

U.S. ARMY SERGEANTS MAJOR ACADEMY (BNCOC)

W321 / GRAPHIC AND OVERLAYS

OCT 04



Stand Alone Common Core

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TRAINING SUPPORT PACKAGE (TSP)

TSP Number / Title	W321 / GRAPHICS AND OVERLAYS				
Effective Date	01 Oct 2004				
Supersedes TSP(s) / Lesson(s)	W321, Graphics and Overlays, 1 Oct 2003				
TSP Users	<table><thead><tr><th><u>Course Number</u></th><th><u>Course Title</u></th></tr></thead><tbody><tr><td>600-BNCOC</td><td>Basic Noncommissioned Officer Course</td></tr></tbody></table>	<u>Course Number</u>	<u>Course Title</u>	600-BNCOC	Basic Noncommissioned Officer Course
<u>Course Number</u>	<u>Course Title</u>				
600-BNCOC	Basic Noncommissioned Officer Course				
Proponent	The proponent for this document is the Sergeants Major Academy.				
Improvement Comments	<p>Users are invited to send comments and suggested improvements on DA Form 2028, <i>Recommended Changes to Publications and Blank Forms</i>. Completed forms, or equivalent response, will be mailed or attached to electronic e-mail and transmitted to:</p> <p>COMDT USASMA ATTN ATSS-DC BLDG 11291 BIGGS FIELD FORT BLISS TX 79918-8002</p> <p>Telephone (Comm) (915) 568-8875 Telephone (DSN) 978-8875 E-mail: atss-dcd@bliss.army.mil</p>				
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Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.				

PREFACE

Purpose

This Training Support Package provides the instructor with a standardized lesson plan for presenting instruction for:

Task Number

Task Title

Individual

071-331-5021

Prepare A Situation Map

Collective

71-6-071-332-5000

Prepare an Operations Overlay

This TSP
Contains

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GRAPHICS AND OVERLAYS
W321 / Version 1
01 Oct 2004

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson	<u>Course Number</u>	<u>Version</u>	<u>Course Title</u>
	600-BNCOC	1	Basic Noncommissioned Officer Course

Task(s) Taught(*) or Supported	<u>Task Number</u>	<u>Task Title</u>
	<u>Individual</u>	
	071-331-5021 (*)	Prepare A Situation Map
	<u>Collective</u>	
	71-6-071-332-5000 (*)	Prepare an Operations Overlay

Reinforced Task(s)	<u>Task Number</u>	<u>Task Title</u>
	None	

Academic Hours	The academic hours required to teach this lesson are as follows:	
	<u>Resident Hours/Methods</u>	
	4 hrs	/ Conference / Discussion
	4 hrs	/ Practical Exercise (Performance)
Test	0 hrs	
Test Review	0 hrs	
Total Hours:	8 hrs	

Test Lesson Number	<u>Hours</u>	<u>Lesson No.</u>
Testing (to include test review)	3 Hrs	E302

Prerequisite Lesson(s)	<u>Lesson Number</u>	<u>Lesson Title</u>
	None	

Clearance Access	Security Level: Unclassified
	Requirements: There are no clearance or access requirements for the lesson.

Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

References

<u>Number</u>	<u>Title</u>	<u>Date</u>	<u>Additional Information</u>
FM 101-5	STAFF ORGANIZATION AND OPERATIONS	31 May 1997	SH-3
FM 101-5-1	OPERATIONAL TERMS AND SYMBOLS	30 Sep 1997	
FM 3-25.26	MAP READING AND LAND NAVIGATION	20 Jul 2001	SH-4

Student Study Assignments

Before class on day eleven--

- Read FM 3-25.26 (SH-4), Chapter 7.
- Review FM 101-5-1, Chapters 3, 4, 5, and Appendices A, B, C, and D.
- Skim FM 101-5-1, Chapters 1 and 2.
- Skim FM 101-5 (SH-3), Appendix H.
- Complete Student Handout 2, Graphics and Overlays Workbook and turn into the instructor on day five.
- Complete Practical Exercise 1 and turn into the instructor on day five.

During class--

- Participate in the group discussion. Complete the PE's.

After class--

- Turn in recoverable materials.

Instructor Requirements

1:16, SSG, BNCOC graduate, ITC and SGITC qualified.

Additional Support Personnel Requirements

<u>Name</u>	<u>Stu Ratio</u>	<u>Qty</u>	<u>Man Hours</u>
None			

Equipment Required for Instruction

<u>ID Name</u>	<u>Stu Ratio</u>	<u>Instr Ratio</u>	<u>Spt</u>	<u>Qty</u>	<u>Exp</u>
*1:50000 MAP, HUNFELD, SHEET L5324	1:16	1:1	No	1	No
441-06 LCD Projection System	1:16	1:1	No	1	No
559359 SCREEN PROJECTION	1:16	1:1	No	1	No
5820-00-T81-6161 VCR	1:16	1:1	No	1	No
673000T101700 PROJECTOR, OVERHEAD, 3M	1:16	1:1	No	1	No
702101T134520 DELL CPU, MONITOR, MOUSE, KEYBOARD	1:16	1:1	No	1	No
703500T102257 DESKTOP/EPSON PRINTER	1:16	1:1	No	1	No
7110-00-T81-1805 DRY ERASE BOARD	1:16	1:1	No	1	No
7510-01-424-4867	1:16	1:1	No	1	No

EASEL, (STAND ALONE) WITH PAPER					
*ACETATE ACETATE, PLASTIC	1:16	1:1	No	1	No
*GREASE PENCIL COLORED GREASE PENCIL SET (5 BASIC MAP COLORS)	1:16	1:1	No	1	No
*MAP GRAPHICS TEMPLAT Graphics Template	1:16	1:1	No	1	No
*PEN PENS, ALCOHOL, OR WATER-BASED	1:16	1:1	No	1	No
SNV1240262544393 36 - INCH COLOR MONITOR W/REMOTE CONTROL AND LUXOR STAND	1:16	1:1	No	1	No
SOFTWARE-1 MS-DOS, LATEST GOVERNMENT APPROVED VERSION	1:16	1:1	No	1	No
SOFTWARE-2 WINDOWS XP, LATEST GOVERNMENT APPROVED VERSION	1:16	1:1	No	1	No
*TASC-LCL MAP BOARD (1:50,000)	1:16	1:1	No	1	No
* Before Id indicates a TADSS					

**Materials
Required**

Instructor Materials:

- VGTs: 23.
- Maps required for the practical exercises, Hunfeld L 5324, Ausgabe 7-DMG, Serie M 745, Scale 1-50,000 (One per student).
- Practical Exercises.
- Acetate (One per student).
- Alcohol-based pens (black, red, green as a minimum).
- Graphics template (One per student).
- One map board per student

Student Materials:

- Pen or pencils and writing paper.
- Reading material listed on the Advance Sheet.
- Student Handouts.
- Alcohol-based pens (black, red, green as a minimum).
- Map graphics template.
- Acetate.

**Classroom,
Training Area,
and Range
Requirements**

CLASSROOM (40X40 PER 16 STUDENTS)

**Ammunition
Requirements**

<u>Id</u>	<u>Name</u>	<u>Exp</u>	<u>Stu Ratio</u>	<u>Instr Ratio</u>	<u>Spt Qty</u>
	None				

**Instructional
Guidance**

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

Before class--

- Post changes to FM 101-5-1, if required, contained in the (Instructor Handout) of this lesson.
- After formal instruction on day one, due to the limited time of this lesson, suggest that you draw a different graphic (IH-3) during all breaks on the whiteboard. Have a student identify the graphic before you start the next class. This should reinforce the student's knowledge of basic graphics prior to day eleven.
- You draw several different graphics depicting task organization until you feel that the student understands this concept.
- Issue the student workbooks and practical exercise 1 after formal instruction on day one.
- On day five, collect the students' completed workbook and practical exercises and grade them. Return them to the students. Go over the workbook and practical exercise during studyhall. Answer any questions the students may have.

During class--

- Conduct the class in accordance with this TSP.

After Class--

- Collect all recoverable materials after the examination for this lesson.

**Proponent
Lesson Plan
Approvals**

<u>Name</u>	<u>Rank</u>	<u>Position</u>	<u>Date</u>
Salcido, Benjamin	GS-09	Training Specialist	
Bennett-Green, Agnes D.	SGM	Course Chief	
Bucher, George V.	GS-11	Chief, CMD	
Lemon, Marion	SGM	Chief, CDDD	

SECTION II. INTRODUCTION

Method of Instruction: Conference / Discussion
 Technique of Delivery: Small Group Instruction (SGI)
 Instructor to Student Ratio is: 1:16
 Time of Instruction: 5 mins
 Media: VGT-1 and VGT-2

Motivator

During combat, commanders and their staffs must issue instructions to subordinates and communicate how to conduct operations. Commanders and staffs can give these instructions either in oral form, written form, or both. They may issue them in person or by electronic means. They may use words, graphics or symbols, or any combination.

Often they combine their words with graphics to complement each other. In any case, a common language is necessary so leaders can give their instructions in a rapid and easily understood manner.

You, as a staff NCO, will use graphics and symbols in your environment; therefore, you must familiarize yourself with their use.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements. At the completion of this lesson, you [the student] will--

Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.
Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
Standards:	<p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p> <ul style="list-style-type: none"> • Identifying, operational terms, acronyms, and abbreviations. • Identifying graphic control measures. • Identifying unit symbols. • Identifying equipment symbols. • Producing a mission map overlay. <p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p>

Safety Requirements

None

Risk Assessment Level

Low

Environmental Considerations

NOTE: It is the responsibility of all soldiers and DA civilians to protect the environment from damage.

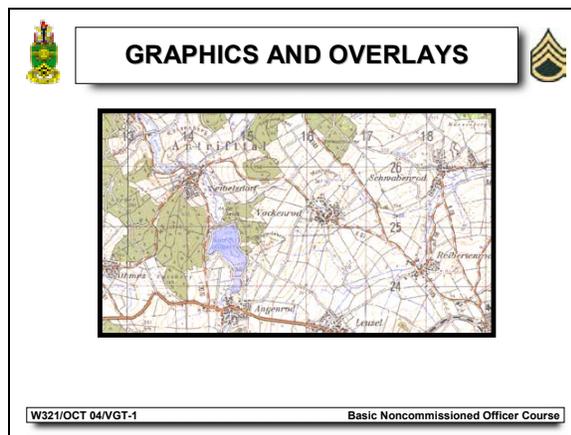
None

Evaluation

During this course you will take a 50-question examination. The examination will include questions on the ELOs and TLO from this lesson. You must correctly answer at least 35 questions to receive a GO. A GO is a graduation requirement.

Instructional Lead-In

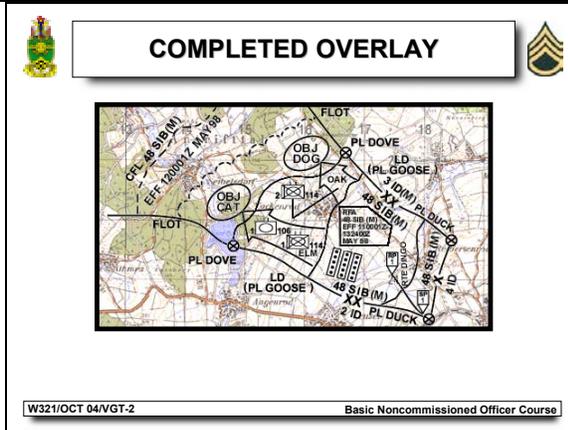
SHOW VGT-1, GRAPHICS AND OVERLAYS



A map is a graphic representation of a portion of the earth's surface drawn to scale. It uses colors, symbols, and labels to represent features found on the ground.

REMOVE VGT-1

SHOW VGT-2, COMPLETED OVERLAY



Communications between commanders, their subordinates, and staff sections are of foremost importance. Often, they can best accomplish this communication by using overlays or decision graphics. This lesson will familiarize you with the symbology necessary to prepare an overlay using military symbols and graphics. This information will assist you as a member of the staff to monitor the tactical movement in battle.

We will now turn our attention to specific parts of FM 101-5-1. This is probably the most misunderstood manual in the Army inventory, but one of the most important. Let's begin our discussion with Chapters 1 and 2.

REMOVE VGT-2

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

ACTION:	Identify operational terms, acronyms, and abbreviations.
CONDITIONS:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
STANDARDS:	Identified operational terms, acronyms, and abbreviations IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).

1. Learning Step / Activity 1. Identify operational terms, acronyms and abbreviations.
Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:16
Time of Instruction: 5 mins
Media: None.

NOTE: Inform the students that the references for this lesson are as follows: FM 101-5-1, FM 101-5 (SH-3), and FM 3-25.26 (SH-4). The handouts will take the place of the FMs.

Open FM 101-5-1 to the table of contents, page “i.” As you can see, this FM consists of five chapters and five appendices. When attempting to locate a specific graphic or symbol, you can use this table of contents to assist you. Chapters 1 and 2 contain operational terms, acronyms, and abbreviations to help you understand the meaning of the graphic or symbol. Your graphics workbook contains information on how to use the shadowed box located in Chapter 1. You can use the shadowed box technique in Chapters 1, 3, and 4, along with Appendices A, C, and D.

NOTE: Briefly review how to use the shadowed box located in Chapter 1. Ensure the students understand how to use the available information in Chapter 1 in relation to the other chapters. Use the example on page 1-1, abatis. The shadowed box indicates page 3-27. Turn to page 3-27 to see an example of the abatis graphic.

CHECK ON LEARNING: The practical exercises serve as a check on learning for this ELO.

B. ENABLING LEARNING OBJECTIVE

ACTION:	Identify graphic control measures.
CONDITIONS:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
STANDARDS:	Identified graphic control measures IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).

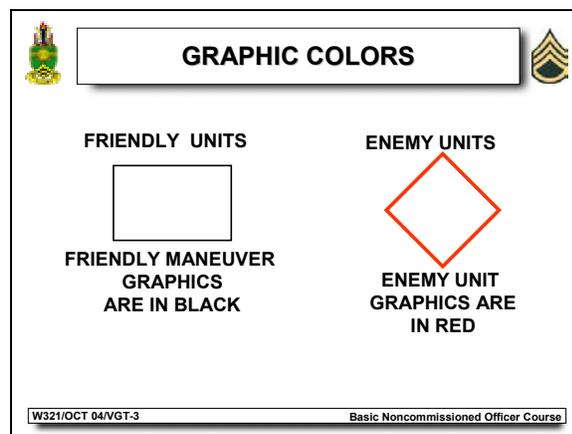
1. Learning Step / Activity 1. Identify graphic control measures.
Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:16
Time of Instruction: 1 hr 35 mins
Media: VGT-3 to VGT-18

Now that you have an understanding of the contents of chapters 1 and 2, let's get into the main body of the manual. Chapter 3 establishes a standard system for the use of graphic control measures.

NOTE: Have the students turn to page 1-38 for the definition of control measures. Have a student read and explain the definition. Use the examples of control measures from the manual to assist in the explanation.

- Boundaries: page 3-11
- Objectives: page 3-17
- Coordinating point: page 3-25
- Contact point: page 3-25
- Direction of attack: page 3-15/16

SHOW VGT-3, GRAPHIC COLORS



Ref: FM 101-5-1, p 3-1

Draw these control measures along with the other graphics in specific colors. The use of different colors on the overlay assists you in reading and understanding it.

If you do not have the specified color, then list the color used in the legend on the overlay. It will explain what that color represents.

NOTE: If red is not available for enemy symbols then use black with a double line or the abbreviation ENY placed on the graphic. Students have seen an example of this in their Graphics Workbook.

REMOVE VGT-3

SHOW VGT-4, GRAPHIC COLORS (CONT)

The slide is titled "GRAPHIC COLORS (CONT)" and features a central text box with two examples of obstacle symbols. The first example shows a row of seven green circles with the label "ENY" to its right, connected by a curved arrow. Below this, the text reads: "ENEMY OBSTACLES ARE GREEN AND REQUIRE THE TERM 'ENY' (IN GREEN) TO IDENTIFY THE OBSTACLE AS ENEMY". The second example shows a row of seven green circles with the label "FRIENDLY OBSTACLES ARE GREEN" below it. The slide includes a small crest in the top left and a rank insignia in the top right. At the bottom, it contains the text "W321/OCT 04/VGT-4" and "Basic Noncommissioned Officer Course".

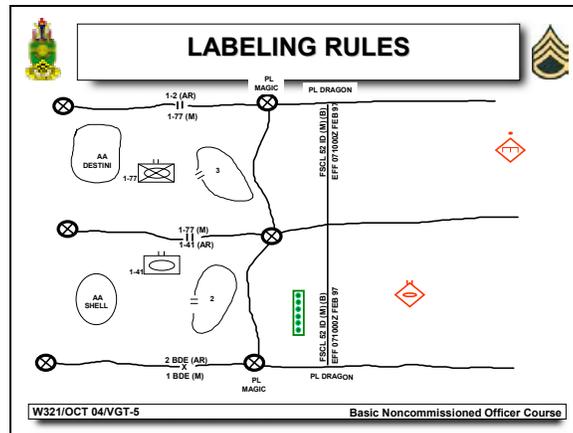
Ref: FM 101-5-1, p 3-1

NOTE: Depict enemy obstacles in green and print the abbreviation ENY (in green) next to the obstacle. Students will see this in the Graphics Workbook.

REMOVE VGT-4

Use the correct color when drawing graphics. Ensure that you can read the label. Capitalize all labels. The overlay will be readable when it is either in the North-South position or when rotated clockwise 90 degrees.

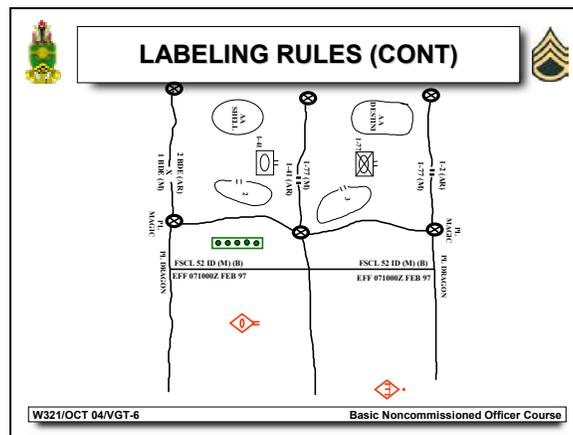
SHOW VGT-5, LABELING RULES



Ref: FM 101-5-1, Chapter 3, Control measures show correct labeling.

REMOVE VGT-5

SHOW VGT-6, LABELING RULES (CONT.).



Ref: FM 101-5-1, Chapter 3, Control measures show correct labeling.

REMOVE VGT-6

There are some basic rules when depicting boundaries, fire support control measures, areas, and points.

NOTE: Discuss and/or draw the following to ensure the students understand the material:

Boundaries:

- Size markings perpendicular to the line.
- If a TM or TF is sharing a boundary, the label must include the respective term.
- Use Roman numerals on all Corps graphics (boundaries, etc.)
- National abbreviations always in parenthesis when two different countries share a boundary.
- Additional information (armored, mechanized, etc.) will be in parenthesis.

Fire Support Control Measures:

- (PL NAME) refers to a code name.
- The term EFF is mandatory. This applies to all graphics that have times indicated. The complete DTG including the time zone designator, month, and year is mandatory. This applies to all graphics that have times indicated.
- For clarity, label on both ends of line if space is available.
- Explain how to use a code name label.
- Field W applies to the fire support control measure and not to the code name. You will use this field only if the labeling of the fire support control measure does not require it to be on the line itself, i.e., FSCL, CFL, RFL.
- The country establishing the Fire Support Control measures will have the national abbreviation in parenthesis, if given. Example: FSCL X (US) Corps.

The example on page 3-2 in the FM 101-5-1 is incorrect. X CORPS FSCL should read FSCL X CORPS.

- Delete the terms "FSCL (PL NAME)" on the outside of the boundaries.
- Add the following sentence to the explanation of field U: Do not use this field for CFL, FSCL, and RFL. These labels are already on the line.

Areas:

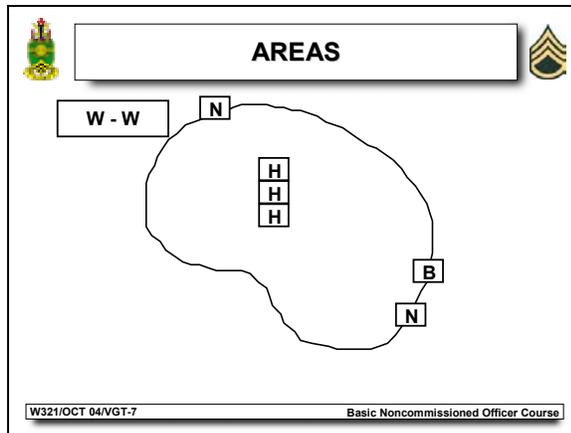
- Correctly plot the coordinates of the outline of the area and connect the plots with a natural curve.
- Abbreviate the type of area followed by a name, letter, or number.
- Use field B only with battle positions or strong points.
- Mark the size indicator perpendicular to the area outline and place it at the farthest point away from the enemy and oriented in the general direction of the enemy or a specified point. Use field N if you have only one color to draw the entire graphic overlay.

Points:

Ensure the students also know that we use staffs and extensions on all points except Start Point and Release Point.

SHOW VGT-7, AREAS

NOTE: Have one of the students explain how to label areas.



Ref: FM 101-5-1, p 3-4

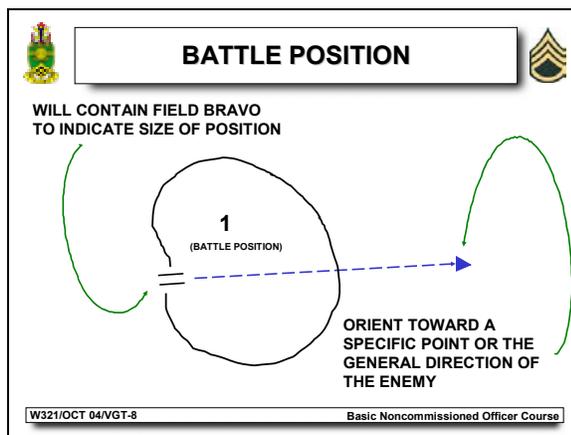
REMOVE VGT-7

NOTE: Draw a couple of examples to clarify.

The remainder of Chapter 3 consists of graphic control measures in maneuver, maneuver and fire, fire support, command and control, mobility and survivability, survivability, and combat service support.

We will look at some examples of these graphics.

SHOW VGT-8, BATTLE POSITION



Ref: FM 101-5-1, p 3-8

Mark the size indicator on battle positions perpendicular to the area outline and place it at the farthestmost point away from the enemy and oriented in the general direction of the enemy or a specified point.

REMOVE VGT-8

On page 3-8 of FM 101-5-1 you see a graphic for an engagement area. This is an example of an engagement area that includes other graphics. On page 3-12 you will find a graphic that depicts just an engagement area.

Mark the size indicator on the strong point perpendicular to the area outline and place it at the farthest point away from the enemy and oriented in the general direction of the enemy or a specified point. Normally we label target reference points (TRPs) with numbers only. Always label point targets, on page 3-24, with two letters and four numbers.

NOTE: Generate a discussion on the difference between TRPs and Point Targets. Page 1-122 has a definition for Point Target and page 1-152 has the definition for TRP.

Break: TIME: 00:50 to 01:00

TIME: 01:00 to 01:50 (continue Learning Step/Activity 1, ELO B)

Let's continue the discussion on page 3-10, general areas and 3-17, objectives. If the area appears in the color red, then the abbreviation "ENY" is not a requirement. There are many different types of areas throughout this field manual.

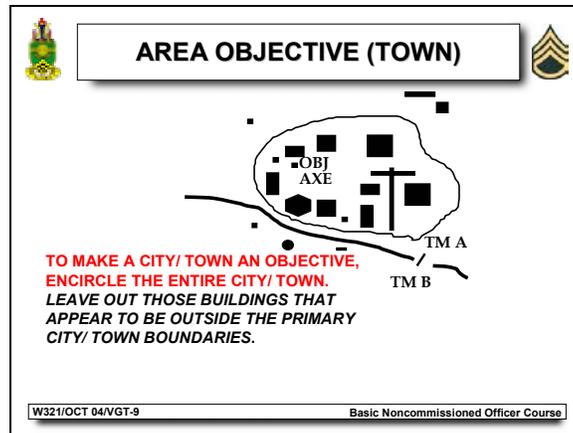
Worth noting though, is that all areas will have a name, letter, or number for identification.

The FM defines an objective area as--

- A defined geographical area within which is located an objective to be captured or reached by the military forces. This area is defined by competent authority for purposes of command and control.
- The city or other geographical location where a civil disturbance is occurring and anticipated, and where Federal Armed Forces are employed.

NOTE: Show the next two slides. Explain to the students that these slides represent a town and a wooded area as area objectives.

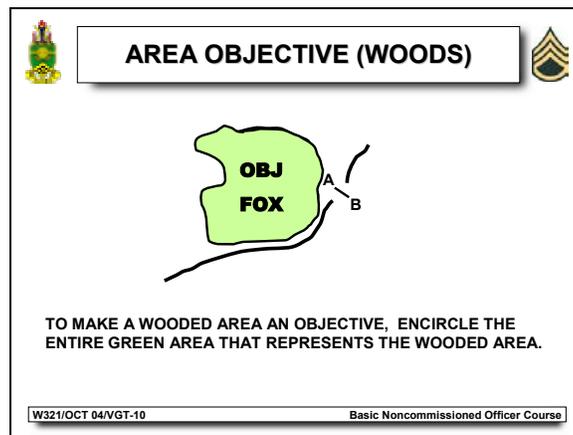
SHOW VGT-9, AREA OBJECTIVE (TOWN)



Ref: FM 101-5-1, p 1-111

REMOVE VGT-9.

SHOW VGT-10, AREA OBJECTIVE (WOODS).

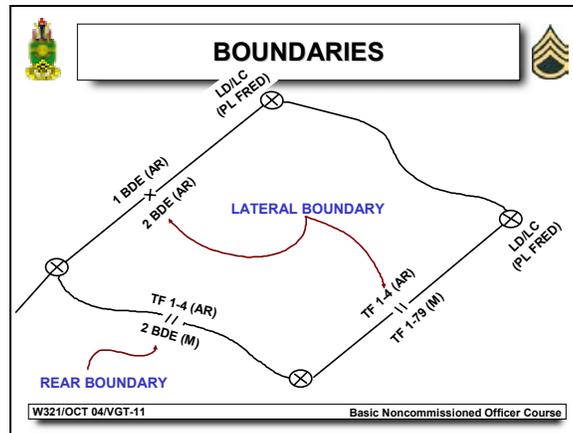


Ref: FM 101-5-1, p 1-111

REMOVE VGT-10

Let's now discuss assembly areas. On page 3-10 you see several forms of an assembly area graphic. The letters AA along with another letter, number, or name are mandatory for all assembly areas. The examples on page 3-10 show how to add a unit symbol to an assembly area graphic. Turn to page 3-11 and we will continue the discussion with boundaries.

SHOW VGT-11, BOUNDARIES



Ref: FM 101-5-1, p 3-11

The types of boundaries we will discuss include lateral and forward/rear boundaries. On page 3-11 you will find examples of these graphics.

RULE TO REMEMBER:

Lateral boundary: If it is between two different size echelons (units), the size indicator (Field B) will always depict the higher echelon.

Rear/forward boundary: If it is between two different size echelons (units), the size indicator (Field B) will always depict the lower echelon.

REMOVE VGT-11

NOTE: Before moving on make sure the students understand the labeling of boundaries. Explain or clear up any misunderstanding.

On pages 3-12 and 3-13 you will find the graphic used to depict a Forward Line of Own Troops (FLOT). The FLOT on page 3-13 is an example with other graphics. The FLOT graphic does not include the coordinating points.

You may see labeling stacked at both ends of a phase line, on-line at both ends, or stacked at one end and on-line at the other end.

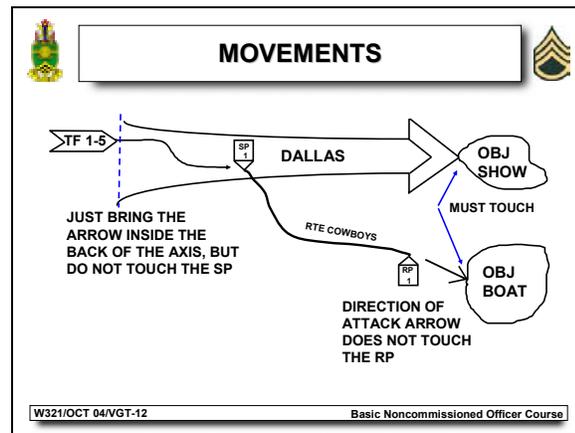
NOTE: Draw an example of the three possible labeling techniques.

On page 3-14 you will find the graphic for attack position. For labeling purposes, attack positions use the letters ATK and a name letter or number. Now look at the graphic that depicts an axis of advance on the bottom of the page.

The arrowhead of the axis will touch the objective or limit of movement. Remember not to include the term AXIS as part of the labeling.

When drawing a friendly air axis of advance, the axis will begin at the unit location or pickup zone (PZ). The air axis could cross over boundaries, areas, etc., to the objective, drop zone (DZ) or landing zone (LZ). The air axis will also contain the type of aircraft modifier.

SHOW VGT-12, MOVEMENTS



Ref: FM 101-5-1, p 3-15

This visual depicts several of the graphics found on page 3-15. Notice that the axis of advance and the direction of attack arrowheads touch the objective area.

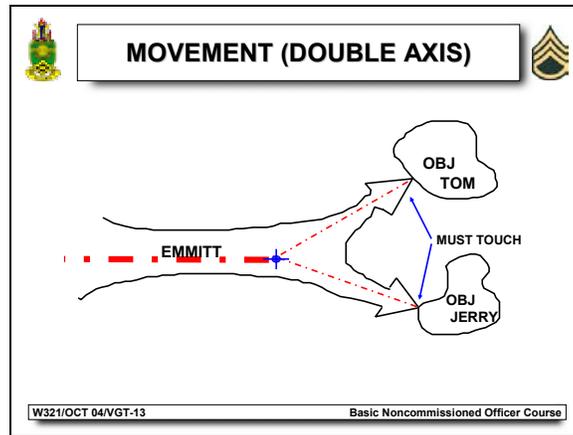
When drawing the axis of advance, start from the departure point and go to the objective following the center of axis. The width of the axis at the departure point will encompass the entire sector of that unit.

On the direction of attack, the arrow leading from the release point does not touch the RP graphic.

The other graphics worth mentioning are the "follow and assume" and "follow and support" graphics. You can find these graphics on page C-9 in the field manual. It is only necessary to bring the arrow of the graphics inside the axis of advance as shown.

REMOVE VGT-12

SHOW VGT-13, MOVEMENTS (DOUBLE AXIS)

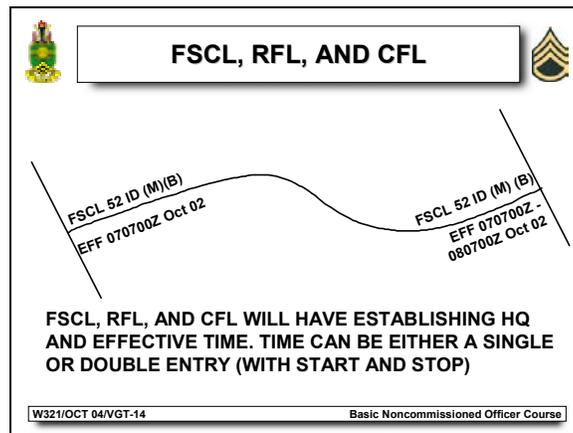


FM 101-5-1 does not include an explanation of how to draw a double axis of advance. This visual shows how to construct a double axis of advance.

NOTE: You will get a more detailed explanation during the Tactics lesson.

REMOVE VGT-13

SHOW VGT-14, FSCL, RFL, and CFL



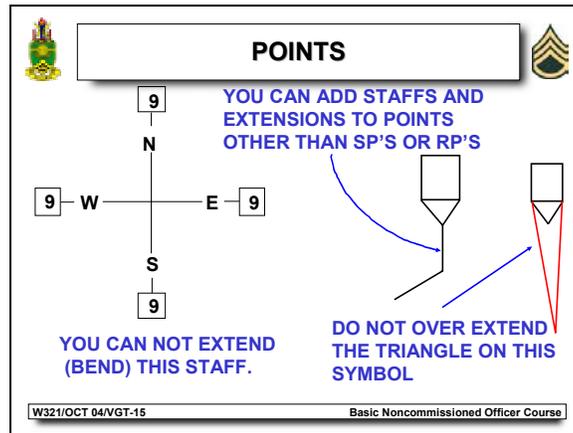
Ref: FM 101-5-1, p 3-21 and 3-22

This visual aid shows two different methods of depicting time. Depending on the information you receive, ensure you use only one method on each graphic control measure that requires a time.

REMOVE VGT-14.

Let's now turn our attention to Points. The next three visual aids show the correct manner to depict a contact point and general or unspecified points found on pages 3-25 and 3-26.

SHOW VGT-15, POINTS

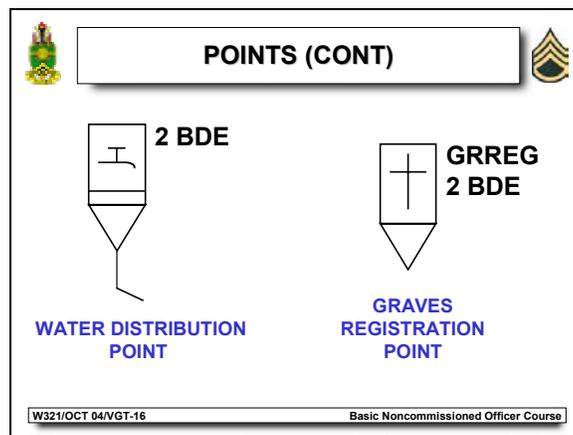


Ref: FM 101-5-1, p 3-25 and 3-26

Notice that the contact point cannot have a bend or extension. Draw it with the staff extending out in one of the four cardinal directions. General or unspecified points can have a staff and extension if needed. The only exceptions to this rule are Release Points (RP) and Start Points (SP). On these two particular points indicate the exact location at the point of the triangle.

REMOVE VGT-15

SHOW VGT-16, POINTS (CONT)



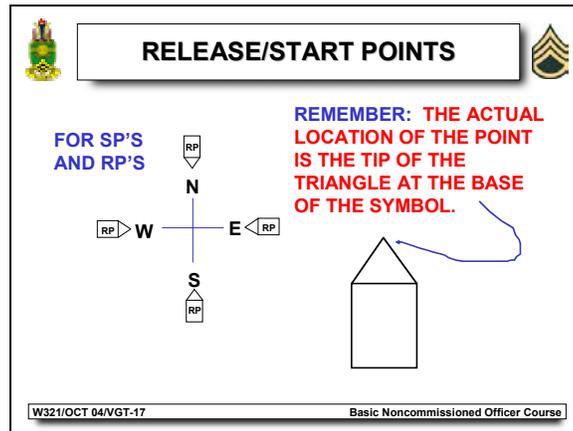
Ref: FM 101-5-1, p 3-25 and 3-26

This is an example of a water distribution point and a Graves Registration Point (GRREG). Keep in mind, this field manual does not contain an example of all

possible graphic symbols, but it gives you all the information needed to construct a particular graphic.

REMOVE VGT-16

SHOW VGT-17, RELEASE/START POINTS



Ref: FM 101-5-1, p 3-25 and 3-26

Remember the rule, Start Points (SP) and Release Points (RP) cannot have staffs or extensions.

REMOVE VGT-17

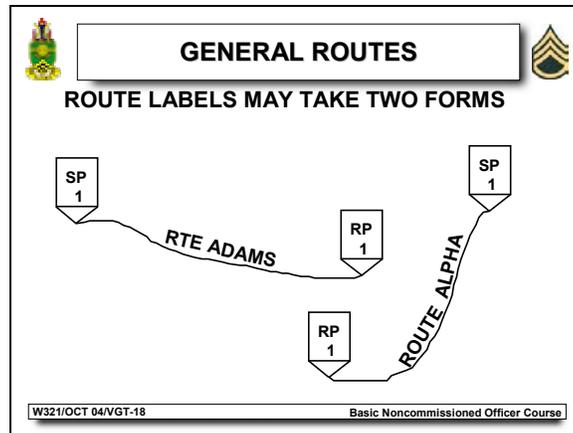
Let's now turn our attention to mobility and survivability symbology starting on page 3-27.

NOTE: On page 3-27, the enemy side is to the right of the three examples of "bypass." On page 3-31, the enemy is to the left of the four examples of "obstacle effect." On page 3-33, the strong point symbol is a duplicate of the symbol on page 3-9.

Briefly cover the NBC Decontamination Points on page 3-36. Explain any misunderstandings.

Turn your attention to page 3-37 and you will find symbology for combat service support. Let me explain a few of the graphics.

SHOW VGT-18, GENERAL ROUTES.



Ref: FM 101-5-1, pp 1-135 and 3-40

Your field manual does not have an example of a general route. Notice that the labeling of the route follows the curvature of the route. Label all general routes (not supply routes) either ROUTE or RTE followed by the name.

REMOVE VGT-18

Break: TIME: 01:50 to 02:00

CHECK ON LEARNING: The practical exercise serves as a check on learning for this ELO.

C. ENABLING LEARNING OBJECTIVE

ACTION:	Identify unit symbols.
CONDITIONS:	As a staff sergeant in a classroom, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
STANDARDS:	Identified unit symbols IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).

1. Learning Step / Activity 1. Identify unit symbols
 Method of Instruction: Conference / Discussion
 Technique of Delivery: Small Group Instruction (SGI)
 Instructor to Student Ratio: 1:16
 Time of Instruction: 1 hr
 Media: VGT-19 to VGT-22

Chapter 4 establishes a standard system for the development of ground unit symbols. This chapter includes a wide variety of unit symbols as well as modifiers for building unique symbols. If you must create a new unit symbol or modifier, explain it in the legend on the overlay. There are three components that comprise a symbol:

1. FRAME (GEOMETRIC BORDER)
2. FILL
3. ICON

Frames are geometric shapes used to display affiliation.

QUESTION: What are the basic affiliation categories?

ANSWER: Friendly, Unknown, Neutral, and Enemy.

Ref: FM 101-5-1, p 4-1

NOTE: Have the students turn to p 4-2, Fig 4-1. We will only use the surface symbol frames (i.e., rectangle, square, and diamond) in this class. Do not spend much time on the geometric shapes and colors.

The **Fill** refers to the color inside the geometric shape that is primarily for use with computer-based graphics. The use of different colors indicates affiliation. Always explain the use of any other color in the legend on the overlay. For this class, we will not use the fill colors. Use the color black for the frame, icon, and modifiers when drawing friendly graphics.

The **Icon** is the role indicator of the unit that shows the warfighting function the unit performs.

Around each geometric shape there are several fields in specific locations. Each field has a specific meaning which Figure 4-4 on page 4-4 explains. These fields help to identify or explain the type of unit or the function of the unit. If the information for that field is available, it is mandatory to have that information drawn in that field.

NOTE: On page 4-3, change field "C" on the examples to field "D."

Now let's look at Figure 4-4 on page 4-4, Labeling Field Definitions. The description for field A states that it is the basic function of the unit (role indicator) and could also have modifiers added to it. On top of page 4-5, you will see an example on how the role indicators and modifiers complement one another. You will have to construct symbols using the role indicators and modifiers. Let's take a closer look at the definitions for the other fields you will need to know.

NOTE: Ensure you discuss fields A, B, D, F, H, M, S, and T. Inform the students that the examples in Figure 4-3 do not show fields C, L, N, and R. In field F, the + and - signs require parenthesis before and after. Explain any misunderstandings.

To separate different levels of command in field "M," use a slash (/) between the numbers or letters of the units. For example: 1/A/3/1/52

This unit designation would represent 1st Platoon, "A" Company, 3d Battalion, 1st Brigade, 52d Division.

NOTE: In field M, depict the number of echelons needed for clarification purposes.

When identifying the name of the unit in field T and M, you may have a unit designated as a CARS unit. CARS stands for Combat Arms Regimental System (Chap 3, para 3-1, AR 600-82, Jul 90). They are battalions that have an affiliation with a traditional regiment.

Used for historical or traditional purposes, this regiment has no personnel or equipment. Battalion-sized units in the infantry, armor, field artillery, air defense artillery, divisional armored cavalry squadrons, and special forces regiments are the only units designated as CARS. The assignment of CARS units are usually to a brigade rather than to the regiment. To avoid confusion with different levels of command, write both the battalion number and traditional regimental number together and separated by a hyphen (-). For example, the numbers 4-7 represent the 4th battalion (or squadron) of the 7th regiment.

NOTE: With the exception of field M, it will be mandatory to have information when provided, drawn on the graphic. The symbol will not be correct when not labeled properly. Ensure the students understand how to use the fields before continuing with the lesson. The workbook also covers most of this information. Explain any misunderstandings.

The battlefield is always moving. Consequently, units must move to stay intact with the battle. Staffs have to plan for future or proposed locations. When depicting the actual location of a unit, use a solid line.

QUESTION: How do you depict the future or projected location of a unit or installation?

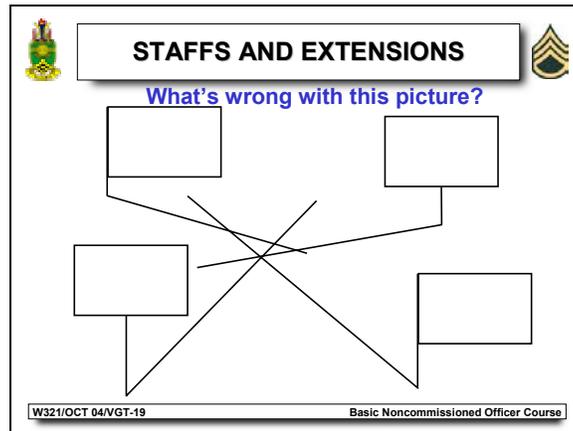
ANSWER: With a broken line.

Ref: FM 101-5-1, p 4-6

The center of mass of the symbol indicates the general location of the unit. You may also use a staff and extension to indicate the exact location of the unit.

Draw the staff from either the center of the bottom of the frame to represent a general unit or from the left side of the bottom of the frame to represent the headquarters of that unit. We will look at some examples of headquarters later in the lesson.

SHOW VGT-19, STAFFS AND EXTENSIONS



Ref: FM 101-5-1, p 4-7

QUESTION: What's wrong with this picture?

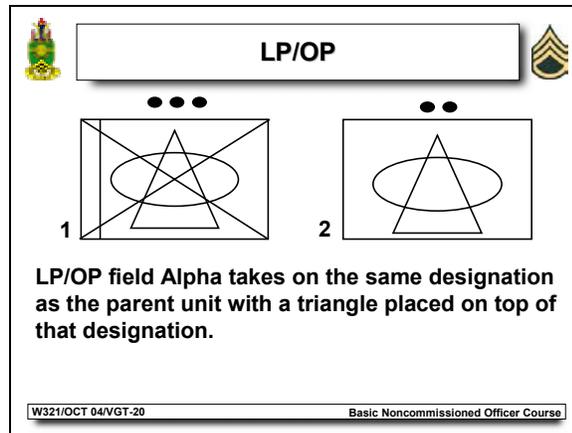
ANSWER: Staffs and extensions cannot cross one another.

NOTE: Explain to the students that when utilizing staffs and extensions with a graphic, they cannot cross or intersect the staff or extension of another graphic. They can cross boundaries or control measures if necessary. Draw the length of the staff or extension in such a manner that it does not cause confusion to the reader of the overlay. When depicting a group of units in a bracket, use an extension from the center line of the bracket to the precise unit location. Draw a few to further explain the concepts from page 4-7.

REMOVE VGT-19

The combination of the basic unit function and unit symbol modifiers creates a graphic that represents a unique type of unit. Let's look at some unit symbol modifiers and basic unit functions.

SHOW VGT-20, LP/OP

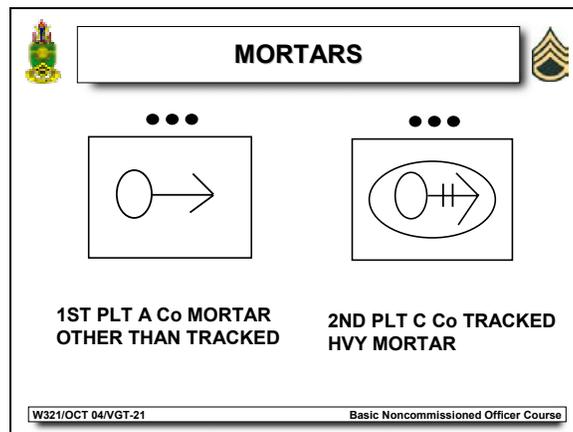


FM 101-5-1, pp 4-9 and 4-17

This visual aid depicts a correctly drawn OP/LP symbol for both a mechanized Bradley equipped platoon and an armor section. Field "A" takes on the same designation as the parent unit with a triangle placed on top of that designation.

REMOVE VGT-20.

SHOW VGT-21, MORTARS.

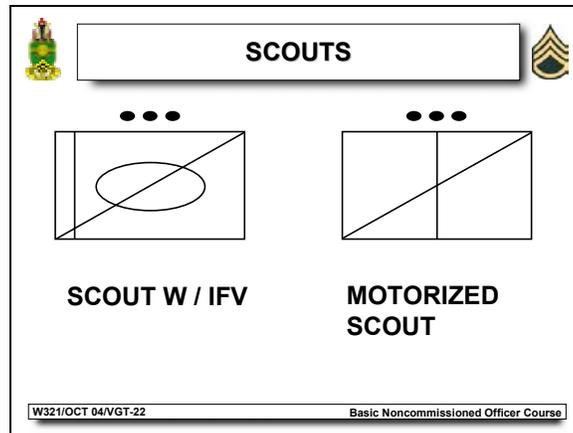


FM 101-5-1, p 4-3 and 4-4

NOTE: Field T is not necessary when depicting a scout platoon because field A identifies the name of the unit. If you are depicting a squad (section) of a scout platoon, you will use field T.

REMOVE VGT-21

SHOW VGT-22, SCOUTS



Ref: FM 10105-1, p 4-18

Let's turn our attention to reconnaissance on page 4-18. This visual aid depicts a scout platoon for a mechanized Bradley unit (IFV) and a motorized reconnaissance unit equipped with HMMWVs or BRDMs.

REMOVE VGT-22

NOTE: Under the symbol for medical treatment facility, Chapter 1 does not define the abbreviation BAS. However, on page 1-4 there is a definition for aid station and page 2-3 explains the acronym BAS.

Briefly review the following unit symbol modifiers and basic unit function (branch) symbols (Special Operations Forces) from page 4-29 and 4-30.

- Special Forces
- Ranger
- Civil Affairs
- Psychological Operations (PSYOPS)

CHECK ON LEARNING: The practical exercises serve as a check on learning for this ELO.

Break TIME: 02:50 to 03:00

D. ENABLING LEARNING OBJECTIVE

ACTION:	Identify equipment symbols.
CONDITIONS:	As a staff sergeant in a classroom, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
STANDARDS:	Identified equipment symbols IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).

1. Learning Step / Activity 1. Identify equipment symbols.
Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:16
Time of Instruction: 1 hr
Media: VGT-23

Chapter 5 consists of equipment, weapons, ground vehicle, and aerial vehicle symbols. It describes procedures for creating composite weapon system symbols. The use of symbol frames is optional for equipment and recommended only for ships, aircraft, and aerial vehicles. In this course we primarily use these symbols as additional modifiers to further explain unit symbols. We will not discuss the information listed on pages 5-2 and 5-3 in this lesson.

NOTE: On page 5-1, the fm states the color blue or black will represent friendly equipment on color displays. Color displays involve computer graphics. In this lesson, we will use only black to represent friendly equipment.

To depict equipment modifiers, draw friendly equipment in black and enemy equipment in red. Turn to page 5-4 to see how to build an equipment symbol. These examples give you a narrative explanation of what certain lines, circles, arrowheads, etc., represent on the symbol.

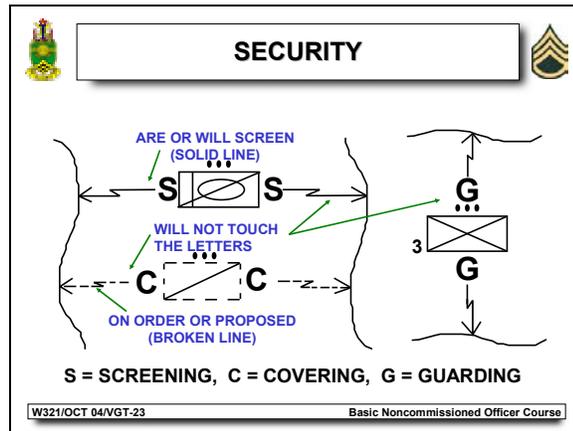
NOTE: Ensure the students understand how to create an equipment symbol. Have the students turn to pages 5-6 through 5-10 and explain/draw examples of modifiers, mobility modifiers, ground equipment, vehicle symbols, and aircraft/aerial vehicles. That completes our class discussion on the five chapters in this field manual. Let's now turn our attention to the appendices. Appendices A and B contain examples of information we discussed in chapters 3, 4, AND 5.

NOTE: Have the students look at the examples of types of headquarters and units in different divisions. Briefly discuss the types of headquarters, specifically TOC, CTCP, Main, Rear, and TAC. The majority of these units are corps level or higher.

Appendix C discusses the military decision-making process and tactical mission graphics. The commander requires additional information to make decisions on the battlefield. Some of that needed information is the status of equipment and personnel, composition of task-organized forces, and combat effectiveness. The graphics portrayed in Chapters 3 through 5 do not give the commander this information. Staffs consolidate this information in the form of decision graphics and ultimately into tactical mission graphics.

NOTE: Have the students skim through Appendix C. On pages C-8 through C-11 there are types of Tactical Mission Graphics (TMG). There are several of these TMGs in Chapter 3. For this lesson, permit the students to use any TMG for operational graphics.

SHOW VGT-23, SECURITY



Ref: FM 101-5-1, p C-11

This visual aid shows the correct manner to depict a unit with a mission of screening, covering, or guarding. Notice that the Zs of the arrows mirror one another. Also, depict an On Order or Proposed mission as broken lines and Are Screening or Will Screen as solid lines. The arrows are drawn coming out the sides of the unit symbol or from the top and bottom as in this visual aid. Notice the symbol of the unit with the guard mission, the letters G are perpendicular to the direction of the mission.

NOTE: Draw an example to clarify any confusion on depicting screen, cover, or guard missions.

REMOVE VGT-23

Appendix D contains stability and support operations symbology. During recent stability and support operations, units found a need to use symbols to track incidents and support intelligence preparations of the battlefield.

Appendix E contains the multi-service tactical brevity codes. This appendix limits its scope to the brevity codes used in multi-service operations and does not include words unique to single service operations. Using the codes eases coordination and improves understanding during multi-service operations.

You will find that we usually must plot all items exactly where they appear on the map except for one, unit symbols. You can adjust the location of the unit symbols by using a staff. The use of this suggested plotting sequence will cause less erasing and adjusting of symbols. This makes your overlays look much better and it saves a lot of time, which is key when taking the written examination. A second clue to aid you in overlay preparation is to complete each symbol before doing the next one. The reason for is that an overlay becomes very cluttered quickly and it is difficult to identify later which items you may have omitted.

You must mark a security classification at the top and bottom of all overlays. While in BNCOC, you do this by placing the words "CLASSIFICATION," in parentheses, centered at the top and bottom of each overlay.

NOTE: Write (Classification) on the board to demonstrate to the students exactly what we expect them to do.

Our next topic is preparing an overlay. You must orient your overlay to the map that you are using. Without orientation your overlay would be useless. Orientation of your overlay will ensure that the overlay will line up correctly every time you place it on the map.

Ref: FM 3.25.26 (SH-4), Chapter 7

You register your overlay by tracing the grid intersections nearest the two opposite corners of the overlay and labeling these registration marks with the proper grid coordinates.

NOTE: Use the map board in your room and a piece of acetate to demonstrate this to the students.

Ref: FM 3-25.26 (SH-4), p 7-1 to 7-2

The next step in overlay preparation is the marginal information. Marginal information clarifies the reason for the overlay. Place this information as close to the lower right hand corner as detail (graphics plotted) permits.

NOTE: Tell the students that due to the limited amount of time available while at BNCOC, we will not require them to list any marginal information on overlays. They need to know this information when preparing overlays in their units.

CHECK ON LEARNING: The Practical exercises serve as a check on learning for this ELO.

Break: Time: 03:50 to 04:00

E. ENABLING LEARNING OBJECTIVE

ACTION:	Construct an overlay.
CONDITIONS:	As a staff sergeant in a classroom, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
STANDARDS:	Constructed and overlay IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).

1. Learning Step / Activity 1. Complete an in-class practical exercise.

Method of Instruction: Practical Exercise (Performance)

Technique of Delivery: Small Group Instruction (SGI)

Instructor to Student Ratio: 1:16

Time of Instruction: 4 hrs

Media: None

Before we start creating an overlay, let's look at the definition of an overlay.

QUESTION: What is an overlay?

ANSWER: An overlay is a clear sheet of plastic or semitransparent paper used to display supplemental map and tactical information related to military operations.

Ref: FM 3-25.26 (SH-4), page 7-1

We use overlays to display military operations with enemy and friendly troop dispositions, and as supplements to orders sent to the field. They show detail that will aid in understanding the orders, displays of communications networks, and so forth.

We use operations overlays as annexes to orders made in the field because they can clarify matters of interest that are difficult to explain clearly in writing. There are three steps in the making of a map overlay: orienting the overlay material, plotting and symbolizing the detail, and adding the required marginal information.

NOTE: At this time pass out a Hunfeld map sheet, template, alcohol-based pens, and a blank overlay to each student. As we go through this ELO, the students will construct the overlay step-by-step. Some units draw double lines when registering an overlay. Both examples are correct.

In Step One, orient the overlay over the place on the map to be annotated. If possible, attach it to the map with tape. Trace the grid intersections nearest the two opposite corners of the overlay using a straightedge and label each with the proper grid coordinates. These register marks show the receiver of your overlay exactly

where it fits on his map sheet. It is imperative that you maintain absolute accuracy in plotting the register marks, as the smallest mistake will throw off the overlay.

Step Two, The plotting of new details includes plotting and symbolizing those details. Experience has shown that sequential placement of the information on the overlay makes overlay preparation easier. We will discuss this step in greater detail in a few minutes.

QUESTION: What information do you include in the third step of the making of an overlay, which is recording marginal information?

ANSWER: Title and objective, time and date, map reference, author, legend, security classification, and additional information.

Ref: FM 3-25.26 (SH-4), para 7-2c

Marginal information provides valuable information to the receiver of the overlay. Additionally, it clarifies the graphic details on the overlay. Place this information as close to the lower right-hand corner as details permit.

NOTE: Within this lesson students will use the word CLASSIFICATION to represent the security classification of the overlay. When the students return to their units, they will use the actual security classification assigned to the overlay. At this time, have the students register the overlay and place "CLASSIFICATION" centered on top and bottom of their overlay sheet.

A clue to aid in overlay preparation is to complete each symbol before moving on to the next one. The reason for this is that an overlay becomes very cluttered quickly and it may become difficult to identify items that you may omit. We will use the following suggested plotting sequence when extracting information from the OPORD, throughout this discussion and the completion of the practical exercise.

NOTE: Have the students turn to PE-2. Allow them a few minutes to read the situation. Inform them that they should ask themselves the following questions as they read the situation:

- What unit are they?
- What unit is on their left and right?
- What unit is to the front?
- What unit is to the rear?
- Who is the higher headquarters?
- Where are they going?
- Where is the enemy?

The first item in our suggested plotting sequence is coordinating points. These are points on the ground where, in all types of combat, adjacent units must make contact for purposes of control and coordination.

NOTE: Have the students locate the definition for coordinating point in FM 101-5-1. The definition is on page 1-39 and the graphic is on page 3-25. Then have the students plot all the coordinating points on their overlay. Assist any student that is having difficulties.

The second step of the suggested plotting sequence is to plot boundaries. Find the definition of a boundary in FM 101-5-1, Chapter 1.

NOTE: The definition is on page 1-20. The graphic is on page 3-11. Have one of the students define a boundary.

QUESTION: What is an Area of Operation (AO)?

ANSWER: A geographical area, including the airspace above, usually defined by lateral, forward, and rear boundaries assigned to a commander, by a higher commander, in which he has responsibility and the authority to conduct military operations.

Ref: FM 101-5-1, p 1-10.

By placing these two definitions together, what do we have? Boundaries that set our area of operations. No other unit may enter, maneuver, or fire into an area of operation that does not belong to them without prior coordination and approval of the commander responsible for that area.

Now that we have the basic definition of a boundary, let's look at the different types of boundaries. There are lateral, rear, and forward boundaries. Lateral boundaries define the left and right limits of that unit. Rear boundaries separate the unit from its higher echelon. Forward boundaries set the limit of the unit's forward area of operation.

NOTE: Have the students draw the boundaries on their overlay. Assist any student that is having difficulties.

The third step of the suggested plotting sequence is plotting phase lines.

QUESTION: What are phase lines?

ANSWER: Lines used for control and coordination of military operations.

Ref: FM 101-5-1, page 1-121

NOTE: Have the students locate the definition and graphic in the manual. The definition is on page 1-121 and the graphic is on page 3-13 and 3-26. Then allow the students time to plot all phase lines on the overlay. Assist those students that are having problems.

The fourth step of the plotting sequence is plotting the Line of Departure or the Line of Contact (LD/LC), Forward Edge of the Battle Area (FEBA), and the Forward Line of Own Troops (FLOT). Since this particular practical exercise contains a FEBA, let's discuss this graphic. Find the definition and an example of the graphic in the manual.

NOTE: Select a student to read the definition and another to find the graphic in the manual. The definition for forward edge of the battle area is on page 1-70 and an example is on page 3-9. Then, allow time for the students to draw this graphic on their overlay. Assist any students that have problems.

We are now moving on to the fifth step in the suggested plotting sequence, which is plotting the fire support measures and obstacles. There are several fire support control measures. Some include; the Coordinating Fire Line (CFL), the Fire Support Coordination Line (FSCL), No Fire Area (NFA), Restricted Fire Area (RFA), point targets, and group targets. Let's look at The Fire Support Coordination Line; commonly referred to as the FSCL.

NOTE: Select a student to read the definition and another to find the graphic in the manual. The definition for fire support coordination line is on page 1-67, and an example is on page 3-21. Briefly cover the other fire support measure in the manual. Then, allow time for the students to draw this graphic on their overlay. Assist any students that are having problems.

The second part of the fifth step of the suggested plotting sequence is the plotting of obstacles.

NOTE: Have the students locate the definition of obstacles in the manual. The definition is on page 1-112. Pages 3-27 to 3-33 contain examples of obstacles.

Notice that the field manual refers you to general obstacles in Chapter 3. Obstacles fall under the category of battlefield mobility and survivability. Take a few moments to look at the symbology from pages 3-27 through 3-33.

NOTE: Allow time for the students to plot the minefield on their overlay. Assist those students that are having problems.

Break: TIME: 04:50 to 05:00

TIME: 05:00 to 05:50 (continue learning step/activity 1, ELO E)

Now let's talk about the sixth step of the suggested plotting sequence, areas. There are several types of areas. Some of the areas include: assembly areas (AA), battle positions (BP), engagement areas (EA), landing zones (LZ), attack positions (ATK + NAME), and objectives (OBJ). Let's look specifically at the graphic for the battle position.

NOTE: Have one student read the definition for battle position and another to locate the graphic in the manual. The definition is on page 1-18 and the graphic is on page 3-8. Briefly discuss the other area graphics they may encounter.

Now that we have defined what some of the areas are, let's look at how to depict the areas graphically. According to FM 101-5 (SH-4), page H-6, we describe areas by naming the northern most point first and the remaining points in a clockwise order. Then we connect the points with a natural curve.

NOTE: Plot 5 points on the mapboard and show them how to round the points of an area symbol. Allow sufficient time for the students to draw the battle positions on their overlays. Assist those students that are having problems.

Step seven in the suggested plotting sequence is the plotting of routes. We use routes to move personnel and supplies from one point to another. We prescribe routes for areas that have a high amount of traffic or to control movement of maneuver forces. Open your manual and locate the definition of routes.

NOTE: The definition is on page 1-135 and an example is on page 3-40.

Turn to page 3-40 and you will see examples of supply routes. Depict a "General Route" using the same technique with the exception of the labeling. Label a general route with the term "ROUTE" or the abbreviation "RTE" along with the name of the route. General routes normally have a Start Point (SP) and a Release Point (RP) to facilitate the flow of traffic.

They also may have Check Points (CPs) to ensure the convoys stay on the correct route, move at the designated speeds, and do not become lost.

Break TIME: 05:50 to 06:00

TIME: 06:00 to 07:45 (continue Learning Step/Activity 1, ELO E)

NOTE: Use the next hour and 45 minutes to complete the practical exercise. Schedule a break at the 50 minute mark. Assist those students that require help. Explain the eighth and ninth steps and allow the students to finish the PE on their own.

This brings us to the eighth step of the suggested plotting sequence, plotting movements. When we talk about movements, we are discussing offensive maneuvers. The two movements included in FM 101-5-1 are Axis of Advance and Direction of Attack. Find the definition for Axis of Advance in the FM.

NOTE: Have a student read the definition of Axis of Advance from the manual. The definition is on page 1-14.

There are two types of Axis of Advance: the Main Attack and the Supporting Attack. Let me draw an example of each of these.

NOTE: Draw an example of an Axis of Advance using the center of axis line. Also, draw an example of a double-head axis. The Axis of Advance graphic is on page 3-15.

Now let's look at the direction of attack graphic. Find the definition in the FM.

NOTE: Have a student read the definition of direction of attack from the manual. The definition is on page 1-53. Examples of this graphic are on pages 3-15 and 3-16. Before moving on, ensure the students understand these two graphics, this PE does not contain a movement graphic.

The ninth and final step, is the plotting of unit symbols and other miscellaneous symbols. Chapter 4 of FM 101-5-1 addresses the development of unit symbols. There are certain aspects that we must consider when depicting unit graphics. There are three steps to follow. The first step is to identify the appropriate symbol from the manual. You may have to use chapter one, operational terms, to locate the geometric shape required for the graphic. Remember that we use a rectangle for friendly forces and a diamond for enemy. The second step is to locate the coordinate where this graphic is depicted. Look at the area surrounding the plot to determine where you will actually draw the graphic. Do not crowd graphics together as this may cause confusion. Decide whether a staff or extension is necessary or use the center of mass method. If you use a staff or extension, do not cross another graphic's staffs

or extensions. The third step is filling in the fields around the geometric shape. It is mandatory to include any information given in the respective field.

We have now gone through the entire suggested plotting sequence. Continue to complete the remainder of your overlay.

NOTE: As the students complete their overlays, compare them with the solution overlay. Answer any question the students may have. Some will complete this PE earlier than others. You may want them to wait in a break area until the allotted time is up.

CHECK ON LEARNING: The practical exercise serves as a check on learning for this lesson.

SECTION IV. SUMMARY

Method of Instruction: <u>Conference / Discussion</u>
Technique of Delivery: <u>Small Group Instruction (SGI)</u>
Instructor to Student Ratio is: <u>1:16</u>
Time of Instruction: <u>5 mins</u>
Media: <u>None</u>

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

The practical exercise serves as the check on learning for this lesson.

Review / Summarize Lesson

During this lesson, we discussed operational terms and graphics. You will usually prepare an operations overlay before the written portion of an order. You must place all information that lends itself to graphically portraying the commander's idea of the operation on the overlay. As you start to translate the commander's decision and ideas into an operations order, you would do well to recall the adage, "One Picture is Worth a Thousand Words."

SECTION V. STUDENT EVALUATION

**Testing
Requirements**

NOTE: Describe how the student must demonstrate accomplishment of the TLO. Refer student to the Student Evaluation Plan.

During this course, you will take a 50-question examination. The examination will include questions on the ELOs and TLO from this lesson. You must correctly answer at least 35 questions to receive a GO. A GO is a graduation requirement.

**Feedback
Requirements**

NOTE: Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed.

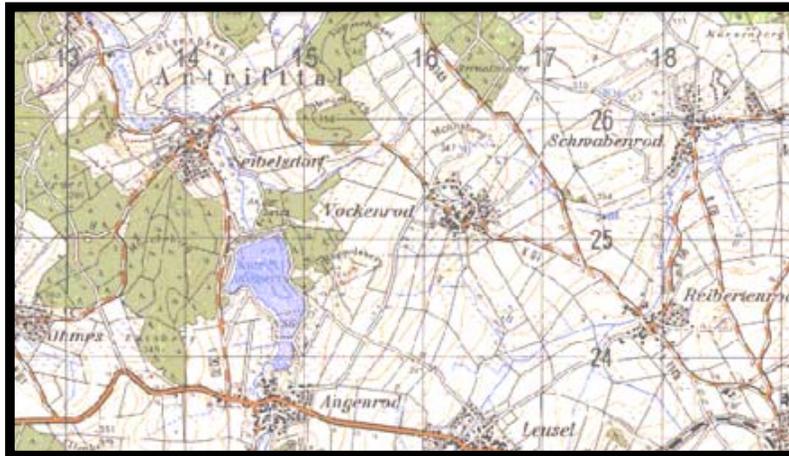
Your instructor will notify you of your test results immediately after the test is scored. If any students need to take the alternate examination, the instructor will give you the time and location for the alternate examination.

Terminal Learning Objective

VGT-1, GRAPHICS AND OVERLAYS



GRAPHICS AND OVERLAYS



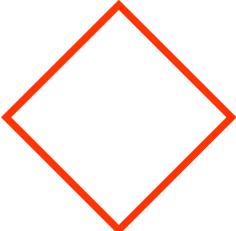
W321/OCT 04/VGT-1

Basic Noncommissioned Officer Course

Enabling Learning Objective B

Learning Step 1

VGT-3, GRAPHIC COLORS

	<h1>GRAPHIC COLORS</h1>	
<p>FRIENDLY UNITS</p> 	<p>ENEMY UNITS</p> 	
<p>FRIENDLY MANEUVER GRAPHICS ARE IN BLACK</p>	<p>ENEMY UNIT GRAPHICS ARE IN RED</p>	
<p>W321/OCT 04/VGT-3</p>	<p>Basic Noncommissioned Officer Course</p>	



GRAPHIC COLORS (CONT)

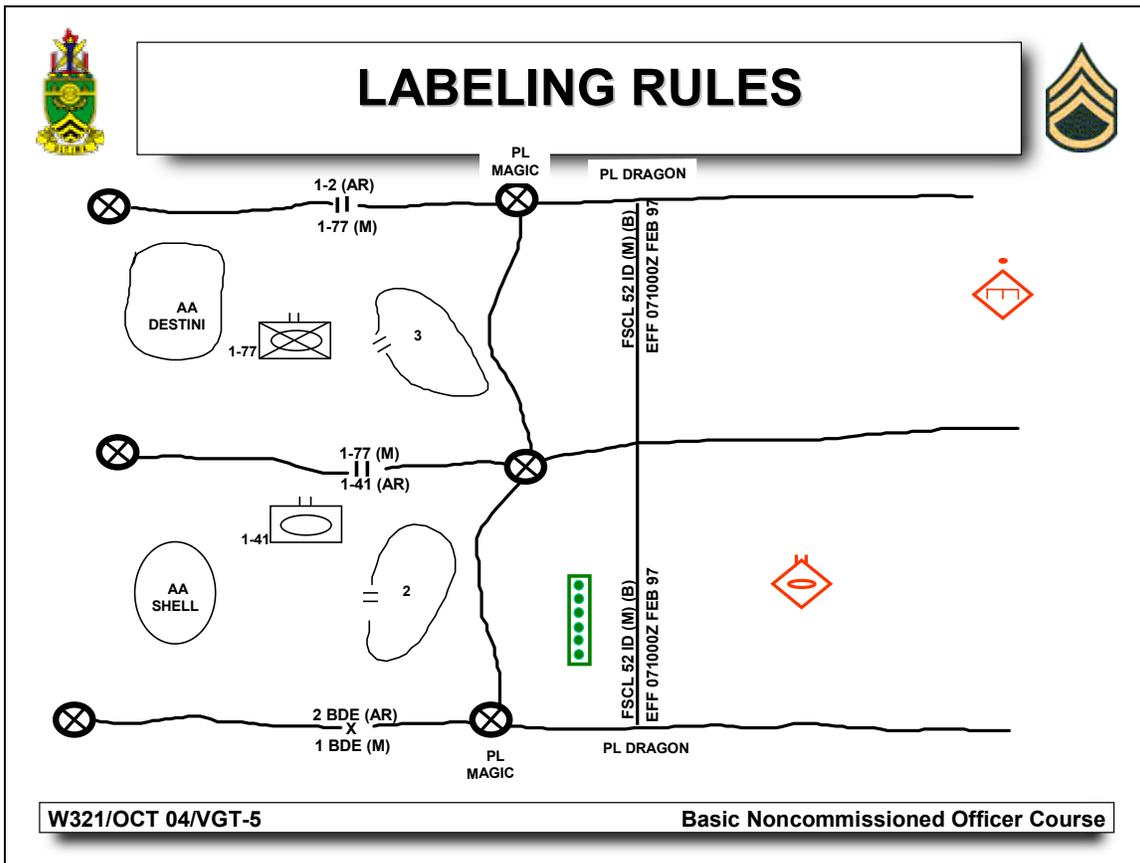


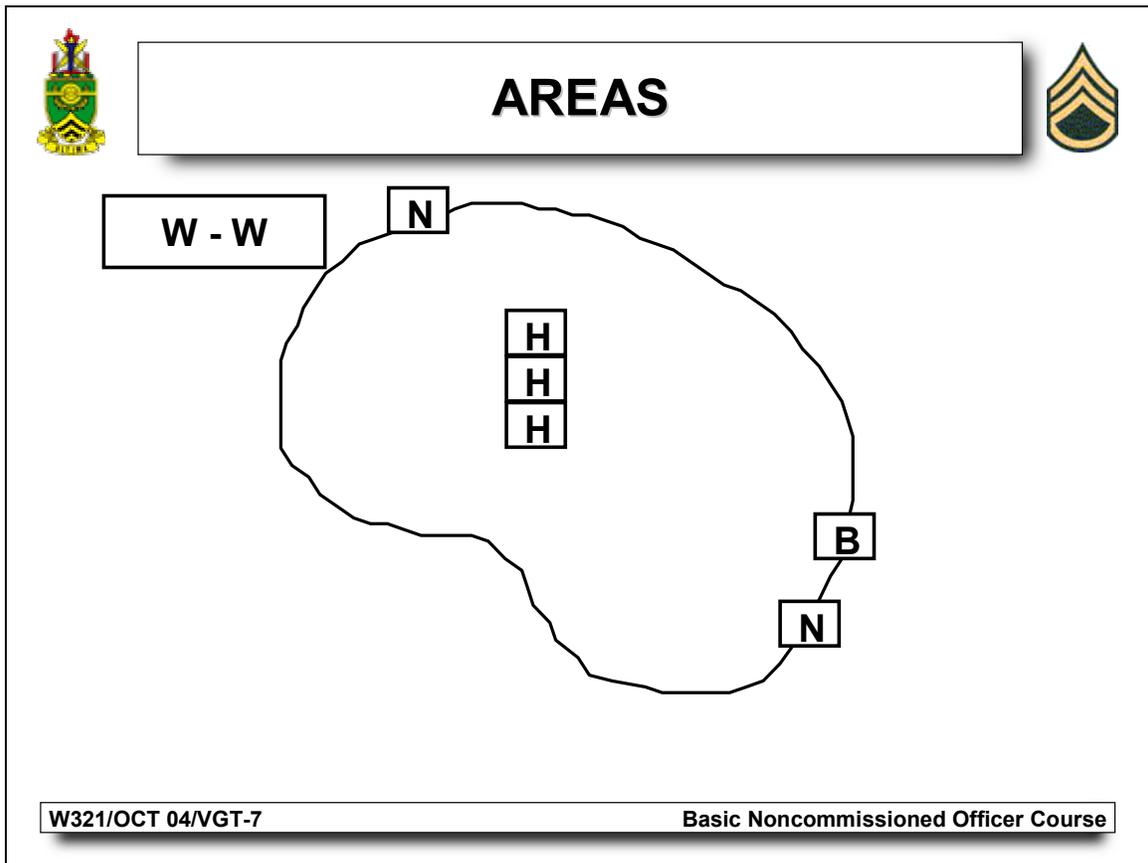
ENEMY OBSTACLES ARE GREEN AND REQUIRE THE TERM “ENY” (IN GREEN) TO IDENTIFY THE OBSTACLE AS ENEMY



FRIENDLY OBSTACLES ARE GREEN

VGT-5, LABELING RULES



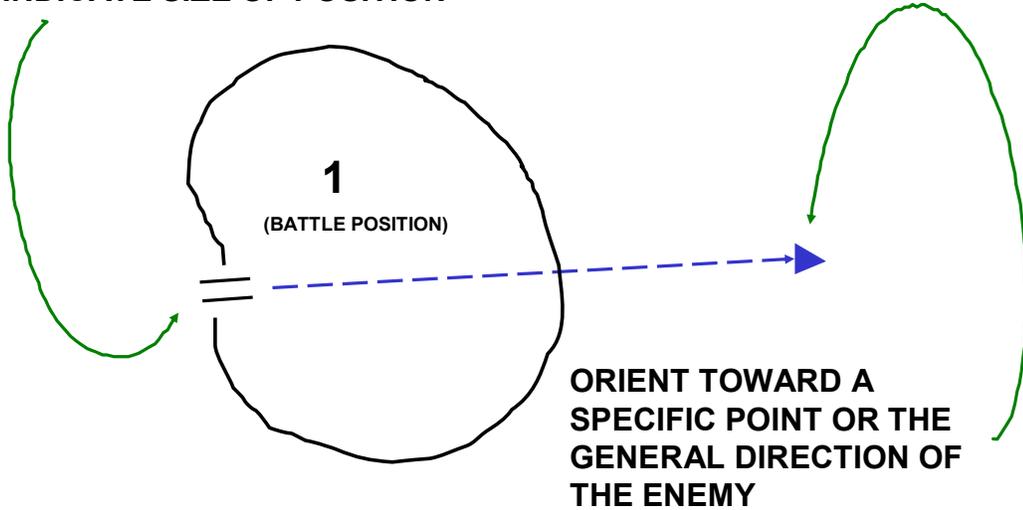




BATTLE POSITION

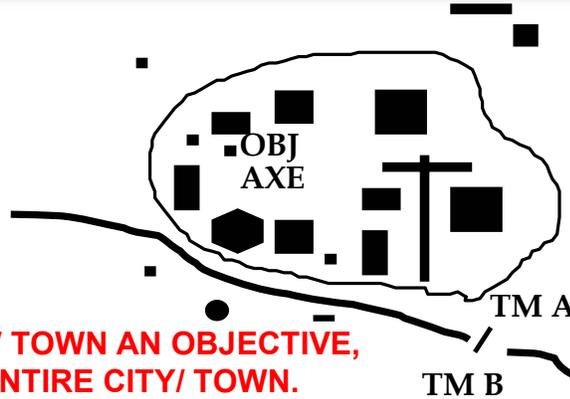


**WILL CONTAIN FIELD BRAVO
TO INDICATE SIZE OF POSITION**





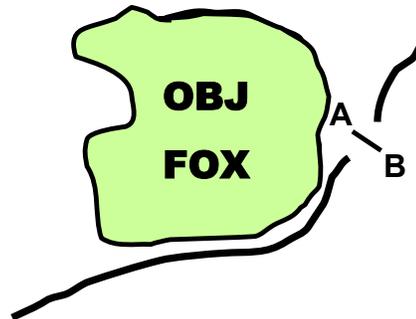
AREA OBJECTIVE (TOWN)



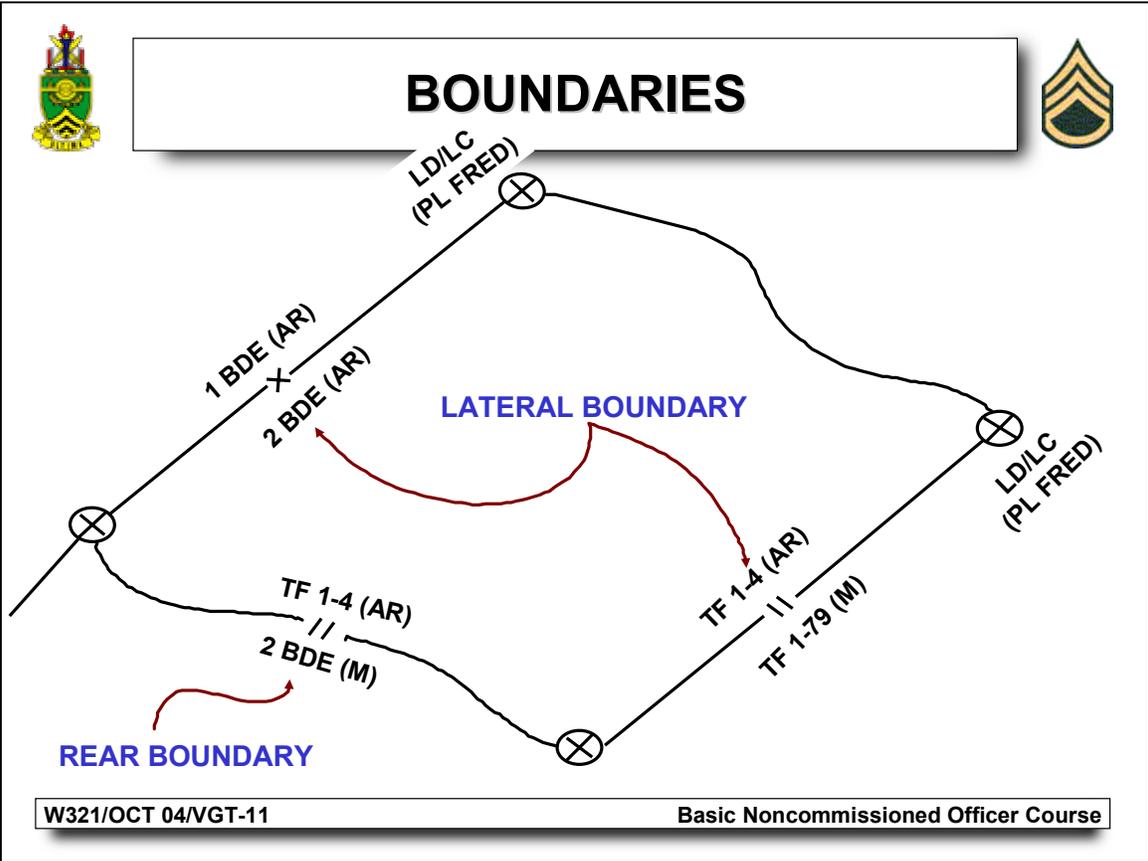
**TO MAKE A CITY/ TOWN AN OBJECTIVE,
ENCIRCLE THE ENTIRE CITY/ TOWN.
LEAVE OUT THOSE BUILDINGS THAT
APPEAR TO BE OUTSIDE THE PRIMARY
CITY/ TOWN BOUNDARIES.**

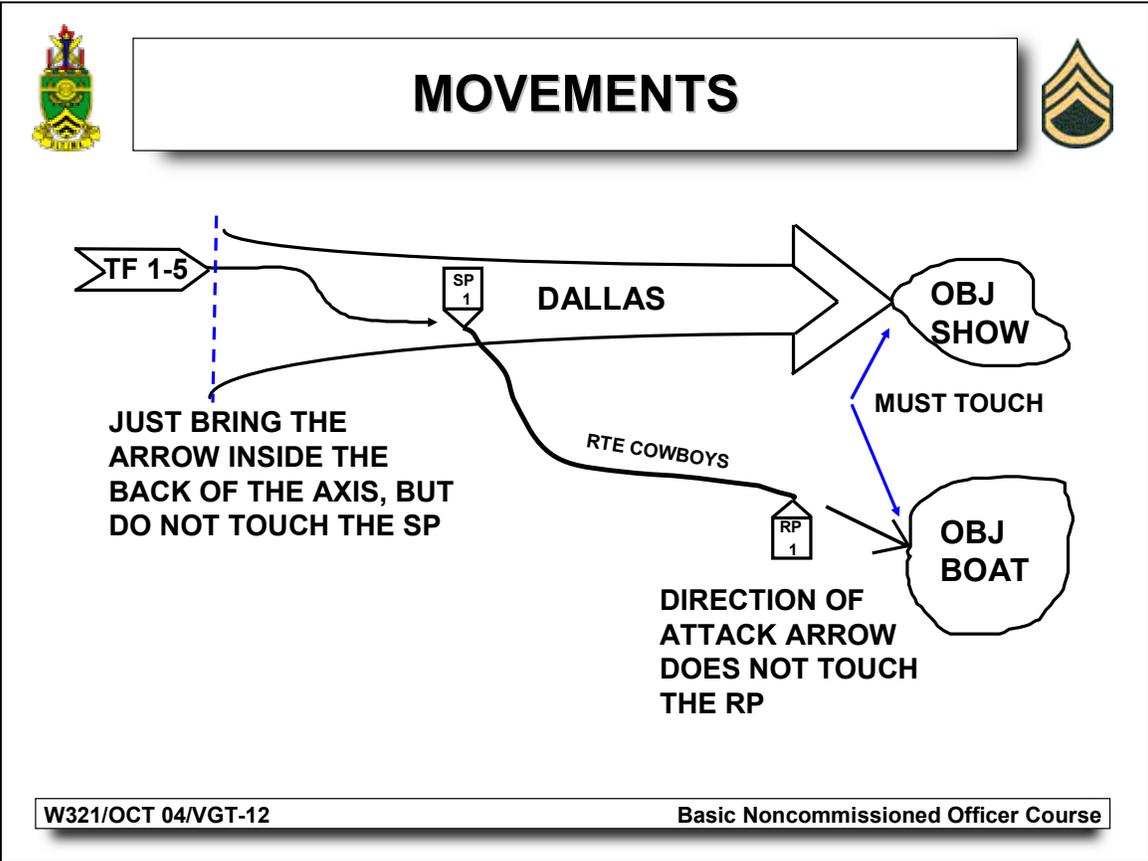


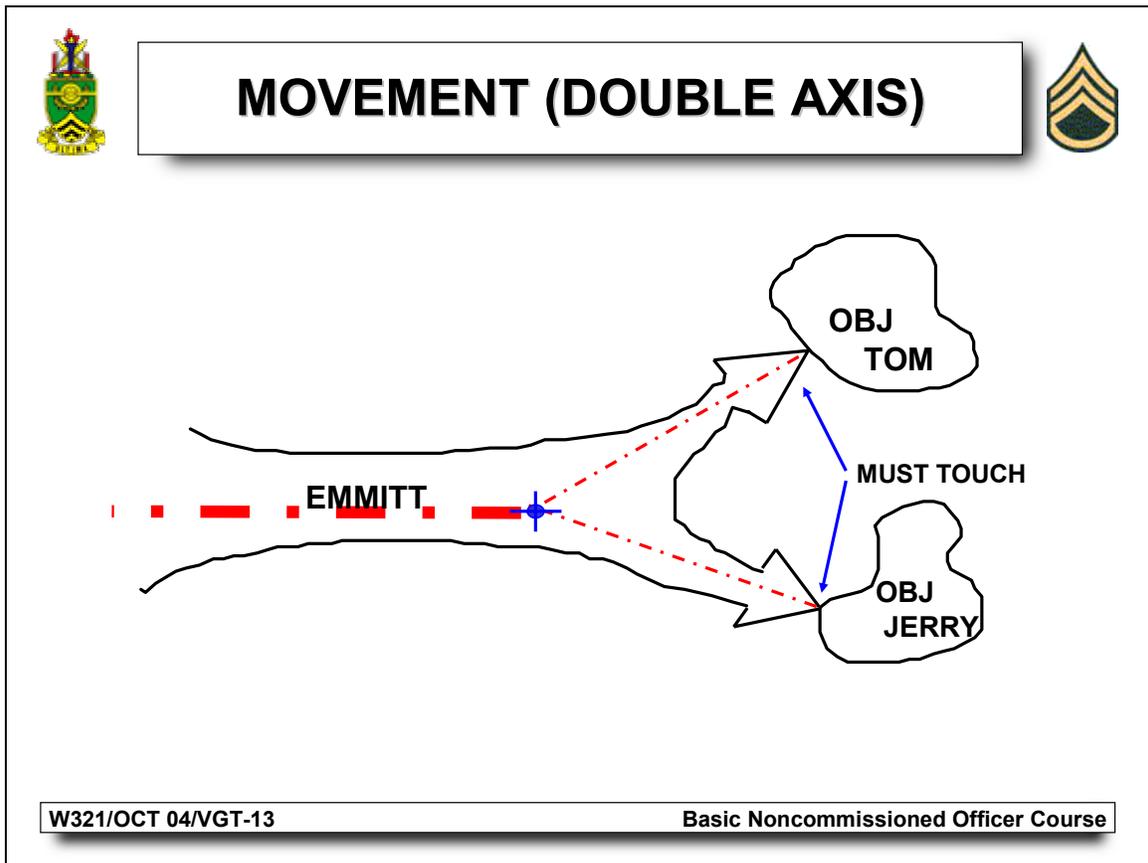
AREA OBJECTIVE (WOODS)



TO MAKE A WOODED AREA AN OBJECTIVE, ENCIRCLE THE ENTIRE GREEN AREA THAT REPRESENTS THE WOODED AREA.







W321/OCT 04/VGT-13

Basic Noncommissioned Officer Course



FSCL, RFL, AND CFL



FSCL 52 ID (M)(B)
EFF 070700Z Oct 02

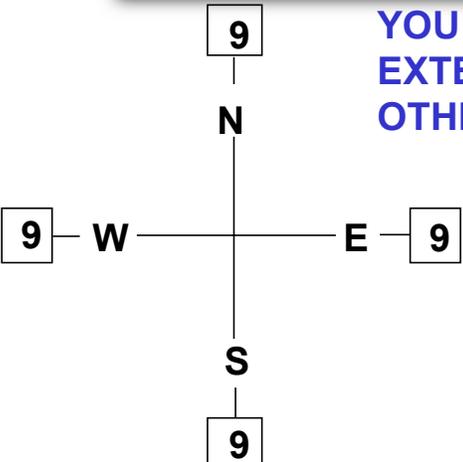
FSCL 52 ID (M) (B)
EFF 070700Z -
080700Z Oct 02

**FSCL, RFL, AND CFL WILL HAVE ESTABLISHING HQ
AND EFFECTIVE TIME. TIME CAN BE EITHER A SINGLE
OR DOUBLE ENTRY (WITH START AND STOP)**



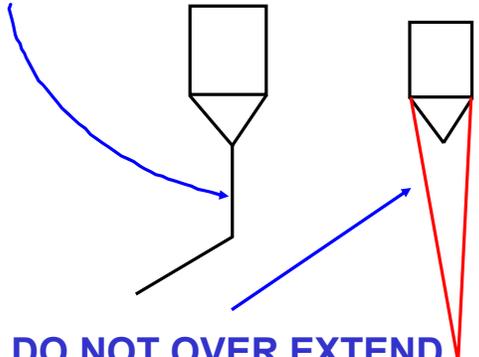
POINTS





**YOU CAN NOT EXTEND
(BEND) THIS STAFF.**

**YOU CAN ADD STAFFS AND
EXTENSIONS TO POINTS
OTHER THAN SP'S OR RP'S**



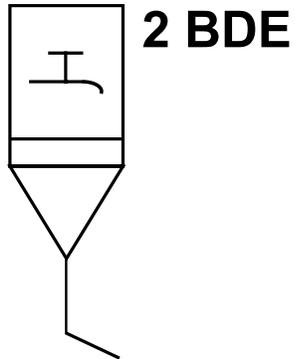
**DO NOT OVER EXTEND
THE TRIANGLE ON THIS
SYMBOL**

W321/OCT 04/VGT-15

Basic Noncommissioned Officer Course



POINTS (CONT)



2 BDE

**WATER DISTRIBUTION
POINT**



**GRREG
2 BDE**

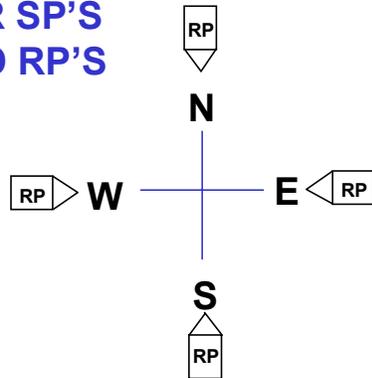
**GRAVES
REGISTRATION
POINT**



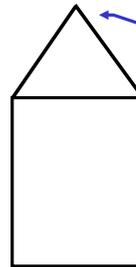
RELEASE/START POINTS



FOR SP'S
AND RP'S



**REMEMBER: THE ACTUAL
LOCATION OF THE POINT
IS THE TIP OF THE
TRIANGLE AT THE BASE
OF THE SYMBOL.**

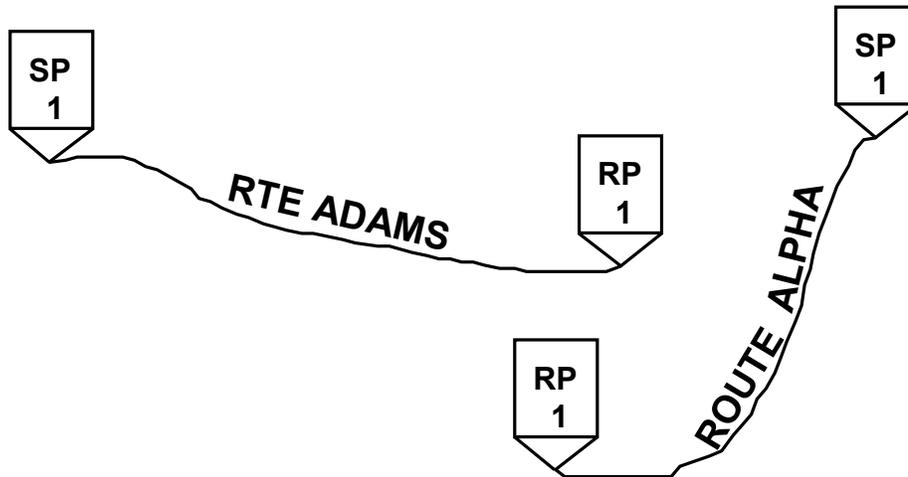




GENERAL ROUTES



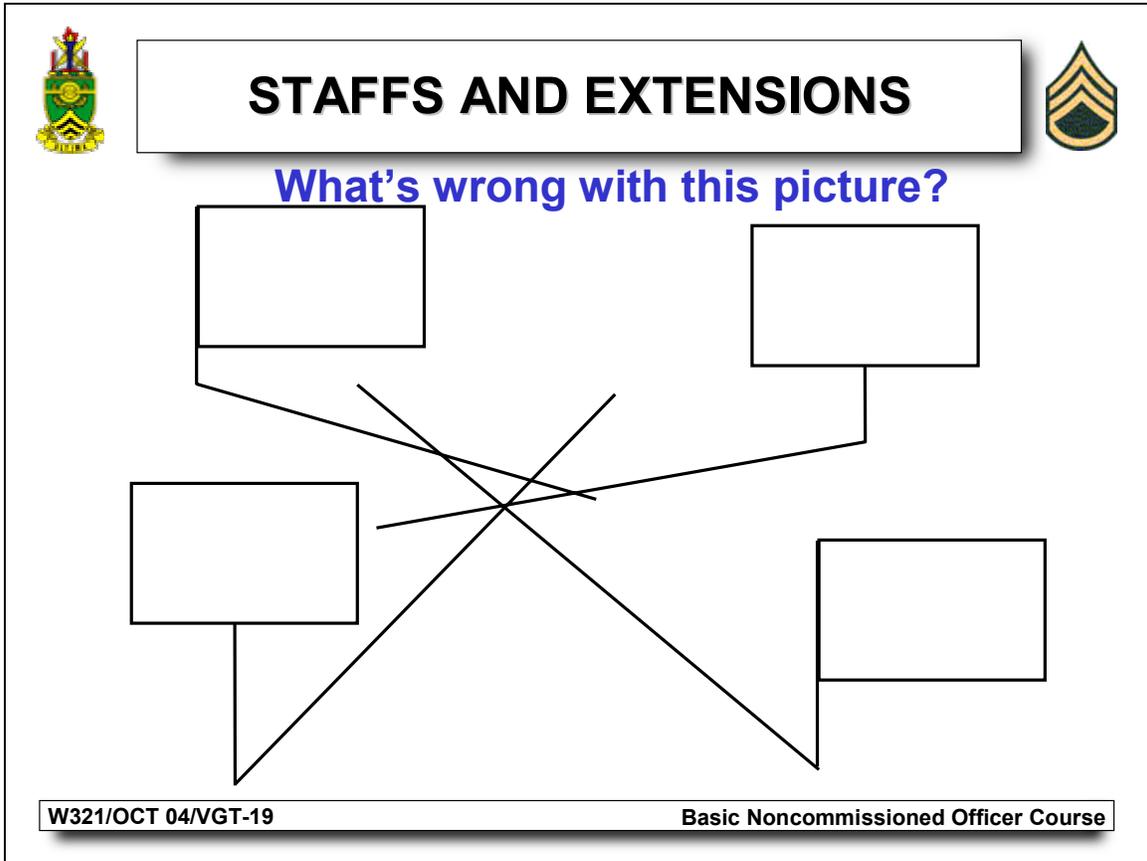
ROUTE LABELS MAY TAKE TWO FORMS



Enabling Learning Objective C

Learning Step 1

VGT-19, STAFFS AND EXTENSIONS



STAFFS AND EXTENSIONS

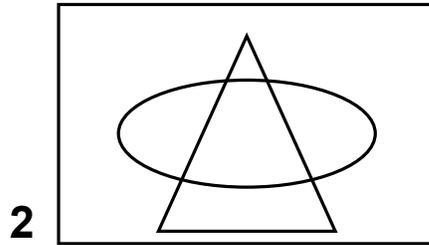
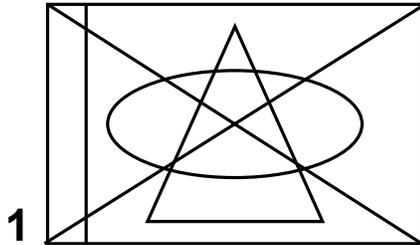
What's wrong with this picture?

W321/OCT 04/VGT-19 Basic Noncommissioned Officer Course

The diagram shows four empty rectangular boxes arranged in a square pattern. Lines connect the boxes in a crossed pattern: the top-left box connects to the bottom-right box, the top-right box connects to the bottom-left box, and the bottom-left box connects to the top-right box. This creates a central intersection where three lines meet. The question 'What's wrong with this picture?' is written in blue text above the boxes. The diagram is framed by a black border. On the left side of the frame is the Army crest, and on the right side is a sergeant's rank insignia. At the bottom of the frame, there are two text boxes: 'W321/OCT 04/VGT-19' on the left and 'Basic Noncommissioned Officer Course' on the right.



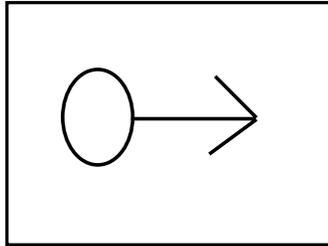
LP/OP



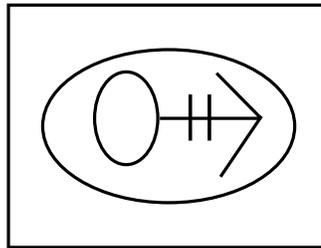
LP/OP field Alpha takes on the same designation as the parent unit with a triangle placed on top of that designation.



MORTARS



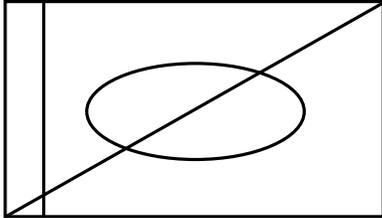
**1ST PLT A Co MORTAR
OTHER THAN TRACKED**



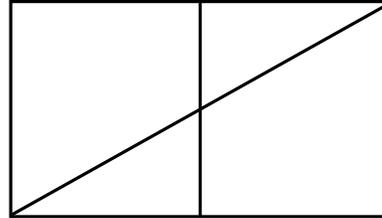
**2ND PLT C Co TRACKED
HVY MORTAR**



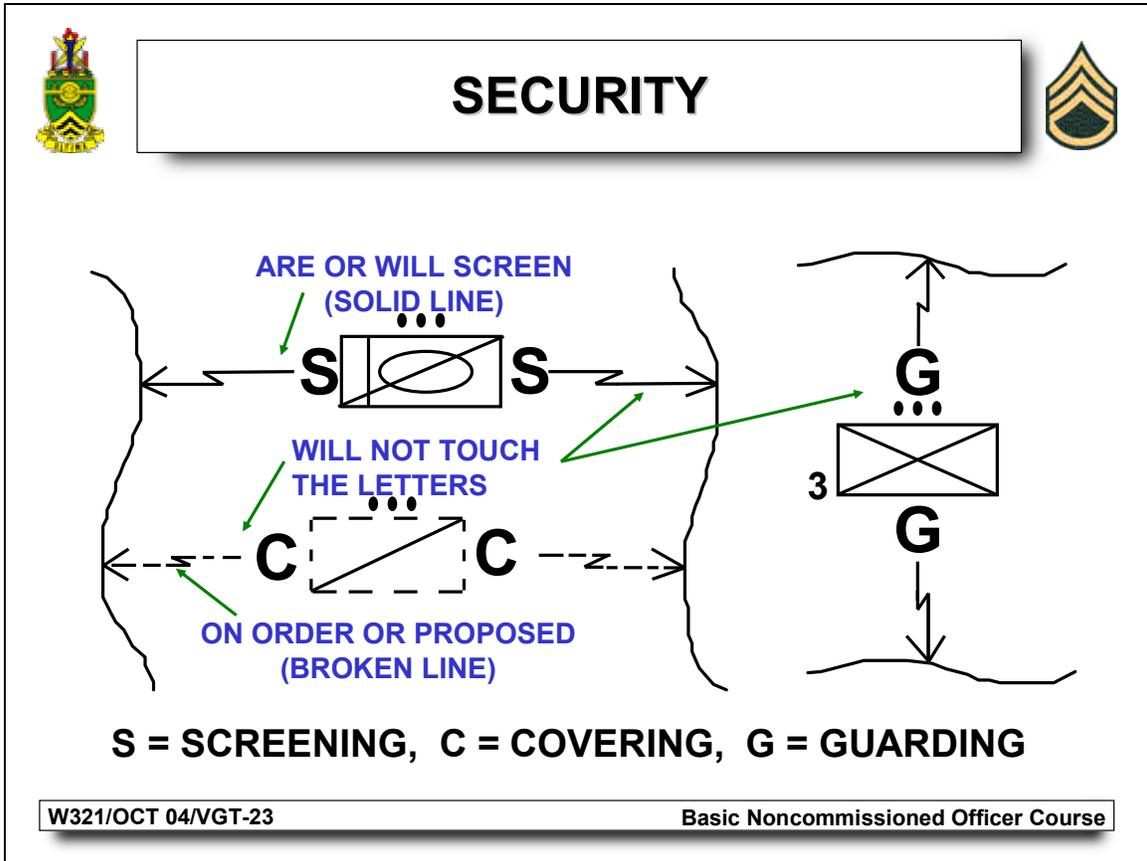
SCOUTS



SCOUT W / IFV



**MOTORIZED
SCOUT**



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Appendix B Test(s) and Test Solution(s) (N/A)

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PRACTICAL EXERCISE SHEET PE-1

Title	GRAPHICS AND OVERLAYS
--------------	-----------------------

Lesson Number/Title	W321 version 1 / GRAPHICS AND OVERLAYS
----------------------------	--

Introduction	This practical exercise is going to give you an opportunity to exercise your understanding of Graphics and Overlays.
---------------------	--

Motivator	This practical exercise will allow you to become more familiar with FM 101-5-1 and its contents.
------------------	--

Terminal Learning Objective	<p>NOTE: The instructor should inform the students of the following Terminal Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will:</p>
------------------------------------	---

Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.
Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
Standards:	<p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p> <ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay. <p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p>

Safety Requirements	None
----------------------------	------

Risk Assessment Level	Low
------------------------------	-----

Environmental Considerations	None
-------------------------------------	------

Evaluation	<p>This practical exercise will reinforce the instruction that you just received.</p> <p>Use FM 101-5-1 to assist you. After you finish the practical exercise, turn into instructor not later than day five, your instructor will grade and return the solution to you.</p>
-------------------	--

**Instructional
Lead-In**

Using the resources listed below and the information provided in the practical exercise, answer the questions and label an overlay.

**Resource
Requirements**

Instructor Materials:

- Maps required for the practical exercises, Hunfeld L 5324, Ausgabe 7-DMG, Series M 745, Scale 1-50,000
- Practical Exercise
- Acetate
- Alcohol-based pens (black, red, green as a minimum).
- Graphics template one per student.
- One map board per student.

Student Materials:

The resource requirements for this practical exercise are--

- FM 101-5-1.
 - Pen, pencil and supplies issued by the instructor.
-

**Special
Instructions**

You will utilize the current month and year for all Date Time Groups (DTG) within this practical exercise.

Procedures

Answer the following questions. You may write on this paper.

1. Outline enemy graphic control measures using _____ line when using only one color on an operations overlay.

2. When equipped with the multiple colors, you may use the color blue to indicate friendly units. (Circle One)

TRUE FALSE

3. If you use any colors other than black, red, or green, you must explain their use in the _____.

4. When depicting an "Ambush" symbol, the tip of the arrow indicates the center of mass of the ambush unit's position. (Circle One)

TRUE FALSE

5. Which of the following is NOT a rule governing building a unit symbol?
- a. Symbols must be easily distinguishable.
 - b. Friendly symbols must not use attributes that a person could confuse with enemy symbols.
 - c. Composite symbols will generally have the secondary symbol centered on or above the modifying symbol.
6. Which of the following should you use to show units forming a temporary grouping under one command?
- a. Staff
 - b. Bracket
 - c. Parenthesis
 - d. Line
7. You normally label the arrow when depicting a "Friendly Direction of Supporting Attack" on an overlay. (Circle One)
- TRUE FALSE
8. If you place a Coordinated Fire Line (CFL) on a Phase Line (PL), then you use a dash line. (Circle One)
- TRUE FALSE
9. When depicting a reinforced and reduced unit, you will use the (+, -) in field H. (Circle One)
- TRUE FALSE
10. In the space below, draw the symbol which depicts a "Follow and Support" mission for 2-35 Armor.
11. Draw the symbol for A/1-52 Inf (Bradley). The symbol shows dismounted troops.
12. In the space below, draw the symbol which depicts a proposed delaying action.

13. In the space below, draw the symbol which represents an Axis of Advance for a Feint.

**Feedback
Requirements**

None

**SOLUTION FOR
PRACTICAL EXERCISE PE-1**

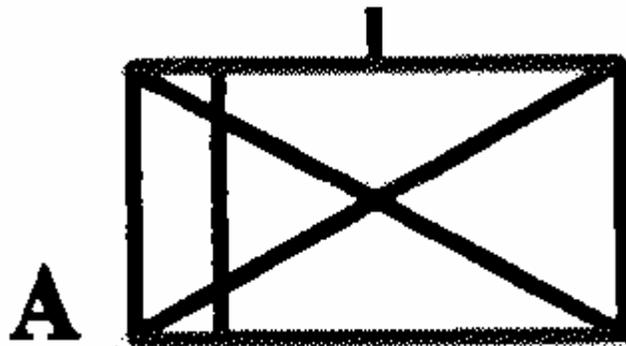
Graphics and Overlays Solution to Practical Exercise 1

The solution to questions one through nine are the following FM 101-5-1.

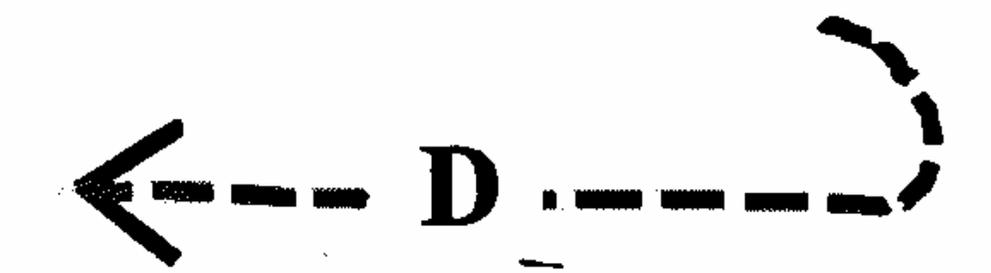
- | | |
|---|--------------|
| 1. black with a double | Ref: Pg 3-1 |
| 2. False | Ref: Pg 3-1 |
| 3. Legend | Ref: Pg 3-1 |
| 4. False | Ref: Pg 3-19 |
| 5. C | Ref: Pg 4-3 |
| 6. B | Ref: Pg 4-7 |
| 7. False | Ref: Pg 3-16 |
| 8. False | Ref: Pg 3-21 |
| 9. False | Ref: Pg 4-4 |
| 10. Your symbol should look like this: Follow and Support | |



11. Your symbol should look like this: A/1-52 Inf (Bradley).



12. Your symbol should look like this: Proposed Delaying Action



13. Your symbol should look like this: Axis of Advance



PRACTICAL EXERCISE SHEET PE-2

Title	GRAPHICS AND OVERLAYS
--------------	-----------------------

Lesson Number/Title	W321 version 1 / GRAPHICS AND OVERLAYS
----------------------------	--

Introduction	This practical exercise is going to give you an opportunity to exercise your understanding of military symbology (Graphics and Overlays).
---------------------	---

Motivator	This practical exercise will give you some firsthand experience in preparing an overlay.
------------------	--

Terminal Learning Objective	<p>NOTE: The instructor should inform the students of the following Terminal Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will--</p> <table border="1"><tr><td style="width: 15%;">Action:</td><td>Prepare offensive and defensive overlays for an armored or mechanized company or battalion.</td></tr><tr><td>Conditions:</td><td>As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</td></tr><tr><td>Standards:</td><td>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--<ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay.IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</td></tr></table>	Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.	Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).	Standards:	Prepared offensive and defensive overlays for an armored or mechanized company or battalion by-- <ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay. IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.						
Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).						
Standards:	Prepared offensive and defensive overlays for an armored or mechanized company or battalion by-- <ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay. IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).						

Safety Requirements	None
----------------------------	------

Risk Assessment Level	Low
------------------------------	-----

Environmental Considerations	None
-------------------------------------	------

Evaluation

a. This practical exercise is for practice. This practical exercise is worth 100 points. To successfully pass, you must score at least 70 points. The following standards comprise the grading system:

(1) Minus two (2) points for each symbol drawn incorrectly.

(2) Minus two (2) points for each symbol labeled incorrectly.

(3) Minus two (2) points for each symbol plotted incorrectly (+/- 100 meters).

b. After you complete the practical exercise, the instructor will review the solution with you. The instructor will compare your overlay to the prepared solution, helping you to evaluate your understanding of the graphics and overlays lesson.

c. The grade you receive will give you an indication on how well you did on the exercise. Use this information to prepare yourself for the examination.

Instructional Lead-In

Use the resources listed below and the information provided in the practical exercise to prepare an overlay.

Resource Requirements**Instructor Materials:**

- Maps required for the practical exercises, Hunfeld L 5324, Ausgabe 7-DMG, Serie M 745, Scale 1-50,000
- Practical Exercises
- Acetate
- Alcohol-based pens (black, red, green as a minimum).
- Graphics template one per student.
- One map board per student.

Student Materials:

The resource requirements for this practical exercise are:

- FM 3-25.26 (SH-4).
- FM 101-5 (SH-3).
- FM 101-5-1.
- Hunfeld Map sheet L5324, Ausgabe 7-DMG, series M 745, scale 1:50000.
- Acetate
- Alcohol based pens (black, red, & green).
- Graphic Templates.

Special Instructions

You will utilize the current month and year for all Date Time Groups (DTG) within this practical exercise.

Procedures

a. You are the operations sergeant for Task Force 1-38 IN (M)(B), 2nd Bde (AR), 52 IN Div (M)(B). You must prepare an overlay using the information below. The task force is responsible for the roads that will become its Lateral Boundaries and Phase Lines.

b. The information below is not in the format usually found in an operations order. The intent of this PE is to reinforce the previous instruction and to build your speed and confidence in the use of FM 101-5-1.

Coordination Points

Plot the following coordinating points:

- NB479169
- NB489208
- NB637256
- NB530157
- NB555156
- NB600179

Lateral Boundaries

a. The Task Force's West boundary separates TF 1-38 IN (M) (B), 2nd BDE and TF 2-38, 1st BDE, and follows the hard surface roads southerly from NB512277—NB499193—NB479169—NB479122.

b. The Task Force's East boundary separates TF 1-38 and TF 1-36 AR and follows the roads southerly from NB650278—NB639258—NB604208—NB600168—NB598162—NB603138—NB600090.

c. The Task Force has three Company Teams: Co Tm A in the West, Co Tm B in the center, and Co Tm C in the East.

(1) The boundary for A and B Co Teams follows the secondary roads southerly from NB525230—NB524199—NB530157.

(2) The boundary for B and C Co Teams follows the secondary roads southwesterly from NB600248--NB569209—NB555155.

Phase lines FEBA, and Rear Boundaries

a. **PL ROPE** follows the secondary roads northeasterly from--

- NB491209
- NB500228
- NB512230
- NB526230
- NB542229
- NB560234
- NB600249
- NB635257

NOTE: This phase line also serves as the Company Teams' rear boundaries.

b. **PL TWINE** follows the roads easterly from--

- NB479122
- NB532121
- NB536128

- NB552120
- NB563108
- NB600090

c. The **FEBA** runs easterly along the roads from--

- NB479169
- NB515167
- NB530157
- NB539143
- NB555155
- NB600179

Battle Positions (BP)

Co Tm A is in Battle Position 1. BP 1 coordinates are--

- NB505177
- NB519173
- NB509168
- NB499169
- NB494175
- NB499178
- NB505177

NOTE: Connect these points BP 1 orients towards Hilltop 305, NB502153

Co Tm B is in Battle Position 2. BP 2 coordinates are--

- NB545161
- NB553168
- NB549152
- NB539152
- NB533159
- NB535163
- NB542162
- NB545161

NOTE: Connect these points. BP 2 orients toward the town of HUNFELD, NB540145.

Co Tm C is in Battle Position 3. BP 3 coordinates are--

- NB579179
- NB582176
- NB578171
- NB559161
- NB558166
- NB565172
- NB568174
- NB579179

NOTE: Connect these points. BP 3 orients toward the town of MOLZBACH, NB567130.

3d Platoon, Co Tm C is in Platoon Battle Position 4. BP 4 coordinates are--

- NB596186
- NB599185
- NB599182
- NB594178
- NB589178
- NB589180
- NB592182
- NB596186

NOTE: Connect these points. BP 4 orients toward the road intersection at NB603147.

Co Tm C established a prepared battle position for future occupation (proposed) at--

- NB604227
- NB613223
- NB599218
- NB589223
- NB599228
- NB604227

NOTE: Connect these points. This is Battle Position 5. BP 5 (P) orients towards NB600210.

Areas

Assembly Area (AA): AA HEMP is inside the area enclosed by the following grids--

- NB549228
- NB555228
- NB559218
- NB549208
- NB539207
- NB539217
- NB549228

NOTE: Connect these points.

Miscellaneous

A scatterable antitank minefield is in a box outlined by grids--

- NB489160
- NB499160
- NB499158
- NB489158

NOTE: The self destruct DTG is 060800Z.

There is a Registered Point Target, AG7001 at NB509148.

The 52d IN Div (M)(B) has established the FSCL along Phase Line TWINE effective 060400Z-140600Z OCT00.

The Scout Platoon of TF 1-38 (M) (B) is screening along the north side of Phase Line TWINE.

Friendly Unit Locations

- a. The 1st Squad, 2d Platoon, Co Tm C, is occupying an LP/OP at NB588148.
- b. Co Tm A Headquarters, TF 1-38 (M) (B), is at NB500174.
- c. Co Tm B Headquarters, TF 1-38 (M) (B), is at NB539158.
- d. Co Tm C Headquarters, TF 1-38 (M) (B), is at NB573170.
- e. 1st Section, 2d Platoon, C Company, 52 MI Battalion has set up a ground surveillance radar (GSR) position at NB533171.
- f. 2d Bde (AR) (B), 52d ID (M) (B), TAC CP is at NB546218, collocated with TF 1-38 (M) (B), TOC CP.
- g. B Company, 52d Combat Engineer Battalion (M) is at NB583262.
- h. B Battery, 1-41 FA (SP) is at NB529239.
- i. There is an Ammunition Transfer Point (ATP 3) at NB568268 serviced by 2nd BDE.
- j. TF 1-38 Battalion Aid Station is at NB509238.

Enemy Unit Locations

The 18th Motorized Infantry Regiment is near NB549077.

Feedback Requirements

None

**SOLUTION FOR
PRACTICAL EXERCISE PE-2**

The solution to this practical exercise is an overlay. Each instructor receives a copy for review and grading.

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HANDOUTS FOR LESSON 1: W321 version 1

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1 and SH-1-2
SH-2, Graphics and Overlays Workbook	SH-2-0 to SH-2-26
IH-1, Graphics and Overlays Solutions	IH-1-0 to IH-1-23
IH-2, FM 101-5-1 changes	IH-2-1 to IH-2-3
IH-3, Practice Graphics	IH -3-1 to IH-3-6
SH-3, FM 101-5 Extract	SH-3-1
SH-4, FM 3-25.26 Extract	SH-4-1

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Student Handout 1

Advance Sheet

Lesson Hours This lesson consists of four hours of small group instruction and a four hour PE.

Overview Communications among commanders, their subordinates, and staff sections are of foremost importance. Often, commanders can best accomplish these communications in the form of an overlay or decision graphic. This lesson acquaints you with the symbology necessary to prepare an overlay using military symbols and graphics. This lesson consists of a classroom discussion before class on day eleven reading assignments, a graphics workbook, and three practical exercises.

Learning Objective Terminal Learning Objective (TLO).

Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.
Condition:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
Standard:	Prepared offensive and defensive overlays for an armored or mechanized company or battalion by: <ul style="list-style-type: none">- Identifying, operational terms, acronyms, and abbreviations.- Identifying graphic control measures.- Identifying unit symbols.- Identifying equipment symbols.- producing a mission map overlay. IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).

ELO A Identify operational terms, acronyms, and abbreviations.

ELO B Identify graphic control measures.

ELO C Identify unit symbols.

ELO D Identify equipment symbols.

ELO E Construct an overlay.

Assignment The assignments for this lesson are:

- Read FM 101-5-1, Operational Terms and Graphics, Chapters 3, 4, 5, and Appendices A thru D. Read FM 3-25.26 (SH-4) Chapter 7.
 - Skim FM 101-5-1, Chapters 1 and 2 and Appendix E.
 - Skim FM 101-5 (SH-3), Appendix H.
 - Complete Graphics and Overlay Workbook and turn into instructor on day five.
 - Complete Practical Exercise 1 and turn into instructor on day five.
-

**Additional
Subject Area
Resources**

None

Bring to Class

You must bring the following items to class:

- All reference materials received.
 - Writing materials.
-

Student Handout 2

This student handout contains the Graphics and Overlays Workbook

GRAPHICS AND OVERLAYS WORKBOOK



PROPONENT FOR THIS WORKBOOK IS THE U.S. ARMY SERGEANTS MAJOR ACADEMY. SEND COMMENTS AND RECOMMENDATIONS ON DA FORM 2028 (RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS) DIRECTLY TO THE COMMANDANT, ATTN: ATSS-DC, USASMA, 11291 SGT E. CHURCHILL ST., FORT BLISS, TX 79918-8002.

OPERATIONAL TERMS AND GRAPHICS INSTRUCTIONS

The basis for this workbook is based on FM 101-5-1, Operational Terms and Graphics, September 1997. It will provide you with a working knowledge to identify and construct operational symbols and graphics.

You must take your time and study each page as you complete this workbook. Otherwise, you'll learn very little from carelessly answering the questions or drawing the symbols. As you progress, your speed, accuracy, and neatness will improve.

Before you begin the workbook, open FM 101-5-1 to the Contents, page i. There are five Chapters and five Appendixes. If you have a question concerning a term or abbreviation, look in either of the first two chapters. Your instructor is also available to answer questions.

Note the shadowed boxes located at the beginning of chapter one. These provide you with pages to link definitions to graphic examples located throughout the manual. Use as an example page 1-1, Abatis. The shadowed box indicates page 3-27. Turn to page 3-27 to see an example of the graphic Abatis

You must complete this workbook and turn in to instructor on day five of the course. Your instructor will grade and return to you this workbook and provide you with any detailed assistance during study hall prior to the next portion of this class.

Your goal upon completion of this workbook should be a better understanding of FM 101-5-1. You will need this knowledge to successfully complete the Graphics and Overlays examination.

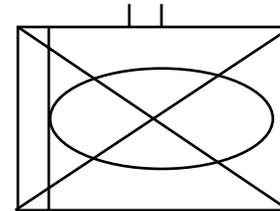
NOTE: This workbook is laid out in the same order we want you to plot an overlay.

While attending BNCOC, use the following colors and suggested pen types to complete your overlays.

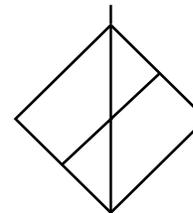
Green: All obstacles, friendly, enemy, neutral, and factional unit symbols. (fine & superfine alcohol pens)



Black: All friendly units and graphic control measures. (medium, fine, & superfine alcohol pens)



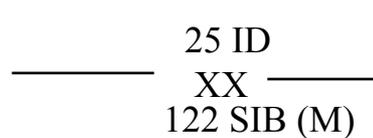
Red: Enemy symbols and enemy graphic control measures. (fine & superfine alcohol pens)



What page in FM 101-5-1 refers to the use of these colors? _____

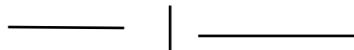
Another step in Graphics is the posting of lateral boundaries between units. A boundary is a control measure normally drawn along identifiable terrain features and used to outline areas of tactical responsibility for subordinate units.

Lateral boundaries are control measures that define the left and right limits of a unit's sector or zone of action. Together with rear and forward boundaries, and a coordinating altitude, lateral boundaries define the area of operations for a commander. Label lateral boundaries to reflect available information to achieve clarity. Authorized abbreviations are provided in Chapters 2 and 4. Chapter 3 defines required fields for lateral boundaries.



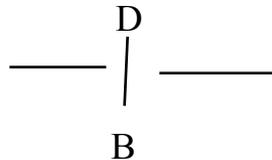
Lateral Boundary between 25th Inf Div and 122d Inf BDE (SEP) (M)

CO TM A

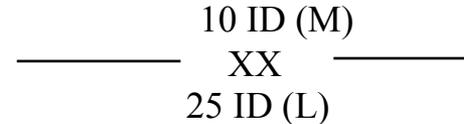


CO TM B

Lateral Boundary between Co Tm A and Co Tm B, TF 1-5 (AR)



Lateral Boundary between Co D and Company B



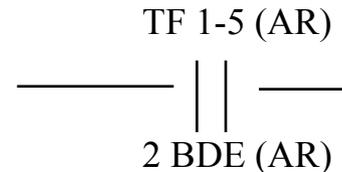
Lateral boundary between 10th Inf Div (M) and 25th Inf Div (L)

TF 1-5 (AR)



3-15 Inf (M)

Lateral Boundary between TF 1-5 (AR) and 3-15 Inf BN (M)



Rear Boundary between TF 1-5 (AR) and 2d BDE (AR)

Label each boundary in accordance with the provided information. For this exercise, place the first unit to the north and the second unit to the south. Consider the top of the page as north.

1st BDE (M) Rear Boundary. 1st BDE (M) is part of 3d Inf Div (M) _____

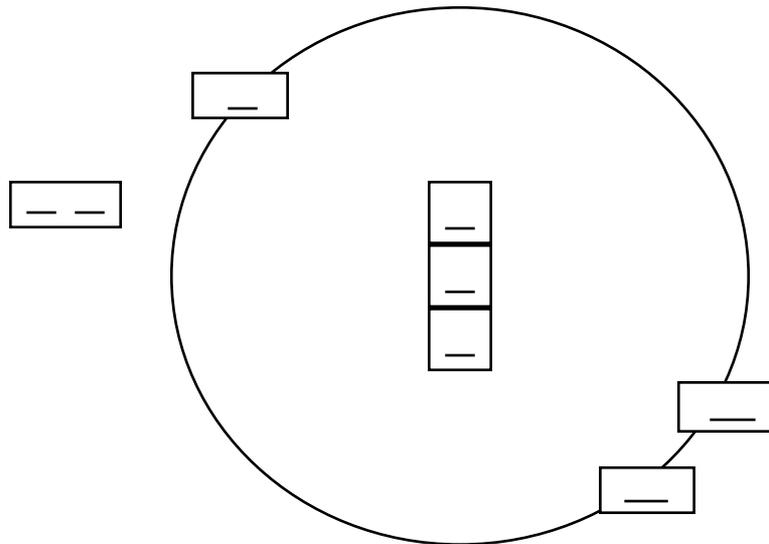
Lateral Boundary between 10th Corps (US) and 1 Armored Div (UK) _____

B Company Rear Boundary. B Company is part of TF 1-79 (M) _____

Lateral Boundary between Co Tm F and Co Tm B _____

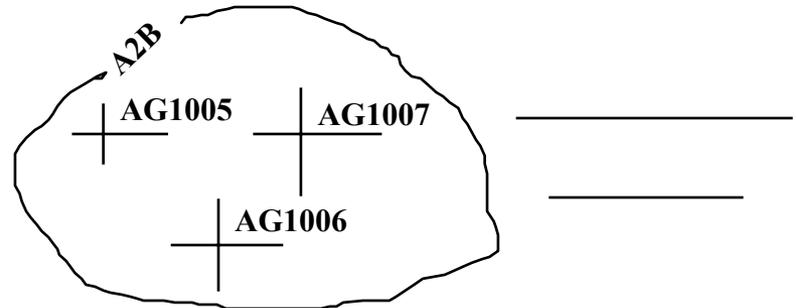
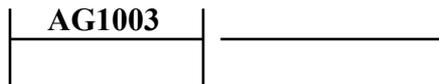
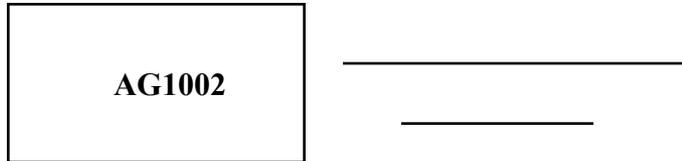
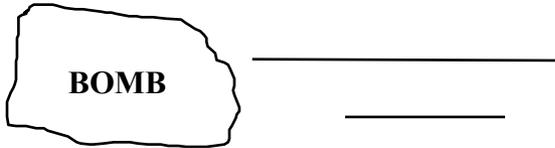
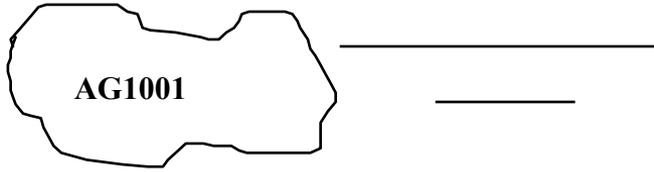
TF 1-4 (AR) Rear Boundary. TF 1-4 (AR) is part of 3d BDE _____

List the reference page and identify the fields for an **AREA**.



Identify the required alphanumeric characters for field Whiskey, (DTG).

Identify the following “Fire and Maneuver” and “Fire Support” symbology and list the page reference for each symbol.

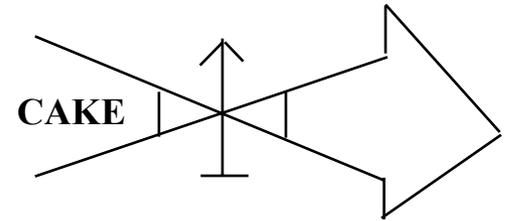
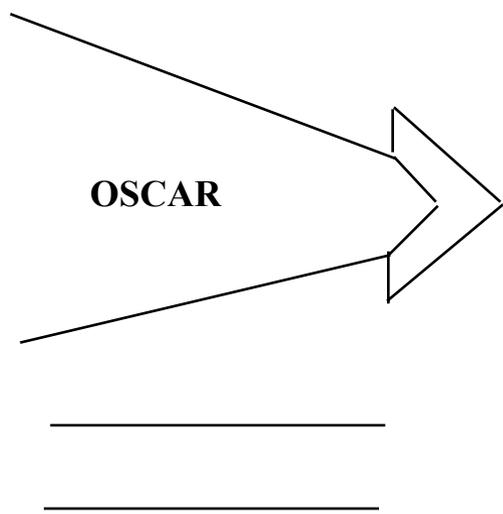
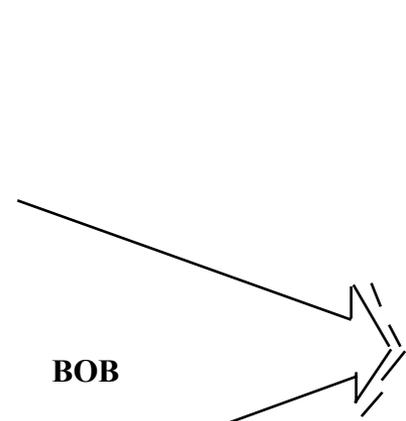
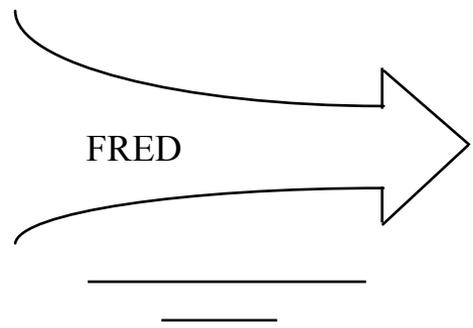
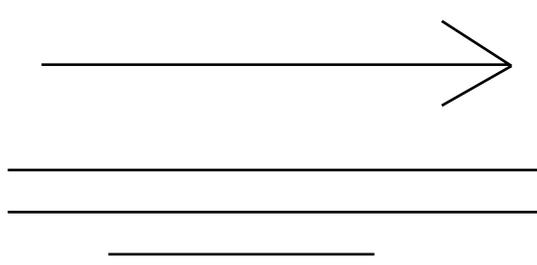


FFF 090900Z DEC 99

FSC X (US) CORPS



Identify the following symbols and list the page reference for each.

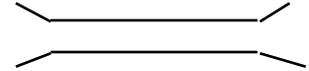


Identify the following Mobility and Survivability symbology and list the page reference for each.



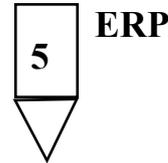


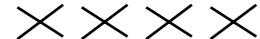










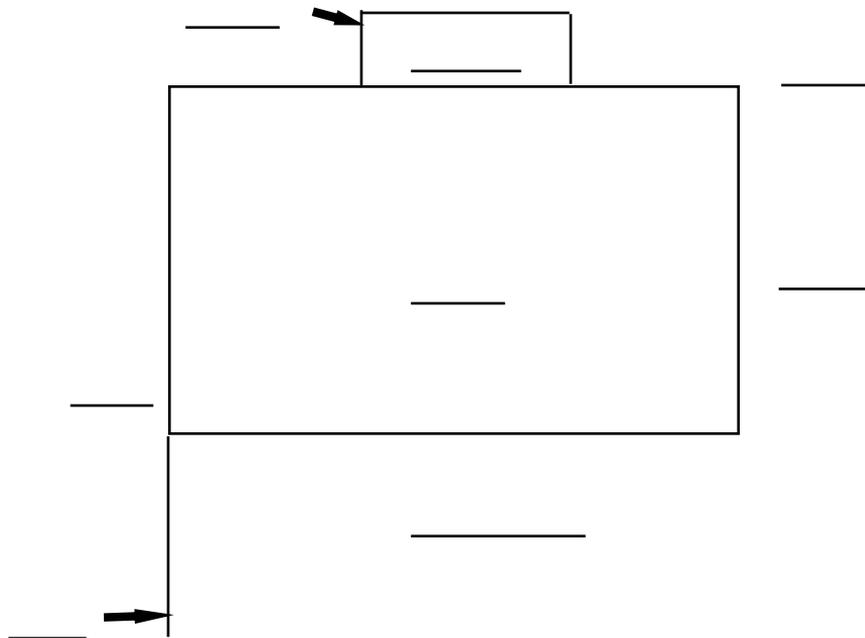


The required **Mandatory** fields for any specific symbol are those fields needed to correctly represent any given symbol.

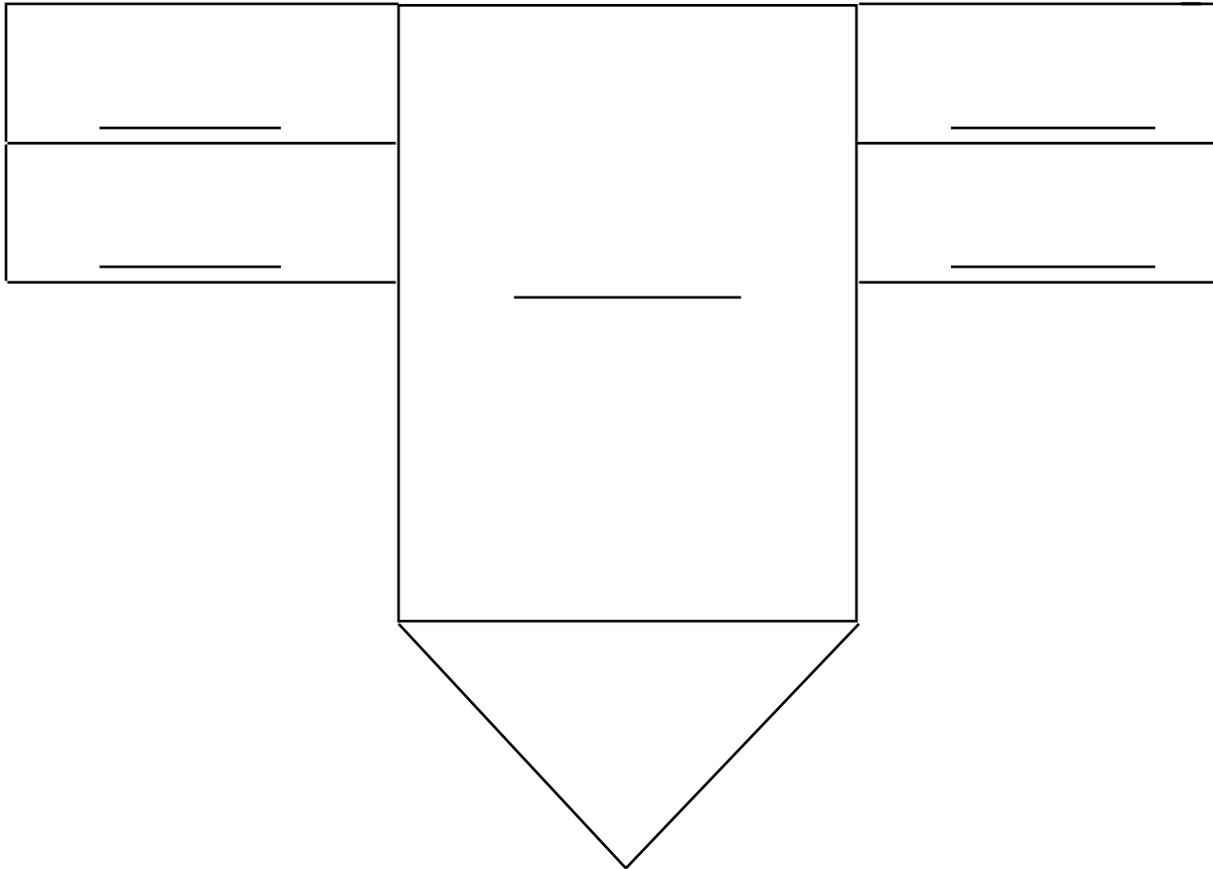
For most unit symbols, it is necessary to fill in fields **Alpha, Bravo, Tango,** and possibly **Delta, Foxtrot, Hotel,** and **Sierra.**

Notice that with field Alpha there are several modifiers required to correctly depict a unit i.e., Airborne, Gun system equipped, or Bicycle equipped.

Identify each of the fields indicated for this symbol:



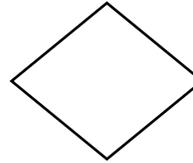
List the page reference and identify the fields for a point.



These are the three basic symbols used in graphics.



FRIENDLY GROUND UNITS
(RECTANGLE)



ENEMY UNITS (DIAMOND)

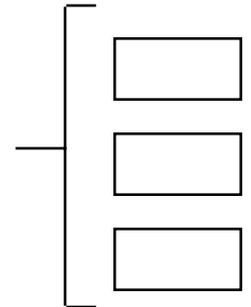
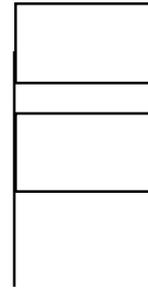


NEUTRAL (SQUARE)

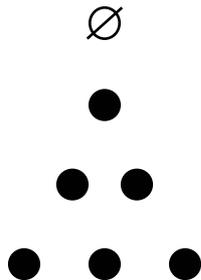
What is the reference page? _____

NOTE: FM 101-5-1 SHOWS SYMBOLOGY FOR SHIPS AND AIRCRAFT, HOWEVER THESE SYMBOLS ARE NOT ADDRESSED IN THIS COURSE. THE NEW FM ALSO DELETED THE CIRCLE REPRESENTING AN INSTALLATION.

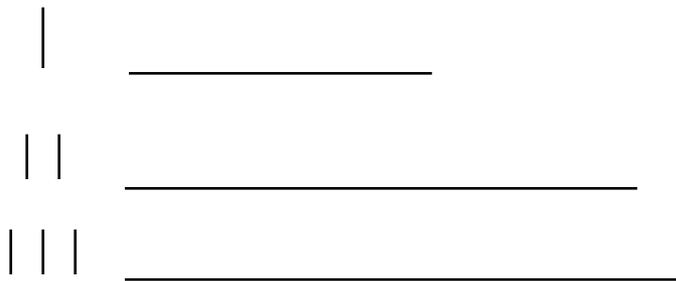
What do the following symbols represent and what is the reference page in FM 101-5-1?



We use dots to show the size of units below Company level. These sizes are--

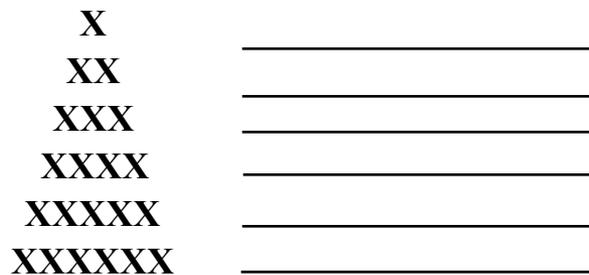


We use vertical lines to represent the size of units from Company to Regimental/Group level. These sizes are--



We use X's to represent the size of Brigade thru REGION Units.

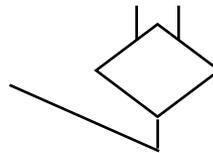
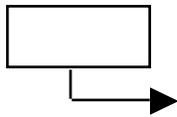
Annotate below which unit size is depicted:



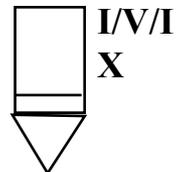
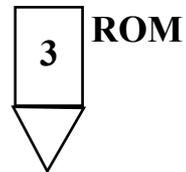
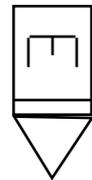
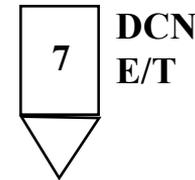
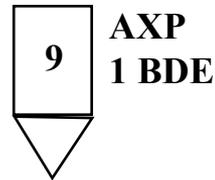
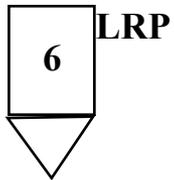
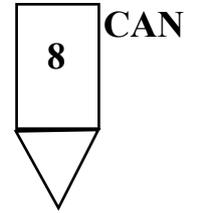
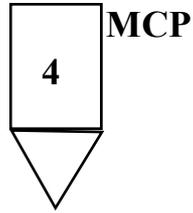
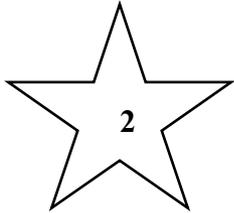
Field _____, placed over the size indicator denotes a temporary grouping of units. We use this special size indicator to depict a _____ or _____. If you are drawing a Headquarters element, what field must you use? _____ You can find this field on the friendly and enemy types of symbols.

What do these symbols represent?

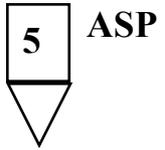


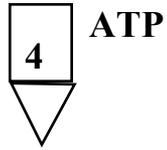


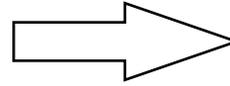
Identify the following symbols and list the page reference for each.

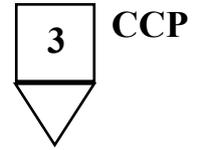


Identify the following CSS symbology and list the page reference for each.





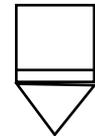




MSR BILL

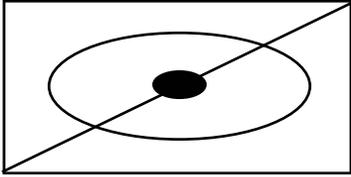
MSR BLUE

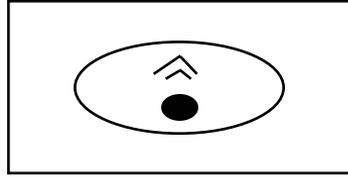


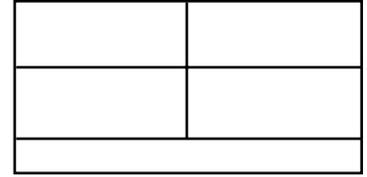


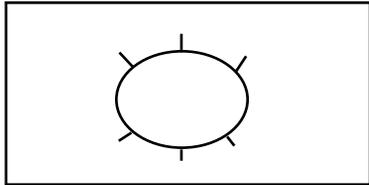


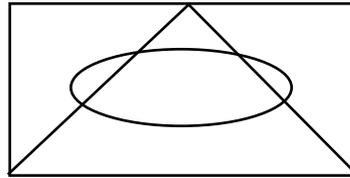
Identify these symbols.

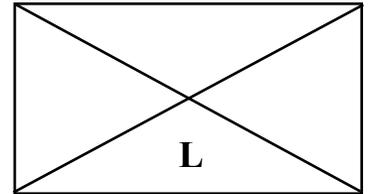


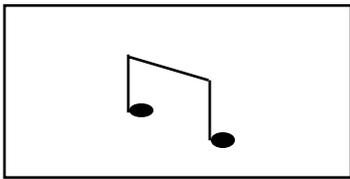


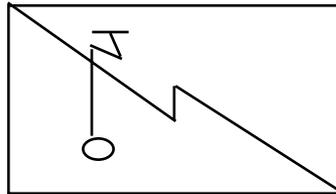


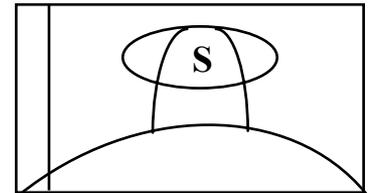




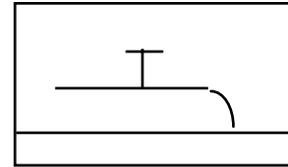
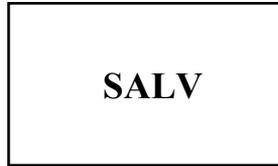
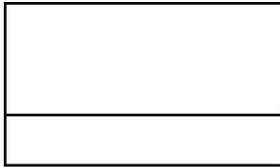


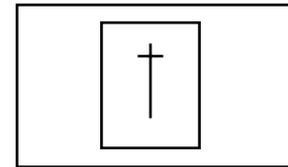
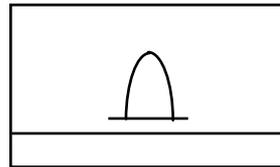
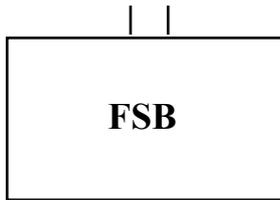


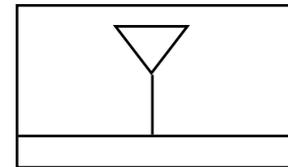
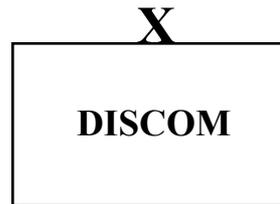
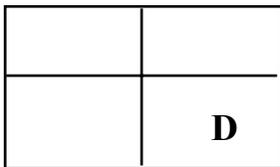




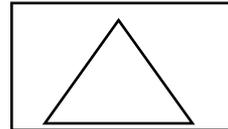
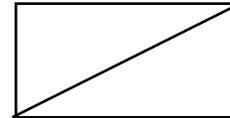
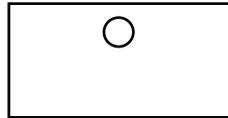
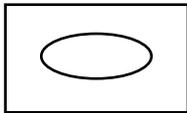
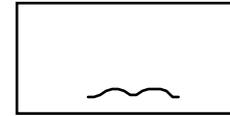
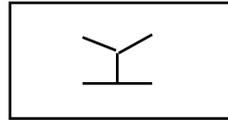
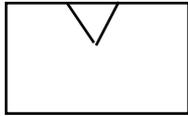
Identify these Combat Service Support Units.



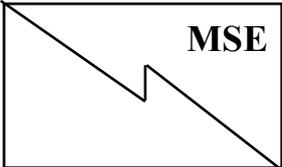
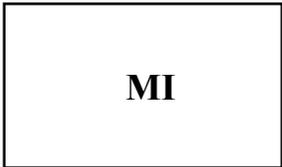
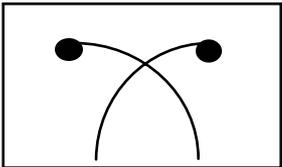


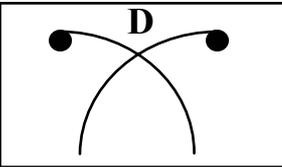
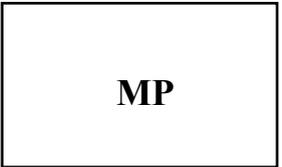
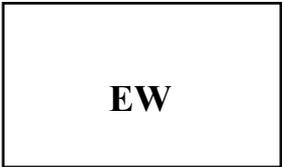


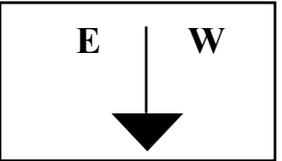
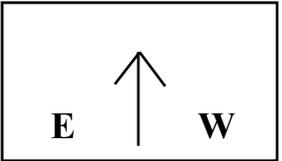
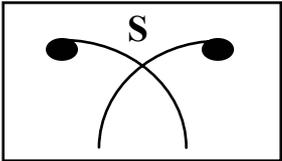
Now that you know how to show the size, and some of the role indicators, it's time to work on some of the over 1000 possible symbols. We will only learn a few at a time. Start on page 4-8 (FM 101-5-1) and identify these modifiers to field Alpha.



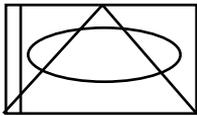
Identify these Combat Support Units.

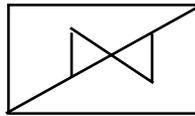


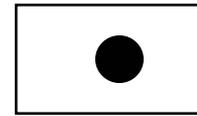


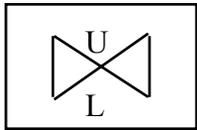


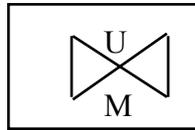
Identify these units.

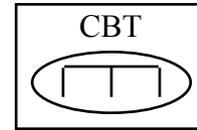


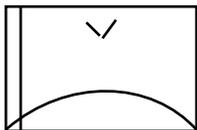


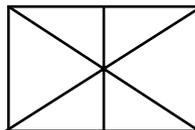


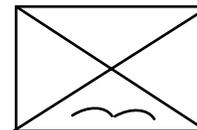




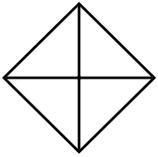


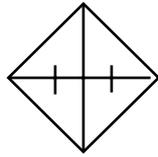




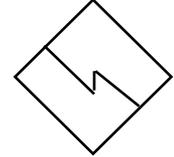


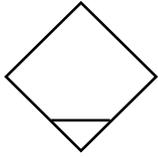
Identify the following symbols from Appendix B and D.

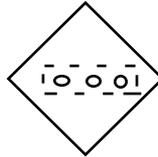


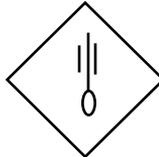


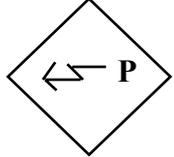


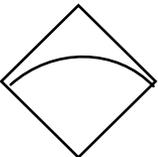


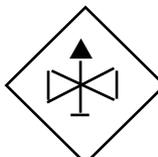


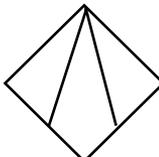


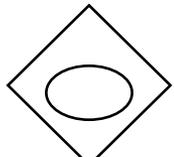




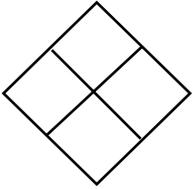


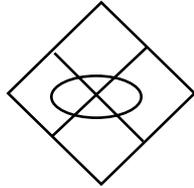


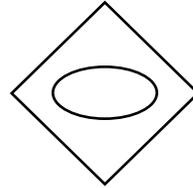


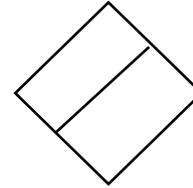


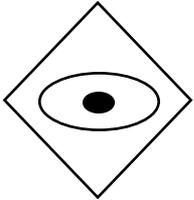
Identify the following symbols from Appendix B and Chapter 4.

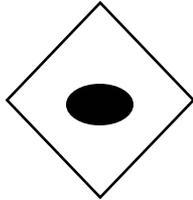


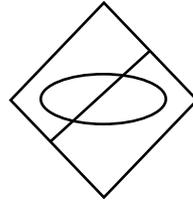


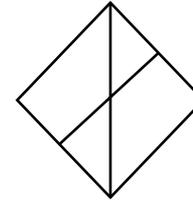


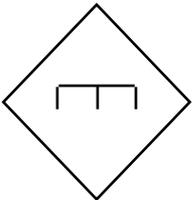


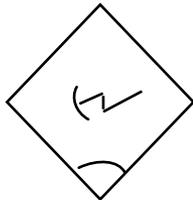


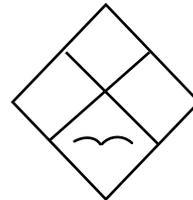


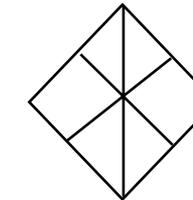












Using your template, draw the correct symbols for the units listed to include fields Alpha, Bravo, Delta, and Tango.

1st Plt, Airborne Inf

Company A, Airborne Inf
(Enemy)

1st Section, Bicycle Equipped Inf

Company Medical Treatment
Facility (Enemy)

1-79 Inf (M)(B)

1-33 Engineers BN
(Enemy)

10th Armored Cavalry Regiment
(Enemy)

3d Squad Inf Observation Post

ADA Team Listening Post

A Battery, Field Artillery (SP)

TF 1-4 Armor

GSR Team

Using your template, draw the correct symbols for the units listed to include fields Alpha, Bravo, Delta, and Tango.

Co Tm B, 1-81 Inf (M)

1st Plt, A Co, 52d Signal BN

A Co, 52d Maintenance BN

1st Plt, A Co, 52d Engineers (M)

HQs, TF 1-81 (AR)

Tm D, 1st Special Forces

A Co HQs, 4th PYSOP BN

D Co, 10th Water Distribution BN

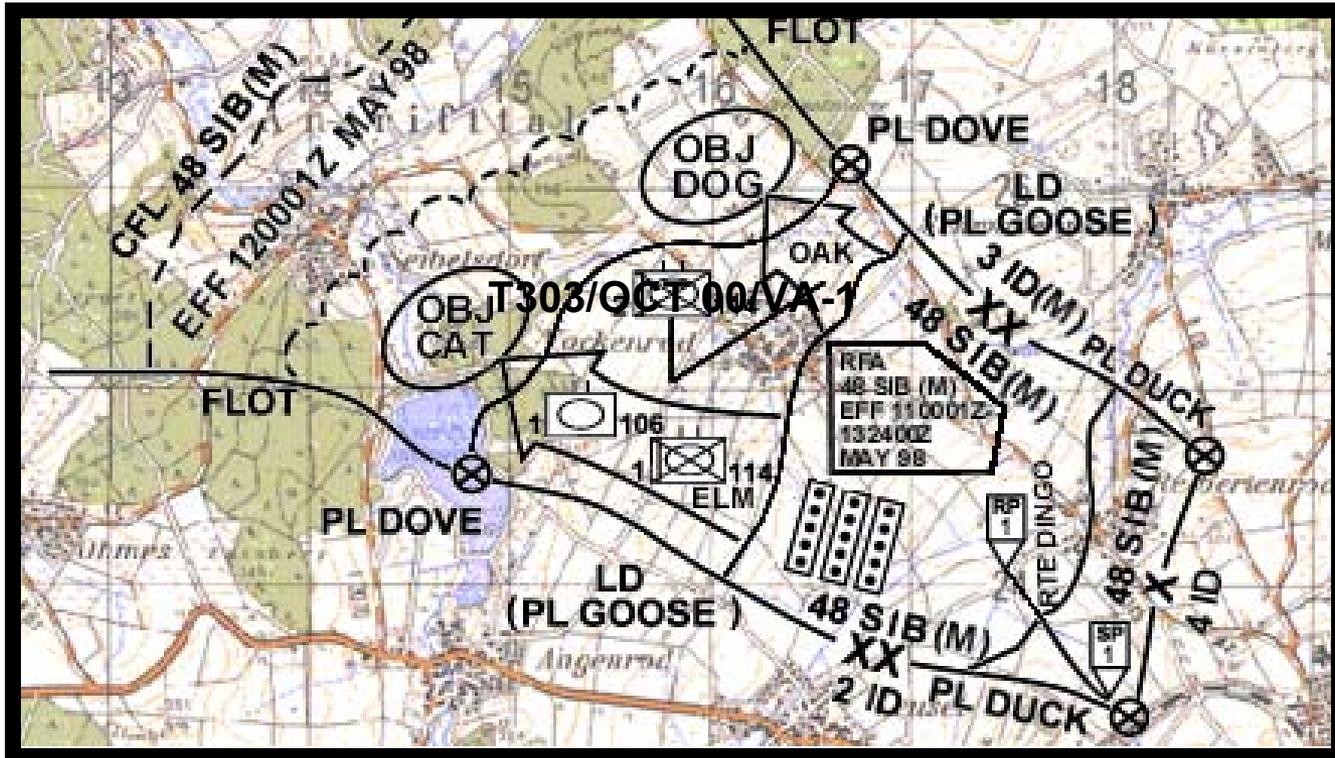
Scout Plt, 1-79 AR
(HMMWV Equipped)

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Instructor Handout 1

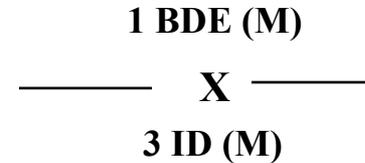
This instructor handout contains solutions to the Graphics and Overlays Workbook

GRAPHICS AND OVERLAYS WORKBOOK SOLUTIONS

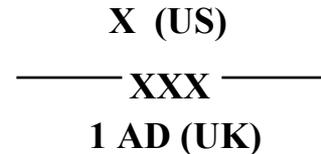


Label each boundary in accordance with the provided information. For this exercise, place the first unit to the north and the second unit to the south, consider the top of the page as north.

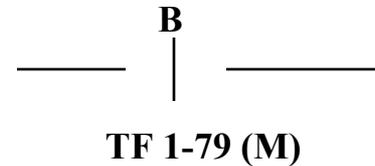
1st BDE (M) Rear Boundary between 1st BDE (M) and 3d Inf Div (M)



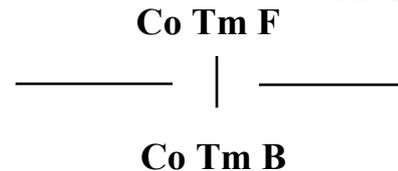
Lateral Boundary between 10th Corps (US) and 1 Armored Div (UK)



B Company Rear Boundary between B Company and TF 1-79 (M)



Lateral Boundary between Co Tm F and Co Tm B

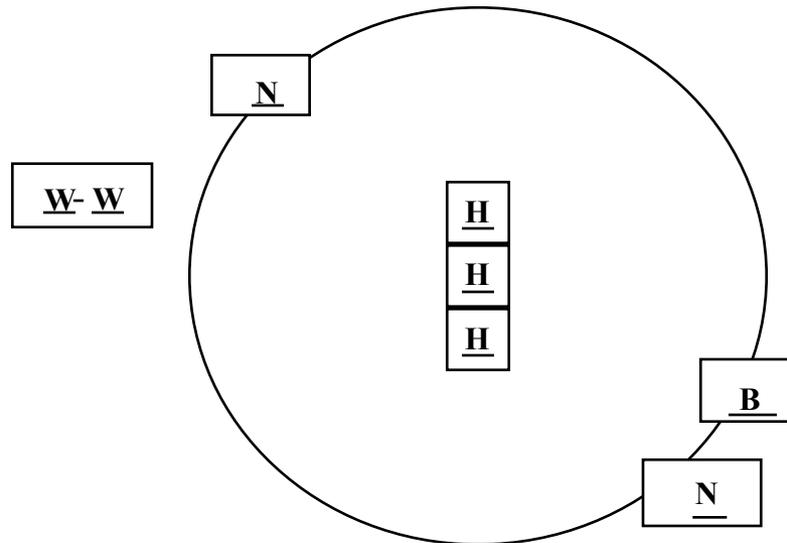


TF 1-4 (AR) Rear Boundary, between TF 1-4 (AR) and 3d BDE



Solution for SH 1-5

List the reference page and identify the fields for an **AREA**.



Reference is FM 101-5-1,
page 3-4 .

Identify the required alphanumeric characters for field Whiskey, (DTG).

D D H H M M S S Z M O N Y Y

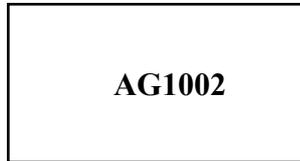
Identify the following “Fire and Maneuver” and “Fire Support” symbology and reference page for each symbol.



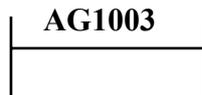
Area Target
3-22



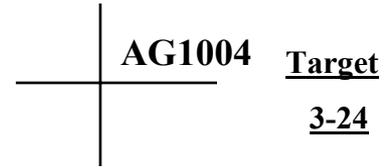
Bomb Area
3-22



Rectangular Target
3-24



Linear Target
3-23



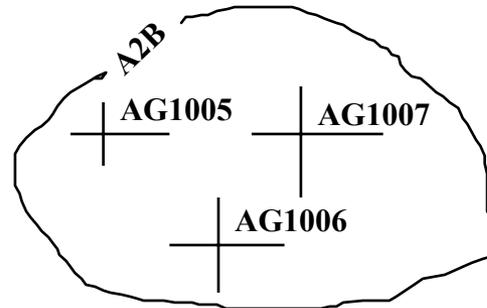
Target
3-24

EFF 090900Z DEC 99

FSC X (US) CORPS

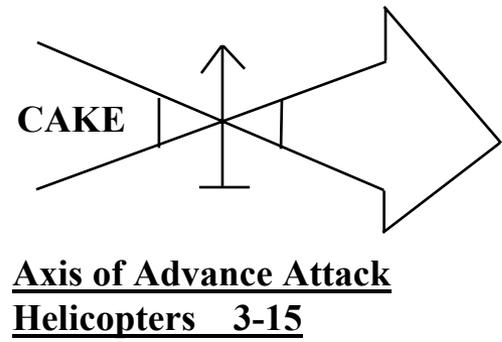
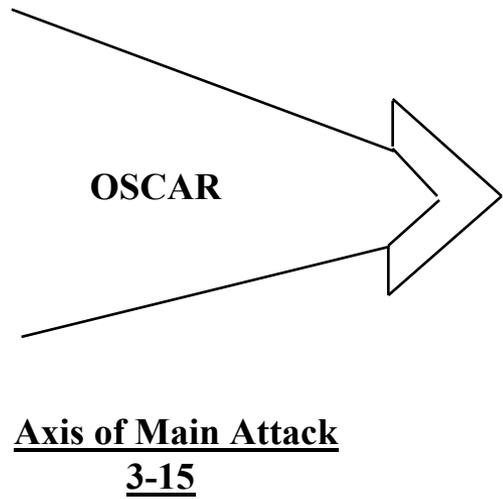
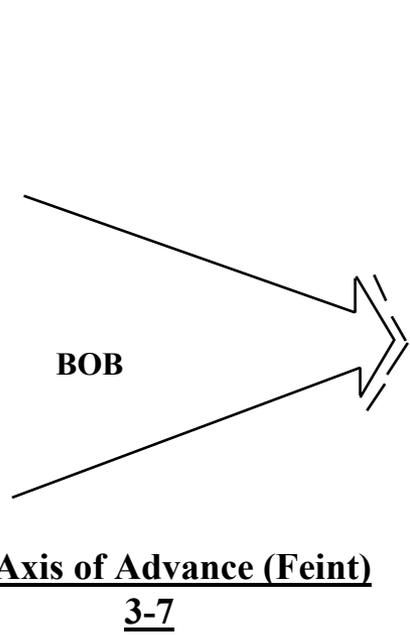
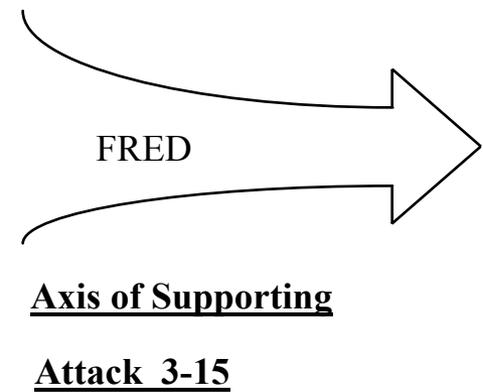
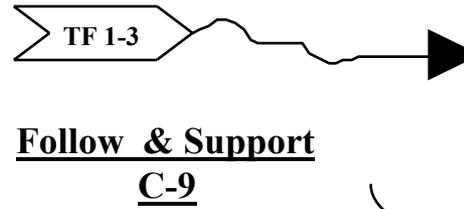
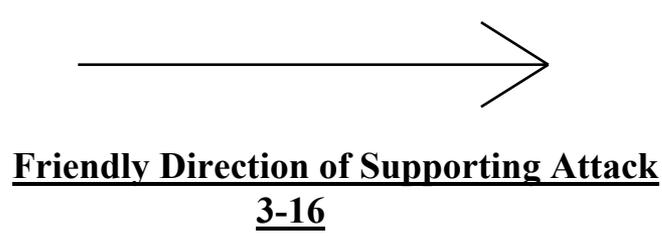
Fire Support Coordination

Line 3-21



Group of Targets
using Regular
Targets 3-23

Identify the following symbols and the reference page for each.



Identify the following Mobility and Survivability Symbology and the reference page as identified in Chapter 3.



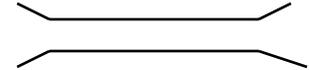
Antitank Obstacle
Movable and
Prefabricated 3-27



Antitank Obstacle Fixed
and Prefabricated
3-27



Booby Trap
3-27



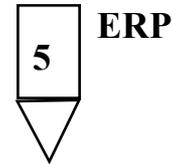
Bridge or Gap
3-38



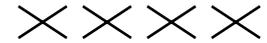
Antitank Minefield
3-29/30



Triple Strand Concertina
3-32



Engineer Regulating
Point 3-28



Wire Obstacle
(Unspecified) 3-32

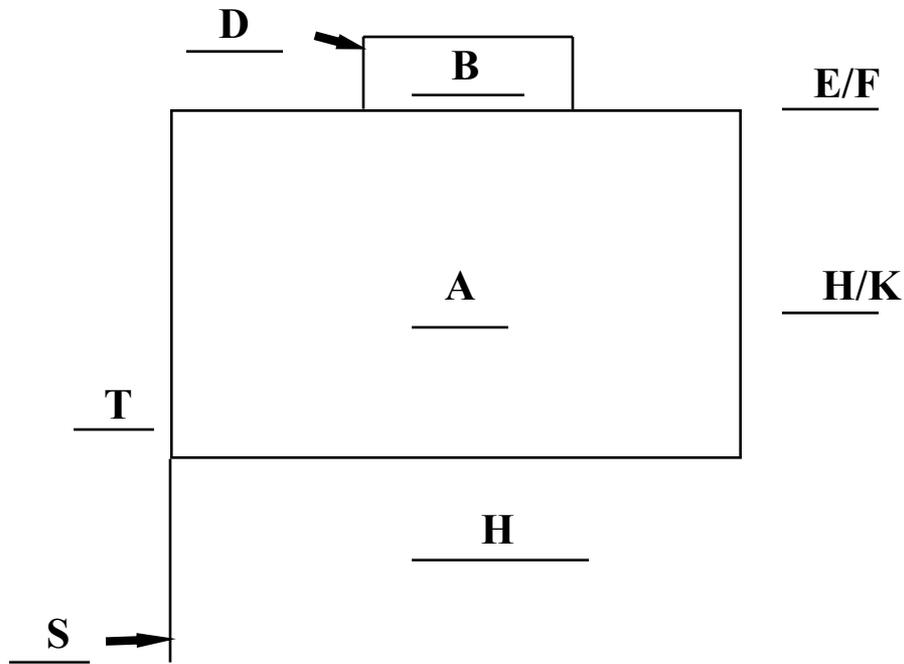
Solution for SH-1-9

The required **Mandatory** fields for any specific symbol are those fields needed to correctly represent any given symbol.

For most unit symbols it will be necessary to fill in fields **Alpha, Bravo, Tango,** and possibly **Delta, Foxtrot, Hotel,** and **Sierra.**

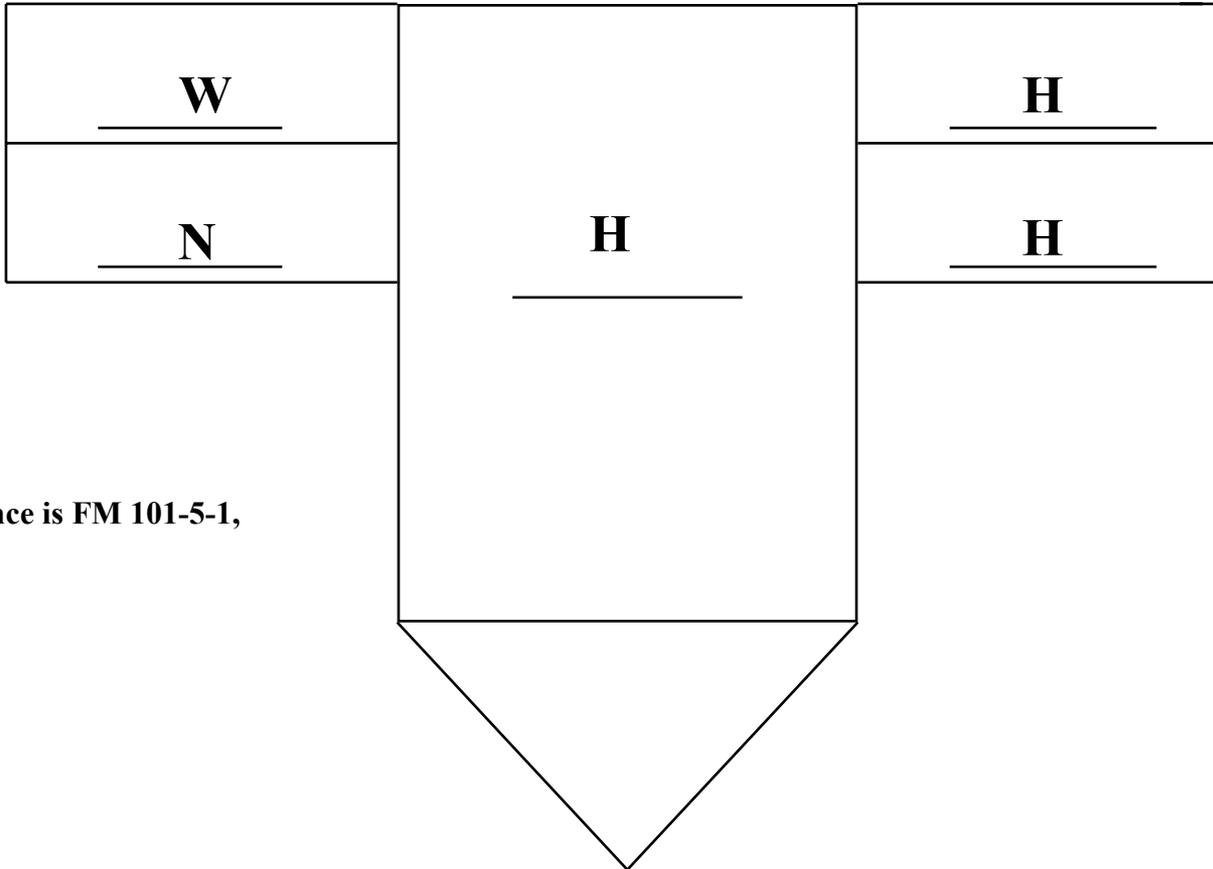
Notice that with field Alpha there are several modifiers necessary to correctly replicate a unit i.e. Airborne, Gun system equipped, or Bicycle equipped

Identify each of the fields indicated for this symbol:



IH-1-7

LIST THE REFERENCE PAGE AND IDENTIFY THE FIELDS FOR A POINT.

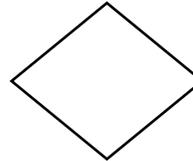


**The reference is FM 101-5-1,
page 3-4.**

These are the three basic symbols used in graphics:



FRIENDLY GROUND UNITS
(RECTANGLE)



ENEMY UNITS (DIAMOND)



NEUTRAL (SQUARE)

What is the reference page? page 4-2

NOTE: FM 101-5-1 SHOWS SYMBOLOGY FOR SHIPS AND AIRCRAFT, HOWEVER THESE SYMBOLS ARE NOT ADDRESSED IN THIS COURSE. THE NEW FM ALSO DELETED THE CIRCLE REPRESENTING AN INSTALLATION.

What do the following symbols represent and what is the reference page in FM 101-5-1?

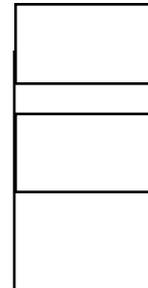


Basic Symbol
Non-HQs Unit

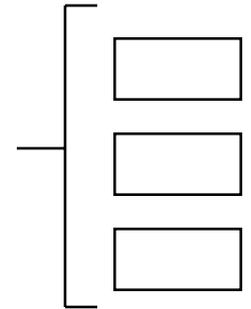


Headquarters Unit

Reference
page is
4-7.



Co-Located Head-
quarters Units



Co-Located
Non HQs
Units

We use dots to show the size of units below Company level. These sizes are--

Annotate the depicted unit unit size--



TEAM/CREW



SQUAD



SECTION



PLATOON/DETACHMENT

Reference page is 4-5.

We use vertical lines to represent the size of units from Company to Regimental/Group level. These sizes are

| **COMPANY/BATTERY/TROOP**

|| **BATTALION/SQUADRON**

||| **REGIMENT/GROUP**

Reference page is 4-5.

We use X's to represent the size of Brigade thru REGION units:

Annotate the depicted unit size--

X **BRIGADE**

XX **DIVISION**

XXX **CORPS**

XXXX **ARMY**

XXXXX **ARMY GROUP/FRONT**

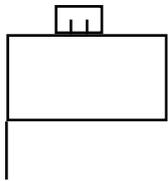
XXXXXX **REGION**

**Reference page
is 4-5.**

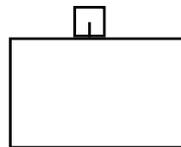
IH-1-11

Field **DELTA**, placed over the size indicator denotes a temporary grouping of units. We use this special size indicator to depict a **TASK FORCE** or **COMPANY TEAM**. When drawing a Headquarters element, you must include field SIERRA. You can find this field on the friendly and enemy types of symbols.

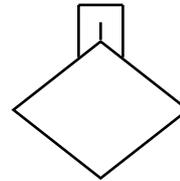
What do these symbols represent?



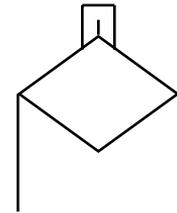
**Bn Task Force
Headquarters**



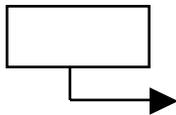
Company Team



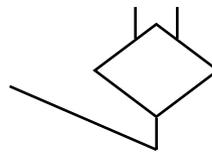
Enemy Company Team



**Enemy Company Team
Headquarters**



**Unit Symbol Using Field Quebec
for Direction of Movement
Indicates Moving or Will Move**

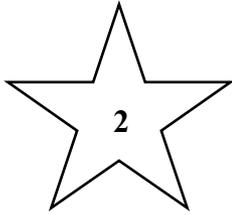


Enemy Battalion

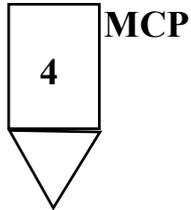


**A Future or Projected Location
Indicating On-Order or
Proposed**

Identify the following symbols and the reference page.



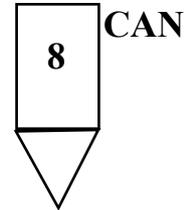
Decision Point
3-25



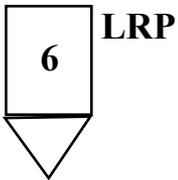
Maintenance Collection
Point 3-38



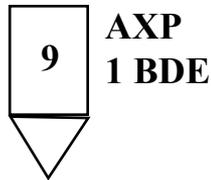
Release Point
3-26



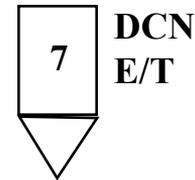
Cannibalization Point
3-37



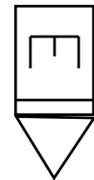
Logistics Release
Point 3-38



Ambulance Exchange
Point for 1st BDE 3-37



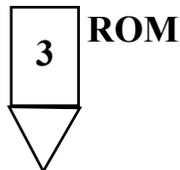
Decontamination Point
Equipment/Troops 3-36



Supply Point for
Class IV 3-39



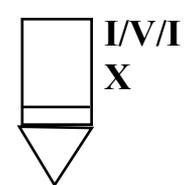
Coordinating Point
3-25



Refuel on the Move
Point 3-39

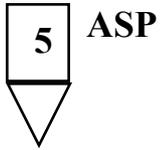


Contact Point #4
3-25



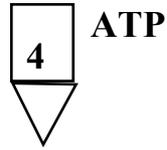
Supply Point for
Multiple Classes of Supply
3-39

Identify the following CSS symbology and reference page using Chapter 3.



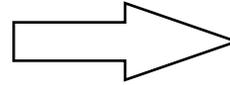
ASP

Ammunition Supply Point
3-37

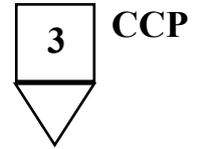


ATP

Ammunition Transfer Point
3-37



Moving Convoy
3-37



CCP

Casualty Collection Point
3-37

MSR BILL

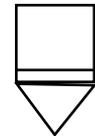
Main Supply Route
3-40



Main Supply Route (One-Way Traffic)
3-40



Startpoint #5
3-26

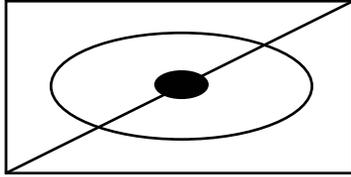


Supply Point General
3-39

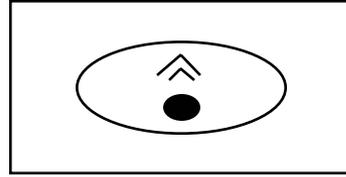


Supply Point (Class VIII)
3-40

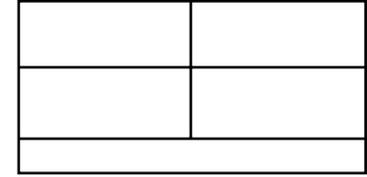
Identify these symbols.



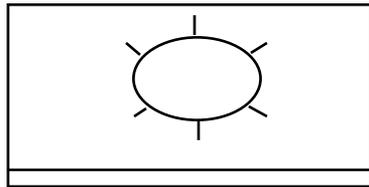
Field Artillery
COLT or Fist Tracked



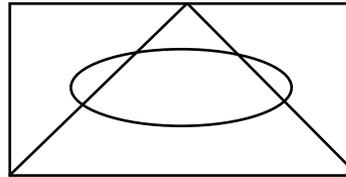
Rocket Artillery
(MLRS or ATACMS)



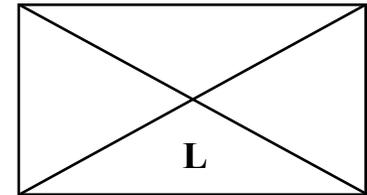
Class VIII Supply



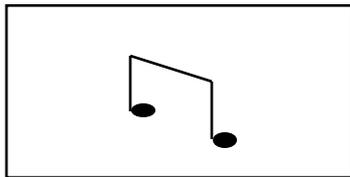
Class IX Supply



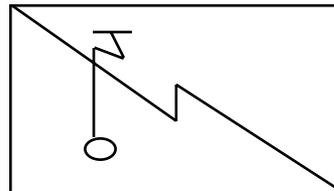
Antiarmor Mechanized



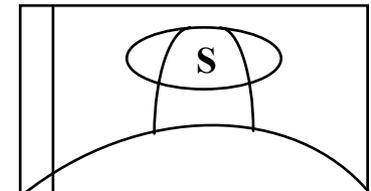
Light Infantry



Band

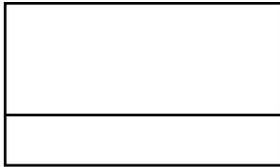


Radio Relay Station

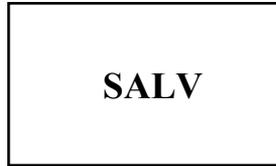


ADA (Bradley Stinger)
Fighting Vehicle

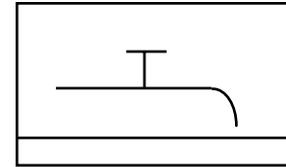
Name these Combat Service Support Units.



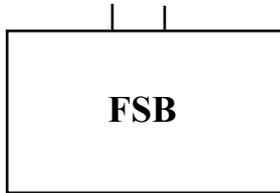
Supply



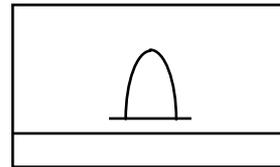
Salvage



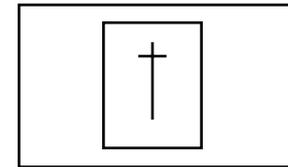
Water Distribution



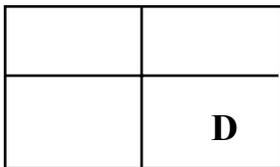
Forward Support Battalion



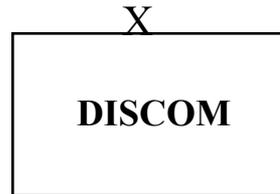
Class V Supply



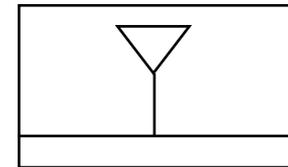
Mortuary Affairs



Dental Unit



Division Support Command

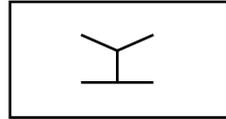


Class III Supply

Now that you know how to show the size and some of the role indicators, it's time to work on some of the over 1000 possible symbols. We will only learn a few at a time. Start on page 4-8 (FM 101-5-1) and identify these modifiers to field Alpha.



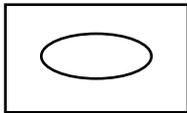
AIR ASSAULT



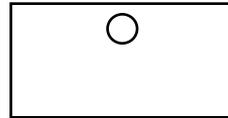
AIR ASSAULT W/ORGANIC LIFT



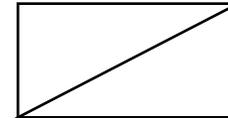
AIRBORNE



**MECHANIZED OR
ARMOR (TRACKED)**



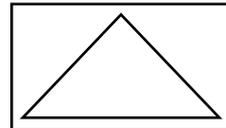
BICYCLE EQUIPPED



RECONNAISSANCE



**GROUND SURVEILLANCE
RADAR**

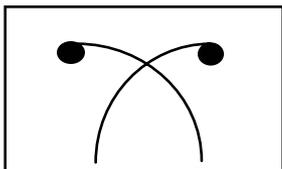


**OBSERVATION or
LISTENING POST**

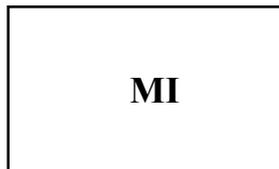


**GUN SYSTEM EQUIPPED
(VULCAN, IFV, ZSU, etc.)**

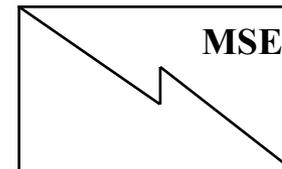
Name these Combat Support Units.



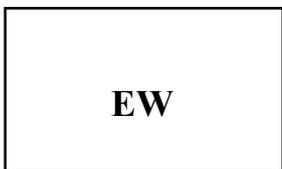
**Nuclear, Biological,
Chemical Basic symbol**



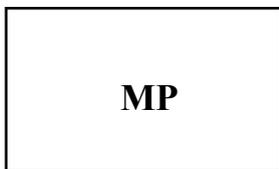
**Military Intelligence
Basic Symbol**



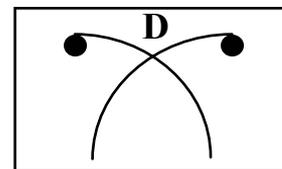
**Multiple Subscriber
Element**



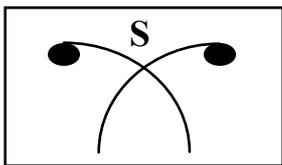
**Electronic Warfare
Basic Symbol**



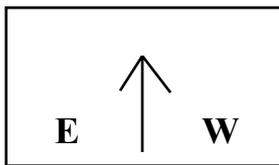
**Law Enforcement/
Army Military Police**



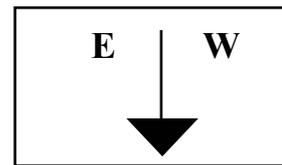
Decontamination Unit



**Smoke Unit
Basic or Truck Equipped**

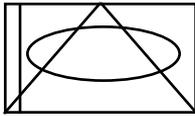


Direction Finding Unit

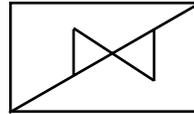


**Electronic Warfare
Intercept Unit**

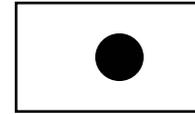
Name these units.



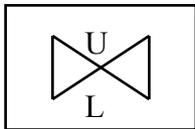
**ANTIARMOR/ FIGHTING
VEHICLE**



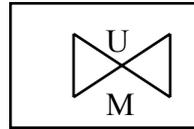
AIR CAVALRY



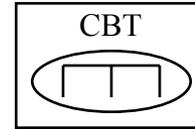
**FIELD ARTILLERY
(BASIC) (TOWED)**



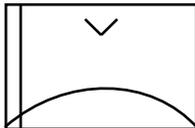
**LIFT HELICOPTER
BASIC or LIGHT
(UH-1 or UH-60)**



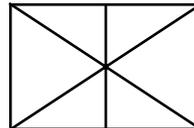
**LIFT HELICOPTER
MEDIUM
(UH-46 or UH-47)**



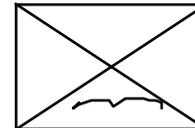
**COMBAT ENGINEER
MECHANIZED**



**AIR DEFENSE
ARTILLERY VULCAN
EQUIPPED TOWED**

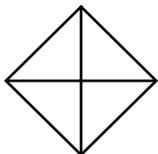


MOTORIZED INFANTRY

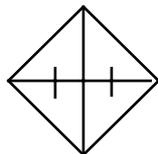


AIRBORNE INFANTRY

Identify the following symbols from Appendix B and D.



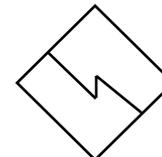
Enemy Medical Unit



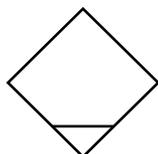
Enemy Medical Treatment Facility Unit



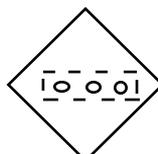
Enemy Supply Unit (All Classes)



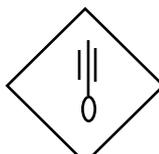
Enemy Signal Unit



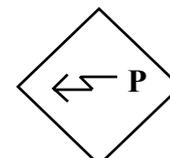
Hostile Supply Cache



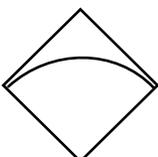
Hostile Mine Laying (In Progress)



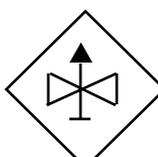
Hostile Artillery Fire



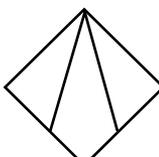
Hostile Patrolling



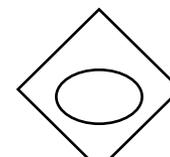
Enemy ADA



Enemy Attack Helicopter (On Ground)

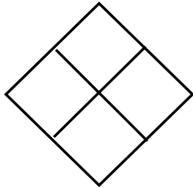


Enemy Antitank

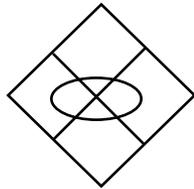


Enemy Armor

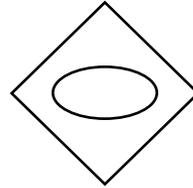
Name the following symbols from Appendix B and Chapter 4.



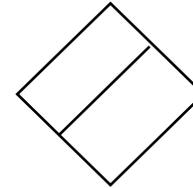
Enemy Infantry



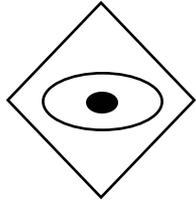
Enemy Mechanized Infantry



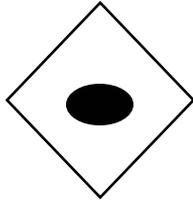
Enemy Armor



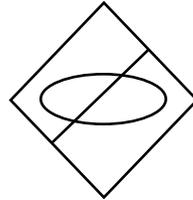
Enemy Cav/Recon



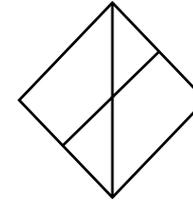
Enemy SP Artillery



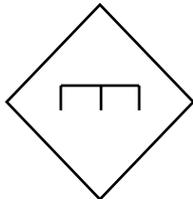
Enemy Artillery



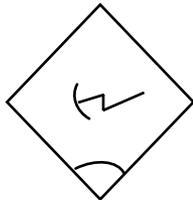
**Enemy Armored Cavalry/
Scout**



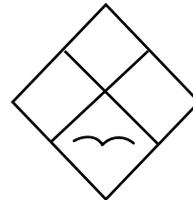
Motorized Scout



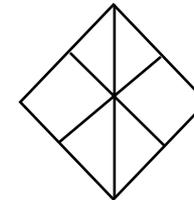
Enemy Engineers



Enemy ADA Radar

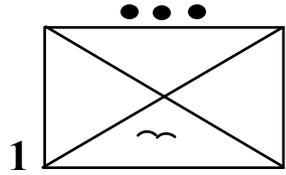


Enemy Airborne Infantry



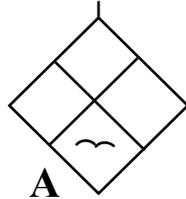
**Enemy Motorized
Infantry**

Using your template, draw the correct symbols to include field Alpha, Bravo, Delta, and Tango entries for the units below:



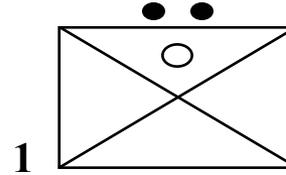
1

1st Plt, Airborne Inf



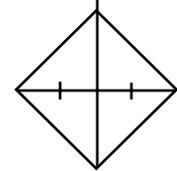
A

Company A, Airborne Infantry
(Enemy)

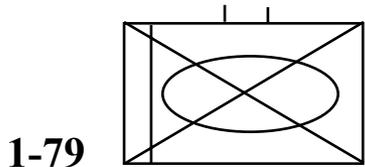


1

1st Section, Bicycle Equipped Inf

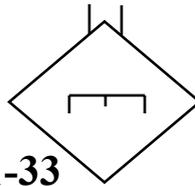


Company Medical Treatment Facility
(Enemy)



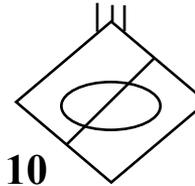
1-79

1-79 Inf (M)(B)



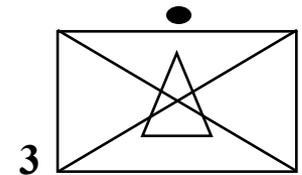
1-33

1-33 Engineers BN (Enemy)



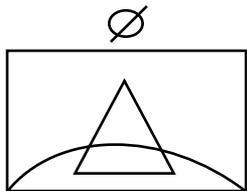
10

10 Armored Cavalry Regiment
(Enemy)

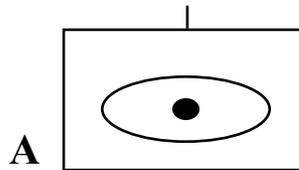


3

3d Squad Inf Observation Post

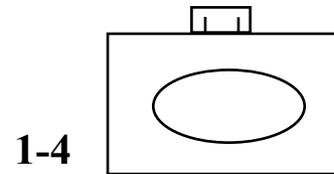


ADA Team Listening Post



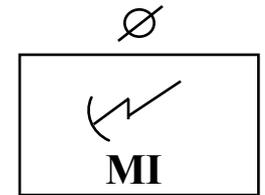
A

A Battery, Field Artillery (SP)

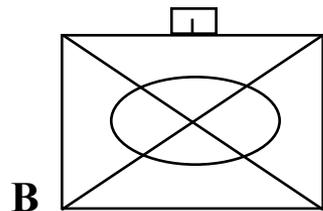


1-4

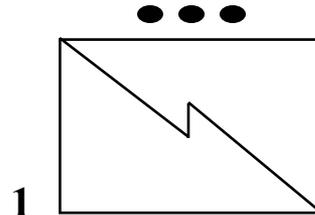
TF 1-4 Armor



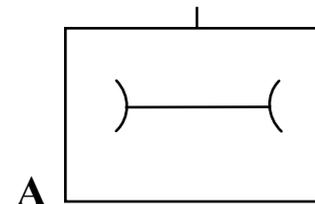
GSR Team



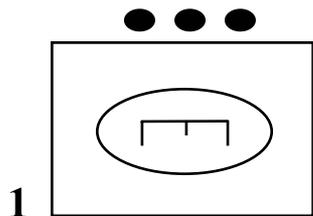
Co Tm B, 1-81 Inf (M)



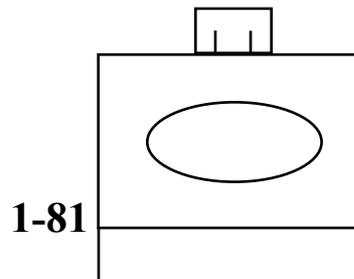
1st Plt, A Co, 52d Signal BN



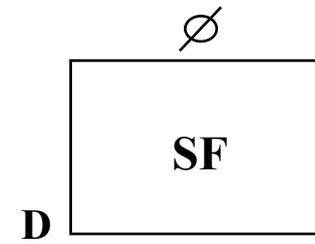
A Co, 52d Maintenance BN



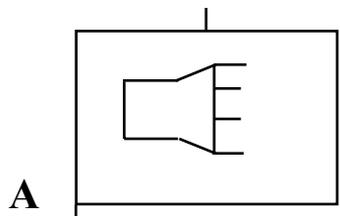
1st Plt, A Co, 52d Engineers (M)



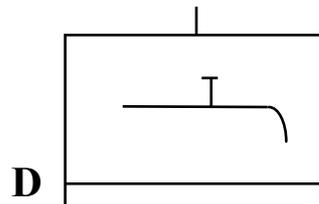
HQs, TF 1-81 AR



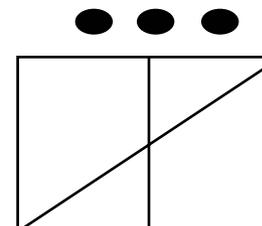
Tm D, 1st Special Forces



A Co HQs, 4th PYSOP BN



D Co, 10th Water Distribution BN



Scout Plt, 1-79 AR (HMMWV Equipped)

Instructor Handout 2

This instructor handout contains FM 101-5-1 changes

Instructor Handout 2

Make the following changes as directed.

On page 5-2, figure 5-3:

Have the students change the geometric shape from a square to a diamond. Inform the students that the figures on page 5-2 do not show fields “L” and “N.” Additionally, field “K” is missing from figure 5-5, page 5-3.

Have the students darken all shaded graphics on page 5-6.

On page A-4:

Have the students draw a track around the “bridge” symbol of the engineer battlaion in the mechanized division.

On page A-5:

Have the students redraw the graphic to show double arrowheads on the MLRS battery in the armored division.

On page A-6:

Have the students redraw the ATP graphic to depict the shell not touching the top of the line.

On page A-7:

Inform the students that this page does not depict all levels of CSS units. The majority of these units are corps level or higher.

On page A-8:

Have the students add the number “2” to the 208th ACR graphic. Also, have the students add the company size indicator to the graphic titled “Engineer construction supply site . . .”

NOTE: Have the students make the following corrections.

On page C-8:

The enemy side is on the right of all graphics except the “Block” graphic where the enemy is on the left side.

On page C-9:

Have students place the unit designation in the tail portion of the Follow and Assume/Follow and Support graphics. Labeling of this graphic will follow the angle of the tail.

On page C-11:

Have students label the unit assigned the mission to screen/guard/cover completely in and around the rectangle.

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Instructor Handout 3

This instructor handout contains suggested practice symbols that the instructor may use to ensure the students understand the graphics system.

Instructor Handout 3

Instructions

After formal instruction on day one, due to the limited time of this lesson, suggest that you draw a different graphic during breaks on the whiteboard. Have a student identify the graphic before the next class. This will serve as a reinforcement of basic graphics.

This should facilitate this lesson and reinforce the knowledge of basic graphics prior to day eleven.

You should draw several different graphics on the whiteboard depicting task organization until you feel that the students understand this concept.

Boundaries

NOTE: Discuss and/or draw the following:

- Size markings perpendicular to the line.
 - If a TM or TF is sharing a boundary, the label must include the respective term.
 - Use Roman numerals on all Corps graphics (boundaries, etc.).
 - National abbreviations always in parenthesis if 2 different countries share the same boundary.
 - Additional information (armored, mechanized, etc.) will be in parenthesis.
-

Fire Support Control Measures

NOTE: Discuss and/or draw the following:

- “(PL NAME)” refers to a code name.
- The term “EFF” is mandatory, this applies to all graphics that have times indicated.
- The complete DTG including the time zone designator, month, and year is mandatory. This applies to all graphics that have times indicated.
- For clarity, label on both ends of line if space is available. Explain how to use a code name label.
- Field “W” applies to the fire support control measure and not to the code name. You will use this field only if the labeling of the fire support control measure does not require it to be on the line itself, i.e. FSCL, CFL, RFL. The country establishing the Fire Support Control measures will have the national abbreviation in parenthesis, if given. Example: “FSCL X (US) Corps.”

Areas

NOTE: Discuss and/or draw the following.

- Correctly plotting the coordinates of the outline of the area and connecting the plots with a natural curve
- Abbreviation for the type of area followed by a name, letter, or number
- Use field “B” only with battle positions or strong points mark the size indicator perpendicular to the area outline and place it at the farthestmost point away from the enemy and oriented in the general direction of the enemy or a specified point use field “N” if you have only one color to draw the entire graphic overlay.

Points

- Ensure the students also know that we use staffs and extensions on all points except Start Point and Release Point.

Graphics

NOTE: Discuss and/or draw the following.

- ACP (p 3-5)
- Dummy/deception/decoy (p 3-7)
- Axis of advance for feint (p 3-7)
- Decoy infantry battalion (p 3-7)
- Direction of attack for feint (p 3-7)
- Battle position (p 3-8)
- Forward edge of the battle area (FEBA) (p 3-9)
- Strong point (p 3-9)
- Target reference point (p 3-9)
- Limit of advance (p3-17)
- Line of departure (p3-17)
- Line of departure is line of contact (p3-17)
- Objective (p3-17)
- Point of departure (p3-17)
- Free fire area (p 3-21)
- No fire area (p 3-21)
- No fire line (p 3-22)
- Restrictive fire line (p 3-22)
- Group of targets (regular and rectangular) (p 3-23)
- Linear targets (p 3-23)
- Target (p 3-24)

Graphics
continued

NOTE: Discuss and/or draw the following:

- coordinating point (p 3-25).
- decision point (p 3-25).
- antitank ditch (p 3-27).
- bridge or gap (p 3-28).
- lane (p 3-28).
- mines (p 3-29).
- minefields (p 3-30).
- obstacle effect (p 3-31).
- wire obstacles (p 3-32).
- strong points (p 3-33).
- ambulance exchange point (p 3-37).
- ammunition points (ASP and ATP) (p 3-37).
- logistical release point (p 3-38).
- maintenance collection point (p 3-38).
- support areas (p 3-39).
- supply points (p 3-39 to 3-40).
- supply routes (p 3-40).

Unit Symbol
Modifiers

NOTE: Discuss and/or draw the following:

- Air assault (p 4-8).
 - Airborne (p 4-8).
 - Gun system-equipped (p 4-9).
 - Mechanized or armor (p 4-9).
 - Motorized (p 4-9).
 - Observation or listening posts - combat outposts (p 4-9).
 - Radar – sensor (p 4-9).
 - Reconnaissance (p 4-9).
-

**Unit Symbol
Modifiers
Combat Arms**

NOTE: Discuss and/or draw the following:

- Air defense (p 4-10).
- Air defense radar (p 4-10) .
- Armor (p 4-11).
- Antiarmor (p 4-11).
- Aviation - fixed wing (p 4-12).
- Aviation - rotary wing (p 4-12).
- Engineer (basic) (p 4-13).
- Engineer (combat) (p 4-13).
- Field artillery (basic, towed) (p 4-14).
- COLT or FIST (p 4-15).
- Forward observer position (p 4-15).
- Rocket artillery (MLRS or ATACMS) (p 4-15).
- Self-propelled artillery (p 4-15).

**Unit Symbol
Modifiers
Combat Arms
Infantry**

NOTE: Discuss and/or draw the following:

- Infantry (basic) (p 4-16) .
- Mortars (p 4-16).
- Airborne (p 4-16).
- Mechanized infantry (APC) (p 4-16).
- Mechanized infantry (IFV) (p 4-17).
- Mechanized infantry (dismounted) (p 4-17).
- Observation post/outpost (p 4-17).

**Unit Symbol
Modifiers
Combat Arms
Reconnaissance**

NOTE: Discuss and/or draw the following:

- Reconnaissance, cavalry, or scouts (basic or dismounted) (p 4-18).
 - Armored (APC) cavalry, reconnaissance, or scouts - use this (p 4-18).
 - Armored (tracked IFV) cavalry, reconnaissance, or scouts (p 4-18).
 - Observation post occupied by dismounted scouts (p 4-18).
-

**Unit Symbol
Modifiers
Combat
Support**

NOTE: Discuss and/or draw the following:

- Chemical corps decontamination (p 4-19).
- Smoke (p 4-19).
- Smoke and decontamination (p 4-19).
- Military intelligence (p 4-19).
- Ground surveillance radar (GSR) (p 4-20).
- EW intercept (p 4-20).
- EW jamming (p 4-21).
- Radio relay - retrans station (p 4-22).

**Unit Symbol
Modifiers
Multifunctional
Combat Service
Support:**

NOTE: Discuss and/or draw the following.

- Supply (p 4-23).
- Supply trains(p 4-23).
- Division support command (p 4-24).
- Main support battlaion (p 4-25).
- Forward support battalion (p 4-25).

**Unit Symbol
Modifiers
Combat
Service
Support**

NOTE: Discuss and/or draw the following:

- Maintenance (p 4-26).
 - Medical (basic) (p 4-26).
 - Medical treatment facility (MTF) (p 4-26).
 - Mortuary affairs (p 4-26).
 - Water (p 4-29).
-

Student Handout 3

Extracted Material from FM 101-5

This student handout contains 10 pages of extracted material from the following publication:

- FM 101-5, Staff Organizations and Operations, 31 Dec 1997
Appendix H pages H-1 thru H-10

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

Appendix H

PLANS AND ORDERS

This appendix explains how to construct plans and orders from battalion to corps levels. General information on the content and construction of plans and orders is followed by examples. For guidance on the preparation of orders and plans at echelons above corps, refer to JP 3-0, JP 5-03.1, and FM 100-7.

Plans and orders are the means by which the commander expresses to his subordinates his battlefield visualization, intent, and decisions, focusing on the results the commander expects to achieve his vision of the end state of an operation. This gives subordinates the maximum operational and tactical freedom to accomplish the mission while providing only the minimum restrictions and details necessary for synchronization and coordination. Plans and orders should provide the *what* rather than the *how* to encourage initiative. Plans and orders are the method the commander uses to synchronize military actions. They also help the staff synchronize the commander's decisions and concepts. Plans and orders

Permit subordinate commanders to prepare supporting plans and orders.

Implement operations derived from a higher commander's plan or order.

Focus a subordinate's activities.

Provide tasks and activities, constraints, and coordinating instructions necessary for the successful completion of missions.

Do not inhibit agility, speed, and initiative in carrying out missions.

Are communications conveying instructions in a standard, recognizable, clear, and simple format.

The amount of detail the commander provides in a plan or an order depends on the experience and competence of subordinate commanders, the cohesion and tactical experience of subordinate units, and the complexity of the operation. The commander balances these factors with his guidance and intent and determines the type of plan or order to issue. To maintain clarity and simplicity, plans and orders include annexes only when necessary and only when they pertain to the entire command. The annexes describe the additional support and

synchronization necessary to accomplish the command's assigned tasks.

All operation plans and orders

Have five paragraphs.

Provide task organization and the scheme of maneuver.

Provide a clear, concise mission statement, based on the mission assigned by the higher headquarters, that includes execution time and date.

Convey the commander's intent and concept of operations.

Usually include an overlay.

Included in this Appendix is a verbatim transcript of an order issued by VII Corps in World War II. It represents a typical order seen during the continuing operations of US Army forces in WWII. The brevity and simplicity of this basic order is remarkable considering that the operation involved six divisions under a corps headquarters. This simplicity and brevity was possible because of several factors. VII corps and its subordinate divisions were well trained, with detailed and practiced SOPs. They were combat-tested with experienced and cohesive staffs. Finally, there was trust up and down the chain of command. Today's units can strive for emulation of these conditions that can lead to simple and concise operation plans and orders.

NOTE: Figure H-1, page H-11, is a list of the figures in this Appendix. The figures, beginning on page H-12, contain examples and procedures for completing plans, orders, and annexes.

PLANS

A *plan* is a proposal for executing a command decision or project. It represents the command's preparation for future or anticipated operations. Because plans concern future operations and help the staff make assumptions about the nature of the situation at the time of execution, they cannot remain static. As the commander and staff change or adjust their estimates to reflect the current analysis of the situation, they must also change the plans.

The **operation plan** (OPLAN) is a plan a command uses to conduct military operations. Commanders may initiate preparation of possible operations by first issuing an OPLAN. (See Figure H-2, page H-12, and Figure H-3, page H-14.) The OPLAN

States critical assumptions that form the basis of the plan (in paragraph 1d of the OPLAN). Assumptions must be revalidated prior to execution of the plan.

Becomes an OPORD when the conditions of execution occur and an execution time is determined.

A **service support plan** (SSPLAN) provides information and instructions covering an operation's service support. Estimates of the command's operational requirements are the bases for the service support plan. The SSPLAN becomes the service support order when the conditions of execution occur. (See Figure H-4, page H-20.)

Other plans are

The **supporting plan**, which complements another plan.

The **contingency plan**, which provides for accomplishing different, anticipated major events before, during, and after an operation.

The **concept plan (CONPLAN)**, which the corps uses when augmented to become a joint task force. It is an abbreviated plan, or outline, for an operation that requires considerable expansion or alteration to convert it into an OPLAN or OPORD. A CONPLAN states important features or principles of a course of action before detailed planning begins. It provides information to higher headquarters and seeks approval and allocation of resources.

ORDERS

An **order** is a written or an oral communication directing actions. Orders are based on plans or the receipt of a new mission. There are two general categories of orders—administrative and combat. **Administrative orders** cover normal administrative operations in garrison or in the field. They include general, specific, and memorandum orders; courts-martial orders; and bulletins, circulars, and other memoranda. (For details, see AR 25-30 and AR 600-8-105.) **Combat orders** pertain to strategic, operational, or tactical operations and their service support. Combat orders include *operation orders*, *service support orders*, *movement orders*, *warning*

orders, and *fragmentary orders*. This appendix is limited to combat orders.

Operation orders (OPORDs) are directives a commander issues to subordinate commanders to coordinate the execution of an operation. They always specify an execution time and date. (See Figures H-2 and H-3.)

The **service support order** (SSORD) provides the plan for service support of operations, including administrative movements (Figure H-4). It provides information to supported elements and serves as a basis for the orders of supporting commanders to their units. SSORDs may be issued either with an OPORD, or separately when the commander expects the CSS situation to apply to more than one operation plan or order. At division and corps levels of command, the SSORD may replace an OPORD's service support annex. If that happens, the staff refers to the existence of the SSORD in paragraph 4 of the OPORD. Staffs at brigade and lower levels of command may cover all necessary information in paragraph 4 of the OPORD without annexes or a separate SSORD. The SSORD follows the same format as the OPORD. It is usually in writing and may include overlays, traces, and other annexes.

The G4 (S4) has primary coordinating responsibility for preparing, publishing, and distributing the SSORD. Other staff officers, both coordinating and special, provide those parts of the order concerning their responsibilities. Their input may be a single sentence or a complete annex.

The **movement order** is a stand-alone order that facilitates an uncommitted unit's movement (Figure H-5, page H-25). The movements are typically administrative, and troops and vehicles are arranged to expedite their movement and to conserve time and energy when no enemy interference (except by air) is anticipated. Normally, these movements occur in the communications zone. The G4 (S4) has primary coordinating staff responsibility for planning and coordinating movements. However, he receives assistance from other coordinating and special staff officers (such as the G3 (S3), PM, MP, transportation officers, and movement-control personnel). The G4 (S4) is also responsible for preparing, publishing, and distributing the movement order.

However, when conducting ground movement in rear areas of the combat zone where enemy interference is expected, the movement order may become a highway regulation annex (in NATO, this is referred to as the *movement annex*) to an OPORD or SSORD. The G3 (S3) plans and coordinates these tactical movements.

The **warning order** (WARNO) is a preliminary notice of an order or action that is to follow (Figure H-6). Warning orders help subordinate units and their staffs prepare for new missions. Warning orders maximize subordinates' planning time, provide essential details of the impending operation, and detail major time-line events that accompany mission execution. The amount of detail a warning order includes depends on the information and time available when the order is issued and the information subordinate commanders need for proper planning and preparation. The words WARNING ORDER precede the message text. With the commander's (or Cof S's (XO's)) approval, a coordinating or special staff officer may issue a warning order.

The warning order clearly informs the recipient of what tasks he must do now as well as informs him of possible future tasks. However, a WARNO does not authorize execution other than planning unless specifically stated. The WARNO follows the five-paragraph field order format and may include the following information:

- Required maps (if changed from the current OPORD).

- The enemy situation and significant intelligence events.

- The higher headquarters' mission.

- Mission or tasks of the issuing headquarters.

- The commander's intent statement (when available).

- Orders for preliminary action, including reconnaissance and surveillance.

- Coordinating instructions (estimated time lines, orders group meeting, time to issue order).

- Service support instructions, any special equipment necessary, regrouping of transport, or preliminary movement of units.

Every warning order involving movement should state a time before which there is no movement. This means that a further order must be issued before that time giving actual movement time tables, or extending the period before which there will be no movement.

The **fragmentary order** (FRAGO) provides timely changes of existing orders to subordinate and supporting commanders while providing notification to higher and adjacent commands. Commanders may authorize members of their staff to change existing orders by issuing

FRAGOs in their name. A FRAGO is either oral or written and addresses only those parts of the original OPORD that have changed. The sequence of the OPORD is used and *all five-paragraph headings must be used*. After each heading, state either No Change or the new information. This ensures that recipients know they have received the entire FRAGO (especially if the FRAGO is sent over the radio). (See Figure H-7, page H-29.)

The FRAGO differs from an OPORD only in the degree of detail provided. It refers to previous orders and provides brief and specific instructions. The higher headquarters issues a new OPORD when there is a complete change of the tactical situation or when many changes make the current order ineffective.

CHARACTERISTICS OF OPLANS AND OPORDS

Characteristics of good OPLANs or OPORDs include

- Addressing of critical facts and assumptions. The commander and staff evaluate all facts and assumptions. They retain for future reassessment only those facts and assumptions that directly affect an operation's success or failure. OPORDs do not state assumptions.

- Authoritative expression. The plan or order reflects the commander's intention and will. Therefore, its language must be direct. It must unmistakably state what the commander wants subordinate commands to do.

- Positive expression. State plans and orders affirmatively. The trains will remain in the assembly area instead of The trains will not accompany the unit.

- Avoiding of unqualified directives. Do not use meaningless expressions like *as soon as possible*. Indecisive, vague, and ambiguous language leads to uncertainty and lack of confidence. For example, do not use try to retain ; instead say retain until. Avoid using phrases like violently attacks or delays while maintaining enemy contact. Use attacks or delays. Army doctrine already requires attacking violently and maintaining enemy contact during delays.

- Balance. Provide a balance between centralization and decentralization. The commander determines the appropriate balance for a given operation by using METT-T. During the chaos of battle, it is essential

decentralize decision authority to the lowest practical level. Over-centralization slows action and contributes to loss of initiative. However, decentralization can cause loss of precision. The commander must constantly balance competing risks while recognizing that loss of precision is usually preferable to inaction.

Simplicity. Reduce all essential elements to their simplest form, eliminating elements not essential to mission success. Simplicity reduces possibilities for misunderstanding.

Brevity. Be concise, clear and to the point, and include only necessary details using short words, sentences, and paragraphs. *Orders and plans, and their annexes, appendixes, tabs, and enclosures, do not include matters covered in SOPs.* However, where appropriate, they should refer to the SOP.

Clarity. Eliminate every opportunity for misunderstanding the commander's exact, intended meaning. Everyone using the plan or order must readily understand it. Do not use jargon, although acronyms may be used when they do not reduce clarity. Keep the plan or order simple, using doctrinal terms and graphics.

Completeness. Portray the commander's will and provide the necessary information required for execution. Provide control measures that are complete and understandable, and that maximize the subordinate commander's initiative. Provide adequate control means (headquarters and communications), clearly establish command and support relationships, and fix responsibilities to carry out the plan according to the commander's intent.

Coordination. Provide for direct contact among subordinates; fit together all combat power elements for synchronized, decisive action; impose only necessary and doctrinally correct control measures; and help identify and provide for mutual support requirements while minimizing the force's exposure to fratricide.

Flexibility. Leave room for adjustments that unexpected operating conditions might cause. The best plan provides for the most flexibility.

Clear, concise mission and intent statements and essential tasks to subordinates.

Centralized planning. The commander's mission, intent, and concept of operations underlie all plans and orders. Subordinate and supporting commanders develop plans and orders that support their commander's

plan or order. The commander's control over subordinate commanders enhances synchronization and minimizes exposure to fratricide.

Decentralized execution. The commander delegates authority to subordinate and supporting commanders to execute the plan by telling them what he wants done, not how to do it. He expects subordinates to seize and retain the initiative by aggressively and creatively executing his plan. In turn, subordinate and supporting commanders ensure their plans and orders provide for decentralized execution at the next lower echelon, allowing their subordinates to seize opportunities while the higher commander reviews courses of action to exploit success.

Use of existing resources for decisive action. Use all resources organic to the organization and available from higher headquarters. Provide subordinates with sufficient resources to accomplish their missions. Provide for adequate resources (personnel, material, C², liaison, and so on) for the expected duration of the contemplated operation.

Timeliness. Send plans and orders to subordinates in time to allow them to adequately plan and prepare their own actions. When time is short, accept less than optimum products in the interest of timeliness. General George S. Patton, Jr., said, "A good plan violently executed now is better than a perfect plan next week."

TECHNIQUES FOR ISSUING ORDERS

There are several techniques for issuing orders. They can be oral, written, or electronically produced, using matrixes or overlays. Five-paragraph *written orders* are the standard format for issuing combat orders. Orders may be generated and disseminated via *electronic* means to reduce the amount of time necessary to gather and brief the orders group. When available preparation time or resources are constrained, the commander may use the *matrix* method of issuing an order.

The *overlay order* combines the five-paragraph order with the operation overlay. The commander may issue the overlay order when planning preparation time is severely constrained and he must get the order to subordinate commanders by the most expeditious means. He may issue the overlay order by any suitable graphic method. The overlay order may consist of more than one overlay. A separate overlay or written annex can

contain the service support coordination and organizations. (See Figure H-8, page H-30.)

Oral orders are used when operating in an extremely time-constrained environment. They offer the advantage of orders being passed quickly to subordinates but at the risk of critical information being overlooked or misunderstood in the haste of circumstances. Oral orders are most often used for FRAGOs.

Plans and orders generally include both text and graphics. Graphics convey information and instructions through military symbols. (See FM 101-5-1.) They complement the written portion of a plan or an order and promote clarity, accuracy, and brevity. The Army prefers depicting information and instructions graphically when possible. However, the mission statement and the commander's intent must be in writing.

An overlay graphically portrays the location, size, and activity (past, current, or planned) of depicted units more consistently and accurately than can text alone. An overlay enhances a viewer's ability to analyze the relationships of units and terrain. A trained viewer can attain a vision of a situation, as well as insight into the identification of implied tasks, relationships, and coordination requirements, that the written plan or order may not list or readily explain. Overlay graphics may be used on stand-alone overlays or overprinted maps in annexes, appendixes, tabs, and enclosures. The issuing headquarters is responsible for the location accuracy of coordinating points, boundaries, and other control measures, transposing graphics to and from the map scale used by subordinate headquarters. (See Figure H-8.)

ADMINISTRATIVE INSTRUCTIONS FOR PREPARING PLANS AND ORDERS

The following information pertains to all plans and orders. Unless otherwise stated, the term order is used to mean both plans and orders during the discussion. Figures H-2 and H-3 show *annotated formats for orders* having prescribed formats. Figure H-9, page H-34, is a sequential list of annexes and appendixes. Figure H-10, page H-36, shows a *common annotated annex format*. The remaining figures show *annotated formats for annexes, appendixes, and tabs* having prescribed formats.

General Information

Show all paragraph headings on written orders. There is no need to place an entry under each heading, except for, Mission, paragraph 2, and Commander's Intent, paragraph 3. A paragraph heading with no text will state: None, See Annex ___, or See Overlay. Conventions such as the bold font and changes in the font size appearing in the headings of annotated formats are solely for emphasis within this manual. They are not intended to be followed in actual plans or orders.

Abbreviations

Use abbreviations to save time and space if they will not cause confusion. Do not sacrifice clarity for brevity. Keep abbreviations consistent throughout any order and its annexes. Avoid using abbreviations in any joint or combined communications, except those contained in international agreements.

NOTE: FM 101-5-1 and AR 310-50 contain guidance for using operational abbreviations.

Place and Direction Designations

Describe locations or points on the ground by

Referring to military grid reference system coordinates.

Referring to longitude and latitude (if the maps available do not have the military grid reference system (MGRS)).

Giving the distance and direction from a simple reference point (for example, crossroads 1,000 meters southwest of church tower of NAPEIRVILLE LB6448).

Designate directions in one of three ways:

By using two locations or places (for example, direction ECKENTAL PV6690 PEGNITZ PA6851).

As a point of the compass (for example, north or northeast).

As a magnetic, grid, or true bearing, stating the unit of measure (for example, a magnetic bearing of 85 degrees).

When a place or feature on a map is mentioned for the first time in an order, print the name in capital letters exactly as spelled on the map and show its grid coordinates in parenthesis after it. When a control measure such as a contact point or supply point is used for the first time in an order, print the name or designation of the point

followed by its grid coordinates in parenthesis. Use four-, six-, or eight-digit MGRS coordinates (as necessary to precisely locate the place, feature, or point) preceded by the 100-kilometer square designation (for example, LB6448). Thereafter, use names, planning names, or codes and repeat the coordinates only for clarity.

Describe areas by naming the northernmost (12 o'clock) point first and the remaining points in clockwise order. Describe positions from left to right and from front to rear, facing the enemy. To avoid confusion, use compass points to describe flanks, rather than right or left of the friendly force.

Always add compass points for clarity when describing a route if the possibility of confusion exists (for example, The route is northwest along the road LAPRAIRIE-DELSON). If a particular route already has a planning name (such as MSR LAME DOG), refer to the route using only that designator.

Designate trails, roads, and railroads by the names of the places near their locations. If you do not use place names, use grid coordinates. Precede place names with trail, road, or railroad (for example, road GRANT CODY). To be consistent with planned movement, designate the route by naming a sequence of grid coordinates along the direction of movement. When there is no movement, name the sequence of points from left to right or front to rear, facing the enemy.

Describe river banks using the cardinal points of the compass or as either near or far in crossing operations.

Describe boundaries and phase lines by easily distinguishable terrain features (from the ground or air or on a map). When designating boundaries between units, state specifically which unit has responsibility and authority for the place, feature, or location to which the description refers. State each location along a boundary as either inclusive or exclusive to a unit (for example, 1st Bde, exclusive crossroad LB621352). List boundaries and phase lines in the order from left to right or front to rear, facing the enemy.

Naming Conventions

Planners must decide on a method to name control measures, routes, assembly areas, and so on. Unit SOPs normally designate naming conventions. For the sake of *clarity* avoid using multiword names, such as Junction City. Simple names are better than complex ones. To

ensure *operations security*, avoid assigning names that could reveal unit identities, such as the commander's name or the unit's home station. Do not name sequential phase lines and objectives in alphabetical order. For *memory aids*, use sets of names designated by the type of control measure or subordinate unit. For example, the division might use colors for objective names and minerals for phase line names.

Classification Markings and Procedures

Army Regulation 380-5 contains a detailed description of marking, transmitting procedures, and other classification instructions. Place classification markings at the top and bottom of each page. All paragraphs must have the appropriate classification marking immediately following the numbered designation of the paragraph (preceding the first word if the paragraph is not numbered). Mark unclassified instructional or training material representing orders _____ for Training, Otherwise Unclassified, with the exercise classification level in the blank. If the entire plan or order is unclassified, no classification markings are required.

When the issuing headquarters sends classified plans or annexes separately, it assigns copy numbers to each and keeps a record of the specific copy or copies sent to each addressee (to facilitate security control).

Annotating Unnamed Dates and Times

In OPLANs or OPORDs, use one of six letters to designate unnamed dates:

C-day. The day when a deployment operation begins. The deployment may be of troops, cargo, and/or weapons systems, using any type of transport.

D-day. The day when an operation begins.

E-day. The day when a NATO exercise begins.

K-day. The day when a convoy system on a particular convoy lane begins.

M-day. The day when full mobilization begins.

S-day. The day (if it is not M-day) when the first mobilization manpower action occurs.

The specific hour on D-day at which a particular operation will begin is H-hour. The highest headquarters planning an operation specifies the exact meaning of D-day and H-hour. If a single plan mentions more than one such event, key the secondary event to the primary event by adding or subtracting days. Refer to days

preceding or following D-day by using a plus or minus sign and an Arabic number following the letter (for example, D-3 is three days before D-day; D+7 is seven days after D-day). When using a time element other than days, spell it out (for example, D+3 months). Refer to hours preceding or following H-hour by a plus or minus sign and an Arabic number following the letter (for example, H-3 is three hours before H-hour; H+7 is seven hours after H-hour). When using a time element other than hours, spell it out (for example, H+30 minutes).

Retain the letter designation used in the original order in translations of OPORDs. Use J only when translating documents to and from French. Use only A, B, N, S, W, and X if other letters are needed; all other letters have multinational meanings.

Where it is necessary to identify a particular operation or exercise, place a nickname, or code words if applicable, before the letter; for example, BALD EAGLE (E-day) or ANVIL EXPRESS (M-day).

Annotating Time

The effective time for implementing the plan or order is the same as the date-time group (DTG). If the effective time of any portion of the order differs from that of the order, explicitly identify this variance at the beginning of the coordination instructions (Effective only for planning on receipt or Task organization effective DTG.)

Include the time zone suffix in the heading data and in the mission statement. The time zone remains the same throughout the order. If local time is chosen, select the appropriate time zone suffix which adjusts for the difference from ZULU time. Many temperate regions practice daylight savings time. For example, Central Standard Time in CONUS uses SIERRA suffix for local time. When daylight savings time is in effect, the local time is ROMEO suffix. The relationship of local time to ZULU, not the geographical location, determines the appropriate time zone suffix.

Express dates in the sequence day, month, and year (6 August 19XX). When using inclusive dates, express them by stating both dates separated by a dash (6-9 August 19XX or 6 August-6 September 19XX). Express times in the 24-hour clock system by means of four-digit Arabic numbers. Include the time zone suffix.

Express the date and time as a six-digit date-time group. The first two digits indicate the day of the month; the last four digits indicate the time. Add the month or

the month and year to the DTG when necessary to avoid confusion. For example, a complete DTG would appear as 060140Z August 19XX.

Identification of Succeeding Pages of the Plan or Order

On pages following the first page, use a short title identification heading. Include the number (or letter) designation and headquarters (for example, OPLAN 7 23d Armd Div or ANX B (INTEL) to OPLAN 15 23d Armd Div).

Page Numbering

Number pages consecutively beginning on the first page. Number second and succeeding pages with Arabic numbers. Use letters and Roman numerals alternately to further identify annexes, appendixes, tabs, enclosures, and additions, in order. Use dashes to separate the alphabetical and Roman numeral groups that precede the Arabic page numbers of annexes, appendixes, and so forth. For example, the designation of the third page of enclosure 7 to tab B to appendix 2 to annex A is A-II-B-VII-3.

Annexes, Appendixes, Tabs, Enclosures

Annexes provide details not readily incorporated into the basic order and help keep the order's basic text short. They should increase the clarity and usefulness of the basic order by providing combat support, combat service support, and administrative details and instructions that amplify the basic order. They are a component to an order but not required if deemed unnecessary; each annex relates to a specific aspect of the operation. The number and type of annexes depend on the commander, level of command, and needs of the particular operation. Make every effort to minimize their number. They are referenced in the body of the order and listed under the heading annexes at the end of the order. The sequence for the most common annexes are shown in Figure H-9, page H-34. This sequence is required for all OPORDs and OPLANs. Units that do not require a particular annex indicate this by stating Annex __ omitted. Additional annexes needed for local command requirements will use the next letter, W, continuing through X, Y, Z, AA, AB, AC, and so forth, as needed.

When an annex that is integral to the basic order has the same distribution as the order, identify it by its title and headquarters (for example, Annex B (Intelligence) to Operation Order 10 52d Mech Div). If an annex has wider distribution than the basic order, or when issuing

an annex separately, give it a heading and title and include all final entries (acknowledgment instructions, the commander's signature, and so on).

Appendixes contain information necessary to expand an annex, *tabs* expand appendixes, and *enclosures* expand tabs. An annex, an appendix, a tab, or an enclosure may be a written text, a matrix, a trace, an overlay, an overprinted map, a sketch, a plan, a graph, or a table. Where appropriate, use the five-paragraph field order format for these documents. The staff officer with responsibility for the activity or service covered in the annex, appendix, tab, or enclosure prepares the document.

Annexes, appendixes, tabs, and enclosures are designated sequentially within their parent document, either alphabetically or numerically. They include a title in parenthesis and always reference the parent document to which they belong. *Annexes* are designated by capital letters (Annex H (Signal) to Operation Order 6 52 Mech Div), *appendixes* with Arabic numbers (Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6 52d Mech Div), *tabs* with capital letters (Tab A (Ground Messenger Service) to Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6 52d Mech Div), and *enclosures* with Arabic numbers (Enclosure 1 (Route Map) to Tab A (Ground Messenger Service) to Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6 52d Mech Div).

Identify additions necessary for expanding enclosures by repeating the procedures for tabs and enclosures. Use double letters (AA) or hyphenated double numbers (1-1) (for example, Enclosure 1-1 (***) to Tab AA (***) to Enclosure 1 (Route Map) to Tab A (Ground Messenger Service) to Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6 52d Mech Div).

Refer to annexes, appendixes, tabs, and enclosures in the body of the parent document by letter or number and title. Also list them at the bottom of the parent document under the appropriate heading.

STANDING OPERATING PROCEDURES

Standing operating procedures (SOP) detail how forces will execute unit-specific techniques and procedures that commanders standardize to enhance effectiveness and flexibility. Commanders use SOP to standardize routine or recurring actions not needing their personal involvement. They develop SOP from doctrinal sources, applicable portions of the higher

headquarters' published procedures, the commander's guidance, and techniques and procedures developed through experience. The SOP must be as complete as possible so that new arrivals or newly attached units can quickly become familiar with the unit's normal routine. In general, SOP apply until commanders change them to meet altered conditions or practices. The benefits of SOP include

- Simplified, brief combat orders.

- Enhanced understanding and teamwork among commanders, staffs, and troops.

- Established synchronized staff drills.

- Established abbreviated or accelerated decision-making techniques.

The operations officer is responsible for preparing, coordinating, authenticating, publishing, and distributing the command's tactical and administrative SOP, with input from other staff sections.

MATRIXES AND TEMPLATES

A number of staff tools exist to support the commander and his staff in the decision-making process and the development of the order. Tools include the decision support template (DST), synchronization matrix, and execution matrix. However, matrixes and templates are only tools; they are not orders.

The *decision support template* is created by the commander and staff during the decision-making process. A DST graphically represents the projected situation, identifying where a decision must be made to initiate a specific activity or event. It does not dictate decisions; it indicates when and where the need for a decision is most likely to occur.

The staff uses the operations map as the base. Before the war gaming, the staff graphically portrays enemy COAs on the situation templates. After the war game, the staff combines projected enemy and friendly situations (developed during war gaming) with options (such as branch plans) that the commander might employ onto a DST. The DST is also keyed to the synchronization matrix (developed during war gaming). It graphically integrates

- Time-phased lines (TPLs) and enemy events, activities, and targets.

Friendly events, activities, scheme of maneuver, and control measures from the synchronization matrix and operation overlay.

Commander's critical information requirements (CCIR).

Time estimates (calculations of the times required to implement decisions).

NOTE: FM 34-1 and FM 34-130 contain discussions on the elements of the DST.

The DST supports decisions that are closely linked to other events. These decisions can involve specific targets or other actions that support the commander's concept of operations. Based on the action, reaction, counteraction drill used during war gaming, a DST lists options that should help the unit accomplish the mission. For example, a DST can provide the options for friendly maneuver and fires to counteract enemy reactions to the friendly unit's actions. Additionally, it can support CS- and CSS-related decisions. Examples include the following:

When the enemy arrives at a certain point, the commander may decide to shift unit positions and displace the division support area.

When a friendly unit reaches a certain point on the battlefield, the commander may decide to move supporting artillery.

A DST equates time to specific points, areas, or lines in the area of operations. Time is expressed in minutes, hours, or days in relationship to the start of the mission or as a sequence of critical events or activities. The time to accomplish certain actions for both friendly and enemy units is estimated based on set planning factors.

A DST uses NAIs and TPLs to depict specific information requirements. Decision points (DPs) integrate NAIs and CCIR by placing a DP on the projected enemy location where the commander expects to review planned options and make a decision. The TAIs depict engagement points or areas where interdiction of an enemy force will reduce or eliminate particular enemy capabilities or cause him to abandon, modify, or adopt another course of action.

The NAI is a point or area where enemy activity (or inactivity) confirms or denies a particular enemy course of action. It can be a specific point on the ground, a portion of a route, or a larger area. When possible, NAIs are placed in numbered sequences along an avenue of approach or a mobility corridor. This technique helps

calculate movement times between NAIs and limits confusion about the avenue or corridor involved.

Time-phased lines help track enemy movements. They provide a graphic means of comparing the enemy's rate of movement along different avenues of approach and mobility corridors. Time-phased lines can be computed for all types of enemy movement and operations air assault, deliberate attack, dismounted infiltration, and so forth. Both friendly and enemy movement rates should be adjusted to compensate for the effects of weather, terrain, and obstacles. During actual operations, the G2 (S2) adjusts TPLs to conform to the enemy's actual rates of movement.

Decision points must be supported by NAIs (where an asset can detect the enemy). The commander can decide to execute a planned decision based on enemy actions at a DP. If the commander does not make a decision before the enemy force passes the DP, that option is negated. Factors affecting DP placement include the time required

For the G2 (S2) to receive the information from the intelligence collection or reconnaissance and surveillance asset.

To process or analyze the information.

To advise the commander of the activity.

To disseminate orders or instructions to the proper maneuver, FS, CS, or CSS unit or asset.

For the unit or asset to execute the orders or instructions.

A TAI is an area or a point along a mobility corridor or an engagement area where the commander wants to mass combat power through maneuver, fires, obstacles, and or EW. The G3 (S3) develops TAIs based on the commander's intent and in coordination with the G2 (S2), FSCoord or FSO, and the electronic warfare officer. DPs often trigger maneuver, fires, or EW on a TAI. For some TAIs, the commander specifies one definite attack option, thus one DP. However, several DPs, called a DP cluster, can be designated to address several options for one TAI. Regardless of location, DPs and TAIs must be under surveillance.

The *synchronization matrix* provides a highly visible, clear method for ensuring that planners address all operating systems when they are developing courses of action and recording the results of war gaming. The matrix clearly shows the relationships between activities, units, support functions, and key events. The

synchronization matrix supports the staff in adjusting activities based on the commander's guidance and intent and the enemy's most likely course of action. The synchronization matrix is not a formal part of plans and orders. It serves as a planning tool, an internal staff product, which normally is not distributed formally to subordinate and higher headquarters. (See Figure 5-9, page 5-20.)

When used together, the synchronization matrix and the DST form a powerful graphic C^2 tool. Once a decision is made on the COA, the staff can use the

DST and synchronization matrix to assist in writing the OPLAN or OPORD. Because missions and decisions are laid out in a logical and orderly fashion, this is also a good way to ensure nothing is left out of the OPLAN or OPORD.

The staff can write an annex to the OPLAN or OPORD as an *execution matrix*. An execution matrix depicts when and where specific supporting actions must occur.

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Student Handout 4

Extracted Material from FM 3-25.26

This student handout contains four pages of extracted material from the following publication:

- FM 3-25.26, Map Reading and Land Navigation, 20 July 2001
Chapter 7, pages 7-1 thru 7-4

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

CHAPTER 7 OVERLAYS

An overlay is a clear sheet of plastic or semi-transparent paper. It is used to display supplemental map and tactical information related to military operations. It is often used as a supplement to orders given in the field. Information is plotted on the overlay at the same scale as on the map, aerial photograph, or other graphic being used. When the overlay is placed over the graphic, the details plotted on the overlay are shown in their true position.

7-1. PURPOSE

Overlays are used to display military operations with enemy and friendly troop dispositions, and as supplements to orders sent to the field. They show detail that will aid in understanding the orders, displays of communication networks, and so forth. They are also used as annexes to reports made in the field because they can clarify matters that are difficult to explain clearly in writing.

7-2. MAP OVERLAY

There are three steps in the making of a map overlay—orienting the overlay material, plotting and symbolizing the detail, and adding the required marginal information (Figure 7-1).

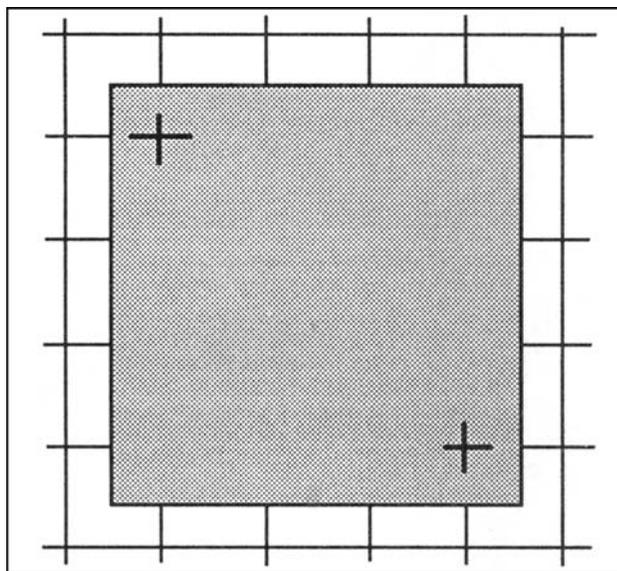


Figure 7-1. Registering the overlay.

a. **Orienting.** Orient the overlay over the place on the map to be annotated. Then, if possible, attach it to the edges of the map with tape. Trace the grid intersections nearest the two opposite corners of the overlay using a straightedge and label each with the proper grid coordinates. These register marks show the receiver of your overlay exactly where it fits on his map; without them, the overlay is difficult to orient. It is imperative that absolute

accuracy be maintained in plotting the register marks, as the smallest mistake will throw off the overlay.

b. **Plotting of New Detail.** Use pencils or markers in standard colors that make a lasting mark without cutting the overlay to plot any detail (FM 101-5-1).

(1) Use standard topographic or military symbols where possible. Nonstandard symbols invented by the author must be identified in a legend on the overlay. Depending on the conditions under which the overlay is made, it may be advisable to plot the positions first on the map, then trace them onto the overlay. Since the overlay is to be used as a supplement to orders or reports and the recipient will have an identical map, show only that detail with which the report is directly concerned.

(2) If you have observed any topographic or cultural features that are not shown on the map, such as a new road or a destroyed bridge, plot their positions as accurately as possible on the overlay and mark with the standard topographic symbol.

(3) If difficulty in seeing through the overlay material is encountered while plotting or tracing detail, lift the overlay from time to time to check orientation of information being added in reference to the base.

c. **Recording Marginal Information.** When all required detail has been plotted or traced on the overlay, print information as close to the lower right-hand corner as detail permits (Figure 7-2). This information includes the following data:

(1) **Title and Objective.** This tells the reader why the overlay was made and may also give the actual location. For example, "Road Reconnaissance" is not as specific as "Route 146 Road Reconnaissance."

(2) **Time and Date.** Any overlay should contain the latest possible information. An overlay received in time is very valuable to the planning staff and may affect the entire situation; an overlay that has been delayed for any reason may be of little use. Therefore, the exact time the information was obtained aids the receivers in determining its reliability and usefulness.

(3) **Map Reference.** The sheet name, sheet number, map series number, and scale must be included. If the reader does not have the map used for the overlay, this provides the information necessary to obtain it.

(4) **Author.** The name, rank, and organization of the author, supplemented with a date and time of preparation of the overlay, tells the reader if there was a time difference between when the information was obtained and when it was reported.

(5) **Legend.** If it is necessary to invent nonstandard symbols to show the required information, the legend must show what these symbols mean.

(6) **Security Classification.** This must correspond to the highest classification of either the map or the information placed on the overlay. If the information and map are unclassified, this will be so stated. The locations of the classification notes are shown in Figure 7-2, and the notes will appear in both locations as shown.

(7) **Additional Information.** Any other information that amplifies the overlay will also be included. Make it as brief as possible.

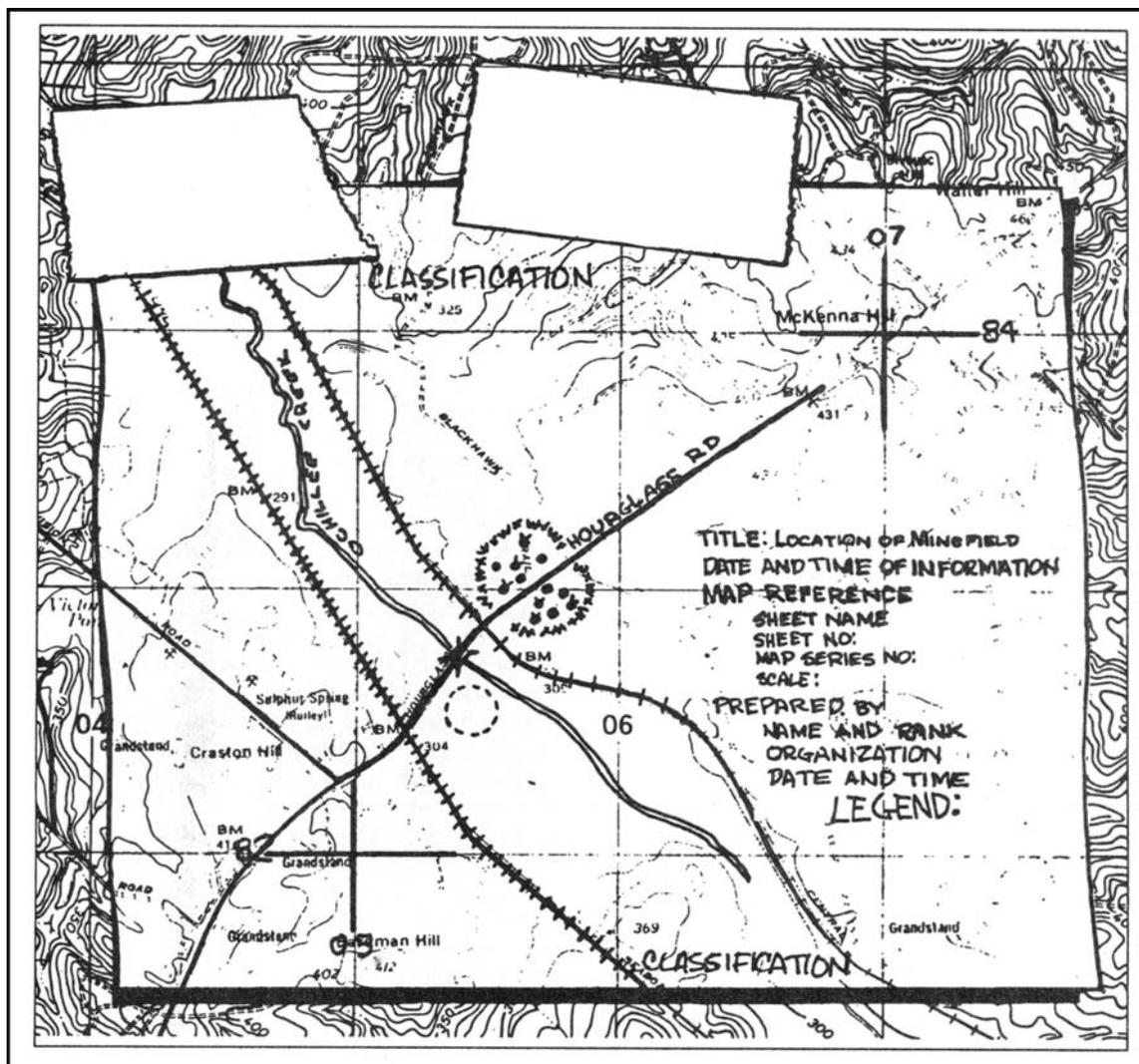


Figure 7-2. Map overlay with marginal information.

7-3. AERIAL PHOTOGRAPH OVERLAY

Overlays of single aerial photographs are constructed and used in the same way as map overlays. The steps followed are essentially the same, with the following exceptions:

a. **Orienting of Overlay.** The photograph normally does not have grid lines to be used as register marks. The borders of the photograph limit the area of the overlay, so the reference marks or linear features are traced in place of grid register marks. Finally, to ensure proper location of the overlay with respect to the photograph, indicate on the overlay the position of the marginal data on the photograph as seen through the overlay.

b. **Marginal Information.** The marginal information shown on photographs varies somewhat from that shown on maps. Overlays of photographs (Figure 7-3, page 7-4) should show the following information:

(1) **North Arrow.** This may be obtained in two ways—by comparing with a map of the area or by orienting the photograph by inspection. In the latter case, a compass or expedient direction finder must be used to place the direction arrow on the overlay. Use the standard symbol to represent the actual north arrow used—grid, magnetic, or true north.

(2) **Title and Objective.** This tells the reader why the photo overlay was made and may also give the actual location.

(3) **Time and Date.** The exact time the information was obtained is shown on a photo overlay just as on a map overlay

(4) **Photo Reference.** The photo number, mission number, date of flight, and scale appear here, or the information is traced in its actual location on the photograph.

(5) **Scale.** The scale must be computed since it is not part of the marginal data.

(6) **Map Reference.** Reference is made to the sheet name, sheet number, series number, and scale of a map of the area, if one is available.

(7) **Author.** The name, rank, and organization of the author are shown, supplemented with a date and time of preparation of the overlay.

(8) **Legend.** As with map overlays, this is only necessary when nonstandard symbols are used.

(9) **Security Classification.** This must correspond to the highest classification of either the photograph or the information placed on the overlay. If the information and photograph are unclassified, this will be so stated. The locations of the classification notes are shown in Figure 7-3, and the notes will appear in both locations.

(10) **Additional Information.** Any other information that amplifies the overlay will also be included. Make it as brief as possible.

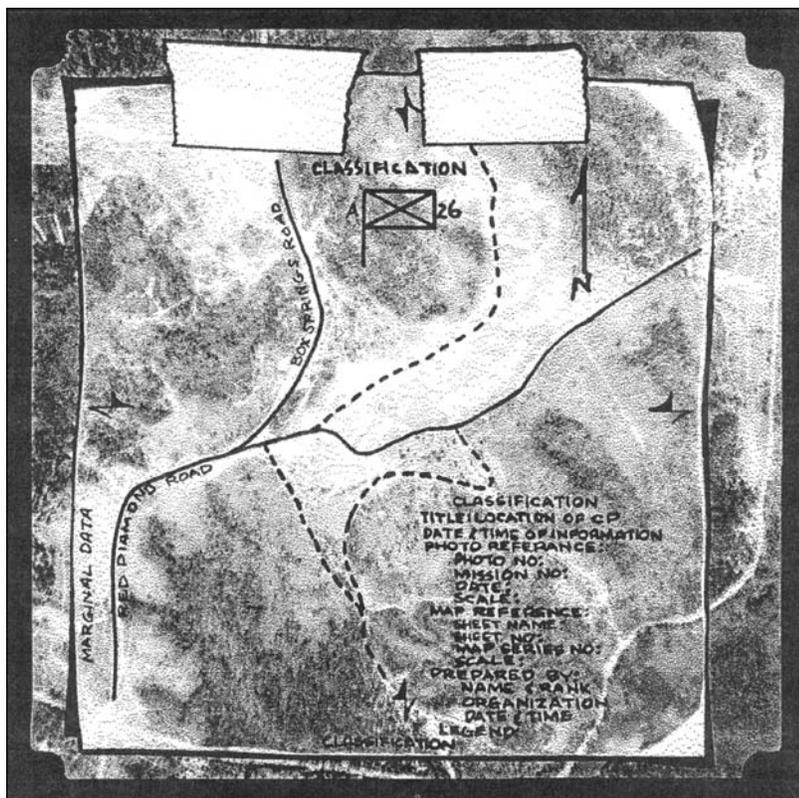


Figure 7-3. Photographic overlay with marginal information.

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