

Training and Evaluation Outline Report

Status: Approved

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Task Number: 05-PLT-5119

Task Title: Conduct Surface Treatment Operations

Distribution Restriction: Approved for public release; distribution is unlimited.

Destruction Notice: None

Foreign Disclosure: FD1 - This training product has been reviewed by the training developers in coordination with the Fort Leonard Wood, MSCoE foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	ATP 5-19 (Change 001 09/08/2014 78 Pages)	RISK MANAGEMENT http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/atp5_19.pdf	Yes	No
	TM 3-34.62	Earthmoving Operations (MCRP 3-17.71)	Yes	No
	TM 3-34.63	PAVING AND SURFACING OPERATIONS	Yes	Yes

Conditions: The element is directed to complete a surface treatment on a prepared base as part of a road construction project. A construction directive, project schedule (Gantt chart), project plans and specifications, and the bill of materials (BOM) are provided. All personnel and equipment assigned by table of organization and equipment (TOE) are available. Work site security is provided.

Note: The Commander must still determine at what level of training they would want the element to perform. Crawl, walk or run. This can only be determined after consideration as to the units training level.

The Commander prior to evaluating an element in the conduct of the task must determine if it will be conducted in a Live, Virtual, or Constructive environment, additionally it must also be determined which condition as described below that the element will conduct the task. The selection made for this task is at a trained level of proficiency. The commander must determine which of the environments below will best suit the unit and the proficiency level at which the unit is. When conducting crawl or walk level training units should not increase the intensity until the unit has achieved the standards and then unit trainers should include variables that increase proficiency in all conditions.

Note: The condition statement for this task is written assuming the highest training conditions reflected on the Task Proficiency matrix required for the evaluated unit to receive a "fully trained" (T) rating.

Note: Condition terms definitions:

Dynamic Operational Environment: Three or more operational and two or more mission variables change during the execution of the assessed task. Operational variables and threat Tactics, Techniques, and Procedures (TTPs) for assigned counter-tasks change in response to the execution of Blue Forces (BLUFOR) tasks.

Complex Operational Environment: Changes to four or more operational variables impact the chosen friendly COA/mission. Brigade and higher units require all eight operational variables of Political, Military, Economic, Social, Infrastructure, Information, Physical environment, and Time (PMESII-PT) to be replicated in varying degrees based on the task being trained.

Single threat: Regular, irregular, criminal or terrorist forces are present.

Hybrid threat: Diverse and dynamic combination of regular forces, irregular forces, and/or criminal elements all unified to achieve mutually benefiting effects.

This task should not be trained in MOPP 4.

Standards: The element completes either a single or multiple surface treatment to the prepared base in accordance with the plans and times specified in the directive.

Note: Leaders are defined as the Commander, Executive Officer, First Sergeant, Operations Sergeant, Platoon Leaders, Platoon Sergeants, Squad Leaders, and Team Leaders.

Live Fire Required: No

Objective Task Evaluation Criteria Matrix:

Plan and Prepare		Execute					Assess	
Operational Environment	Training Environment (LW/C)	Training/Authorized % of Leaders Present at	% of Soldiers Present at	External Eval	% Performance Measures 'GO'	% Critical Performance Measures 'GO'	% Leader Performance Measures 'GO'	Task Assessment
SQD & PLT								
Dynamic (Single Threat)	IAW unit CATS statement.	>=85%	>=80%	Yes	>=91%	All	>=90%	T
		75-84%			80-90%		80-89%	T-
Static (Single Threat)		65-74%	75-79%	No	65-79%	<All	<=79%	P
		60-64%	60-74%		51-64%			P-
		<=59%	<=59%		<=50%			U
Day								

Remarks: None

Notes: None

Safety Risk: Low

Task Statements

Cue: None

DANGER

Leaders have an inherent responsibility to conduct Risk Management to ensure the safety of all Soldiers and promote mission accomplishment.

WARNING

Risk management is the Army's primary decision-making process to identify hazards, reduce risk, and prevent both accidental and tactical loss. All Soldiers have the responsibility to learn and understand the risks associated with this task.

CAUTION

Identifying hazards and controlling risks across the full spectrum of Army functions, operations and activities is the responsibility of all Soldiers.

Performance Steps and Measures

NOTE: Assess task proficiency using the task evaluation criteria matrix.

NOTE: Asterisks (*) indicate leader steps; plus signs (+) indicate critical steps.

STEP/MEASURE	GO	NO-GO	N/A
+* 1. The element leader conducts troop-leading procedures.			
a. Conducts preliminary construction planning.			
b. Requests augmentation support if required.			
+* 2. The element leader develops a work site safety plan.			
a. Develops a risk assessment matrix.			
b. Appoints a work site safety non-commissioned officer (NCO).			
+ c. Implements precautions to warn and control traffic that may be using the road.			
+* 3. The element leader inspects the prepared base before beginning surface treatment.			
+ a. Ensures base was prepared to specifications.			
b. Submits requests for changes to improve or correct project plans and specifications according to the unit standing operating procedure (SOP), as needed.			
+ 4. The element receives and stockpiles aggregate.			
+ a. Transports aggregate to the project site by truck.			
+ b. Stockpiles aggregate at the pit and the project site to prevent shortages during construction progress.			
(1) Builds large stockpiles in layers or lifts with a flat top to retain uniformity of gradation and avoid segregation.			
(2) Maintains separate stockpiles when more than one type of or size of aggregate is used.			
+ 5. The element completes the surface treatment of the prepared base.			
+ a. Places primer on the base course.			
(1) Applies the prime coat with a bituminous distributor.			
(2) Extends the prime coat at least 1 foot beyond the surface on each side to waterproof the base, and ensure complete coverage.			
(3) Applies the prime coat at a rate of between 0.2 and 0.5 gallon per square yard, depending on the type of soil.			
(4) Allows the prime coat to cure for a minimum of 48 hours.			
<p>Note: Overpriming is more undesirable than underpriming. An overprimed base may fail to cure and can contribute to pavement failure. A free film of prime material remaining on the base after a 48-hour curing period indicates that the base is overprimed. Correct this condition by spreading a light, uniform layer of clean, dry sand over the prime coat to absorb the excess material. After applying the sand, lightly roll and broom the surface. Correct excess prime that is held in minor depressions by applying clean, dry sand. Lightly broom loose sand away before laying the wearing surface.</p>			
+ b. Places binder and aggregate.			
(1) Ensures that the atmospheric temperature was above 50 degrees Fahrenheit.			
(2) Determines recommended application rate of bituminous material, in gallons per square yard, based upon the weight of the aggregate per square yard.			
(3) Applies bitumen with a bituminous distributor.			
(4) Uses 1 gallon of bitumen for every 100 pounds of aggregate.			
(5) Spreads aggregate immediately after the application of bitumen.			
(6) Ensures that the aggregate was not completely submerged in the bitumen.			
+ c. Compacts by rolling the aggregate into the binder with a 5- to 8-ton roller while drag-brooming.			
(1) Rolls parallel to the centerline of the roadway to reduce the number of times the roller changes direction.			
(2) Overlaps succeeding passes one-half of the wheel width to ensure complete coverage.			
(3) Completes rolling before the bitumen hardens to ensure that the aggregate is well embedded.			
(4) Makes succeeding passes from the low side to the high side to maintain a crown and prevent the edge from feathering.			
(5) Rolls at a low speed.			
(6) Keeps rollers wet to prevent the bitumen from sticking to the wheels.			
+ d. Places multiple surface treatments, if required by the directive.			
(1) Sweeps the first layer so that the layers will bond.			
(2) Reduces the second layer of bitumen to between one-third and one-half of the first application.			
(3) Uses, in the second application, aggregate approximately one-half the diameter of that used in the first application.			
(4) Drag-broom the final application of aggregate to maintain an even layer.			
(5) Rolls the surface with a 5- to 8-ton roller to embed the aggregate in the bitumen at the same time the surface is being broomed.			
+* 6. The element leader supervises the surface treatment.			
a. Monitors overall safety at the work site.			
+ b. Manages the employment of personnel and equipment.			

c. Provides technical advice and expertise.			
+ d. Performs quality assurance (QA) functions.			
+ e. Ensures element recovers, cleans and performs preventive maintenance checks and services (PMCS) on all equipment and tools used on the work site.			
+* 7. The element leader submits status reports to higher headquarters in accordance with unit standing operating procedure (SOP).			

TASK PERFORMANCE / EVALUATION SUMMARY BLOCK							
ITERATION	1	2	3	4	5	M	TOTAL
TOTAL PERFORMANCE MEASURES EVALUATED							
TOTAL PERFORMANCE MEASURES GO							
TRAINING STATUS GO/NO-GO							

ITERATION: 1 2 3 4 5 M

COMMANDER/LEADER ASSESSMENT: T P U

Mission(s) supported: None

MOPP 4: Never

MOPP 4 Statement: None

NVG: Never

NVG Statement: None

Prerequisite Collective Task(s):

Step Number	Task Number	Title	Proponent	Status
	05-PLT-5124	Provide Construction Project Asphalt Support	05 - Engineers (Collective)	Approved

Supporting Collective Task(s):

Step Number	Task Number	Title	Proponent	Status
	05-PLT-5144	Perform Dump Truck-Hauling Operations	05 - Engineers (Collective)	Approved
1.	71-CO-5100	Conduct Troop Leading Procedures for Companies	71 - Combined Arms (Collective)	Approved
5.	05-PLT-5122	Apply a Tack Coat on a Prepared Surface	05 - Engineers (Collective)	Approved
5.	05-PLT-5123	Apply a Prime Coat on a Prepared Surface	05 - Engineers (Collective)	Approved
7.	05-CO-0018	Conduct Report Procedures	05 - Engineers (Collective)	Approved

OPFOR Task(s):

Task Number	Title	Status
71-2-9002	OPFOR Ambush(Company and below)	Approved
71-CO-9004	OPFOR Reconnaissance Attack (Company and below)	Approved

Supporting Individual Task(s):

Step Number	Task Number	Title	Proponent	Status
	052-12V-1039	Perform Hand Spraying Operations	052 - Engineer (Individual)	Approved
	052-12V-1068	Perform Bar Spray Operations on an M4 Bituminous Distributor	052 - Engineer (Individual)	Approved
	052-210-1005	Manage Projects Using TCMS and MS Project	052 - Engineer (Individual)	Approved
	052-243-2010	Determine Bitumen Content of Bituminous Hot Mix	052 - Engineer (Individual)	Approved
	052-243-3010	Design Aggregate Blend to Meet Job Mix Specifications for Asphaltic Concrete	052 - Engineer (Individual)	Approved
	052-243-3418	Design Bituminous Mix by Marshall Stability Method	052 - Engineer (Individual)	Approved
	052-252-1040	Perform Preventive-Maintenance Checks and Services (PMCS) on an M4 Bituminous Distributor Module	052 - Engineer (Individual)	Approved
	052-252-1050	Line-Fill an M4 Bituminous Distributor Module	052 - Engineer (Individual)	Approved
	052-252-1059	Heat Bitumen in an M4 Bituminous Distributor	052 - Engineer (Individual)	Approved
	052-252-1069	Perform Preventive-Maintenance Checks and Services (PMCS) on an M780T Asphalt Paver	052 - Engineer (Individual)	Approved
	052-252-1071	Perform Operator's Preventive-Maintenance Checks and Services (PMCS) on an M081 Asphalt Mixing Plant	052 - Engineer (Individual)	Approved
	052-252-2005	Supervise Preventive-Maintenance Checks and Services (PMCS) on an M780T Asphalt Paver	052 - Engineer (Individual)	Approved
	052-252-2007	Supervise Operator's Preventive-Maintenance Checks and Services (PMCS) on a M081 Asphalt Mixing Plant	052 - Engineer (Individual)	Approved
	052-252-3058	Direct the Application of Bituminous Material Lay-Down	052 - Engineer (Individual)	Approved
	052-252-3059	Direct the Manufacture of Asphalt Cutback	052 - Engineer (Individual)	Approved
	052-252-3060	Direct the Erection of an Asphalt Plant	052 - Engineer (Individual)	Approved
	052-252-3061	Direct Asphalt Plant Operations	052 - Engineer (Individual)	Approved
	052-252-3062	Supervise Operator's Preventive-Maintenance Checks and Services (PMCS) on Asphalt Equipment	052 - Engineer (Individual)	Approved
	052-253-1049	Roll Material With a 9-Wheel, Self-Propelled Roller	052 - Engineer (Individual)	Approved
	052-253-1055	Roll Material With a Steel-Wheel Roller	052 - Engineer (Individual)	Approved
	052-256-3020	Interpret a Construction Print	052 - Engineer (Individual)	Approved
	052-256-3067	Supervise Placement of Single Surface Treatment Materials	052 - Engineer (Individual)	Approved
	052-256-4143	Schedule Work in a Construction Project	052 - Engineer (Individual)	Approved
	052-256-4146	Plan Surface Treatment Operations	052 - Engineer (Individual)	Approved
	052-306-7106	Interpret Construction Documents	052 - Engineer (Individual)	Approved

Supporting Drill(s): None

Supported AUTL/UJTL Task(s):

Task ID	Title
ART 4.1.7.2	Enable Logistics

TADSS

TADSS ID	Title	Product Type	Quantity
No TADSS specified			

Equipment (LIN)

LIN	Nomenclature	Qty
S13546	Spreader: Bituminous Module PLS 2500 Gallon: XM4	1
U76871	Sweeper Rotary Towed: Gas/Diesel Driven with Adjustable Brush	1
K25215	Heater Hot Oil Trailer Mounted: Electric Powered 2100000BTU Output	1
N75124	Paving Machine Bituminous Material: Diesel Driven Crawler Mounted 12 FT	1
D17391	Dump Body Module XM6	1
T81874	Truck: Palletized Loading	1
E05007	Engineer Mission Module-Water Distribution (EMM-WD): Type II	1
S11711	Roller Motorized Steel Wheel: 2 Drum Tandem 10-14 Ton (CCE)	1

Materiel Items (NSN)

NSN	LIN	Title	Qty
No materiel items specified			

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to the current Environmental Considerations manual and the current GTA Environmental-related Risk Assessment card. .

Safety: In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. .