

CHAPTER 7

RESPONSIBILITIES, MARKING, RECORDING, AND REPORTING

RESPONSIBILITIES

Command and Control

Due to the delivery means, command and control of scatterable mine operations is more complex than it is for conventional mines. Scatterable mines are very dynamic weapon systems, because they can be rapidly emplaced and then cleared through their self-destruct capability. Also, the physical boundary of a scatterable minefield is not clearly defined. These characteristics require impeccable communication and coordination to ensure friendly

units know where mines are located, when they will be effective, and when they will self-destruct.

Employment

The corps commander holds authority for emplacing scatterable minefields within the corps area of operations. He may delegate this authority to lower echelons based on the self-destruct time of the mine system according to the following guidelines:

Self-Destruct Time

Long duration
(greater than 24 hours)

Short duration
(24 hours or less)

Emplacement Authority

Corps commander may delegate employment authority to division level, who may further delegate it to brigade level.

Same as for long duration but may be further delegated to battalion or task force level.

Based on the commander's desired shape of the battlefield, the authority to employ scatterable mine systems must be delegated or withheld. The commander's guidance is found in the operation order (OPORD/OPLAN) (paragraph 3, concept subparagraph, engineer part). Additional information is included in the engineer annex and fire support annex, if used.

Authority for Gator missions is normally held at the division, corps, or theater command level. Further allocation is on a mission basis.

Authority for air Volcano missions is delegated no lower than the element with command authority over the aircraft; for example, division level. Sorties are allocated by one of two methods—

- Subordinate elements submit requests for support. Each request is approved or disapproved on an individual basis.
- The parent unit allocates a specified number of sorties to subordinate maneuver commands.

Due to the complete control a commander has over the MOPMS mine and dispenser, employment authority guidelines do not apply to the MOPMS. It is impractical for the corps or brigade commander to authorize each MOPMS protective minefield. Therefore, the authority to emplace MOPMS minefields is specifically delegated. In general, units can emplace MOPMS protective minefields as required for their own self-defense and report them as they do any protective obstacle. Any MOPMS minefield used as part of an obstacle plan must be reported as a normal scatterable minefield.

Coordination

Basic responsibilities of key command, staff, and units are outlined in Table 7-1. The fire support coordinator (FSCOORD) is involved in planning for artillery-delivered scatterable mine systems (ADAM/RAAM), and the air liaison officer is involved in planning for air-delivered scatterable mine systems (Gator/Vol - cane). The engineer has primary shift responsibility for planning and employing scatterable mine systems.

Table 7-1. Coordination responsibilities

Element	Responsibilities
G3/S3 with engineer FSCOORD/ALO	<p>Plan and coordinate minefield location, size, composition, density, self-destruct time, safety zone, and emplacement time.</p> <p>Designate and brief the emplacing unit.</p> <p>Incorporate the minefield and safety zone into the obstacle plan.</p> <p>Receive and forward the scatterable minefield report and record.</p> <p>Disseminate scatterable mine warning (SCATMIN-WARN) information to adjacent and subordinate units before laying.</p> <p>Post operation maps with minefield location, safety zone, and DTG of self-destruct time. Disseminate the SCATMINWARN one hour before to initiation of the self-destruct sequence.</p>
Emplacing unit	<p>Calculate logistical requirements.</p> <p>Calculate the safety zone.</p> <p>Emplace the minefield.</p> <p>Report ammunition expended.</p> <p>Prepare and forward the scatterable minefield report and record to the authorizing commander via appropriate channels.</p>
Maneuver units	<p>Be aware of calculated safety zone boundary locations.</p>

MARKING

Scatterable minefields are marked to protect friendly troops. GEMSS, Flipper, and ground-delivered Volcano minefields are marked according to the guidelines listed below. The maneuver unit responsible for the area of ground in which the minefield is emplaced is always responsible for marking the minefield. This generally requires direct coordination between elements of the maneuver command (usually the engineer) and the delivering/emplacing unit. However, it is unrealistic to expect units to mark artillery, Gator, and air-delivered Volcano minefields. For this reason, units operating in the vicinity of these minefields must know calculated safety zones and use extreme caution.

Minefield Location	Marking
Enemy forward area	Not marked
Friendly forward area	Sides and rear marked
Friendly rear area	All sides marked

★ **NOTE:** The safety zone around the GEMSS and Volcano minefields is depicted in Figures 7-1 through 7-3. The safety zone is the area where a stray or outlier mine has a chance of landing and laying to rest. This area may be marked with a fence depending on its specific location on the battlefield. This is the area where the commander must preclude any friendly forces from maneuvering during the minefield's life cycle. If an AT mine, oriented on its side, self-destructs, the explosively formed penetrator can theoretically travel 2,000 feet or 640 meters. This is the maximum fragment hazard zone. However, the chances of being struck are negligible at this distance. Tests indicate that acceptable risk for maneuver is the distance over 235 meters from the outer edges of the minefield's safety zone. This fragment hazard zone is also associated with the Gator and MOPMS AT mines. When the MOPMS is used for protective minefield missions, commanders must be made aware of the fragment hazard. Use Table 7-2 to help determine the necessary zones.

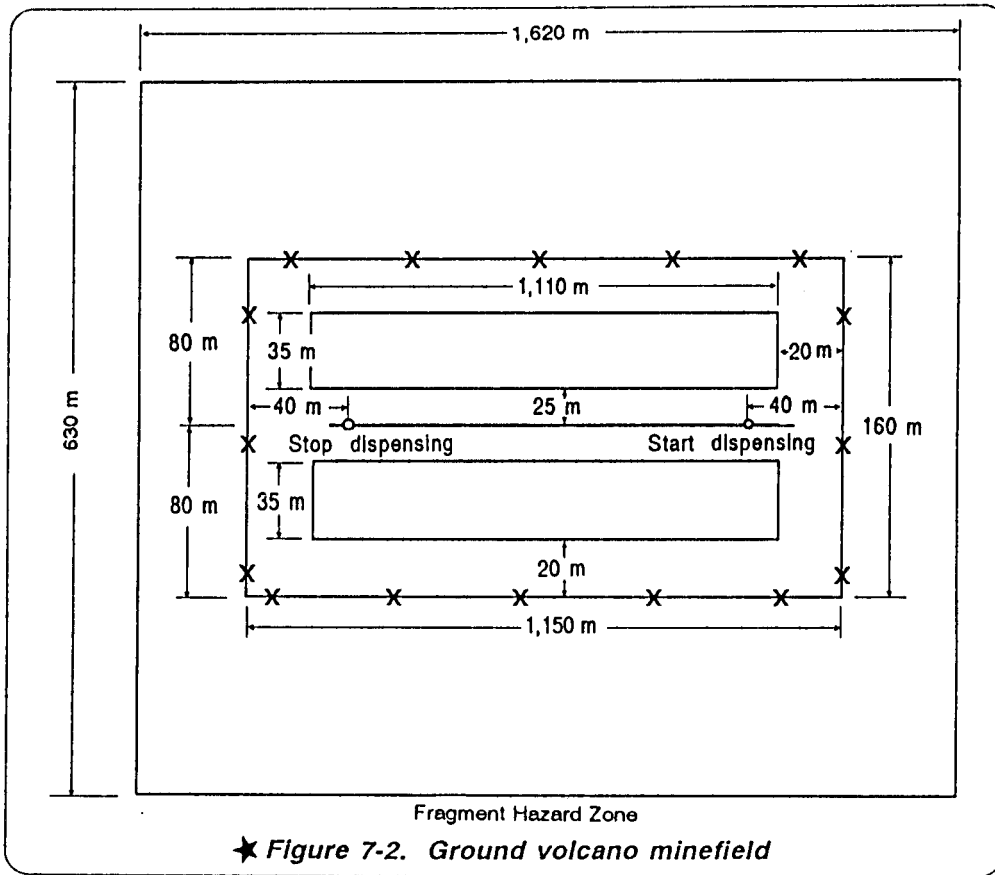
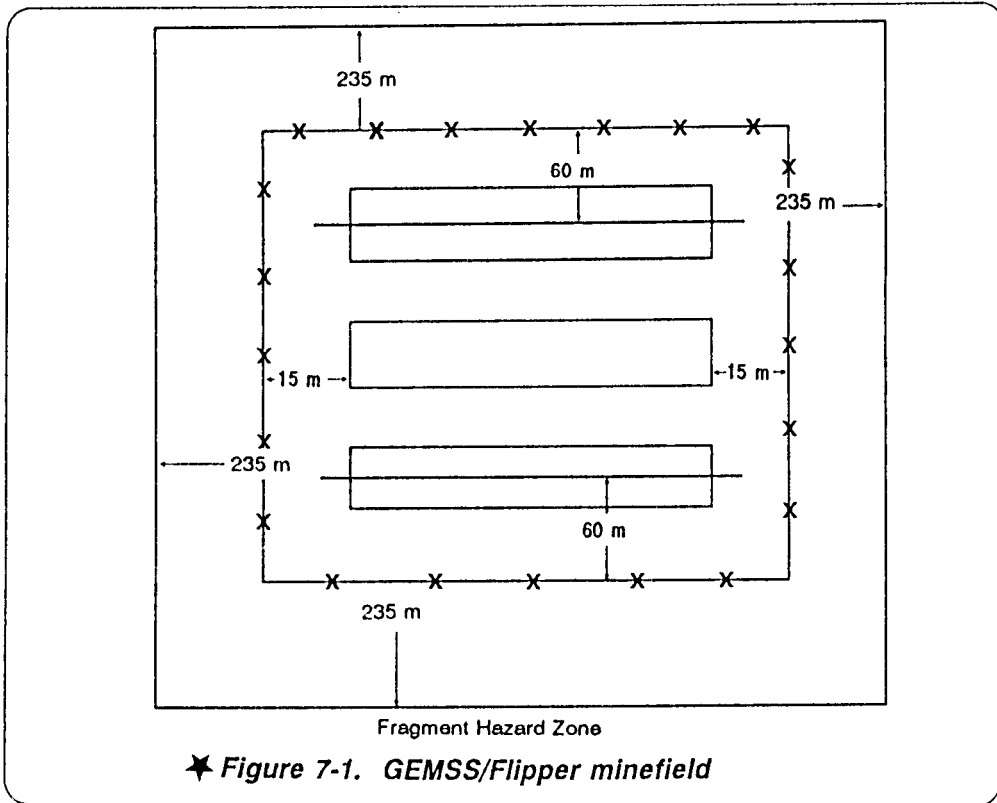
Table 7-2. Safety and fragment hazard zones

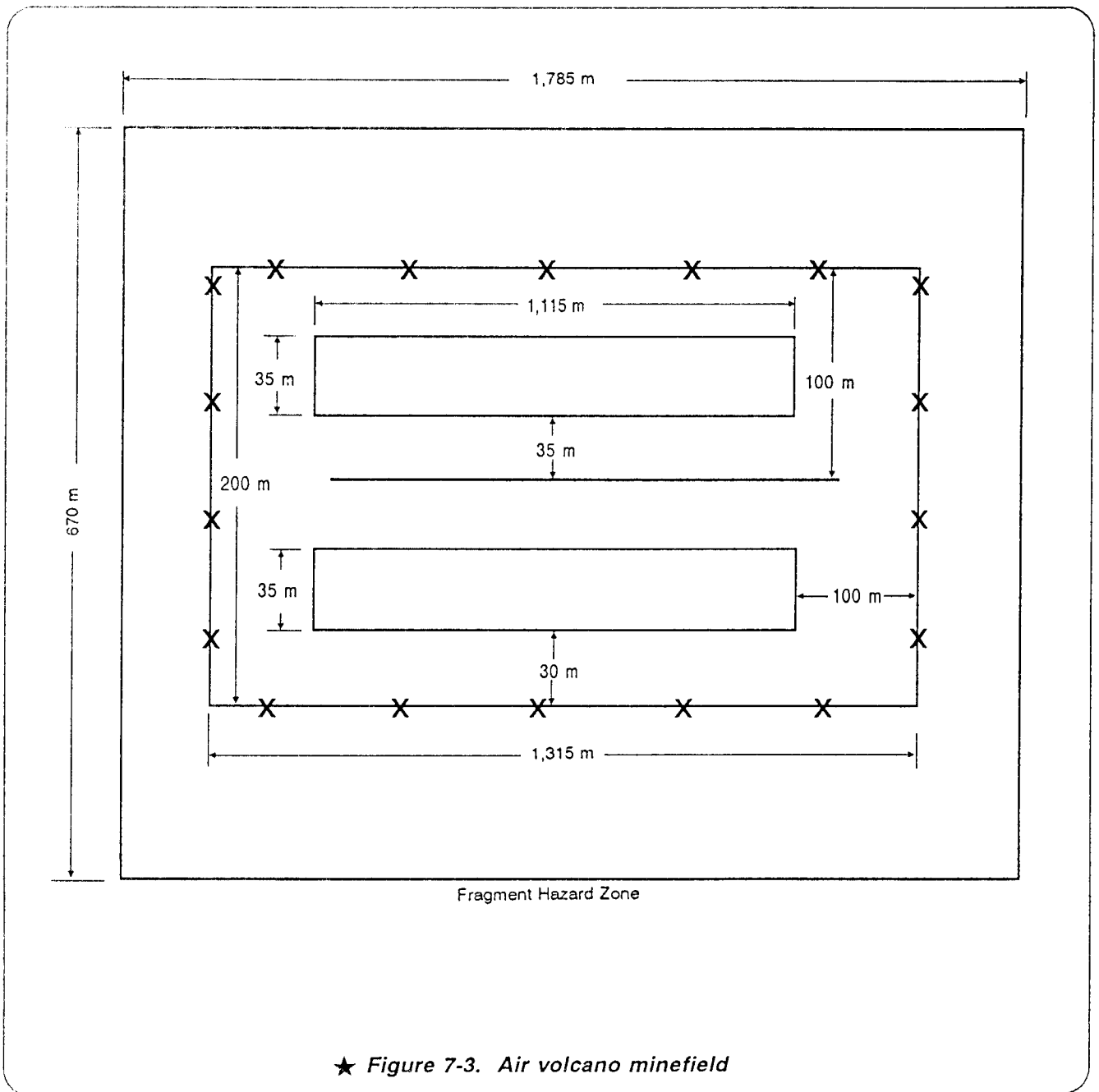
System	Safety Zone	Fragment Hazard Zone
ADAM/RAAM	500 to 1,500 meters from aim point(s). Depends on the delivery factors.	Add 235 meters to the outside dimensions of the safety zone.
Gator	925 x 475 meters from aim point(s).	1,395 x 945 meters from aim point(s).
Volcano: Ground Air	1,150 x 160 meters (from centerline) 1,315 x 200 meters (from centerline).	235 meters from start/stop point(s) and centerlines.
GEMSS/ Flipper	Add 15 meters from start and stop points. Add 45 meters from centerlines.	Add 235 meters to the safety zone's dimensions.
MOPMS	See page 6-32 for specific placement.	Add 235 meters to the safety zone's dimensions.

Fencing for GEMSS/Flipper minefields is emplaced 60 meters beyond the centerline of the two end strips and 15 meters beyond the start and end markers. (See Figure 7-1.)

Fencing for ground Volcano minefields is emplaced 80 meters beyond the centerline of the minefield and 40 meters from the start and stop points of mine dispensing. Fencing should be no closer than 20 meters from the nearest mine. (See Figure 7-2.)

Air Volcano minefields are not normally marked by fencing. However, if air Volcano minefields are emplaced in friendly areas, they should be marked with fencing to protect friendly personnel. End points must be visibly marked for the pilot before emplacing deliberate air Volcano minefields. Fencing is installed before delivery of air Volcano minefields, and it is located 100 meters from the centerline of the minefield and 100 meters from the mining start and end points. (See Figure 7-3.)





★ Figure 7-3. Air volcano minefield

GEMSS Minefield

Figure 7-4a shows the platoon arriving on the minefield site. Figures 7-4b through 7-4h, pages 7-7 through 7-13, depict the actual execution of a typical GEMSS minefield. In this example, a lane is left in the minefield. More mines are required for another minefield mission, so the M548 must return to the mine dump after loading is complete.

Laying out the minefield (Figure 7-4b). The platoon leader briefs party leaders on siting and laying out the minefield. The siting party positions squad members with line-of-sight markers at points 1, 2, 3, and 4 and marks points 5 and 6. The marking party prepares the HEMMS for use, and the loading party begins loading the dispenser with mines. The maneuver unit or security element moves to overwatch positions.

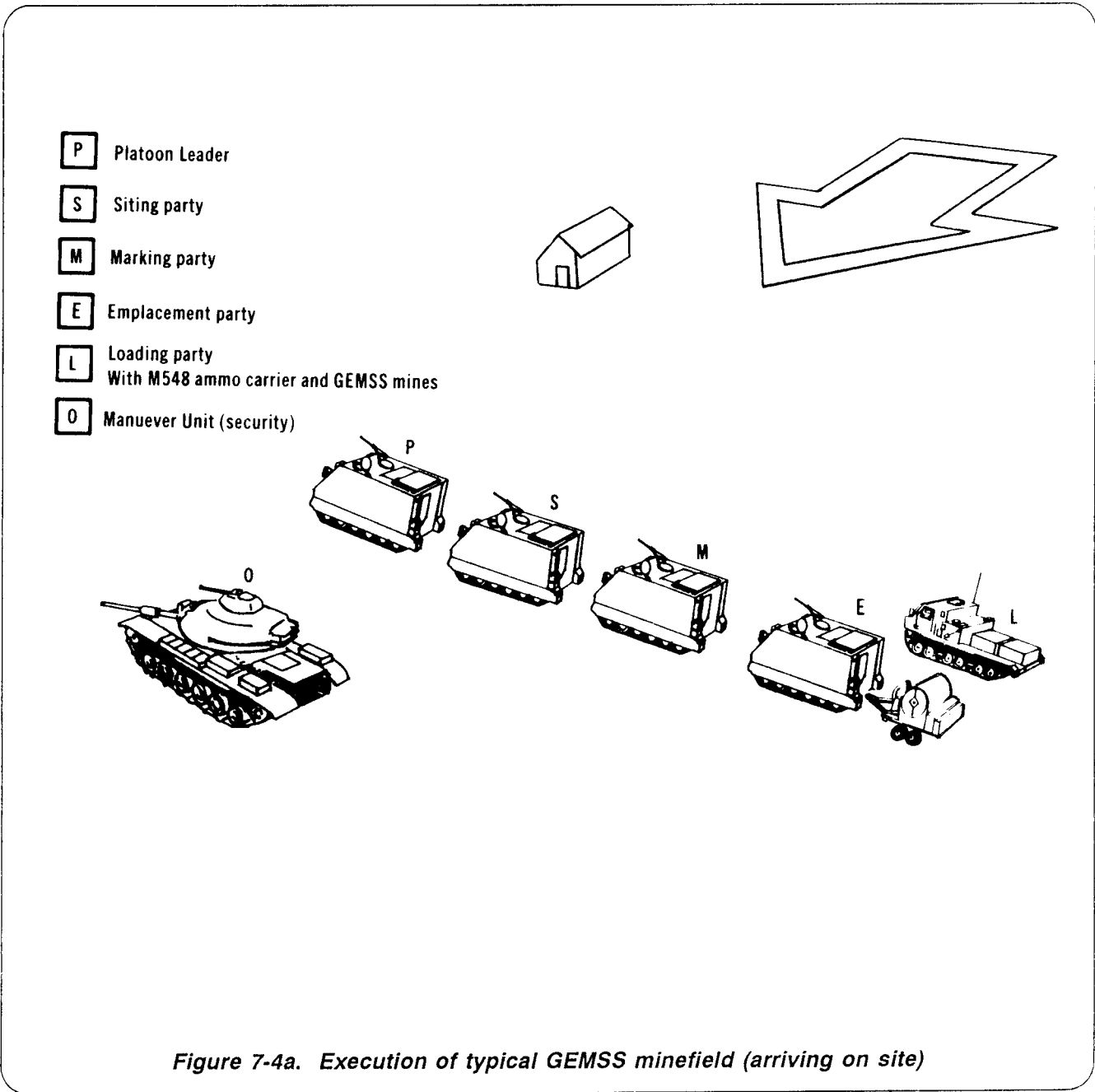


Figure 7-4a. Execution of typical GEMSS minefield (arriving on site)

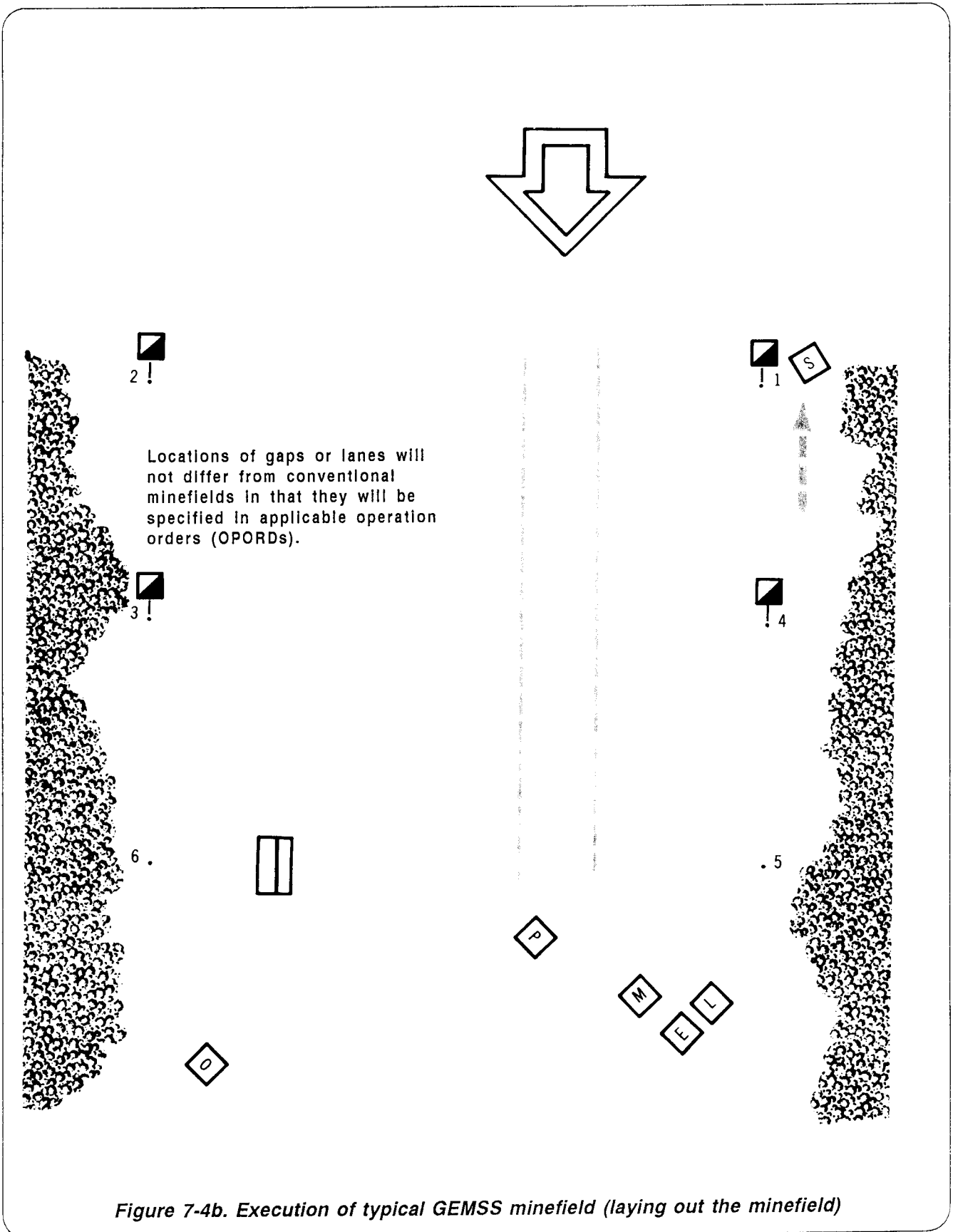
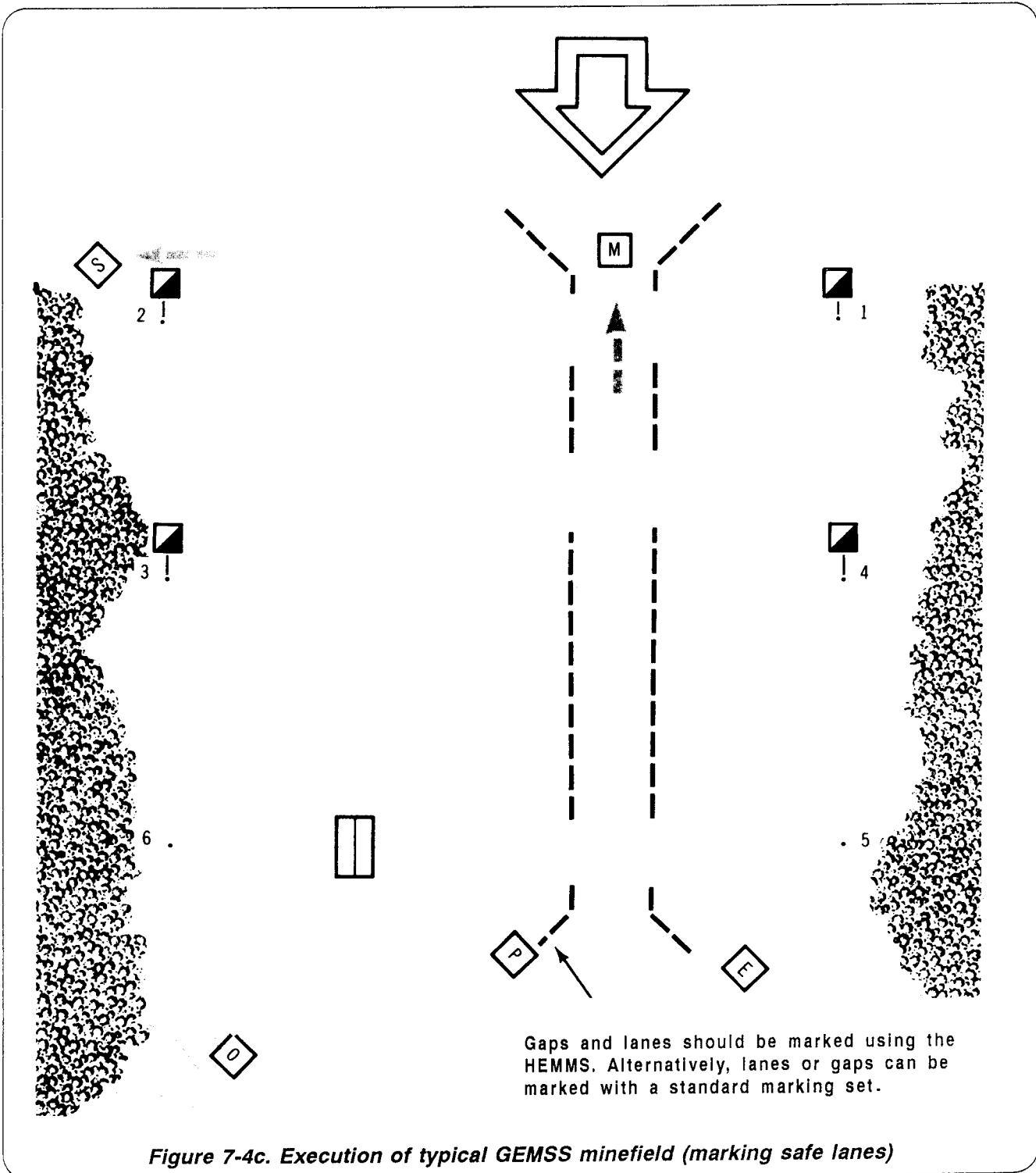


Figure 7-4b. Execution of typical GEMSS minefield (laying out the minefield)

Marking safe lanes (Figure 7-4c). The siting party leader completes laying out centerline strips and takes position at point 2 for over-watch. The marking party leader establishes the safe lane through the minefield and marks it with the HEMMS. Gaps are left open in the

safe lane to allow the dispenser to pass. The loading party brings the empty containers back to the ASP to draw more mines. The emplacement party makes final operational checks on the dispenser.



Marking the minefield (Figure 7-4d). The marking party marks the minefield boundaries. The marking party is assisted by members of the siting and emplacement parties as needed. Fences are emplaced 60 meters beyond the

centerline of the two end strips and 15 meters beyond the strip line-of-site markers. The platoon leader reorganizes and prepares to move to a new mission site when marking is complete.

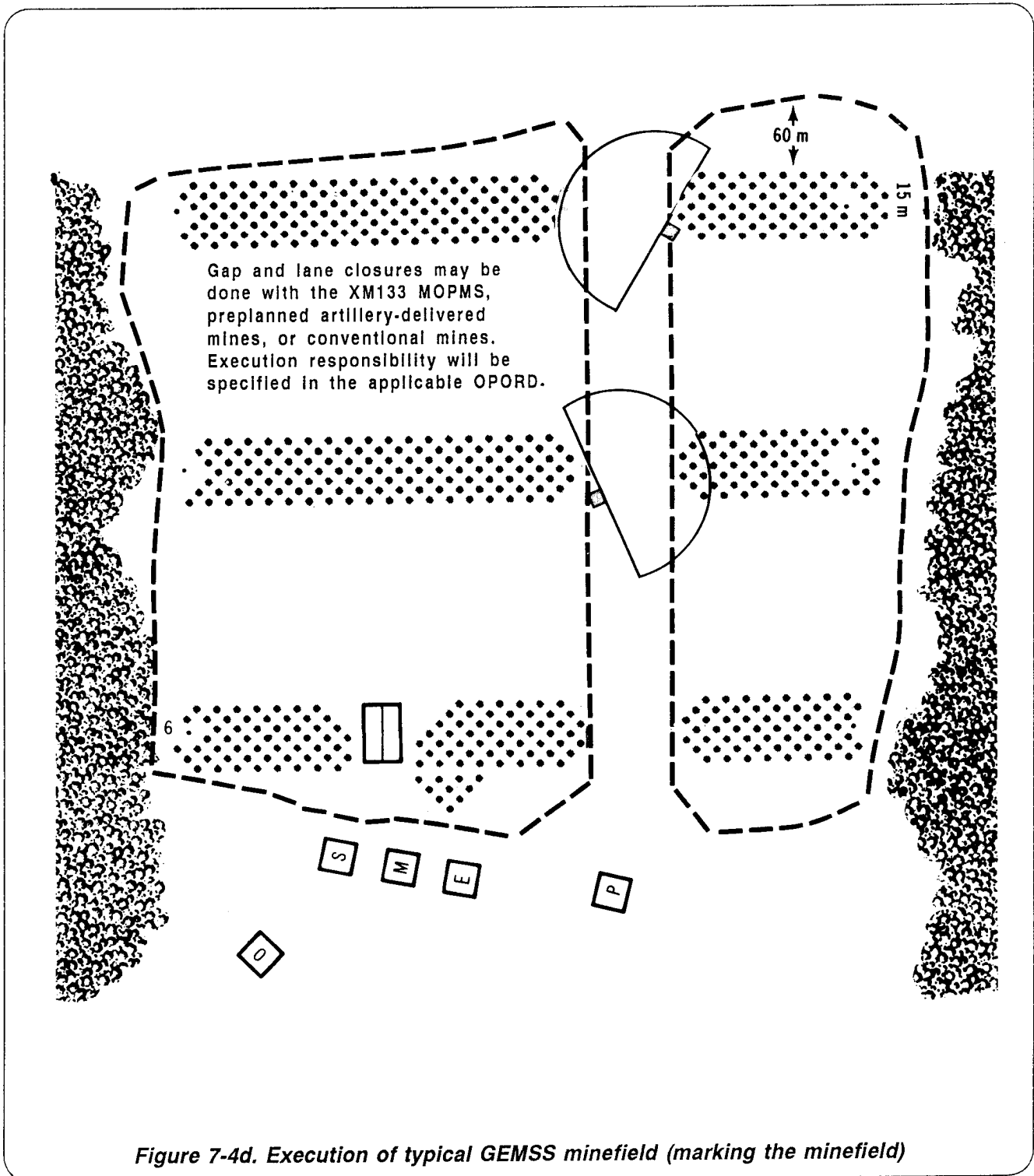


Figure 7-4d. Execution of typical GEMSS minefield (marking the minefield)

Making final preparations (Figure 7-4e). Siting and marking party leaders confirm completion of their initial missions to the platoon

leader. The platoon leader instructs the emplacement party to begin dispensing mines.

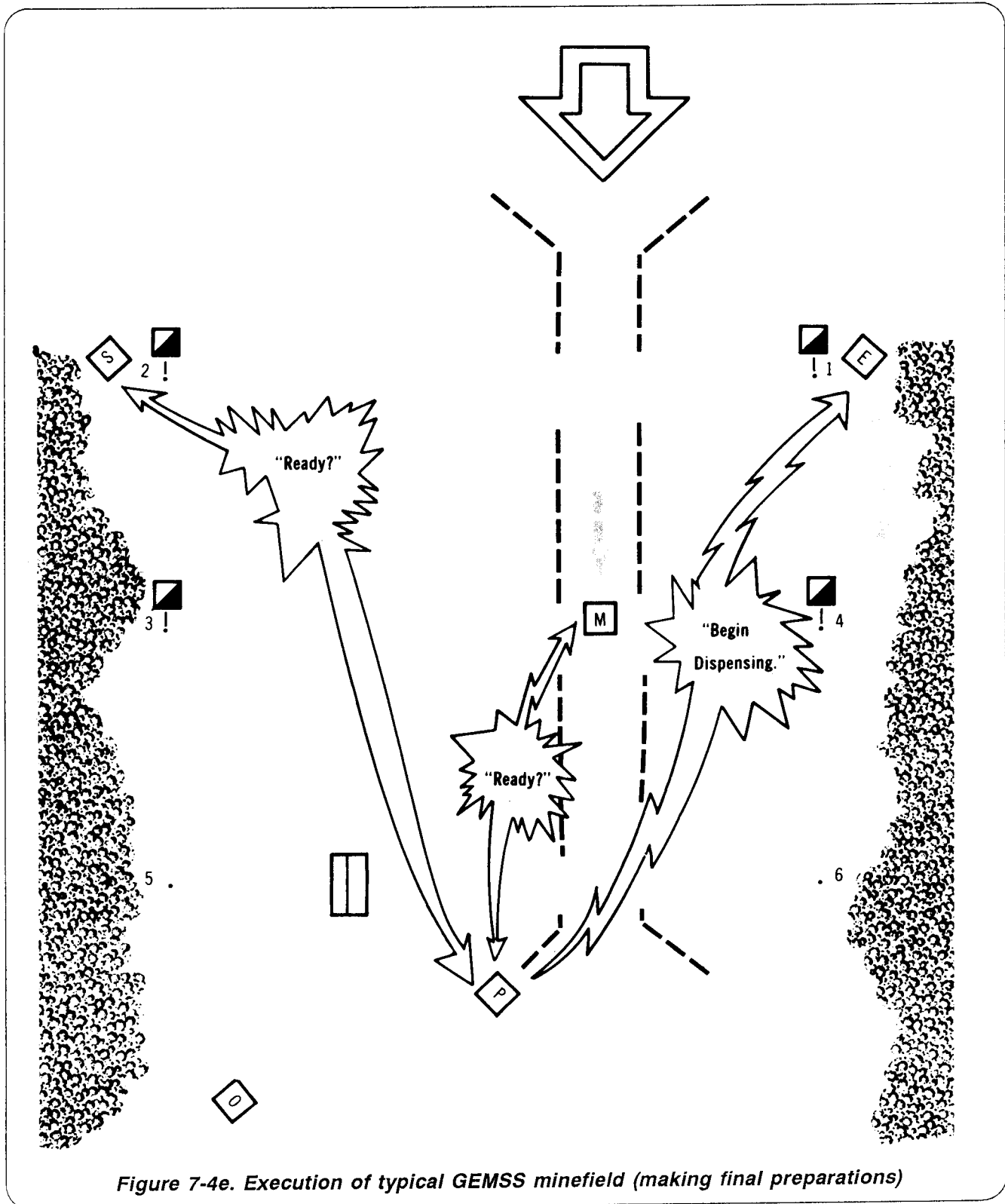
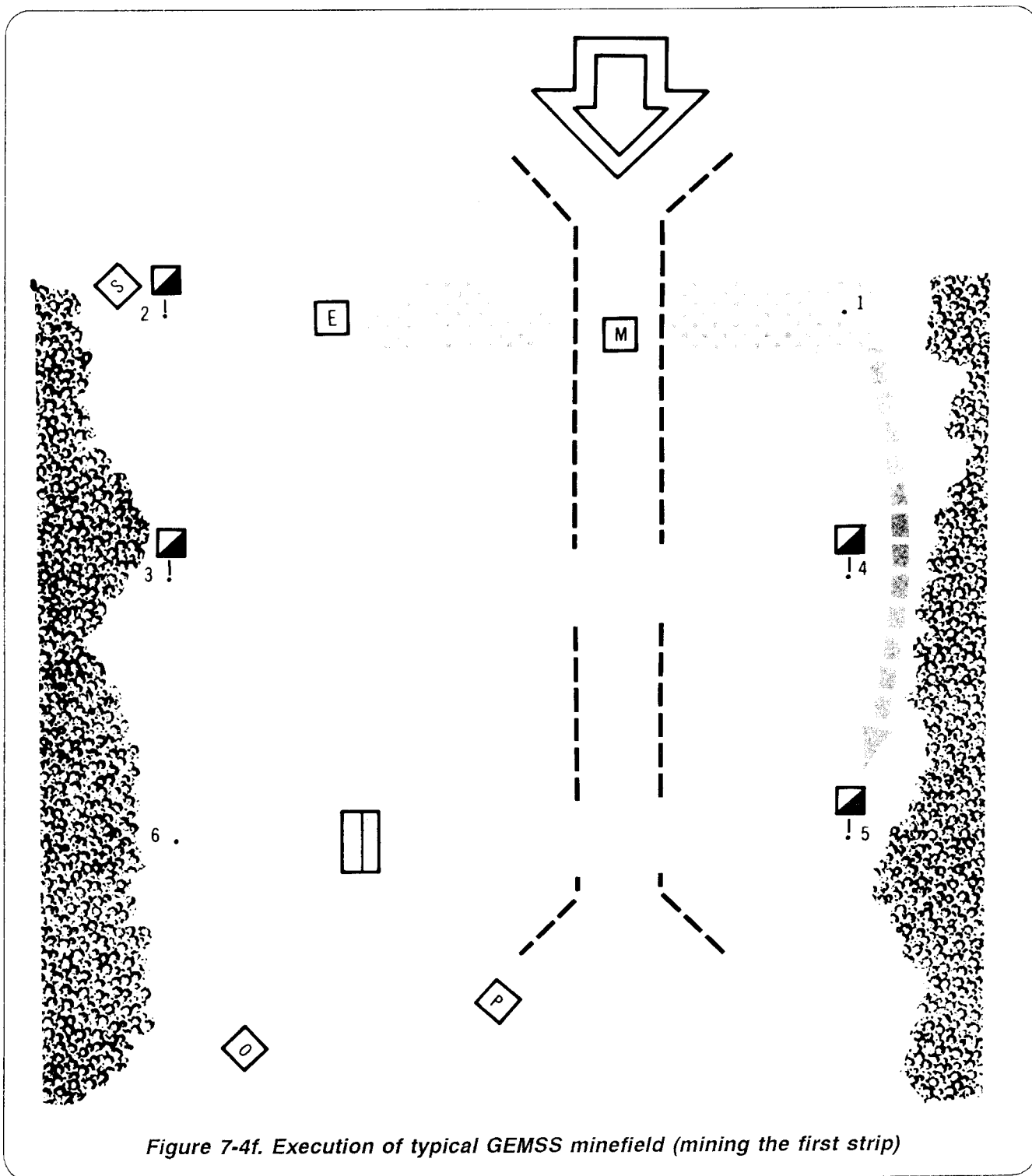


Figure 7-4e. Execution of typical GEMSS minefield (making final preparations)

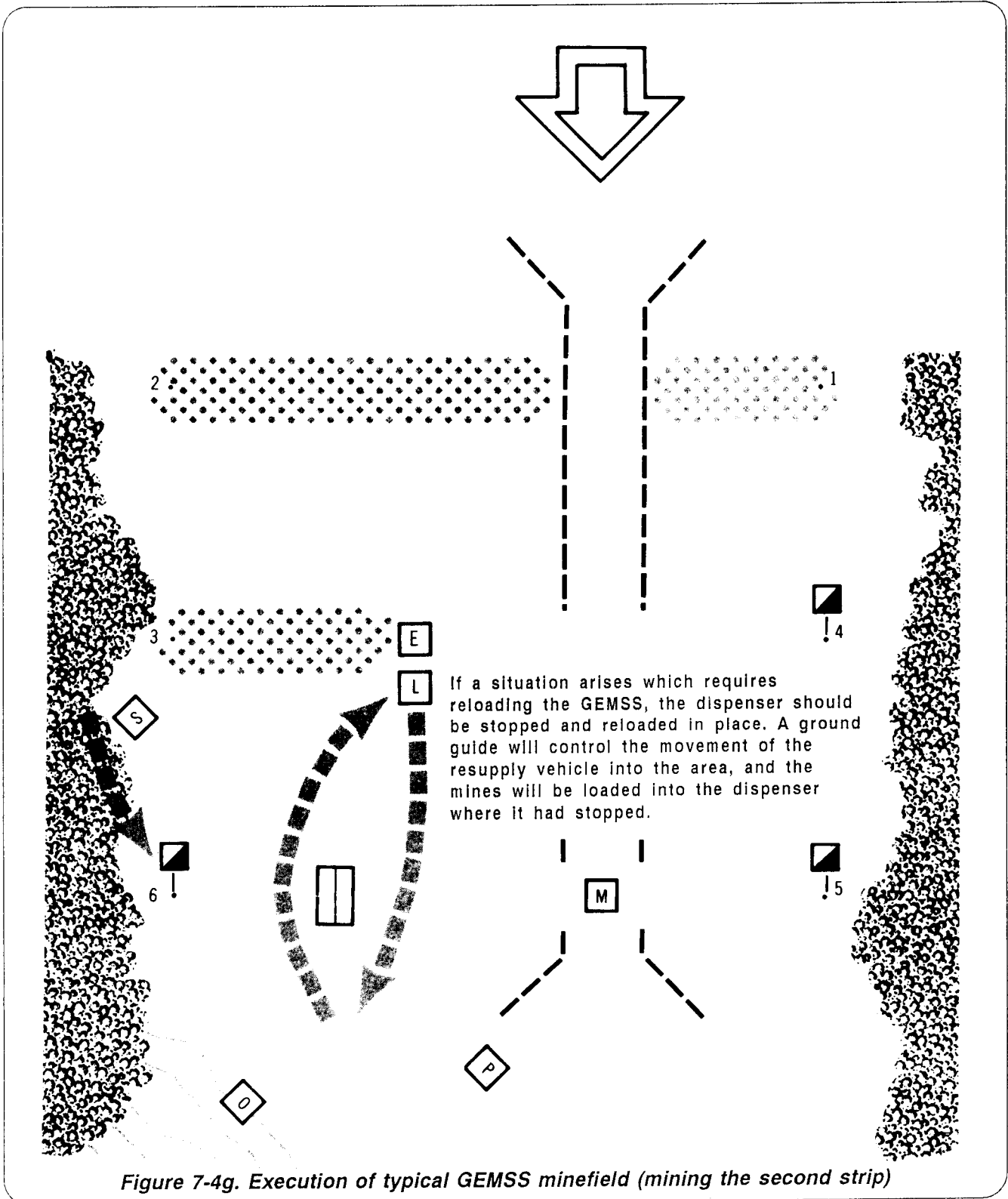
Mining the first strip (Figure 7-4f). The emplacement party moves to point 2 while dispensing mines. It stops dispensing once the rear of the M128 dispenser is 5 meters inside the safe lane, and begins again when it is 40 to 50 meters beyond the safe lane. After the

GEMSS passes through the safe lane, a marking party member closes that portion of the lane with the HEMMS and ensures no mines have fallen into the lane. The siting party member at point 1 moves to point 5.



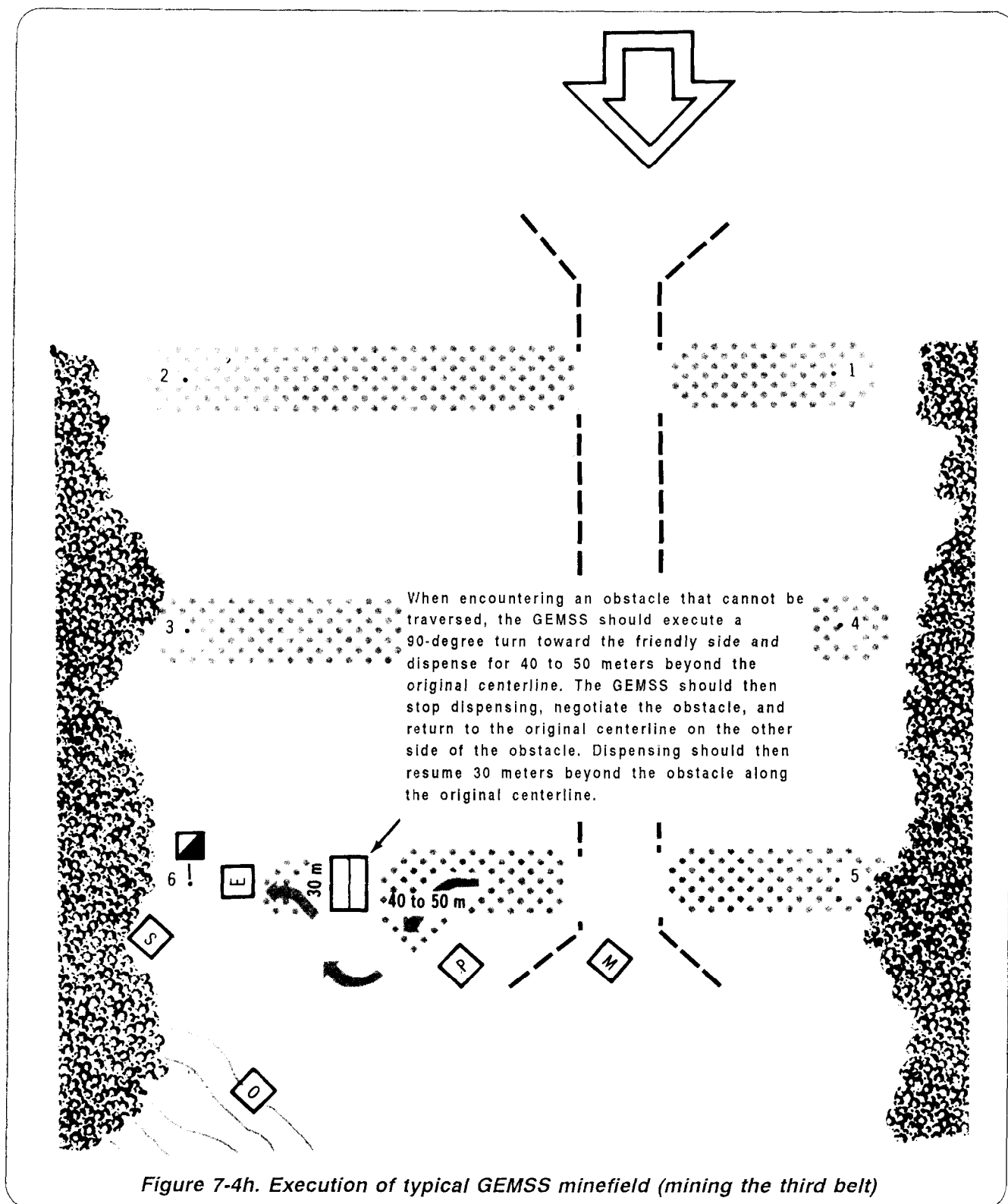
Mining the second strip (Figure 7-4g). The GEMSS stops dispensing 5 meters beyond point 2, turns around, and repeats the process

for the second strip. The siting party member at point 2 moves to point 6.



Mining the third strip (Figure 7-4h). Repeat the process used for the first and second strips. The siting party leader picks up personnel at

the end of each strip. The marking party completes marking the safe lane after the final



pass of the dispenser and ensures no mines have fallen into the lane.

Completing the GEMSS mission. After completing the GEMSS mission, the platoon leader transfers the minefield to the maneuver commander. The platoon leader prepares the scatterable minefield report and record and forwards it through channels to the appropriate command. The maneuver commander and the

platoon leader sign a report of transfer. It is sent to the next higher commander having authority over both units. The maneuver commander assumes responsibility for the mine field. GEMSS minefields should be marked on all sides when emplaced in friendly controlled rear areas. Safe lanes are marked, and ground guides are used as much as possible.

RECORDING AND REPORTING

The speed and responsiveness of scatterable mine employment require accurate, uniform, and timely reports. All information on scatterable mine employment is simply and rapidly reported to all affected units. Although scatterable mines have a self-destruct capability, they are still recorded; and the information is disseminated to prevent casualties to friendly forces.

Since individual scatterable mine locations are unknown, they can not be recorded in as much detail as conventional mines. For most systems, a safety zone is calculated from one or more aim point. For example, a RAAM minefield is recorded based on the target location (the grid coordinates given to the firing battery). The size of the minefield depends on the number of rounds fired, the number of aim points, and the angle of fire. Artillery-delivered minefields are recorded by plotting them on a map, based on the aim point(s) and a safety zone area specified in the scatterable minefield report and record prepared by the emplacing unit. A GEMSS or ground Volcano minefield is recorded more accurately by plotting each minefield corner point rather than an aim point.

To facilitate reporting and recording of scatterable minefields, a simple uniform procedure is used. This procedure combines the report and the record into one document (scatterable minefield report and record) applicable for all delivery systems. In addition to the scatterable minefield report and record, the SCATMINWARN notifies effected units that scatterable mines will be emplaced. These two reports are

the only reports used with scatterable mines. The scatterable minefield report and record form is shown in Figures 7-5a and 7-5b, pages 7-15 and 7-16.

A completed scatterable minefield report and record for an ADAM/RMM artillery mission is shown in Figure 7-6, page 7-17. Note that on line 6, only one grid coordinate is given. It is the aim point used when the minefield was fired. The 500-meter distance from the aim point (line 15) designates a safety zone that is 1,000 by 1,000 meters.

A completed scatterable minefield report and record for a GEMSS mission is shown in Figure 7-7, page 7-18. Five corner points are designated on the GEMSS example. Corner points can be directly determined for the GEMSS minefield. Corner points provide a more accurate means of recording the minefield than estimating a safety zone from an aim point. Five corner points, instead of four, are given in the GEMSS example because they provide a more accurate record when the minefield is irregularly shaped.

The SCATMINWARN report provides affected units with the necessary warning to plan and execute their operations. The information is kept to a minimum to ensure rapid dissemination. The report may be oral, digital, or hard copy. It is sent before or immediately after mines have been emplaced. A sample SCATMINWARN report is shown in Figure 7-8, page 7-19. A completed SCATMINWARN report for an artillery mission is shown in Figure 7-9, page 7-19.

LINE #	INFORMATION REQUIRED	DATA - INST ON BACK
1	APPROVING AUTHORITY	
2	TGT/OBSTACLE #	
3	TYPE EMPLACING SYSTEM	
4	TYPE MINES	
	LIFE CYCLE	
6	AIM PT/CORNER PTS OF MINEFIELD	
7		
8		
9		
10		
11		
12		
13		
14		
15	SIZE SAFETY ZONE FROM AIM PT	
16	UNIT EMPLACING MINES/RPT #	
17	PERSON COMPLETING RPT	
18	DTG OF REPORT	
19	REMARKS	

SAMPLE

Figure 7-5a. Scatterable minefield report and record (front side)

LINE #	INSTRUCTIONS
1	Approving Authority. Enter approving authority. CDR 3AD
2	Target/Obstacle Number. If the minefield is part of an obstacle plan, enter the obstacle number 2XXX0157. This number represents II corps, target number 147. If the minefield is not a part of an obstacle plan or does not have a number, then leave blank or enter NA.
3	Type Emplacing System. Enter the type system that emplaced the minefield, such as GEMSS, ARTY, Volcano.
4	Type Mines. Enter AP for antipersonnel mines, AT for antitank mines. If both, enter AP/AT.
5	Life Cycle. Enter the DTG the minefield was emplaced until the last mine self destructs.
6-14	Aim Point/Corner Points of the Minefield. If the system used to emplace the minefield uses a single aim point to deliver the mines, enter that aim point MB 10102935. If the system has distinct corner points such as GEMSS, enter those corner points MB 17954790, MB 18604860, MB 18504890, MB 18054895, MB 17804850.
15	Size Safety Zone from Aim Point. If an aim point is given in Line 6, enter the size safety zone from that aim point. Example: Artillery emplaces a minefield from aim point MB 10102935 and the safety zone is 1,000 m X 1,000 m, enter 500 m so that personnel plotting or receiving the information can plot the coordinate and go 500 m in each direction from the aim point and plot the safety zone.
16	Unit Emplacing Mines and Report Number. BCO 23 ENGR BN 4. Reports should be numbered consecutively. This would be the fourth minefield that B Company has emplaced.
17	Person Completing the Report. 160735ZOCT90
18	Date-Time Group of Report. 160735ZOCT90
19	Remarks. Any other items the reporting unit may feel are important.

Figure 7-5b. Scatterable minefield report and record (back side)

LINE #	INFORMATION REQUIRED	DATA - INST ON BACK
1	APPROVING AUTHORITY	CDR 3AD
2	TGT/OBSTACLE #	2XXX0157
3	TYPE EMPLACING SYSTEM	ARTY
4	TYPE MINES	AT/AP
5	LIFE CYCLE	081610Z - 082020OCT90
6	AIM PT/CORNER PTS OF MINEFIELD	MB 10102935
7		
8		
9		
10		
11		
12		
13		
14		
15	SIZE SAFETY ZONE FROM AIM PT	500 m
16	UNIT EMPLACING MINES/RPT #	2/48FA/2
17	PERSON COMPLETING RPT	SFC HOLLINS
18	DTG OF REPORT	061645ZOCT90
19	REMARKS	NA

Figure 7-6. Scatterable minefield report and record for ADAM/RAAM artillery mission

LINE #	INFORMATION REQUIRED	DATA - INST ON BACK
1	APPROVING AUTHORITY	2BDE3AD
2	TGT/OBSTACLE #	NA
3	TYPE EMPLACING SYSTEM	GEMSS
4	TYPE MINES	AT/AP
5	LIFE CYCLE	101630Z-152113ZOCT90
6	AIM PT/CORNER PTS OF MINEFIELD	MB 17955490
7		MB 18604860
8		MB 18504890
9		MB 18054895
10		MB 17804850
11		
12		
13		
14		
15	SIZE SAFETY ZONE FROM AIM PT	NA
16	UNIT EMPLACING MINES/RPT #	BCO23ENGR/4
17	PERSON COMPLETING RPT	1LT JENNINGS
18	DTG OF REPORT	051400ZOCT90
19	REMARKS	MINEFIELD AROUND TANK DITCH

Figure 7-7. Scatterable minefield report and record for GEMSS mission

LINE	MESSAGE
ALPHA	Emplacing System
BRAVO	AT YES/NO
CHARLIE	AP YES/NO
DELTA	# aim points/corners points
ECHO	Grid coordinates of aim points/corner points and size safety zone.
FOXTROT	DTG of life cycle

Figure 7-8. Sample SCATMINWARN report

LINE	MESSAGE
ALPHA	ARTY
BRAVO	Yes
CHARLIE	Yes
DELTA	One
ECHO	MB 10102935 500 m
FOXTROT	081610Z - 081920ZOCT90

Figure 7-9. Sample SCATMINWARN report for artillery mission