

551-88U-2445
Calculate Basic Track Repair Material
Status: Approved

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 Transportation School, Fort Lee, VA foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

Conditions: Assigned as a Railway Specialist advising COCOM/ Host Nation personnel with the requirement to calculate basic track repair material, given a work order to calculate material for a new track or surface existing track, and references, day or night, in all weather conditions, and in an operational environment. Some iterations of this task should be performed in MOPP 4. This task should be trained under IED Threat conditions.

Standards: In accordance with host nation work order, Calculate Class IV (construction) material required to surface existing track or install new track with 90% accuracy or better.

Special Conditions: None

Safety Risk: Low

MOPP 4: Sometimes

Task Statements

Cue: You have been tasked to calculate basic track repair material to determine what is needed to repair or replace a section of rail.

DANGER

None

WARNING

None

CAUTION

Working around live tracks is always dangerous. Follow all safety procedures outlined in the GCOR, ATP 4-14, and UFC 4-860-03.

Remarks: None

Notes: None

Performance Steps

1. Review work order to determine:
 - a. Number of new tracks to be installed/existing tracks to be surfaced.
 - b. Length of track (in miles).
 - (1) Length of tangent track (in miles).
 - (2) Length of curved (curvature >4 degrees) track (in miles).
 - c. Depth of ballast section (new track).
 - d. Height of track raise (surfacing).
 - e. Width of ballast section.
 - f. Weight of rail to be used (new track).
 - g. Type of tie plates (new track).
 - h. Whether new trackage is to be jointed (bolt size and joint bar type) or welded.
2. Calculate amount of ballast required in cubic yards.
3. Calculate number of ties, plates and kegs of spikes required.
4. Calculate sticks of rail (39' length), kegs of bolts, joint bars and field welds required.
5. Report results to Railway Section Supervisor.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If any performance measure is failed, tell the Soldier what was done wrong and how to do it correctly.

Evaluation Preparation: Ensure that all materials required to perform the task are available. Tell the Soldier that he/she will be evaluated on calculating basic track repair material.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Reviewed work order.			
2. Calculated amount of ballast required in cubic yards.			
3. Calculated number of ties, plates and kegs of spikes required.			
4. Calculate sticks of rail (39' length), kegs of bolts, joint bars and field welds required.			
5. Reported results to Railway Section Supervisor.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	ATP 4-14	EXPEDITIONARY RAILWAY CENTER OPERATIONS http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/atp4_14.pdf	Yes	No
	GCOR	General Code of Operating Rules (GCOR), Seventh Edition	Yes	No
	UFC 4-860-03	Unified Facilities Criteria (UFC): Railroad Track Maintenance & Safety Standards	Yes	Yes

TADSS : None

Equipment Items (LIN): None

Materiel Items (NSN) :

Step ID	NSN	LIN	Title	Qty
	7020-01-182-8535		Calculator, Electronic	1
	5120-00-221-1882		Tape Measuring General Purpose	1

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.

AR 200-1 delineates TRADOC responsibilities to integrate environmental requirements across DOTMLPF and ensures all training procedures, training manuals, and training doctrine includes sound environmental practices and considerations. The Army's environmental vision is to be a national leader in environmental and natural resource stewardship for present and future generations as an integral part of all Army missions. Environmental protection is never completed. Continuously be alert to ways to protect our environment and reduce waste.

Leaders must ensure that their unit has an active and strong environmental program. They must understand the laws and know what actions to take. Leaders bring focus, direction, and commitment to environmental protection. Commanding officers should ensure the following environmental programs are in place and are being maintained:-Hazardous materials program.-Hazardous waste program.
-Hazardous communications program.
-Pollution prevention and hazardous waste minimization recycling program.
-Spill prevention and response plan program.

Safety: In a training environment, leaders must perform a risk assessment in accordance with current Risk Management Doctrine. 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 current CBRN doctrine.

All operations will be performed to protect and preserve Army personnel and property against accidental loss. Procedures will provide for public safety incidental to Army operations and activities and safe and healthful workplaces, procedures, and equipment. Observe all safety and/or environment precautions regarding electricity, cable, and lines. Provide ventilation for exhaust fumes during equipment operation and use hearing protection when required IAW AR 385-10, the Clean Air Act (CAA) and the CAA amendments, and the OSHA Hazard Communication standard.

Accidents are an unacceptable impediment to Army missions, readiness, morale, and resources. Decision makers at every level will employ risk management approaches to effectively preclude unacceptable risk to the safety of personnel and property affiliated with this task. (a) Take personal responsibility. (b) Practice safe operations. (c) Recognize unsafe acts and conditions. (d) Take action to prevent accidents. (e) Report unsafe acts and conditions.

Prerequisite Individual Tasks : None

Supporting Individual Tasks : None

Supported Individual Tasks : None

Supported Collective Tasks : None

Knowledges :

Knowledge ID	Knowledge Name
K-551-T-0001	Knowledge of rail track standards
K-551-T-0028	Knowledge of production surfacing
K-551-T-0005	Knowledge of rail welding procedures
K-551-T-0004	Knowledge of OTM standards
K-551-T-0027	Knowledge of mathematics (algebra / geometry)
K-551-T-0007	Knowledge of ballast standards
K-551-T-0008	Knowledge of ties
K-551-T-0012	Knowledge of track nomenclature

Skills : None

ICTL Data : None