

**071-COM-1008**  
**Measure Distance on a Map**  
**Status: Approved**

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**Security Classification: U** - Unclassified

**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 G2, Ft Benning, GA 31905 foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

**Conditions:** You are a member of a squad or team in a field environment and have been directed to determine the distance between two known points. You have a 1:50,000 scale map, a strip of paper with a straight edge, and a pencil. You have been shown the beginning and ending points on the map. Some iterations of this task should be performed in MOPP 4.

**Standards:** Determine the straight-line distance between two points with no more than a 5 percent error and the curve-line distance between two points with no more than a 10 percent error.

**Special Conditions:** None

**Safety Risk:** Low

**MOPP 4:** Sometimes

**Task Statements**

**Cue:** None

**DANGER**

None

**WARNING**

None

**CAUTION**

None

**Remarks:** None

**Notes:** None

## Performance Steps

1. Identify the graphic bar scale of the map (Figure 1).

Note: The graphic bar scale is a ruler printed on the map that is used to convert distances on the map to actual ground distances. The graphic bar scale is divided into two parts. To the right of the zero, the scale is marked in full units of measure and is called the primary scale. To the left of the zero, the scale is divided into tenths and is called the extension scale. Most maps have three or more scales, each using a different unit of measure. When using the graphic bar scale be sure to use the correct scale for the unit of measure desired.

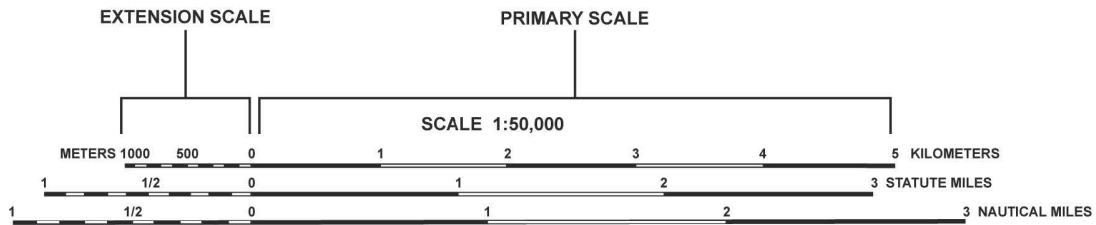


Figure 1. Graphic bar scale.

2. Determine straight-line distance between two points on a map.

- Lay a straight edged piece of paper on the map so that the edge of the paper touches both points and extends past them.
- Make a tick mark on the edge of the paper at each point (Figure 2).

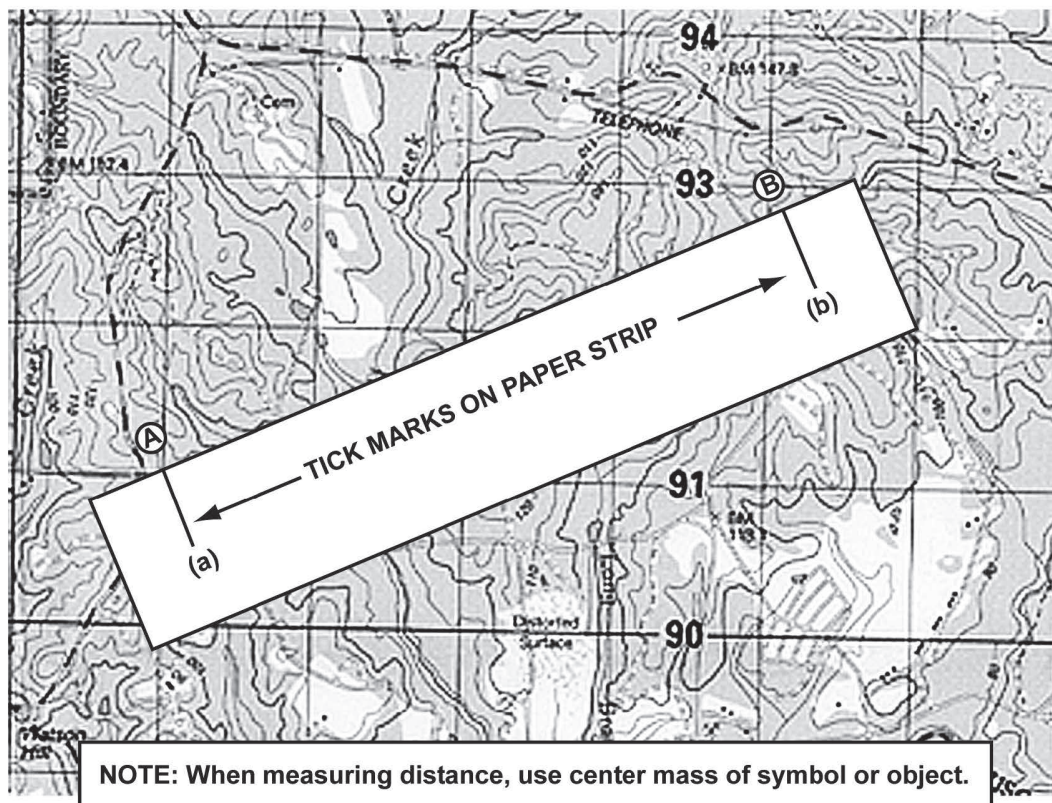


Figure 2. Straight-line distance.

c. Move the paper down to the graphic bar scale.

d. Align the right tick mark (b) with a printed number in the primary scale so that the left tick mark (a) is in the extension scale (Figure 3).

Note: The Primary scale determines the distance to in 1000 meter intervals. If the distance between tick marks is greater than the scale determine the 1000 meter interval using the primary scale then use the extended scale to determine the remaining intervals.

The extension scale is numbered with zero at the right and increases to the left. When using the extended scale, always read right to left. From the zero left to the beginning of the first shaded area is 100 meters.

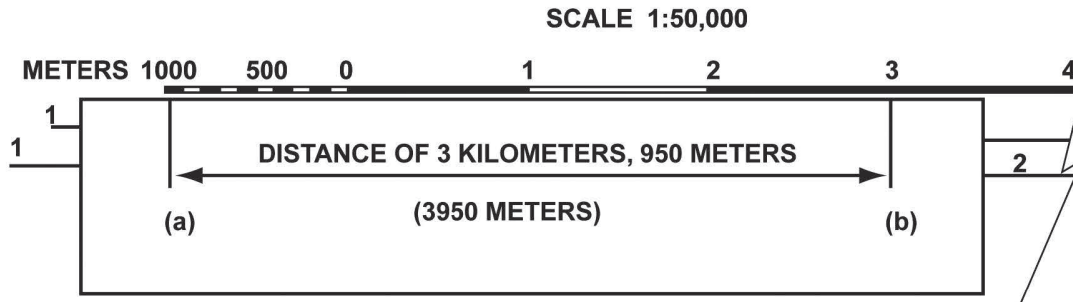


Figure 3. Determining ground distance using graphic bar scale.

3. Measure distance along a road, stream, or other curved line.

Note: In order to avoid confusion concerning the point to begin measuring from and the ending point, an eight-digit coordinate should be used for both the starting and ending points.

a. Place a tick mark on the paper and map at the beginning point from which the curved line is to be measured.

b. Align the edge of the paper along a straight portion and make a tick mark on both map and paper when the edge of paper leaves the straight portion of the line being measured (Figure 4).

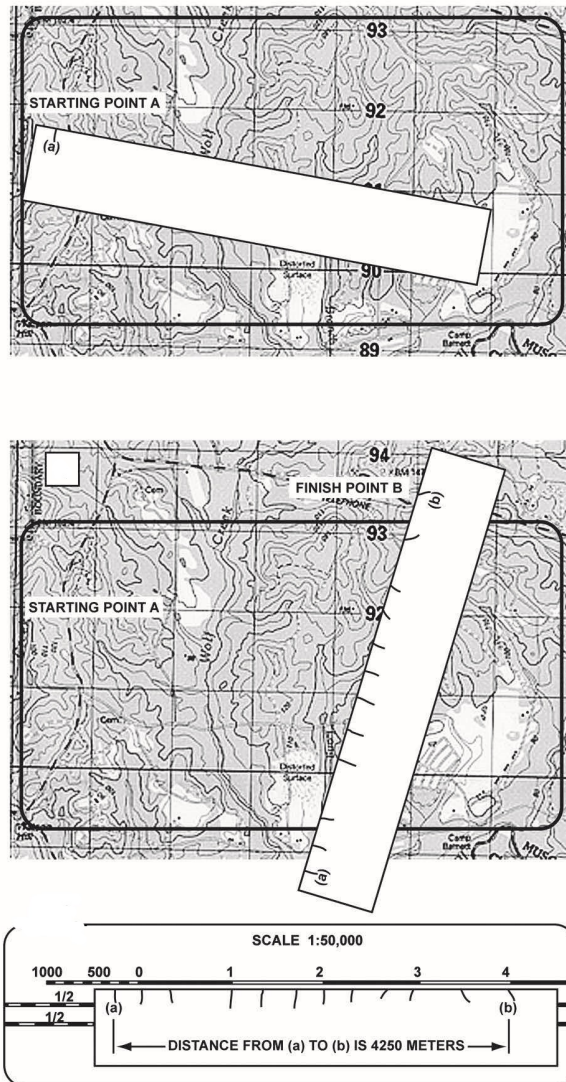


Figure 4. Curve-line distance.

- c. Keep the tick marks on the paper and map together.
- d. Place the point of the pencil close to the edge of the paper on the tick mark to hold it in place.
- e. Pivot the paper until another straight portion of the curved line is aligned with the edge of paper.
- f. Repeat steps 3c, 3d and 3e until the measurement from start point to end point is completed.
- g. Move the paper to the graphic scale to determine the ground distance.
- h. Measure the distance between the beginning (a) and ending tick mark (b) only (Figure 4).

(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 the Soldier scores a NO-GO, show the Soldier what was done wrong and how to do it correctly.

**Evaluation Preparation:** Setup: Provide the Soldier with the equipment and materials described in the conditions statement. Brief the Soldier: Tell the Soldier what is required to successfully complete the task by reviewing the conditions and standards. Stress the importance of observing cautions, warnings, and dangers, as applicable.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Identified the graphic bar scale of the map.			
2. Determined straight-line distance between two points on a map.			
3. Measured distance along a road, stream, or other curved line.			

**Supporting Reference(s):**

Step Number	Reference ID	Reference Name	Required	Primary	Source Information
	TC 3-25.26	MAP READING AND LAND NAVIGATION ( <a href="https://armypubs.us.army.mil/doctrine/DR_pubs/dr_c/pdf/tc3_25x26.pdf">https://armypubs.us.army.mil/doctrine/DR_pubs/dr_c/pdf/tc3_25x26.pdf</a> )	Yes	No	

**TADSS :** None

**Equipment Items (LIN):** None

**Materiel Items (NSN) :**

Step ID	NSN	LIN	Title	Qty
	7643-01-404-4393		Topo, MC&G Products	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.

**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.

**Prerequisite Individual Tasks :** None

**Supporting Individual Tasks :**

Task Number	Title	Proponent	Status
071-COM-1000	Identify Topographic Symbols on a Military Map	071 - Infantry (Individual)	Approved
071-COM-1002	Determine the Grid Coordinates of a Point on a Military Map	071 - Infantry (Individual)	Approved

**Supported Individual Tasks :** None

**Supported Collective Tasks :** None

**Knowledges :**

Knowledge ID	Knowledge Name
071-NAV-0029	Bar Scales
071-NAV-0027	Military Grid Reference System
071-NAV-0033	Distance Measuring Techniques
805C-K-0154	How to read a map
029	Map Terms and Symbols

**Skills :**

Skill ID	Skill Name
301-S-158	Measure Distance On A Military Map
011-1942S	Read a Map or Chart

011-007S	Map and chart interpretation
071-NAV-0014	Measure Distance on a Map

**ICTL Data :** None