

Training and Evaluation Outline Report

Status: Approved

09 Apr 2015

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Task Number: 05-SEC-5002

Task Title: Perform Geodetic Survey 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 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 2-01.3	Intelligence Preparation of the Battlefield/Battlespace (Including change 1)	Yes	No
	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
	FAA 405	Standards for Aeronautical Surveys and Related Products.	Yes	Yes
	TM 3-34.55	Construction Surveying	Yes	No

Conditions: The survey team is directed from Higher Headquarters (HQ) to perform a geodetic survey in support of current operations. The team is given the area to be surveyed, as well as the standards for accuracy. All organic personnel, Sets, Kits and Outfits (SKO), equipment, and materials are available.

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 survey team performs the geodetic survey, determining horizontal and vertical distances between objects, measuring angles between lines, determining the direction of lines, and establishing points of predetermined angular and linear measurements within the specified standards of accuracy. The element collects the required data and computes a final report for the requesting agency not later than the time 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 (LV/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-
65-74%			75-79%	65-79%	<All	<=79%	P		
60-64%			60-74%	51-64%			P-		
<=59%			<=59%	<=50%			U		
Static (Single Threat)				No					
	Day								

Remarks: None

Notes: All required references and technical manuals will be provided by the local command.

Safety Risk: Low

Task Statements

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 analyzes the directive.			
+* a. Understands the survey mission, the customer's intent and any time constraints.			
* b. Reviews the facts and assumptions of the survey project.			
+* c. Identifies any specified and implied tasks for geodetic survey operations and develops a recommended list of essential tasks for the commander's approval during the mission analysis brief.			
+* d. Requests, analyzes, and collects any existing geodetic survey data and intelligence pertinent to mission accomplishment.			
* e. Issues Warning Order (WARNORD) to the team.			
Note: Geodetic products are available through the National Geospatial-Intelligence Agency (NGA), Falcon View, satellite imagery and Environmental Systems Research Institute Aeronautical Reconnaissance Coverage Geographic Information System (ESRI ArcGIS) products.			
+* 2. The element leader conducts a preliminary reconnaissance survey.			
* a. Ensures points of contacts are accessible to identify the main objective of the survey being performed.			
* b. Ensures office space is available to set up survey equipment and to compute data.			
+* c. Identifies existing Survey Control Points (SCPs) to be utilized in establishing survey control for the survey project.			
* d. Considers environmental effects on the mission.			
(1) Identifies dangerous and restricted areas.			
(2) Evaluates terrain and weather conditions for safety and welfare of soldiers during the survey project.			
(3) Considers flora and fauna restrictions (endangerment and extinctions to plants and animals).			
+* 3. The element leader plans the survey.			
+* a. Evaluates the requirements as stated in the project directive.			
* b. Determines survey method.			
+* c. Determines accuracy constraints in accordance with the Standards and Specifications for Geodetic Control Networks (SSGCN).			
* d. Develops milestones.			
* e. Determines administrative support.			
(1) Determines personnel requirements to support the survey.			
(2) Determines logistical requirements to support survey.			
+* f. Issues Operations Order (OPORD) to team.			
+ 4. The element conducts geodetic survey operations.			
+ a. Establishes relative horizontal positions.			
+ b. Establishes vertical control.			
+ 5. The element establishes and confirms survey control.			
+ a. Utilizes Global Positioning System (GPS) to establish control on existing SCPs.			
(1) Analyzes project instructions.			
(2) Evaluates source materials.			
(3) Lists steps and procedures.			
+ b. Constructs and establish control on unknown SCPs.			
(1) Prepares / Digs hole.			
(2) Constructs monument and base plate arrow facing north.			
(3) Collects data electronically and prepares station description.			
(4) Reports SCPs data to Section noncommissioned officer in charge (NCOIC) for processing in computerized software (Terramodel, AutoCAD, or Trimble Business Center (TBC)).			
* 6. The element leader reports daily survey progress reports to higher HQ.			
* a. Reports personnel and equipment accountability.			
* b. Reports status of project.			
+* 7. The element leader performs quality control (QC) checks on computed coordinates, published data and methodology.			
+* a. Verifies accuracy of survey data.			
* b. Informs field crew of survey data to be redone if necessary.			
* c. Reprocesses data if necessary.			
+ 8. The element prepares survey report.			
a. Includes all survey procedures that were done to complete the mission.			
b. Attaches collected field data.			
+ c. Attaches survey drawing.			

+* 9. The element leader briefs higher headquarters of geodetic survey project completion and redeploys detachment section and equipment.			
+* 10. The element leader submits the survey project to the NGA for final review.			
* 11. The element archives the geodetic survey projects with NGA and Headquarters S-3.			

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): None

Supporting Collective Task(s):

Step Number	Task Number	Title	Proponent	Status
	05-PLT-1018	Perform an Engineer Reconnaissance	05 - Engineers (Collective)	Approved

OPFOR Task(s):

Task Number	Title	Status
71-CO-8502	OPFOR Execute an Ambush	Approved
71-CO-8504	OPFOR Execute a Reconnaissance Attack	Approved

Supporting Individual Task(s):

Step Number	Task Number	Title	Proponent	Status
	052-12T-3428	Supervise Airfield/Heliport Obstruction and Navigational-Aid (NAVAID) Survey	052 - Engineer (Individual)	Approved
	052-210-1213	Manage Traverse Survey	052 - Engineer (Individual)	Approved
	052-210-1214	Manage Differential Leveling	052 - Engineer (Individual)	Approved
	052-210-1251	Manage Post Processing Technique Kinematic (PPRTK) Survey with DGPS	052 - Engineer (Individual)	Approved
	052-243-1540	Perform Real Time Kinematic (RTK) Survey with Differential Global Positioning System (DGPS)	052 - Engineer (Individual)	Approved

Supporting Drill(s): None

Supported AUTL/UJTL Task(s):

Task ID	Title
ART 4.1.7.3.1	Provide Engineer Survey Support

TADSS

TADSS ID	Title	Product Type	Quantity
No TADSS specified			

Equipment (LIN)

LIN	Nomenclature	Qty
N96248	Navigation Set: Satellite Signals AN/PSN-13	1
D10281	Digital Topographic System: AN/TYQ-67(V)	1
U70179	Surveying Set General Purpose: Planimet Construction and Topographical Survey	1
C05002	Computer System Digital: AN/PYQ-10(C)	1
S03726	SURV INSTRUMENT ELECT	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. .