

Report Date: 05 Jun 2013

**Summary Report for Individual Task
061-306-6004
Perform Crater and Shell Fragment Analysis
Status: Approved**

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

DESTRUCTION NOTICE: None

Condition: Given DA Form 2185-R Artillery Counterfire Information, compass or aiming circle, four stakes, ten feet of commo wire or parachute cord, and curvature template. Some iterations of this task should be performed in MOPP.

Standard: Determine location of the crater to the accuracy of an eight-digit grid and the azimuth to the enemy weapon to within 60 mils or 3 degrees.

Special Condition: None

Special Standards: None

Special Equipment:

Safety Level: Low

MOPP: Sometimes

Task Statements

Cue: Incoming enemy artillery/mortar fire.

DANGER
None

WARNING
None

CAUTION
None

Remarks: None

Notes: None

Performance Steps

1. Locate a Low-angle fuze quick, Low-angle fuze delay or a High-angle shell crater.
2. Inspect craters as soon as possible after impact.
3. Determine an eight-digit grid coordinate to the crater.
4. Determine the direction to the firing weapon by:
 - a. Fuze-furrow and center of crater method for a Low-angle fuze quick crater.
 - (1) Place a stake in the center of the crater.
 - (2) Place a second stake in the fuze furrow at the point where the fuze was blown forward to the front of the crater.
 - (3) Setup the direction-measuring instrument in line with the stakes and away from the fragments.
 - (4) Orient the instrument.
 - (5) Measure the direction to the hostile weapon.
 - b. Side spray method for a Low-angle fuze quick crater.
 - (1) Place a stake in the center of the crater.
 - (2) Place the stakes, one at the end of each line of the side spray, equal distance from the center stake.
 - (3) Hold a length of communication wire (or another appropriate field expedient means) to each side spray stake, and strike an arc forward of the fuze furrow.
 - (4) Place a stake where the arcs intersect.
 - (5) Setup a direction-measuring instrument in line with the center stake and the stake at the intersection of the arcs.
 - (6) Orient the instrument.
 - (7) Measure the direction to the hostile weapon.
 - c. Ricochet-furrow method for a Low-angle fuze delay crater.
 - (1) Clean out the furrow.
 - (2) Place stakes at each end of a usable straight section of the furrow.
 - (3) Setup the direction-measuring instrument in line with the stakes and away from the fragments.
 - (4) Orient the instrument.
 - (5) Measure the direction to the weapon.
 - d. Mine action method for a Low-angle fuze delay crater.

Note: Mine action occurs when a shell bursts beneath the ground. Occasionally such a burst will leave a furrow that can be analyzed in the same manner as the ricochet furrow. A mine action crater that does not have a furrow cannot be used to determine the direction of the firing weapon.

e. Main axis method for a High-angle shell crater.

(1) Lay a stake along the main axis of the crater, dividing the crater into symmetrical halves. The stake points in the direction of the mortar.

(2) Setup a direction-measuring instrument in line with the stake and away from the fragments.

(3) Orient the instrument.

(4) Measure the direction to the weapon.

f. Splinter groove method for a High-angle shell crater.

(1) Lay a stake along the ends of the splinter groove that extend from the crater.

(2) Lay a second stake perpendicular to the first stake through the axis of the fuze.

(3) Setup a direction-measuring instrument in line with the second stake and away from the fragments.

(4) Orient the instrument.

(5) Measure the direction to the weapon.

g. Fuze-tunnel method for a High-angle shell crater.

(1) Place a stake in the fuze tunnel.

(2) Setup the direction-measuring instrument in line with stake and away from the fragments.

(3) Orient the instrument.

(4) Measure the direction to the weapon.

5. Analyze shell fragments.

6. Tag shell fragments to S-2 for analysis.

7. Submit DA Form 2185-R (Artillery Counterfire Information Form) to superior or the S-2.

(Asterisks indicates a leader performance step.)

Evaluation Preparation: Setup: Present a brief situation and have the soldiers perform crater and shell fragment analysis by using a fabricated crater or a previously located crater. Use the references and the evaluation guide to score the soldier's performance.

Brief soldier: Tell the soldier to perform crater and shell fragment analysis IAW the task steps in this lesson.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Located Craters.			
2. Inspected craters as soon as possible after impact.			
3. Determined eight-digit grid to the crater location.			
4. Determined direction of incoming artillery using one of the following methods:			
a. Fuze-furrow and center of crater method for a low-angle fuze quick crater.			
b. Side spray method for a low-angle fuze quick crater.			
c. Ricochet-furrow method for a low-angle fuze delay crater.			
d. Mine action method for a low-angle fuze delay crater.			
e. Main axis method for a high-angle shell crater.			
f. Splinter groove method for a high-angle shell crater.			
g. Fuze-tunnel method for a high-angle shell crater.			
5. Analyzed shell fragments.			
6. Tagged usable fragments.			
7. Submitted DA Form 2185-R to superior or the Bn S-2.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	FM 3-09.12	Tactics, Techniques, and Procedures for Field Artillery Target Acquisition	No	No
	FM 6-50	Tactics, Techniques, and Procedures for the Field Artillery Cannon Battery	No	No

Environment: Environmental protection is not just the law but also 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.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET 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, NBC Protection, FM 3-11.5, CBRN Decontamination. Safety considerations will be consistent with Post regulations and unit SOP.

Prerequisite Individual Tasks : None

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
061-306-6005	Prepare a Standard Shelling, Mortaring, and Bombing Report	061 - Field Artillery (Individual)	Analysis

Supported Individual Tasks : None

Supported Collective Tasks :

Task Number	Title	Proponent	Status
06-6-4011	Protect the Force Artillery	06 - Field Artillery (Collective)	Approved

ICTL Data :

ICTL Title	Personnel Type	MOS Data

MOS 13R - Field Artillery Firefinder Radar Operator - SL3	Enlisted	MOS: 13R, Skill Level: SL3, ASI: P5, Duty Pos: EBE, LIC: EN, SQI: O
--	----------	---