NOTE: If involute gear cutter is not available, grind a fly cutter tool bit to fit a good gear tooth. When tool bit is properly ground, no light should show between tool bit and tooth space.		
6. Mount index head and footstock and install workpiece on solid mandrel.	—	—
7. Position cutter to center and set depth of cut.	—	—
8. Compute and set indexing head for number of spaces required.	—	—
NOTE: If repairing a gear, a trial fit of several good teeth is a good practice to ensure centering and indexing are correct prior to machining.		
9. Determine speed, feed, and direction of cutter rotation.	—	—
10. Machine workpiece; apply cutting oil, as required.	—	—
11. Measure finished workpiece for accuracy.	—	—
12. Annotate actions taken on the DA Form 5988-E.	—	—
13. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524
TM 9-3417-210-10

Related

Subject Area 6: VERSA-MIL OPERATIONS TASKS

**Perform Drilling Operations Using the Versa-Mil
091-44E-2053**

Conditions: In a field or garrison environment, given a Versa-Mil, machinist's tool kit, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform drilling operations using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the versa-mil.	—	—
5. Perform drilling operations.	—	—
6. Annotate actions taken on the DA Form 5988-E.	—	—
7. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Perform Grinding Operations Using the Versa-Mil
091-44E-2052**

Conditions: In a field or garrison environment, given a Versa-Mil, lathe, machinist's tool kit, steel stock, dial indicator, test bar, layout dye, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform grinding operations using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the Versa-Mil to perform grinding.	—	—
5. Perform external grinding.	—	—
6. Measure finished workpiece for accuracy.	—	—
7. Annotate actions taken on the DA Form 5988-E.	—	—
8. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Perform Gear Cutting/Repair Using the Versa-Mil
091-44E-2050**

Conditions: In a field or garrison environment, given a Versa-Mil, machine shop field maintenance equipment, a lathe with attachments, Versa-Mil, machinist's tool kit, aluminum gear, mandrel, arbor press bench utility grinder, involute milling cutter or fly cutter, vernier gear tooth caliper or a set of pins or wires to measure tooth thickness, paper shims of a known thickness, shop drawing, cutting oil, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform gear cutting/repair using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Mount and align Versa-Mil on the lathe.	—	—
5. Set up indexing head.	—	—
6. Select and set up milling cutter or fly cutter.	—	—
7. Mount and secure workpiece.	—	—
8. Align the cutter.	—	—
9. Reference milling cutter or fly cutter to the workpiece using paper shims.	—	—
10. Determine and set speed, feed, and depth of cut.	—	—
11. Determine and set indexing pattern for the required number of teeth.	—	—
12. Machine workpiece; apply cutting oil, as required.	—	—
13. Set up the Versa-Mil to repair a gear.	—	—
14. Repair a gear on the Versa-Mil.	—	—
15. Measure finished workpiece for accuracy.	—	—
16. Annotate actions taken on the DA Form 5988-E.	—	—
17. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Perform Milling Keyways Using the Versa-Mil
091-44E-2049**

Conditions: In a field or garrison environment, given a Versa-Mil, machine shop field maintenance equipment, a milling machine with attachments, machinist's tool kit, aluminum stock, 1-2 inch outside micrometer, parallels, 1/4 inch by 3 inch side milling cutter, No. 608 Woodruff keyslot cutter, 1/2 inch by 6 inch side milling cutter, 1/4 inch by 1/4 inch by 1/2 inch square key, No. 608 Woodruff key, shop drawing, paper shims of a known thickness, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform milling keyways using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Mount and align Versa-Mil on the lathe.	—	—
5. Set up indexing head, as required.	—	—
6. Set up milling cutter.	—	—
7. Mount and secure workpiece.	—	—
8. Reference milling cutter to the workpiece using paper shim.	—	—
9. Determine the keyslot depth.	—	—
10. Determine and set speed, feed, and depth of cut.	—	—
11. Machine workpiece; apply cutting oil, as required.	—	—
12. Measure finished workpiece for accuracy.	—	—
13. Annotate actions taken on the DA Form 5988-E.	—	—
14. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524
TM 9-3417-210-10

Related

**Perform Angular Milling Using the Versa-Mil
091-44E-2046**

Conditions: In a field or garrison environment, given a Versa-Mil, lathe, machine shop field maintenance equipment, machinist's tool kit, workpiece, lead or composition hammer, paper shims of a known thickness, aluminum stock, 1/8 inch by 4 inch slitting saw, 45 degree by 3 inch angle milling cutter, 5/16-inch toolbit, dial indicator, soluble oil, parallels, hand oiler, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform angular milling using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Select and mount appropriate milling cutter.	—	—
5. Select holding device(s); then mount and align workpiece.	—	—
6. Set swivel head to the correct angle, as required.	—	—
7. Determine and set speeds, feeds, and direction of cutter rotation.	—	—
8. Reference workpiece to cutter using paper shims.	—	—
9. Machine workpiece; apply cutting oil, as required.	—	—
10. Measure finished workpiece for accuracy.	—	—
11. Annotate actions taken on the DA Form 5988-E.	—	—
12. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

TC 9-524

TM 9-3417-210-10

Related

**Perform Indexing Using the Versa-Mil
091-44E-2044**

Conditions: In a field or garrison environment, given a Versa-Mil lathe, machinist's tool kit, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform indexing using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Compute speeds for Versa-Mil.	—	—
5. Perform indexing on a Versa-Mil.	—	—
6. Annotate actions taken on the DA Form 5988-E.	—	—
7. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	Required	Related
	TC 9-524	
	TM 9-3417-210-10	

**Perform Plain/Facing Milling Using the Versa-Mil
091-44E-2045**

Conditions: In a field or garrison environment, given a Versa-Mil, lathe, machinist's tool kit, workpiece, aluminum stock, 1-2 inch outside micrometer, 4-5 inch outside micrometer, 1 1/2-inch shell end milling cutter, cutting oil, hand oiler, shop drawing, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Perform plain/facing milling using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up Versa-Mil for plain milling.	—	—
5. Perform plain milling on a workpiece.	—	—
6. Set up Versa-Mil for face milling.	—	—
7. Perform face milling on a workpiece.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

- References**
Required
 TC 9-524
 TM 9-3417-210-10

Related

Subject Area 7: DRILLING OPERATIONS TASKS

Perform Drilling Operations

091-44E-2057

Conditions: In a field or garrison environment, given an upright drilling machine; machinist's tool kit; portable drill; metal stock; drill gauge; fractional, numbered, and lettered size twist drills; UNC, UNF, and NPT threading set; cutting oil; solvent; hand oiler; layout dye; shop drawing; applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform drilling operations IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up the drilling machine.	—	—
5. Perform drilling (upright and portable) operations.	—	—
6. Perform hand tapping.	—	—
7. Annotate actions taken on the DA Form 5988-E.	—	—
8. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Perform Counterboring Using a Drilling Machine
091-44E-2056**

Conditions: In a field or garrison environment, given an upright drilling machine, machinist's tool kit, metal stock, counterbore set, 3/8-inch diameter 82-degree countersink, cutting oil, hand oiler, 10-24 (82-degree) flat head machine screw, 5/16-inch socket head screw, layout dye, No. 10 and 5/16-inch drills, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform counterboring using a drilling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Select applicable counterbore and pilot.	—	—
5. Mount and secure workpiece.	—	—
6. Align workpiece with counterbore.	—	—
7. Determine and set spindle speed (25 percent less than the speed for drilling).	—	—
8. Counterbore holes to the required depths; apply cutting oil, as required.	—	—
9. Measure finished workpiece for accuracy.	—	—
10. Annotate actions taken on the DA Form 5988-E.	—	—
11. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

**Perform Countersinking Using a Drilling Machine
091-44E-2055**

Conditions: In a field or garrison environment, given an upright drilling machine, machinist's tool kit, metal stock, counterbore set, 3/8-inch diameter 82-degree countersink, cutting oil, hand oiler, 10-24 (82-degree) flat head machine screw, 5/16-inch socket head screw, layout dye, No. 10 and 5/16-inch drills, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform countersinking using a drilling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Mount 82 degree countersink.	—	—
5. Mount and secure workpiece.	—	—
6. Align countersink with holes.	—	—
7. Determine and set spindle speed (one-half the speed for drilling).	—	—
8. Countersink holes to the required depths; apply cutting oil, as required.	—	—
9. Measure finished workpiece for accuracy.	—	—
10. Annotate actions taken on the DA Form 5988-E.	—	—
11. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

Skill Level 2

Subject Area 6: VERSA-MIL OPERATIONS TASKS

**Perform Straddle/Spine Milling Using the Versa-Mil
091-44E-2048**

Conditions: In a field or garrison environment, given a Versa-Mil, lathe, machine shop field maintenance equipment, machinist's tool kit, workpiece, lead or composition hammer, paper shims of a known thickness, aluminum stock, 1/8 inch by 4 inch slitting saw, 45 degree by 3 inch angle milling cutter, 5/16 inch tool bit, dial indicator, soluble oil, parallels, hand oiler, shop drawing, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform straddle/spine milling using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools and equipment.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Set up Versa-Mil for straddle milling.	—	—
5. Perform straddle milling.	—	—
6. Set up Versa-Mil for spline milling.	—	—
7. Perform spine milling.	—	—
8. Measure finished workpiece for accuracy.	—	—
9. Annotate actions taken on the DA Form 5988-E.	—	—
10. Maintain tools and equipment.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

- Required**
- TC 9-524
- TM 9-3417-210-10

Related

**Perform Form Milling Using the Versa-Mil
091-44E-2047**

Conditions: In a field or garrison environment, given a Versa-Mil, lathe, machine shop field maintenance equipment, machinist's tool kit, workpiece, lead or composition hammer, paper shims of a known thickness, aluminum stock, 1/8 inch by 4 inch slitting saw, 45 degree by 3 inch angle milling cutter, 5/16 inch tool bit, dial indicator, soluble oil, parallels, hand oiler, shop drawing, applicable maintenance forms and technical publications, and supervision/assistance.

Standards: Perform form milling using the Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Select and use applicable technical publications.	—	—
2. Select and use applicable tools, equipment, and TMDE.	—	—
3. Practice shop safety and maintenance discipline.	—	—
4. Select and mount appropriate milling cutter.	—	—
5. Select holding device(s); then mount and align workpiece.	—	—
6. Set up Versa-Mil for form milling.	—	—
7. Determine and set speeds, feeds, and direction of cutter rotation.	—	—
8. Reference workpiece to cutter using paper shims.	—	—
9. Machine workpiece; apply cutting oil, as required.	—	—
10. Annotate actions taken on the DA Form 5988-E.	—	—
11. Maintain tools, equipment, and TMDE.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 9-3417-210-10

Related

Skill Level 3

Subject Area 8: COMMON LOGISTICS TASKS

Manage the Standard Army Maintenance System (SAMS)

091-CLT-3012

Conditions: In a field or garrison environment, given a computer system(s) with SAMS-1 software, database of equipment files, SAMS operator, and applicable references.

Standards: Supervised SAMS-1 functions of a direct support (DS)-level maintenance shop IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary equipment and publications were available.	—	—
2. Ensured SAMS operator was adequately trained.	—	—
3. Reviewed the SAMS-1 system and the flow of information to and from system interfaces.	—	—
4. Reviewed the purpose and use of SAMS-1 categories and codes.	—	—
5. Supervised the processing of maintenance requests (DA Form 2407).	—	—
6. Interpreted SAMS-1 reports to identify maintenance trends and problems.	—	—
a. bench stock listing (AHN-023).		
b. shop section summary (AHN-006).		
c. work order detail (AHN-018).		
d. shop stock list (AHN-002).		
e. production backlog (AHN-022).		
f. equipment status listing (AHN-021).		
7. Requested and interpreted ad hoc reports as necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

AIMS 18-L21-AHN-BUR-UM
 AIMS 18-L26-AHO-BUR-EM
 DA PAM 738-750

Related

**Deploy Maintenance Support Teams
091-CLT-3011**

Conditions: In a field or garrison environment, given a request for maintenance support/maintenance situation, map, operational overlay, grid coordinates of destination, vehicle(s), equipment, maintenance personnel, and applicable references.

Standards: Deployed the maintenance support team IAW the maintenance situation/request for maintenance support and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Reviewed the request for maintenance support/maintenance situation.	—	—
2. Determined personnel and equipment requirements necessary to perform the mission.	—	—
3. Identified available resources for the support team, including personnel with applicable MOSs, vehicle(s), tools, test equipment, publications, repair parts, time, and facilities as necessary.	—	—
4. Determined requirements for defending the team.	—	—
5. Briefed the team on the mission.	—	—
a. Reviewed operational overlay.		
b. Conducted a map recon of the route and destination.		
6. Deployed the maintenance support team.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

FM 4-30.3 (FM 9-43-1)

Related

FM 101-5-1

FM 5-170

**Interpret Maintenance Operational Overlay
091-CLT-3010**

Conditions: In a field or garrison environment, given an operational overlay, map, maintenance situation/OPORD, and applicable references.

Standards: Interpreted the maintenance operational overlay by identifying key features and elements of the area of operation IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary references and materials were available.	—	—
2. Identified mapping symbols on the operational overlay.	—	—
3. Identified key features of the map and operational overlay.	—	—
4. Identified key elements of the area of operation on the map and operational overlay.	—	—
5. Updated the operational overlay, as necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	Related
Required	
FM 101-5-1	
FM 4-30.3 (FM 9-43-1)	
FM 5-170	

Manage Key Control Procedures
091-CLT-3006

Conditions: In a field or garrison environment, given keys, key control rosters, key boxes/cabinets, and applicable publications.

Standards: Managed key control procedures IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary publications were available.	—	—
2. Established key control policies and procedures.	—	—
3. Established key control access rosters.	—	—
4. Ensured personnel were aware of their responsibilities for the security and accountability of keys.	—	—
5. Ensured key control access rosters were properly maintained and adhered to.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

- Required**
- AR 190-13
- AR 190-51

Related

Establish Maintenance Facilities
091-CLT-3003

Conditions: In a field or garrison environment, given a maintenance site, maintenance personnel, applicable equipment, maintenance shop/section SOP, and applicable references.

Standards: Set up a maintenance shop facility suitable for accomplishing necessary maintenance functions IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured applicable references and publications were available.	—	—
2. Identified commander's maintenance requirements for the accomplishment of the unit's mission.	—	—
3. Set up the maintenance facility IAW SOP.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
FM 4-30.3 (FM 9-43-1)

Related

Maintain a Publications Library
091-CLT-3002

Conditions: In a field or garrison environment, given publications and storage location, local and higher headquarters publications indexes and publications procedures, SOP, and applicable forms and references.

Standards: Ensured required publications were on hand or ordered, publications were arranged and maintained properly, forms/records were properly maintained, and changes were posted IAW applicable references and local procedures.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Determined all publications required by the maintenance shop or section.	—	—
2. Reviewed and updated publications library SOP as needed.	—	—
3. Ensured that technical publications on hand/on order were the most current IAW DA Pam 25-30.	—	—
4. Ensured that doctrinal, training, and organizational publications on hand/on order were the most current IAW DA Pam 25-30 and local listings.	—	—
5. Ensured that administrative publications on hand/on order were the most current IAW DA Pam 25-30.	—	—
6. Ensured that local and higher headquarters publications on hand/on order were the most current IAW DA Pam 25-30 and local listings.	—	—
7. Prepared DA Form 4569 IAW DA Pam 25-33.	—	—
8. Prepared the required transmittal form IAW DA Pam 25-33.	—	—
9. Prepared DA Forms 17 and 17-1 to request local and higher headquarters publications, IAW DA Pam 25-33 and local/higher headquarters' publications requisitioning procedures.	—	—
10. Ensured that published changes were posted to applicable publications IAW DA PAM 25-40 and publication change instructions.	—	—
11. Removed obsolete/rescinded/superseded publications from library IAW DA Pam 25-40 and publication change instructions.	—	—
12. Arranged publications in proper order and in a suitable location IAW DA Pam 25-40.	—	—
13. Labeled binders used for storing library publications IAW AR 25-400-2 applicable) and DA Pam 25-40.	—	—
14. Notified personnel to return loaned publications to the library in a timely manner IAW SOP.	—	—
15. Updated US Army Publishing Agency (USAPA), local, and higher headquarters publications accounts as required IAW DA Pam 25-33 and local/higher headquarters publication account instructions.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

AR 25-400-2
DA PAM 25-30
DA PAM 25-33

Related

AR 25-11

**Manage a Shop Safety Program
091-CLT-3001**

Conditions: In a field or garrison environment, given a maintenance site/facility, maintenance personnel, and applicable references.

Standards: Ensured personnel followed all safety procedures, that preventable accidents were avoided, and if accidents occurred that they were properly recorded and reported, IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured all safety references were on hand.	—	—
2. Established and documented goals and requirements for a successful shop safety and accident prevention program.	—	—
3. Briefed and regularly updated subordinates on shop safety program.	—	—
4. Conducted initial safety inspections.	—	—
5. Ensured initial safety concerns and violations were corrected.	—	—
6. Conducted scheduled and unscheduled safety inspections.	—	—
7. Documented safety violations, reported the violations as required, and conducted follow-up inspections to ensure violations were/remained corrected.	—	—
8. Kept necessary records of safety inspections and accident reports.	—	—
9. Ensured MSDS were prepared and maintained as required in applicable work areas.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- AR 190-13
- AR 220-1
- AR 700-138
- AR 750-1
- DA PAM 738-750
- FM 4-30.3 (FM 9-43-1)
- TB 43-180

Related

- AR 385-10
- AR 385-40
- AR 385-55

**Assist in Preparing a Standing Operating Procedure
091-CLT-3004**

Conditions: In a field or garrison environment, given FM 9-43-1, higher headquarters SOP(s), and commander's guidance.

Standards: Prepared a draft copy of a maintenance shop/section internal or external SOP for supervisor's review, comment, and approval IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured applicable publications were available.	—	—
2. Ensured unit policies and commander's guidance were followed.	—	—
3. Ensured shop operation policies were adequately addressed.	—	—
4. Updated the shop SOP as required.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
FM 4-30.3 (FM 9-43-1)	

**Manage the TMDE Calibration Program
091-CLT-3007**

Conditions: In a field or garrison environment, given TMDE, maintenance personnel, and applicable references.

Standards: Managed the TMDE calibration program IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary publications were available.	—	—
2. Reviewed and updated TMDE computer printout list.	—	—
3. Ensured PMCS and inventory of all TMDE and auxiliary equipment are conducted, as required.	—	—
4. Ensured TMDE was turned in for calibration IAW computer printouts.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

- Required**
- AR 750-43
- TB 43-180

Related

**Manage Tool Control Procedures
091-CLT-3005**

Conditions: In a field or garrison environment, given applicable supply catalog(s), applicable references, and hand receipt forms.

Standards: Managed tool control procedures IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured applicable references were available.	—	—
2. Established policies and procedures for the control of tools.	—	—
3. Ensured all DA Form 2062s were properly filled out and updated.	—	—
4. Ensured tools and equipment were inventoried IAW applicable references.	—	—
5. Ensured tool shortages were annotated on a shortage annex.	—	—
6. Ensured subordinates applied property accountability procedures.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- AR 190-13
- AR 220-1
- AR 385-10
- AR 385-40
- AR 700-138
- AR 750-1
- DA PAM 710-2-1
- FM 101-5-1
- FM 4-30.3 (FM 9-43-1)

Related

- DA PAM 738-750

**Recon Terrain/Route
091-CLT-3008**

Conditions: In a field environment, given a maintenance situation/operations order (OPORD), operational overlay, grid coordinates of destination, vehicle with personnel, and applicable references.

Standards: Performed a route/terrain reconnaissance, and selected the most appropriate route to follow or the most appropriate location to set up a maintenance site, IAW maintenance situation/OPORD and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary equipment and publications were available.	—	—
2. Performed a map recon of the terrain and route.	—	—
3. Selected personnel for recon team.	—	—
4. Reconned route to determine best access to destination and to ensure safety of personnel and equipment.	—	—
5. Reconned terrain to determine suitability for maintenance site use, to determine best avenues of entry and exit, and to ensure safety of personnel and equipment.	—	—
6. Reported findings and conclusions to supervisors.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
FM 4-30.3 (FM 9-43-1)
FM 5-170

Related

**Supervise Maintenance Operations
091-CLT-3009**

Conditions: In a field or garrison environment, given maintenance personnel, equipment, maintenance facility/site, SOPs, and applicable references.

Standards: Established and maintained an effective maintenance shop operation IAW SOPs and applicable references.

Performance Steps

1. Ensure unit maintenance procedures are IAW AR 750-1, DA Pam 750-35 and local major command (MACOM) policies.
 - a. Review unit standing operating procedures (SOP) for maintenance.
 - b. Inform unit personnel of changes in policy and new policy that impacts unit SOP
2. Provide technical assistance to unit maintenance activities.
 - a. Inspect unit maintenance operations
 - b. Identify shortcomings
 - c. Make recommendations for corrective action.
 - d. provide training in maintenance procedures.
3. Provide maintenance management to units.
 - a. Review reports (MCRS and ULLS-G).
 - b. Coordinate with higher level maintenance activities
 - c. Direct cross-leveling of maintenance assets/workload.
 - d. Prioritize maintenance efforts of units.

Performance Measures

	<u>GO</u>	<u>NO GO</u>
1. Reviewed unit SOP as scheduled	—	—
2. Compared unit SOP against standards set in 750-35-35 (Aug 94), Pg.	—	—
3. Completed regular inspection of unit operations.	—	—
4. Compared unit operations against standards in AR 750-1, Da Pam 738-750 and DA 750, and DA Pam 750-35.	—	—
5. Inspect environmental protection practices for compliance.	—	—
6. Review safety program practices for compliance with AR 220-1	—	—
7. Recorded and submitted deficiencies to proper personnel for correction.	—	—
8. Recorded training needs.	—	—
9. Coordinated with appropriate personnel to provide needed training	—	—
10. Reviewed MCSR for accuracy and compliance with standards in AR 700-138, ADSM-25-L3N-AWA-EUM, and AISM -25-L3Q-AWC-ZZZ-CG	—	—
11. Coordinated with appropriate maintenance level to correct maintenance discrepancies.	—	—
12. Coordinated with TRADOC and AMC to ensure that emerging issues are addressed appropriately at the unit.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References**Required**

AR 190-51
AR 385-10
AR 385-40
AR 385-55
AR 600-55
AR 700-4
AR 710-2
AR 725-50
AR 735-11-1
AR 735-5
AR 750-43
DA PAM 25-30
DA PAM 710-2-2
DA PAM 738-750
DA PAM 750-1
FM 4-30.3 (FM 9-43-1)

Related

Subject Area 9: 44E TECHNICAL TASKS

Supervise Cutting/Grinding Laminated Glass
091-44E-3029

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, light machine oil, laminated safety glass, methanol alcohol, combat vehicle windshield frame, rubber weather stripping, liquid soap, belt edger, cutting board, abrasive belts, glass cutting tool kit, water, additional tools, equipment specified in TMs, repair parts, safety equipment, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Supervise cutting/grinding laminated glass IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect cutting/grinding of laminated glass.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure cutting/grinding laminated glass is performed in accordance with appropriate technical manuals and references.	—	—
a. Cut Laminated Glass.		
(1) Lay out pattern of glass to be cut.		
(2) Cut both sides of glass.		
(3) Cut plastic between sheets.		
b. Grind laminated glass.		
(1) Select/install abrasive belt.		
(2) Turn on water supply.		
(3) Turn on belt edger.		
(4) Adjust water flow.		
(5) Grind edge of glass.		
(6) Bevel edge of glass.		
(7) Check dimension of glass.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure cutting/grinding laminated glass has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-510

Related

**Supervise All Position GMAW Ferrous/Nonferrous/Titanium Metal
091-44E-3018**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, GMAW equipment, welding shop, welder's tool kit, aluminum stock, stainless steel coupons, titanium, (titanium-specific tools, equipment, and supplies), welder's helmet, needle nose pliers, additional tools, equipment specified in TMs, repair parts, safety equipment, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Supervise all position GMAW ferrous/nonferrous titanium metal IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect all position GMAW ferrous/nonferrous/titanium metal.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure all position GMAW ferrous/nonferrous/titanium metal is performed in accordance with appropriate technical manuals and references.	—	—
a. Set up GMAW equipment for ferrous metal.		
b. Perform GMAW ferrous metal.		
c. Set up GMAW equipment for non-ferrous metal.		
d. Perform GMAW non-ferrous metal.		
e. Set up GMAW equipment for titanium metal.		
f. Perform GMAW titanium metal.		
g. Visually inspect welds.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure all position GMAW ferrous/nonferrous/titanium metal has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-237

Related

**Supervise Soldering Operations
091-44E-3008**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, oxy-fuel torch set, welder's tool kit, soft solder, galvanized steel plates, cutting booth, soapy water solution, additional tools, equipment specified in TMs, repair parts, safety equipment, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Supervise soldering operations IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect soldering operations.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure soldering operations are performed in accordance with appropriate technical manuals and references.	—	—
a. Prepare surface for soldering.		
b. Prepare solder.		
c. Perform soldering operations.		
d. Visually inspect completed work.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure soldering operations have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-237

Related

**Supervise All Oxy-Fuel Cutting Operations
091-44E-3004**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, welder's tool kit, oxy-fuel torch set, oxy-fuel cutting attachment, cutting booth, soapy water solution, armor plates, additional tools, equipment specified in TMs, repair parts, safety equipment, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Supervise all oxyacetylene cutting operations IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect all oxyacetylene cutting operations.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure all oxyacetylene cutting operations are performed in accordance with appropriate technical manuals and references.	—	—
a. Determine the size and type of material.		
b. Set up oxyacetylene welding set with cutting attachment.		
c. Lay out materials, if appropriate.		
d. Select appropriate cutting tip.		
e. Adjust oxygen and acetylene working pressure.		
f. Visually inspect the finished cut.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure all oxyacetylene cutting operations have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-237

Related

**Supervise All Positions Oxy-Fuel Welding, Ferrous Metal
091-44E-3003**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, oxyacetylene welding set, welder's tool kit, filler rods, clamps, welding apron, bench grinder or sander, additional tools, equipment specified in TMs, repair parts, safety equipment, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Supervise all position oxy-fuel welding, ferrous metal IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect all position oxy-fuel welding, ferrous metal.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure all position oxy-fuel welding, ferrous metal is performed in accordance with appropriate technical manuals and references.	—	—
a. Determine the size and type of material.		
b. Select filler metal.		
c. Lay out materials, if appropriate.		
d. Select appropriate welding tip.		
e. Adjust oxygen and acetylene working pressure.		
f. Clean metal to be welded.		
g. Select type of joint (tee, butt, corner, lap, edge).		
h. Align materials.		
i. Tack welding joint.		
j. Weld joint in correct position.		
k. Visually inspect the finished weld.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure all position oxy-fuel welding, ferrous metal has been performed to in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-237

Related

**Supervise All Position GTAW, Ferrous / Nonferrous / Titanium Metal
091-44E-3183**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, GTAW equipment, welding shop, welder's tool kit, aluminum stock, stainless steel coupons, titanium, welder's helmet, needle nose pliers, safety equipment, additional tools, equipment specified in TMs, repair parts, and applicable maintenance forms and technical publications.

Standards: Supervise all position GTAW ferrous/nonferrous titanium metal IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect all position GTAW, ferrous/nonferrous/titanium metal.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure all position GTAW ferrous/nonferrous/titanium metal is performed in accordance with appropriate technical manuals and references.	—	—
a. Ferrous metal.		
(1) Set up GTAW equipment for ferrous metal.		
(2) Perform GTAW ferrous metal.		
(3) Visually inspect weld.		
b. Nonferrous metal.		
(1) Set up GTAW equipment for non-ferrous metal.		
(2) Perform GTAW non-ferrous metal.		
(3) Visually inspect weld.		
c. Titanium metal.		
(1) Set up GTAW equipment for titanium metal.		
(2) Perform GTAW titanium metal.		
(3) Visually inspect weld.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure all position GTAW ferrous/nonferrous/titanium metal has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-237

Related

**Supervise SMAW Armor Plate
091-44E-3181**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, SMAW equipment, welding helmet, welder's tool kit, armor plates, 1/8- and 5/32-inch stainless steel electrodes, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise SMAW armor plate IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect SMAW armor plate.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure SMAW armor plate is performed in accordance with appropriate technical manuals and references.	—	—
a. SMAW a butt joint weld on armor plate (vertical position).		
b. Visually inspect weld.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure SMAW armor plate has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-237

Related

**Supervise Radiator Repair
091-44E-3041**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, radiator plug set, probing tool, rubber apron, oxy-fuel welding set, solder/soldering flux, welder's tool kit, 1/16-inch copper coupons, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise radiator IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to repair and inspect radiator.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure radiator repair is performed in accordance with appropriate technical manuals and references.	—	—
a. Clean area to be soldered.		
b. Cut patch, if applicable.		
c. Tin area to be repaired, if applicable.		
d. Solder damaged area.		
e. Test radiator for leaks using compressed air.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure radiator repair has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TM 750-254

Related

**Supervise Interpretation of Welding Symbols
091-44E-3111**

Conditions: In a field or garrison environment, given shop drawings and applicable technical publications.

Standards: Supervise interpretation of welding symbols IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensure applicable technical publications are available.	—	—
2. Assign personnel to perform task.	—	—
3. Provide assistance when necessary.	—	—
4. Ensure interpretation of welding symbols is performed in accordance with appropriate technical manuals and references.	—	—
a. Identify welding symbols.		
b. Interpret welding symbols on shop drawings.		
c. Identify welding joint designs.		
5. Critique personnel on their job performance.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-237

Related

Supervise Control of Expansion and Contraction of Metals
091-44E-3053

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, body and fender tool kit, metal body repair tools (electric, pneumatic, and hydraulic tools), damaged vehicle, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise control of expansion and contraction of metals IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect control of expansion and contraction of metals.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure control of expansion and contraction of metals is performed in accordance with appropriate technical manuals and references.	—	—
a. Perform metal expansion procedures.		
b. Perform hammering operations.		
c. Perform hot shrinking of metal.		
d. Perform cold shrinking of metal.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure control of expansion and contraction of metals has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
 TC 9-510

Related

Supervise Analyzing a Repair Sequence
091-44E-3047

Conditions: In field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, body and fender tool kit, damaged vehicle, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise analyzing a repair sequence IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect analyzing a repair sequence.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure analyzing a repair sequence is performed in accordance with appropriate technical manuals and references.	—	—
a. Inspect the damage.		
b. Determine sequence of damage.		
c. List repair sequence.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure analyzing a repair sequence has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-510

Related

**Supervise Hydraulic Body Jack Operations
091-44E-3044**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, body and fender tool kit, metal body repair tools (electric, pneumatic, hydraulic tools), damaged vehicle, hydraulic body jack kit, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise hydraulic body jack operations IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect hydraulic body jack operations.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure hydraulic body jack operations are performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Use proper attachments on the body jack. b. Properly remove dent using the body jack. c. Perform direct hammering with the body jack, if necessary. d. Perform indirect hammering with the body jack, if necessary. e. Visually inspect the completed job. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure hydraulic body jack operations have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-510

Related

**Supervise Repair/Replacing Structural Components
091-44E-3054**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, body and fender tool kit, metal body repair tools (electric, pneumatic, and hydraulic tools), damaged vehicle, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise repair/replacing structural components IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect repair/replacing structural components.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure repair/replacing structural components is performed in accordance with appropriate technical manuals and references.	—	—
a. Identify repair tools and their use.		
b. Analyze damage.		
c. Perform metal roughing and aligning (bumping).		
d. Perform hammering operations.		
e. Perform hydraulic jack operations.		
f. Perform filling procedures.		
g. Perform filing procedures.		
h. Perform sanding procedures.		
i. Mix body plastics.		
j. Apply body plastics.		
k. Identify components for replacement.		
l. Replace structural components.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure repair/replacing structural components has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-510

Related

**Supervise All Position SMAW, Ferrous Metal
091-44E-3180**

Conditions: In field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, welder's tool kit, SMAW equipment, electrodes, low carbon steel coupons, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise all position SMAW, ferrous metal IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect all position SMAW, ferrous metal.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure all position SMAW, ferrous metal is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up SMAW equipment for operations (ferrous metals). b. Perform all position SMAW. c. Inspect completed work. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure all position SMAW, ferrous metal has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-237

Related

**Supervise Inspection of Radiators
091-44E-3040**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, radiator plug set, probing tool, rubber apron, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise inspection of radiators IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to inspect and evaluate radiators.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure inspection of radiators is performed in accordance with appropriate technical manuals and references.	—	—
a. Inspect radiator for damage.		
b. Inspect radiator repairs.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure radiators have been properly inspected, repaired, and evaluated in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TM 750-254

Related

**Supervise Fuel Tanks/Containers Repair
091-44E-3036**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, fuel tank, oxy-fuel welding set, explosive meter, welder's tool kit, air compressor, rubber plug set, nonelectric soldering copper, 18-gauge galvanized steel, tin snips, soft solder, soldering flux, fire extinguisher, solvent, clean rags, flexible exhaust hose, water hose, steam cleaner, radiator test tank, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise fuel tanks/containers repair IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect fuel tanks/containers repair.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure fuel tanks/containers repair is performed in accordance with appropriate technical manuals and references.	—	—
a. Inspect fuel tank/container for damage.		
b. Repair fuel tank/container.		
c. Inspect fuel tank repairs.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure fuel tanks/containers repair have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-510

Related

**Supervise Preparing Fuel Tanks/Containers for Repair
091-44E-3035**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, fuel tank, air compressor, rubber plug set, tin snips, fire extinguisher, solvent, clean rags, flexible exhaust hose, water hose, steam cleaner, radiator test tank, explosive meter, additional tools, equipment specified in TMs, repair parts, safety equipment, applicable maintenance forms, and technical publications, and supervision/assistance.

Standards: Supervise preparing fuel tanks/containers for repair IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to prepare and inspect fuel tanks/containers for repair.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure preparing fuel tanks/containers for repair is performed in accordance with appropriate technical manuals and references.	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure preparing fuel tanks/containers for repair has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-510

Related

**Supervise Composite Material Repair
091-44E-3123**

Conditions: In field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, epoxy repair kit, electric disk sander with disks, sanding block (hand) with sandpaper, pneumatic oscillating sander, welder's tool kit, additional tools, equipment specified in TMs, repair parts, applicable maintenance forms and technical publications.

Standards: Supervise composite material repair IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect composite material repair.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure composite material is repaired in accordance with appropriate technical manuals and references.	—	—
a. Repair fiberglass equipment/components/material.		
b. Repair Kevlar equipment/components/material.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure composite material has been repaired in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-510

Related

Subject Area 10: 44B TECHNICAL TASKS

Supervise Removing Bolts and Studs
091-44E-3140

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, drilling machine, tap wrench, twist drills, machinist's tool kit, stock (object block), screw head extractor, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise removing bolts and studs IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to inspect and remove bolts and studs.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure bolts and studs are removed in accordance with appropriate technical manuals and references.	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure bolts and studs have been removed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
 TC 9-524
 TM 9-243

Related

**Supervise Sharpening Twist Drills
091-44E-3120**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, utility grinder, twist drill, water quench, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise sharpening twist drills IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to inspect, sharpen, and test twist drill.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure twist drill is sharpened in accordance with appropriate technical manuals and references.	—	—
a. Set up utility grinding machine.		
b. Grind lips to correct point angle.		
c. Grind lips to equal length.		
d. Grind correct relief angle.		
e. Grind correct chisel edge angle.		
f. Thin web, if required.		
g. Measure the angles and length of both lips.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure twist drill has been sharpened in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

Supervise Preparation of Shop Drawings/Sketches
091-44E-3119

Conditions: In a field or garrison environment, given a pencil, a ruler, paper, and applicable maintenance forms and technical publications.

Standards: Supervise preparation of shop drawings/sketches IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/function.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper equipment and supplies are available to prepare shop drawings/sketches.	—	—
5. Assign personnel to perform task.	—	—
6. Ensure all safety precautions and procedures are followed.	—	—
7. Provide assistance when necessary.	—	—
8. Ensure the shop drawings/sketches are prepared in accordance with appropriate technical manuals and references.	—	—
9. Conduct an in-process inspection.	—	—
10. Perform a final inspection to ensure drawings/sketches have been prepared in accordance with appropriate technical manuals and references.	—	—
11. Critique personnel on their job performance.	—	—
12. Ensure maintenance forms are completed as required.	—	—
13. Ensure equipment is properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
FM 5-553

Related

**Supervise Installing/Removing Screw Thread Inserts
091-44E-3107**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, drill press, counterbore set, screw thread insert kits,, machinist's tool kit, twist drills, screw extractor, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise installing/removing screw thread inserts IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to install/remove screw thread inserts.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure installing/removing screw thread inserts is performed in accordance with appropriate technical manuals and references.	—	—
a. Install/remove keenserts.		
b. Install/remove helicoil inserts.		
c. Install/remove Rosan inserts.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure installing/removing screw thread inserts has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- TC 9-524
- TM 43-0104
- TM 9-243
- TO 44H1-1-117

Related

**Supervise Performing Hand Threading
091-44E-3106**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, drilling machine, tap wrench, twist drills, machinist's tool kit, stock (object block), screw head extractor, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise performing hand threading IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and test hand threading.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure hand threading (internal and external) is performed in accordance with appropriate technical manuals and references.	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure hand threading (internal and external) has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524
TM 9-243

Related

**Supervise Counterboring on a Drilling Machine
091-44E-3100**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, drill press, counterbore set, screw thread insert kits, machinist's tool kit, twist drills, screw extractor, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable technical publications.

Standards: Supervise counterboring on a drilling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect counterboring on a drilling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure counterboring on a drilling machine is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up counterbore set for counterboring procedures. b. Perform counterboring procedures. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure counterboring on a drilling machine has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Grinding Operations on a Versa-Mil
091-44E-3095**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, Versa-Mil with attachments, machinist's tool kit, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable technical publications.

Standards: Supervise grinding operations on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect grinding operations on a Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure grinding operations on a Versa-Mil are performed in accordance with appropriate technical manuals and references.	—	—
a. Mount and align Versa-Mil on the lathe.		
b. Mount and set up the internal Versa-Grinder.		
c. Mount and secure workpiece.		
d. Determine setting speeds and feeds.		
e. Grind workpiece; apply cutting oil, as required.		
f. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure grinding operations on a Versa-Mil have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Cutting/Repair of Gears on a Versa-Mil
091-44E-3093**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, lathe cutter bit, Versa-Mil with attachments, machinist's tool kit, aluminum stock, fly cutter, gear blank, vernier gear tooth caliper or a set of pins or wires to measure tooth thickness, paper shims of a known thickness, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise cutting/repair of gears on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect cutting/repair of gears on a Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure cutting/repair of gears on a Versa-Mil are performed in accordance with appropriate technical manuals and references.	—	—
a. Mount and align Versa-Mil on the lathe.		
b. Set up indexing head.		
c. Select and set up fly cutter.		
d. Mount and secure workpiece.		
e. Align the cutter.		
f. Reference cutter to the workpiece using paper shim.		
g. Determine and set speed, feed, and depth of cut.		
h. Determine and set indexing pattern for the required number of teeth.		
i. Machine workpiece; apply cutting oil, if necessary.		
j. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure cutting/repair of gears on a Versa-Mil are performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Milling Keyways on a Versa-Mil
091-44E-3092**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, Versa-Mil with attachments, machinist's tool kit, applicable size keystack, paper shims of a known thickness, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable technical publications.

Standards: Supervise milling keyways on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect milling keyways on a Versa-Mil.	—	—
5. Perform the inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure milling keys on a Versa-Mil is performed in accordance with appropriate technical manuals and references.	—	—
a. Mount and align Versa-Mil on the lathe.		
b. Set up indexing head, if necessary.		
c. Set up milling cutter.		
d. Mount and secure workpiece.		
e. Reference milling cutter to the workpiece using paper shims.		
f. Determine the key slot depth.		
g. Determine and set speed, feed, and depth of cut.		
h. Machine workpiece; apply cutting oil, if necessary.		
i. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure milling keyways on a Versa-Mil has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Straddle/Spline Milling on a Versa-Mil
091-44E-3091**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, lathe cutter bit, Versa-Mil with attachments, machinist's tool kit, aluminum stock, paper shims of a known thickness, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable technical publications.

Standards: Supervise straddle/spline milling on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect straddle/spline milling on a Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure straddle/spline milling on a Versa-Mil is performed in accordance with appropriate technical manuals and references.	—	—
a. Set up Versa-Mil for straddle milling.		
b. Perform straddle milling operations.		
c. Measure finished workpiece for accuracy.		
d. Set up Versa-Mil for spline milling.		
e. Perform spline milling operations.		
f. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure straddle/spline milling on a Versa-Mil has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Form Milling on a Versa-Mil
091-44E-3090**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe complete, lathe cutter bit, Versa-Mil complete, machinist's tool kit, aluminum stock, paper shims of a known thickness, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable technical publications.

Standards: Supervise form milling on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect form milling on a Perform Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure form milling on a Versa-Mil is performed in accordance with appropriate technical manuals and references.	—	—
a. Mount and align Versa-Mil on the lathe.		
b. Set up indexing head, if necessary.		
c. Set up milling cutter.		
d. Mount and secure workpiece.		
e. Reference milling cutter to the workpiece using paper shim.		
f. Determine and set speed, feed, and depth of cutter.		
g. Machine workpiece; apply cutting oil, as required.		
h. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure form milling on a Versa-Mil has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

**Supervise Angular Milling on a Versa-Mil
091-44E-3089**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, Versa-Mil with attachments, machinist's tool kit, paper shims of a known thickness, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise angular milling on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure tools and equipment are available to perform and inspect angular milling on a Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure angular milling on a Versa-Mil is performed in accordance with appropriate technical manuals and references.	—	—
a. Set up Versa-Mil for angular milling.		
b. Perform angular milling.		
c. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure angular milling on a Versa-Mil has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Plain/Face Milling on a Versa-Mil
091-44E-3088**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, Versa-Mil with attachments, machinist's tool kit, paper shims of a known thickness, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise plain/face milling on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect plain/face milling on a Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure plain/face milling on a Versa-Mil is performed in accordance with appropriate technical manuals and references.	—	—
a. Mount and align Versa-Mil on the lathe.		
b. Set up indexing head, if necessary.		
c. Set up milling cutter.		
d. Mount and secure workpiece.		
e. Reference milling cutter to the workpiece using paper shim.		
f. Determine and set speed, feed, and depth of cut.		
g. Machine workpiece; apply cutting oil, if necessary.		
h. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure plain/face milling on a Versa-Mil is performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

**Supervise Indexing on a Versa-Mil
091-44E-3087**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, lathe with attachments, Versa-Mil with attachments, machinist's tool kit, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise indexing on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect indexing on a Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure indexing on a Versa-Mil is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Calculate Versa-Mil indexing. b. Set up the indexing head on the lathe. c. Perform indexing on a Versa-Mil. d. Measure finished workpiece for accuracy. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure indexing on a Versa -Mil has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Milling Keyways on a Milling Machine
091-44E-3084**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, milling machine with attachments, machinist's tool kit, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise milling keyways on a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect milling keys on a milling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure milling keys on a milling machine is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up milling machine for milling keyways. b. Perform milling keyways procedures. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure milling keyways on a milling machine has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Drilling/Boring on a Milling Machine
091-44E-3083**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, milling machine, machinist's tool kit, offset boring head, drill bits, drill chuck, aluminum stock, boring bar with cutter, lead or composition hammer, workpiece, shop drawing, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise drilling/boring on a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect drilling/boring on a milling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure drilling/boring on a milling machine is performed in accordance with appropriate technical manuals and references.	—	—
a. Drilling.		
(1) Determine hole sizes and locations.		
(2) Select and mount holding device(s).		
(3) Select and install drill holding devices into Morse tapered collar and install countersink and drill.		
(4) Reference and locate center hole.		
(5) Determine and set drill speed.		
(6) Machine workpiece; apply cutting oil, if necessary.		
(7) Measure finished workpiece for accuracy.		
b. Boring.		
(1) Select holding device(s) and mount workpiece.		
(2) Determine and set speed and feed.		
(3) Mount and position boring bar.		
(4) Machine workpiece; apply cutting oil, if necessary.		
(5) Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure drilling/boring on a milling machine have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Cutting/Repair of Gears on a Milling Machine
091-44E-3082**

Conditions: In a field or garrison environment, given a milling machine, machinist's tool kit, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise cutting/repair of gears on a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect cutting/repair of gears on a milling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure cutting/repair of gears on a milling machine is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up milling machine for gear cutting. b. Perform gear cutting. c. Perform gear repair. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure cutting/repair of gears on a milling machine has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Sawing/Parting on a Milling Machine
091-44E-3081**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, milling machine with attachments, milling cutters, T-4 aluminum, lead or composition hammer, workpiece, shop drawing, cutting oil, parallels, paper shims of a known thickness, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise sawing/parting on a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect sawing/parting on a milling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure sawing/parting on a milling machine is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up milling machine for sawing. b. Perform sawing operations. c. Measure finished workpiece for accuracy. d. Set up milling machine for parting. e. Perform parting operations. f. Measure finished workpiece for accuracy. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure sawing/parting on a milling machine have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

**Supervise Straddle/Spline Milling on a Milling Machine
091-44E-3080**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, milling machine with attachments, milling cutters, lead or composition hammer, workpiece, shop drawing, cutting oil, parallels, paper shims of a known thickness, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise plain/face milling on a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect straddle/spline milling on a milling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure straddle/spline milling on a milling machine is performed in accordance with appropriate technical manuals and references.	—	—
a. Straddle Milling.		
(1) Set up milling machine for straddle milling.		
(2) Perform straddle milling.		
(3) Measure finished workpiece for accuracy.		
b. Spline Milling.		
(1) Set up milling machine for spline milling.		
(2) Perform spline milling.		
(3) Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure straddle/spline milling on a milling machine has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Angular Milling on a Milling Machine
091-44E-3078**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, milling machine with attachments, milling cutters, T-4 aluminum, lead or composition hammer, workpiece, shop drawing, cutting oil, parallels, paper shims of a known thickness, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise angular milling on a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect angular milling on a milling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure angular milling on a milling machine is performed in accordance with appropriate technical manuals and references.	—	—
a. Select and mount appropriate milling cutter.		
b. Select holding device(s) and mount and align workpiece.		
c. Set swivel to the correct angle.		
d. Determine and set speeds, feeds, and direction of cutter rotation.		
e. Reference workpiece to cutter using paper shims.		
f. Machine workpiece, apply cutting oil, if necessary.		
g. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure angular milling on a milling machine has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Plain/Face Milling on a Milling Machine
091-44E-3077**

Conditions: In field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, milling machine with attachments, milling cutters, lead or composition hammer, workpiece, shop drawing, cutting oil, parallels, paper shims of a known thickness, additional tools, equipment specified in TMs, repair parts, safety equipment, applicable maintenance forms, and technical publications, and supervision/assistance

Standards: Supervise plain/face milling on a milling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect plain/face milling on a milling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure plain/face milling on a milling machine is performed in accordance with appropriate technical manuals and references.	—	—
a. Set up machine for plain milling		
b. Perform plain milling.		
c. Measure finished workpiece for accuracy.		
d. Set up machine for face milling.		
(1) Select and mount appropriate milling cutter.		
(2) Select holding device(s) and mount and align workpiece.		
(3) Determine and set speeds, feeds, and direction of cutter rotation.		
(4) Reference workpiece to cutter using paper shims.		
e. Machine workpiece; apply cutting oil, if necessary.		
f. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure that plain/face milling on a milling machine has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Eccentric Turning on a Lathe
091-44E-3075**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, machinist's tool kit, layout dye, surface plate, vernier height gauge, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise eccentric turning on a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect eccentric turning on a lathe.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure eccentric turning on a lathe is performed in accordance with appropriate technical manuals and references.	—	—
a. Set up lathe for eccentric turning.		
(1) Layout workpiece center holes and drill, as required.		
(2) Select holding device for straight turning main center diameters.		
(3) Mount workpiece.		
(4) Determine and set speeds and feeds.		
b. Perform eccentric turning.		
(1) Apply cutting oil; straight and shoulder turn workpiece to dimensions.		
(2) Mount workpiece to offset throw center.		
(3) Apply cutting oil; straight and shoulder turn workpiece to dimensions.		
(4) Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure eccentric turning on a lathe has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Knurling on a Lathe
091-44E-3074**

Conditions: In field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, machinist's tool kit, knurling tool, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise knurling on a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect knurling on a lathe.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure knurling on a lathe is performed in accordance with appropriate technical manuals and references.	—	—
a. Determine knurling pattern.		
b. Drill center hole for tailstock.		
c. Install applicable holding device and center support as required.		
d. Mount knurling tool.		
e. Adjust knurling tool 90 degrees to workpiece axis.		
f. Mount workpiece. NOTE: Mounted workpiece in chuck should be supported by a dead center, tailstock, and steady rest, if required.		
g. Lay out length to be knurled.		
h. Set the lathe to the lowest spindle speed.		
i. Determine and set feed.		
j. Machine workpiece; apply cutting oil, if necessary.		
k. Check knurled pattern.		
l. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure knurling with a lathe has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Taper Turning on a Lathe
091-44E-3073**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, machinist's tool kit, layout dye, aluminum stock, test bar, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise taper turning on a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect taper turning on a lathe.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure taper turning on a lathe is performed in accordance with appropriate technical manuals and references.	—	—
a. Determine best method for turning the taper.		
b. Determine the correct taper required to machine the workpiece.		
c. Select and mount holding device.		
d. Mount workpiece in holding device.		
e. Sharpen tool bit and mounting in holder.		
f. Align tool bit and holder.		
g. Determine and set speeds and feeds.		
h. Machine workpiece; apply cutting oil, if necessary.		
i. Check taper during machining for required taper per inch.		
j. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure taper turning on a lathe has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Filing/Polishing on a Lathe
091-44E-3071**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, lathe with attachments, machinist's tool kit, test bar, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise filing/polishing on a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect filing/polishing on a lathe.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure filing/polishing on a lathe is performed in accordance with appropriate technical manuals and references.	—	—
a. Set up lathe for filing procedures.		
b. Perform filing procedures.		
c. Set up lathe for polishing procedures.		
d. Perform polishing procedures.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure filing/polishing on a lathe has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Countersinking on a Drilling Machine
091-44E-3099**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, drill press, counterbore set, screw thread insert kits, machinist's tool kit, twist drills, screw extractor, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable technical publications.

Standards: Supervise countersinking on a drilling machine IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect countersinking on a drilling machine.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure countersinking on a drilling machine is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up counterbore set for countersinking procedures. b. Perform countersinking procedures. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure countersinking on a drilling machine has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Drilling, Reaming, and Boring on a Lathe
091-44E-3070**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, machinist's tool kit, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise drilling, reaming, and boring on a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform drilling, reaming, and boring on a lathe.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure drilling, reaming, and boring on a lathe are performed in accordance with appropriate technical manuals and references.	—	—
a. Set up the lathe for drilling.		
b. Perform drilling operations.		
c. Set up the lathe for reaming.		
d. Perform reaming operations.		
e. Set up the lathe for boring.		
f. Perform boring operations.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure drilling, reaming, and boring on a lathe are performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

Supervise Parting and Grooving on a Lathe
091-44E-3069

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, machinist's tool kit, test bar, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise parting and grooving on a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect parting and grooving on a lathe.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure parting and grooving on a lathe are performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Lay out workpiece. b. Select and mount the holding device. c. Mount workpiece; dial indicate, if necessary. Use steady rest to support small diameter workpiece from springing during the machining operation, if necessary. d. Select parting tool or form and sharpen tool bit.. e. Mount and align tool bit to workpiece. f. Determine and set spindle speed. g. Locate area to be grooved. h. Machine workpiece; apply cutting oil, of necessary. i. Measure finished workpiece for accuracy. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure parting and grooving on a lathe have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Facing, Straight, and Shoulder Turning on a Lathe
091-44E-3068**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, machinist's tool kit, test bar, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise facing, straight, and shoulder turning on a lathe IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform facing, straight, and shoulder turning on a lathe.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure facing, straight, and shoulder turning on a lathe are performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up lathe for facing. b. Perform facing procedures. c. Set up lathe for straight turning. d. Perform straight turning procedures. e. Set up lathe for shoulder turning. f. Perform shoulder turning procedures. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure facing, straight, and shoulder turning have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

**Supervise Installing/Removing Inserts
091-44E-3108**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, drill press, counterbore set, insert kits, machinist's tool kit, twist drills, screw extractor, safety equipment, additional tools, equipment specified in TMs, repair parts, applicable technical publications.

Standards: Supervise installing/removing inserts IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect installing/removing inserts.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure that installing/removing inserts is performed to acceptable standards.	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure installing/removing inserts has been performed to acceptable standards.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
TC 9-524	
TM 43-0104	
TM 9-243	
TO 44H1-1-117	

Supervise Welding a Saw Band with a Butt Welding Attachment
091-44E-3066

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, bandsaw, machine shop field maintenance equipment, welding equipment and materials, silver solder, saw band, propane torch, holding fixture (vise), weld thickness gauge, machinist's tool kit, layout dye, aluminum stock, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise welding a saw band with butt welding attachment IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to weld a saw band with butt welding attachment.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure saw band is welded in accordance with appropriate technical manuals and references.	—	—
a. Prepare band saw for welding.		
b. Set up butt welder to weld band saw blade.		
c. Align and secure band saw blade in jaws of welder.		
d. Weld band saw blade.		
e. Grind the weld.		
f. Check weld with weld thickness gauge.		
g. Anneal the weld.		
h. Inspect the weld.		
i. Prepare band saw blade for mounting on the band saw.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure saw band has been welded in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Filing/Polishing on a Bandsaw
091-44E-3064**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, bandsaw, machinist's tool kit, layout dye, steel stock, V-block clamp, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise filing/polishing on a bandsaw IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect filing/polishing on a band saw.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and safety precautions are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure filing/polishing on a band saw is performed in accordance with appropriate technical manuals and references.	—	—
a. Set up band saw for filing operations.		
b. Perform filing operations.		
c. Set up bandsaw for polishing operations.		
d. Perform polishing operations.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure filing/polishing on a band saw has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Internal Sawing on a Bandsaw
091-44E-3063**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, bandsaw, machinist's tool kit, layout dye, aluminum stock, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise internal sawing on a band saw IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect internal sawing on a bandsaw.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure internal sawing on a band saw is performed in accordance with appropriate technical manuals and references.	—	—
a. Prepare the bandsaw and workpiece for internal sawing.		
(1) Lay out the workpiece for internal sawing.		
(2) Drill the workpiece for internal sawing.		
(3) Cut/weld the bandsaw blade for internal sawing.		
(4) Mount the blade for internal sawing.		
b. Perform internal sawing.		
(1) Cut and remove blade from the workpiece.		
(2) Weld bandsaw blade.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure internal sawing on a band saw has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Grinding Threading Toolbits
091-44E-3141**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, utility bench grinder, machinist's tool kit, 5/16-inch stock, wheel dresser, toolbit blanks, water, steel stock, screw pitch gauge, center gauge, 0-1 inch outside micrometer, 1-2 inch outside micrometer, measuring wires, 6-inch rule, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise grinding threading toolbits IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect grinding threading tool bits.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure grinding and threading tool bits is performed in accordance with appropriate technical manuals and references.	—	—
a. Grinding.		
(1) Set up utility grinding machine.		
(2) Determine tool bit needed for the material and type of operation being performed.		
(3) Grind correct end clearance angle.		
(4) Grind correct back rake angle.		
(5) Grind correct side rake and side clearance angles.		
(6) Hone all cutting edges.		
(7) Measure finished ground tool bit for correct angles.		
b. Threading.		
(1) Determine thread dimensions.		
(2) Sharpen thread cutting tool bit.		
(3) Mount holding device.		
(4) Mount workpiece.		
(5) Set compound rest for direction of feed.		
(6) Align and center tool bit to workpiece.		
(7) Set spindle speed for threading.		
(8) Set lathe gearbox for the number of threads required.		
(9) Check threads per inch after taking initial cut.		
(10) Machine workpiece; apply cutting oil, if necessary.		
(11) Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure grinding threading tool bits has been performed in accordance with appropriate technical manuals and references.	—	—

Performance Measures

	<u>GO</u>	<u>NO GO</u>
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Angular Sawing on a Bandsaw
091-44E-3062**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, bandsaw, machinist's tool kit, layout dye, aluminum stock, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise angular sawing on a band saw IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform angular sawing on a band saw.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure angular sawing on a band saw is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up a bandsaw for angle sawing. b. Layout a workpiece for angle sawing. c. Perform angle sawing. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure angular sawing on a band saw has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-524

Related

Subject Area 11: 44E/B TECHNICAL TASKS

Supervise Setting Up the Trailer Mounted Welding Shop
091-44E-3148

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, welding shop (trailer mounted) with accessories, general mechanic's tool kit, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise setting up the trailer mounted welding shop IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to set up and inspect the welding shop, trailer mounted.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure the welding shop, trailer mounted is set up in accordance with appropriate technical manuals and references.	—	—
a. Set up the trailer mounted welding shop for SMAW operations.		
b. Set up the trailer mounted welding shop for GTAW operations.		
c. Set up the trailer mounted welding shop for GMAW operations.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure the welding shop, trailer mounted has been set up in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
TC 9-237	
TM 9-2330-205-14&P	
TM 9-3431-272-13&P	

Supervise Versa-Mil Operations (Advanced Applications)
091-44E-3147

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, Versa-Mil with attachments, machinist's tool kit, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise Versa-Mil operations (advanced applications) IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect Versa-Mil operations (advanced applications).	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure Versa-Mil operations (advanced applications) are performed in accordance with appropriate technical manuals and references.	—	—
a. Prepare a procedure sheet.		
b. Set up Versa-Mil.		
c. Machine a workpiece.		
d. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure Versa-Mil operations (advanced applications) have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
 TC 9-524

Related

Supervise Milling Operations (Advanced Applications)

091-44E-3146

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, milling machine with attachments, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise milling operations (advanced applications) IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect milling operations (advanced applications).	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure milling operations (advanced applications) are performed in accordance with appropriate technical manuals and references.	—	—
a. Set up milling machine for advanced applications.		
b. Perform milling operations (advanced applications).		
(1) Perform milling operations with a rotary table.		
(2) Perform milling operations with a boring head.		
(3) Perform indexing operations.		
c. Measure finished workpiece for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure that milling operations (advanced applications) have been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Machine a Workpiece (Advanced Applications)
091-44E-3145**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, lathe with attachments, machinist's tool kit, shop supplies, workpiece, safety equipment, additional tools, equipment specified in TMs, repair parts, and applicable maintenance forms and technical publications.

Standards: Machine in workpiece (advanced applications) IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect machining a workpiece (advanced applications).	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure machining a workpiece (advanced applications) is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Prepare lathe. b. Machine workpiece. c. Measure finished workpiece for accuracy. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure machining a workpiece (advanced applications) has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

**Supervise Lathe Milling Operation Using the Lathe Attachment (Advanced Applications)
091-44E-3144**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, lathe with attachments, milling attachments, machinist's tool kit, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise lathe milling operation using the lathe attachment (advanced applications) IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect lathe milling operation using the lathe attachment (advanced applications).	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure lathe milling operation using the lathe attachment (advanced applications) is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Set up a lathe to operate with a milling attachment. b. Perform lathe operations using a milling attachment. c. Measure finished workpiece for accuracy. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure lathe milling operation using the lathe attachment (advanced applications) has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-524

Related

Supervise Identification of Metals
091-44E-3115

Conditions: In a field or garrison environment, given metal samples and applicable technical publications.

Standards: Supervise identification of metals IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensure applicable technical publications are available.	—	—
2. Ensure proper tools and equipment are available to assist in the identification of metals.	—	—
3. Assign personnel to identify metals.	—	—
4. Ensure all safety precautions and procedures are followed.	—	—
5. Provide assistance when necessary.	—	—
6. Ensure metals are properly identified.	—	—
7. Critique personnel on their job performance.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-237

Related

**Supervise Visual Weld Inspection
091-44E-3112**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, inspector's tool kit, safety equipment, additional tools, equipment specified in TMs, repair parts, and applicable technical publications.

Standards: Supervise visual weld inspection IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform visual weld inspection.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure visual weld inspection is performed in accordance with appropriate technical manuals and references.	—	—
a. Apply procedures for inspecting welds (destructive methods).		
(1) Cross sectional inspecting procedures.		
(2) Tensile strength test inspecting procedures.		
b. Apply procedures for inspecting welds (non-destructive methods).		
(1) Visual method.		
(2) Dye-penetrant method.		
(3) Magnetic particle method.		
(4) X-ray method.		
(5) Ultrasonic method.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure visual weld inspection has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-237

Related

**Supervise Laying Out a Workpiece
091-44E-3105**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, parallels, V-block and clamp, vernier height gauge, surface plate, angle plate, sine bar, layout dye, vernier caliper, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise layout of a workpiece IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect laying out a workpiece.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure laying out a workpiece is performed in accordance with appropriate technical manuals and references. <ul style="list-style-type: none"> a. Use precision layout tools. b. Perform layout preparation procedures. 	—	—
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure laying out a workpiece has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
TC 9-237

Related

**Perform Cutter Grinding on a Versa-Mil
091-44E-3096**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, machine shop field maintenance equipment, lathe with attachments, Versa-Mil with attachments, milling cutters, machinist's tool kit, shop drawing, workpiece, cutting oil, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable technical publications.

Standards: Supervise cutter grinding on a Versa-Mil IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	—	—
2. Ensure task is within shop capability/authorization.	—	—
3. Ensure applicable technical publications are available.	—	—
4. Ensure proper tools and equipment are available to perform and inspect cutter grinding on a Versa-Mil.	—	—
5. Perform initial inspection.	—	—
6. Assign personnel to perform task.	—	—
7. Ensure all safety precautions and procedures are followed.	—	—
8. Provide assistance when necessary.	—	—
9. Ensure cutter grinding on a Versa-Mil is performed in accordance with appropriate technical manuals and references.	—	—
a. Mount and align Versa-Mil on the lathe.		
b. Set up grinding head.		
c. Select and mount grinding wheel.		
d. Mount holding device and cutter on the lathe.		
e. Calculate required clearance angles.		
f. Select grinding wheel speed.		
g. Set up Versa-Mil for grinding the required cutter.		
h. Grind cutter clearance angles; apply cutting oil, if necessary.		
i. Check clearance angles for accuracy.		
10. Conduct an in-process inspection.	—	—
11. Perform a final inspection to ensure cutter grinding on a Versa-Mil has been performed in accordance with appropriate technical manuals and references.	—	—
12. Critique personnel on their job performance.	—	—
13. Ensure maintenance forms are completed as required.	—	—
14. Ensure tools and equipment are properly maintained.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
TC 9-524

Related

**Supervise Air Arc Cutting/Gouging Operations
091-44E-3027**

Conditions: In a field or garrison environment, given a maintenance request or equipment inspection worksheet describing repair/fabrication requirements, welding shop (trailer mounted), copper coated carbon electrodes, steel coupons, additional tools, equipment specified in TMs, repair parts, safety equipment, and applicable maintenance forms and technical publications.

Standards: Supervise air arc cutting/gouging operations IAW applicable technical publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Review work request.	_____	_____
2. Ensure task is within shop capability/authorization.	_____	_____
3. Ensure applicable technical publications are available.	_____	_____
4. Ensure proper tools and equipment are available to perform and inspect air arc cutting/gouging operations.	_____	_____
5. Perform initial inspection.	_____	_____
6. Assign personnel to perform task.	_____	_____
7. Ensure all safety precautions and procedures are followed.	_____	_____
8. Provide assistance when necessary.	_____	_____
9. Ensure air arc cutting/gouging operations are performed in accordance with appropriate technical manuals and references.	_____	_____
a. Set up carbon air arc-cutting and gouging equipment.		
b. Perform carbon air arc cutting.		
c. Perform carbon air arc gouging.		
10. Conduct an in-process inspection.	_____	_____
11. Perform a final inspection to ensure air arc cutting/gouging operations have been performed in accordance with appropriate technical manuals and references.	_____	_____
12. Critique personnel on their job performance.	_____	_____
13. Ensure maintenance forms are completed as required.	_____	_____
14. Ensure tools and equipment are properly maintained.	_____	_____

Evaluation Guidance: Score the soldier GO if all steps are passed . Score the soldier NO-GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
 TC 9-237

Related

Skill Level 4

Subject Area 12: COMMON LOGISTICS MANAGEMENT TASKS

**Coordinate Support for the Maintenance Platoon/Section
091-CLT-4006**

Conditions: In a field environment, given a OPORD/maintenance situation, a maintenance platoon or section with personnel and equipment, SOP, and applicable references.

Standards: Coordinated support for the maintenance platoon/section IAW SOP and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Evaluated the tactical situation and OPORD requirements.	—	—
2. Determined support needed at each location.	—	—
3. Notified parent/supported units of support requirements.	—	—
4. Followed up to ensure support had been coordinated/was being provided.	—	—
a. Notified appropriate parent/supported units to resolve any problems.		
b. Addressed problems in after action review (AAR).		

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

FM 4-30.3 (FM 9-43-1)

Related

**Enforce Compliance With the Shop Safety Program
091-CLT-4005**

Conditions: In a field or garrison environment, given a maintenance site/facility, maintenance personnel, unit safety SOP, and applicable references.

Standards: Enforced compliance with the shop safety program IAW applicable references and unit safety SOP.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured all safety references were on hand.	—	—
2. Ensured all safety equipment was on hand, accessible, and properly maintained.	—	—
3. Ensured all soldiers were regularly updated on the shop safety program.	—	—
4. Ensured periodic safety inspections were being conducted, and safety concerns and violations were being corrected.	—	—
5. Ensured safety violations were being documented and reported as required, and follow-ups were being conducted.	—	—
6. Inspected records of safety inspections and accident reports for accuracy and completeness.	—	—
7. Inspected to ensure Material Safety Data Sheets (MSDS) were posted and maintained in applicable work areas.	—	—
8. Performed periodic safety spot checks and inspections for safety awareness and systemic safety problems.	—	—
a. Performed on-the-spot corrections.		
b. Performed follow-ups.		

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

- Required**
 AR 385-10
 AR 385-40
 AR 385-55
 AR 614-200
 DA PAM 385-1
 TB 43-0142
 TB MED 524

Related

**Ensure Maintenance Operations are in Compliance With the Army Environmental Program
091-CLT-4004**

Conditions: In a field or garrison environment, given a maintenance facility/site, maintenance personnel and equipment, and applicable references.

Standards: Ensured maintenance operations were in compliance with the Army Environmental Program and other regulatory publications.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured all publications were available.	—	—
2. Reviewed maintenance SOP to ensure environmental policies and procedures were adequately addressed concerning the following: a. Environmental strategies of compliance, restoration, prevention, and conservation. b. Federal, state, local, and host nation laws and regulations.	—	—
3. Updated/changed/amended SOP as necessary.	—	—
4. Ensured all soldiers had received training on environmental laws, regulations, policies, and procedures.	—	—
5. Ensured inspections for hazardous waste and HAZMAT were conducted as required.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
AR 385-10	
AR 40-5	
FM 4-30.3 (FM 9-43-1)	

Manage Combat Stress
091-CLT-4003

Conditions: In a field or garrison environment, given a situation requiring stress management and FM 22-51.

Standards: Managed combat stress IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Identified sources of combat stress.	—	—
2. Identified the signs and classifications of battle fatigue.	—	—
3. Identified signs of stress in self, others, and the unit.	—	—
4. Took appropriate steps to reduce and/or prevent stress.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References
Required
FM 22-51

Related

**Supervise Platoon/Section Administrative Procedures
091-CLT-4002**

Conditions: In a field or garrison environment, given situation(s) requiring platoon/section administrative procedures supervision and applicable forms, records, and publications.

Standards: Supervised platoon/section administrative procedures IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Established files using the Modern Army Record Keeping System (MARKS). a. Prepared file folders and guides. b. Arranged file folders and guides. c. Prepared file drawer labels. d. Prepared a list of file numbers.	—	—
2. Processed a recommendation for award.	—	—
3. Processed and updated a flag on records.	—	—
4. Verified the accuracy of Suspension of Favorable Action Report.	—	—
5. Processed and updated a bar to reenlistment.	—	—
6. Processed a chapter action. a. Selected appropriate type of chapter action and identified separation guidelines. b. Initiated and follow-up the chapter action.	—	—
7. Processed a recommendation for advancement/promotion.	—	—
8. Verified accuracy of Enlisted Promotion Report (AAC-C01).	—	—
9. Assisted a subordinate NCO who had received notice of selection to be released under the Qualitative Management Program (QMP).	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

- Required**
AR 25-400-2
AR 600-8-2
AR 614-200
AR 635-200

Related

**Perform Senior Rater Responsibilities for a Maintenance Section
091-CLT-4001**

Conditions: In a field or garrison environment, given an NCOER with the rater's portion completed, accompanying counseling statements, and AR 623-205.

Standards: Performed senior rater's responsibilities IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured all materials and references were available.	—	—
2. Reviewed quarterly counseling that supported the NCOER.	—	—
3. Reviewed the administrative data and rater's portions of the NCOER for accuracy and content.	—	—
4. Prepared the senior rater's portion of the NCOER.	—	—
5. Ensured the NCOER was submitted for review and further processing.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
AR 623-205

Related

**Provide Maintenance Support During Tactical Operations
091-CLT-4028**

Conditions: In a field environment, given an operation order (OPORD)/maintenance situation, maintenance personnel and equipment, and applicable references.

Standards: Provided maintenance support during tactical operations IAW the OPORD and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Provided maintenance support during offensive operations.	—	—
2. Provided maintenance support during defensive operations.	—	—
3. Provided maintenance support during retrograde operations.	—	—
4. Provided maintenance support during reconstitution operations.	—	—
5. Provided maintenance support during night operations.	—	—
6. Provided maintenance support in NBC environment.	—	—
7. Provided maintenance support during stability and support operations (SASO).	—	—
a. Peace operations.		
b. Humanitarian operations.		
c. Disaster relief operations.		
8. Provided maintenance support in the following adverse conditions.	—	—
a. Desert operations.		
b. Cold weather operations.		
c. Jungle operations.		
d. Mountain operations.		
e. Urban terrain operations.		

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required
FM 4-30.3 (FM 9-43-1)

Related

**Manage Maintenance Operations at a Maintenance Collection Point
091-CLT-4027**

Conditions: In a field maintenance environment, given an OPORD/maintenance situation, a maintenance collection point (MCP) site, maintenance personnel and equipment, and applicable references.

Standards: Managed maintenance operations at an MCP IAW the OPORD and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Set up the MCP.	—	—
2. Managed flow of equipment for repair. <ul style="list-style-type: none"> a. Focused efforts toward repairing systems for current battle or start of next battle. b. Fixed 4 to 6 hour jobs at unit maintenance collection point (UMCP). c. Evacuated other equipment to brigade MCP or farther rear location. d. Maximized battle damage assessment repair (BDAR), cannibalization, and controlled exchange at central MCP. 	—	—
3. Managed company maintenance teams/recovery support teams/maintenance support teams held at MCP.	—	—
4. Managed prescribed load list (PLL) assets for forward combat units.	—	—
5. Relocated forward (as necessary) to continue fix-forward support.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

FM 4-30.3 (FM 9-43-1)

Related

**Perform Support Operations NCO Duties
091-CLT-4026**

Conditions: In a field or garrison environment, given a position as a support operations maintenance NCO, and applicable references.

Standards: Performed the duties of a support operations maintenance NCO, ensuring that the direct support (DS) maintenance mission is effectively coordinated and integrated within the battalion or support group.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Provided guidance on maintenance priorities within the unit.	—	—
2. Set objectives for maintenance shop production.	—	—
3. Monitored maintenance shop workflow and status of repair part requisitions.	—	—
4. Supervised, controlled, and directed the operation of battalion units for:	—	—
a. DS maintenance.		
b. Evacuation.		
c. Repair parts supply.		
d. Repairable exchange (RX).		
e. Technical assistance.		

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	Related
Required	
FM 100-16	
FM 4-30.3 (FM 9-43-1)	

**Manage Battlefield Maintenance Support
091-CLT-4025**

Conditions: In a field maintenance shop, given an OPORD/maintenance situation, maintenance personnel, equipment, and applicable references.

Standards: Managed battlefield maintenance support IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Appraised the combat situation and organized and prioritized support based on type of operation: a. Offensive operation. b. Defensive operation.	—	—
2. Planned for and executed appropriate maintenance support: a. Identified requirements. b. Identified available resources. (1) Personnel and skills. (2) Publications. (3) Time. (4) Facilities. (5) TMDE and tools. (6) Parts. c. Managed resources for maximum return, with priority on the following: (1) Maintenance support forward. (2) Commander's guidance. (3) Battle damage repair. (4) Controlled exchange. (5) Cannibalization. (6) Evacuation. (7) Recovery.	—	—
3. Followed priorities for repair of battle damaged systems: a. Most essential for completion of the immediate mission. b. Least amount of time to repair. c. Repairable, but not in time to continue the immediate mission. d. Damaged beyond repair candidate for cannibalization.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

FM 4-30.3 (FM 9-43-1)

Related

**Conduct an Area Reconnaissance for a Maintenance Mission
091-CLT-4024**

Conditions: In a field environment, given a maintenance situation/OPORD, operational overlay, grid coordinates for a proposed occupation area, map, vehicle with personnel, and applicable references.

Standards: Performed an area reconnaissance, selecting the most appropriate location to establish a maintenance site IAW the maintenance situation/OPORD and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary equipment and publications were available.	—	—
2. Performed a map recon of the area.	—	—
3. Selected personnel to conduct the reconnaissance.	—	—
4. Reconned the area to determine suitability for maintenance operations, accessibility in and out of the site, defendability, and actions required for the safety of personnel and equipment.	—	—
5. Advised the commander/staff officer on occupying the area of operations based upon the reconnaissance.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
FM 4-30.3 (FM 9-43-1)	
FM 5-170	

**Conduct a Route Reconnaissance for a Maintenance Mission
091-CLT-4023**

Conditions: In a field environment, given a maintenance situation/OPORD, operational overlay, grid coordinates for a proposed route, map, vehicle with personnel, and applicable references.

Standards: Conducted a route reconnaissance for a given route identifying distances/times, problem areas along the route, possible bypasses or alternate routes, and prepared strip maps IAW the maintenance situation/OPORD and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary equipment and publications were available.	—	—
2. Determined the route to be used for the maintenance mission.	—	—
3. Performed a map recon of the route.	—	—
4. Contacted units along the route and coordinated passage.	—	—
5. Selected personnel to conduct the reconnaissance.	—	—
6. Reconned the route identifying key features to include: <ul style="list-style-type: none"> a. Potential problem areas (i.e., possible enemy contact, trafficability, etc.). b. Possible bypasses/alternate routes. 	—	—
7. Recorded information on a strip map for use by the maintenance team.	—	—
8. Advised the commander/staff officer on use of the route for maintenance missions.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

FM 4-30.3 (FM 9-43-1)
FM 5-170

Related

**Prepare Standing Operating Procedures for Maintenance Operations
091-CLT-4021**

Conditions: In a field or garrison environment, given FM 9-43-1, higher headquarters SOP(s), and commander's guidance.

Standards: Prepared a maintenance shop internal or external SOP for the commander's review, comment, and approval IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured applicable publications were available.	—	—
2. Prepared a maintenance shop internal or external SOP.	—	—
3. Ensured unit policies and commander's guidance were followed.	—	—
4. Ensured shop operation policies were adequately addressed.	—	—
5. Updated the shop SOP as required.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required FM 4-30.3 (FM 9-43-1)	Related
--	----------------

**Maintain Property Accountability
091-CLT-4020**

Conditions: In a field or garrison environment, given property and tools, property book listing and/or hand receipts, blank forms, and applicable references.

Standards: Maintained property accountability IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured all references, technical bulletins (TBs), supply catalogs (SCs), and forms were available.	—	—
2. Performed initial inventory of all property, tools, and equipment. <ul style="list-style-type: none"> a. Completed shortage annexes, as necessary. b. Reported all shortages, as necessary. c. Initiated report of survey or other property loss actions, as necessary. d. Ordered replacement items. 	—	—
3. Prepared sub-hand receipts for subordinate sections.	—	—
4. Had subordinates inventory all property, tools, and equipment on each respective subhand receipt and shortage annex and sign for property on hand.	—	—
5. Signed for property on property book or hand receipts, as applicable.	—	—
6. Performed periodic inventories of tools and sensitive items, as required.	—	—
7. Performed periodic partial or full inventories, as required.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

<p>Required AR 710-2 DA PAM 710-2-1</p>	<p>Related</p>
--	-----------------------

**Analyze Shop Workload Summary Listing
091-CLT-4019**

Conditions: In a field or garrison DS-level maintenance shop, given a SAMS-1 generated shop workload summary listing and applicable references.

Standards: Analyzed the shop workload summary listing IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured references and equipment were available.	—	—
2. Assigned workload to personnel, as required.	—	—
3. Tracked status of all jobs requiring parts.	—	—
4. Ensured once job was completed, parts were turned in and paperwork completed IAW local SOP.	—	—
5. Improved operational procedures where necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

AIMS 18-L21-AHN-BUR-UM

AIMS 18-L26-AHO-BUR-EM

Related

**Analyze Shop Deadline and Deferred Workload Listing
091-CLT-4018**

Conditions: In a field or garrison DS-level maintenance shop, given a SAMS-1 generated shop deadline and deferred workload listing report and applicable references.

Standards: Analyzed the shop deadline and deferred workload listing report IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured references and equipment were available.	—	—
2. Prioritized jobs by the status and priority code.	—	—
3. Tracked workload listing for proper status of operation and maintenance (O/M).	—	—
4. Supervised AHN-006, AHN-022, and AHN-026 reports.	—	—
5. Improved operational procedures where necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	
Required	Related
AIMS 18-L21-AHN-BUR-UM	
AIMS 18-L26-AHO-BUR-EM	

**Analyze Completed Shop Workload Summary
091-CLT-4017**

Conditions: In a field or garrison DS-level maintenance shop, given a SAMS-1 generated completed shop workload summary report and applicable references.

Standards: Analyzed the completed shop workload summary report IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured references and equipment were available.	—	—
2. Assigned workload to personnel, as required.	—	—
3. Tracked status of all jobs requiring parts.	—	—
4. Ensured once job was completed, parts were turned in and paperwork completed IAW local SOP.	—	—
5. Improved operational procedures, where necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	
Required	Related
AISM 18-L21-AHN-BUR-UM	
AISM 18-L26-AHO-BUR-EM	

**Analyze Open Work Request Reconciliation Listing
091-CLT-4016**

Conditions: In a field or garrison DS-level maintenance shop, given a SAMS-1 generated open work request reconciliation listing and applicable references.

Standards: Analyzed the open work request reconciliation listing IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured references and equipment were available.	—	—
2. Conducted face-to-face reconciliation with team chief.	—	—
3. Supervised SAMS operator on purging operations.	—	—
4. Supervised SAMS operator on mail status returned on organizational disk.	—	—
5. Improved operational procedures where necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- AIMS 18-L21-AHN-BUR-UM
- AIMS 18-L26-AHO-BUR-EM

Related

**Analyze Bench Stock Listing
091-CLT-4015**

Conditions: In a field or garrison DS-level maintenance shop, given a SAMS-1 generated bench stock listing (AHN-023) and applicable references.

Standards: Analyzed bench stock listing to identify supply problems that may impact maintenance readiness IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured report and references were available.	—	—
2. Performed random bench stock inventory checks.	—	—
3. Determined expedient measures necessary to resolve NMC-S equipment awaiting bench stock items.	—	—
4. Resolved any discrepancies in report data in the SAMS-1.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
AISM 18-L21-AHN-BUR-UM	
AR 710-2	
DA PAM 710-2-1	
DA PAM 738-750	

**Monitor Quality Control Program
091-CLT-4014**

Conditions: In a field or garrison maintenance shop, given a maintenance facility/site, maintenance personnel, maintenance SOP, and applicable references.

Standards: Monitored the quality control program to ensure quality of work IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured quality assurance/quality control (QA/QC) inspectors were adequately trained and knowledgeable in their respective maintenance areas and were on orders from the commander, if required by SOP.	—	—
2. Ensured QA/QC inspectors followed maintenance SOP guidelines and procedures and TM procedures for initial and final inspections.	—	—
3. Performed periodic checks of inspectors' work for accuracy of initial diagnosis and quality of final inspections.	—	—
4. Ensured supervisors were conducting in-process inspections of work done by mechanics/technicians.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

AR 710-2

DA PAM 710-2-1

FM 4-30.3 (FM 9-43-1)

Related

Supervise the Deployment of Company Maintenance Team/Recovery Support Team/Maintenance Support Team
091-CLT-4022

Conditions: In a field or garrison environment, given a request for maintenance support/maintenance situation, map, operational overlay, grid coordinates of destination, vehicle(s), equipment, maintenance personnel, and applicable references.

Standards: Supervised the deployment of company maintenance team/recovery support team(s) IAW the maintenance situation/request for maintenance support and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Reviewed the request for maintenance support/maintenance situation.	—	—
2. Ensured personnel and equipment to perform the mission were available.	—	—
3. Ensured resources for the company maintenance team/recovery support team/maintenance support team, including personnel with applicable MOSs, vehicle(s), tools, test equipment, publications, repair parts, time, and facilities were appropriately identified.	—	—
4. Ensured requirements for defending the team had been properly determined and arranged.	—	—
5. Ensured team leader(s) were briefed on the mission.	—	—
a. Reviewed the operational overlay.		
b. Conducted a map recon of the route and destination.		
6. Ensured the company maintenance team/recovery support team/maintenance support team was deployed.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required	Related
FM 101-5-1	
FM 4-30.3 (FM 9-43-1)	
FM 5-170	

**Analyze the Prescribed Load List (PLL) Report
091-CLT-4013**

Conditions: In a field or garrison unit-level maintenance shop, given PLL reports produced by ULLS-G system and applicable references.

Standards: Analyzed the PLL reports to ensure inventory accuracy and identified potential supply shortages/problems impacting on maintenance readiness IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured reports and references were available.	—	—
a. PLL inventory report.		
b. Zero balance report.		
c. PLL excess management report.		
d. PLL inquiries (as needed).		
e. NMC report.		
2. Performed random inventory checks and resolved discrepancies.	—	—
3. Determined expedient measures necessary to resolve not mission capable supply (NMC-S) equipment awaiting PLL items on the zero balance report.	—	—
4. Resolved discrepancies in report data within the ULLS-G system.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- AR 710-2
- DA PAM 710-2-1
- DA PAM 738-750

Related

**Monitor the Preparation and Disposition of the Army Materiel Status System (AMSS) Reports
091-CLT-4012**

Conditions: In a field or garrison unit-level maintenance shop, given a unit level logistics system-ground (ULLS-G) computer system with AMSS software, AMSS reports produced from a ULLS-G system, and applicable references.

Standards: Verified accuracy of AMSS report data, identified maintenance trends and problems, and ensured timely completion and forwarding of reports IAW applicable references and SOP.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary ULLS equipment and references were available.	—	—
2. Checked AMSS report data for accuracy and completeness.	—	—
3. Analyzed AMSS reports and data to identify maintenance trends and problems.	—	—
4. Notified supported units, logistics assistance office/logistics assistance representative, and chain of command, (as necessary), to resolve problems and prevent future occurrences.	—	—
5. Ensured AMSS reports were completed and forwarded through appropriate channels IAW SOP.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- AR 710-2
- DA PAM 710-2-1
- DA PAM 738-750

Related

**Plan Logistics Support for Maintenance Operations
091-CLT-4011**

Conditions: In a field or garrison environment, given an OPORD/maintenance situation, maintenance personnel and equipment, and applicable references.

Standards: Planned logistics support for maintenance operations IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Appraised the combat situation.	—	—
2. Determined support needed.	—	—
a. People (skills and numbers).		
b. Equipment (transportation, tools, TMDE, and communications).		
c. Supplies (components, assemblies, and repair parts).		
3. Organized resources to provide needed support.	—	—
4. Followed these planning considerations:	—	—
a. Number and type of units supported.		
b. Stock levels for repair parts.		
c. Forward displacement of maintenance support teams/maintenance collection points.		
d. Channels and procedures for recovery, collection, evacuation, and disposition of captured or abandoned materiel.		

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

FM 4-30.3 (FM 9-43-1)

Related

**Integrate Automated Logistics Support Systems
091-CLT-4010**

Conditions: In a field or garrison environment, given a Unit Level Logistics System-Ground (ULLS-G) computer system with software and equipment data base in a unit-level maintenance shop, a Standard Army Maintenance System-1 (SAMS-1) computer system with software and database in a direct support (DS)-level maintenance shop, a Standard Army Maintenance System -2 (SAMS-2) computer system with software and data base in a support operations section, and applicable publications.

Standards: Integrated automated logistics support systems in a maintenance shop IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Identified the architecture/interface of Army automated logistics systems.	—	—
2. Supervised ULLS-G functions in a unit-level maintenance shop.	—	—
3. Supervised SAMS-1 functions in a DS-level maintenance shop.	—	—
4. Supervised SAMS-2 functions in a support operations section.	—	—
5. Interfaced with Standard Army Retail Supply System-Objective (SARSS-O) for supply functions.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- AIMS 18-L21-AHN-BUR-UM
- AIMS 18-L26-AHO-BUR-EM
- AR 710-2
- DA PAM 710-2-1
- DA PAM 738-750

Related

**Control Flow of Work Through the Maintenance Shop
091-CLT-4009**

Conditions: In a field or garrison environment, given a maintenance shop including personnel, work orders, and applicable references.

Standards: Controlled the flow of work within the maintenance shop to ensure maximum production, effective use of personnel and facilities, and orderly progression of work so that overloads were prevented or corrected, and the shop was working near capacity with a manageable backlog.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Screened maintenance requests.	—	—
2. Assigned work to the appropriate shop section.	—	—
3. Maintained work load status for the various sections.	—	—
4. Directed repair priorities and additional actions(evacuation, operational readiness float (ORF), intra-shop, deferred) as applicable.	—	—
5. Ensured shop supply section orders/maintained repair parts, as required.	—	—
6. Improved operational procedures where necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

FM 4-30.3 (FM 9-43-1)
TC 43-4

Related

**Prepare an Operational Overlay for Maintenance Operations
091-CLT-4008**

Conditions: In a field or garrison environment, given a map, overlay material, maintenance situation/OPORD, and applicable references.

Standards: Prepared an operational overlay for maintenance operations by depicting key activities and elements within the area of operation IAW applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Ensured necessary references and materials were available.	—	—
2. Placed units/activities on the maintenance operations overlay using the appropriate symbols.	—	—
3. Placed key features of the area of operation on the overlay.	—	—
4. Updated the operational overlay, as necessary.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References

Required

- FM 101-5-1
- FM 4-30.3 (FM 9-43-1)
- FM 5-170

Related

**Select a Field Maintenance Site
091-CLT-4007**

Conditions: In a field environment, given an OPORD to establish a field maintenance site, maintenance personnel, equipment, and references.

Standards: Selected a field maintenance site IAW the OPORD and applicable references.

Performance Measures	<u>GO</u>	<u>NO GO</u>
1. Considered the following elements of a good field maintenance site during the selection process: <ul style="list-style-type: none"> a. Area should be reasonably flat and have good drainage. b. Area should have firm soil to permit parking and movement of heavy vehicles and equipment. c. Area should be accessible to support units. d. Terrain should facilitate defense. e. Area should be near built-up areas that can be used for mission support. 	—	—
2. Performed a map reconnaissance to determine possible sites.	—	—
3. Performed an area reconnaissance and site recons to determine the best site.	—	—
4. Informed higher headquarters of the field maintenance site location.	—	—
5. Relocated to the new field maintenance site.	—	—

Evaluation Guidance: Score the soldier GO if all steps are passed. Score the soldier NO GO if any step is failed. If the soldier fails any step, show what was done wrong and how to do it correctly.

References	Related
Required FM 4-30.3 (FM 9-43-1)	

APPENDIX A -**HANDS-ON EVALUATION (DA FORM 5164-R)
INSTRUCTIONS
(Excerpted from STP 21-24-SMCT, Appendix C)**

DA Form 5164-R (Hands-On Evaluation) allows the trainer to keep a record of the performance measures a soldier passes or fails on each task.

Before evaluation:

1. Obtain a blank copy of DA Form 5164-R, which you may locally reproduce on 8 ½" x 11" paper.
2. Enter the task title and 10-digit number from the STP task summary.
3. In Column a, enter the performance measure numbers from the task summary.
4. In Column b, enter the performance measure corresponding to the number in Column a (you may abbreviate this information if necessary).
5. Locally reproduce the partially completed form when evaluating more than one soldier on the task or when evaluating the same soldier more than once.

During evaluation:

1. Enter the date just before evaluating the soldier's task performance.
2. Enter the evaluator's name, the soldier's name, and the unit.
3. For each performance measure in Column b, enter a check in Column c (PASS) or Column d (FAIL), as appropriate.
4. Compare the number of performance measures the soldier passes (and, if applicable, which ones) against the task standards specified in the task summary. If the standards are met or exceeded, check the GO block under STATUS; otherwise, check the NO-GO block.

HANDS-ON EVALUATION		DATE	
For use of this form, see AR 350-57; the proponent agency is ODCSOPS			
TASK TITLE		TASK NUMBER	
ITEM a	PERFORMANCE STEP TITLE b	SCORE (Check One)	
		PASS c	FAIL d
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
		<input type="checkbox"/> P	<input type="checkbox"/> F
EVALUATOR'S NAME		UNIT	
SOLDIER'S NAME		STATUS <input type="checkbox"/> GO <input type="checkbox"/> NO GO	

DA FORM 5164-R, SEP 85
USAPPC V2.00

EDITION OF DEC 82 IS OBSOLETE

APPENDIX B -**FIELD EXPEDIENT SQUAD BOOK (DA FORM 5165-R)
INSTRUCTIONS
(Excerpted from STP 21-24-SMCT, Appendix C)**

DA Form 5165-R (Field Expedient Squad Book) allows the trainer to keep a record of task proficiency for a group of soldiers.

Before evaluation:

1. Obtain a blank copy of DA Form 5165-R, which you may locally reproduce on 8 ½" x 11" paper.
2. Locally reproduce the partially completed form if you are evaluating more than nine soldiers.

During evaluation:

1. Enter the names of the soldiers you are evaluating, one name per column, at the top of the form.
2. Under STATUS, record (in pencil) the date in the GO block if the soldier demonstrated task proficiency to soldier's manual standards. Keep this information current by always recording the most recent date on which the soldier demonstrated task proficiency. Record the date in the NO-GO block if the soldier failed to demonstrate task proficiency to soldier's manual standards. Soldiers who failed to perform the task should be retrained and reevaluated until they can meet the standards. When the standards are met, enter the date in the appropriate GO block and erase the previous entry from the NO-GO block.

After evaluation:

1. Read down each column (GO/NO-GO) to determine the training status of an individual. This will give you a quick indication of which tasks a soldier needs training on.
2. Read across the rows for each task to determine the training status of all soldiers. You can readily see which tasks to focus training on.
3. Line through the STATUS column of any soldier who leaves the unit.

GLOSSARY**Section I**
Abbreviations

AC	Active Component
ACCP	Army Correspondence Course Program
AIPD	Army Institute for Professional Development
AIT	advanced individual training
AMSS	Army Materiel Status System
AN	annually
ANCOC	Advanced Noncommissioned Officers Course
AR	Army regulation
ARTEP	Army training and evaluation program
BA	biannually
BDAR	battle damage assessment and repair
BNCOC	Basic Noncommissioned Officers Course
BW	biweekly
CTT	common task test
DA	Department of the Army
DA Form	Department of the Army form
DA Pam	Department of the Army pamphlet
FM	field manual
HQ	Headquarters
IAW	in accordance with
METL	mission essential task list
MO	monthly
MOS	military occupational specialty
MOSC	military occupational specialty code
MTP	MOS training plan

NA	not applicable
NCO	noncommissioned officer
PLL	prescribed load list
PMCS	preventive maintenance checks and services
QT	quarterly
RC	Reserve Component
RDL	Reimer Digital Library
SA	semiannually
SL	skill level
SM/TG	soldier's manual/trainer's guide
SMCT	soldier's manual of common tasks
STP	soldier training publication
TM	technical manual
TMDE	test measurement and diagnostic equipment
TRADOC	Training and Doctrine Command
USAOC&S	United States Army Ordnance Center and School
WK	weekly

REFERENCES

Required Publications

Required publications are sources that users must read in order to understand or to comply with this publication.

Army Regulations

AR 190-13	The Army Physical Security Program (This Item is Included on EM 0001). 30 September 1993
AR 190-51	Security of Unclassified Army Property (Sensitive and Nonsensitive) (This Item is Included on EM 0001) 30 September 1993
AR 220-1	Unit Status Reporting (This Item is Included on EM 0001) 1 September 1997
AR 25-400-2	The Modern Army Recordkeeping System (MARKS) (This Item is Included on EM 0001) 26 February 1993
AR 385-10	The Army Safety Program (This item is included on EM 0001) 23 May 1988
AR 385-40	Accident Reporting and Records (This Item is Included on EM 0001) 1 November 1994
AR 385-55	Prevention of Motor Vehicle Accidents (This item is Included on EM 0001) 12 March 1987
AR 40-5	Preventive Medicine (This Item is Included on EM 0001) 15 October 1990
AR 600-55	The Army Driver and Operator Standardization Program (Selection, Training, Testing, and Licensing) (This Item is Included on EM 0001) 31 December 1993
AR 600-8-2	Suspension of Favorable Personnel Actions (FLAGS) (This Item is Included on EM 0001) 30 October 1987
AR 614-200	Enlisted Assignments and Utilization Management (This Item is Included on EM 0001) 31 October 1997
AR 623-205	Enlisted Evaluation Reporting System (This Item is Included on EM 0001) 31 March 1992
AR 635-200	Enlisted Personnel (This Item is Included on EM 0001) 5 July 1984
AR 700-138	Army Logistics Readiness and Sustainability (This Item is Included on EM 0001) 16 September 1997
AR 700-4	Logistics Assistance (This Item is Included on EM 0001) 30 June 1995
AR 710-2	Inventory Management Supply Policy Below the Wholesale Level (This Item is on EM 0001) 31 October 1997
AR 725-50	Requisition, Receipt, and Issue System (This Item is Included on EM 0001) 15 November 1995
AR 735-11-1	Uniform Settlement of Military Freight Loss and Damage Claims (This Item is Included on EM 0001) 1 January 1988
AR 735-5	Policies and Procedures for Property Accountability (This Item is Included on EM 0001) 31 January 1998
AR 750-1	Army Material Maintenance Policy and Retail Maintenance Operations (This Item is Included on EM 0001) 1 August 1994
AR 750-43	Army Test, Measurement and Diagnostic Equipment Program (This Item Is Included on EM 0001) 28 November 1997

Department of Army Pamphlets

DA PAM 25-30	Consolidated Index of Army Publications and Blank Forms (ISSUED QUARTERLY)(No Printed Copies Exist)(Formerly DA Pam 310-1)(This Item is Included on EM 0001) 1 January 2001
DA PAM 25-33	User's Guide for Army Publications and Forms (This Item is Included on EM 0001) 15 September 1996
DA PAM 385-1	Small Unit Safety Officer/NCO Guide 22 September 1993
DA PAM 710-2-1	Using Unit Supply System (Manual Procedures) (Standalone Pub) (This Item is on EM 0001) 31 December 1997
DA PAM 710-2-2	Supply Support Activity Supply System: Manual Procedures (This Item is on EM 0001) 30 September 1998
DA PAM 738-750	Functional Users Manual for The Army Maintenance Management System (TAMMS) (This Item is Included on EM 0001) 1 August 1994
DA PAM 750-1	Leader's Unit Level Maintenance Handbook (This Item is Included on EM 0001) 15 February 1994

Field Manuals

FM 100-16	Army Operational Support 31 May 1995
FM 101-5-1	Operational Terms and Graphics (MCRP 5-2A) 30 September 1997
FM 22-51	Leader's Manual for Combat Stress Control 29 September 1994
FM 4-30.3 (FM 9-43-1)	Maintenance Operations and Procedures 1 September 2000
FM 5-170	ENGINEER RECONNAISSANCE 5 May 1998
FM 5-553	General Drafting 6 January 1984

Other Product Types

AISM 18-L21-AHN-BUR-UM	Standard Army Maintenance System Level 1 (SAMS-1) End User Manual
AISM 18-L26-AHO-BUR-EM	Standard Army Maintenance System Level 2 (SAMS-2) End User Manual
TO 44H1-1-117	General Installation of Helicoil Inserts

Technical Bulletins

TB 43-0142	Safety Inspection and Testing of Lifting Devices (This Item is Included on EM 0055 and EM 0178) 28 February 1997
TB 43-180	Calibration and Repair Requirements for the Maintenance of Army Materiel (This Item is Included on EM 0022) 1 December 2000
TB MED 524	Occupational and Environmental Health: Control of Hazards to Health From Laser Radiation 20 June 1985

Technical Manuals

TM 43-0104	General Use of Rosan Fasteners (TO 44H1-1-13; 01-1A-15)(Reprinted w/Basic Incl C1-2) 15 November 1963
TM 750-254	Cooling Systems, Tactical Vehicles (Reprinted w/Basic Incl C1-2)(This Item is Included on EM 0178) 29 March 1972
TM 9-2330-205-14&P	Operator's, Organizational, Direct Support, and General Support Maintenance (Including Repair Parts and Special Tools List) for Chassis, Trailer: Generator, 2-1/2-Ton, Two-Wheel, M200A1(NSN 2330-00-331-2307)(Reprinted w/Basic Incl C1) 11 September 1984
TM 9-243	Use And Care of Hand Tools And Measuring Tools M6290-AJ-MAN-010; To 32-1-101; TM-10209-10/1 (Reprinted W/Basic InclC1-2) (This Item is Included on EM 0178) 12 December 1983
TM 9-3416-225-12	Organizational Maintenance Manual for Lathe, Engine, Bench Mounted, Solid Bed Type; 10-Inch Swing NO.2 Morse Taper Center, 1 3/8 Spindle

TM 9-3417-210-10	Hole, 110V, 60 HZ, Single Phase, 3/4 HP w/Army DWG NO. 7550151 Bench(Standard-Modern Tool Series 2,000 8 November 1965 Operator's Manual: Milling Machine, Ram Type, Swivel Head, Plain Table, Power Feed, 1 1/2 HP, 110V, 60 Cycle, Single Phase (Van Norman Co., Models IR-3-22 and IRQ-3-22)(FSN 3417-624-4254)(Reprinted w/Basic Incl C1)(This Item is Included on E 17 March 1967
TM 9-3419-224-10	Operator's Manual For Saw Band Metal Cutting (Boice-Crane Co. Model 2325) (NSN 3419-222-1330) (Reprinted W/Basic Incl C1) 8 June 1965
TM 9-3419-227-10	Operator's Manual: Saw, Band, Metal Cutting, Floor Mounting, 16-Inch Throat Depth Saw Blade Or File Band; 24x24 Table Angle Adjusting; 208 V, 60 Cycle, 3 Phase (Do All Co., Model 1612-OM) (NSN 3419-00-294-9591) (Reprinted W/Basic Incl C1-2) 14 June 1966
TM 9-3419-228-10	Operator's Manual: Saw, Band Cutting, Floor Mounting, 26 Inch Throat Depth, 26X26 Work Table, Tilt Type Table, 220V, 60 HZ, 3 Phase W/Integral Butt Welder (Do All Co, Model 2612-1M)(FSN 3419-542-1328)(This Item is Included on EM 0138) 20 December 1966
TM 9-3431-272-13&P	Operator's, Unit, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Welding Shop, Trailer Mounted Model 11838792 (NSN 3431-01-341-6232)(This Item is Included on EM 0072) 26 October 1994

Training Circulars

TC 43-4	Commander's and Shop Officer's Guide for Support Maintenance Management 8 May 1996
TC 9-237	Operator's Circular Welding Theory and Application (This item is included on EM 0028) 7 May 1993
TC 9-510	Metal Body Repair and Related Operations 30 September 1993
TC 9-515	Shop Mathematics 24 December 1990
TC 9-524	Fundamentals of Machine Tools 29 October 1996

Related Publications

Related publications are sources of additional information. They are not required in order to understand this publication.

Army Regulations

AR 190-13	The Army Physical Security Program (This Item is Included on EM 0001). 30 September 1993
AR 190-51	Security of Unclassified Army Property (Sensitive and Nonsensitive) (This Item is Included on EM 0001) 30 September 1993
AR 25-11	Record Communications and the Privacy Communications System (This Item is Included on EM 0001) 4 September 1990
AR 385-10	The Army Safety Program (This item is included on EM 0001) 23 May 1988
AR 385-40	Accident Reporting and Records (This Item is Included on EM 0001) 1 November 1994
AR 385-55	Prevention of Motor Vehicle Accidents (This item is Included on EM 0001) 12 March 1987

Department of Army Pamphlets

DA PAM 738-750 Functional Users Manual for The Army Maintenance Management System (TAMMS) (This Item is Included on EM 0001) 1 August 1994

Field Manuals

FM 101-5-1 Operational Terms and Graphics (MCRP 5-2A) 30 September 1997
FM 5-170 ENGINEER RECONNAISSANCE 5 May 1998

Training Circulars

TC 9-237 Operator's Circular Welding Theory and Application (This item is included on EM 0028) 7 May 1993

STP 9-44E14-SM-TG
22 March 2001

By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:


JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0112103

DISTRIBUTION:

Active Army, US Army Reserve, and Army National Guard: Not to be distributed. EMO only.

PIN: 044759-000