

ST 3-20.983

RECONNAISSANCE



HANDBOOK

**US Army Armor Center & School
Fort Knox, Kentucky**

40121-5000

April 2002



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RECONNAISSANCE HANDBOOK

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Fiddler’s Green

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PREFACE

This supplemental text will provide you, the scout, with a standardized means by which to operate effectively. The *Reconnaissance Handbook* serves as both an SOP and a leader's guide for those that serve in reconnaissance or cavalry organizations. As such, it acts as a quick-reference guide that focuses on the principles of reconnaissance platoon operations, the tactics, techniques, and procedures (TTP) the platoon uses to operate in a theater of operations, and how the platoon acquires information for its higher commander. The term "*reconnaissance platoon*" refers to all forms of the scout platoon, whether it is part of an armor or infantry battalion, a cavalry squadron, a brigade reconnaissance troop (BRT), or a reconnaissance, surveillance, and target acquisition (RSTA) squadron. References to the "recce platoon" in this supplemental text apply specifically to reconnaissance platoons organic to the recce troops of the RSTA squadron. The *Reconnaissance Handbook* is designed to supplement both the Reconnaissance Platoon field manual (FM 3-20.98) and the mission training plan (ARTEP 17-97F-10-MTP).

The *Reconnaissance Handbook* will assist you in improving and maintaining your scouts' readiness. You may adapt any part of it as needed to fit your unit's mission requirements. This handbook, however, is not a substitute for good tactical training. Use it to supplement and enhance your training program as you prepare for combat. As a minimum, all leaders should maintain a copy of the *Reconnaissance Handbook* at all times.

This publication is provided for resident and nonresident instruction at the US Army Armor School. It reflects the current thought of the school and conforms to published Department of the Army doctrine.

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NOTE: Users are requested to inform the Armor School of changes they make to the electronic *Reconnaissance Handbook*. This will help the school's doctrine developers and instructors remain current on SOP/leader requirements in the field, and your feedback will aid in future doctrine and training development. Please annotate any modifications and send a copy of those pages to Commander, USAARMC, ATTN: ATZK-TDD-C, Fort Knox, KY 40121-5000.

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Chapter 1

LEADERSHIP

DUTIES AND RESPONSIBILITIES

The reconnaissance platoon leader and the platoon's noncommissioned officers (NCO) must be experts in the use of organic weapons, indirect fires, land navigation, supporting fires, demolitions, obstacles, communications, reconnaissance, human intelligence (HUMINT) collection, liaison, and security techniques. They must be familiar with infantry, mortar, and combined arms tactics and be able to react to rapidly changing situations; they must also know how to employ combat support (CS) assets that are attached to or supporting the platoon. Because of the many missions the platoon must be capable of performing, the reconnaissance platoon leader and PSG must be proficient in tasks at all skill levels of MOS 19D and familiar with the capabilities, limitations, and deployment of intelligence, surveillance, and reconnaissance (ISR) assets, such as ground sensors and unmanned aerial vehicle (UAV) sections.

Platoon Leader

The platoon leader is responsible to his higher commander for the discipline, combat readiness, and training of the platoon as well as the maintenance of its equipment. The platoon leader must have a thorough knowledge of **reconnaissance** and **security** tactics. He works closely with his higher commander during the mission analysis portion of the planning process.

The platoon leader must be proficient in the tactical employment of the platoon. A solid understanding of troop-leading procedures and

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the ability to apply them quickly and efficiently in the field are essential. The platoon leader must also know the capabilities and limitations of the platoon's personnel and equipment. He must be an expert in threat organizations, doctrine, and equipment.

Most of all, the platoon leader must be versatile. He must be able to exercise sound judgment and make correct decisions quickly based on his commander's intent and the tactical situation. He must ensure that he, and every member of the platoon, understands and can successfully accomplish the following leadership competencies:

- Troop-leading procedures.
- Deployment.
- Tactical movement.
- OP establishment and operation.
- Patrolling and local security.
- Proper use and maintenance of all organic communications, to include digital assets.
- Employment of fires.
- Actions on contact.
- The multidimensional aspect of reconnaissance and surveillance (R&S).
- Reporting procedures.
- Employment of ISR assets (e.g., PROPHET, GSR, HUMINT collectors).

Platoon Sergeant

The PSG leads elements of the platoon as directed by the platoon leader and assumes command of the platoon in the absence of the platoon leader. During tactical operations, he may assist in the control of the platoon, requiring him to be proficient in each of the platoon's leadership competencies. The PSG assists the platoon leader in maintaining discipline, as well as in coordinating training

and controlling the platoon. He supervises equipment maintenance, supply operations, and other CSS activities.

Section and Squad Leaders

All leaders must have a thorough knowledge in reconnaissance and security. Section and squad leaders must be experts in:

- Dismounted patrolling.
- Mounted operations.
- Employment of ISR assets.
- Conducting surveillance and establishing OPs.
- Employment of fires.
- Training and discipline of their sections.
- Tactical employment and control of the section, requiring proficiency in the platoon's leadership.
- Maintenance and operation of all vehicles and equipment organic to their sections.
- Squad leaders have the same responsibilities for their squads as section leaders have for sections.

HUMINT Collectors

HUMINT collectors are tasked with collecting information for intelligence use from people or related documents. Their responsibilities are covered in detail in Chapters 3, 5, and 7 (Urban Operations) of FM 3-20.98. The HUMINT collectors must be proficient in the following related procedures and operations:

- Tactical questioning. This is an abbreviated form of interrogation or debriefing used to collect information related to the commander's priority information requirements (PIR) from human sources. The HUMINT

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collector must be able to help the platoon leader develop lines of tactical questioning to fulfill the commander's PIR and accomplish the mission.

- Interrogation and debriefing. These involve the systematic questioning of individuals to procure information to answer specific collection requirements. Sources, such as EPWs and civilian detainees who are in the custody of US forces, are interrogated. All others are debriefed, to include friendly forces, civilian refugees, and local inhabitants. (**NOTE:** The role of interrogation in the reconnaissance platoon is limited to the initial questioning and evaluation of detainees. Debriefing is limited to gathering information from internal patrols.)
- Source operations. These intelligence collection operations use recruited and registered HUMINT sources. The registration of sources is a legal requirement in any sustained use of a specific individual as a source. (**NOTE:** The role of recce platoon HUMINT collectors in source operations is limited to identifying potential intelligence sources for exploitation by HUMINT assets at higher levels.)

In reconnaissance platoons that do not have organic HUMINT collectors, scouts should have an understanding of these functions of information-gathering. A supportive civilian populous will likely pass valuable information to the first soldiers with whom they come into contact. In addition, all scouts should have an understanding of the roles and duties of HUMINT collectors because these assets may be attached once the platoon is deployed even if they are not organic to the platoon.

Gunner

Gunners in a Reconnaissance platoon are subject matter experts on their vehicle and its weapons system. While serving as a gunner, a soldier must mentor the other soldiers assigned to his vehicle. The gunner is responsible for the operation of his assigned vehicle and maintaining his and other scouts' MOS proficiency in gunnery, dismounted and mounted maneuver, and other 19D MOS skills.

Driver

Drivers in a Reconnaissance platoon are tasked to be technically competent on their assigned vehicle and tactically proficient at driving in all mission environments. The driver has initial responsibility for operation and maintenance of his assigned vehicle while maintaining other perishable reconnaissance skills. While assigned to a vehicle, the driver is responsible for the following:

- Observation of his sector of responsibility.
- Maintenance for vehicle—PMCS.
- Maintaining and improving on all scout skills.
- Preparing himself for positions of increased responsibility within the platoon.

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.....**EXAMPLE OF LEADER BOOK CONTENTS****Soldier Data**

Contact (phone, address)	Driver Records
Counseling / working NCOER	Weapons Qualifications (personal and crew)
Pre-Deployment Preparation Information	Family Information (Spouse, children, other dependants)
APFT Data	DEROS / PCS / ETS dates

Sensitive Items / Weapons List

Weapons	Ampilfier
Night Vision Devices	FBCB2
Sensors	ANCD
Radios	Field Telephones
Manpacks	VAA
Any other sensitive items	

Vehicle information

Vehicle Serial Numbers	Assigned equipment
Records of last turret/hull/gun services	Copies of last 5988E
Mileage	

Training Plan

Platoon Training Calendar	Troop Training Calendar
Platoon Training Assessment	Squadron / Battalion Training Calendar

Post Agencies that support Soldiers and their Families

ACS	Medical / Dental
AER	Emergency Contacts
Financial	Installation / Unit Emergency Operations Center (EOC)
Educational	Medical
Legal (JAG)	MEDEVAC
Chaplain	

TROOP-LEADING PROCEDURES

Many platoons are not prepared to perform their mission effectively because of inadequate planning. To prevent this from happening, the reconnaissance platoon must be proficient in troop-leading procedures. These are the basis of the dynamic process by which units develop plans and orders at every level of leadership. The troop-leading process consists of eight steps, which are discussed in this chapter in the traditional order. The process, however, **is not rigid**, and the steps are not necessarily sequential. The tasks involved in some steps (such as initiate movement, issue the warning order, and conduct reconnaissance) may recur several times during the process. Although listed as the last step, activities associated with supervising and refining the plan and other preparations occur throughout the troop-leading process.

Operational Considerations

The following points summarize important factors involved in troop-leading procedures:

- Time management.
- IPB.
- Understanding the mission.
- Effective orders.
- Rehearsals.
- Precombat checks and inspections.

NOTES: For additional information on crew orders, rehearsals, PCCs, and PCIs, refer to the discussion of the “supervise and refine” step of troop-leading procedures later in this section.

See Chapter 19 for detailed information on precombat checklist.

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The key to success is that the platoon is prepared to move by the time specified in the order with operational weapons and equipment and the basic load of supplies as specified by the order and/or the platoon leader. All personnel must be able to explain the higher unit's mission, the higher commander's intent, the platoon mission, and their specified tasks and duties to support the mission. All attachments must be received, briefed, and inspected.

Military Decision-making Process (MDMP)

Decisions are the means by which a commander or leader translates the information available to him and his vision of the desired end state of an operation into the actions necessary to achieve that end state. Decision making is a conscious process for selecting a COA from two or more alternatives. As outlined in FM 5-0 [101-5], it is a learned skill of knowing *if* to decide, then *when* and *what* to decide. The process includes an understanding of the consequences of each decision.

The MDMP is the Army's adaptation of this analytical approach to decision making and problem solving. It provides the commander or leader with a valuable tool in developing his estimate of the situation and his plan. Although the process begins with the receipt of the mission, the analytical aspects of the MDMP continue at all levels throughout the operation. FM 5-0 [101-5] provides a detailed examination of the MDMP.

At platoon level, many actions associated with the MDMP are based on SOPs and standard unit drills; these include evacuation of wounded soldiers, rearming and resupply procedures, and individual crew responsibilities. This allows the platoon to operate quickly and efficiently without constant guidance from the platoon leader. SOPs are especially critical in helping to maintain combat preparedness when leaders are tired as a result of the stress of continuous

operations. Because SOPs are so critical, it is absolutely necessary that everyone in the platoon know and understand them.

Conduct of Troop-leading Procedures

Troop-leading procedures begin when the platoon leader receives the first indication of an upcoming operation (often by warning order from higher) and continue throughout the planning, preparation, and execution phases of the mission. The platoon leader maximizes the available planning time by starting as soon as the first bit of information becomes available. He normally uses one-third of the available time to plan, prepare, and issue the order; his vehicle commanders then have the remaining two-thirds of the time available to conduct their own troop-leading procedures. This system of time allocation is known as the **“one-third/two-thirds” rule** of planning and preparation.

Figure 1-1 lists the eight troop-leading steps and illustrates their role in relation to the MDMP, which plays an important role in the troop-leading process. The following discussion provides a step-by-step overview of troop-leading procedures.

NOTE: Refer to the appropriate platoon-level mission training plan (MTP) for the training and evaluation outline (T&EO) covering the task of conducting troop-leading procedures. The task, included in Chapter 5 of the Reconnaissance Platoon MTP (ARTEP 17-97F-10-MTP), includes procedures involved in each of the troop-leading steps.

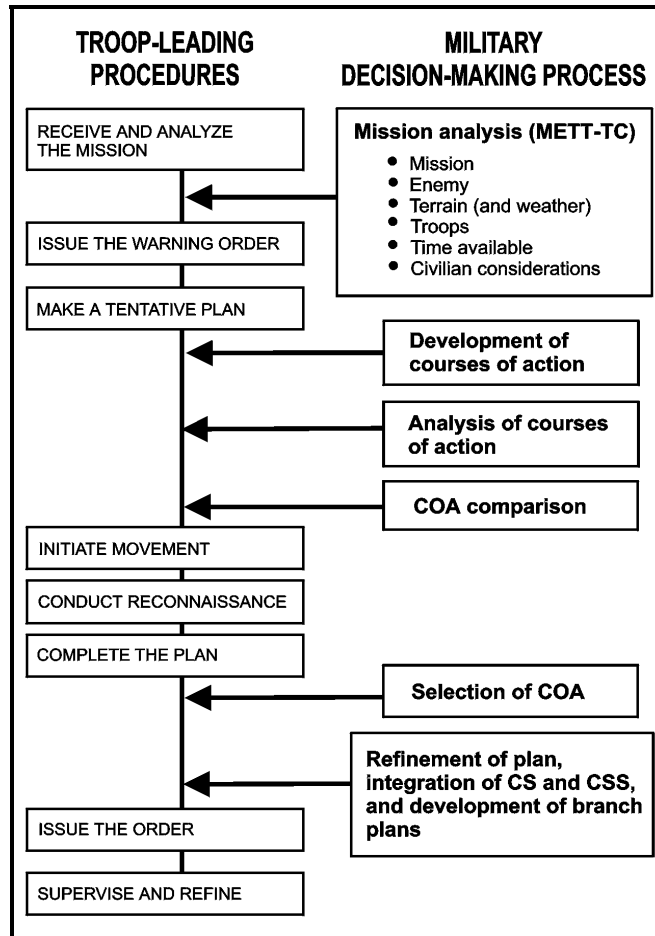


Figure 1-1. Relationship of troop-leading procedures and the military decision-making process.

Receive and Analyze the Mission

The reconnaissance platoon leader normally receives his orders as an oral, written, and/or digital OPORD, as a FRAGO, or as a warning order. Upon receipt of the order, he begins analyzing the mission using the factors of METT-TC: mission, threat, terrain (and weather), troops, time available, and civilian considerations. Mission analysis is a continuous process. The platoon leader constantly receives information during the planning phase and must decide if it affects his mission. If it does, he then decides how to adjust his plan to meet this new situation.

Initial actions. Although mission analysis is continuously refined throughout the troop-leading process, the platoon leader's initial actions are normally based only on the initial warning order from higher. These include an initial METT-TC analysis covering the terrain and the threat and friendly situations.

The platoon leader may also conduct his initial time analysis, develop an initial security plan, and issue his own initial warning order to provide guidance and planning focus for his subordinates. At a minimum, the initial platoon warning order should cover the threat and friendly situations, movement instructions, and coordinating instructions such as an initial timeline and security plan. (**NOTE:** The initial analysis is normally conducted as quickly as possible to allow the platoon leader to issue the initial warning order in a timely manner. He then conducts a more detailed METT-TC analysis after the initial warning order is put out.)

NOTE: The technique of using multiple warning orders is a valuable tool for the platoon leader during the troop-leading process. He can issue warning orders for several purposes: to alert subordinates of the upcoming mission, to initiate

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the parallel planning process, and to put out tactical information incrementally as it is received (ultimately reducing the length of the OPORD). Refer to FM 3-90.1 [71-1] for a discussion of how multiple warning orders are employed at various stages of the troop-leading procedures.

METT-TC analysis. The following discussion provides detailed information on the six METT-TC factors. (**NOTE:** METT-TC factors are not necessarily analyzed sequentially. How and when the platoon leader analyzes each factor depends on when the information is made available to him.)

Mission. After receiving an essential task and purpose, either in a warning order or the OPORD, the platoon leader can then begin the analysis of his own mission. He may use a refined product to better visualize the interrelationships of the terrain, the threat, and friendly forces. These may include a MCOO and/or the situational template (SITEMP), if available. The platoon leader's goal in this analysis is to clarify what the platoon is to accomplish and why the platoon must accomplish it. Key considerations in the analysis include the following:

- What is my task and purpose for this operation?
- What is the commander's intent?
- What are the specified tasks for the operation (those that the commander stated must be accomplished)? (**NOTE:** These tasks are outlined in paragraph 3 of the OPORD, which comprises the commander's intent, concept of the operation, tasks to subordinate units, and coordinating instructions.)
- What are the implied tasks for the operation? These are other tasks, not specifically noted by the commander, that must be accomplished to achieve the purpose or specified tasks.

- What are the essential tasks for the operation? These are all tasks, both specified and implied, that are absolutely required to ensure mission success.
- What is the focus of the operation?
- What is the tempo of the operation?
- What are the engagement criteria for the platoon? For the troop? For the squadron/battalion?

Enemy (threat forces). The platoon leader's analysis of the threat situation should focus on the areas outlined in FM 3-90.1 [71-1] (doctrinal analysis and objectives, composition and disposition, capabilities, weaknesses, anticipated COAs, and factors that can influence these COAs) as well as FM 2-01.3 [34-130], which covers IPB. The analysis can focus on the following considerations:

- What types of threat units is the platoon up against?
- Where are these units? (**NOTE:** If possible, these locations should be templated to vehicle level.)
- What is the threat doing?
- How strong is he?
- What kind of equipment does he have? What are his weapons types and effective ranges?
- What are his capabilities and weaknesses?
- Where is he vulnerable?
- Where are his engagement areas?
- What are the threat's intentions, doctrinal objectives, and most probable COA(s)?
- How will he react to the eight forms of contact? These are the following:
 - Visual contact.
 - Physical contact (direct fire).

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- Indirect fire contact.
 - Contact with obstacles of threat or unknown origin.
 - Contact with threat or unknown aircraft.
 - Contact involving NBC conditions.
 - Situations involving electronic warfare tactics (such as jamming, interference, and imitative deception).
 - Situations involving nonhostile elements (such as civilians).
- What can the threat do in response to friendly actions?

Terrain (and weather). The platoon leader analyzes the terrain using the factors of OCOKA: observation and fields of fire; cover and concealment; obstacles; key terrain; and avenues of approach. The following discussion focuses on questions the platoon leader can use in his analysis.

Observation and fields of fire. The platoon leader should cover the following considerations in his analysis:

- Where can the threat observe and engage my platoon, and how do I counter this capability?
- Where can I establish OPs to maximize my ability to see the battlefield?

Cover and concealment. The platoon leader should include the following considerations in his analysis of cover and concealment:

- What routes within the area of operations offer cover and concealment for my platoon or for threat elements?
- What dismounted and/or mounted routes offer my platoon the best available cover and concealment?

Obstacles. In his terrain analysis, the platoon leader first identifies existing and reinforcing obstacles that may limit mobility (affecting such features as objectives, avenues of approach, and mobility corridors).

Existing obstacles include, but are not limited to, the following:

- Gullies, ravines, gaps, and ditches over 3 meters wide.
- Streams, rivers, and canals over 1 meter deep.
- Mountains or hills with a slope in excess of 60 percent.
- Lakes, swamps, and marshes over 1 meter deep.
- Tree stumps and large rocks over 18 inches high.
- Forest or jungles with trees 8 inches or more in diameter and with less than 4 meters of space between trees.
- Man-made existing obstacles, including built-up areas such as towns, cities, or railroad embankments.

Reinforcing obstacles include, but are not limited to, the following:

- Minefields.
- Antitank ditches.
- Road craters.
- Abatises.
- Wire obstacles.

Based on the degree of obstruction posed by obstacles, terrain is further classified in one of the following categories:

- **Unrestricted.** This is terrain that is free of any restriction to movement; no actions are required to enhance mobility. For wheeled vehicles, unrestricted terrain is typically flat or moderately sloped, with scattered or widely spaced obstacles such as trees or rocks. This type of terrain generally allows wide maneuver and offers unlimited travel over well-developed road networks.

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- **Restricted.** This is terrain that hinders movement to some degree. Little effort is needed to enhance mobility, but units may have to zigzag or make frequent detours. They may have difficulty maintaining optimum speed, moving in some types of combat formations, or transitioning from one formation to another. For wheeled vehicles, restricted terrain typically encompasses moderate to steep slopes and/or moderate to dense spacing of obstacles such as trees, rocks, or buildings. Swamps and rugged ground are examples of restricted terrain for dismounted infantry forces. Logistical or rear area movement in this type of terrain may be hampered by poorly developed road systems.
- **Severely restricted.** Terrain in this classification severely hinders or slows movement in combat formation unless some effort is made to enhance mobility. This could require commitment of engineer forces to improve mobility or deviation from doctrinal tactics, such as using a column rather than a line formation or moving at speeds much lower than otherwise preferred. Severely restricted terrain for wheeled vehicles is typically characterized by steep slopes, densely spaced obstacles, and/or the virtual absence of a developed road system.

Key terrain. Key terrain is any location or area whose seizure, retention, or control affords a marked advantage either to friendly forces or to the threat. The platoon leader's analysis should include these considerations:

- Where and what is the key terrain?
- How can the platoon use key terrain to support the mission?
- How will the threat use key terrain to support his mission?

Avenues of approach. These are areas through which a unit can maneuver. The definition of an avenue of approach is an area

that provides sufficient ease of movement and enough width to allow passage of a force large enough to significantly affect the outcome of the battle. The platoon leader's analysis should include these considerations:

- Where are the most favorable mounted and dismounted avenues of approach for threat and friendly forces?
- Where are the best air avenues of approach for threat forces?

Weather. The platoon leader analyzes weather conditions as part of his evaluation of the terrain. The following considerations should be included in this evaluation:

- What are the light conditions (including percentage of night illumination) and visibility?
- What are the times for beginning of morning nautical twilight (BMNT), sunrise, sunset, end of evening nautical twilight (EENT), moonrise, and moonset?
- How has recent weather affected the area of operations?
- Will weather become better or worse during the mission?
- How will fog, rain, dust, heat, snow, wind, or blowing sand affect the troops and equipment of both friendly and threat forces during the mission?
- How will weather conditions affect the employment of chemical weapons and/or smoke?

Troops. The platoon leader's analysis of troops available for an operation includes an assessment of the platoon's vehicles and equipment. Considerations in the analysis include the following:

- What is the present condition of the platoon's soldiers, vehicles, and equipment?
- What is the supply status of ammunition, fuel, and other necessary items?

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- What is the turnaround time for resupply operations (time between transmission of the request and delivery of supplies)?
- What is the state of training of the platoon?
- What is the state of morale?
- How much sleep have the soldiers had?
- How much sleep can they get before and during the operation?
- Does the platoon need any additional equipment to support or accomplish its mission?
- What attachments does the platoon have (or require) to accomplish its mission?
- How many OPs (mounted/dismounted and long-/short-duration) can be manned with the available assets?
- How big a frontage can be covered with the available assets?

Time available. The platoon leader's analysis of the time available for an operation begins with the "one-third/two-thirds" rule of planning and preparation discussed earlier in this section. This principle allows the platoon leader to use one-third of planning and preparation time himself, then to allocate the remaining two-third to subordinates. Additional considerations in the analysis should include the following:

- How much time is available to plan and conduct reconnaissance?
- How much time is available for rearming, refueling, and resupply?
- How long will it take the platoon to move to planned OPs, to the line of departure (LD), and/or to the objective?
- Is there enough time for rehearsals?

- How much time is available to the threat for the activities listed in the previous items?
- How does the potential threat timeline for planning and preparation compare with that developed for friendly forces?

Civilian considerations. In his analysis of how the platoon will handle situations involving the society and infrastructure, the platoon leader should assess the following considerations:

- How will existing civilian considerations affect the mission? What are the potential negative effects of civilian contact?
- What are the applicable rules of engagement (ROE) and/or rules of interaction (ROI)?
- What procedures and guidelines will the platoon use in dealing with refugees, prisoners, and other civilians?
- Will the platoon be working with civilian organizations, such as governmental agencies, private groups, or the media?
- Will the platoon conduct stability operations (such as peace operations or noncombatant evacuation) or support operations (such as humanitarian or environmental assistance)?

NOTE: Refer to paragraph 1 (Situation) of the OPORD on page 34 and to FM 3-20.98 for a thorough explanation of civilian considerations.

Information sources. In planning and preparing for the mission, the platoon leader may find that he requires additional sources of information to help answer some of the questions raised in the analysis of METT-TC. The platoon can receive and/or request information from a variety of sources to assist in planning and understanding the operational area, including the following:

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- Paragraph 1 of the OPORD (especially those portions covering the threat and the applicable terrain and weather).
- UAV imagery and video (such as photos/video of a route or danger area to assist with the METT-TC assessment).
- Satellite imagery (for example, showing locations of increased military traffic).
- Engineer database information on terrain, such as from the TERRABASE program.
- HUMINT reports from brigade and higher, such as a human density overlay.
- Assessments on the operational area.
- Signal intelligence (SIGINT) and measurement and signal intelligence (MASINT) reports from the surveillance troop.

Risk management. Leaders must make a thorough risk assessment, identifying and evaluating hazards the platoon will face during the operation. They then develop risk management controls and ensure that all subordinate leaders and individual scouts implement them to eliminate or reduce the risks.

Reverse planning and timeline development. After completing his METT-TC analysis, the platoon leader conducts reverse planning to ensure that all specified, implied, and essential tasks can be accomplished in the time available. He develops a reverse planning schedule (timeline), as illustrated in Figure 1-2. Beginning with actions on the objective, he works backward through each step of the operation and then through preparation and planning activities to the present time. This process also helps the platoon in making efficient use of planning and preparation time.

NOTE: Simultaneous planning and preparation are key factors in effective time management during the troop-leading process. The next five steps (issue a warning order; make a tentative plan; initiate movement; conduct reconnaissance; complete

the plan) may occur simultaneously and/or in a different order. As noted, the final troop-leading step, supervise and refine, is on-going throughout the process.

Issue the Warning Order

After the platoon leader has analyzed his orders and worked out his mission and related tasks, he must quickly pass this information to his subordinate leaders. This is accomplished through the warning order. As a minimum, the following information must be included:

- Elements and individuals to whom the warning order applies.
- Threat situation as stated in the higher unit's order.
- The time and nature of the operation.
- The earliest time of movement.
- Coordinating instructions, including an initial timeline.
- The time and place the OPORD will be issued.

If possible, the platoon leader issues a conventional (analog) and/or digital overlay of the area of operations. In the absence of further orders, this gives the platoon an idea of the scope of the operation. Also, the platoon leader should inform his subordinates of the results of his reverse planning process and delegate appropriate preparation tasks to the PSG and to the section and squad leaders. If possible, he should also include the task organization of the platoon. In addition to accounting for all required preparatory tasks, the reverse planning schedule should include a sleep plan. (**NOTE:** The sleep plan should be a 24-hour plan with the goal of maximizing available time in the planning, preparation, and execution phases of the operation. It covers all platoon members.) All elements should acknowledge receipt of the warning order.

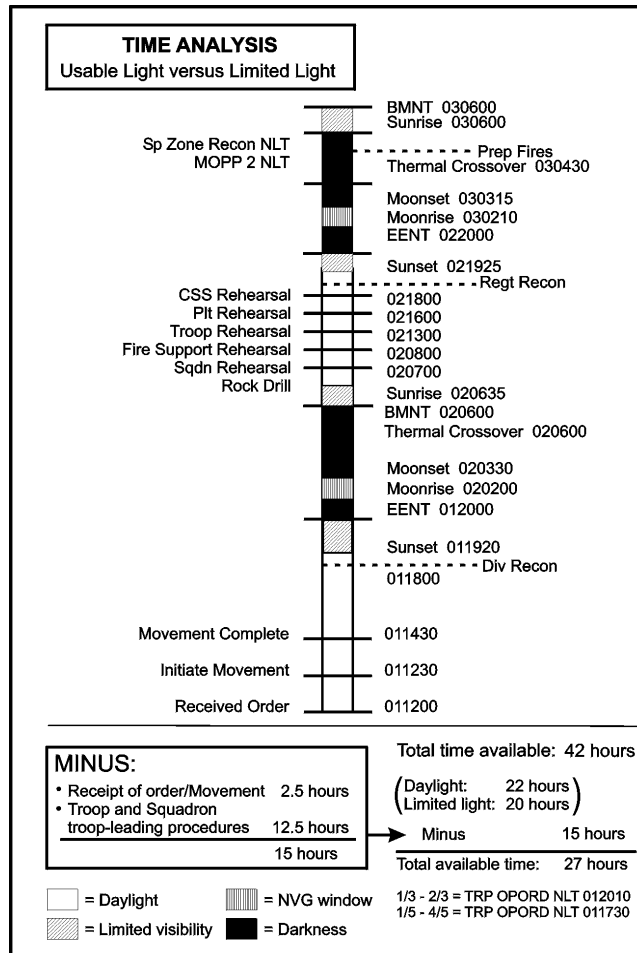


Figure 1-2. Example reverse planning timeline.

Make a Tentative Plan

Based on results of his mission analysis, the platoon leader develops a tentative plan that addresses all specified, implied, and essential tasks using the OPORD format.

Initiate Movement

After issuing a warning order and making a tentative plan, the platoon leader may choose to initiate movement. The platoon leader should at least be able to determine when the platoon will move. He announces this in terms of a readiness condition (REDCON) level. Each REDCON level indicates critical tasks and time available to prepare for future operations. Refer to Chapter 12, Communications, for definitions of REDCON levels.

Conduct Reconnaissance

This step of the troop-leading procedures allows the platoon leader to confirm the validity of his tentative plan and to refine the plan. The platoon leader should conduct the reconnaissance with his subordinate leaders. This will allow them to see the terrain and develop a better visualization of the projected plan. At a minimum, the platoon leader conducts this step as a detailed map reconnaissance. He should at least confirm his initial march route to the LD or start point (SP) and check initial positions. If possible, he should also check some of the area beyond the LD; this may require permission from the commander.

If the platoon leader cannot personally conduct on-site reconnaissance, he should make the most efficient use of available time by tasking his subordinates to accomplish specific reconnaissance requirements. An example of this is tasking a squad leader to reconnoiter and time routes to the SP. The platoon leader must conduct the reconnaissance with an open mind; not everything

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he sees will match his tentative plan. He must be flexible enough to change and competent enough to work out new plans rapidly.

Complete the Plan

The platoon leader refines his plan based on the results of the reconnaissance. He then completes the plan using these results and any new information from his commander and members of his platoon. He should keep the plan as simple as possible, at the same time ensuring that it effectively supports the commander's intent.

As he completes and refines his plan, the platoon leader should consider delegating planning responsibilities to other members of the platoon. He can then use the information developed by these soldiers in developing his order and in establishing an effective platoon SOP. Examples of delegated planning responsibilities include the following:

- The HUMINT NCO researches and briefs the threat/civilian situation.
- A section sergeant researches and briefs the terrain and weather.
- The PSG researches, plans, and briefs CSS considerations (such as MEDEVAC and vehicle recovery operations).
- An NCO sets up rehearsals.
- An NCO translates graphics to FBCB2 and overlays.
- Section sergeants plan specific reconnaissance patrols in support of the overall mission.
- An NCO plans and briefs occupation procedures for such positions as ORPs, OPs, and surveillance sites.
- An NCO plans and briefs specific communication issues (paragraph 5 of the OPORD).

- An NCO plans and briefs specific coordinating instructions (such as the collection plan, actions on contact, special equipment, linkup tasks, and methods of handling EPWs).
- A leader finalizes the risk management process.

Using this type of planning delegation will help the platoon leader to ensure that his subordinate leaders are in synch with the plan. It also facilitates a more rapid planning process. The platoon leader must remain fully aware of all facets of the plan and of the activities of his subordinates. He must also give clear guidance for this technique to be successful.

Issue the Order

The platoon leader issues his finalized order in the five-paragraph OPORD format. He refers to notes to make sure he does not forget anything. He ensures that all subordinate leaders understand the entire plan as well as their particular portion of it. To ensure complete understanding of the operation, the platoon leader should end the order with a briefback of key points by his leaders.

Whenever possible, the platoon leader should issue his order to the entire platoon. At a minimum, he should issue the order to his subordinate leaders and vehicle commanders. Once everyone has arrived at the place and time specified in the warning order, the platoon leader or PSG should ensure that everyone has recorded the applicable graphic control measures. The platoon leader should issue the revised operations overlay before he starts; he should have a copy of the graphics for each of his leaders. The PSG ensures that each subordinate leader's overlay matches the platoon leader's overlay. To use his time most efficiently, the platoon leader should use a walk-through rehearsal as part of his briefing of paragraph 3 of the order.

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If he can issue the order from a favorable vantage point, the platoon leader can physically indicate the ground over which his scouts will maneuver. If a vantage point is not available, he can use a terrain cloth, sand table, or map as a reference. The platoon leader should have a briefing kit available to build a model of the area of operations; items in the kit might include the following:

- Nylon rope and nails or spikes.
- Preconstructed Plexiglas squares for units and equipment (blue for friendly elements, red for threat forces).
- “Micro” armor vehicles or other models.
- Pens and markers.
- Stakes.
- Engineer tape.
- Operational symbol cutouts.
- Dry eraser board.

In extreme situations, FBCB2 allows the platoon leader to issue the OPORD to his sections or squads when they are widely dispersed and cannot gather at a central point. The platoon leader must alert his elements (via FM voice) that a new order is available on the FBCB2 and direct each element to acknowledge receipt of the order.

Supervise and Refine

Flexibility is the key to effective operations. The reconnaissance platoon leader must be able to refine his plan whenever new information becomes available. If he adjusts the plan, he must inform the platoon and supervise implementation of the changes. Once the operation has begun, the platoon leader must be able to direct his platoon in response to new information and new situations.

Crew orders, rehearsals, and inspections are essential elements of the supervision process as the platoon prepares for the mission. The following discussion covers these procedures in detail.

Crew orders. The platoon leader and PSG make sure all crewmembers have been briefed by their leaders or vehicle commanders and understand the platoon mission and concept of the operation. All members of the platoon must be familiar with the formats of warning orders, OPORDs, and FRAGOs.

Rehearsals. The platoon leader should never underestimate the value of rehearsals. They are his most valuable tools in preparing the platoon for the upcoming operation. Refer to FM 5-0 [101-5] for a detailed discussion of rehearsal types, techniques, and procedures. The platoon leader uses well-planned, efficiently run rehearsals to accomplish the following purposes:

- Reinforce training and increase proficiency in critical tasks.
- Reveal weaknesses or problems in the plan.
- Synchronize the actions of subordinate elements.
- Improve each soldier's understanding of the concept of the operation.

Rehearsal types. The platoon leader can choose among several types of rehearsals, each designed to achieve a specific result and with a specific role in the planning and preparation timeline. The following discussion focuses on the five rehearsal types.

Confirmation brief. The confirmation brief is, in effect, a reverse briefing process routinely performed by subordinate leaders immediately after receiving any instructions, such as an OPORD or FRAGO. They confirm their understanding by repeating and explaining details of the operation for their leader. In the reconnaissance platoon, the platoon leader should conduct

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confirmation briefs after his subordinate leaders have received the OPORD, but before other phases of the platoon rehearsal begin.

Backbrief. Leaders perform this type of rehearsal throughout the planning and preparation timeline to help clarify their intent for their subordinates. The backbrief allows the platoon leader to identify problems in his own concept of the operation and his subordinates' understanding of the concept; he also uses the backbrief to learn how subordinates intend to accomplish their missions.

Support rehearsal. Support rehearsals are normally conducted within the framework of a single operating system, such as fire support or CSS, or a limited number of operating systems. The goals are to ensure that support elements can achieve their missions within the higher commander's plan and that their support plans are synchronized with the overall maneuver plan. The rehearsals are conducted throughout the planning and preparation timeline.

Battle drill or SOP rehearsal. This type of rehearsal is used to ensure that all participants understand a technique or a specific set of procedures. The platoon initiates battle drill and/or SOP rehearsals as soon as possible after receipt of the mission; he then can continue to conduct them as needed throughout the planning and preparation timeline. This rehearsal does not necessarily cover a published drill or SOP, giving the commander or leader flexibility in designing the rehearsal. For example, the platoon leader could rehearse procedures for marking obstacle lanes or establishing local security. (**NOTE:** It is recommended that drills for actions on contact be rehearsed frequently during planning and preparation.)

Rehearsal techniques. The platoon leader can choose among several techniques in conducting rehearsals, which should follow the crawl-walk-run training methodology to prepare the platoon for increasingly difficult conditions. As noted in FM 5-0 [101-5], techniques for conducting rehearsals are limited only by the resourcefulness of the commander or leader; that manual outlines six basic techniques (full dress, reduced force, terrain model, sketch map, map, and radio). The following discussion covers these techniques, which are listed in descending order in terms of the preparation time and resources required to conduct them. Considerations in selecting a rehearsal technique include the following:

- **Time.** How much time will be needed for planning, preparation, and execution?
- **Multiechelon employment.** How many echelons will be involved?
- **Operations security (OPSEC).** Will the rehearsal allow the threat to gain intelligence about upcoming operations?
- **Terrain.** What are the applicable terrain considerations?

Full force rehearsal. This rehearsal produces the most detailed understanding of the mission, but is the most difficult to conduct in terms of preparation and resources. It involves every soldier and system participating in the operation. If possible, units should conduct the full force rehearsal under the same conditions (such as weather, time of day, terrain, and use of live ammunition) that they will encounter during the actual operation.

Reduced force rehearsal. This rehearsal normally involves only key leaders of the unit and is thus less extensive than the full dress rehearsal in terms of preparation time and resources. The commander decides the level of leader involvement. The selected leaders then rehearse the plan, if possible on the terrain to be used

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for the actual operation. The reduced force rehearsal is often conducted to prepare leaders for the full dress rehearsal.

Terrain model rehearsal. This is the most popular rehearsal technique, employing an accurately constructed model to help subordinates visualize the battle in accordance with the commander's or leader's intent. When possible, the platoon leader places the terrain model where it overlooks the actual terrain of the area of operations or is within walking distance of such a vantage point. Size of the model can vary, but it should be large enough to depict graphic control measures and important terrain features for reference and orientation. Participants walk or move "micro" armor around the table or model to practice the actions of their own vehicles in relation to other members of the platoon.

Sketch map rehearsal. Units can use the sketch map technique almost anywhere, day or night. Procedures are similar to those for the terrain model rehearsal. The sketch must be large enough to allow all participants to see as each subordinate "walks" through an interactive oral presentation of his actions. Platoon elements can use symbols or "micro" armor to represent their locations and maneuver on the sketch.

Map rehearsal. Procedures are similar to those for the sketch map rehearsal except that the commander or leader uses a map and operation overlay of the same scale as he used to plan and control the operation. This technique is useful in conjunction with a confirmation brief or backbrief involving subordinate leaders and vehicle commanders. The platoon leader uses the map and overlay to guide participants as they brief their role in the operation.

Radio rehearsal. The commander or leader conducts this rehearsal by having his unit simulate critical portions of the

operation orally and interactively over established communications networks. The radio rehearsal may be especially useful when the situation does not allow the platoon to gather at one location. Subordinate elements check their communications systems and rehearse events that are critical to the platoon plan. To be effective, the radio rehearsal requires all participants to have working communications equipment and a copy of the OPORD and applicable overlays.

Inspections. Precombat checks (PCC) and precombat inspections (PCI) allow leaders to check the platoon's operational readiness. The key goal is to ensure that soldiers and vehicles are fully prepared to execute the upcoming mission. The platoon leader makes sure the entire chain of command conducts PCCs and PCIs in accordance with the commander's guidance or his own SOP.

Precombat checks. See Chapter 19, Precombat Checklist.

Precombat inspections. Leaders in the reconnaissance platoon conduct PCIs to ensure that subordinate leaders and soldiers have executed the necessary PCCs. Obviously, leaders cannot possibly check everything. They should focus on key pieces of equipment and details of the plan that are critical to mission accomplishment. The platoon leader and PSG should coordinate their inspections to make optimum use of available time and to avoid redundant inspections. PCIs must be completed in time to fix deficiencies before mission execution begins.

ORDERS

Orders Group

When the situation permits, the platoon leader assembles subordinate leaders for detailed oral orders and rehearsals. The orders group consists of the following:

- All team and squad leaders.
- Gunners from the platoon leader's and PSG's vehicles.
- Leaders from any attached or operational control (OPCON) elements.

The Warning Order (WARNO)

The reconnaissance platoon leader will use warning orders to alert his platoon of upcoming missions. The guidelines and directions in the warning order will allow the platoon to begin its planning and preparation activities. The platoon leader then uses a series of warning orders to provide additional information to the platoon as he receives it or as he further develops his plan. The warning order provides answers to the following questions:

- **WHO** is involved in the mission?
- **WHAT** is the nature of the mission and what are we tasked to accomplish?
- **WHY** are we performing the mission?
- **WHEN** is the earliest starting time expected for the mission?
- **WHERE** is location of the area of operations and where and when will the OPORD be issued?

At a minimum, all platoon warning orders will include the following elements:

- **Situation.** The warning order covers the following situational factors:
 - **Threat.** Define the area of operations and the area of interest. Give a brief description of the terrain layout using OCOKA factors.
 - **Friendly.** State your intent and the mission statements for the next two higher levels. Explain the next higher commander's concept of the operation and provide a copy of the available operational graphics.
- **Mission.** Give the restated reconnaissance platoon mission.
- **Coordinating instructions.** Provide the platoon with all of the limitations identified up to this point and any other instructions that will allow for proactive planning and preparation, including priorities of work. The following elements are included:
 - **Timeline.** Update your earlier timeline(s). Outline all known beginning and ending times, to include those for the next higher unit.
 - **Rehearsals.** Specify what type of mission-specific rehearsals or drills you expect subordinate units to conduct within the framework of the timeline.
 - **Security.** Brief the security plan.
 - **Service support.** Address any changes to the support requirement for which the platoon may have to plan, such as attachment of an engineer platoon or infantry squad.

The Operation Order

1. SITUATION.

a. Enemy forces (brief from the situational template). Ensure this subparagraph contains information that describes the most probable course of action the enemy will adopt. Include identification, activity, location, disposition, strength, composition, and other information critical to the operation. List all enemy forces that can influence the platoon's mission, including enemy FS weapons and aircraft. This subparagraph also covers the following:

(1) Weather. Include light data, weather forecast for the operation, and effects of weather and light conditions on operations (trafficability, visibility, effect on lasers and thermal sights, effect on air operations).

(2) Terrain (brief from the map). Identify the effect of terrain on operations. Include the aspects of OCOKA (observation and fields of fire, cover and concealment, obstacles, key terrain, and avenues of approach) as well as specific features such as hills, valleys, road types and conditions, streams, rivers, bridges, towns, and engagement areas.

b. Civilian considerations (brief from map and/or situational template). This subparagraph includes the following:

(1) Society Overview: The center of gravity during operations may be the civilian inhabitants themselves. Leaders can decide whether civilian presence and/or density represent a significant risk to the accomplishment of their mission. If civilians are the primary focus of the operation, analysis may help to determine the decisive points. Considerations are population

demographics, language, religions, government, ethnic/cultural considerations, history, economy, politics, and key individuals.

(2) Infrastructure. Urban infrastructures are those systems that support the inhabitants and their economy and government. Some elements are communications (wireless, telegraphs, radios, television, computers, newspapers, magazines, etc.), transportation and distribution (highways and railways, to include bridges, tunnels, ferries, and fords), energy (system that provides the power to run the urban area), commerce (includes business and financial centers), human services (includes hospitals, water supply systems, emergency services and governmental services).

(3) Potential effects on military operations: This may include food and water shortages, refugees, urban elite (groups that carry more power than the local or state government and have major power over the area's politics and economic activities), disease and pollution, insurgencies, and crime.

c. Friendly forces (brief from operations graphics). This subparagraph includes the following:

(1) Mission of the higher unit and a clear statement of the higher commander's intent.

(2) Any additional subparagraphs to state the mission of units to the immediate left, right, front, and rear and of FS, air, and other critical units.

d. Attachments and detachments. Do not repeat information already listed under task organization. State when the attachment or detachment is to be effective (if different from the full duration of

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the operation); examples include on order, on commitment of the reserve, and so forth.

2. MISSION. (Brief this paragraph from operations graphics.) Ensure the mission is a clear, concise statement of *WHO* does *WHAT*, *WHEN*, *WHERE*, and *WHY*. This should be the result of the essential tasks stated in the battle sequence developed during mission analysis. Do not include "be prepared" missions in the mission statement. This paragraph has no subparagraphs.

3. EXECUTION. (Brief this paragraph from operations graphics.) This paragraph begins with a brief statement of the commander's intent, his vision of the mission. The intent is optional at platoon level; it describes the *WHY* of the entire mission, but it does not summarize the concept of the operation or describe subunit missions. The remainder of the execution paragraph is made up of the following elements:

a. Concept of the operation.

(1) Maneuver. Provide a clear, concise narrative of the scheme of maneuver from the beginning of the mission to its successful completion.

(2) Fires. Describe the "scheme of fire" to support the overall concept of the mission. Establish priority of fire support. Include the fire support execution matrix. Explain specific use of fire support assets such as combat observation lasing teams (COLT).

(3) Engineer. Describe the effort needed to support the overall concept. Indicate priority of support and priority by type of engineer mission (mobility, countermobility, and/or survivability). Explain specific uses of engineer assets.

(4) Other operational functions as needed.

b. Tasks to teams. State missions or specific tasks to be accomplished by each team. Do not list tasks that affect two or more teams; these should be in the coordinating instructions. Platoons should have subparagraphs for the following teams, to include who is in the team and what equipment is to be used:

(1) Deliberate dismounted patrol teams.

(2) Search and enemy prisoner of war (EPW) teams.

(3) Nuclear, biological, chemical (NBC) teams.

(4) Obstacle reconnaissance and/or breaching teams.

(5) Route evaluation teams.

c. Coordinating instructions. These cover the following areas:

(1) Movement instructions, including SP time, formation and movement technique, order of march, route of march, and alternate route(s).

(2) Operational exposure guidance (OEG).

(3) Air defense weapons status and warning status.

(4) Mission-oriented protective posture (MOPP) status.

(5) Rally points.

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- (6) Time or conditions when a plan becomes effective.
- (7) Passage of lines information, including contact points, passage points, passage lanes, and identification procedures.
- (8) Debriefing procedures.
- (9) Priority of targets for organic weapon systems.
- (10) Uniform and equipment, to include weapon and ammunition.
- (11) Actions on the objective.
- (12) Actions on contact (visual, physical, indirect fire, obstacles, air, NBC, electronic warfare, nonlethal).
- (13) Actions at danger areas.
- (14) Rehearsals, including time and place.
- (15) Inspections, including time and place.
- (16) Rules of engagement (ROE).
 - (a) Rules of interaction (ROI).
 - (b) Graduated response.
- (17) Any instructions not provided in the concept of the operation or tasks to teams subparagraphs.
- (18) Entire reverse planning schedule.

4. SERVICE SUPPORT.

a. General. This portion includes organization of trains (combat, field), location of trains (initial location), and movement of trains (movement instructions).

b. Material and services.

(1) Supply. This covers Class I (ration cycle), Classes II and IV, Class III, and Class V (including what is to be taken and where it is to be picked up). It also covers logistics package (LOGPAC) instructions, including the location of the logistic release point (LRP).

(2) Transportation. Identify the main supply route (MSR).

(3) Services (if available). This covers clothing exchange and bath; mortuary affairs, including handling of personnel killed in action (KIA); and locations of water points and deliberate decontamination sites.

(4) Maintenance. List such information as repair time criteria, repair/evacuation procedures, location of unit maintenance collection points (UMCP), priority of support, authorization for cannibalization, priority of support for recovery/evacuation, and repair/recovery of contaminated vehicles.

c. Medical evacuation and hospitalization. This includes location of the aid station, displacement procedures for the aid station, location of the clearance station, aeromedical evacuation (MEDEVAC) information, handling of contaminated wounded in action (WIA) personnel, and evacuation procedures for WIAs.

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d. Personnel. This covers EPW handling and disposition instructions, EPW guard instructions, location of the unit EPW collection point, location of next higher headquarters' EPW collection point, number of expected personnel replacements, and cross-leveling procedures.

e. Miscellaneous. This covers any other CSS requirements not included in previous subparagraphs.

5. COMMAND AND SIGNAL.

a. Command. This portion covers the location of the platoon leader and PSG throughout the mission; location and composition of command groups; location of the CP; location of next higher headquarters' CP; succession of command; and axis of displacement of the CP, to include primary and alternate locations.

b. Signal. This subparagraph lists signal instructions, such as codes words, procedures if jamming occurs, call signs and hand-and-arm signals within the unit, challenge and password procedures, use of pyrotechnics, and edition of the signal operation instructions (SOI) to be used and days it is in effect. The order should cover all communications contingencies.

NOTE: Many units include a doctrinally unofficial Paragraph 6 to discuss both Safety and Risk Management. Leaders may want to include such a section in their OPORD.

The Fragmentary Order

The FRAGO is a brief oral or written order that serves to update or clarify a previous order. During the execution of an operation, FRAGOs are the medium of battle command. The commander uses them to communicate changes in the threat or friendly situation and to retask his subordinate elements based on changes in the situation. FRAGOs can serve any of the following purposes:

- Implement timely changes to existing orders.
- Provide pertinent extracts from more detailed orders.
- Provide instructions until a detailed order is developed.
- Provide specific instructions to subordinates who do not require a complete order.

The content of each FRAGO will depend on the specific operational and tactical situation. In general, reconnaissance platoon FRAGOs will include the following information:

- **Situation:** Updated threat or friendly situation
- **Mission:** Ensure platoon tasks and purpose are clear
- **Concepts:** Discuss the platoon's scheme of maneuver and interaction with neighboring units
- **Tasks:** Discuss specific events and instructions as necessary.

FIVE-POINT CONTINGENCY PLAN

A leader must provide subordinates with a basic five-point contingency plan whenever he detaches elements from the platoon or team to conduct separate operations. These operations may include outposting, clearing of danger areas, and obstacle

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reconnaissance, to name a few. The contingency plan covers the *who, what, when, where, and why* by covering the following points:

- Who the leader will be taking with him.
- What actions are taken if the leader fails to return and the actions of the unit and the leader on chance contact while the leader is gone.
- When the leader is leaving and how long he will be gone.
- Where the leader is going (to include routes there and back).
- Why the leader is leaving (his mission).

Chapter 2

ORGANIZATION

There are several types of reconnaissance platoons in the force, including platoons in light and heavy divisions and those in separate cavalry troops. The three most prominent types, however, are the CFV platoon, the HMMWV platoon, and the interim armor vehicle (IAV) platoon. The platoons are organized by tables of organization and equipment (TOE) into a headquarters element and scout sections. When executing missions, the reconnaissance platoon is organized according to the factors of mission, enemy, terrain (and weather), troops, time available, and civilian considerations (METT-TC) into an appropriate tactical organization consisting of a variable number of scout sections or squads.

All scouts should understand the various reconnaissance platoon organizations. This will enhance the facilitation of reconnaissance handover (explained in Chapter 3) and other forms of coordination required while conducting operations. Refer to FM 3-20.98 for further information on organizations.

CFV PLATOON

The CFV platoon, also known as the cavalry scout platoon, is equipped with six M3 CFVs (as shown in Figure 2-1). The platoon is found in the cavalry squadrons of an armored or mechanized division or in an armored cavalry regiment (ACR); it may also be found in certain mechanized battalions. Regardless of the mission it is executing or the formation or movement technique it is using, the CFV platoon normally operates in one of three organizations: as three sections with two vehicles in each section, as two sections with three vehicles in each section, or as a six-vehicle platoon.





Vehicle # 1 - Platoon leader 	Vehicle # 4 - Platoon sergeant 
LT (Platoon leader) SGT 19D20 (Gunner) SPC 19D10 (Driver) SPC 19D10 (Scout/Loader)) PFC 19D10 (Scout)	SFC 19D40 (Platoon sergeant) SGT 19D20 (Gunner) SPC 19D10 (Driver) SPC 19D10 (Scout/Loader) PFC 19D10 (Scout)
Vehicles 2 and 5 - Section leaders 	Vehicles 3 and 6 - Squad leaders 
SSG 19D30 (Section leader) SGT 19D20 (Gunner) SPC 19D10 (Driver) SPC 19D10 (Scout/Loader) SPC 19D10 (Scout)	SSG 19D30 (Squad leader) SGT 19D20 (Gunner) SPC 19D10 (Driver) SPC 19D10 (Scout/Loader) PFC 19D10 (Scout)

Figure 2-1. CFV scout platoon.

Three-Section Organization

The three-section configuration is the basic organization for the CFV scout platoon (see Figure 2-2). This organization allows the platoon to achieve a good compromise between the requirement of employing a maximum number of elements during the reconnaissance or security mission and the need for security. It is the ideal organization for the conduct of a route reconnaissance mission. In a screen mission, this organization allows employment of three long-duration OPs.

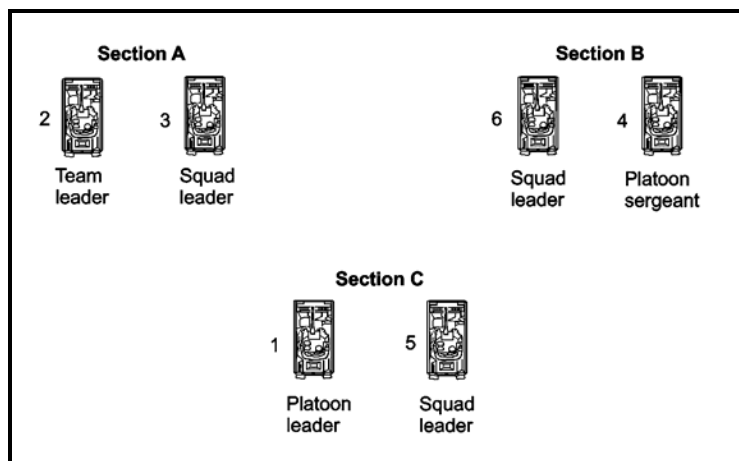


Figure 2-2. CFV scout platoon three-section organization.

Two-Section Organization

The two-section organization is used when increased security is required, when the area of operations can be covered efficiently with only two elements, or when operational strength (less than six vehicles operational) makes the three-section organization impossible. (See Figure 2-3.)

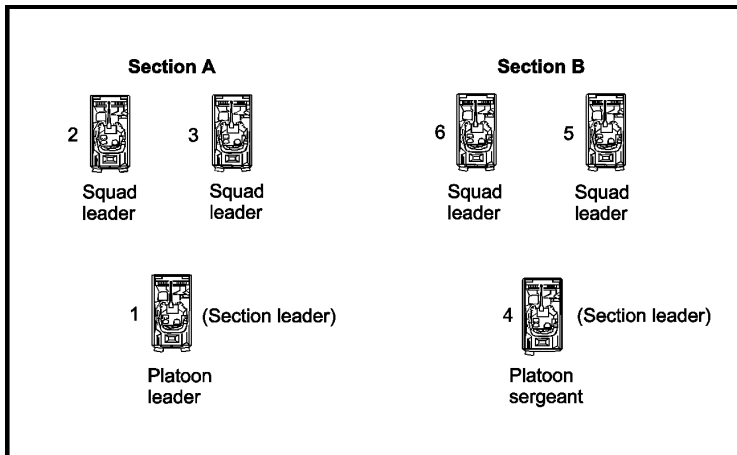


Figure 2-3. CFV scout platoon two-section organization.

Six-Vehicle Organization

The six-vehicle organization is the most difficult to control (see Figure 2-4). The platoon leader employs this organization when he must have six separate information sources at the same time.

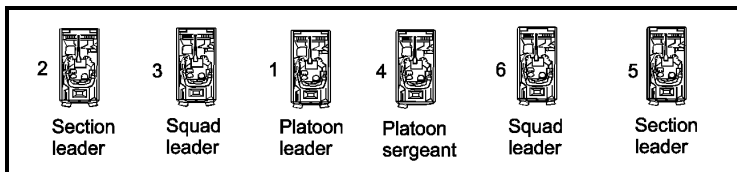


Figure 2-4. CFV scout platoon six-vehicle organization.

HMMWV RECONNAISSANCE PLATOON

With 6 or 10 vehicles (see Figures 2-5 and 2-6), the HMMWV reconnaissance platoon has a wide variety of organizational options. The platoon leader selects an organization based on his METT-TC analysis. The basic maneuver element of this platoon, as in the CFV scout platoon, is the scout section.

The following discussion covers basic organizational options for the HMMWV platoon. The platoon leader may develop other combinations to meet unique METT-TC requirements and to accommodate attachments.

NOTE: In some units the overwatching platform may be a TOW HMMWV.











Vehicle #1 - M2		Vehicle #4 - MK-19	
			
Lt (Platoon leader) SPC (Scout/Gunner) PFC (Driver)		SFC (PSG) SPC (Scout/Gunner) PFC (Driver)	
ALPHA section Vehicle #2 - M2		BRAVO section Vehicle #5 - M2	
			
SSG (Sec leader) SGT (Sct/Gunner) SPC (Driver)		SSG (Sec leader) SGT (Sct/Gunner) SPC (Driver)	
CHARLIE section Vehicle #7 - M2		DELTA section Vehicle #9 - M2	
			
SSG (Sec leader) SPC (Sct/Gunner) PFC (Driver)		SSG (Sec leader) SPC (Sct/Gunner) PFC (Driver)	
Vehicle #3 MK-19		Vehicle #6 MK-19	
			
SGT (Sqd leader) SPC (Sct/Gunner) PFC (Driver)		SGT (Sqd leader) SPC (Sct/Gunner) PFC (Driver)	
Vehicle #8 MK-19		Vehicle #10 MK-19	
			
SGT (Sqd leader) SPC (Sct/Gunner) PFC (Driver)		SGT (Sqd leader) SPC (Sct/Gunner) PFC (Driver)	

Figure 2-5. Ten-HMMWV reconnaissance platoon.

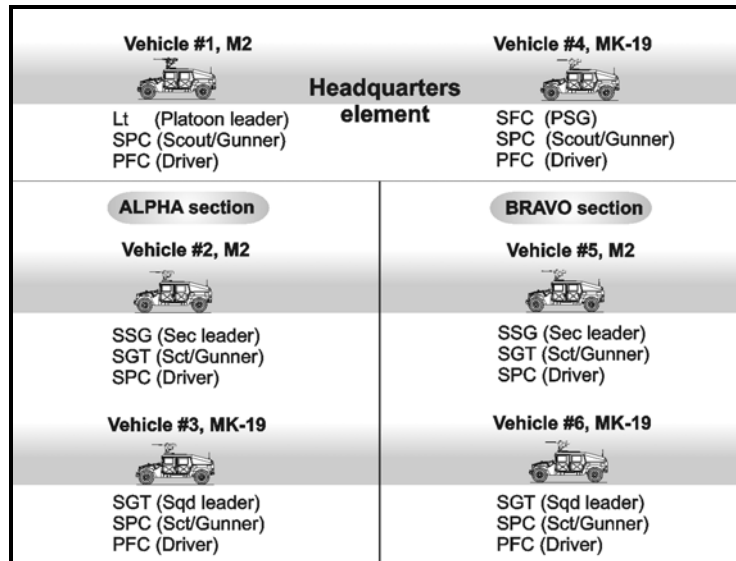


Figure 2-6. Six-HMMWV reconnaissance platoon.

Two-Section Organization

This is an effective organization when only two maneuver corridors have to be observed or when two distinct reconnaissance missions are required. This organization maximizes security at the section level and gives the sections sufficient maneuver and C2 capability to conduct limited separate missions. This organization allows the platoon to put out two long-duration OPs; it is the best organization for dismounted operations. (See Figures 2-7 and 2-8.)

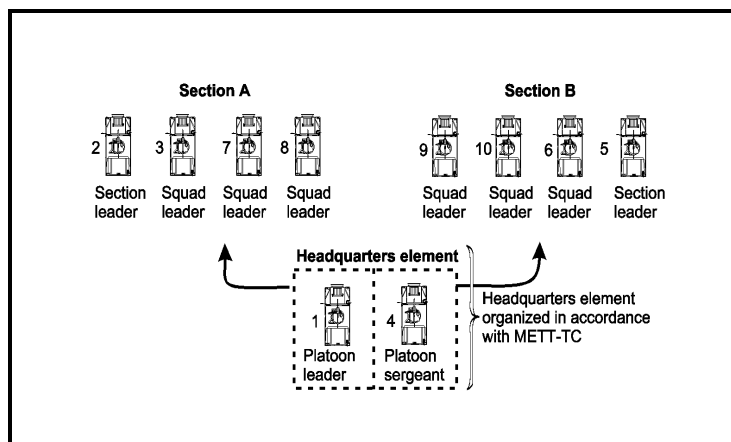


Figure 2-7. HMMWV reconnaissance platoon two-section organization (10-HMMWV platoon).

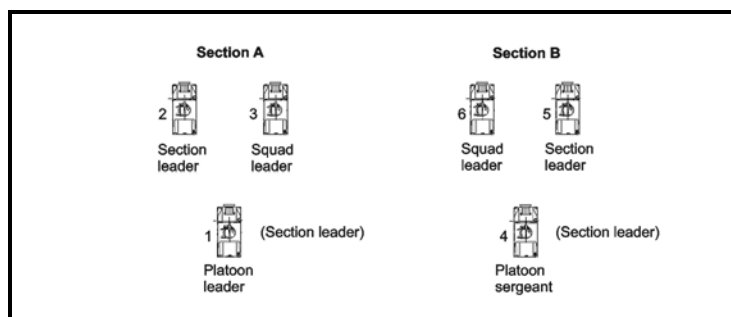


Figure 2-8. HMMWV reconnaissance platoon two-section organization (six-HMMWV platoon).

Three-Section Organization

This organization is ideal for reconnaissance along a single route. In a 10-HMMWV platoon, it allows employment of three long-duration OPs and the ability to concurrently conduct dismounted patrols. Dismounted patrols are difficult for six-HMMWV platoons. (Refer to Figures 2-9 and 2-10.) **(NOTE:** A consolidated headquarters section, with the platoon leader and PSG as shown in Figure 2-10, increases C2 capability and is an optional configuration.)

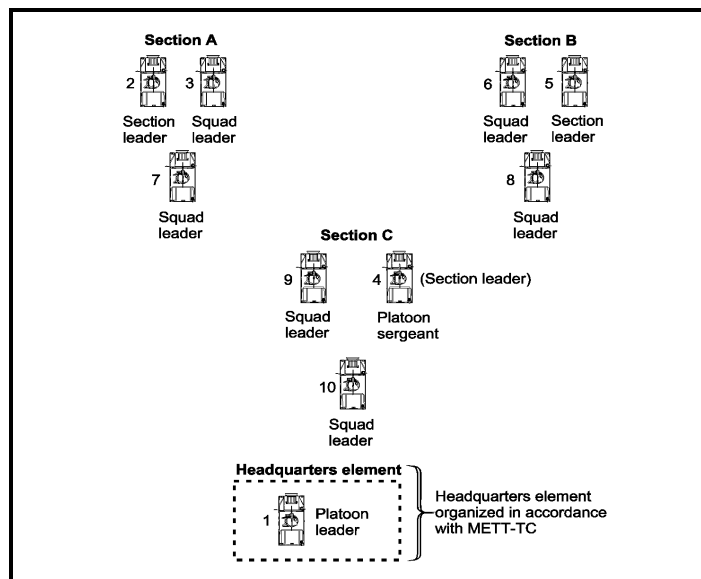


Figure 2-9. HMMWV reconnaissance platoon three-section organization (10-HMMWV platoon).

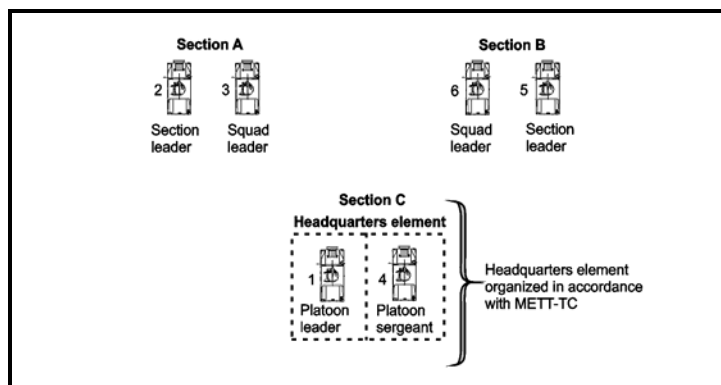


Figure 2-10. HMMWV reconnaissance platoon three-section organization (six-HMMWV platoon).

Five-Section Organization

This organization is used only by 10-HMMWV platoons in reconnoitering large areas or multiple avenues of approach. Five short-duration OPs can be established, allowing OPs to be structured in depth. In this organization, sections have dismounted capability to conduct local security only. (See Figure 2-11.)

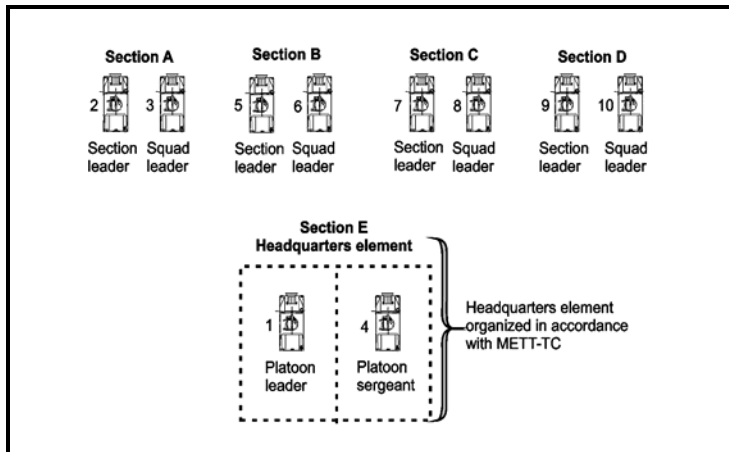


Figure 2-11. HMMWV reconnaissance platoon five-section organization (10-HMMWV platoon).

Six-Vehicle Organization

The six-vehicle organization is used only by six-HMMWV platoons and is the most difficult to control (refer to Figure 2-12 for an illustration). The platoon leader employs this organization when he must have six separate information sources at the same time.

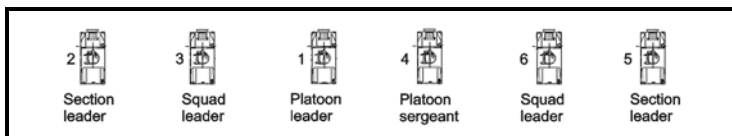


Figure 2-12. HMMWV reconnaissance platoon six-vehicle organization (six-HMMWV platoon).

Ten-Vehicle Organization

The 10-vehicle organization is used only by the 10-HMMWV platoon. It gives the platoon an enhanced ability to conduct screening missions in depth, although only for short durations. It also provides the platoon with the ability to conduct numerous reconnaissance tasks simultaneously. (See Figure 2-13.)

At the same time, however, the 10-vehicle organization is rarely employed because it creates very difficult C2 challenges. It severely limits the platoon's overwatch capability; if the platoon is not echeloned in its sector with an overwatch plan for follow-on squads, platoon elements are left extremely vulnerable to threat contact. In addition, this organization affords the platoon no ability to organize patrols of any type.

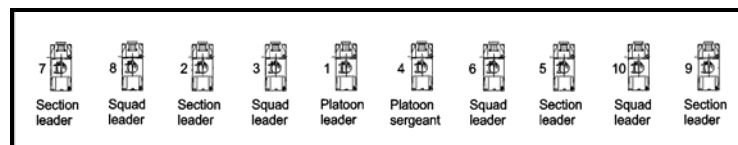


Figure 2-13. HMMWV reconnaissance platoon 10-vehicle organization (10-HMMWV platoon).

RECCE PLATOON

A recce platoon in the reconnaissance, surveillance, and target acquisition (RSTA) squadron consists of one officer and 20 enlisted soldiers manning four vehicles (see Figure 2-14). The recce platoon is equipped with the Stryker interim armor vehicle (IAV), but is primarily a dismount centric organization.

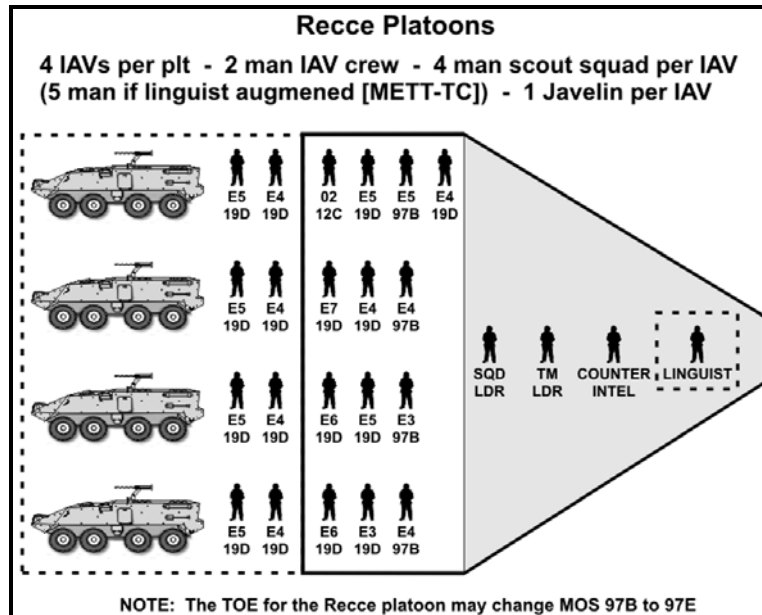


Figure 2-14. RSTA squadron recce platoon.

Recce Platoon Mounted Organization

Regardless of the mission it is executing or the formation or movement technique it is using, the recce platoon normally operates in one of three organizations during mounted operations: as three sections with one vehicle in each section and the platoon leader's vehicle providing C2, as two sections with two vehicles in each section, or as a four-vehicle platoon.

Three-Section Organization

The three-section organization is used when the anticipated threat is low to medium. The key to this organization rests in the use of dismounted elements and in ensuring that adjacent vehicles mutually support each other. (See Figure 2-15.)

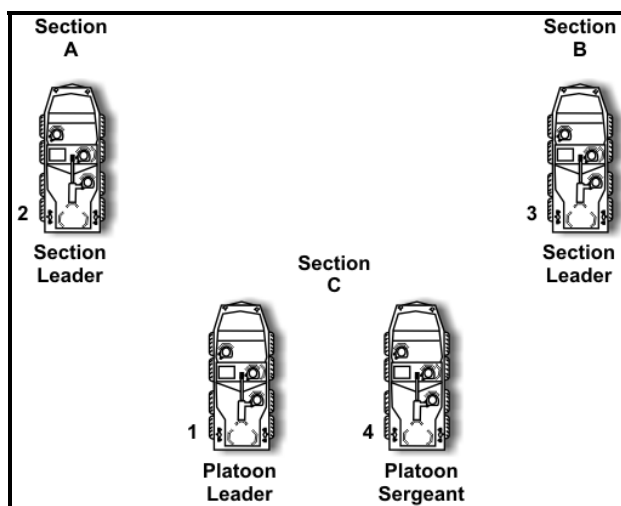


Figure 2-15. Recce platoon three-section vehicle organization.

Two-Section Organization

The two-section organization is used when increased security is required, when the area of operations can be covered efficiently with only two elements, or when the threat situation is unknown. This type of organization limits the amount of terrain the platoon can cover and decreases the speed with which the platoon can perform

its tasks. On the other hand, it increases internal section security by providing mutually supporting fires. It also gives the platoon leader and PSG greater flexibility in performing C2 and CSS requirements. (See Figure 2-16.)

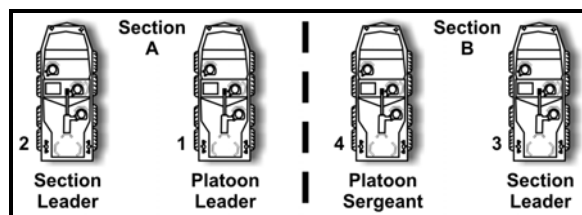


Figure 2-16. Recce platoon two-section vehicle organization.

Four-Vehicle Organization

The four-vehicle organization is the most difficult to control (refer to Figure 2-17 for an illustration). The platoon leader employs this organization when he must have four separate information sources at the same time or when the platoon is executing certain surveillance missions. This organization should be used when the threat situation is known and/or the threat is low or nonexistent. This formation may also be implemented during short-duration security missions, allowing for depth in the platoon's sector.

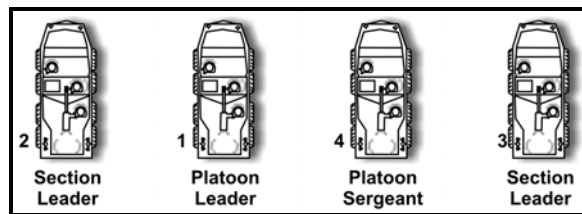


Figure 2-17. Recce platoon four-vehicle organization.

DISMOUNTED ORGANIZATION

Although all platoons conduct dismounted operations at times, dismounted operations are the recce platoon's primary means for gathering information. The basic dismounted elements within the platoon are the team, squad, section, and platoon. Each recce vehicle has a designated dismounted team.

Every dismounted element consists of a **reconnaissance element** and a **security element**. The purpose of the reconnaissance element is to obtain data on information requirements. The security element's primary responsibility is to protect the reconnaissance element. The security element may also serve as a reconnaissance element or have alternate responsibilities. Whichever role the security element plays, its primary objective is protecting the dismounted element. A two-man team is the smallest dismount element within the platoon (see Figure 2-18).

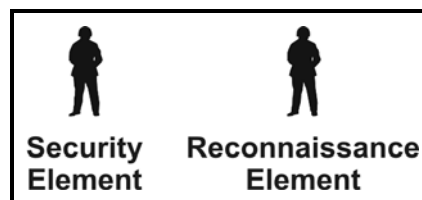


Figure 2-18. Dismounted two-man reconnaissance organization.

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The following dismounted organizations describe other basic configurations within the platoon. This discussion, however, does not cover all the possible organizations; refer to Chapter 5 for additional information covering dismounted operations.

Dismounted Three-Man Squad Organization

The three-man dismounted squad is the basic dismounted element within a recce squad (single IAV). It can perform reconnaissance tasks, security tasks, observation post (OP) and surveillance tasks, liaison, or a combination of these tasks. It is headed by a 19D scout of grade E5 or higher. One of the crewmembers can dismount to provide security for the vehicle and to serve as an AT (Javelin) reaction element. In this organization (as well as the other dismounted organizations), the vehicle may provide security for the entire element. (See Figure 2-19.)

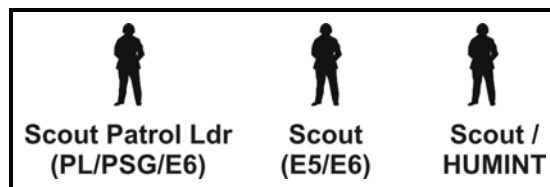


Figure 2-19. Dismounted three-man squad reconnaissance organization.

Dismounted Four-Man Squad Organization

The four-man organization is the basic dismounted section configuration. It can perform reconnaissance tasks, security tasks, OP/surveillance tasks, liaison, or a combination of these tasks. It is headed by a 19D scout of grade E6 or higher. (See Figure 2-20.)

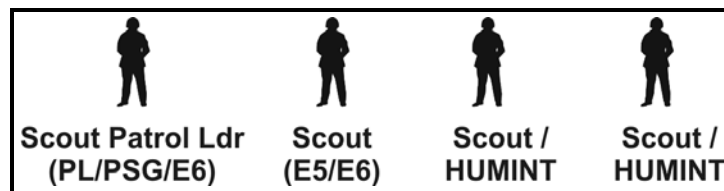


Figure 2-20. Dismounted four-man reconnaissance organization.

Dismounted Section Organization

The dismounted section combines the strength of two dismounted squads (from two IAVs). It can perform reconnaissance tasks, security tasks, OP/surveillance tasks, liaison, or a combination of these tasks. The platoon leader, PSG, or an E6 section sergeant heads this section, which always includes an element designated for security and control. The section is large enough to have a reaction team as part of its security element. (See Figure 2-21.)

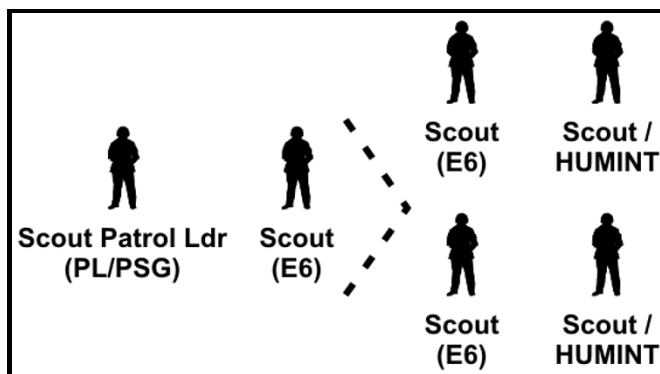


Figure 2-21. Dismounted section reconnaissance organization.

Dismounted Platoon Organization

The dismounted platoon can perform reconnaissance tasks, security tasks, OP/surveillance tasks, liaison, or a combination of these tasks. The platoon leader/PSG heads the dismounted platoon element, which always includes an element designated for security (reaction force) and control. The dismounted platoon organization may be used if the threat is high (security of the element requires mutual support) or vehicular movement is impossible. Infiltration, for example, may require the platoon to conduct dismounted tactical movement. As noted, the platoon's vehicles may provide security for the entire element; this organization normally leaves two scouts mounted on each vehicle. (See Figure 2-22.)

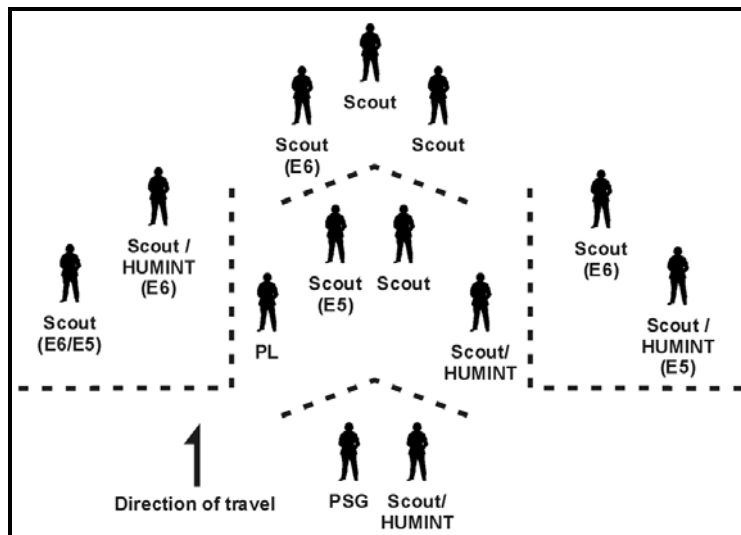


Figure 2-22. Dismounted platoon reconnaissance organization.

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TASK ORGANIZATION

METT-TC circumstances will often require the reconnaissance platoon leader to employ variations of the basic platoon organizations discussed previously. In addition, attachments, such as a section of infantry or engineers, may change the composition and number of reconnaissance squads or sections.

Chapter 3

OPERATIONS

The purpose of this chapter is to outline the critical tasks for reconnaissance, security and other key missions. For a complete list of requirements for reconnaissance and security missions, see Chapters 4 and 5 of ARTEP 17-97F-10-MTP.

ZONE RECONNAISSANCE

- Conduct troop-leading procedures.
- Issue order.
- Conduct coordination with adjacent/flank units prior to movement.
- Move to and deploy along LD.
- Execute LD/conduct tactical movement into zone.
 - **Dismount scouts** to assist in tactical movement when:
 - Detailed reconnaissance is required.
 - Gathering HUMINT from local populace.
 - Stealth is required.
 - Threat contact expected or made visually.
 - Vehicle movement is restricted by terrain/obstacles.
 - Time is available.
 - Security is the primary concern.
- Identify and report all threat forces within zone IAW with reconnaissance focus.
- Collect and report terrain information IAW reconnaissance focus.

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- Collect and report information on the civilian populace/infrastructure IAW reconnaissance focus.
- Adjust reconnaissance tempo during operations.
- Conduct reconnaissance handover (see Reconnaissance Handover paragraph in this chapter).
- Report reconnaissance information IAW order/unit SOP.

AREA RECONNAISSANCE

- Conduct troop-leading procedures.
- Issue order.
- Conduct coordination with adjacent/flank units prior to movement.
- Move to and deploy along LD.
- Execute LD/conduct tactical movement into area.
 - **Dismount scouts.**
- Identify and report all threat forces within area IAW with reconnaissance focus.
- Collect and report terrain information IAW reconnaissance focus.
- Collect and report information on the civilian populace/infrastructure IAW reconnaissance focus.
- Adjust reconnaissance tempo during operations.
- Conduct reconnaissance handover (see Reconnaissance Handover paragraph in this chapter).
- Report reconnaissance information IAW order/unit SOP.

ROUTE RECONNAISSANCE

- Conduct troop-leading procedures.
- Issue order.
- Platoon deploys along the route ensuring:
 - Organization/formation specified in OPORD.
 - Report when set along LD.
 - Execute LD and report to higher.
 - Use the appropriate movement technique:
 - Traveling.
 - Traveling overwatch.
 - Bounding overwatch.
 - Coordinate movement with supporting combat/air elements.
- Platoon collects information about route. (Seek specific guidance from higher on how detailed the reconnaissance should be as well as specific tasks to be accomplished by integrated ISR assets, as appropriate.) See Chapter 14, Technical Data, for examples of all symbols used during a route reconnaissance:
 - Send initial route report (ROUTREP) (see Chapter 13, Reports).
 - Determine trafficability of route.
 - Reconnoiter to limit of threat's direct fire range and along terrain that dominates the route, to include lateral routes.
 - Reconnoiter to all built-up areas along route (airspace, buildings and rooftops, streets, and subterranean systems).

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- Locate bypass around built-up areas, obstacles, and contaminated areas.
 - Inspect/classify bridges along route.
 - Locate and report all fords or crossing sites near all bridges on the route, as required using Crossing Report.
- Locate and identify threat that can influence the route.
- Conduct reconnaissance handover with other units/elements IAW OPORD and/or unit SOP.
- Report reconnaissance information IAW OPORD and/or unit SOP:
 - Confirm or deny higher headquarters' information requirements (CCIR and SIR).
 - Submit final ROUTEREP with overlay, including all technical data.

SCREEN

- Conduct troop-leading procedures.
- Issue order addressing the following:
 - Orientation, to include screen line(s), lateral and rear boundaries, and command-directed NAIs.
 - Threat situation.
 - Civilian situation, to include impact on mission.
 - Terrain, to include effect on threat weapon systems.
 - Weather, to include effect on night observation devices (NOD).
 - Location, disposition, and missions of forces being screened.

- Task organization of assigned and attached elements.
- Mission statement that includes screen location, start time, duration, orientation, and follow-on mission.
- Higher commander's intent.
- Concept of the operation.
- CCIR.
- Instructions for target acquisition.
- Engagement criteria.
- Patrol requirements.
- Priorities for CSS operations to support the screen.
- Description of communication plan.
- Platoon leader coordinates with adjacent units:
 - Linkup and coordination for passage of lines if applicable.
 - Counterreconnaissance tasks, as required.
 - CSS requirements.
- Platoon moves to screen line.
- Platoon occupies the screen:
 - Deploy to screen not later than designated start time.
 - Establish stationary screen.
 - Remain behind the screen line and cross only with permission from the commander.
 - Report exact OP locations.
 - Establish local security.
 - Continuously improve positions.
 - Coordinate fields of observation and fire with adjacent unit OPs.

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- Coordinate with counterreconnaissance force.
- Conduct coordination with supporting air cavalry elements as applicable.
- Establish contact with tank or MGS platoon to the platoon's rear.
- Confirm indirect fire plan with the fire support team.
- Emplace hasty obstacle/protective minefields, if necessary.
- Emplace/orient GSR on mounted/dismounted avenues of approach.
- Initiate patrols as necessary to cover dead space between OPs.
- Prepare and mark routes to subsequent positions as time allows.
- Establish moving screen using similar techniques as stationary screen:
 - Use control measures to orient of direction of movement/orientation.
 - Reposition to stay oriented on the force it is screening.
 - Conduct coordination with supporting air cavalry elements as applicable.
 - Conduct reconnaissance and surveillance IAW order.
 - Maintain continuous surveillance of all assigned NAIs.
 - Maintain surveillance on all designated avenues of approach.
 - Obtain and forward all relevant information that answers the higher CCIR and/or specific information requirements (SIR).

- Acquire threat reconnaissance elements and destroy IAW order.
- Coordinate with ISR assets/air cavalry to gain contact with threat reconnaissance forward of the initial screen line and/or in restrictive terrain.
- OPs and patrols initially focus on reconnaissance avenues of approach as required.
- Use indirect fires to impede and/or harass the threat.
- Coordinate with counterreconnaissance force to destroy threat reconnaissance.
- Maintain observation of the threat until the counterreconnaissance force gains contact IAW the order. (**NOTE:** After threat reconnaissance elements have been identified and destroyed, scouts should focus on identifying the threat main body and reporting its direction of movement.)
- Acquire targets and execute indirect fires IAW the fire support plan.
- Displace to the subsequent screen line.
- Request permission to displace:
 - Direct OPs facing most immediate threat to displace first.
 - Continue to adjust indirect fires.
 - Maintain contact with advancing threat elements.
 - Conduct reconnaissance handover with other elements IAW order/unit SOP.
 - Report to higher headquarters when set on the subsequent line.
- Keep higher headquarters informed throughout the operation.

AREA SECURITY

- Conduct troop-leading procedures.
- Develop area security plan addressing the following:
 - Orientation, to include sector within the higher headquarters area of operations (AO), locations of high value asset(s), boundaries, and command-directed NAIs.
 - Threat situation, to include enemy/threat trends and recent activities.
 - Civilian situation, to include impact on mission.
 - Terrain, to include infiltration lanes and impact on weapon systems.
 - Weather, to include effect on NODs.
 - Location, disposition, and mission of friendly forces in area and of high-value assets in area if applicable.
 - Integration of attached elements to best accomplish the commander's intent.
 - Mission statement that includes security location(s), start time, duration, and orientation.
 - Higher commander's intent.
 - Concept of the operation.
 - Engagement criteria.
 - Patrol requirements.
 - Coordination tasks with flank units and other forces.
 - Priorities of service support and description for integrating analog elements into the digital network.
 - Priorities/procedures for integrating analog elements into digital network.

- Platoon moves to and occupies the area to be secured:
 - Move along covered and concealed routes to the point, area, or asset to be secured.
 - Occupy hasty fighting positions oriented on likely threat avenues of approach.
 - Complete range cards/sector sketches and forward one copy per vehicle to the platoon leader.
 - OP personnel occupy OP sites.
 - Conduct coordination with supporting combat elements as applicable.
 - Conduct coordination with supporting air cavalry elements as applicable.
- Consolidate sector sketches and finalizes the platoon fire plan:
 - Plot grid lines.
 - Identify individual vehicle positions.
 - Identify platoon sector.
 - Identify TRPs (including location, range, and coverage responsibilities).
 - Identify range lines and other key terrain features.
 - Identify locations of OPs.
 - Identify indirect fire targets.
 - Identify dead space.
 - Record appropriate marginal information, including (as required) engagement criteria, effective range of available weapon systems, and fire pattern.
- Report establishment of area security to commander.

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- Supervise improvement of the position:
 - Coordinate with engineer assets, if available.
 - Direct digging of firing positions, using engineers.
 - Inspect dug-in firing positions and escort engineers to the next vehicle when finished.
 - Direct that vehicles and equipment be camouflaged.
 - Ensure clear fields of fire.
 - Establish thermal TRPs IAW unit SOP.
 - Establish wire communications IAW order and/or unit SOP.
 - Direct employment of NBC monitoring equipment IAW order and/or unit SOP.
 - Direct emplacement of platoon early warning systems IAW order and/or unit SOP.
 - Direct emplacement of obstacles IAW commander's guidance.
- Conduct area security IAW order and unit SOP:
 - Conduct reconnaissance and surveillance as necessary.
 - Conduct security and reconnaissance patrols both inside and outside of the perimeter as necessary.
 - Acquire and defeat infiltrating threat elements IAW order and ROE.
 - Employ indirect fire IAW order to harass/impede the threat.
 - Defeat threat reconnaissance elements IAW order and/or commander's guidance.
 - Conduct tactical movement to maintain security or disengage based on threat actions, or commander's guidance.

- Defend against attack, if necessary:
 - Initiate defense.
 - Engage enemy/threat IAW engagement criteria or on order.
 - Conduct consolidation and reorganization as necessary.
- Report to higher headquarters.

RELIEF IN PLACE

If the higher headquarters has completed coordination, platoon leader conducts troop-leading procedures, with emphasis on specifying the following information in the platoon order:

- Time the relief is to begin and end.
- Method for conducting the relief.
- Critical control measures.
- When responsibility will change.
- Operational security (OPSEC) considerations.
- Locations of and transfer procedures for obstacles.
- Contingency plans in case of threat attack during the relief.
- Responsibilities and requirements for transfer of supplies and equipment.

OR

If the platoon leader is required to conduct coordination, he conducts linkup with relieved/relieving unit (as applicable) to conduct final coordination for the relief.

- Moves to designated contact point.
- Coordinates/exchanges the following information with the relieved/relieving unit:
 - Updated enemy/threat situation.
 - Impact of civilian considerations on the relief.

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- Time relief is to begin and estimated time for completion that best takes advantage of limited visibility.
- Sequence of relief.
- Method of relief.
- Battle handover procedures and criteria.
- Locations of forward assembly areas (AA), passage lanes, start points (SP), routes (RTE), and release points (RP).
- Locations of subordinate element battle positions, fighting positions, OPs, checkpoints, and/or roadblocks.
- Fire plans and sector sketches covering all crew-served weapons and/or vehicle fighting positions.
- Fire support information to include assets available, fire control measures, critical friendly zones (CFZ), preplanned targets, final protective fires, and smoke missions.
- Locations of and procedures to transfer responsibility for obstacles in sector.
- Locations/employment and purpose of intelligence, surveillance, and reconnaissance (ISR) assets.
- Vehicle recognition markings and near- and far-recognition signals.
- Locations, linkup procedures, and responsibilities of guides provided by relieved unit.
- Actions on contact during the relief.
- CSS responsibilities and requirements, to include transfer of supplies and emergency Class III resupply.

- Specified responsibilities and procedures for integrating analog elements into the digital network.
 - Updating locations and status of analog elements to digital elements.
 - Providing locations of key digital elements to analog elements.
 - Providing key information that was digitally transmitted to the platoon to analog elements.
- Communications data to include:
 - Exchange role/IP addresses, communications security, and/or signal operating instructions (SOI).
 - Transfer of wire lines, if necessary.

Platoon prepares for relief as the relieving unit.

- Maintains OPSEC, taking these actions:
 - Sets transmission settings, adjusts address books, and changes radio frequencies to those of the relieved unit.
 - Maintains communications silence.
 - Adheres to noise, light, and litter discipline.
- Identifies and prepares equipment for quick exchange with the relieved unit, if applicable.
- Platoon leader conducts reconnaissance.
 - Moves to predetermined contact point to meet representative from the relieved unit.
 - Reconnoiters routes, AAs, and other designated critical points.
 - Reconnoiters battle positions, fighting positions, checkpoints, and/or roadblocks.

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- Initiates movement, taking these actions:
 - Moves to predetermined contact points (using covered and concealed routes and maintaining 360-degree security) to meet the guides from the relieved unit.
 - Maintains communications silence.
 - Moves into hide positions and coordinates final information.
- Platoon leader reports to commander that platoon is prepared to conduct the relief.

Platoon prepares for relief as the relieved unit.

- Maintains communications as determined during coordination or IAW order and/or unit SOP.
- Identifies and prepares equipment for quick exchange with the relieving unit, if applicable.
- Updates and/or prepares necessary range cards, sector sketches, minefield records, and prestock supplies for transfer to the relieving unit.
- Reports to commander that preparations for the relief are complete.

Relieved platoon leader exchanges required information with the relieving platoon leader.

- Meets relieving unit platoon leader at prescribed contact point.
- Exchanges information on threat situation.
- Provides sketch cards and platoon fire plans to relieving platoon leader.

- Transfers obstacle target folders and hasty protective minefield forms to relieving platoon leader.
- Conducts reconnaissance of positions with relieving unit.

Platoon conducts relief.

- Vehicle commanders and/or guides meet the relieving/relieved unit at designated contact points using covered and concealed routes and maintaining 360-degree security.
- Guides lead the relieving unit to positions in the determined sequence of relief.
- Units transfer equipment and supplies (as required).
- Relieved unit remains in charge until the entire relieving unit is in place and prepared to assume the mission.
- Relief is completed IAW order and/or unit SOP.
- Relieving vehicle commanders report completion of the relief to the platoon leader.
- Relieved platoon moves to a predetermined rally point for accountability and then moves to assembly area designated by the commander.

On order, or when relief in place is completed, relieving platoon reestablishes communications.

- Sets radios to assigned platoon and higher frequencies.
- Conducts internal radio checks, checks of wire communications and digital linkup, if applicable.
- Reports completion of the relief to higher headquarters.

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LINKUP

- Conduct troop-leading procedures.
- The following is verified:
 - Checks and/or designates mission-specific graphics.
 - Checks call signs, frequencies, and signal operating instructions (SOI) of the other unit.
 - Checks and/or designates visual recognition signals (far and near).
 - Checks and/or designates fire coordination measures.
 - Checks the command relationship with the other unit.
 - Establishes command authority at linkup/contact point.

Stationary platoon conducts linkup with a moving unit.

- Conducts tactical movement to the linkup/contact point designated in the operations order (OPORD)/fragmentary order (FRAGO).
- Determines suitability of designated linkup/contact point.
- Secures and occupies linkup/contact point prior to the time specified in the OPORD/FRAGO.
 - Stops short of the linkup/contact point.
 - Establishes overwatch of the linkup/contact point.
 - If available, tactical unmanned aerial vehicles (TUAV) or air cavalry elements can visually clear the linkup/contact point.
- Employs two- to three-man team to clear and secure linkup/contact point.
 - If necessary, the platoon can request assistance from the moving unit to secure the linkup/contact point and provide local security.

- Conducts steps for hasty occupation of battle position (BP).
 - The unit that first arrives at the linkup/contact point is responsible for its security (direct and/or indirect fire). However, units that have linkup/contact points within their area of operations are responsible for their defense in the event of a threat attack.
- Conducts long-range recognition with the moving unit.
 - Establishes communications before moving unit enters the effective range of the platoon's direct fire weapons.
 - Monitors the frequency of the moving unit.
 - As necessary, authenticates correctly and/or challenges the moving unit using the SOI.
 - Informs the moving unit of number, type, and orientation of platoon vehicles at the linkup/contact point.
 - Requests that moving unit identify number and type of vehicles and direction from which it is traveling.
 - Confirms short-range recognition signals.
- Completes linkup with moving unit.
 - Conducts short-range recognition with the moving unit.
 - Continues to monitor moving unit's frequency to reduce fratricide risk.
 - If necessary, requests assistance from moving unit to secure the linkup/contact point or maintain local security.

Moving platoon conducts linkup with a stationary unit.

- Initiates tactical movement to the linkup/contact point designated in the OPORD/FRAGO.

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- Conducts long-range recognition with the stationary unit.
 - Establishes communications before entering effective range of stationary unit's direct fire weapons.
 - As necessary, authenticates correctly and/or responds to challenges IAW the SOI.
 - Informs stationary unit of number and type of platoon vehicles and direction from which platoon is traveling.
 - Requests that stationary unit identify number and type of vehicles, direction of weapons orientation, and location of any dismounts.
 - Verifies that linkup/contact point is secure or that additional security is needed.
 - Confirms short-range recognition signals.
- Completes linkup with stationary unit.
 - Conducts short-range recognition with the stationary unit.
 - Completes tactical movement to linkup/contact point.
 - As necessary, assists stationary unit in securing linkup/contact point and maintaining local security.

NOTE: The following task step covers minimum coordination requirements for the linkup. When adjacent units conduct linkup as part of more complex tactical operations (e.g., attachment, passage of lines, relief in place), coordination requirements will usually be more extensive.

Coordinates and verifies with the other unit.

- Coordinates control measures, including, at a minimum, the following:
 - Linkup points.

- Contact points.
 - Checkpoints.
 - Observation post (OP), BP, and command post (CP) locations.
 - Target reference point (TRP) locations and responsibility.
- Coordinates friendly forces information, including, at a minimum, the following:
 - Unit designations and dispositions.
 - Friendly obstacles and mines.
 - Command post locations.
 - SOI information.
 - Tactical plans and situations (routes, indirect fire data, location of flanks, OPs/patrols, sectors of fire).
- Exchanges threat information, including, at a minimum, the following:
 - Number and types of threat units.
 - Specific threat locations.
 - Obstacles, mines, and contaminated areas.
 - Suspected threat avenues of approach (mounted/dismounted).
- Coordinates mission-specific information designated in OPOD/FRAGO or requested by the commander.
- Determines time and place of next coordination.

Keeps commander informed throughout the linkup.

- Sends updated situation reports (SITREP) during linkup, as necessary.

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- Reports information obtained during coordination as previously specified by the commander.
- Reports completion of linkup/coordination.

LIAISON

- Analyze order to determine the scope of liaison activities:
 - Analyze liaison objectives/requirements.
 - Identify limitations on objectives.
 - Define authority under which specific liaison activities are conducted, including guidelines for joint/combined operations.
 - Provide additional related information.
- Platoon human intelligence (HUMINT) personnel analyze the AO.
- Review existing information on the AO.
- Gather updated information on the AO from patrols, observation posts, and/or checkpoints.
- Identify key, local authority figures and develop list of priority contacts within the AO.
- Evaluate identified local contacts within AO to determine their amount of influence in the community.
- Establish agenda of each contact to assist liaison personnel in understanding the contact's views, beliefs, or goals.
- Match key authority figures with platoon liaison personnel and submit to platoon leader for review/approval.
- Develop plan for conducting liaison activities IAW OPORD/FRAGO:

- Develop liaison requirements and frequency of contact for identified contacts in the AO.
 - Assign liaison personnel, based on input from HUMINT personnel, to conduct liaison activities.
 - Establish time(s)/location(s) for initial liaison with identified contacts.
 - Request linguist and/or civil affairs support, as necessary, to support liaison activities.
 - Conduct liaison activities IAW OPORD/FRAGO and METT-TC:
 - Maintain cooperative image of operating forces and platoon with the population in AO.
 - Comply with requests for liaison assistance from the civil population if consistent with unit constraints.
 - Establish on-call liaison to respond to crisis situation that may develop in platoon AO.
 - Continually update situation map (SITMAP) and reports to higher headquarters regarding current locations of liaison contacts.
 - Report confirmed key liaison contacts to higher headquarters IAW OPORD/SOP.
 - Ensure liaison personnel do not deploy beyond range of platoon or higher headquarters' quick-reaction force response.
 - Ensure liaison personnel are prepared to cope with hijacking/kidnapping.
 - Coordinate with observer teams operating in platoon AO, as required/applicable.
 - Stabilize area(s) identified as having escalating tension, as necessary.
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- Employ liaison personnel to initiate coordination for higher headquarters-led negotiations or dispute resolution using neutral facilities:
 - Identify all units, agencies, individuals within sector with whom liaison/coordination must be conducted.
 - Specify link-up time(s)/location(s).
 - Develop agenda for liaison meetings.
 - Comply with local protocols and established limits of support IAW TOR/SOFA/other mandates/directives.
 - Maintain continuous contact until dispute is resolved and/or tensions reduced.
- Coordinate meeting(s) with local officials and maintains casual relations with local populace:
 - Communicate that only major problems be brought to his attention, and only after subordinate liaison personnel have been unable to resolve issues.
 - Demonstrate resolve, confidence, commitment, and concern for local customs and people living within AO.
- Implement immediate response to any serious breach of trust, confidence, or deception that occurs IAW order and/or unit SOP and other mandates/directives.

CHECK POINT

- Conduct troop-leading procedures with emphasis on the following:
 - Determine type and purpose of the roadblock/checkpoint.
 - Determine the most advantageous location for the roadblock/checkpoint.
 - Task organize the platoon based on METT-TC.
-

- Develop contingency plans that address possible and/or expected situations during operation of the roadblock/checkpoint.
- Platoon order addresses the following:
 - Orientation, to include the area to be secured or isolated, routes, start points (SP) and release points (RP), and the time/distance factors for the quick-reaction force (QRF) response.
 - Threat situation.
 - Weather.
 - Task organization of assigned and attached elements to best accomplish the commander's intent.
 - Mission statement that includes location, start time, duration, and follow-on mission.
 - Higher commander's intent.
 - Concept of the operation.
 - Priorities for service support and description of CSS operations to support the operation.
 - Responsibility and procedures for integrating analog elements into the digital network.
- Prepare for operations:
 - Conduct reconnaissance.
 - Coordinate for personnel, as required.
 - Direct rehearsals, as time permits.
 - Prior to departure, inform all units in area, either US or international, of time and location for departure, composition, and disposition of forces at roadblock/checkpoint.

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- Establish and maintain security for the roadblock/checkpoint.
- Construct the roadblock/checkpoint:
 - Emplace parallel obstacles across the road.
 - Base distance between the obstacles on the amount of traffic to be held in the search area.
 - Place a barrier pole between obstacles to control movement from the search area to the exit obstacle.
 - Employ warning signs (printed in the native language and English) on all perimeter barriers, and wires.
 - Establish overwatch positions.
 - Establish parking and/or holding areas.
 - Establish vehicle search areas.
 - Establish separate search areas for males and females.
 - Establish detention areas.
 - Prepare drop holes to provide protection for searchers in the event of problems during the search and to prevent searchers from masking security element fires.
 - Ensure adequate lighting for night operations.
 - Ensure translator is present at the roadblock/checkpoint.
 - Report completion of roadblock/checkpoint to higher headquarters.
- Control roadblock/checkpoint operations:
 - Enforce ROE.
 - Establish shifts.
- Conduct roadblock/checkpoint operations:
 - Perform actions to accomplish assigned purpose.

- Check and/or inspect military convoys.
 - Check and/or inspect civilian vehicles for authorization to use the route.
 - Search military and/or civilian vehicles for specified personnel.
 - Search vehicles and personnel for specified items.
 - Detain personnel and seize vehicles, equipment, and/or items in holding area as necessary.
 - Question/interrogate detained personnel to obtain information of immediate importance.
 - Evacuate and/or dispose of detained personnel and/or seized vehicles, equipment, and other items as directed.
 - Employ active and passive protective measures, and improve roadblock/checkpoint as time and situation permit.
- React to hostile elements and/or actions IAW order and/or unit SOP and ROE/ROI:
 - Fire warning shots to deter personnel or vehicles attempting to flee/breach.
 - Control fleeing civilians using minimal force required.
 - Use necessary force to disarm evading military or paramilitary forces.
 - Attack to disable all vehicles attempting to flee/breach the roadblock/checkpoint.
 - Destroy vehicles that return or initiate fires.
 - Destroy vehicles that persist in attempting to flee/breach the roadblock/checkpoint.
 - Administer first aid to casualties.
 - Send situation report (SITREP) to higher headquarters.

CONVOY ESCORT

- Conduct troop-leading procedures.
- Coordinate to determine the composition and disposition of the escorted unit:
 - Time and place of linkup for orders brief.
 - Number and types of vehicles to be escorted.
 - Available weapons systems and ordnance (crew-served, squad, and personal).
 - Maintenance status and operating speeds of each vehicle.
 - Personnel roster of escorted unit.
 - Provide copy of platoon SOP as necessary.
- Platoon operations order (OPORD) addresses the following:
 - Orientation to include the route, potential choke points along the route, and critical points, to include the SP and RP.
 - Threat situation.
 - Terrain.
 - Mission statement.
 - Higher commander's intent.
 - Concept of the operation.
 - CSS.
 - Responsibility and procedures for integrating designated analog elements into the digital network if applicable.
- Conduct linkup with the escorted element.

- Conduct the escort mission:
 - Based on METT-TC, use most advantageous formation and movement technique and, as applicable, covered and concealed routes.
 - Conduct tactical movement to platoon's position in the convoy and begin movement as part of the convoy.
 - Maintain proper weapons orientation to ensure 360-degree or flank security.
 - Track reports from ISR assets/air cavalry elements of potential contacts.
- Conduct actions at halts, as directed:
 - Take up protective positions forward, to the rear, and to the flanks (up to 100 meters beyond the escorted vehicles, as applicable) and orient weapon systems outward. (**NOTE:** Platoon vehicles should not leave the roadway if there is a possibility of threat mines.)
 - Remain at REDCON-1 and establish dismounted local security.
 - Platoon leader reports "SET."
 - When the order to move out is given and the escorted vehicles have reestablished the column, platoon vehicles rejoin the column, leaving local security dismounted.
 - Once all elements are in column, local security personnel mount and the escorted element resumes movement.
- Execute actions on contact in response to a threat ambush:
 - React to the ambush IAW METT-TC.

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- Once the escorted element is clear of the kill zone, choose a COA based on the capabilities of the escort force and the strength of the threat.
- Platoon completes escort activities:
 - Move through the RP.
 - Move to designated position as directed by the commander or IAW order.
 - (Defense) Report completion of escort mission to higher headquarters.

OUTPOSTING

The platoon may establish a series of OPs in order to outpost a route. Outposting screens a route after it has been reconnoitered. The platoon outposts a route as part of its higher headquarters mission to conduct route security. The following is a list of key considerations for establishing an OP.

- Platoon leader/platoon sergeant (PSG)/section sergeant/squad leader plans for the OP sites:
 - Based on the commander's guidance, determine if OP will be short-duration (12 hours or less) or long-duration (more than 12 hours).
 - Determine how many OPs are needed based on avenues of approach/NAIs the platoon must cover in the assigned sector.
 - Determine whether OPs will be dismounted, mounted, or combination
 - Select the general location for the OPs based on the commander's guidance and METT-TC.

- Integrate intelligence, surveillance, and reconnaissance (ISR) assets, if available, to augment OPs, as necessary.
- Coordinate with supporting air cavalry elements, as applicable, to augment OPs, as necessary.
- If time is available, conduct reconnaissance of the sector to confirm avenues of approach and suitability of possible OP locations.
- Designate team(s) to occupy and man OPs.
- Platoon leader/PSG/section sergeant briefs OP personnel:
 - Review platoon's mission.
 - Orient OPs by relating mission graphics to the terrain, as appropriate.
 - Specify primary/secondary avenues of approach, as appropriate.
 - Specify means of communications (visual, wire, FM voice, digital).
 - Specify procedures for providing key information that was digitally transmitted to the platoon to OPs.
 - Specify covered/concealed routes to and from OPs.
 - Specify actions on contact and displacement criteria for the OPs.
 - Specify relief time.
 - OP personnel assemble required materials/equipment for dismounted OPs and ensure they are complete and/or serviceable.
 - Inspect OP personnel IAW unit SOP prior to departure for the OP site.

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- Sections occupy OPs:
 - Conduct appropriate technique of movement to the screen line or position based on METT-TC.
 - Section leaders select OP sites.
 - Select hide and fighting positions for vehicles.
 - Vehicles move into fighting positions.
 - Vehicles move back into hide positions after completing range cards and sector sketches.
 - OP personnel occupy dismounted OP sites.
- Platoon leader/PSG/section leader inspects dismounted/mounted OPs IAW order and/or unit SOP:
 - Check range card/sector sketches for accuracy.
 - OP personnel observe the assigned sector.
- Identify threat elements entering sector.
- Develop a complete sector sketch or map.
- Dig in to enhance cover and concealment.
- Camouflage OP and vehicle positions.
- Employ hasty protective obstacles (mines, wire, trip flares) IAW order and/or unit SOP.
- Reconnoiter routes to fighting/observation positions and alternate positions.
- Perform maintenance.
- Ensure MOPP suits and protective masks are available.
- Emplace nuclear, biological, and chemical (NBC) monitoring equipment IAW order and/or unit SOP.

HUMINT

Integrating HUMINT operations into reconnaissance platoons maximizes the information passed on to higher headquarters. When assigned to reconnaissance platoons, HUMINT collectors assist the platoon leadership to do the following:

- **Tactical questioning.** This is an abbreviated form of debriefing used to collect information related to the commander's priority information requirements (PIR) from human sources.
- **Gathering/requesting intelligence** from higher. The HUMINT collector may request HUMINT reports from brigade and higher, such as a human density overlay.
- **Interrogation and debriefing.** These involve the systematic questioning of individuals to procure information to answer specific collection requirements. Sources, such as EPWs and civilian detainees who are in the custody of US forces, are interrogated. All others are debriefed, to include friendly forces, civilian refugees, and local inhabitants. (**NOTE:** The role of interrogation in the reconnaissance platoon is limited to the initial questioning and evaluation of detainees. Debriefing is limited to gathering information from internal patrols.)
- **Source operations.** These intelligence collection operations use recruited and registered HUMINT sources. The registration of sources is a legal requirement in any sustained use of a specific individual as a source. (**NOTE:** The role of recce platoon HUMINT collectors in source operations is normally limited to identifying potential intelligence sources for exploitation by HUMINT assets at higher levels.)

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NOTE: In reconnaissance platoons that do not have organic HUMINT collectors, scouts should have an understanding of these functions of information-gathering. A supportive civilian populace will likely pass valuable information to the first soldiers with whom they come into contact. In addition, all scouts should have an understanding of the roles and duties of HUMINT collectors because these assets may be attached once the platoon is deployed even if they are not organic to the platoon.

NOTE: Refer to Chapter 4, Urban Operations, for more information on tactical questioning and debriefing.

FORWARD PASSAGE OF LINES/REARWARD PASSAGE OF LINES

Unit commanders or their designated representative meet at a contact point designated by the headquarters ordering the passage to exchange information and to complete coordination.

- The following information is exchanged:
 - Enemy situation.
 - Friendly situation/dispositions.
 - Terrain analysis.
 - Supporting fires information, including available assets, smoke data, and target numbers/locations.
 - Locations of friendly obstacles and applicable breaching information.
 - Recognition signals.
 - SOI information.
 - CP location of stationary unit.

- Passing unit designation.
- Number/type of vehicles involved in the passage.
- Estimated time of arrival (ETA) of vehicles and markings of the first and last vehicles.
- The following items are coordinated:
 - Contact points (primary, alternate).
 - Passage lane data, including the SP, RP, passage points, and checkpoints.
 - The LD.
 - Location and number of guides.
 - Routes through obstacles.
 - Alternate routes.
 - Reconnaissance handover line (RHOL).
 - CSS information, including resupply of Classes III and V, medical evacuation (MEDEVAC) assets, handling of EPWs, and maintenance assets and requirements.
 - Traffic control, including number/type of vehicles.
 - Time of passage.
 - Rally points and assembly areas.
 - Actions on contact if enemy forces are encountered during the passage.

The stationary unit commander must designate contact points, passage points, and routes if they are not specified in the higher headquarters order. As a minimum, he provides guides to meet the passing unit and lead it along the routes through passage points to the RP.

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The stationary unit maintains normal radio traffic. A representative of the passing unit headquarters collocates with the stationary unit headquarters. The passing unit maintains radio listening silence until the passage is completed and the passing unit assumes responsibility for the zone or sector.

Vehicle commanders must observe the following considerations and procedures during the passage:

- Once the passage route has been entered, never stop. Quickly bypass broken-down vehicles; use alternate passage routes, if necessary.
- Make sure the vehicle is marked using methods as prescribed in the OPORD.
- If enemy contact is made during the passage, return fire and keep moving.

The platoon will use the traveling technique during the passage, normally in column formation with all gun tubes oriented toward known or suspected enemy positions.

RECONNAISSANCE HANDOVER

In a reconnaissance platoon, two distinct flavors of reconnaissance handover may occur:

- Higher headquarters has conducted coordination and planning for handover. In this case, emphasize the following:
 - Location of reconnaissance handover line or point.
 - Method for conducting handover.
 - Critical control measures.
 - Communication procedures (visual signals, FM/voice, digital).
 - Actions on contact during handover.

OTHERWISE

- The platoon leader/sergeant has responsibility for coordination.
 - Exchange the following information as applicable:
 - Reconnaissance and surveillance plan.
 - Updated threat situation.
 - Impact of civilian considerations on operations.
 - Fire support information.
 - Communication data, to include internet protocol (IP) addresses, FM and/or Enhanced Position Location Reporting System (EPLRS) frequencies, communications security (COMSEC) key, and/or signal operating instructions (SOI).
 - Procedures for exchanging information between analog and digital units, if necessary.
 - Establish or coordinate the following as necessary:
 - Location of reconnaissance handover line.
 - Method for reconnaissance handover.
 - Coordinate criteria for target acquisition handover.
 - Coordinate for intelligence, surveillance, and reconnaissance (ISR) asset support to assist in maintaining contact during handover.
 - Select contact point(s) or linkup point(s), if needed.
 - Coordinate passage points, lanes and routes with other units, if necessary.
 - Coordinate vehicle recognition markings and far and near recognition signals with other units, as necessary.
 - Determine method to pass contact to other elements/units.

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- Locations of friendly unit positions and applicable control measures such observation posts (OPs), rally points, checkpoints, and/or roadblocks.
- Actions on contact during handover.

QUARTERING PARTY

- Conduct troop-leading procedures.
 - Coordinate to determine the composition of the quartering party, which should be determined on current METT-TC factors. When conducting quartering party duties as part of its parent unit, attachments from the other elements within the higher unit may be attached to the platoon to facilitate assembly area (AA) establishment and occupation.
- Scouts should look for these characteristics when selecting an assembly area:
 - Concealment from overhead observation.
 - Cover from direct fire.
 - Good drainage; ground surface to support unit vehicles.
 - Adequate exits, entrances, and road networks.
 - Enough space for adequate dispersion.
- Equipment required by the quartering party:
 - DR-8/RL-39.
 - WD-1 wire.
 - TA-1 or TA 312 (two pieces).
 - Signal flag.
 - Engineer tape.

- U-shaped pickets.
 - Flashlights with colored lens.
 - Chemical lights.
 - NBC monitoring equipment.
- Conduct quartering party duties:
 - Quartering party duties should be conducted in MOPP 4 if the contamination situation is unknown.
 - Stops short and observes proposed AA location and the reconnaissance element that will reconnoiter the location.
 - Reconnoiters and secures the AA (rest of quartering party occupies AA).
 - If site is unacceptable, immediately requests further guidance from the platoon leader or commander.
 - Organizes the area (platoon positions, TOC).
 - Improves and marks entrances, exits, and internal routes.
 - Marks vehicle positions, may use chemical lights at night.
 - Links up with the unit at the release point (RP). Ensures all elements clear the RP without stopping.
 - Serves as ground guides for lead vehicles of each element and points out exact vehicle location (may be conducted by that element's attachment).
 - Ensures that vehicles move into their assigned positions as quickly as possible without halting on the route. The positions may be adjusted once the entire unit has occupied the AA.

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- Briefs unit leaders on adjacent vehicle locations, location of boundaries between elements, routes in and out of the AA, and unit positions.
 - Accomplishes any special assigned tasks.
- Nighttime occupation:
 - Lead vehicles are met and signaled according to the movement order.
 - Guides then use flashlights with colored lenses or shielded chemical lights to guide elements vehicles into position.

ASSEMBLY AREA

- Units use assembly areas to prepare for future operations or to regroup. Scout platoons are often directed to find, clear, and occupy these areas. Scouts should look for these characteristics when selecting an assembly area:
 - Concealment from overhead observation.
 - Cover from direct fire.
 - Good drainage; ground surface to support unit vehicles.
 - Adequate exits, entrances, and road networks.
 - Enough space for adequate dispersion.
- All vehicle traffic within the assembly area is directed by ground guides, who use filtered flashlights during periods of limited visibility.
- These factors affect communications in the assembly area:
 - Radio listening silence is ordinarily in effect in the assembly area.

- Platoons establish hot loops within 30 minutes of arrival. Platoon OPs and higher CPs may, if appropriate, be connected to the hot loop.
- All vehicle commanders report vehicle status to the platoon leader, who forwards a situation report (SITREP), BLUE 2, to the TOC or commander within 30 minutes.
- The platoon leader or PSG checks the positioning of each vehicle and OP in the platoon area of responsibility and assigns sectors of fire and observation. Vehicle commanders develop sketch/range cards and bring them to the platoon leader within 30 minutes.
- The platoon leader develops a platoon fire plan and brings it to the TOC or commander within 60 minutes.
- Personnel remain in complete uniform at all times, to include possession of personal weapon, mask (carried), load-bearing equipment (LBE), and helmet (CVC helmet, if applicable).
- The priority of tasks is as follows:
 - Position vehicles.
 - Establish local security.
 - Establish OPs.
 - Develop range cards and fire plans.
 - Establish wire communications.
 - Camouflage positions.
 - Develop the obstacle plan.
 - Select alternate and supplementary positions.
 - Reconnoiter routes of withdrawal.
 - Perform preventive maintenance checks and services (PMCS).

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- Emplace M8 or M8A1 alarms.
- Emplace the platoon early warning system (PEWS)/REMBASS.
- Conduct resupply.
- Rest as necessary and as time permits.
- Field sanitation measures are enforced to keep the area clean and safe and include use of the following:
 - Cat holes.
 - Field latrines.
 - Plastic bags.
 - War-burying/collection procedures for garbage.

TACTICAL ROAD MARCH

The platoon conducts tactical road marches alone or as part of a larger unit. The order of march is determined by SOP unless changed by the platoon leader, who positions himself where he can best control the platoon.

- March speeds and intervals are maintained based on the following conditions:

Conditions	Interval (meters) (day / night)	Speed (mph) (day / night)	Catchup Speed (mph) (day / night)
Open Road	100 / 50	40 / 25	45 / 30
Built-Up Areas	25 / 25	25 / 20	25 / 25
Interstate/Autobahn	100 / 50	40 / 35	45 / 40

- March columns are used based on the following criteria:
 - Close column is normal at night and in limited visibility. Vehicle distance depends on visual contact with the vehicle ahead.
 - Open column is normal for daylight. Vehicles are spaced 100 meters apart or at a safe "dust distance," if applicable.
 - Infiltration, in which vehicles are dispatched at irregular intervals, is used as announced in the OPORD.
- Normally, night road marches are conducted in total blackout. For movement in assembly areas, guides use filtered flashlights. Every soldier must learn how to read the blackout markers of the vehicle in front of him.
- Scheduled halts are executed based on these factors:
 - They are announced in the OPORD.
 - They normally last 15 minutes at the end of the first hour of movement and then 10 minutes every two hours thereafter.
 - Once the march is stopped, the platoon leader and PSG post left and right flank security, with a two-man team on each flank.
 - Crews maintain security at all times; the vehicle commander or gunner mans turret weapons.
 - Vehicle commanders send an observer forward to the next vehicle when operating completely blacked out.
 - The driver conducts during-operation maintenance.
 - Refueling is conducted, if required or scheduled.
 - The platoon reports the halt if not under radio listening silence.

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- During unscheduled halts, the platoon takes these actions:
 - Assumes a herringbone formation.
 - Establishes security.
 - Determines the cause of the halt.
 - Platoon leader notifies the battalion or troop commander.
- When moving, each vehicle designates an air guard (scout observer). Vehicles alternate turret orientation within the column; the last vehicle orients its weapons to the rear.
- The following contingency plan is used in case of a vehicle breakdown:
 - Clear the road, if possible, and notify the PSG of vehicle status.
 - Post an observer for local security; place warning indicators behind the vehicle.
 - Have the observer wave other vehicles past.
 - Attempt to repair the vehicle; when it is repaired, rejoin the column.
 - If repairs cannot be made, wait for recovery by unit trains.
 - When the vehicle is repaired, rejoin the end of the column.

DEFENSE/SUPPORT BY FIRE

NOTE: When conducting SBF in an urban area, the platoon leader should consider buildings, streets, and subterranean systems as possible threat positions or avenues of approach.

- Identify and analyze likely threat positions or avenues of approach that can influence the supported element's movement.
- Conduct line-of-sight analysis to identify the most advantageous position.
- Identify tentative SBF position, target reference points (TRP), moving element routes, and objective.
- Identify covered and concealed routes to be used during movement to the position.
- Plan the integration of direct and indirect fires IAW the higher headquarters fire support plan.
- Plan triggers for lifting direct and indirect fires.
- Ensure platoon knows signal to lift fires.
- Plan and rehearse actions on contact and maneuver to the SBF position.
- Plan expenditure of ammunition addressing the following:
 - Desired effects of platoon fires.
 - Composition, disposition, and strength of threat force.
 - Duration of suppression required.

INFILTRATION/EXFILTRATION

- Plan and coordinate for the infiltration/exfiltration.
 - Identify focus, tempo, and engagement criteria for the infiltration/exfiltration and mission.
 - Request and analyze existing imagery and signal intelligence information to locate weaknesses in enemy dispositions.
 - Coordinate for intelligence, surveillance, and reconnaissance (ISR) asset or air cavalry support, if available.
 - Coordinate with lift air assets.
 - Coordinate for CS.
 - Develop contingency plans. (**NOTE:** The OPORD should clearly state whether elements in contact continue or abort the mission if detected by the threat.)
 - Plan passage points, rally points, linkup points, pickup points (if applicable), and reentry points.
 - Develop escape and evasion plan.
 - Plan deployment by echelon (if applicable).
 - Plan for departure, accomplishment of essential tasks, and return to the platoon position to take advantage of limited visibility, bad weather, and broken terrain.
 - Plan for special equipment requirements.
- Determine infiltration/exfiltration routes, techniques, and method.
- Analyze/plan infiltration/exfiltration routes using maps, urban operations sketch, aerial photography, and any known intelligence.
- Determine if platoon will move on a single route or multiple routes.

- Determine most appropriate technique for infiltration/exfiltration based on mission, enemy, terrain, troops, time available, and civilian considerations (METT-TC).
 - Identify whether platoon will move mounted and/or dismounted.
 - Identify whether platoon will move as a whole or as separate elements during infiltration and/or exfiltration.
 - Determine most appropriate method (ground, air, water) for infiltration/exfiltration based on the following:
 - Resources available to support the method.
 - Distance to be covered during infiltration/exfiltration.
 - Time available to complete the assigned mission.
 - Suitability of terrain to support ground infiltration/exfiltration.
 - Air or naval superiority.
 - Platoon OPORD addresses the following:
 - Threat situation, to include likely enemy/threat positions, obstacles, weapon systems, night observation devices (NOD), electronic warfare, and their capabilities.
 - Civilian situation, to include populated areas and heavily traveled routes and trails.
 - Terrain, to include effect on friendly and threat weapon systems.
 - Weather, to include effect on NODs.
 - Location, disposition, and missions of friendly forces that may impact mission.
 - Organization of the platoon based on deploying the largest elements that can move undetected.
-

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- Concept of the operation.
- Graphic control measures that support concept of operation, to include contact points, point(s) of departure (PD), infiltration lane(s), primary and alternate rally points, linkup points, pickup zones (PZ), and TIRS/GIRS.
- Priorities of fire and how fires will support the platoon's mission.
- Integration of ISR assets and/or air cavalry elements to support infiltration, as applicable.
- Human intelligence (HUMINT) collection requirements.
- Engagement criteria and actions on contact.
- Criteria for commitment of supporting combat elements to assist infiltration/exfiltration.
- Criteria for aborting the mission.
- Criteria for postponing or canceling exfiltration.
- Priorities for service support and description of CSS operations to support infiltration/exfiltration.
 - Medical evacuation.
 - Killed in action (KIA).
 - Casualty collection points.
 - Vehicle recovery (if necessary).
 - Emergency resupply procedures and locations.
 - Criteria for destroying equipment and supplies.
- Communications methods and procedures, to include specifying responsibilities and procedures for integrating analog elements into the digital network.
 - Updating locations and status of analog elements to digital elements.

- Providing locations of key digital elements to analog elements.
 - Providing key information that was digitally transmitted to the platoon to analog elements.
- Platoon conducts infiltration:
 - Conduct forward passage of lines, as required.
 - If applicable, separate into infiltrating elements at designated rally points.
 - Initiate fires for suppression and deception as applicable.
 - Platoon or separate elements conduct tactical movement as specified in OPORD to the linkup point or designated rally point.
 - Conduct continuous surveillance and maintains 360-degree security while moving.
 - Move along concealed primary or alternate routes.
 - Maintain communications IAW order and/or unit SOP.
 - Maintain dispersion and strict noise, light, and camouflage discipline.
 - Clear routes and transmit critical points to follow-on elements.
 - If contact is made, avoid becoming decisively engaged, break contact, and continue or abort mission IAW order.
- Reconnoiter and secure designated location, as necessary.
- Conduct long-range recognition, taking these actions:
 - Establish communications before entering direct fire weapons range.

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- As necessary, authenticate correctly and/or respond to challenges IAW signal operating instructions (SOI).
 - Confirm short-range recognition signals.
- Complete linkup, taking these actions:
 - Conduct short-range recognition.
 - Complete movement to designated rally point.
- (Defense) If required, report completion of linkup to higher headquarters.
- Reorganize and cross-level as required to prepare for follow-on mission.
- (Defense) Send updated situation reports to higher headquarters IAW order and/or unit SOP.
- If applicable, separate into exfiltrating elements at designated rally point.
- Platoon or separate elements conduct tactical movement to pickup point or reentry rally point.
- If applicable, conduct linkup with extraction element at pickup point:
 - Establish communications before entering direct fire weapons range.
 - Respond to challenges and authenticate correctly IAW SOI.
 - Exchange short-range recognition signals.
- If applicable, conduct rearward passage of lines.
- As necessary, implement contingency plans.
- Conduct movement to designated area following rearward passage of lines, or return to friendly lines.
- Report completion of mission to higher headquarters.

Chapter 4

URBAN OPERATIONS

PLANNING PHASE

Collect and Analyze Existing Intelligence

During the planning phase, the leader will assess his assigned reconnaissance objectives and conduct his urban IPB. The platoon will collect and analyze existing intelligence, including map and aerial images (IMINT) and HUMINT, to begin developing the situation. The platoon will begin mapping of the urban area as part of the planning phase.

Develop the Plan

Collection methods for new information are outlined below.

Reconnaissance

If conducting reconnaissance operations, decide whether stealthy or the aggressive method of reconnaissance will be executed. Mounted or dismounted patrols are used in conjunction with available surveillance assets, such as UAVs or PROPHET, to gain information required by the mission. The air and ground reconnaissance plans must be synchronized to be effective. Although reconnaissance elements can use stealth during limited visibility, the human density within an urban area makes it difficult for these assets to remain undetected.

Surveillance

When stealth is required, the platoon uses surveillance to collect information on or in objectives. Locating surveillance positions

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within the urban area requires thorough planning to ensure that teams are not compromised and that the platoon can assist in extraction if necessary. Communications are of vital importance to the surveillance team; therefore, redundancy must be incorporated into the collection plan.

Surveillance positions. Surveillance positions should be placed in low-activity areas and occupied during limited visibility to reduce possibility of compromise.

Infiltration. Depending on the mission and the information gained initially, the platoon may have to conduct infiltration using surveillance teams to observe areas of interest or conduct target acquisition. Plans for infiltration are based on the requirement for conducting movement to the area of operations with the least risk of detection.

Exfiltration. The principles of route selection, movement formations, and movement security are observed during movement to the extraction site. To reduce chances of ambush, infiltration and exfiltration routes may not be the same.

Escape and evasion are considered and planned for throughout the operation, to include during infiltration and exfiltration.

EXECUTION PHASE

Approach the Urban Area of Operations

The reconnaissance platoon conducts reconnaissance outside the urban area to gain information on the objective. Depending on the time available, the platoon develops the urban situation progressively as it moves from the surrounding area toward the city.

Employ Surveillance Teams

The primary method of employing surveillance teams is in a hide or surveillance site. The terrain, mission, and location of the site, however, may dictate that the teams establish one or more separate surveillance sites to effectively observe the area. Reconnaissance teams may be echeloned into sector. Those observation posts (OP) initially established in depth, observing the urban area, may be able to provide overwatch for subsequent teams moving closer to, and within the urban area.

Conduct Reconnaissance

The reconnaissance platoon then conducts the reconnaissance of the urban area. This may include the multidimensional aspect of tactical questioning and developing an understanding of the regional, local, and neighborhood level situation. Force protection remains a primary consideration at all times while conducting operations.

Conduct Assessment of the Area of Operations

The platoon leader receives and analyzes the information gathered by the reconnaissance and surveillance teams. The platoon leader will then assess the area of operations according to the mission and the intent of the higher commander.

End State

The platoon achieves the end state of its reconnaissance effort when it is able to answer two critical questions for higher headquarters:

- Is it essential to conduct operations in the urban environment?
- If so, how can combat power be employed in the most efficient manner?

URBAN MOVEMENT TECHNIQUES

Dismounted Movement

Reconnaissance units will normally *not* perform building-to-building clearance, but they may perform urban patrolling to accomplish reconnaissance missions. (Refer to Chapter 5 for patrolling techniques.) Dismounted movement may be both above ground and subterranean. Due to the three-dimensional aspect of urban terrain (streets, buildings, underground, and air), each member of the patrol must maintain strict observation of his assigned sector, anticipating enemy contact from any direction at any time (see Figure 4-1). These force protection rules apply in all environments, to include permissive environments. If there is an increased risk factor, and stealth is being applied, scouts should move primarily at night, when possible.

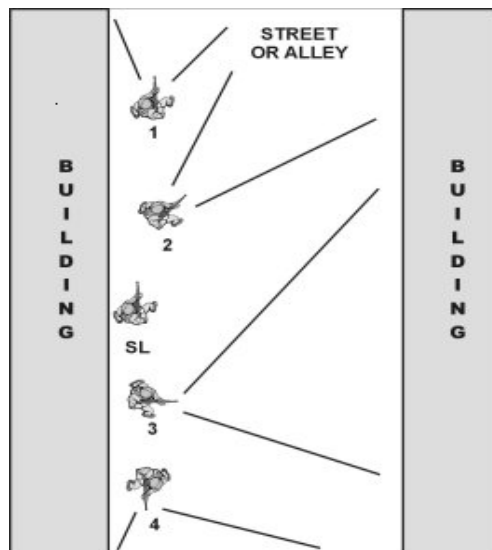


Figure 4-1. Sectors of security.

Mounted Movement

Reconnaissance vehicles traditionally work with dismounted teams in order to capitalize on one another's strengths and weaknesses. Although vehicles are equipped with greater firepower and armor protection than a dismounted soldier, they are vulnerable to enemy fire from numerous directions because of their dead space. Dismounted scouts provide local security for vehicles to counter this vulnerability. See Figure 4-2.

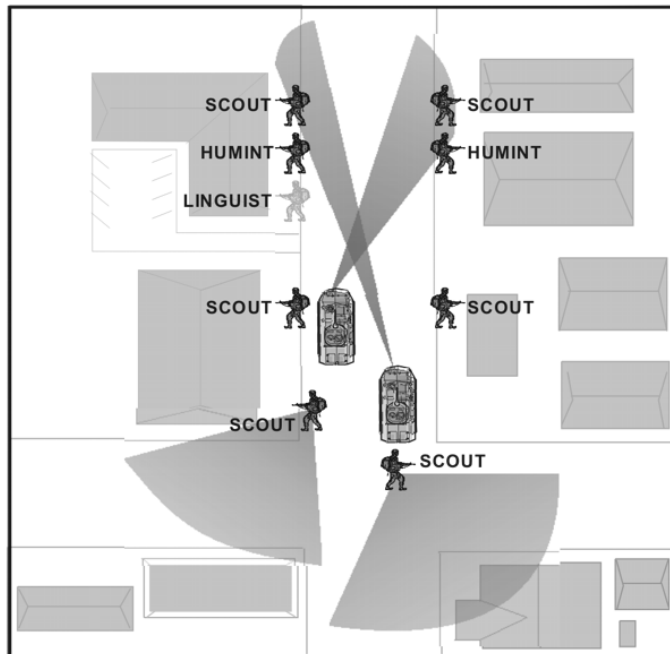


Figure 4-2. Mounted movement with dismounted security.

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Some vehicle capabilities and limitations are as follows:

- **CFV capabilities.** The CFV has these capabilities related to urban operations (see also Figure 4-3):
 - It is armed with the 25-mm cannon and 7.62-mm coax machine gun.
 - It is capable of 60-degree elevation, allowing it to engage targets on the upper floors of tall buildings.
 - It can employ 25-mm TP-T or HEI-T ammunition to penetrate buildings.
 - It provides armor protection for crew and passengers.
 - It is equipped with multiple FM radios.
 - It can assist in MEDEVAC/CASEVAC operations.
 - It can assist in resupply operations.
- **CFV limitations.** The CFV has these vulnerabilities related to urban operations:
 - It is restricted primarily to streets and lacks maneuverability inside built-up areas.
 - There is dead space around the CFV into which the vehicle cannot fire its weapons.
 - It is vulnerable to enemy infantry firing antiarmor weapons from cellars and drains.
 - It is dependent on dismounts for all-around protection.

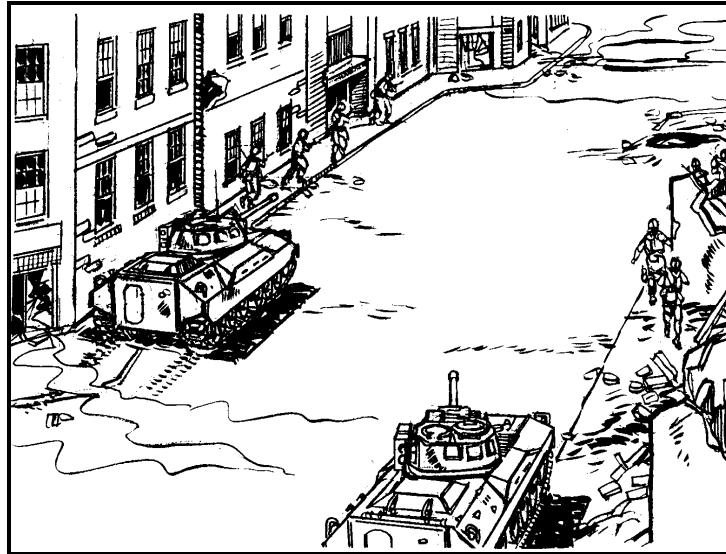


Figure 4-3. CFVs providing overwatch for lead dismounted element.

- **HMMWV and IAV capabilities.** The HMMWV and the IAV have these capabilities related to urban operations:
 - They are armed with the caliber .50 heavy machine gun and/or the MK-19 40-mm machine gun with automatic grenade launcher.
 - They can suppress and destroy light armor vehicles.
 - They are highly mobile and have a small thermal signature.
 - They are equipped with multiple FM radios.

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- They present fewer logistical problems than the CFV.
- They can operate on narrow streets.
- **HMMWV and IAV limitations.** The HMMWV and the IAV have these vulnerabilities related to urban operations:
 - They provide armor protection only against small arms.
 - The HMMWV lacks the ability to transport infantry soldiers.
 - They have no antiarmor capability.
 - As well as those limitations listed under the CFV.

Movement Inside Buildings

Scouts *do not* clear buildings. Rather, they reconnoiter buildings, primarily to determine suitability for potential OP locations or compliance inspections. Scouts enter buildings only when operating in a permissive environment with a minimum risk of threat forces. (**NOTE:** Building clearance operations, which are conducted by the infantry, are discussed in detail in FM 3-06.11 [90-10-1].)

Movement in close quarters, such as within a room or hallway, must be planned and executed with care. Each team member must understand the following principles of building reconnaissance, which are similar to those for precision room clearance:

- **Surprise.** This is the key to successful operations in close quarters. The team checking the rooms must achieve surprise, if only for seconds, by deceiving, distracting, or startling any potential threat. Silent building entry also supports surprise when individual rooms are entered.

- **Speed.** Speed provides a measure of security to the team. It allows scouts to use the first few vital seconds provided by surprise to their maximum advantage. In movement in close quarters, however, speed does not mean incautious haste. There is security in continuous, fluid motion. Never remain in one location within the building too long until the building has been checked for threat presence.
- **Controlled violent action.** If contact occurs and termination of threat forces is required, the scouts use controlled violent action to eliminate or neutralize the threat while giving him the least chance of inflicting friendly casualties. Its use is based on the ROE/ROI and the commander's engagement criteria.

Each of the listed principles has a synergistic relationship with the others. Controlled violence coupled with speed increases surprise. At the same time, successful surprise allows increased speed.

NOTE: Research has determined, that on average, only three individuals out of ten actually fire their weapons when confronted by an enemy during room clearing operations. Close quarters combat success for the Scout begins with the Scout being psychologically prepared for the possibility of close quarter's battle.

Movement inside buildings is graphically portrayed in Figures 4-4 and 4-5.

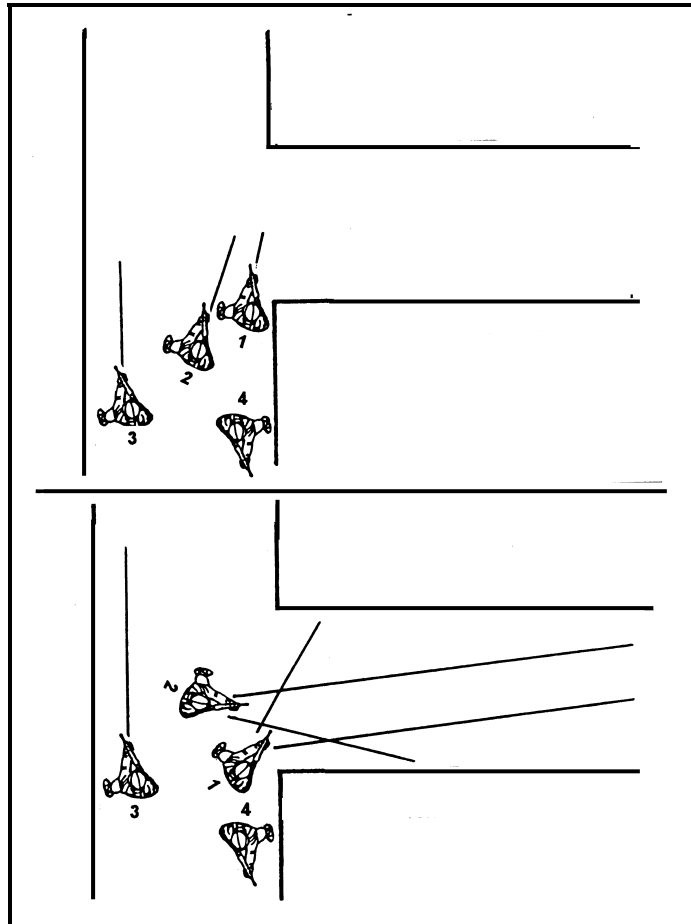


Figure 4-4. Hallway intersection positions (top) and sectors of observation/fire (bottom).

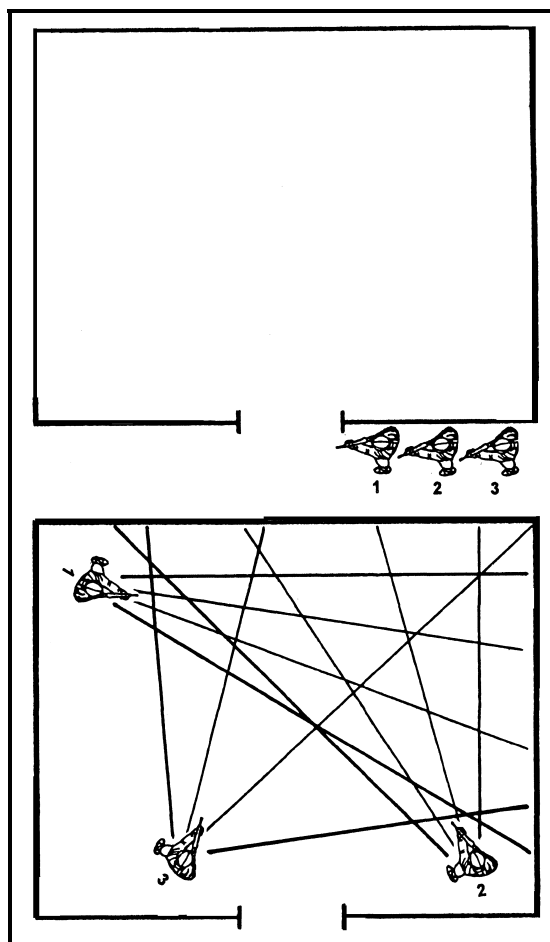


Figure 4-5. Points of domination and sectors of fire (three-man team, center door).

TACTICAL QUESTIONING

When conducted properly, tactical questioning will elicit valuable, timely, and accurate information from the local populace. While the primary goal of tactical questioning is to learn the *who*, *what*, *when*, *where*, *why*, and *how* of a situation, the process involves more than merely asking questions.

The person asking the questions must stay on guard not to lose the initiative to an uncooperative subject, adhering to these principles of productive interrogation:

- All questions should be brief and to the point.
- All questions should be simple.
- Questions should be clear and in one complete thought.
- Ask for narrative responses.
- Use of follow-up questions is essential.

The following types of questions are most effective for use in tactical questioning:

- **Direct questions.** Examples: What is your name? Who is your organization's leader?
- **Follow-up questions.** These are used to exploit a topic of interest. Questions usually flow from one to another based on the answer to the previous question.
- **Control questions.** These are used to maintain control and to check the accuracy and truthfulness of the source's statements. Control questions should be mixed in with normal questions throughout the interview/interrogation.
- **Repeat questions.** The interrogator uses this technique to ensure accuracy, particularly when he suspects that the source is lying.

Conversely, there are several types of questions to be avoided:

- **Negative questions.** Avoid questions that contain the words *not*, *no*, or *none*.
- **Leading questions.** These tend to prompt the source to give the reply he believes the interrogator wants to hear or simply to answer “yes” or “no,” requiring the questioner to ask more leading questions to complete the facts.
- **Compound questions.** A compound question contains two or more parts. It can cause the source either to become confused or to intentionally provide incomplete responses.
- **Vague questions.** These elicit very broad and general answers. They may enable the source to go on a tangent, giving answers totally unrelated to the topic and providing false or misleading information.

SUPPORT AN ASSAULT IN THE URBAN AREA

The reconnaissance platoon may be required to support assaults in urban areas. In this combat environment, the platoon will normally operate as part of the fire support element or the security force.

In support of forces conducting an assault of a built-up area, the reconnaissance platoon can support in several phases of the operation as described in the paragraphs below.

Reconnoiter the Objective and Move to the Objective

Considerations and actions involved in planning and executing the first two phases of the assault operation are covered earlier in this chapter. For information on other operational factors, refer to discussions earlier in this chapter (Urban Movement), Chapter 3 (Operations), and Chapter 5 (Dismounted Operations).

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Isolate the Objective

The reconnaissance platoon is effective in this phase of the operation, which may entail isolation of a building, village, small town, or large built-up area. Operating outside the town allows the platoon to use its speed, mobility, and if applicable, firepower. In addition to security, reconnaissance platoon tasks during the isolation phase may include the following:

- Prevent enemy forces from escaping.
- Prevent reinforcement of the built-up area.
- Protect the assault force from counterattack.
- Call for and adjust indirect fires.

Secure a Foothold

The reconnaissance platoon can use its weapons sights, including thermals, to conduct long-range reconnaissance and to locate enemy positions and/or vehicles during periods of limited visibility. The platoon can also provide fire support for infantry assaulting the objective. During the assault, the attacking force penetrates the area on a narrow front, concentrating all available supporting fires on the entry point. In support of the assault during this phase, reconnaissance platoon tasks include the following:

- **Attack by fire.** If applicable, platoon vehicles such as the CFV can attack by fire while the infantry assaults the objective. Once the assault force establishes a foothold, the vehicles move forward to provide close-in support. This method is used when enemy antiarmor fires or obstacles block the only possible armor avenue of approach.
- **Support by fire.** The platoon can conduct support by fire during the assault; this may include covering critical areas on the assault force's flanks. Once the assault force establishes a foothold, platoon vehicles move forward to provide close-in support.

- **Attack with the infantry.** Platoon vehicles and the infantry advance together, with the infantry moving behind the vehicles for protection from small arms fire. Infantry squads or fire teams protect the vehicles from the enemy's hand-held antiarmor weapons. Attacking with infantry is rarely done and is difficult to coordinate and execute because of differences in speed between the mounted and dismounted forces.
- **Call for and adjust indirect fires.** This also requires close coordination with the assaulting Infantry. The urban environment, ROE, ROI, and collateral damage may impact the use of indirect fires in built-up areas.

Clear a Built-up Area

Once the infantry seizes its initial foothold, the reconnaissance platoon provides supporting fires while the infantry clears each building. Because of the danger of ambush, scout vehicles should support by fire, if applicable, from cleared positions rather than moving ahead with the infantry. They can sometimes provide fire support without entering the built-up area.

Because target identification and fire control measures change rapidly as clearance progresses, vehicles in the built-up area must be closely controlled by the infantry leader in charge. Platoon vehicles provide suppressive fires to allow the infantry to establish a foothold in each building. To isolate buildings, vehicles engage known or suspected enemy locations. Once the infantry is inside the building, the vehicles continue to suppress enemy positions on other floors or in adjacent buildings. Specific actions of the reconnaissance platoon in clearing a building include the following:

- Fire into the upper stories of the buildings to drive enemy forces to lower floors or the basement, where the infantry can trap and destroy them.

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- Suppress and destroy enemy weapons and personnel.
- Provide antitank protection.
- Use direct fires to open holes in walls and reduce barricades.

Consolidate and Reorganize

Once the assault operation is complete, the reconnaissance platoon and other elements conduct *consolidation* activities to collocate forces, secure the objective area, and guard against enemy counterattack. They conduct *reorganization* activities to redistribute personnel, equipment, and supplies in support of continued operations.

DEBRIEFING

As soon as a team returns to an assembly area, it is directed to a secure area to prepare for debriefing. In preparing for a debriefing, the team takes the following actions:

- Accounts for all team and individual equipment.
- Reviews and discusses the events listed in the team notebook, from infiltration to return to the assembly area, including the details of each threat sighting.
- Prepares overlays of the team's route, area of operations, infiltration point, exfiltration point, and sighting locations.

Operations and intelligence personnel or the commander normally conducts the debriefing. A communications representative debriefs the team separately after the team debriefing to obtain information related to the communications architecture within the urban area. The team leader gives a step-by-step discussion of every event listed in the team notebook, from the infiltration until the return to the assembly area. (See sample debriefing format that follows.)

Sample Debriefing Format**Team Number:** _____**DTG:** _____**Maps Used:** 1:25,000

1:50,000

- A. Size and composition of team.**
- B. Mission.**
- C. Time of departure (DTG).**
 - 1. Method of infiltration.
 - 2. Point of departure.
- D. Threat forces observed en route.**
 - 1. Ground activity.
 - 2. Air activity.
 - 3. Miscellaneous activity.
- E. Routes out.** (Team provides a detailed description, written and overlay, of routes from assembly area to objective.)
 - 1. Planned primary and alternate routes.
 - 2. Actual routes taken and reason for deviation from planned routes.
 - 3. Halts en route, to include security and objective.
 - 4. DTG arrived at objective area.
- F. Terrain throughout the objective area.**
 - 1. Roads, trails, railroad tracks.
 - a. Type (single or multilane, hard, gravel, or dirt surface).
 - b. Condition (dry, wet, muddy, well-used, seldom used).
 - c. Trafficability (types of vehicle terrain will support).
 - d. Trails or roads not on the map.
 - e. Bypasses and/or alternate routes.
 - 2. All open areas.
 - a. Type (pasture, cultivated, new tree farm).
 - b. Suitability for use as a PZ, LZ, or DZ.
 - c. Will the ground support tracked or wheeled vehicles?

3. Forested areas.
 - a. Type of trees.
 - b. Thickness.
 - c. Undergrowth.
 - d. Effects on maneuverability of vehicles and dismounted soldiers.
 - e. Thickness of overhead cover.
 4. Rivers, streams, and lakes.
 - a. Length.
 - b. Width.
 - c. Depth.
 - d. Fordability to vehicles and soldiers.
 - e. Bridges (classification report).
 - f. Trafficability under the bridge for boats or barges.
 5. Key terrain.
 6. Restrictive terrain.
 7. Major obstacles to vehicles and soldiers.
 8. Availability of cover and concealment.
 9. Major avenues of approach (any that an attacking element, battalion-size or larger, could maneuver through).
 10. Any map corrections not already given.
- G. Threat forces and installations (include sketches).**
- H. Miscellaneous information.**
1. NBC.
 2. Abandoned equipment (type, number, location, and markings).
 - a. Out of fuel.
 - b. Destroyed or damaged.
 - c. Abandoned towns or villages.
- I. Results of encounters with threat forces or local populace.**
1. All sightings (DTG, activity, location).
 - a. Did soldiers appear clean-shaven? What was morale?
 - b. Did uniforms appear clean? Were all soldier in the same uniform? List types of uniforms.
 - c. Weapons (type; locked and loaded?).
 - d. Conditions of vehicles and equipment.
 - e. Nationality and language.
 - f. Actions of local populace (friendly, confrontational, oblivious).

-
2. Results of threat contact (DTG; location; EPWs; personnel killed, wounded, or MIA).
- J. Captured threat equipment and material.**
- K. Routes back.**
1. Planned primary and alternate routes.
 2. Actual routes taken and reason for deviation from planned routes.
 3. Halts en route, to include security and linkup with vehicle.
 4. DTG arrived at assembly area.
- L. Exfiltration.**
1. DTG of exfiltration.
 2. Method of exfiltration.
 3. Point of exfiltration.
- M. Time and point of return.**
- N. Condition of team.**
1. Disposition of dead and wounded personnel.
 2. Team leader's estimate of when team will be ready to start a new mission.
 3. Personnel and equipment shortages.
- O. Items of potential tactical value.**
1. Were all maps and any other identifiable material returned with the team?
 2. If not, what is missing? (State item and approximately where lost.)
- P. Conclusions and recommendations.**
1. To what extent was the mission accomplished?
 2. Recommended changes in tactics or procedures.
 3. What additional information is needed in the OPORD?
 4. Recommended equipment changes.
 5. Effects of weather on team's operational capability.
 6. What else should another team know before going into this area?
 7. Additional areas or information that has not been covered. Is there something that should be highlighted?

Team Leader (print name and grade): _____

Unit: _____

Signature: _____

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Debriefer (print name and grade): _____

Unit: _____

Signature: _____

Additional remarks by debriefer:

Example Enclosures:

- Patrol log
- Communications log
- Surveillance log
- Photograph log

Chapter 5

DISMOUNTED OPERATIONS

ORGANIZATION

The leader must plan carefully to ensure that he has identified and assigned all required tasks in the most efficient way. Where possible, the patrol leader should maintain squad and section integrity in assigning tasks. The chain of command continues to lead its elements during a patrol. The following elements are common to all patrols:

- **Headquarters element.** It may consist of any attachments that the leader decides that he must control directly, such as an FO or engineers.
- **Aid and litter team.** Aid and litter teams are responsible for treating and evacuating casualties.
- **EPW team.** EPW teams are responsible for controlling prisoners. This team may also be the search team. If contact results in wounded and/or killed enemy soldiers, this team searches those individuals for information and material they may have been carrying while the rest of the patrol provides security.
- **Surveillance team.** The surveillance team keeps watch on the objective from the time that the leader's reconnaissance ends until the unit deploys for actions on the objective.
- **Point man/senior observer.** The point man selects the actual route through the terrain, guided by the compass man or patrol leader.
- **En route recorder.** The en route recorder records all information collected by the patrol.

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- **Compass man.** The compass man assists in navigation by ensuring that the team remains on course at all times.
- **Pace man.** The pace man maintains an accurate pace at all times. The platoon or squad leader should designate how often the pace man is to report the pace to him.

MOVEMENT TECHNIQUES

Figures 5-1 through 5-4 illustrate various movement techniques.

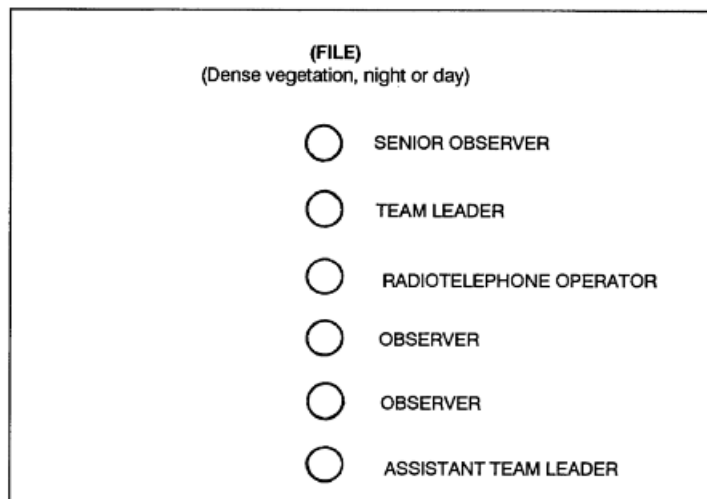


Figure 5-1. File formation.

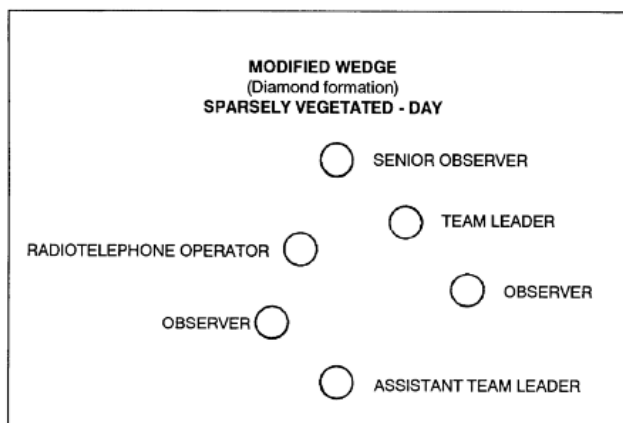


Figure 5-2. Diamond formation.

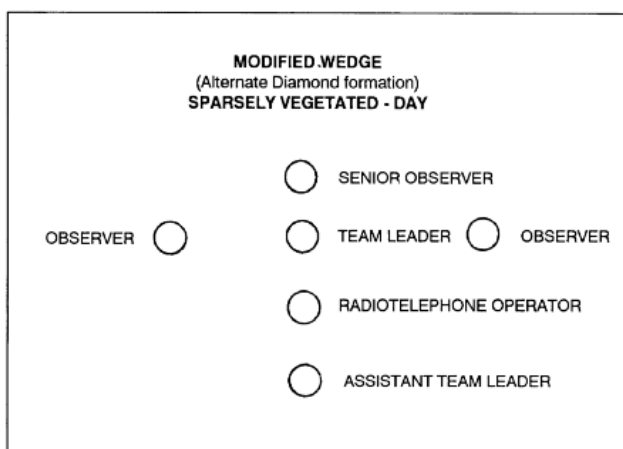


Figure 5-3. Alternate diamond formation.

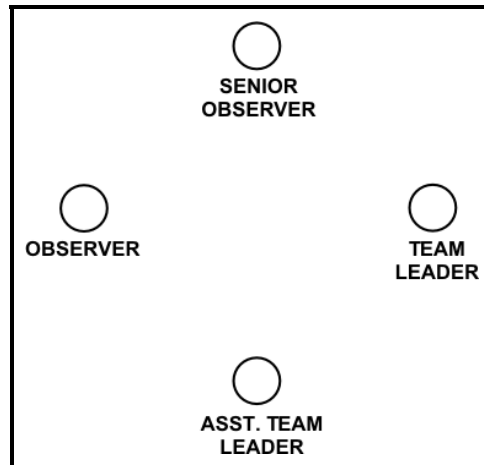


Figure 5-4. Four-man diamond formation.

SECURITY HALTS

During short halts, team members drop on one knee, face out, and freeze in place. The security halt should not exceed five minutes. If the halt exceeds five minutes, the team should move to the prone position. For extended halts, team members may sit with their feet facing outward and shoulders touching (see Figures 5-5 and 5-6). This aids quick and quiet communication, and guarantees all-round security at all times. This technique offers the smallest signature, and it is the most difficult to detect and is best used in dense vegetation.

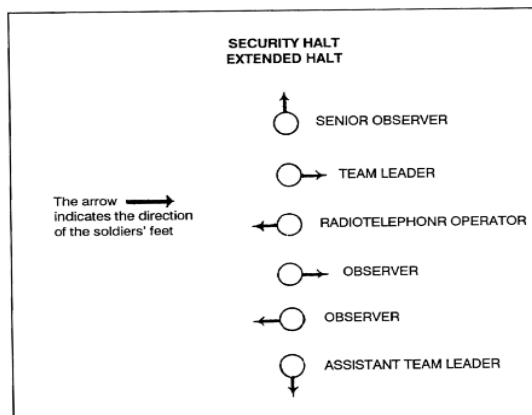


Figure 5-5. Security/extended halt.

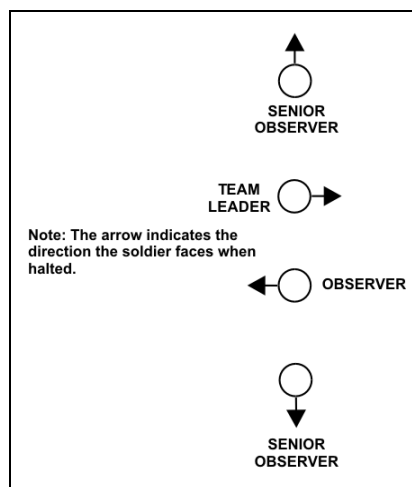


Figure 5-6. Security/extended halt (four man).

DANGER AREAS

Scroll to the Road Technique

The lead team member identifies the danger area and moves across, placing his left or right shoulder toward the danger area (see Figure 5-7). The second team member faces in the opposite direction from the lead team member. This gives security in both directions. Each member crosses in the same manner.

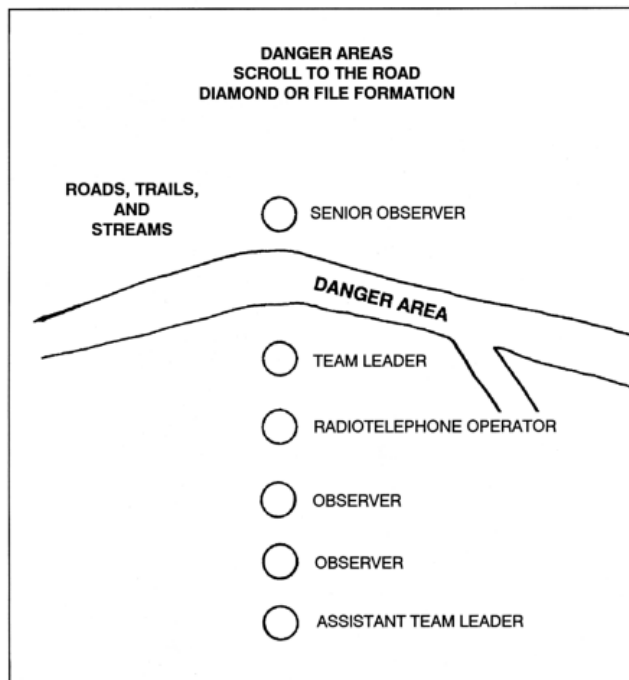


Figure 5-7. Danger areas.

Small Open Area Technique

When crossing a small open area, the team uses the contour or detour bypass method (see Figure 5-8). They avoid crossing directly through the open area, if possible.

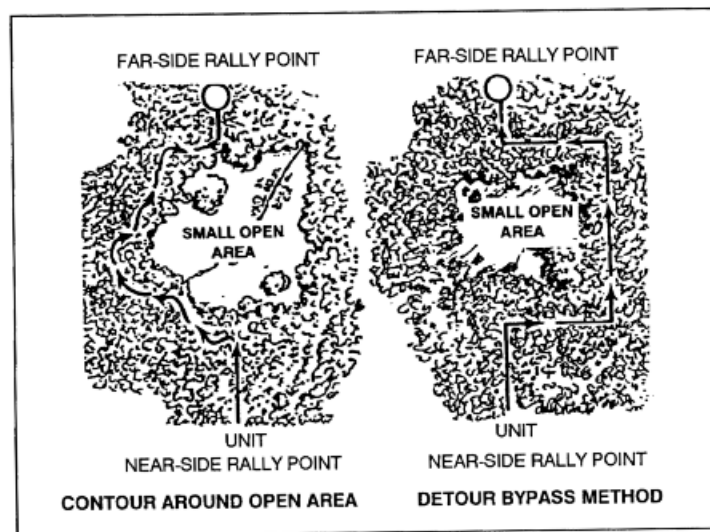


Figure 5-8. Crossing a small open area.

ACTIONS ON CONTACT

Well-rehearsed battle drills are critical to the success of a dismounted team. The team is lightly armed with a limited supply of ammunition and can expect little or no fire support.

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Precoordinated indirect fire support should be maximized while breaking contact. An immediate suppression fire mission on a near target from the target overlay may support the team breaking contact; then, once in a covered and concealed position, adjusted fire missions may be executed against the enemy. Indirect fires should be considered whenever breaking contact, emphasizing the need for thorough fire support planning.

Break Contact

The team breaks contact as soon as possible, since it lacks assets to stay and fight. METT-TC determines which drill is executed.

Break Contact (Front)

The team executes fire and movement by two- or three-man teams until contact with the enemy is broken. When contacted from the front, the senior observer and another observer return fire with one full magazine each. An observer and the team leader move to a position to provide support for the withdrawal of the senior observer and observer. Once the senior observer and observer have fired a complete magazine, team leader and observer begin firing, covering the withdrawal of the senior observer and observer to the next firing position. The process of fire and movement continues until contact is broken (see Figures 5-9 and 5-10). The RATELO and assistant team leader may place a Claymore with a time-delay fuze to slow the enemy. It is placed in the position where the RATELO was when the team began the break contact drill. When using a Claymore mine in a battle drill, the mine is dual-primed (electrically and time-delay fuze).

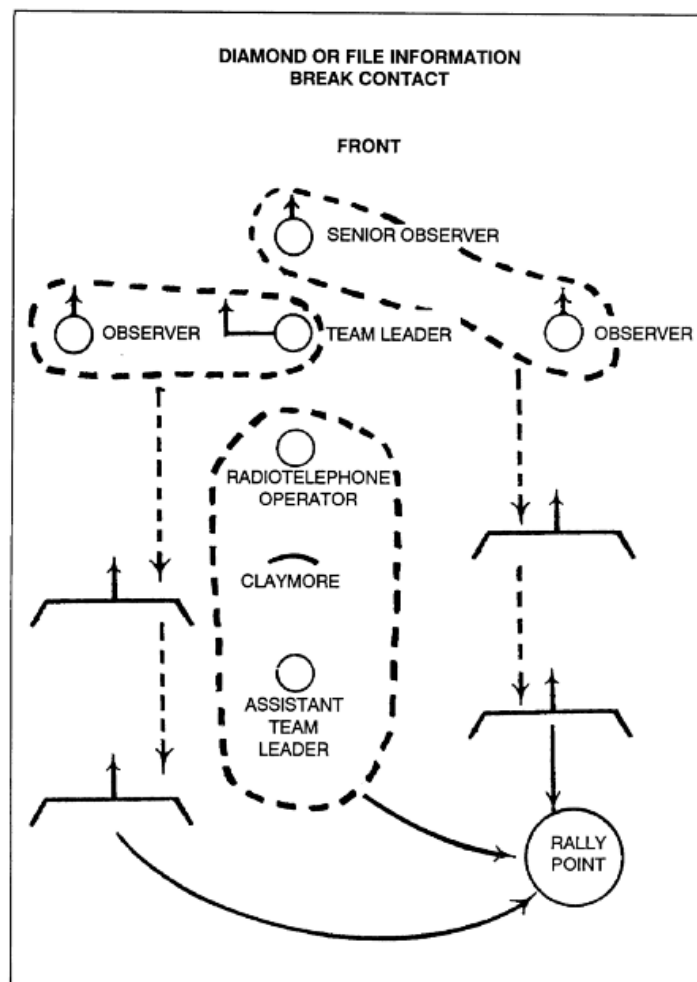


Figure 5-9. Break contact, front.



right, depending on the terrain. One member at a time passes back through the formation (see Figure 5-11).

When contacted from the front, the first member fires a full magazine (automatic or burst). Every other member does the same, one at a time. Each member waits until the member in front of him is even with him or on his left or right before firing a weapon. Individuals move straight back through the inside of the formation, avoiding masking the fires of the members providing covering fire. The assistant team leader or the last member throws a hand grenade (fragmentary). During limited visibility, the battle drill may be executed without firing weapons. In this event, the battle drill is still executed in the same sequence. Upon completion of the first iteration, the team can emplace a Claymore mine with a time-delay fuze to slow the enemy. The team initiates fires only if it has been compromised. If the enemy element breaks contact and ceases fire, the LRS team should cease fire immediately to prevent revealing their new position.

If contact occurs from the rear, the battle drill is executed in the reverse sequence. The first member is the last to throw a hand grenade (fragmentary). Once the battle drill is completed, the team moves to the designated rally point.

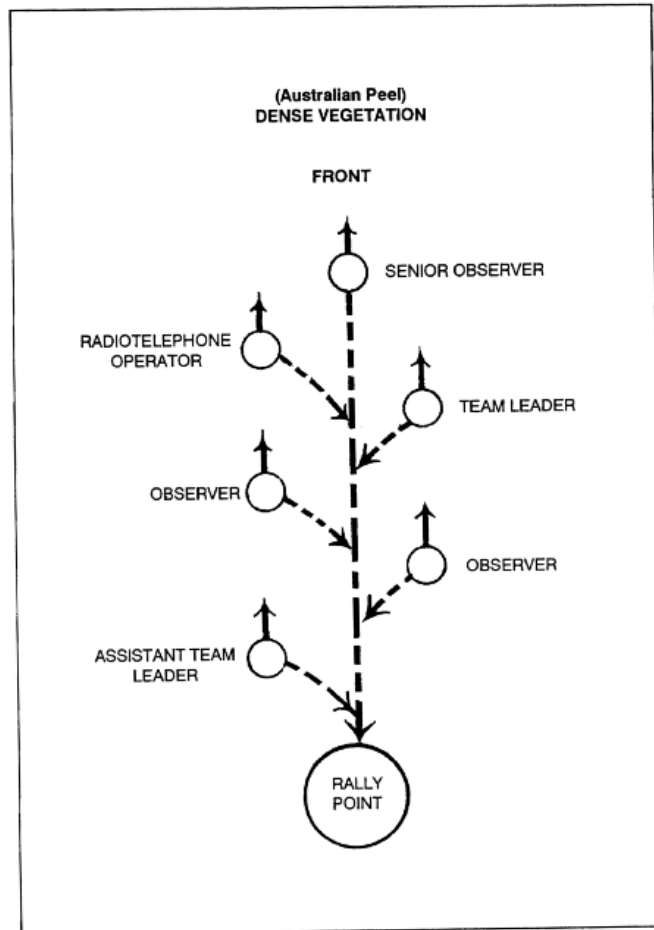


Figure 5-11. Break contact, front (Australian peel).

Break Contact, Left or Right

If a patrol finds itself in a threat ambush, it must get out of the kill zone or face destruction. Team members in the kill zone, without order or signal, immediately return fire, throw smoke, and move quickly out of the kill zone by the safest route (see Figures 5-12 and 5-13). There is no set procedure for this; each man must decide the best way for his situation. For inferior-sized enemy force, a team may assault through a near ambush. Soldiers not in the kill zone fire to support the withdrawal or hasty assault of the men in the kill zone.

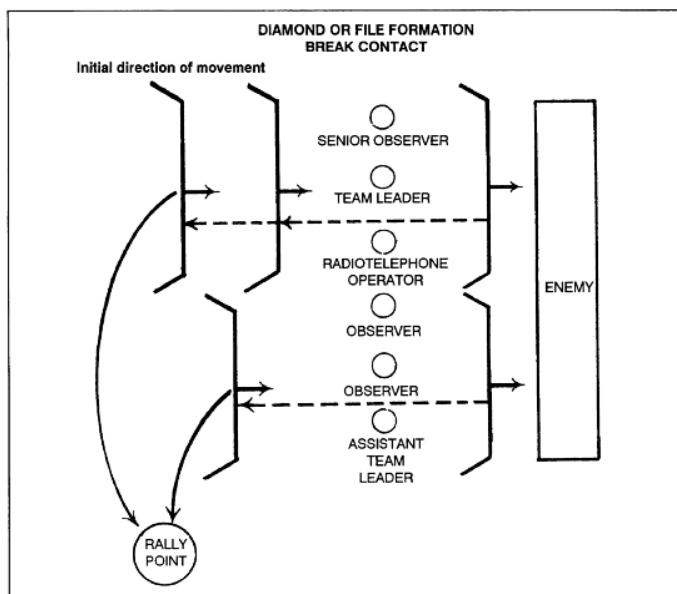


Figure 5-12. Break contact, left or right.

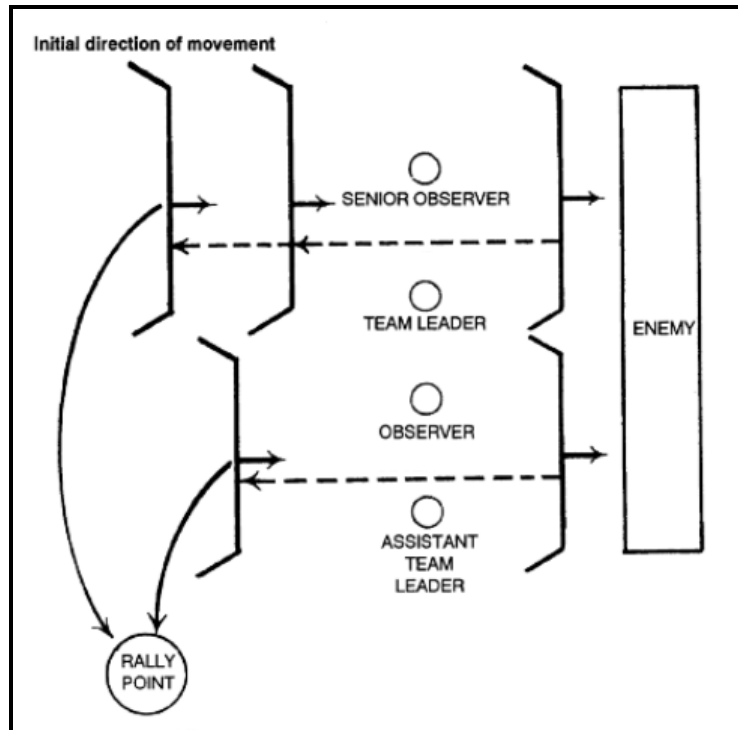


Figure 5-13. Break contact, left or right (four man).

React to Air Attack

The first soldier who hears or sees an aircraft signals "Freeze." The first soldier who sees an attacking aircraft alerts "Aircraft, front (left, right, or rear)." Each soldier hits the ground, using available cover, and returns fire. Between attacks, the team should seek better cover

and concealment. If the team leader wants the team to move out of the area, he gives the clock direction and distance. See Figure 5-14.

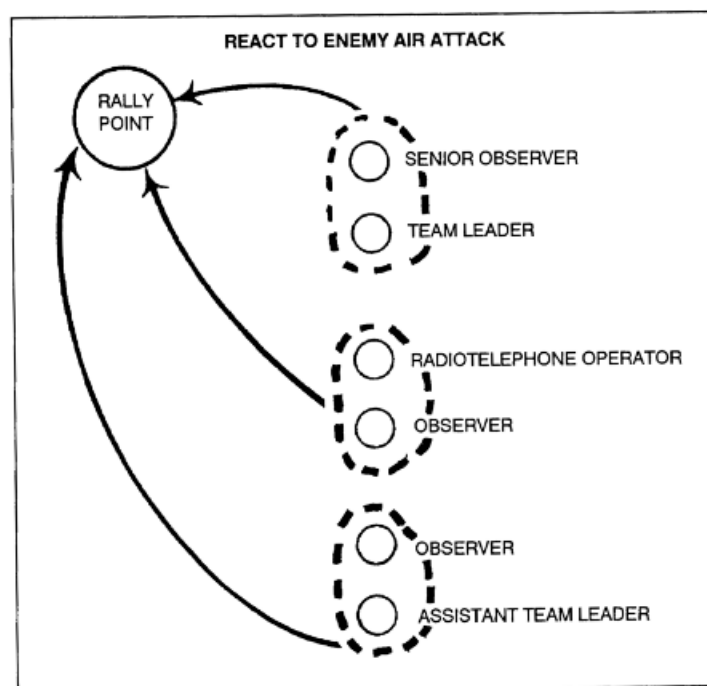


Figure 5-14. React to air attack.

React to Indirect Fire

Upon receiving indirect fire, the team deploys and takes cover. If more rounds impact, the team leader gives the clock position and the direction and distance to move. The team consolidates while moving or at a distance given by team leader. The team may elect to move to the last rally point or as otherwise directed by the team leader (see Figure 5-15).

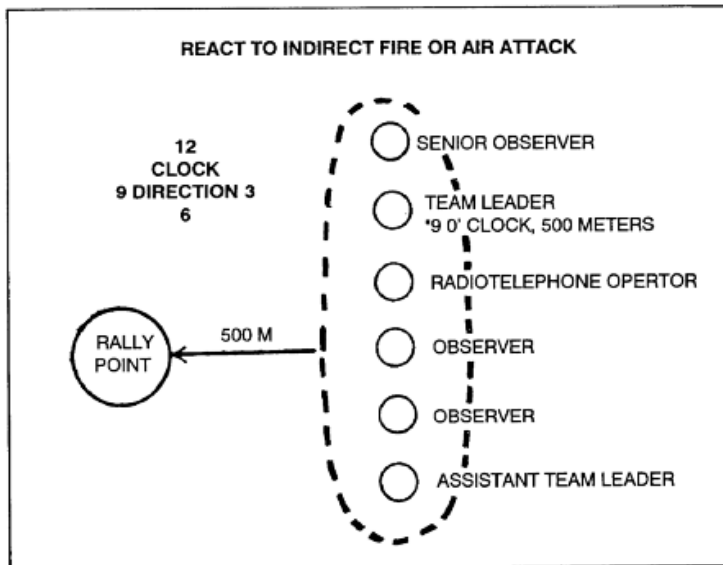


Figure 5-15. React to indirect fire or air attack.

React to Flares

If the team encounters flares, it should execute the following actions:

- **Ground flares.** The team moves out of the illuminated area and takes cover. Each soldier closes his firing eye to protect his night vision.
- **Overhead flare with warning.** The team assumes a prone position (behind concealment, when available) before the flare bursts. Each soldier closes his firing eye to protect his night vision.
- **Overhead flare without warning.** The team gets into a prone position, making the most use of nearby cover, concealment, and shadows until the flare burns out. Each soldier closes his firing eye to protect his night vision.

React to Sniper Fire

If the patrol comes under sniper fire, it immediately returns fire in the direction of the sniper. The patrol then conducts fire and maneuver to break contact with the sniper.

TYPES OF PATROLS**Reconnaissance Patrol**

There are three types of reconnaissance patrols: air reconnaissance patrol, zone reconnaissance patrol, and route reconnaissance patrol.

Area Reconnaissance Patrol

This type of patrol is conducted to obtain information about a specific location (such as a road junction, hill, bridge, or threat position) and the area immediately around it.

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Zone Reconnaissance Patrol

This patrol is conducted to obtain information within a specific zone. The zone is defined by boundaries.

Route Reconnaissance Patrol

This patrol focuses on obtaining information on a route and adjacent terrain or on locating sites for friendly obstacles. Reconnaissance is oriented on a road; on a narrow axis, such as an infiltration lane; or on a general direction of attack.

Security Patrol

These patrols reconnoiter areas through which threat units may pass and the routes they would use. The patrols prevent infiltration and surprise attacks on stationary units by screening their front or flanks and by reconnoitering gaps between OPs and around their positions.

Combat Patrol

Combat patrols are a rare assignment for the reconnaissance platoon, but they may be employed during a counterreconnaissance mission. Combat patrols are generally categorized into two types of missions: an ambush or a raid. They are generally conducted to capture threat soldiers, capture threat equipment, harass threat forces, or destroy threat soldiers, installations, or facilities.

Presence Patrol

The presence patrol is almost always used in urban environments, particularly during stability operations and support operations. Among the various types of patrol the scouts may conduct, the presence patrol is unique in that its primary purpose is *to be seen* by military forces and civilians in the area of operations. Although this patrol does perform limited reconnaissance and security functions, it usually is conducted to serve as evidence of US and allied forces' presence.

Tracking Patrol

A platoon or squad may receive the mission to follow the trail of a specific threat unit. Soldiers look for signs left by the threat. They gather information about the threat unit, the route, and the surrounding terrain as they track.

NOTE: Patrols may also interact with the populace and conduct tactical questioning throughout any type of patrol. See Chapter 4, Urban Operations, for tactical questioning techniques.

OCCUPATION OF AN ORP

In planning the occupation of an objective rally point (ORP), the leader considers the following sequence:

- Halt beyond sight, sound, and small-arms weapons range of the tentative ORP (200 to 400 meters in good visibility; 100 to 200 meters in limited visibility).
- Position security elements.
- Move forward with a compass man and one member of each squad to confirm the location of the ORP and determine its suitability. Issue a five-point contingency plan before departure.
- Position a soldier at 12 o'clock and a soldier at 6 o'clock in the ORP. Issue them a contingency plan and return with the compass man.
- Lead the team into the ORP. Position a squad from 9 to 3 o'clock and a squad from 3 to 9 o'clock.

NOTE: The team may also occupy the ORP by force. This requires more precise navigation, but eliminates separating the team.

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PATROL BASE

A patrol base is a security perimeter that is set up when a section or platoon conducting a patrol halts for an extended period (see Figure 5-16). Patrol bases should not be occupied for more than a 24-hour period (except in emergency). A patrol never uses the same patrol base twice.

Site Selection

The leader selects the tentative site from a map or by aerial reconnaissance. The site's suitability must be confirmed and secured before the unit moves into it. Plans to establish a patrol base must include selecting an alternate patrol base site. The alternate site is used if the first site is unsuitable or if the patrol must unexpectedly evacuate the first patrol base.

Selection criteria include the following:

- Select terrain the enemy would probably consider of little tactical value.
- Select terrain that is off main lines of drift.
- Select difficult terrain that would impede foot movement such as an area of dense vegetation, preferably bushes and trees that spread close to the ground.
- Select terrain near a source of water.
- Select terrain that can be defended for a short period of time and that offers good cover and concealment.
- Avoid known or suspected enemy positions.
- Avoid built-up areas.
- Avoid ridges and hilltops, except as needed for maintaining communications.
- Avoid small valleys.
- Avoid roads and trails.

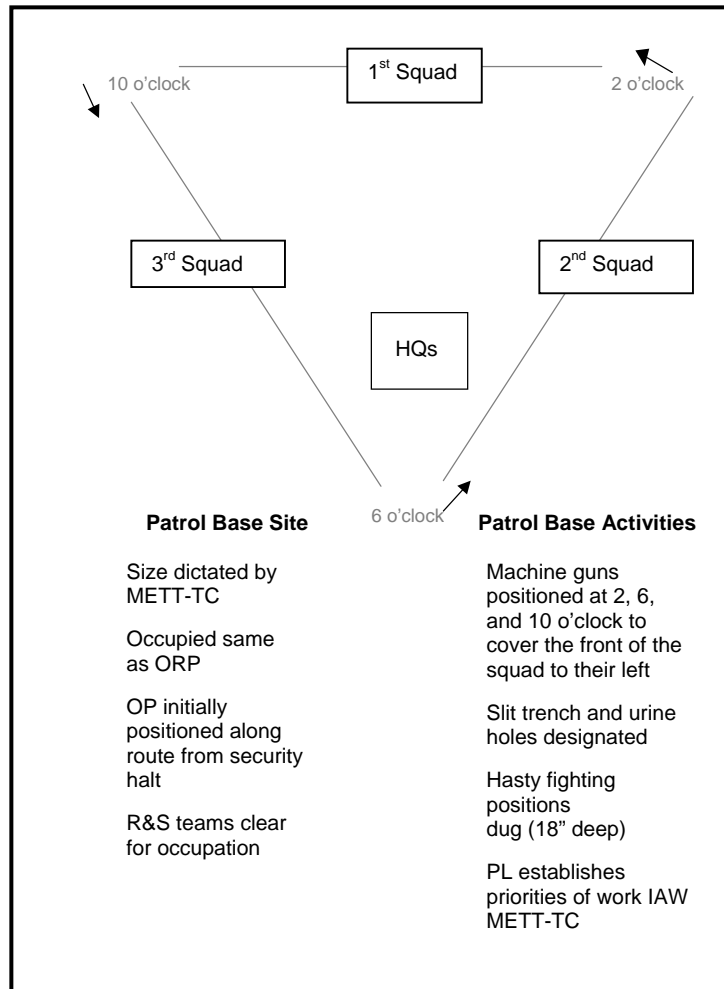


Figure 5-16. Patrol base.

Planning Considerations

The leader plans for:

- Observation posts and communication with observation posts.
- Patrol or platoon fire plan.
- Alert plan.
- Withdrawal plan from the patrol base to include withdrawal routes and a rally point, rendezvous point, or alternate patrol base.
- A security system to make sure that specific soldiers are awake at all times.
- Enforcement of camouflage, noise, and light discipline.
- The conduct of required activities with minimum movement and noise.
- Priorities of work.
- Security (continuous).
- Use of all passive and active measures to cover 100 percent of the perimeter 100% of the time, regardless of the percentage of weapons used to cover the entire terrain.

Patrol Base Activities

The leader or appropriate personnel conduct the following activities:

- Readjust after R&S teams return, or based on current priority of work (such as weapons maintenance).
- Employ all elements, weapons, elements and personnel to meet conditions of the terrain, enemy, or situation.

- Assign sectors of fire to all personnel and weapons. Develop squad sector sketches and platoon fire plan.
- Confirm location of fighting positions for cover, concealment, and observation and fields of fire. Squad leaders supervise placement of aiming stakes and Claymores.
- Use only one point of entry and exit, and count personnel in and out. Everyone is challenged IAW the unit SOP.
- Prepare hasty fighting positions at least 18 inches deep (at the front), and sloping gently from front to rear, with a grenade sump if possible.
- Maintain communications with higher headquarters, OPs, and within the unit. May be rotated between the patrol's RTOs to allow accomplishment of continuous radio monitoring, radio maintenance, act as runners for the patrol leader (PL), or conduct other priorities of work.
- The PL designates the signal for withdrawal, order of withdrawal, and the platoon rendezvous point and/or alternate patrol base.
- The PL uses the patrol base to plan, issue orders, rehearse, inspect, and prepare for future missions.
- The PL ensures that machine guns, weapon systems, communications equipment, and night vision devices (as well as other equipment) are maintained. These items are not broken down at the same time for maintenance (not more than 25 percent at one time), and weapons are not disassembled at night. If one machine gun is down, then security for all remaining systems is raised.

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Passive (Clandestine) Patrol Base

The purpose of a passive patrol base is for the rest of a smaller size element. A Claymore mine is emplaced on the route entering the patrol base. Teams sit back-to-back facing outward, ensuring that at least one individual per team is alert and providing security.

OBSERVATION POST (OP)

Selecting an OP Site

OPs should have the following characteristics (see also Figure 5-17):

- Covered and concealed routes to and from the OP. Scouts must be able to enter and leave the OP without being seen by the threat.
- Unobstructed observation of the assigned area or sector. Ideally, the fields of observation of adjacent OPs overlap to ensure full coverage of the sector.
- Effective cover and concealment. Scouts should select positions with cover and concealment to reduce their vulnerability on the battlefield. They may pass up a position with favorable observation capability but with no cover and concealment in favor of a position that affords better survivability.
- A location that will not attract attention. OPs should not be sited in such locations as a water tower, an isolated grove of trees, or a lone building or tree; these positions draw threat attention and may be used as threat artillery TRPs. The OPs should also be located away from natural lines of drift along which a moving threat force can be expected to travel. These locations might include a route on the floor of a valley or a site near a major highway.

B	Blend in with the surrounding area. Does the site look natural? Does it attract unwanted attention?
L	Low-to-the-ground construction techniques must be used. Does the site provide protection against small arms and direct weapons fire?
U	Unexpected sites should be used. Will the threat forces expect you to look out the window or the small hole in the wall?
E	Evacuation routes must be planned during site selection. Where will you go to link up with friendly forces?
S	Avoid silhouetting of the site by using the sides of hills, not the crests. Can the sniper see you silhouetted against the skyline, wall, or other object?

Figure 5-17. BLUES principles for extended OPs.

Manning the OP

A minimum of two scouts man each OP. They must be equipped to observe the area, report information, protect themselves, and call for and adjust indirect fire. One scout observes the area while the other provides local security, records information, and sends reports to the section/squad leader or platoon leader. Essential equipment for the OP includes the following:

- Map of the area, with required graphic only.
- Compass.
- Communications equipment (wire and/or radio).
- Observation devices (binoculars, observation telescope, and/or NVDs).
- SOI extract.
- Report formats.

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- Weapons (personal, crew-served, and/or Javlin; mines are included, if necessary).
- Seasonal uniform and load-bearing equipment (LBE).
- Appropriate NBC equipment to achieve the highest MOPP level prescribed in the OPORD.

Personnel manning the OP continuously improve the OP to provide protection from observation, direct, and indirect fires.

AMBUSHES

An ambush is a surprise attack from a concealed position on a moving or temporarily halted target.

Ambush Categories

Hasty ambush. A platoon or section conducts a hasty ambush when it makes visual contact with a threat force and has time to establish an ambush without being detected.

Deliberate ambush. A deliberate ambush is conducted against a specific target at a predetermined location.

Ambush Types

Point ambush. In a point ambush, soldiers deploy to attack a threat in a single kill zone.

Area ambush. In an area ambush, soldiers deploy in two or more related point ambushes. A platoon is the smallest unit to conduct an area ambush.

Antiarmor ambush. Platoons and squads conduct antiarmor ambushes to destroy one or two armored vehicles.

Ambush Formations

Linear. In an ambush using a linear formation, the assault and support elements deploy parallel to the threat's route (see Figure 5-18).

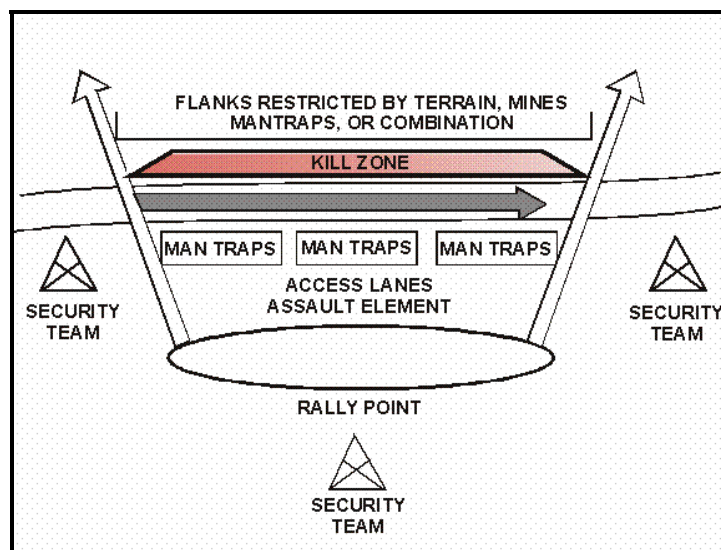


Figure 5-18. Linear ambush formation.

SNIPER

The primary mission of a sniper in combat is to support combat operations by delivering precise long-range fire on selected targets. By this, the sniper creates casualties among enemy troops, slows enemy movement, frightens enemy soldiers, lowers morale, and adds confusion to their operations. The secondary mission of the sniper is collecting and reporting battlefield information.

Whether a sniper is organic or attached, he will provide the team with extra supporting fire. In reconnaissance-dismounted operations, snipers are best employed as overwatching and countersniper elements within a patrol. The sniper's role becomes more significant when the target is entrenched or positioned among civilians, or during riot control missions. The fires of automatic weapons in such operations can result in the wounding or killing of noncombatants.

URBAN OPERATIONS

Refer to the section on dismounted considerations in urban terrain in Chapter 4.

Chapter 6

DIRECT FIRE PLANNING

PRINCIPLES

When planning and executing direct fires, the commander and subordinate leaders must know how to apply several fundamentals. The purpose of these fundamentals of direct fire is not to restrict. Rather, it is to help the platoon to accomplish its primary goal in any direct fire engagement: to both *acquire first and shoot first*. The fundamentals are as follows:

- Principles of direct fire.
 - IPB—Where is the enemy.
 - Cover all targets.
 - Kill at different ranges, IAW weapons capabilities, simultaneously.
 - Destroy most dangerous first.
 - Distribute fires.
 - Fire at long range.
 - Take good shots; do not expose yourself too early.
 - Maximize weapons capabilities.
- Concept for direct fires.
 - Who shoots.
 - What they shoot—prioritize targets.
 - Where they shoot—prioritize location.
 - When they shoot/stop shooting (trigger/break).
 - How they shift/focus fires.

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- All must understand the following:
 - Enemy/terrain (OCOKA)/weather.
 - Battlefield conditions.
 - Weapons capabilities.
 - Combat support.
 - Logistical requirements.
 - Create.
- Fire control techniques.
 - Divide sector into quadrants.
 - Assign sectors of fire (left and right limits).
 - Use TRPs (hasty TRPs—smoke/illum/HE/ tracer/ terrain).
 - Shift fires off the enemy formation.
 - Use fire pattern (left/right, near/far, inside/outside).
- Fire commands.
 - Alert.
 - Weapon system.
 - Target description.
 - Target location.
 - Pattern/technique.
 - Execution.

RANGE CARD

An example range card for an individual vehicle or OP is shown in Figure 6-1. Figure 6-2 shows a completed platoon sketch.

STANDARD RANGE CARD					
For use of this form see FM 7-8. The proponent agency is TRADOC.					
SQD <u>ALL</u> PLT <u>2</u> CO <u>C</u>	May be used for all types of direct fire weapons				 MAGNETIC NORTH
DATA SECTION					
POSITION IDENTIFICATION			DATE		
PRIMARY			3 MAR / 1140 HRS		
WEAPON			EACH CIRCLE EQUALS		
MZ C-21			400		
NO.	DIRECTION DEFLECTION	ELEVATION	RANGE	AMMO	DESCRIPTION
L	350°/5800 ft	0 ft	2000 M	TOW 2	FARMHOUSE
R	105°/920 ft	+ 10 ft	2600 M	TOW 2	R/SIDE WOODLINE
1	6400 ft	+ 30 ft	3200 M	TOW 2	RP - HILLTOP
2	5910 ft	+ 10 ft	2700 M	TOW 2	TRP - AB002 RJ
3	60 ft	- 10 ft	1800 M	TOW 2	TRP - AB002 RJ
REMARKS					
4 WRP - RJ AT 13629411, 100° AT 320 M					
DA FORM 5517-R, FEB 86					

Figure 6-1. Completed range card for an individual vehicle/OP.

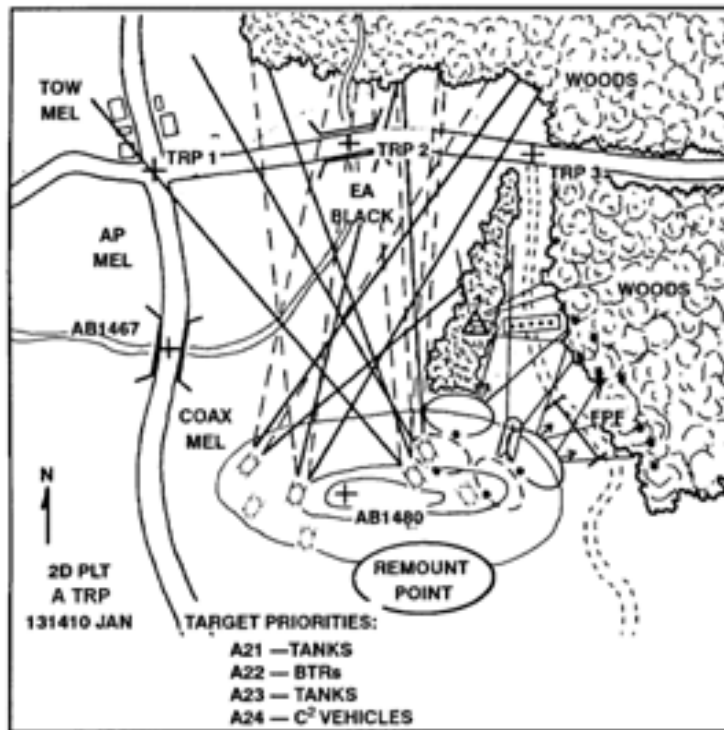


Figure 6-2. Completed platoon sketch.

Chapter 7

COMBAT SUPPORT

FIRE SUPPORT

Fire support capabilities include field artillery, conventional munitions, mortars, and naval gunfire (see Tables 7-1 through 7-4).

Table 7-1. Fire support capabilities (field artillery).

FIELD ARTILLERY					
Weapon	Max Range(m)	Min Range(m)	Max Rate Rds per Min	Burst Radius	Sustained Rate Rds per Min
105mm Howitzer M102, Towed	11,500 14,500(RAP)	0	10 for 3 min	35 m	3
105mm Howitzer M119, Towed	14,000m	0	6 for 2 min	35 m	3 Rds for 30 min, then 1 rd per min
155mm Howitzer M198, Towed	18,100 30,000(RAP)	0	4 for 3 min 2 for 30 min	50 m	1 rd per min Temp Dependent
155mm Howitzer M109A2/A3 SP	18,100 23,500(RAP)	0	4 for 3 min	50 m	1 for 60 min 0.5
203mm Howitzer M110A2, SP	22,900 30,000 (RAP)	0	1.5 for 3 min	80 m	0.5

Table 7-2. Fire support capabilities (conventional munitions).

CONVENTIONAL MUNITIONS					
MAXIMUM RANGES (M198) (meters)			FPF WIDTH	RATES OF FIRE	
HE/DPICM	ERDPICM	RAP	400m	SUSTAINED	MAXIMUM
18,100	28,400	30,000		Variable	4 rounds/minute
ILLUMINATION					
MAXIMUM RANGE	BURN TIME	RATE OF FIRE FOR CONTINUOUS ILLUMINATION		ILLUMINATION DIAMETER	
17,500	2 minutes	1 round/minute		1,000 m	
SMOKE					
TYPE	TIME TO BUILD EFFECTIVE SMOKE			AVERAGE BURN TIME (minutes)	
WP	30 seconds			1 to 1½	
Smoke	60-90 seconds			5 to 10	

Table 7-3. Fire support capabilities (mortars).

MORTARS						
Weapon	Munition Available	Max Range (m)	Min Range (m)	Max Rate Rds per Min	Burst Radius	Sustained Rate Rds per Min
60mm	HE,WP, ILLUM	3500 (HE)	70 (HE)	30 for 4 min	30 m	20
81mm	HE,WP, ILLUM	5600 (HE)	70 (HE)	25 for 2 min	38 m	8
107mm	HE,WP, ILLUM	6840 (HE)	770 (HE)	18 for 1 min 9 for 5 min	40 m	3
120mm	HE,SMK, ILLUM	7,200 (HE)	180 (HE)	15 for 1 min	60 m	5

Table 7-4. Fire support capabilities (naval gun fire).

NAVAL GUN FIRE				
Weapon	Full Charge	Reduced Charge	Max Rate Rds per Min	Sustained Rate Rds per Min
5 in / 38	15,904	8,114	20	15
5 in / 54	23,133	12,215	35	20
16 in / 50	36,188	22,951	2	1

Elements and Sequence of Call for Fire

- a. Observer's Identification - Call Signs.
- b. Warning Order:
 - (1) Type of mission:
 - (a) Adjust fire.
 - (b) Fire for effect.
 - (c) Suppress.
 - (d) Immediate suppression.
 - (2) Size of element to fire for effect—When the observer does not specify what size element to fire, the battalion FDC will decide.
 - (3) Method of target location:
 - (a) Polar plot.
 - (b) Shift from a known point (give point TRP).
 - (c) Grid.
 - (4) Location of target:
 - (a) Grid Coordinate—6 digit. 8 digit if greater accuracy is required.
 - (b) Shift from a known point:
 - Send OT direction:
 - Mils (nearest 10).
 - Degrees.
 - Cardinal direction.
 - Send lateral shift (right/left) (nearest 10m).
 - Send range shift (add/drop) (nearest 100m).
 - Send vertical shift (up/down). Use only if it exceeds 35 meters (nearest 5m).
 - (c) Polar plot:
 - Send direction (nearest 10 mils).
 - Send distance (nearest 100m).
 - Send vertical shift (nearest 5m.)

- (5) Description of target:
 - (a) Type.
 - (b) Activity.
 - (c) Number.
 - (d) Degree of protection.
 - (e) Size and shape (length/width or radius).
- (6) Method of engagement:
 - (a) Type of adjustment—When the observer does not request a specific type of fire control adjustment, area fire issued.
 - Area fire—moving target.
 - Precision fire—point target.
- (7) Danger Close—When friendly troops are within:
 - (a) 600m for mortars.
 - (b) 600m for artillery.
 - (c) 750m for naval guns 5 inches or smaller.
 - (d) 1000m for naval guns over 5 inches.
 - (e) 2000m for 16-inch naval guns (ICM or controlled variable time).

NOTES: The term *DANGER CLOSE* is used when the target is within 600 meters of any friendly troops for both mortars and field artillery. When adjusting naval gun fire the term *DANGER CLOSE* is announced when the target is located within 750 meters when using 5 inch or smaller naval guns. For naval guns larger than 5 inch, *DANGER CLOSE* is announced when the target is within 1000 meters.

The creeping method of adjustment is used exclusively during *DANGER CLOSE* missions. The FO should make range changes by creeping the rounds to the target using corrections of no more than 100 meters.

- (8) Mark—Used to orient observer or to indicate targets.
- (9) Trajectory:
 - (a) Low angle (standard).
 - (b) High angle (mortars or if requested).
- (10) Ammunition—HE quick will be used unless specified by the observer.
 - (a) Projectile (HE, ILLUM, ICM, SMOKE, etc.).
 - (b) Fuse (Quick, Time, etc.).
 - (c) Volume of fire (observer may request the number of rounds to be fired).
- (11) Distribution:
 - (a) 100m sheaf (standard).
 - (b) Converged sheaf (used for small hard targets).
 - (c) Special sheaf (any length, width and attitude).
 - (d) Open sheaf (separate bursts).
 - (e) Parallel sheaf (linear target).
- (12) Method of fire and control:
 - (a) Method of fire—Specific guns and a specific interval between rounds. Normally adjust fire; one gun is used with a 5-second interval between rounds.
 - (b) Method of control:
 - “At My Command”—“Fire.” Remains in effect until observer announces “Cancel at my Command.”
 - “Cannot Observe”. Observer can’t see the target.
 - “Time on Target”. Observer tells FDC when he wants the rounds to impact.
 - Continuous Illumination. Calculated by the FDC otherwise observer indicates interval between rounds in seconds.

- Coordinated Illumination. Observer may order the interval between ILLUM and HE shells.
- "Cease Loading" to indicate the suspension of loading rounds.
- "Check Firing." Immediate halt.
- "Continuous Fire." Load and fire as fast as possible.
- "Repeat." Fire another round(s) with or without adjustments.

(13) Authentication. Challenge and reply.

(14) Message to observer:

- (a) Battery(ies) to fire for effect.
- (b) Adjusting battery.
- (c) Changes to the initial call for fire.
- (d) Number of rounds (per tube) to be fired for effect.
- (e) Target numbers.
- (f) Additional information:
 - Time of flight. Moving target mission.
 - Probable error in range (38 meters or greater [normal mission]).
 - Angle T (500 mils or greater).

c. Correction of Errors. When FDC has made an error when reading back the fire support data, the observer announces "CORRECTION" and transmits the correct data in its entirety.

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Examples of Call for Fire Transmissions

Examples include grid mission, shift from known point, and naval gunfire (NGF) (see Figure 7-1).

GRID MISSION

OBSERVER

F24, this is J42, ADJUST
FIRE, OVER.

GRID WM180513, DIRECTION
0530, OVER.

Infantry platoon dug in, OVER

SHOT OUT

SPLASH OUT

End of mission, 15 casualties,
Platoon dispersed, OVER.

FIRING UNIT

J42, this is F24, AJUST
FIRE, OUT.

GRID WM180513, DIRECTION
0530, OUT.

Infantry platoon dug in, OUT
SHOT OVER

SPLASH, OVER

End of mission, 15 casualties,
Platoon dispersed, OUT.

SHIFT FROM KNOWN POINT

OBSERVER

J42, this is F24, ADJUST
FIRE, SHIFT AB1001, OUT.

DIRECTION 2420, RIGHT
400, ADD 400, OUT.

5 T72 Tanks at POL site,
OVER

I AUTHENTICATE Tango
OVER.

SHOT OUT

SPLASH OUT

End of mission, 2 tanks
destroyed, 3 in woodline,
OVER.

FIRING UNIT

J42, this is F24, ADJUST
FIRE, SHIFT AB1001, OUT.

DIRECTION 2420, RIGHT
400, ADD 400, OUT.

5 T72 Tanks at POL site,
AUTHENTICATE Juliet
November, OVER.

SHOT, OVER.

SPLASH, OVER.

End of mission, 2 tanks
destroyed, 3 in woodline,
OUT.

NAVAL GUNFIRE CALL FOR FIRE	
1.	FIRST TRANSMISSION:
A.	SPOTTER ID: DE _____
B.	WARNING ORDER: "FIRE MISSION"
C.	TARGET NUMBER _____ (SPOTTER ASSIGNS)
-----OVER-----	
2.	SECOND TRANSMISSION
A.	TARGET LOCATION
(1)	GRID _____
	ALTITUDE _____
	DIRECTION _____
(2)	POLAR: DIRECTION _____
	DISTANCE _____
	U/D (IF ≥ 5M) _____
(3)	SHIFT: FROM TGT # _____
	DIRECTION _____
	L/R _____
	U/D (IF ≥ 5M) _____
B.	TARGET DESCRIPTION: _____
	(TYPE, SIZE, DEGREE OF PROTECTION)
C.	METHOD OF ENGAGEMENT
(1)	DANGER CLOSE, CARDINAL DIR & DIST TO FRIENDLY UNIT
(2)	TRAJECTORY: - FULL CHARGE *
	- REDUCED CHARGE
	- HIGH ANGLE
(3)	AMMUNITION: _____ - (HE/Q)*
(4)	NUMBER OF GUNS: - ONE GUN *
	- TWO GUNS
(5)	NUMBER OF SALVOS _____
	- SENT IF ADJUSTING WITH MORE THAN 1 RD OR A FFE MISSION
(6)	SPECIAL INSTRUCTIONS: - INTERVAL
	- SUSTAINED
	- TIME ON TARGET
	- COORDINATED ILLUM
	- CONTINUOUS ILLUM
D.	METHOD OF CONTROL:
(1)	SPOTTER ADJUST
(2)	SHIP ADJUST
(3)	FIRE FOR EFFECT
(4)	CANNON OBSERVE
(5)	AT MY COMMAND
-----OVER-----	

Figure 7-1. Naval gunfire call for fire format.

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3.	PREPARING REPORT (SPOTTER READS BACK) GTL _____, LINE OF FIRE _____, SUMMIT (MAX ORD) _____, FIRST SALVO AT _____, ANY CHANGES _____, READY, TOF _____, BREAK; FIRE ----- OVER -----														
4.	SHOT / SPLASH – every volley in adj and 1 st FFE volley														
5.	CORRECTION, _____ VOLLEYS (if different than adjustment), FFE, ----- OVER -----														
6.	RREMS R/L +/- U/D EOM BDA (EST _____ CASUALTIES) ----- OVER -----														
NOTES:															
ENTER FFE WHEN:															
<ol style="list-style-type: none"> 1. ADJUSTING ROUND HAS EFFECTS ON TARGET 2. SPLITTING 100M BRACKET FOR POINT TARGET 3. SPLITTING 200M BRACKET FOR AN AREA TARGET 															
- USE STANDARD ARTILLERY CORRECTIONS FOR Q, TI & VT FUZES															
* DENOTES STANDARD IN CFF															
SEQUENCE OF SUBSEQUENT CORRECTIONS:															
<ol style="list-style-type: none"> 1. DIRECTION 2. DANGER CLOSE 3. TRAJECTORY 4. SHELL 5. FUZE 6. DEVIATION 7. RANGE 8. HOB 9. NUMBER OF GUNS 10. NUMBER OF SALVOS 11. METHOD OF CONTROL 															
<table border="0"> <tr> <td><u>Fresh Target Shift</u></td> <td><u>New Target Shift</u></td> </tr> <tr> <td>1. Spotter ID: omitted</td> <td>1. Spotter ID: omitted</td> </tr> <tr> <td>2. Fresh Target, Target # _____</td> <td>2. New Target, Target # _____</td> </tr> <tr> <td>3. Target Location: Sent from last Salvo</td> <td>3. Target Location: Sent from last salvo</td> </tr> <tr> <td>4. Target Description: Always sent</td> <td>4. Target Description: Always sent</td> </tr> <tr> <td>5. Method of Engagement: omitted if different</td> <td>5. Method of Engagement: omitted if different</td> </tr> <tr> <td>6. Method of Control: omitted if different</td> <td>6. Method of Control: omitted if different</td> </tr> </table>		<u>Fresh Target Shift</u>	<u>New Target Shift</u>	1. Spotter ID: omitted	1. Spotter ID: omitted	2. Fresh Target, Target # _____	2. New Target, Target # _____	3. Target Location: Sent from last Salvo	3. Target Location: Sent from last salvo	4. Target Description: Always sent	4. Target Description: Always sent	5. Method of Engagement: omitted if different	5. Method of Engagement: omitted if different	6. Method of Control: omitted if different	6. Method of Control: omitted if different
<u>Fresh Target Shift</u>	<u>New Target Shift</u>														
1. Spotter ID: omitted	1. Spotter ID: omitted														
2. Fresh Target, Target # _____	2. New Target, Target # _____														
3. Target Location: Sent from last Salvo	3. Target Location: Sent from last salvo														
4. Target Description: Always sent	4. Target Description: Always sent														
5. Method of Engagement: omitted if different	5. Method of Engagement: omitted if different														
6. Method of Control: omitted if different	6. Method of Control: omitted if different														
Preface each correction with Target #															

Figure 7-1. Naval gunfire call for fire format (continued).

CLOSE AIR SUPPORT (CAS)

Refer to Chapter 8, Aviation, for aircraft capabilities and coordinating and controlling CAS.

THE TUAV

Through their mobility and speed, TUAVs provide the ground commander or reconnaissance platoon leader with flexible, versatile platforms that are suitable for employment in numerous types of situations and operations.

Several types of imagery sensors are available for use on TUAVs, although sensors are currently limited to electro-optical (EO) and infrared (IR) (see Table 7-5). Each sensor has unique capabilities, with distinct advantages and disadvantages. (**NOTE:** Additional types of sensors and other TUAV payloads are under development and will be fielded as their respective technologies mature.)

Table 7-5. TUAV sensor characteristics.

SENSOR TYPE	ADVANTAGES	DISADVANTAGES
Electro-optical (visible light)	<ul style="list-style-type: none"> • Best tool for detailed analysis during daytime and clear weather. • Affords a familiar view of a scene. • Offers system resolution that cannot be achieved with other optical systems, thermal images, or radar. • Preferred for detailed analysis and mensuration. • Offers stereoscopic viewing. 	<ul style="list-style-type: none"> • Can be deceived by employment of camouflage and concealment techniques. • Restricted by weather conditions; visible light cannot penetrate clouds or fog. • Restricted by terrain and vegetation. • Limited to daytime use only.
Infrared	<ul style="list-style-type: none"> • Best tool for detailed analysis in darkness with clear weather. • Passive sensor that is impossible to jam. • Offers camouflage penetration. • Provides good resolution. • Offers nighttime imaging capability. 	<ul style="list-style-type: none"> • Not effective during thermal crossover (1 to 1.5 hours after sunrise or sunset). • Tactical platforms (TUAVs) can be threatened by threat air defenses. • Bad weather degrades quality of sensor images.

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COMBAT ENGINEERS

The basic engineer unit with which the reconnaissance platoon is likely to operate is a sapper squad from a combat engineer platoon. A parallel consideration is that sapper-qualified scouts enhance reconnaissance platoon capabilities and can provide support to attached engineer assets.

The engineer team may perform the following functions:

- Conduct tactical or technical reconnaissance.
- Conduct route and bridge classification.
- Assist in locating bypasses around obstacles.
- Identify the exact composition and dimensions of an obstacle.
- Conduct limited reduction of log cribs, abatises, and minefields. The engineer reconnaissance team's actual reduction capabilities are limited to manual and explosive methods. Scouts must provide security for the engineer team while it is reducing obstacles.

AIR DEFENSE

There are no air defense assets organic to squadrons or battalions. Consequently, the reconnaissance platoon must be able to protect itself from threat air attacks during all combat operations. Passive air defense measures employed by the platoon include actions to avoid detection and air attack and actions to limit the damage if attacked. If necessary, the platoon takes active air defense measures to fight back against the threat aircraft.

- Report all enemy air activity.
- Use the following warnings:

- White (attack not probable). Use passive air defense measures, such as camouflage and concealment.
- Yellow (attack probable). Post air guards; scout observers are air guards for their respective vehicles. Position M2, M249 SAW and M60 machine guns to fire into assigned sectors of coverage.
- Red (attack imminent or in progress). Man all weapons and be prepared to engage.
- Use the following weapon control status levels:
 - Weapons free. This is the least restrictive level; elements may fire at any aircraft not positively identified as friendly.
 - Weapons tight. Elements may fire at aircraft that are positively identified as hostile.
 - Weapons hold. This is the most restrictive level, with fire authorized only in self-defense.

Scouts may have one of several weapon systems (chain guns, machine guns, and small arms) that can be used against aircraft when they must fight back (see Figure 7-2).

TYPE AIRCRAFT	COURSE	AIM POINT
Jet	Crossing	Two football fields in front of nose
Jet	Overhead	Two football fields in front of nose
Jet	Directly at you	Slightly above aircraft nose
Helicopter	Crossing	One-half football field in front of nose
Helicopter	Hovering	Slightly above helicopter body
Helicopter	Directly at you	Slightly above helicopter body

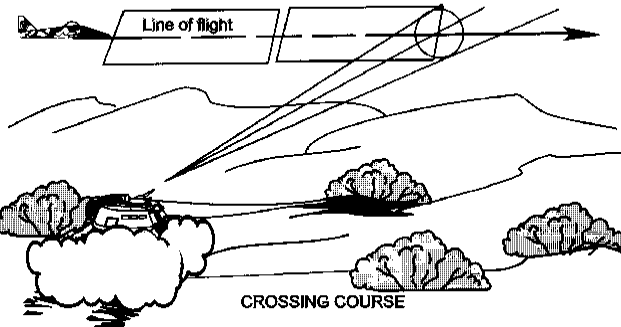


Figure 7-2. Guidelines for selecting aim points.

SHORT-RANGE AIR DEFENSE SYSTEMS

Although other short-range air defense (SHORAD) systems support divisional units, reconnaissance platoons with dedicated ADA systems are most likely to be supported by man-portable air defense systems (MANPADS).

The Stinger missile system employs a two-man crew (crew chief and gunner). The MANPADS crew will normally have a wheeled vehicle (HMMWV) as its assigned transportation. Unit leaders must carefully consider the consequences before separating a Stinger team from its vehicle. Stinger teams operating away from their vehicles have no more than two missiles available for resupply.

MULTICAPABLE SENSOR TEAMS

Sensor teams employing GSR and remotely monitored battlefield sensor systems (REMBASS) can enhance the surveillance capability of the reconnaissance platoon. The teams can detect targets and provide accurate range and azimuth readings to threat locations during limited visibility conditions.

Capabilities and Limitations

Sensor teams provide mobile, all-weather battlefield surveillance. When employed, they can provide observation from a given vantage point 24 hours a day.

GSR/REMBASS targets are classified as dismounted, light vehicle, heavy vehicle, or tracked vehicle. The AN/PPS-5b (GSR) has a line-of-sight range of 10,000 meters against vehicles and 6,000 meters against personnel. It can detect targets through light camouflage, smoke, haze, light snow and rain, and darkness. Foliage, heavy rain, and snow seriously reduce its capability. (See Figures 7-3 and 7-4 for system capabilities.)

GSR SYSTEM SUMMARY	
FEATURES:	
<ul style="list-style-type: none">• Portable, battery-powered radar set.• Locates and identifies ground targets at ranges up to 10,000 meters.• Discriminates between personnel and vehicular traffic.• Remote operations.	
TABULATED DATA:	
Detection range:	
With control indicator	
Personnel: 50 to 10,000 m	
Vehicles: 50 to 10,000 m	
Without control indicator	
Personnel: 50 to 3,000 m	
Vehicles: 50 to 5,000 m	
Range Accuracy: +/- 20 m	
Frequency:	
Tunable: 16.0 to 16.5 GHz	
Power:	
Battery: 6 volt DC vehicle or 24 volt DC	
Azimuth:	
Automatic sensor scanning: 533; 1,067; 1,600; 1,955 mls	
Accuracy: +/- 10 mls	
Elevation:	
Coverage: -600 mls to +400 mls	
Accuracy: +/- 10 mls	

Figure 7-3. GSR system summary.

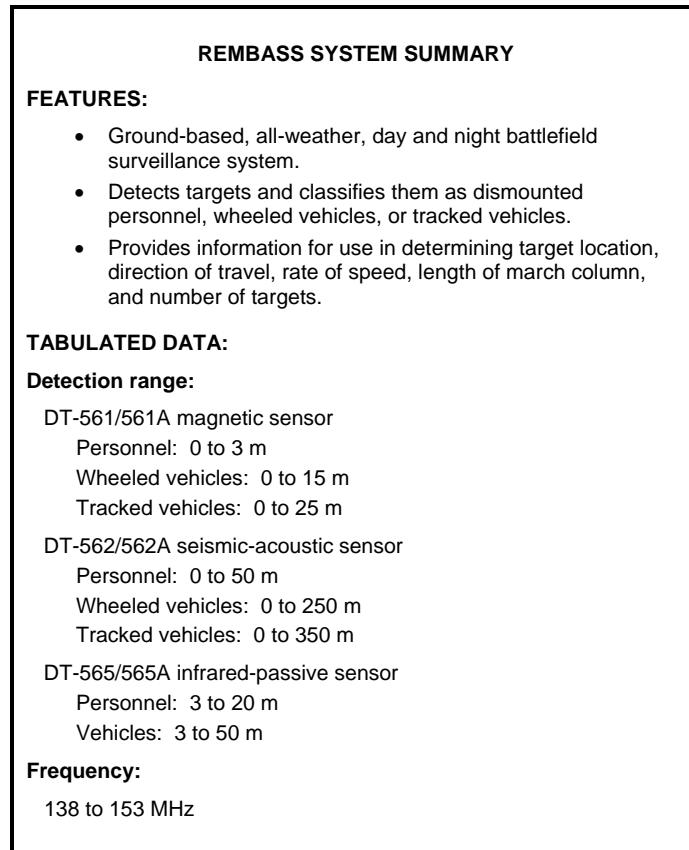


Figure 7-4. REMBASS system summary.

PROPHET

The PROPHET system (Figure 7-5) is capable of monitoring or scanning from 20 MHz to 2000 MHz, stop at detected signals, and restart after either a pre-determined time or when manually cued by the operator. The system can filter selected signals. The receivers identify single channel digital and analog signals with modulations of AM, FM, SSB, and Morse/CW. The PROPHET system is capable of message internal exploitation of unencrypted tactical voice communications from single channel, push-to-talk emitters.



Figure 7-5. PROPHET system.

In support of fluid mobile operations, the system has on-the-move capabilities, such as direction-finding (lines of bearing) and signal intercept exploitation capabilities. It has a stationary direction-finding accuracy of 15 degrees root mean square (RMS) and on-the-move accuracy of less than 22.5 degrees RMS. The PROPHET crew can set up the system and be fully operational for stationary direction-finding operations within 5 minutes.

Chapter 8

AVIATION

FIXED-WING SUPPORT

The US Air Force, Navy, and Marine Corps provide the Army with fixed-wing air support. They provide the following five types of air support:

- Close air support (CAS).
- Combat air reconnaissance.
- Tactical airlift.
- Electronic combat.
- Air interdiction.

Table 8-1 lists characteristics and capabilities of fixed-wing aircraft.

Table 8-1. Characteristics and capabilities of fixed-wing aircraft.

AIRCRAFT	SERVICE	CHARACTERISTICS (Typical Munitions)
AV-8B ¹	USMC, USN	VSTOL CAS aircraft; subsonic; typical load 4,000 lbs. Maximum load 9,200 lbs; 25-mm Gatling gun.
A-10 or O/A-10 ¹	USAF, USAF Res, USAF NG	Specialized CAS aircraft; subsonic; typical load 6,000 lbs. Maximum load 16,000 lbs; 30-mm gun.
F-15E	USAF	Multi-role aircraft; priority is air-to-ground; supersonic; maximum load 24,500 lbs; 20mm cannon w/ 512 rounds.
F-16 ¹	USAF, USAF Res, USAF NG	Multi-role aircraft; complements the F-15 in an air-to-air role; most accurate air to ground delivery system in the inventory; supersonic; typical load 6,000 lbs. Maximum load 10,500 lbs.
F/A-18 ¹	USN, USMC	Multi-role fighter; wide variety of air-to-surface weapons; typical load 7,000 lbs. maximum load 17,000 lbs; 20-mm gun mounted in the nose and air-to-air missiles.
AC-130 ¹	USAF, USAF Res	Specialized CAS/RACO aircraft, propeller driven, two models. The A model is equipped with two 40-mm guns, two 20-mm guns, and two 7.62-mm miniguns. The H model is similar, except it has no 7.62 miniguns and one of the 40-mm guns is replaced with a 105-mm howitzer. Both models have advanced sensors and target acquisition system including forward-looking infrared and low-light TV. Weapons employment accuracy is outstanding. This aircraft is vulnerable to threat air defense systems and must operate in a low ADA threat environment.
¹ Aircraft with FM communications.		
NOTE: Typical load is average load for typical support mission; maximum load is the amount the aircraft can carry in an ideal situation.		

CLOSE AIR SUPPORT

Air Force and Marine Corps personnel have the primary responsibility for requesting and controlling their respective service's aircraft. If no personnel augmentation by the other services is available, however, the reconnaissance platoon must employ organic fire support personnel as its primary means of coordinating and controlling CAS aircraft.

In the event Air Force or Marine personnel do not augment the platoon to assist in controlling CAS, the platoon should use a CAS briefing form. Figure 8-1 shows an example.

CAS Briefing Form (9-Line)	
(Omit data not required, do not transmit line numbers. Units of measure are standard unless otherwise specified. * denotes minimum essential in limited communications environment. Bold denotes readback items when requested.)	
Terminal controller:	"_____, this is _____" (aircraft call sign) (terminal controller)
*1. IP/BP:	"_____"
*2. Heading:	"_____ " (magnetic). (IP/BP to target)
Offset:	"_____ (left/right)"
*3. Distance:	"_____ " (IP-to-target in nautical miles/BP-to-target in meters)
*4. Target elevation:	"_____ " (in feet MSL)
*5. Target description:	"_____ "
*6. Target location:	"_____ " (latitude/longitude or grid coordinates or offsets or visual)
7. Type mark:	"_____ " Code: " _____ " (W/P, laser, IR, beacon) (actual code)
*8. Location of friendlies:	"_____ "
Position marked by:	"_____ "
9. Egress:	"_____ "
Remarks (As appropriate):	"_____ " (threats, restrictions, danger dose, attack clearance, SEAD, abort codes, hazards)
NOTE: For AC-130 employment, lines 5, 6, and 8 are mandatory briefing items. Remarks should also include detailed threat description, marking method of friendly locations (including magnetic bearing and distance in meters from the friendly position to the target, if available), identifiable ground features, danger dose acceptance.	
Time on target (TOT):	"_____ "
OR	
Time to target (TTT):	"Stand by _____, plus _____, Hack."

Figure 8-1. CAS briefing form.

ATTACK HELICOPTER SUPPORT

Aircraft Weapon Systems

Table 8-2 lists weaponry for the AH-1 Cobra, which is no longer in the active Army inventory, and the AH-1W, a version of the Cobra employed by the US Marine Corps.

Table 8-2. Helicopter weapon systems.

WEAPON SYSTEM AIRCRAFT TYPE *	Hellfire or TOW **	Air-to-air missiles	2.75-inch (70-mm) rockets ***	Caliber .50 machine gun (rounds)	20-mm cannon (rounds)	30-mm chain gun (rounds)
AH-1 ****	8 TOW		76		750	
AH-1W ****	8 TOW or 8 Hellfire	2 Sidewinder	76		750	
AH-64A *****	16 Hellfire		76			1,200
AH-64D *****	16 Hellfire/ Hellfire II	4 Stinger	76			1,200
OH-58D **** *****	4 Hellfire	4 Stinger	14	500		
WEAPONS RANGE	Hellfire 8 km max TOW 3,750 m max	5+ km max	8 km max	2 km max	2 km max	4 km max

Marking/Identification Techniques

The methods used to identify and mark targets and friendly positions are limited only by the creativity of the ground forces and aircrews. Ground and air commanders should use Table 8-3 as a reference, but they need not limit themselves only to these methods. In any situation, marking methods must be adapted to the conditions prevalent at the time. Positive air-to-ground communications are also essential in coordinating and authenticating marking procedures.

ST 3-20.983**Table 8-3. Target and friendly marking methods.**

METHOD	DAY/ NIGHT	ASSETS	FRIENDLY MARKS	TARGET MARKS
SMOKE	Day/night	All	Good	Good
REMARKS: Easily identifiable. May compromise friendly position, obscure target, or warn of fire support employment. Structures may make placement difficult.				
SMOKE (IR)	Day/night	All/ NVD at night	Good	Good
REMARKS: Easily identifiable. May compromise friendly position, obscure target, or warn of fire support employment. Structures may make placement difficult. Night marking is greatly enhanced using IR reflective smoke.				
GROUND BURST ILLUMINATION	Day/night	All	N/A	Good
REMARKS: Easily identified. May wash out NVDs.				
SIGNAL MIRROR	Day	All	Good	N/A
REMARKS: Avoids compromise of friendly location. Dependent on weather and available light and may be lost in reflections from other reflective surfaces (such as windshields, windows, or water).				
SPOTLIGHT	Night	All	Good	Marginal
REMARKS: Highly visible to all. Compromises friendly position and warns of fire support employment. Effectiveness dependent on degree of urban lighting.				
IR SPOTLIGHT	Night	All NVDs	Good	Marginal
REMARKS: Visible to all with NVDs. Less likely to compromise than overt light. Effectiveness dependent on degree of urban lighting.				
IR LASER POINTER (below .4 watts)	Night	All NVDs	Good	Marginal
REMARKS: Effectiveness dependent on degree of urban lighting.				

Table 8-3. Target and friendly marking methods (continued).

METHOD	DAY/ NIGHT	ASSETS	FRIENDLY MARKS	TARGET MARKS
IR LASER POINTER (below .4 watts)	Night	All NVDs	Good	Marginal
REMARKS: Less affected by ambient light and weather conditions. Highly effective under all but the most highly lit or worst weather conditions. IZLID-2 is the current example.				
VISUAL LASER	Night	All	Good	Marginal
REMARKS: Highly visible to all. Risk of compromise is high. Effectiveness dependent on degree of urban lighting.				
LASER DESIGNATOR	Day/night	PGM- or LST- equipped	N/A	Good
REMARKS: Highly effective with PGM. Because of very restrictive laser acquisition cone, requires line of sight to target. May require precoordination of laser codes.				
TRACERS	Day/night	All	N/A	Marginal
REMARKS: May compromise position. May be difficult to distinguish marking rounds from other gunfire. During daytime use, may be more effective when used to kick up dust surrounding target.				
ELECTRONIC BEACON	Day/night	See remarks	Excellent	Good
REMARKS: Ideal friendly marking device for AC-130 and some USAF fixed-wing aircraft (not compatible with Navy or Marine aircraft). Least impeded by urban terrain. Can be used as a TRP for target identification. Coordination with aircrews essential to ensure equipment and training compatibility.				
STROBE (OVERT)	Night	All	Marginal	N/A
REMARKS: Visible by all. Effectiveness dependent on degree of urban lighting.				
STROBE (IR)	Night	All NVDs	Good	N/A
REMARKS: Visible to all NVDs. Effectiveness dependent up degree of urban lighting. Coded strobes aid in acquisition.				

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Table 8-3. Target and friendly marking methods (continued).

METHOD	DAY/ NIGHT	ASSETS	FRIENDLY MARKS	TARGET MARKS
FLARE (OVERT)	Day/night	All	Good	N/A
REMARKS: Visible by all. Easily identified by aircrews.				
FLARE (IR)	Night	All NVDs	Good	N/A
REMARKS: Visible to all NVDs. Easily identified by aircrews.				
GLINT/IR PANEL	Night	All NVDs	Good	N/A
REMARKS: Not readily detectable by threat. Very effective except in highly lit areas.				
COMBAT IDENTIFICATION PANEL	Day/night	All FLIR	Good	N/A
REMARKS: Provides temperature contrast on vehicles or building. May be obscured by urban terrain.				
VS-17 PANEL	Day	All	Marginal	N/A
REMARKS: Only visible during daylight. Easily obscured by structures.				
CHEMICAL HEAT SOURCES	Day/night	All FLIR	Poor	N/A
REMARKS: Easily masked by urban structures and lost in thermal clutter. Difficult to acquire, but can be effective when used to contrast cold background or when ACFT indicates general location.				
SPINNING CHEM LIGHT (OVERT)	Night	All	Marginal	N/A
REMARKS: Provides unique signature. May be obscured by structures. Provides a distinct signature easily recognized. Effectiveness dependent on degree of urban lighting.				
SPINNING CHEM LIGHT (IR)	Night	All NVDs	Marginal	N/A
REMARKS: Provides unique signature. May be obscured by structures. Effectiveness dependent on degree of urban lighting.				

Air/Ground Coordination Procedures for Aviation Close Fires

Aviation Close Fires Request Procedures

The basic format for ACF requests, which can be adapted as necessary for preplanned and immediate missions, includes the following items:

- **Friendly location.** This is normally the position of the individual requesting ACF support.
- **Heading to target.** This is usually the magnetic (compass) heading, although a heading based on grid coordinates can be used if necessary.
- **Distance to target.** This is given in kilometers.
- **Target description.**
- **Target coordinates.**
- **Method of target designation or marking.**
- **Remarks.** This includes any additional information necessary to orient the attack team on the target or friendly forces.
- **Flight hazards.**
- **Restrictive fire control measures.**
- **Enemy threats.** This includes threat ADA positions and capabilities.
- **Clearance for fire authority.**

Coordination for Preplanned Aviation Close Fires

When employing preplanned ACF, the ground company commander and attack team leader meet at the holding area, face to face whenever possible, and plan the attack. This coordination must cover certain elements of the operation; Figure 8-2 illustrates a sample preplanned ACF checklist.

PREPLANNED AVIATION CLOSE FIRES CHECKLIST
<p>Areas to be covered in coordination for preplanned ACF include the following:</p> <ul style="list-style-type: none"> • Threat situation and target identification. This item details threat activity in the area of operations and identifies specific targets relative to the threat situation. • Friendly situation. This covers the locations of friendly positions, which ideally are identified on a map. The ground and air elements must agree on a method of visually marking these positions. • Engagement area and aircraft fighting positions. As necessary, the ground and air units must verify and/or define the engagement area. The attack team leader then establishes his unit's BPs or attack by fire/support by fire positions. • Ground maneuver mission/scheme of maneuver. The ground unit provides details of its scheme of maneuver, including the commander's intent and a description of what is expected to be the decisive point on the battlefield. • Aerial scheme of maneuver. Based on the ground unit's scheme of maneuver, the attack team leader provides a supporting scheme of maneuver. • Fire coordination and fire restrictions. The ground and air units coordinate the fire control measures necessary to minimize the potential for fratricide. • Map graphics update. The ground commander and attack team leader develop key maneuver graphics as required to support or clarify the scheme of maneuver. They must ensure that all subordinate leaders update their maps with these graphics. • Method of target designation. The ground and air leaders coordinate the required method(s) to be used in designating targets. Refer to the discussion earlier in this section, including information on specific marking methods outlined in Table 8-6. • Request for aviation close fires. The final item in the coordination process is submission of the ACF request; the discussion of request procedures earlier in this section lists items to be covered.

Figure 8-2. Example preplanned aviation close fires checklist.

UTILITY AND CARGO HELICOPTER SUPPORT

Medical Evacuation

In conducting the evacuation operation, the reconnaissance platoon must accomplish the following tasks:

- Prepare a suitable PZ/LZ for the aircraft.
- Secure the PZ/LZ.
- Provide terminal guidance during the aircraft's approach to the PZ/LZ.

NOTE: Refer to Chapter 13, Reports, or to Chapter 16, First Aid, for required information in an air evacuation (Nine-line Air Evacuation Request Format).

Downed Aircraft

Reconnaissance platoons must be prepared to support downed aircraft operations. They may be part of the initial security and evacuation team, or the security force for a downed aircraft recovery team (DART). DART teams also normally consist of a qualified maintenance officer or maintenance test pilot, aircraft technical inspector, aircraft mechanics/rigging crew, and medical personnel. The following are considerations when approaching downed aircraft:

- Establish local security around the crash site.
- Avoid approaching aircraft if rotor blades are still turning.
- Avoid approaching from the rear of aircraft because of possible turning tail rotor.
- Approach aircraft with fire extinguisher, if available.
- Aircraft weapons systems may be active and could discharge rounds.

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- Attack helicopter pilot and copilot door glass have explosive material around edges.
- Remove injured personnel from aircraft and move a safe distance from aircraft.
- Neck and back injuries are common in downed aircraft. Because of this, consideration must be given to delaying movement of injured until medical support arrives.
- Evacuate wounded.
- DART team will either fix in place, conduct one-time flight, aerial recovery, ground recovery, or destruction.
- If destruction or abandonment is directed, efforts should be made to first remove or destroy all classified equipment and records, weapons, ammunition, communication equipment, loose equipment, unit property, data plate, and then mark for abandonment or further destruction.
- Refer to FM 3-04.513 [1-513] for information on DART operations.
- For further information on extracting wounded personnel from helicopters, refer to STP 17-19D1-SM.

Pickup Zone/Landing Zone Operations

Platoon Responsibilities

As the receiving unit in aerial resupply or another utility/cargo helicopter operation, the platoon will have the following responsibilities at the PZ/LZ:

- Select and control the PZ/LZ.
- Secure the PZ/LZ.

- Provide limited weather observations, such as wind velocity and direction, cloud cover, visibility, and approximate ceiling.
- Provide terminal guidance with appropriate advisories. This information covers such areas as obstacles, wire hazards, and the threat situation, including ADA threats.

Table 8-4 and Figures 8-3, 8-4, and 8-5 provide pertinent information regarding PZ/LZ operations.

Table 8-4. Distances between helicopter landing points.

AIRCRAFT/OPERATION TYPE	MINIMUM LANDING DISTANCE
DAYTIME OPERATIONS	
UH-60 and like aircraft	50 meters
CH-47 and like (or unknown) aircraft	100 meters
NIGHT OPERATIONS	
UH-60 and like aircraft	75 meters
CH-47 and like (or unknown) aircraft	150 meters
NOTE: Height of ground/rooftop obstructions must not exceed 18 inches.	

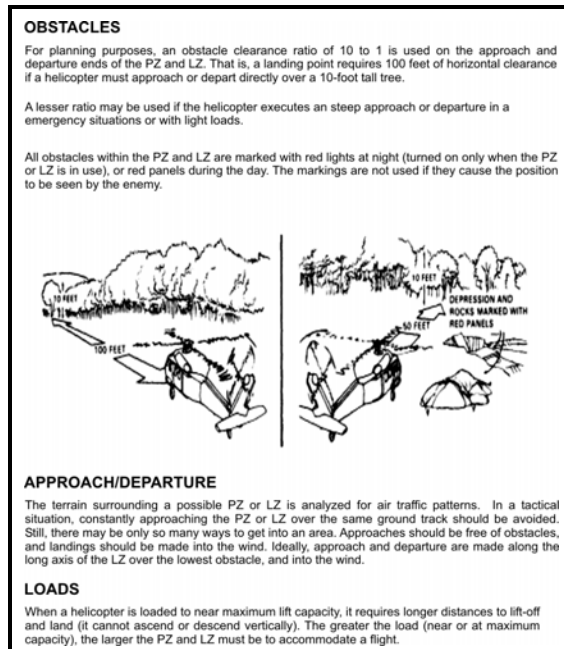


Figure 8-3. PZ/LZ planning considerations.

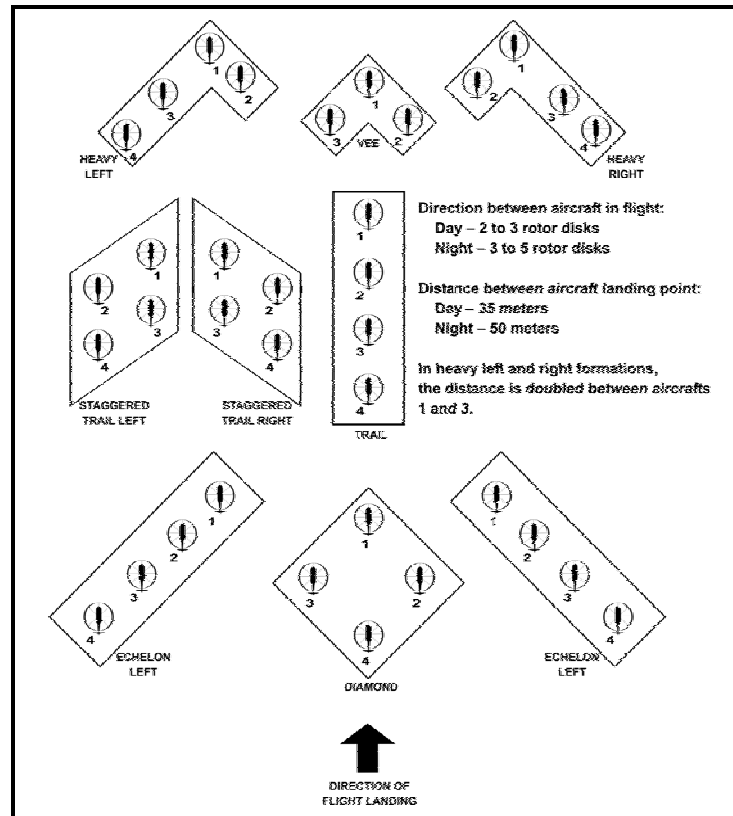


Figure 8-4. Aircraft landing formations.

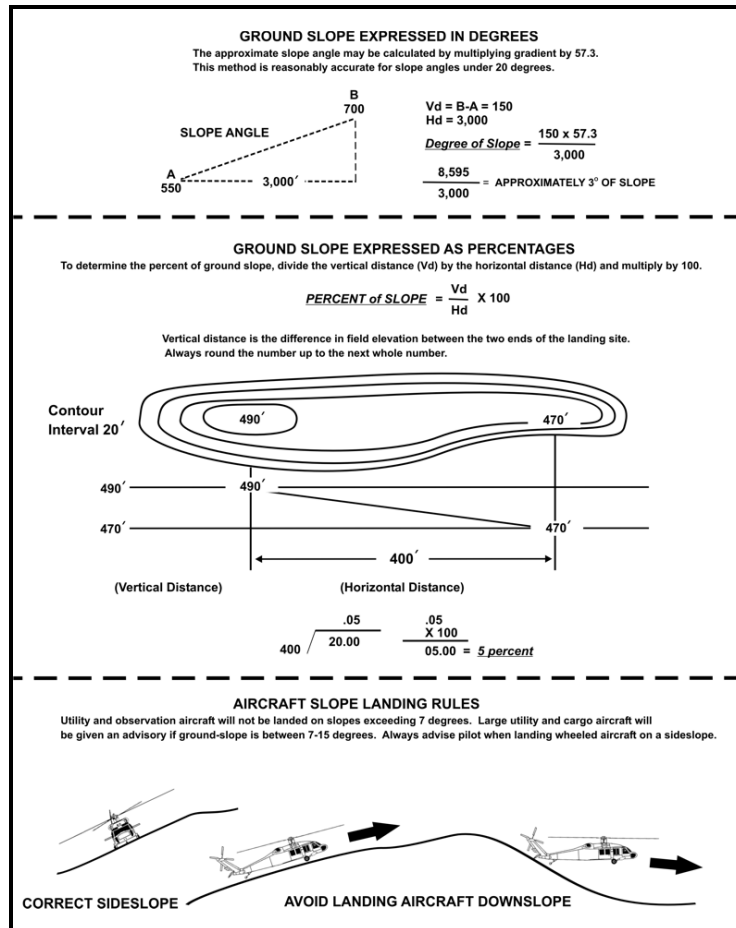
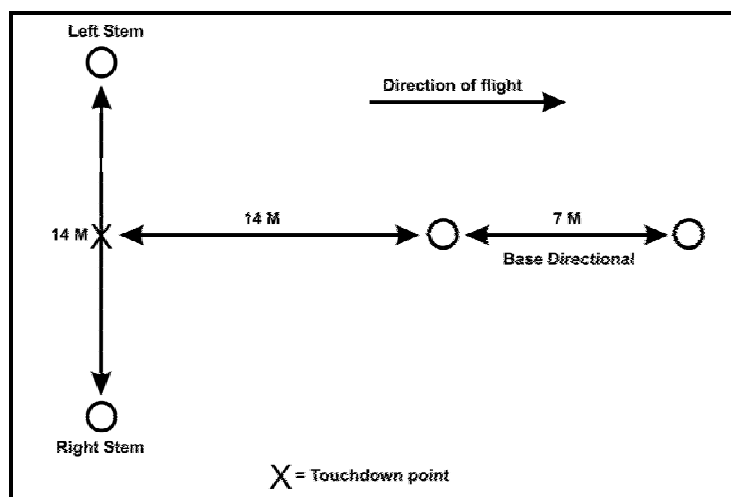


Figure 8-5. Calculating slope for landings.

Marking of the PZ/LZ

- **Daylight operations.** A ground guide will mark the PZ or LZ for the lead aircraft by holding an M16A1 rifle over his head, by displaying a folded VS-17 panel chest high, or by other identifiable means.
- **Night operations.** The code letter Y (actually, an inverted Y) is commonly used to mark the landing point of the lead aircraft at night (see Figure 8-6). The NATO T may also be used if the aircraft is approaching at, or above 500 feet above ground level (AGL) or, this marking was previously coordinated (see Figure 8-7).

**Figure 8-6. Inverted Y.**

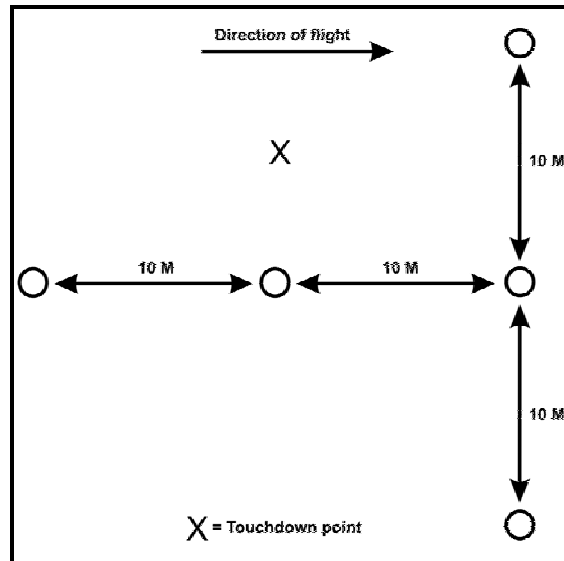


Figure 8-7. NATO T.

Actions at the PZ

UH-60 loading sequence (split chalk). The following considerations and procedures apply:

- The chalk leader (squad leader) initiates movement once the aircraft has landed.
- The far side and near side groups move to the aircraft in file, with the chalk leader always leading the near side group (see Figure 8-8).

- The chalk leader should take the following actions:
 - Ensure that all personnel know which aircraft and which position to load.
 - Ensure that all personnel wear or carry rucksacks on the aircraft.
 - Notify the crew chief when all chalk members are on board and are ready for liftoff.
- All personnel buckle up as soon as they are seated in their assigned seats. The chalk leader will always sit in the left front seat unless a platoon leader or company commander is on the same aircraft.
- The chalk leader hands the chalk card to the pilot and answers any questions the pilot may have, using the aircraft intercommunications (troop commander's) handset.

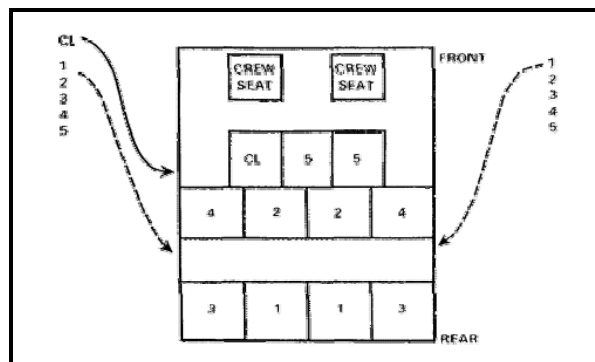


Figure 8-8. UH-60 loading diagram (split chalk).

UH-60 loading sequence (whole chalk). The following considerations and procedures apply:

- The chalk leader (squad leader) initiates movement once the aircraft has landed.

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- The far side and near side groups move to the aircraft in file, with the No. 1 man leading the load to the appropriate side (see Figure 8-9).

NOTE: The far side group will always move around to the front of the aircraft.

- The chalk leader stops at the near side of the aircraft to ensure that the near side group loads properly; then he moves around the front of the aircraft to the far side and checks the other half of the chalk.
- All personnel buckle up as soon as they are seated in the correct seats.
- The chalk leader hands the chalk card to the pilot and answers any questions the pilot may have, using the aircraft intercommunications (troop commander's) handset.

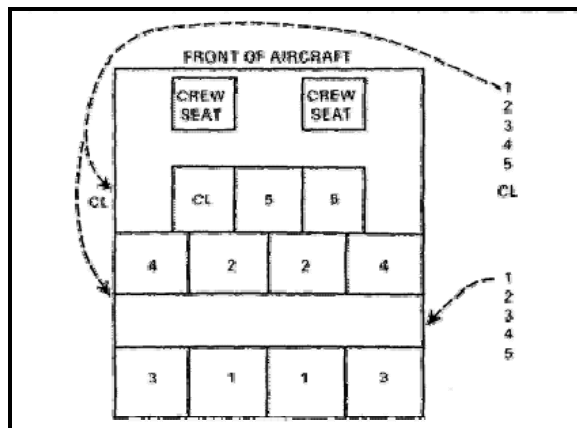


Figure 8-9. UH-60 loading diagram (whole chalk).

CH-47 configurations. Figure 8-10 illustrates how to configure the space inside a CH-47 helicopter based on its load.

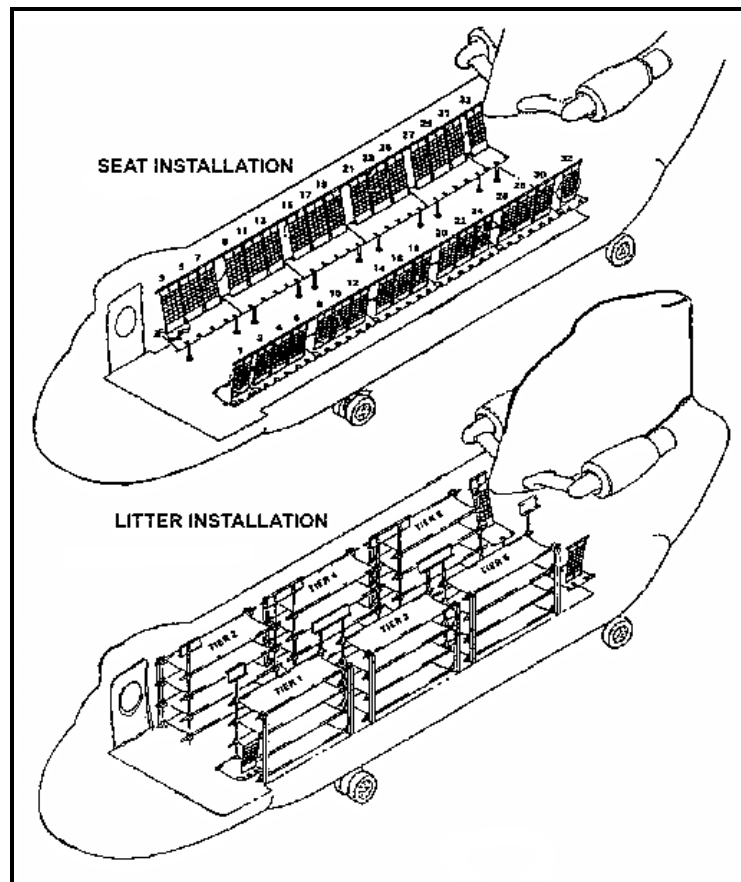


Figure 8-10. CH-47 seat and litter installation.

Actions at the LZ

Unloading. Unloading of the aircraft does not begin until directed by the crew chief or pilot. The following actions occur:

- Once an aircraft lands, personnel unbuckle their seatbelts and exit as quickly as possible with all equipment.
- Prior to leaving the aircraft, the chalk leader obtains the landing direction from the pilot (if it was not determined during the approach into the LZ). This will aid in orientation to the LZ, particularly at night.
- Individuals move 15 to 20 meters out from the side of the aircraft and assume the prone position, facing away from the aircraft with weapons at the ready, until the aircraft has departed the LZ (see Figure 8-11).

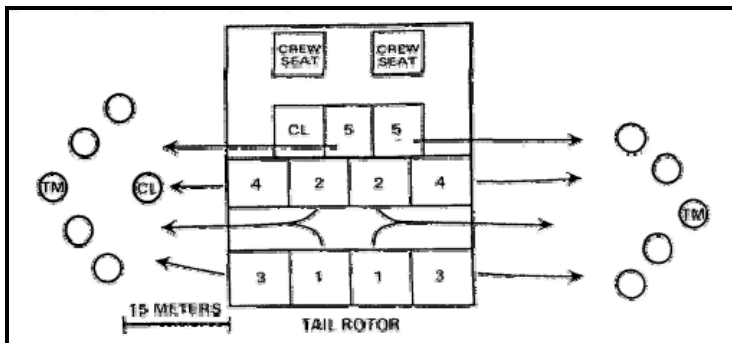


Figure 8-11. UH-60 unloading diagram.

Immediate actions on a hot LZ. If the decision is made to use a hot LZ or if contact is made upon landing, troops quickly dismount and move 15 to 20 meters away from the aircraft. They immediately return enemy fire to allow the aircraft to depart. The following actions occur:

- If the contact is similar to a far ambush, troops fire and maneuver off the LZ to the closest location offering cover and concealment.
- If troops are engaged from nearby enemy positions, they treat it as a near ambush by immediately returning fire. Soldiers who consider themselves in the kill zone may assault the enemy positions or attempt to get out of the kill zone. Soldiers not in the kill zone provide supporting fire to facilitate movement of troops in the kill zone.
- The squad or platoon leader calls for fire support, if available.
- Once friendly elements disengage from the enemy force, the squad or platoon leader moves the unit to a covered and concealed position, accounts for personnel and equipment, and assesses the situation as to whether or not the unit can continue the mission.

Chalk assembly on a cold LZ. After the aircraft is unloaded, the chalk leader (squad leader) moves the chalk to its predetermined locations using the traveling overwatch movement technique. Once at the concealed assembly point, the chalk leader makes a quick count of personnel and equipment and then proceeds with the mission.

HELICOPTER SPECIFICATIONS

Observation helicopter specifications are illustrated in Figures 8-12 and 8-13.

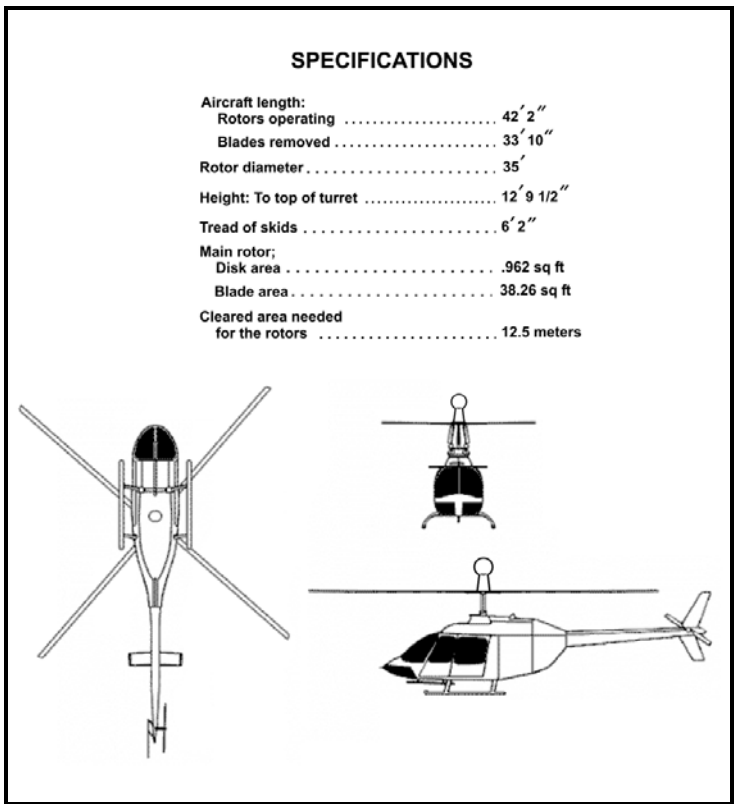


Figure 8-12. OH-58D (Kiowa).

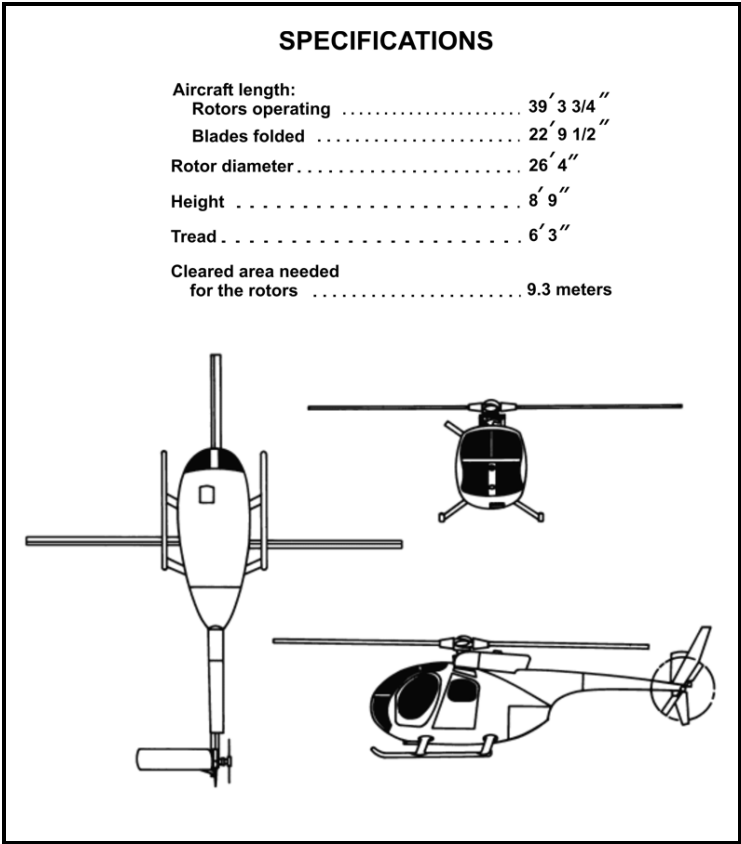


Figure 8-13. OH-6A (Cayuse).

Attack helicopter specifications are illustrated in Figures 8-14 and 8-15.

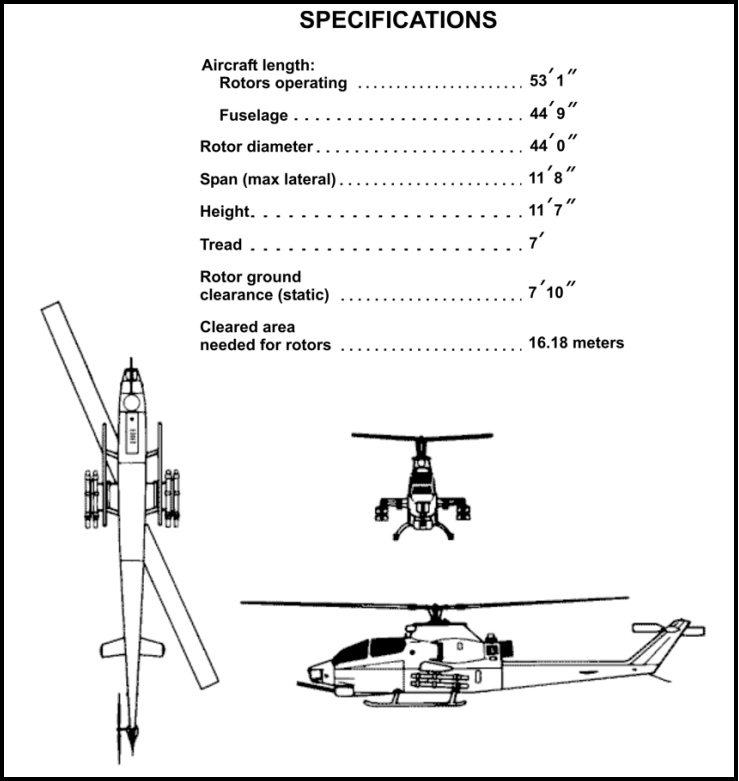


Figure 8-14. AH-1S (Cobra).

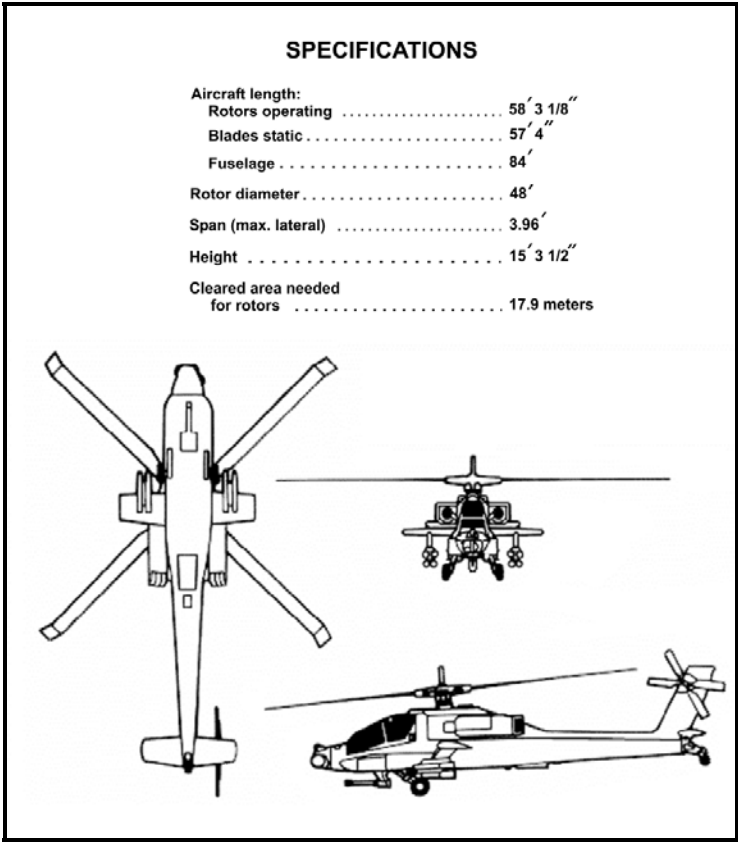


Figure 8-15. AH-64A (Apache).

Utility helicopter specifications are illustrated in Figures 8-16 and 8-17.

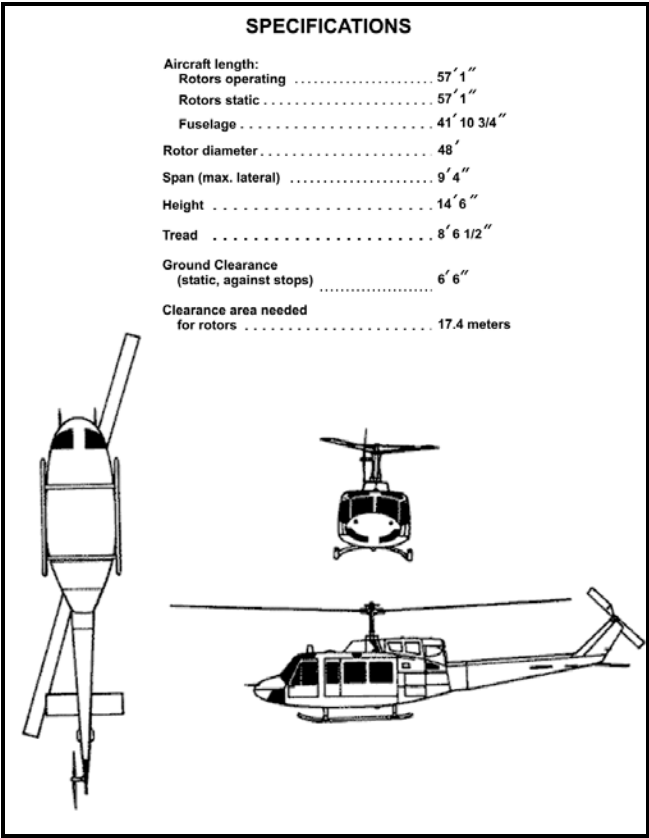


Figure 8-16. UH-1H (Iroquois).

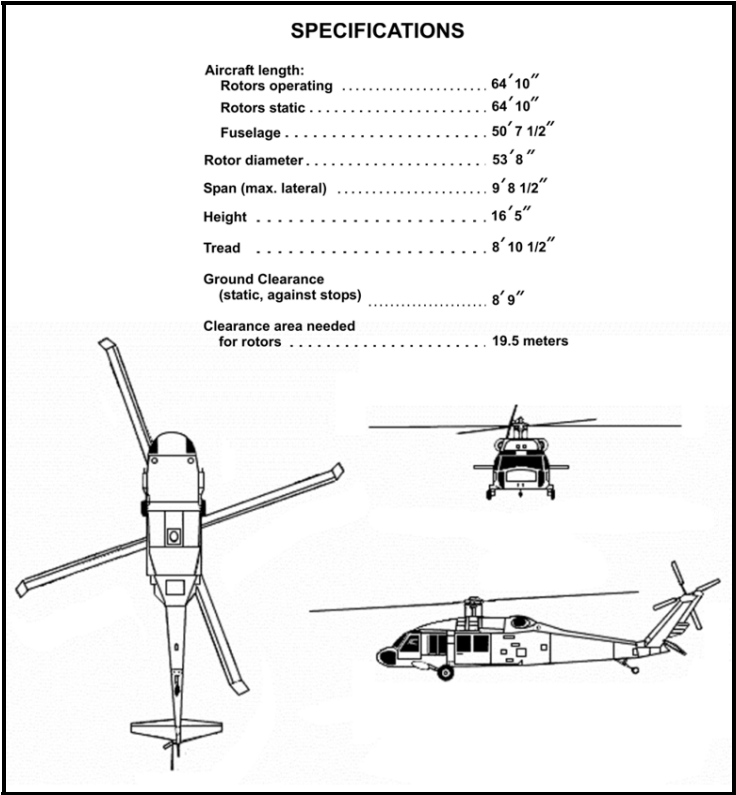


Figure 8-17. UH60A (Black Hawk).

Cargo helicopter specifications are illustrated in Figure 8-18.

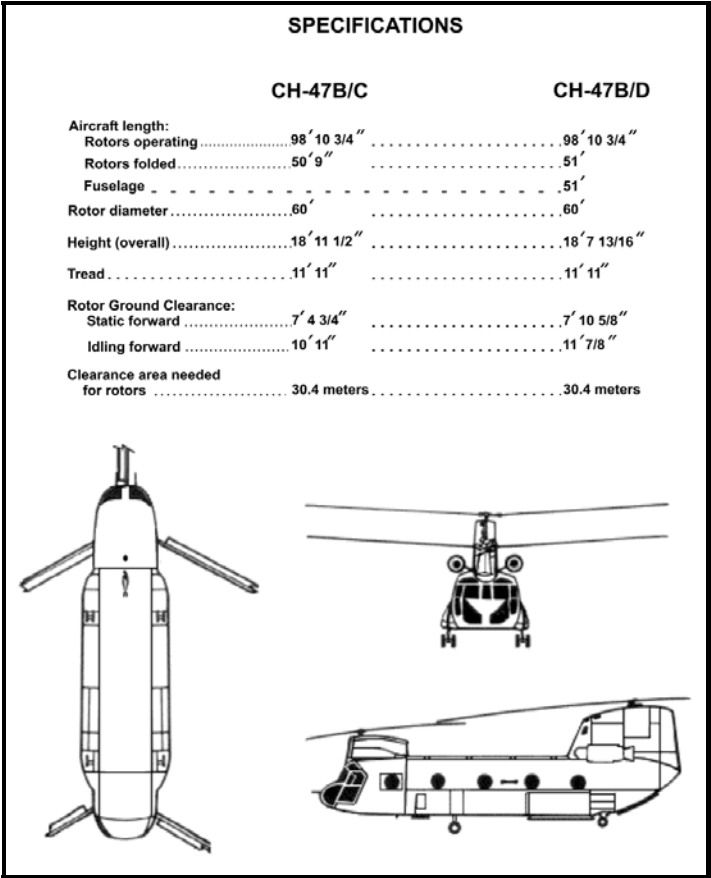


Figure 8-18. CH-47B/C and B/C (Chinook).

Chapter 9

MOUNTED MOVEMENT

Effectively employed, these guidelines can help scouts to see the threat first and observe him undetected.

- Use terrain for cover and concealment.
- Use caution at danger areas.
- Dismount vehicles.
- Reduce vehicle-related signatures.

PLATOON FORMATIONS

There are six mounted reconnaissance platoon formations: line, vee, column, staggered column, coil, and herringbone. Formations are intended to be flexible. They can be modified to fit the situation, terrain, and combat losses; they do not have exact geometric dimensions and design. (**NOTE:** The following formation examples use the four-vehicle recce platoon.)

Line Formation

This formation (Figure 9-1) can be used regardless of the platoon organization and is applicable to most reconnaissance platoon missions. It allows maximum reconnaissance forward.

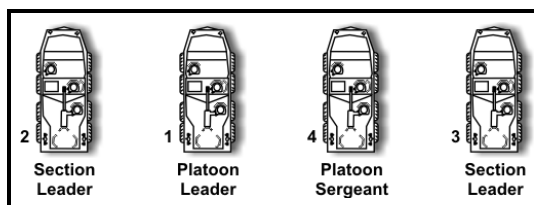


Figure 9-1. Platoon line formation.

Vee Formation

The vee formation uses the two-section organization (Figure 9-2). The platoon maintains relative positioning based on terrain and combat losses.

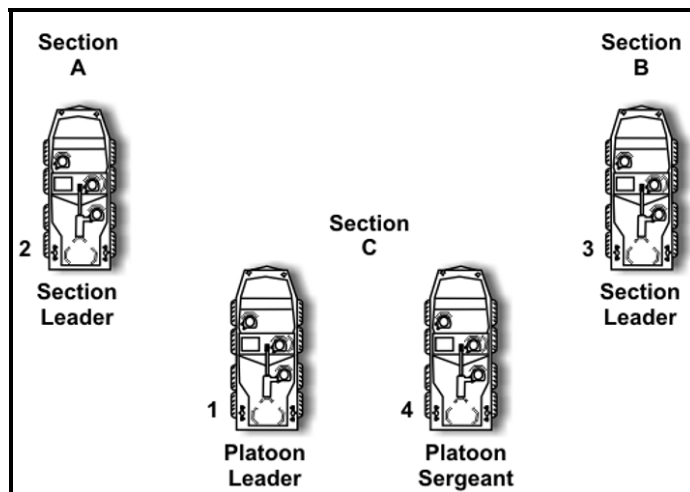


Figure 9-2. Platoon vee formation.

Column Formation and Staggered Column Formation

The platoon uses the column formation when speed is essential as it moves on a designated route (Figure 9-3). The order of march in the column may vary based on METT-TC considerations.

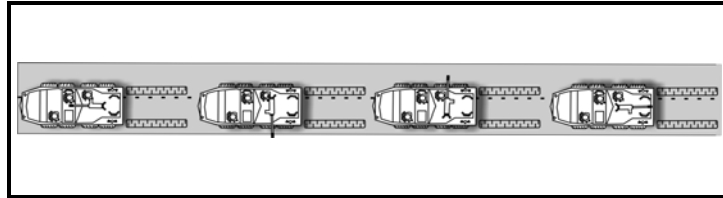


Figure 9-3. Platoon column formation.

The staggered column is used for rapid movement across open terrain (Figure 9-4).

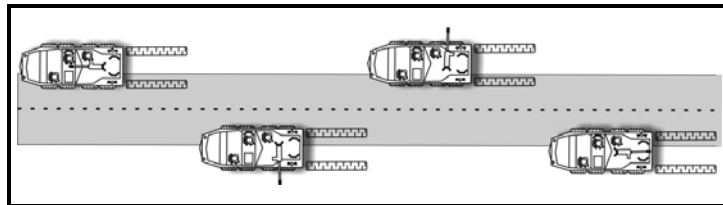


Figure 9-4. Platoon staggered column formation.

Coil Formation

The platoon coil is used to provide all-around security during halts (Figure 9-5). The coil is always executed from the column or staggered column, with the lead vehicle occupying the 12 o'clock position. Vehicles are usually positioned 100 to 150 meters apart.

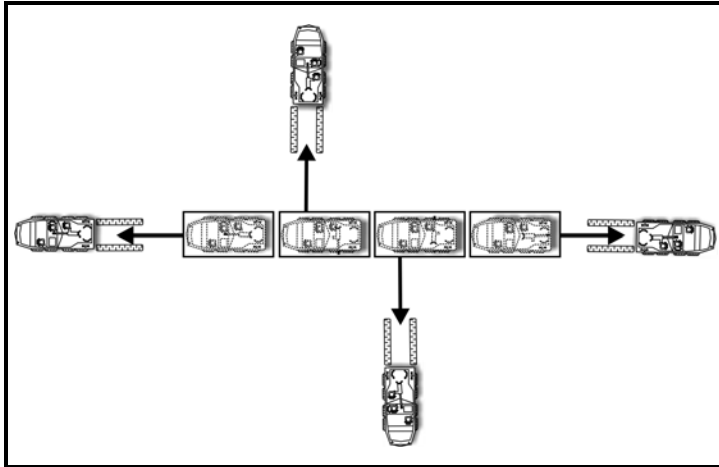


Figure 9-5. Example platoon coil formation.

Herringbone Formation

The herringbone is used to provide 360-degree security during a temporary halt from a march column (Figure 9-6).

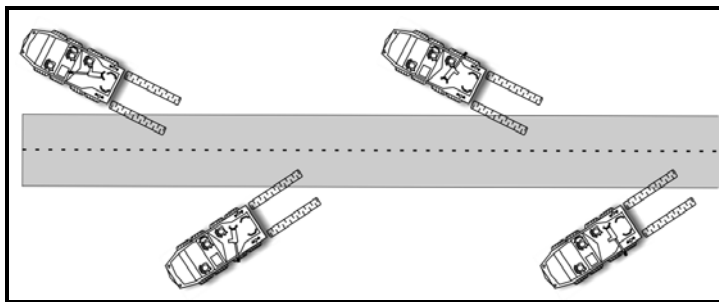


Figure 9-6. Platoon herringbone formation.

MOVEMENT TECHNIQUES

Tactical Considerations

In conducting either mounted or dismounted movement on the battlefield, the reconnaissance platoon uses three movement techniques: traveling, traveling overwatch, and bounding overwatch. The decision of which technique to use is based in large part on the likelihood of threat contact; in general, this can be summarized as whether contact is not likely (traveling), possible (traveling overwatch), or expected (bounding overwatch). Terrain considerations may also affect the choice of movement technique.

Execution

Traveling

In this technique, the lead and trail elements move together as a unit (Figure 9-7). It is the fastest but least secure movement technique. It is used when speed is important and threat contact is not likely. Movement is continuous, and interval and dispersion are maintained between squads as terrain and weather permit.

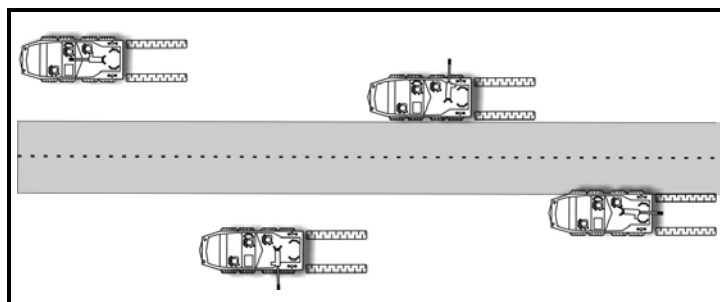


Figure 9-7. Recce platoon using traveling technique and staggered column formation.

Traveling Overwatch

Traveling overwatch is used when contact is possible but speed is desirable (Figure 9-8). The lead element moves continuously along covered and concealed routes that afford the best available protection from possible threat observation and direct fire. The trail element moves at variable speeds, providing continuous overwatch. It normally maintains visual contact with the lead element and may stop periodically for better observation. The trail element remains close enough to provide immediate suppressive fire and to maneuver for support. It must, however, be far enough to the rear to avoid contact in case the lead element is engaged by an enemy force.

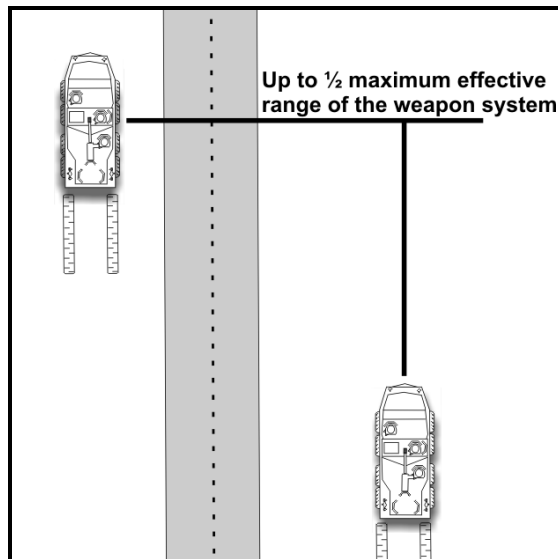


Figure 9-8. Section using traveling overwatch technique and wedge formation.

Bounding Overwatch

Employed when threat contact is expected, bounding overwatch is the most deliberate and secure movement technique (Figure 9-9). It provides for immediate direct fire suppression on a threat force that engages the bounding element with direct fire. (**NOTE:** When sufficient time is available, bounding overwatch should always be used regardless of the likelihood of threat contact.)

In bounding overwatch, one element is always stationary to provide overwatch. The trail element first occupies a covered and concealed position from which it can overwatch the lead element. Upon completing its movement (bound), the lead element then occupies a similar position and provides overwatch as the trail element bounds forward to its next overwatch position. Bounding overwatch can be executed using one of the following bounding methods:

- **Alternate bounds.** In this method, the trail element advances past the lead element to the next overwatch position. This is usually more rapid than successive bounds.
- **Successive bounds.** In successive bounding, the trail element moves to an overwatch position that is approximately abreast of the lead element. This method is easier to control and more secure than alternate bounding, but it is slower.

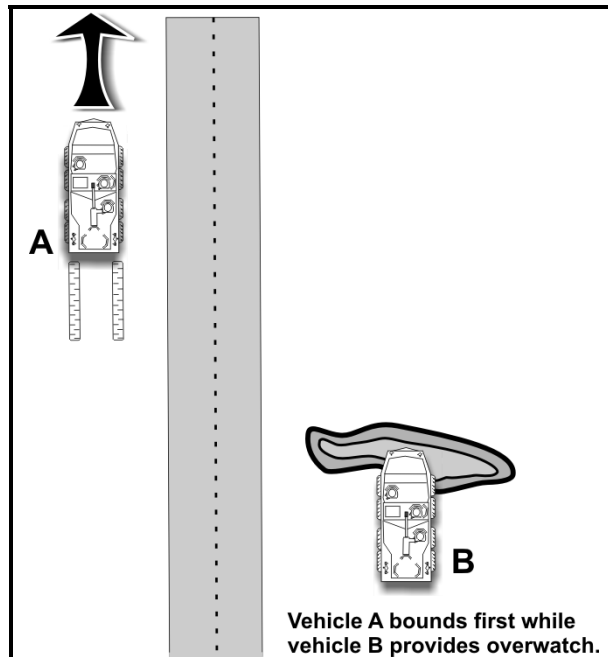


Figure 9-9. Section using bounding overwatch technique.

Chapter 10

ACTIONS ON CONTACT

The ideal way for the platoon to make contact is by means of reports from other ISR assets (such as UAVs or GSR) or with assets, such as LRAS3, prior to being detected by the threat force. FBCB2 will allow immediate dissemination of this information. The platoon leader can then evaluate and develop the situation out of contact. Based on this evaluation and further guidance from higher, he can maneuver the platoon out of contact and make contact either on his own terms or as directed by the commander.

THE EIGHT FORMS OF CONTACT

In all types of operations, contact occurs when an individual soldier, squad, or section of the platoon encounters any situation that requires an active or passive response to the threat. These situations may entail one or more of the following forms of contact:

- Visual contact (friendly elements may or may not be observed by the threat).
- Physical contact (direct fire) with a threat force.
- Indirect fire contact.
- Contact with obstacles of threat or unknown origin.
- Contact with threat or unknown aircraft.
- Situations involving NBC conditions.
- Situations involving electronic warfare tactics.
- Situations involving nonlethal elements, such as civilians.

THE FOUR STEPS OF ACTIONS ON CONTACT

Step 1 – Deploy and Report

The section or squad that makes initial visual contact with the threat deploys to covered terrain that affords good observation and fields of fire. If the scouts receive fire from the threat, they return fire, but only with the intent of breaking direct fire contact.

The scout or element in contact sends a contact report to the platoon leader and follows as soon as possible with a spot report using the SALUTE format (size, activity, location, unit identification, time, and equipment). If the scout or element in contact is unable to report or cannot report quickly, another squad in the section must report.

Step 2 – Evaluate and Develop the Situation

The scouts next concentrate on defining what they are up against. If they have not been detected by the threat and time is available, the scouts reconnoiter the threat position, emphasizing stealth, dismounted reconnaissance, and use of such assets as GSR and UAVs.

Step 3 – Choose and Recommend a COA and Maneuver the Force

Once the element in contact has developed the situation and the platoon leader has enough information to make a decision, he selects a COA. He ensures the COA is within the capabilities of the platoon, that it allows the scouts to continue the reconnaissance as quickly as possible, and that it supports the commander's concept of the operation. Once he decides on a COA, he recommends it to his commander, providing information on how the platoon COA will affect the next higher echelon's situation.

- **Disengage from threat contact.** As a general rule, the platoon, section, or squad should disengage from the threat as early in the contact as possible. This will allow for continuation of the mission and reduce the chance of any loss of combat power.
- **Break contact and bypass.** This COA may be selected when the platoon does not have the resources to leave an element in contact and still continue to accomplish its priority reconnaissance tasks. It may also be selected when the platoon has made contact with a threat force that cannot adversely affect the mission of the platoon's higher headquarters. Because breaking contact is a violation of reconnaissance fundamentals, the platoon leader must be sure that his higher headquarters is informed of and approves this COA.
- **Maintain contact and bypass.** This COA is appropriate when a threat force, based on its current disposition, is not in a position to influence the platoon's higher commander. An element (normally a section or squad) will be left to maintain contact while the rest of the platoon continues the reconnaissance mission.
- **Maintain contact to support a hasty attack.** This COA is appropriate when the platoon discovers threat elements the higher commander wants to destroy, but which the scouts cannot destroy, either because they lack sufficient combat power or because they have other tasks to perform. In this situation, the platoon maintains contact by leaving a section or squad in contact. The rest of the platoon continues on to establish far-side security, monitor any changes in the threat situation, and support the hasty attack by a friendly unit.
- **Attack an inferior force.** If the scouts are permitted to attack a threat, they should only attack lightly armored or

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unarmored reconnaissance vehicles, such as motorcycles or Soviet-style BRDMs and BTRs. They should not engage more heavily armored vehicles except in self-defense.

- **Establish a hasty defense.** The platoon will establish a hasty defense if it cannot bypass the threat, all the sections and/or squads are fixed or suppressed, and the platoon no longer has the ability to move forward. A hasty defense will also be used when the threat executes a hasty attack. (**NOTE:** Without the use of indirect fires in this situation, the platoon will fail.)
- **Conduct reconnaissance handover.** The platoon leader will attempt to hand over responsibility for the threat element. He does this for several tactical reasons: to continue operations as directed, to regain use of all his elements, or to pass reconnaissance responsibility to another friendly element. An example of this is a BRT platoon handing over a threat element to a task force reconnaissance platoon to maintain contact
- **Conduct battle handover.** This COA is applicable when a reconnaissance platoon hands over responsibility for a threat force to a friendly combat element. An example of battle handover is a task force reconnaissance platoon handing over a threat element to a tank company team for destruction.

Step 4 – Execute the COA

The platoon leader updates his spot report to the commander with any new information and then recommends a COA to the commander. The commander approves or disapproves the recommended COA based on how it will affect the parent unit's mission.

NOTE: Refer to Chapter 5, Dismounted Operations, for dismounted actions on contact.

Chapter 11

NAVIGATION

COMPASS AND ODOMETER METHOD

This method of navigation entails use of a dismounted compass and the vehicle's odometer (see Figure 11-1). The platoon should use the following steps:

- Divide the route or operation into legs or parts, each with a unique direction and distance and a checkpoint at both ends.
- Measure the map distance of each leg or part.
- Determine the magnetic azimuth of each leg or part.
- Develop a chart listing the legs or parts, azimuths, and distances. Write a description of each leg or part.
- For each leg or part, on vehicles with stabilized weapon systems, move the gun tube to the direction of the magnetic azimuth. Maintain turret stabilization at all times; do not traverse the turret except at the start of the next leg or part.
- Use the odometer to measure the distance traveled for each leg or part.
- Review the written description of the route to help prevent navigational errors.

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LEG/PART	AZIMUTH	DISTANCE	DESCRIPTION OF ROUTE TRAVELED
AA BLUE to SP	180°	2.5 km	From AA BLUE, travel downhill to the SP, a three-way, hardtop intersection.
SP to RP	90°	5.5 km	At the SP, turn east and travel on a flat hardtop road for about 4 km. The road becomes uphill as you approach the four-way intersection (RP). A downhill grade on the azimuth will mean the RP has been passed.
RP to PP1	183°	6.3 km	At the RP, turn south and travel downhill for 6.3 km, linking up with the XO at PP1. The PP is at the foot of a bridge within sight of two houses.
PP1 to 12	92°	7.4 km	At PP1, turn east, cross the bridge, and travel a flat, cross-country stretch for 7.4 km until you reach three houses (12). Reaching an uphill grade or a hardtop road along the same azimuth will mean 12 has been passed.
12 to 5	60°	5.5 km	From 12, travel along on a 60° azimuth uphill for about 5.5 km, crossing a dirt road and a hardtop road. At hill (5), tanks will be oriented on a 90° azimuth.

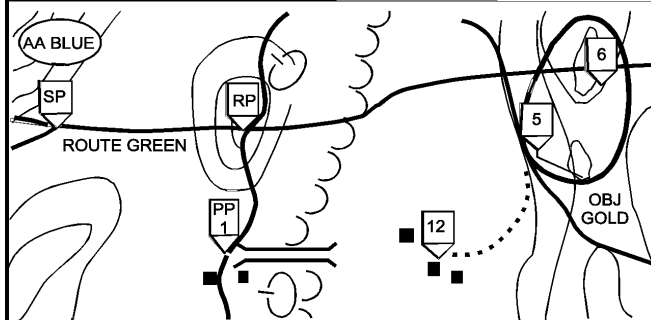


Figure 11-1. Route chart for compass and odometer navigation method.

GLOBAL POSITIONING SYSTEM

Most GPS navigation readings are based on waypoints, the known positions entered into the system's memory. The platoon leader identifies points along the route or at the destination and designates them as waypoints. Once waypoints are entered in the GPS, the device can display information such as distance and direction from point to point.

NOTE: The GPS should not be used as the only means of navigation.

SHIFT FROM A KNOWN POINT

The known point is usually a previously distributed graphic control measure, such as a checkpoint or a target reference point (TRP). Referencing a location from a known point is done in kilometers. For example, 500 meters is given as "POINT FIVE," 1,000 meters as "ONE," and 3,500 meters as "THREE POINT FIVE." Cardinal directions are used. Shifts to the east or west are given first, followed by shifts to the north or south.

As an example, consider the following transmission: "RED SET FROM CHECKPOINT SEVEN — EAST ONE POINT EIGHT — NORTH ONE POINT SEVEN." This means "We (the Red element) are set at a position 1,800 meters east and 1,700 meters north from checkpoint 7." Figure 11-2 illustrates this example.

NOTE: Many units routinely use the grid index reference system (GIRS) or the terrain index reference system (TIRS) to make shifts from a known point. GIRS is the most accurate method of shifting from a known point to report

locations (both friendly and threat); it uses intersections of four grid squares as the known points. TIRS identifies locations based on terrain points previously designated on an overlay; it is the preferred method for shifting or adjusting the unit's orientation to control combat operations.

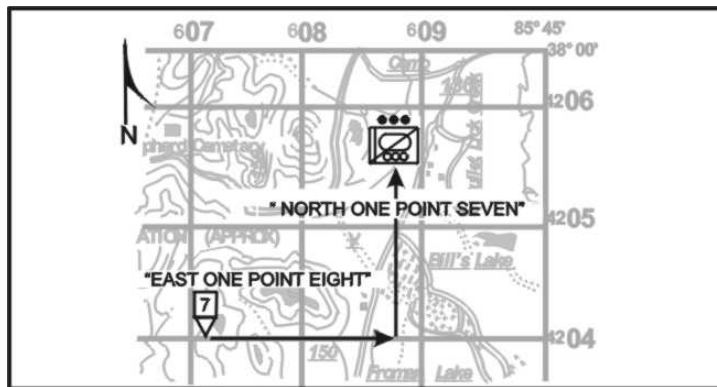


Figure 11-2. Example of shifting from a known point.

MILITARY MAP COLORS

Black. Indicates cultural (man-made) features such as buildings and roads, surveyed spot elevations, and all labels.

Red-Brown. The colors red and brown are combined to identify cultural features, all relief features, non-surveyed spot elevations, and elevation, such as contour lines on red-light readable maps.

Blue. Identifies hydrography or water features such as lakes, swamps, rivers, and drainage.

Green. Identifies vegetation with military significance, such as woods, orchards, and vineyards.

Brown. Identifies all relief features and elevation, such as contours on older edition maps, and cultivated land on red-light readable maps.

Red. Classifies cultural features, such as populated areas, main roads, and boundaries, on older maps.

Other. Occasionally other colors may be used to show special information. These are indicated in the marginal information as a rule.

DECLINATION DIAGRAM

Declination is the angular difference between any two norths. If you have a map and a compass, the one of most interest to you will be between magnetic and grid north. The declination diagram (Figure 11-3) shows the angular relationship, represented by prongs, among grid, magnetic, and true norths.

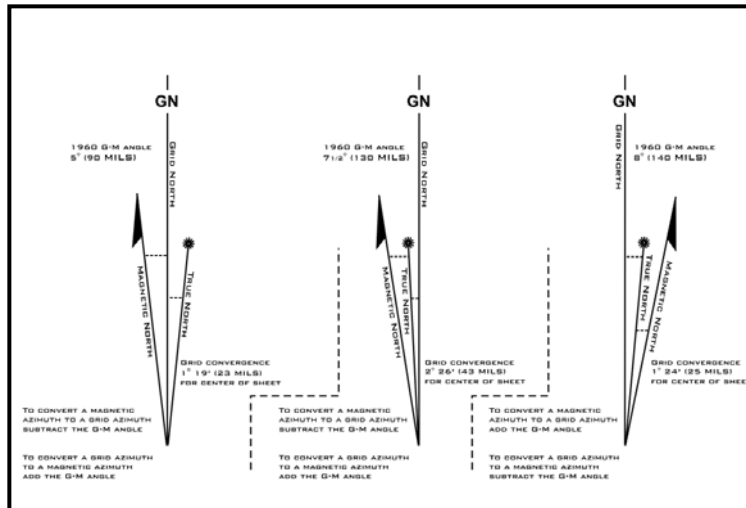


Figure 11-3. Declination diagrams.

INTERSECTION

Intersection is the location of an unknown point by successively occupying at least two (preferably three) known positions on the ground and then map sighting on the unknown location (Figure 11-4).

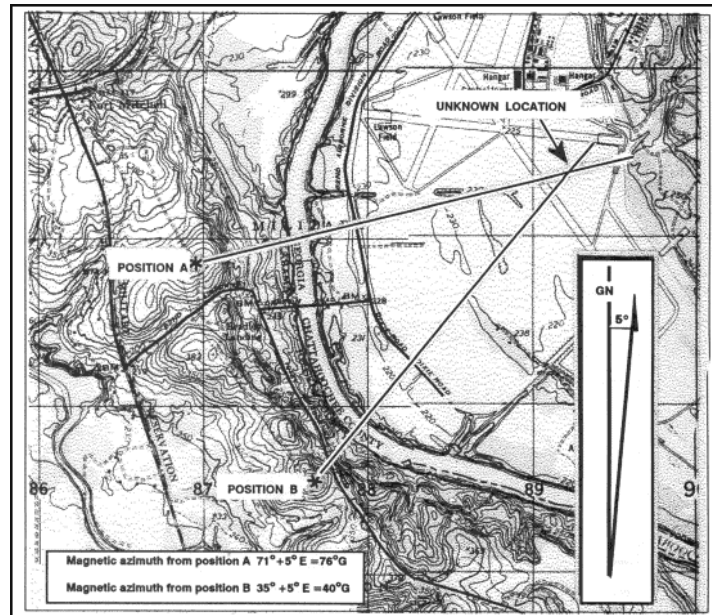


Figure 11-4. Intersection, using map and compass.

RESECTION

Resection is the method of locating one's position on a map by determining the grid azimuth to at least two well-defined locations that can be pinpointed on the map (Figure 11-5).

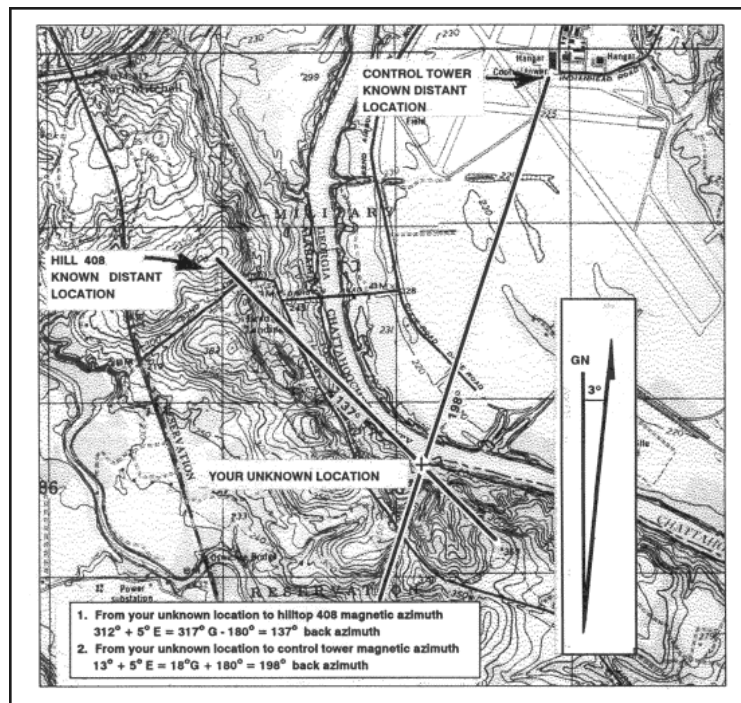


Figure 11-5. Resection with map and compass.

MODIFIED RESECTION

Modified resection is the method of locating one's position on the map when the person is located on a linear feature on the ground, such as a road, canal, or stream (Figure 11-6).

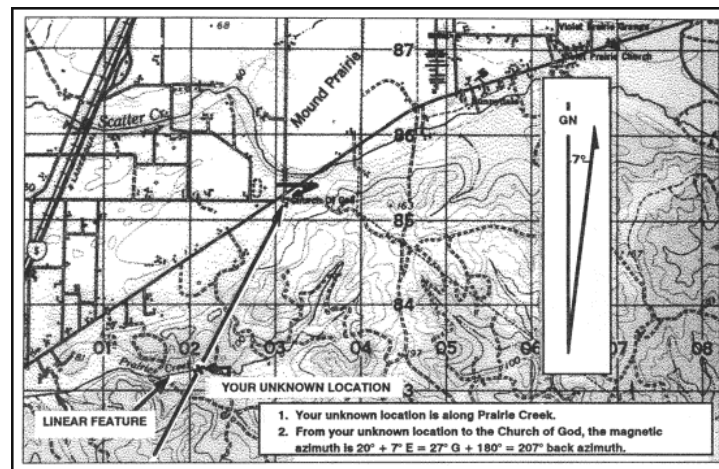


Figure 11-6. Modified resection.

POLAR COORDINATES

A method of locating or plotting an unknown position from a known point by giving a direction and a distance along that direction line is called polar coordinates. Using the laser range finder to determine the range enhances your accuracy in determining the unknown position's location (Figure 11-7).

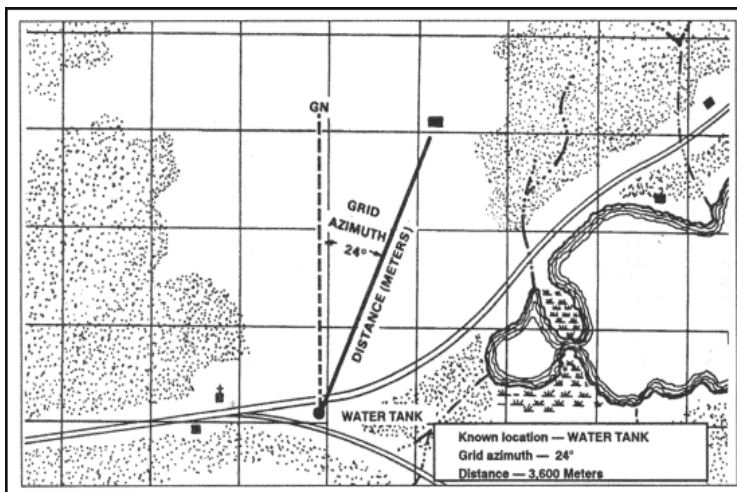


Figure 11-7. Polar plot.

OTHER METHODS

In a survival situation, an individual may well find himself without a compass. The ability to determine directions may enable an individual to navigate back to his unit or to a friendly sanctuary. He can determine cardinal directions (north, south, east, and west) by—

- Remembering the sunrise/moonrise is in the east and sunset/moonset is in the west.
- Using stick and shadow method to determine a true north-south line (Figure 11-8).
- Using a wristwatch to determine general cardinal direction (Figure 11-9).
 - Digital watches—visualize a clock face on the watch.
 - Northern Hemisphere: Point hour hand at the sun. South is halfway between the hour hand and 12 o'clock position.
 - Southern Hemisphere: Point the 12 o'clock position on your watch at the sun. North is halfway between the 12 o'clock position and the hour hand.

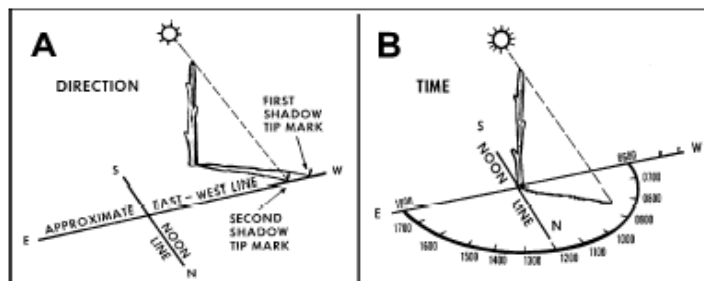


Figure 11-8. Stick and shadow method.

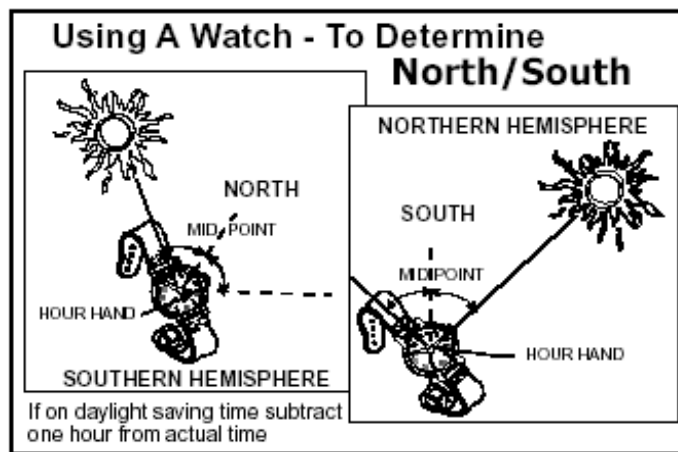


Figure 11-9. Direction using a watch.

- Using the stars (Figure 11-10), the—
 - North Star is used to locate true north-south line.
 - Southern Cross is used to locate true south-north line.

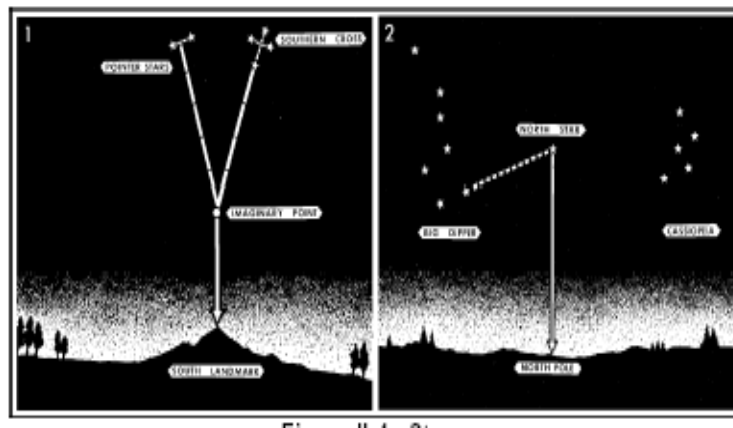


Figure 11-10. Stars.

NIGHT NAVIGATION

Setting a compass for night navigation is illustrated in Figure 11-11.

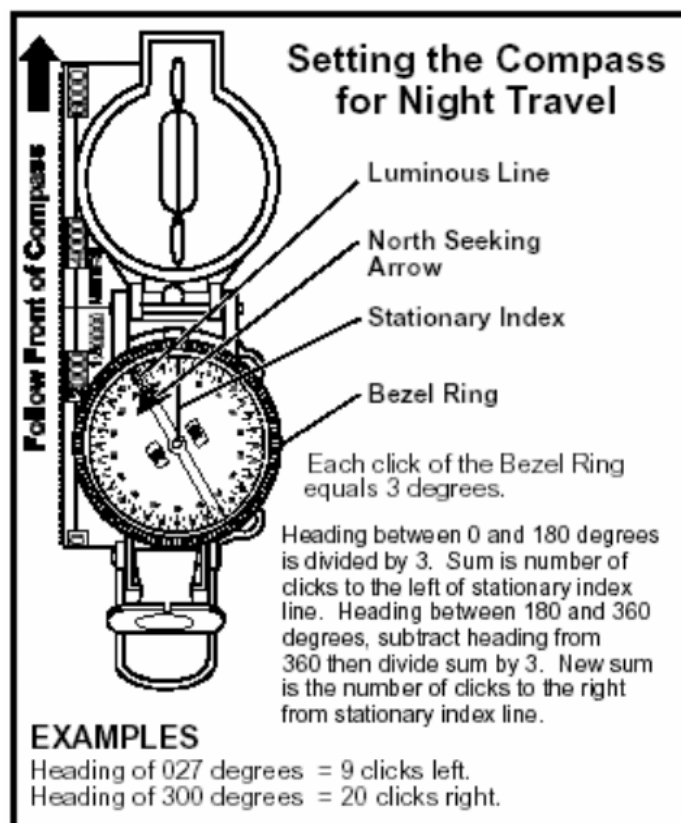


Figure 11-11. Compass night navigation setup.

Chapter 12

COMMUNICATIONS

READINESS CONDITIONS (REDCON)

REDCON levels allow quick responses to changing situations and ensure completion of necessary work and rest plans. Figure 12-1 summarizes operational considerations for each REDCON level.

REDCON LEVEL	ACTIONS – Readiness conditions (REDCON)
REDCON-1 Full alert; unit ready to move and fight	<ul style="list-style-type: none"> • All equipment stowed; OPs pulled in. • All personnel alert and mounted on vehicles; weapons manned. • Engines started; platoon ready to move immediately. • All digital and FM links operational. <p>NOTE: The level of REDCON-1(-) is the same as REDCON-1 except vehicles are not started.</p>
REDCON-2 Reduced alert; unit ready to move in 15 minutes	<ul style="list-style-type: none"> • All equipment stowed; OPs pulled in (may still have local dismounted security). • All personnel alert and weapons manned. • All digital and FM links operational. • Status reports submitted IAW company/troop SOP.
REDCON-3 Reduced alert; unit ready to move in 30 minutes	<ul style="list-style-type: none"> • 50 percent of platoon executes work/rest plans. • Remainder of platoon executes security plan, to include manning OPs, weapons, and monitor radios/phones.
REDCON-4 Minimum alert; unit ready to move in 1 hour	<ul style="list-style-type: none"> • OPs manned; one man per platoon designated to monitor radio and one man on weapons. • Remainder of platoon executes work/rest plans. • Digital/FM links maintained.

Figure 12-1. REDCON level actions.

FBCB2 START-UP PROCEDURES

Figure 12-2 lists steps the tank crew takes in powering up the FBCB2 system.

STEP	ACTION – FBCB2 start-up procedures
1	Power up the PLGR ; ensure unobstructed line of sight (LOS) for PLGR to acquire satellites.
2	Press the DOWN arrow button until FOM is displayed.
3	Turn EPLRS power to ON + audible . Ensure no red lights are lit.
4	Verify that the URO Radio Set ID is the same as the FBCB2 setting.
5	Turn vehicular amplifier adapter CB1 toggle switch to ON .
6	Set radio function switch to Squelch On and verify settings.
7	Verify that the COMSEC Crypto key is loaded.
8	Verify that the Net ID is the same as the FBCB2 setting.
9	Verify the PCKT mode by pressing 4 , then 7 until PCKT is displayed.
10	Set the circuit breaker/switch on the PU to ON .
11	Press Display Unit Power button for 4 seconds and release.
12	Select Cancel Timeout .
13	Check the color of the GPS and Router dialog boxes to determine your status. These should be green; if they are red or yellow, a problem exists that must be addressed.
14	Select DONE on the GPS and Router when initialization is complete.
15	Select the START button.
16	Select the LOGIN option.
17	Type in your password .
18	Select the Continue button.
19	Check the Unit/Role in the Function Bar ; if the setting is wrong, perform the Configure Role Setup procedure before proceeding.
20	Select OPS button on the Session Manager function bar.

Figure 12-2. FBCB2 power-up steps.

ATTACHMENTS

When additional assets are attached to the platoon, the platoon leader takes the following actions:

- Provide guides/liaison personnel as needed to assist incoming elements upon their arrival in the platoon position.
- Brief leaders of the incoming elements on these subjects:
 - Platoon organization and current status.
 - Overlays and graphic control measures (digitally equipped elements can use FBCB2).
 - OPORD/FRAGOs/WARNOs.
 - SOP(s).
- To ensure effective support, assist the incoming element leaders in their planning process.

COMMUNICATIONS SECURITY

Communications security incorporates the following considerations:

- Make maximum use of hand-and-arm signals and face-to-face communications.
- Limit a stationary element's radio transmissions from 8 to 10 seconds; the proword "BREAK" is used. Transmit long messages and FRAGOs while on the move.
- Immediately report loss of SOI by secure means to the commander or executive officer (XO).
- Require authentication under these conditions:
 - When opening, entering, or leaving the net.
 - When challenged by a net control station (NCS).
 - When lifting or imposing radio listening silence.

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- When receiving suspicious instructions from an unknown source.
 - When a change of mission is ordered.
 - When permission to unmask is given.
- Always transmit reports and information about the unit or other friendly elements by secure means.
- Use the vehicle number on the hot loop when using wire communications.

Electronic warfare considerations include the following:

- Report interference or imitative deception in meaconing, intrusion, jamming, and interference (MIJI) format.
- On FM radios, use the lowest power necessary to get the call through.
- If jamming is suspected, take these actions:
 - Disconnect the antenna to determine if interference is coming from within the vehicle, then reconnect the antenna.
 - Shift to maximum power.
 - Continue operations.
 - Attempt to relocate or use terrain masking.
 - Change frequency only if authorized.

These considerations apply during tactical operations:

- The platoon leader and PSG will ensure that communications are maintained with the NCS and/or commander at all times using whatever means are necessary.
- FM frequencies and call signs will normally be changed daily as required by SOL.

RADIO NET ORGANIZATION AND RESPONSIBILITY

Recce, BRT, and Cavalry Platoon Nets and Responsibilities

The following radio nets are employed and/or monitored by leaders in Recce, BRT, and Cavalry Platoons (see Figure 12-3).

NOTE: The platoon leader may assign section or squad leaders to monitor the nets of units operating to the front and/or rear of the platoon. These would become the alternate nets monitored by the leaders. This technique supports situational awareness and facilitates reconnaissance or battle handover.

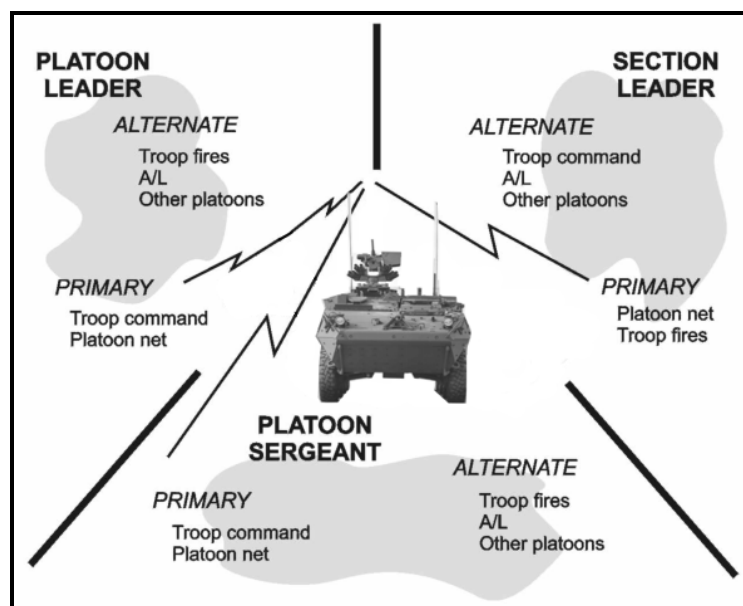


Figure 12-3. Reconnaissance platoon nets.

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- **Platoon.** This net is used to conduct all platoon operations.
- **Troop command.** This net is used to maneuver the reconnaissance or Recce Troop as well as to process most routine reports not sent on FBCB2.
- **Troop fires.** Many troops operate a troop fires net to send calls for fire to the troop FSO or directly to the troop mortars.
- **Administrative/logistics.** The PSG will usually monitor the A/L net for the platoon, but the platoon leader must be familiar with it as well. The PSG uses it as required to send routine A/L reports. This net is also used to coordinate resupply operations and evacuation of casualties.

Battalion Reconnaissance Platoon Nets

The following are the radio nets employed and/or monitored by leaders in the Battalion Reconnaissance Platoon (see Figure 12-4).

NOTE: The platoon leader may assign section or squad leaders to monitor the nets of units operating to the front and/or rear of the platoon. These would become the alternate nets monitored by the leaders. This technique supports situational awareness and facilitates reconnaissance or battle handover.

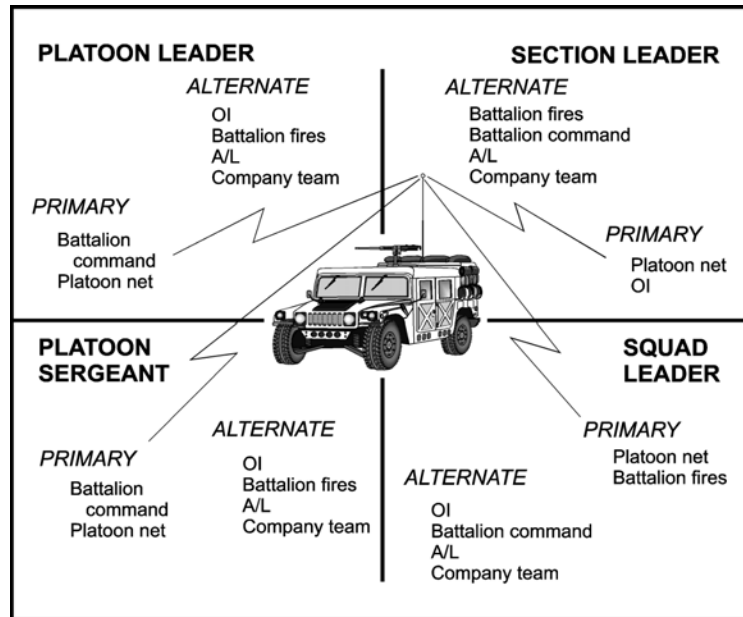


Figure 12-4. Battalion reconnaissance platoon nets.

- **Platoon.** This net is used to conduct all platoon operations.
- **Battalion command.** The battalion command net is the primary net used to direct the tactical operations of the battalion.
- **Operations and intelligence.** Many battalions operate an OI net to handle R&S reports and thus make the command net more efficient. This net can also be used to control the R&S effort before the battalion main body begins tactical operations.

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- **Battalion fires.** Because rapidly coordinating for and adjusting indirect fires is vital in all R&S operations, the fires net is extremely critical to the success of scout platoon operations.
- **Company team.** All scouts must have the ability to rapidly change to any of the battalion company team nets. These nets are used to conduct coordination for handing over enemy targets once the scouts make contact.
- **Administrative/logistics.** The scout PSG will usually monitor the A/L net for the platoon, but the platoon leader must be familiar with it as well. The PSG uses it as required to send routine A/L reports. This net is also used to coordinate resupply operations and evacuation of casualties.
- **Retrans.** When the scout platoon operates at extended distances from the battalion TOC, it may use the battalion retrans net to facilitate effective communications between the scout platoon leader and the TOC.

WIRE ANTENNAS

Emergency repair of a wire antenna may involve the repair or replacement of the wire used as the antenna or transmission line or the repair or replacement of the assembly used to support the antenna.

The radiating element (the actual antenna wire) should touch only the antenna terminal and should be physically separated from all other objects (other than the supporting insulator). Figure 12-5 shows various improvised insulators.

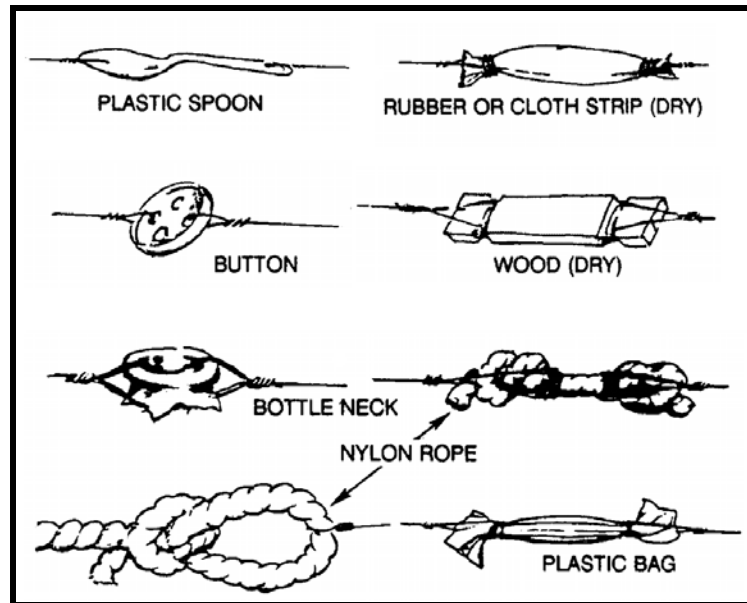


Figure 12-5. Improvised insulators.

FIELD-EXPEDIENT REPAIR ITEMS

The items listed in Table 12-1 may be valuable in field-expedient repairs.

Table 12-1. Example field-expedient repair items.

ORIGINAL ISSUE ITEM	FIELD-EXPEDIENT REPAIR ITEMS
Antenna wire	WD-1, barbed wire electrical wire, coaxial cable
Antenna mast	Tree, stick, lance pole, telephone pole
Coaxial cable	WD-1, electrical wire
Antenna guy rope	Wire, cloth belt
Guy stakes	Rocks, vehicles, trees, tent pins
Whip antenna	Wire, WD-1, coaxial cable
Pulleys	Wire, nylon rope
Insulators	Plastic rings, plastic spoons, plastic bags, wood, rope, glass/plastic bottles

FIELD-EXPEDIENT ANTENNAS

A vertical antenna may also be a wire supported by a tree or a wooden pole (see Figure 12-6). For short vertical antennas, the pole may be used without guy wires (if properly supported at the base). If the length of the vertical mast is not long enough to support the wire upright, it may be necessary to modify the connection at the top of the antenna (see Figure 12-7).

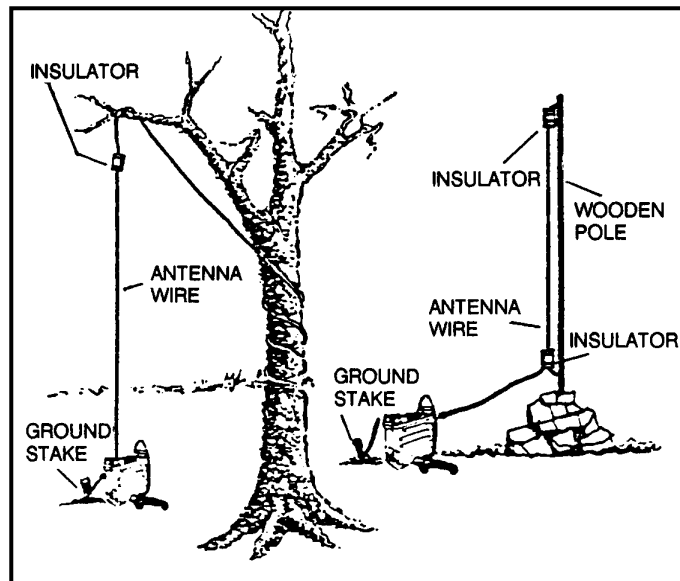


Figure 12-6. Field-expedient substitutes for support of vertical wire antennas.

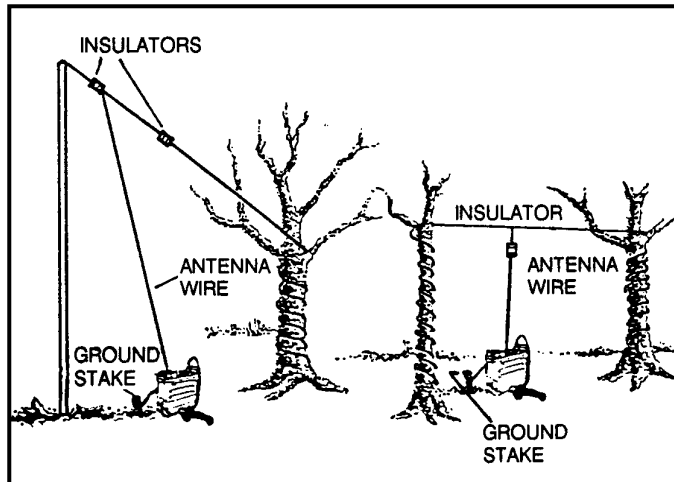


Figure 12-7. Modified support substitutes for vertical wire antennas (continued).

Chapter 13

REPORTS

ANALOG REPORTS

Contact and Blue reports (operations).

- Contact report.
- Blue 1 - Spot report (SPOTREP).
- Blue 2 - Situation report (SITREP).
- Blue 4 - Report for bridge, overpass, culvert, underpass, or tunnel (BRIDGEREP).
- Blue 5 - Report for ford, ferry, or other crossing site (CROSSREP).
- Blue 7 - Route reconnaissance report (ROUTEREP).
- Blue 9 - Obstacle report.
- Blue 10 - Bypass report.
- Blue 11 - Stand-to report (STANREP).

Green reports (intelligence).

- Green 2 - Sensitive items report (SENSEREP).
- Green 3 - Splash report.
- Green 4 - Patrol report.
- Green 5 - Meaoning, intrusion, jamming, and interference (MIJI) report.
- Green 6 - EPW/captured material report.

Yellow reports (logistics).

- Yellow 1 - Equipment status report (ESTAT).
- Yellow 1A - Battle loss spot report.
- Yellow 2 - Ammunition status report.
- Yellow 2A - Ammunition request.
- Yellow 3 - POL status report.
- Yellow 3A - POL request.

Red Reports (personnel).

- Red 2 - Personnel battle loss report.
- Red 3 - Medical evacuation request.

NBC reports.

- NBC-1 - Observer's initial report.
- NBC-3 - Immediate warning of expected contamination.
- NBC-4 - Report of radiation dose-rate measurement.
- NBC-5 - Report of areas of contamination.

Figure 13-1. Report formats.

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Contact Report

When Used

A contact report is issued immediately upon contact with a threat or unknown force in the area of operations. This alert, which can be very brief, takes priority over all other communications traffic. This report is primarily sent FM but if already in a hide position, and you have detected the enemy before he has detected you, and time permits, this initial report may be sent digitally for digitally equipped units.

Format

State "CONTACT," followed by a description of the threat or unknown force and the cardinal direction from the sender.

Example

"THIS IS YANKEE 23. CONTACT, TANK, NORTH, OUT."

Blue Reports (Operations)

Blue 1 – Spot Report (SPOTREP)

When Used. A SPOTREP is used when scouts observe any known or suspected threat activity, when they observe any characteristic of the area of operations likely to affect accomplishment of the mission, or when required by the OPORD. Always send threat information in the clear. A SPOTREP takes priority over all other routine radio traffic. The initial SPOTREP should follow no more than 1 minute after the contact report.

Format. State "SPOTREP" or "UPDATED SPOTREP," followed by pertinent information on these lines:

Line ALPHA: Observer or source (omit if it is the calling station; use call signs or description otherwise).

Line BRAVO: Activity or characteristic being observed. Use the SALUTE format:

- **Size:** The number of sighted personnel, vehicles, or other equipment.
- **Activity:** What the threat is doing.
- **Location:** Grid coordinates.
- **Unit:** Patches, signs, or markings.
- **Time:** Time the activity was observed.
- **Equipment:** Description or identification of all equipment associated with the activity.

Line CHARLIE: Actions you have taken and your recommendations. Actions usually involve conducting additional reconnaissance to determine the complete threat situation or recommending and executing a specific course of action.

Line DELTA: Self-authentication (if required).

NOTE: Report the center of mass of identical, closely grouped items. Otherwise, report multiple grid coordinates of traces (from _____ to _____).

Example. "YANKEE 27, THIS IS YANKEE 23. SPOTREP, OVER. ONE BRDM, STATIONARY, ORIENTED SOUTH AT GRID MS289546; 1725 HOURS. CONTINUING TO OBSERVE, OVER."

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Blue 2 – Situation Report (SITREP)

When Used. The SITREP is submitted by subordinate units to their higher headquarters to report their tactical situation and status. It is submitted daily at 0600 and 1800 hours, after significant events, or as otherwise requested by the platoon leader or commander.

Format. State "SITREP," followed by pertinent information on these lines:

Line 1: The as-of date-time group (DTG).

Line 2: Brief summary of threat activity, casualties inflicted, and prisoners captured.

Line 3: Friendly locations (encoded using control measures or TIRS points). The following can be listed:

- CP locations.
- First subelement's center of mass.
- Second subelement's center of mass.
- Third subelement's center of mass.
- Any additional elements as necessary.

Line 4: Combat vehicles operational. The following types of vehicles can be listed:

- Tanks.
- CFVs.
- APCs.
- ITVs.
- Mortar vehicles.
- AVLBs.
- HMMWVs.

Line 5: Defensive obstacles (encoded using codes, control measures, or TIR points). The following can be listed:

- Type and location of obstacles. Abbreviations can include MF (minefield), TD (tank ditch), AB (abatis), RC (road crater), and CW (concertina wire).
- Type and location of executed demolition targets.
- Type and location of reserved demolition targets.

Line 6: Personnel strength, classified using the following status levels:

- GREEN: full strength; 90% or more fit for duty.
- AMBER: reduced strength; 80 to 89% fit for duty.
- RED: reduced strength; 60 to 79% fit for duty; the unit is mission-capable.
- BLACK: reduced strength; 59% or less fit for duty.

Line 7: Classes III and V supplies available for combat vehicles. Status levels for ammunition and fuel are the same (GREEN, AMBER, RED, OR BLACK) as for personnel strength, with percentages referring to the amount of basic load level available. Refer to Line 6 of this report.

NOTE: If an item is reported as status level BLACK on lines 6 or 7, the appropriate yellow report (logistics) must follow.

Line 8: Summary of tactical intentions.

Example. “YANKEE 21, THIS IS YANKEE 02, SITREP, OVER. LINE 1: 062230. LINE 2: NEGATIVE CONTACT. LINE 3: VISIT 7. LINE 4B: 2. LINE 5: ABATIS, FROM X19 EAST ZERO POINT THREE NORTH ONE POINT SEVEN. LINE 6:

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GREEN. LINE 7A: GREEN. LINE 7B: AMBER. LINE 8: CONTINUING MISSION.”

Blue 4 – Report for Bridge, Overpass, Culvert, Underpass, or Tunnel (BRIDGEREP)

To send this report, state “BRIDGEREP,” followed by pertinent information on these lines:

Line ALPHA: Type and location (for a long tunnel, include both entrance and exit locations). Use either a TIRS point or grid coordinates.

Line BRAVO: Overall length.

Line CHARLIE: Width of roadway.

Line DELTA: Height restrictions.

Line ECHO: Length and number of spans.

Line FOXTROT: Computed classification.

Line GOLF: Bypass locations and conditions. Use a Blue 5 report if necessary.

Blue 5 – Report for Ford, Ferry, or Other Crossing Site (CROSSREP)

To send this report, state “CROSSREP,” followed by pertinent information on these lines:

Line ALPHA: Type and location, using either a TIRS point or grid coordinates.

Line BRAVO: Length of crossing in meters.

Line CHARLIE: Usable width.

Line DELTA: Current speed in meters per second.
Line ECHO: Maximum depth in meters.
Line FOXTROT: Bottom material and condition.
Line GOLF: Capacity classification of any existing ferry equipment.
Line HOTEL: Slope of entry bank.
Line INDIA: Slope of exit bank.
Line KILO: Other comments as necessary.

Blue 7 – Route Reconnaissance Report (ROUTEREP)

When Used. To report the results of a route reconnaissance, scouts should send an initial report at the SP. As a minimum, the initial report should be followed by updates at any obstructions, at each phase line, and whenever a route change becomes necessary. These update reports should include only the line(s) that have changed from the initial ROUTEREP.

Format. To send this report, state “ROUTEREP,” followed by pertinent information on these lines:

Line ALPHA: “From” location, reported using a control measure or TIRS point.

Line BRAVO: “To” location, reported using a control measure or TIRS point.

Line CHARLIE: Type of route, reported using the following designations:

- Highway, reported using the number “1.”
- Road, number “2.”

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- Trail, number “3.”
- Cross-country, number “4.”

Line DELTA: Classification of route. Check for height, width, and weight restrictions to determine the appropriate class, and report what vehicles the route is capable of handling using the following designations:

- All squadron/battalion vehicles (70 class minimum), reported using the number “1.”
- Tracked vehicles only, number “2.”
- CFVs only (35 class restriction), number “3.”

Line ECHO: Seasonal limitations of route based on weather-support capability, reported as follows:

- All-weather (usable year-round), reported using the letter “X.”
- Limited all-weather (use limited during bad weather), letter “Y.”
- Fair weather (may be impassable during bad weather), letter “Z.”

Line FOXTROT: Rate of movement the route will support, reported as follows:

- Fast, reported using the number “1.”
- Slow, number “2.”

Line GOLF: Location and type of any critical points (send the applicable report). Report the following obstructions in all cases: curves with a radius of 45 meters or less; uphill slopes with grades of 5 percent or greater; width restrictions of 6 meters or less for one-way traffic, 10 meters or less for two-way traffic; and overhead clearance of 4.3 meters or less.

Blue 9 – Obstacle Report

Report all pertinent information using the following format:

Line ALPHA: Type of obstacle or obstruction.

Line BRAVO: Location, using grid coordinates. For large, complex obstacles, send the coordinates of the ends and of all turn points.

Line CHARLIE: Dimensions and orientation.

Line DELTA: Composition.

Line ECHO: Threat weapons influencing obstacle.

Line FOXTROT: Observer's actions.

Blue 10 – Bypass Report

Report all pertinent information using the following format:

Line ALPHA: Observer or source.

Line BRAVO: Length; width; surface type; grade.

Line CHARLIE: Coordinates of "from" and "to" locations.

Line DELTA: Seasonal/weather limitations. Use letter designation (X, Y, or Z) as described for the Blue 7 report (ROUTEREP).

Line ECHO: Bypass markings.

Line FOXTROT: Observer's actions.

Blue 11 – Stand-to Report (STANREP)

When Used. The STANREP is sent to the platoon leader or TOC, as applicable, when stand-to is completed.

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Format. To send this report, state “STANREP,” followed by pertinent information on these lines:

Line ALPHA: Time stand-to was completed.

Line BRAVO: Weapons on hand and functional. Use the term “UP” for functional weapons on hand. Use "EXCEPTION" for weapons either not on hand or not functional.

Line CHARLIE: Sensitive and accountable items on hand. Use “UP” or “EXCEPTION” as applicable.

Line DELTA: Vehicles and radios on hand and functional. Use “UP” or “EXCEPTION” as applicable.

Line ECHO: Report the on-hand/functional status of any other equipment using “UP” or “EXCEPTION.”

NOTE: For lines B, C, D, and E, refer to the Yellow 1 report (ESTAT) for equipment line numbers.

Example. “BLACK 3, THIS IS RED 1; BLUE 11. LINE ALPHA: COMPLETE TIME 0600. LINE BRAVO: UP. LINE CHARLIE: ITEM 38, MISSING 1 EACH. LINE DELTA: RED 3 WILL NOT START.”

Green Reports (INTELLIGENCE)

Green 2 – Sensitive Items Report (SENSEREP)

When Used. This report is sent daily at 0600 and 1800 hours or at other prescribed times (before and after significant movement, after significant events, and after any consolidation or reorganization). Items covered include machine guns, personal weapons, night vision devices, binoculars, NBC equipment, CEOI materials, maps/graphics, and special equipment assigned to platoons for particular operations.

Format. To send this report, state “SENSEREP,” followed by pertinent information on these lines:

Line ALPHA: Reporting unit (use call sign).

Line CHARLIE: Results of sensitive items check. Use the term "UP" for on-hand/functional items. For missing items, report the line description and serial number and provide an explanation. Use additional lines from the Yellow 1 report.

Line ECHO: Initials of person sending report.

Examples. “THIS IS RED 1. SENSEREP. LINE ALPHA: RED. LINE CHARLIE: ALL 'UP.' LINE ECHO: RWS.”

(When sent over a wire net.) “THIS IS RED ONE WITH A SENSEREP. LINE ALPHA: ONE. LINE CHARLIE: MISSING ONE IM-93 DOSIMETER, NUMBER 64, SEARCH IN PROGRESS. LINE ECHO: TDB.”

Green 3 – Splash Report

When Used. The splash report is used to report downed or missing aircraft.

Format. To send this report, provide all pertinent information on these lines:

Line 1: Call sign.

Line 2: Aircraft data (type and status).

Line 3: Pilot status, reported as follows:

- Recovered/good condition.
- Recovered/WIA.
- Recovered/KIA.
- Unknown or captured.

Green 4 – Patrol Report

When Used. Information collected by combat units is normally submitted using SPOTREPs as events occur. The duration and activity of dismounted reconnaissance patrols make a debriefing desirable. In such cases, a debriefing report format helps ensure that the patrol reports all important information it has collected. The patrol report may be submitted by radio or wire when required.

Format. The following debriefing format can be used to ensure all pertinent information is provided in the patrol report.

Designation of patrol. Include these elements:

- To: _____
- From: _____
- Maps: _____

Size and composition of patrol.

Task.

Time of departure.

Time of return.

Routes (out and back).

Terrain. This includes a description of terrain by type (dry, swampy, jungle, thickly wooded, high brush, rocky), depth of ravines and draws, condition of bridges (type, size, and strength), and effect of terrain on tracked and wheeled vehicles.

Threat. This includes details of threat strength, disposition, defenses, equipment, weapons, attitude, morale, exact location, and movements. The report should include the time threat activity was observed and coordinates of the location where activity occurred.

Any map corrections.

Miscellaneous information. This includes pertinent details of NBC warfare, if applicable.

Results of encounters with the threat. This includes threat prisoners and casualties, captured documents and equipment, identification of threat elements, and threat disposition after the contact.

Condition of the patrol. This includes disposition arrangements for any dead or wounded.

Conclusions and recommendations. This includes the extent to which the mission was accomplished and any recommendations as to patrol equipment and tactics.

Additional remarks by the debriefer.

NOTE: The report should conclude with the name, rank/grade, and organization/unit of the patrol leader.

Green 5 – Meaconing, Intrusion, Jamming, and Interference (MIJI) Report

When Used. MIJI are forms of electronic warfare (EW). Whenever the reception of radio signals is hindered, confused, or prevented by any type of disruption, the radio operator first follows the unit SOP to confirm that the disruption is the result of an external signal. Upon confirmation, the operator is responsible for reporting the incident immediately to the troop/battalion TOC; the TOC will forward the report to the S2 and the signal officer. The MIJI report also covers incidents in which imitative deception is suspected (especially when instructions are received from a source that cannot be authenticated).

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Format. Report all pertinent information in this format:

Line 1: Unit identification.

Line 2: Type of interference.

Line 3: Location.

Line 4: “On” time (DTG interference started).

Line 5: “Off” time (DTG interference ended).

Line 6: Effects of interference, including operations or equipment affected.

Line 7: Frequency (or frequency range) of interference, if known.

Line 8: Narrative or additional information.

Line 9: Time (when required).

Line 10: Authentication.

Green 6 – EPW/Captured Material Report

When Used. Use this report only to inform the troop or battalion TOC of EPWs or captured material of immediate tactical value. Normally, EPWs and captured material are tagged immediately to show the place, time, and circumstances of capture. This ensures information of intelligence value is not lost during evacuation of the EPW or material.

Format for Reporting EPW Capture. Provide all pertinent information on the following lines (examples in parentheses):

Line 1: State “GREEN 6.”

Line 2: Item captured (state “EPW”).

Line 3: DTG of capture (“260845SEP83”).

Line 4: Place of capture, using grid coordinates (“NS 621434”).

Line 5: Capturing unit (appropriate call sign).

Line 6: Circumstances of capture, described as briefly as possible.

Format for Reporting Captured Material. Provide all pertinent information on the following lines (examples in parentheses):

Line 1: State “GREEN 6.”

Line 2: Item captured (state “MATERIAL”).

Line 3: Type of document or equipment (“CEOI”).

Line 4: DTG of capture (“160900JUN83”).

Line 5: Place of capture, using grid coordinates (“NE 824615”).

Line 6: Capturing unit (appropriate call sign).

Line 7: Circumstances of capture, described as briefly as possible.

NOTE: After sending the report to the company team or troop commander, provide disposition instructions or recommendations, if necessary.

Yellow Reports (LOGISTICS)

Yellow 1 – Equipment Status Report (ESTAT)

When Used. Each PSG sends this report by courier or FM radio to the troop/task force TOC between 1200 hours and 1300 hours daily. The information will be as of 1200 hours that same day.

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Format. Equipment status is recorded using one of these terms: operational, inoperative, or combat loss. Provide all pertinent information using the following categories and lines:

Weapons

- Line 1: Bayonet knife, with scabbard, for M16A2.
- Line 2: Pistol, 9-mm, automatic, M9.
- Line 3: Rifle, 5.56-mm, with equipment.
- Line 4: Launcher, grenade, 40-mm, single shot, rifle mounted, detachable, with equipment.
- Line 5: Machine gun, M2, caliber .50, heavy barrel (HB).
- Line 6: Machine gun, 7.62-mm, light flexible.
- Line 7: Squad automatic weapon, M249.
- Line 8: Grenade launcher, 40-mm, MK19.
- Line 9: Machine gun, 7.62-mm, fixed M24OC RH feed F/FVS.
- Line 10: Launcher, grenade, smoke, screening, RP M250.
- Line 11: Mortar, 4.2-inch, on mount.
- Line 12: Command launch unit, AAWS-M.

NOTE: Lines 13, 14, 15, and 16 are used as needed for additional weapons assigned to the platoon.

Vehicles and vehicle equipment

- Line 17: CFV, M3.
- Line 18: Carrier, 107-mm mortar, self-propelled (less mortar), M106.
- Line 19: Carrier, personnel, full-tracked, armored, M113.
- Line 20: HMMWV, M1025/M1026.
- Line 21: Tank, M1/M1A1/M1A2/M8-AGS.

NOTE: Lines 22, 23, and 24 are used as needed for additional vehicles and/or vehicle equipment assigned to the platoon.

NBC equipment

Line 25: Alarm, chemical agent, automatic, portable, for full-tracked APC and armored recovery vehicle (ARV).

Line 26: Alarm, chemical agent, automatic, portable, with power supply, for track, utility, 1/4-ton.

Line 27: Charger, radiac detector, PP-1570/PD.

Line 28: Mask, chemical-biological, multipurpose.

Line 29: Radiacmeter, IM-185/UD.

Line 30: Alarm, chemical agent, automatic, portable, manpack.

Line 31: Radiacmeter, IM-93/UD.

Line 32: Radiacmeter, IM-174/PD.

Line 33: Radiacmeter, AN/VDR-1.

NOTE: Lines 34, 35, and 36 are used as needed for additional NBC equipment assigned to the platoon.

Radios

Line 37: Radio set, AN/GRC-160.

Line 38: Radio set, AN/VRC-46.

Line 39: Radio set, AN/VRC-47.

Line 40: Radio set, AN/VRC-64.

Line 41: Radio set, AN/PRC-77.

Line 42: Radio set, AN/VRC-12.

Line 43: Secure set, AN/PRC-91.

Line 44: Secure set, AN/PRC-126.

Line 45: Secure set, KY-57.

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NOTE: Lines 46, 47, and 48 are used as needed for additional radios assigned to the platoon.

Miscellaneous equipment

- Line 49: Demolition set, explosive, initiating, nonelectric.
- Line 50: Detecting set, mine, portable, metallic and non-metallic.
- Line 51: Detecting set, mine, portable, metallic, AN/PSS-11.
- Line 52: Night vision goggles, AN/PVS-7B.
- Line 53: Night vision sight, crew-served weapon, AN/TVS-5.
- Line 54: Night vision sight, individual-served weapon, AN/PVS-4.
- Line 55: Platoon early warning system (PEWS), AN/TRS-2(V).
- Line 56: Binoculars, modular construction, military scale reticle, 7x50-mm, with equipment.
- Line 57: Telescope, straight, military.
- Line 58: Detector, radar signal, AN/PSS-10.
- Line 59: Position locating reporting system, basic user unit.
- Line 60: Position locating reporting system, surface vehicle installation kit.

NOTE: Lines 61, 62, and 63 are used as needed for any other equipment assigned to the platoon.

Example. “THIS IS RED 3. YELLOW 1. LINE 12: ALPHA. LINE 33: BRAVO. LINE 38: CHARLIE. LINE 55: CHARLIE. OVER.”

Yellow 1A – Battle Loss Spot Report

When Used. The Yellow 1A report is transmitted by the platoon leader or PSG as soon as possible after items are lost or damaged in battle. Losses are reported using line numbers from the Yellow 1 report.

Format. Provide pertinent information on the following lines:

Line 1: Time of loss.

Line 2: Number of pieces of equipment to be evacuated to troop/battalion or higher for maintenance. Refer to the appropriate line numbers from the Yellow 1 report.

Line 3: Number of pieces of equipment destroyed and abandoned in pieces. Refer to the appropriate line numbers from the Yellow 1 report.

Line 4: Location (encoded) of abandoned equipment.

Example. “BLACK 3, THIS IS RED 4. YELLOW ONE ALPHA, BREAK. LINE 1: ONE FOUR THREE ZERO HOURS. LINE 2: REFERENCE SIX SLANT ONE; REFERENCE TWO-NINER SLANT THREE. LINE 3: REFERENCE TWO-NINER SLANT ONE. LINE 4: I SET VB, IDVRTG.”

NOTE: Yellow 1A reports are not cumulative. A Yellow 1 report showing total unit status is sent daily not later than 1300 hours. It gives equipment status as of 1200 hours that day.

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Yellow 2 – Ammunition Status Report

This report is transmitted once daily at 1300 hours or immediately upon completion of threat contact. The following status codes are used:

GREEN: 90% or more on hand, all ammunition types.

AMBER: 80% to 89% on hand, all ammunition types.

RED: 60% to 79% on hand, all ammunition types.

BLACK: 59% or less on hand, all ammunition types.

NOTE: BLACK status in a Yellow 2 report requires immediate follow-up with a Yellow 2A report. GREEN, AMBER, or RED status does not require submission of a Yellow 2A.

Yellow 2A – Ammunition Request

Format. The required quantity of each type of ammunition will be requested using the following line numbers:

- Line 1: Report as-of DTG.
- Line 2: 105-mm/120-mm, HEAT.
- Line 3: 105-mm/120-mm, HEP.
- Line 4: 105-mm/120-mm, APERS.
- Line 5: 105-mm/120-mm, WP.
- Line 6: 105-mm/120-mm, APDS.
- Line 7: 40-mm, HEDP.
- Line 8: Caliber .50 (M85).
- Line 9: Caliber .50 (M2).
- Line 10: 25-mm.
- Line 11: 7.62-mm (coax/M60).
- Line 12: 4.2-inch HE with fuze.
- Line 13: 4.2-inch WP with fuze.

Line 14: 4.2-inch illumination with fuze.
Line 15: 81-mm, HE with fuze.
Line 16: 81-mm, WP with fuze.
Line 17: 81-mm, illumination with fuze.
Line 18: Fuze, prox (4.2-inch).
Line 19: Fuze, PD (4.2-inch).
Line 20: Fuze, prox (81-mm).
Line 21: Fuze, PD (81-mm).
Line 22: Fuze, blast, time.
Line 23: Blasting cap, nonelectric.
Line 24: Fuze, igniter.
Line 25: 5.56-mm ball.
Line 26: 5.56-mm tracer.
Line 27: Redeye, XM41E2.
Line 28: Grenade, fragmentation.
Line 29: Grenade, smoke.
Line 30: Grenade, thermite.
Line 31: Grenade, 40-mm, HE.
Line 32: Grenade, 40-mm, WP.
Line 33: Grenade, 40-mm, AP.
Line 34: Javelin.
Line 35: AT-4.
Line 36: Dragon.
Line 37: TOW.
Line 38: Stinger missile.
Line 39: Mine, AT.
Line 40: Mine, AP.
Line 41: Mine, Claymore.
Line 42: 25-mm HE.

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Line 43: 25-mm AP.

Line 44: 165-mm HE (CEV).

NOTE: All Yellow 2A requests will be for the quantity of ammunition required by the platoon unless otherwise specified.

NOTE: When sending a Yellow 2A report, use only the lines required for specific requests. Additional lines (beginning with Line 45) are used to request any other types of ammunition required by the platoon. Attached units should coordinate with the S4 for additional line numbers for their ammunition requirements.

Example. “BLACK 3, THIS IS RED 4. YELLOW TWO ALPHA, BREAK. LINE 1: CVB GHJ. LINE 37: RTY UOL. LINE 42: ERF WDS QTR.”

Yellow 3 – POL Status Report

When Used. This report is sent twice daily or as required.

Format. The following status codes are used:

GREEN: 90% or more of the required quantity on hand.

AMBER: 80% to 89% on hand.

RED: 60% to 79% on hand.

BLACK: 59% or less on hand.

Example. “BLACK 3, THIS IS RED 4. YELLOW THREE, AMBER, OVER.”

Yellow 3A – POL Request

Format. The required quantity of each type of POL product will be requested using the following line numbers:

- Line 1: Report as-of DTG.
- Line 2: MOGAS (gal).
- Line 3: Diesel (gal).
- Line 4: Oil, OE-10 (gal).
- Line 5: Oil, OE-30 (gal).
- Line 6: Oil, OE-50 (gal).
- Line 7: Oil, OE-90 (gal).
- Line 8: Antifreeze (gal).
- Line 9: Brake fluid (gal).
- Line 10: Hydraulic fluid, OHA (qt).
- Line 11: Hydraulic fluid, OHT (qt).
- Line 12: Hydraulic fluid, FRH (qt).
- Line 13: Oil, penetrating (qt).
- Line 14: Oil, PL-special (qt).
- Line 15: Oil, PL-medium (qt).
- Line 16: Bore cleaner (gal).
- Line 17: Oil, LSA (qt).
- Line 18: Grease, GAA (lb).
- Line 19: Grease, wheel bearing (lb).
- Line 20: Solvent (gal).

NOTE: Lines 61, 62, and 63 are used as needed for any other equipment assigned to the platoon. Additional lines (beginning with Line 21) are used to request any other POL products required by the platoon or attached elements.

Example. “BLACK 3, THIS IS RED 1. YELLOW THREE ALPHA, BREAK. LINE 1: 112000 NOV. LINE 3: 900. LINE 8: 15.”

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Red Reports (PERSONNEL)

Red 2 – Personnel Battle Loss Report

When Used. A Red 2 report is transmitted to the troop/task force TOC as casualties occur. The unit must also complete DA Form 1156, with witness statements, and DA Form 1155 and submit them to the 1SG. Red 2 is an interim report to update information sent in the last Red 1 report.

Format. Provide all pertinent information using the following lines:

- Line 1: Battle roster number.
- Line 2: DTG of the incident.
- Line 3: Location of the incident (encoded).
- Line 4: Type of casualties, encoded by letter as follows:
 - ALPHA: KIA, hostile action.
 - BRAVO: KIA, nonhostile action.
 - CHARLIE: Body recovered.
 - DELTA: Body not recovered.
 - ECHO: Body identified.
 - FOXTROT: Body not identified.
 - GOLF: MIA.
 - HOTEL: Captured.
 - INDIA: WIA, slight, hostile action.
 - JULIET: WIA, serious, hostile action.
 - KILO: WIA, slight, nonhostile action.
 - LIMA: WIA, serious, nonhostile action.
 - MIKE: Accident.
- Line 5: Location to which casualties are evacuated.

Red 3 – Medical Evacuation Request

When Used. A Red 3 report is sent to the medical team on the troop/company command net to request MEDEVAC support.

Ground Evacuation Format. Provide pertinent information on the following lines:

Line 1: State "EVAC."

Line 2: Location for pickup (encoded).

Line 3: Number of casualties.

Line 4: Category of patient condition, encoded by letter designation as follows:

- ALPHA: Urgent.
- BRAVO: Priority.
- CHARLIE: Routine.

NOTE: Use the letter designation with the number of patients in each category; for example, "TWO ALPHA" indicates that two patients require evacuation on an urgent basis.

Air Evacuation Format. Use the information format in Figure 13-2 for an air evacuation.

NINE-LINE AIR EVACUATION REQUEST FORMAT	
Units must use the following nine-line format to provide the necessary information when requesting air evacuation (either MEDEVAC or CASEVAC) for casualties.	
LINE 1 – LOCATION.	_____
Specify the grid coordinates for the six-digit grid location, preceded by the 100,000-meter grid identification.	
LINE 2 – RADIO FREQUENCY/CALL SIGN.	_____
The frequency and call sign should be that of the radio at the site of the unit requesting evacuation.	
LINE 3 – PATIENT CATEGORY OF PRECEDENCE.	_____
Classify the casualties' priority for evacuation using the following terms:	
Urgent. Evacuation required within 2 hours to save life or limb. Priority. Patient's medical condition will deteriorate, becoming urgent within 4 hours. Routine. Evacuation required, but patient's condition is not expected to deteriorate for several hours. Tactical immediate. Evacuation required so casualties do not endanger the tactical mission.	
LINE 4 – SPECIAL EQUIPMENT/EMERGENCY MEDICAL SUPPLIES.	_____
List all requirements.	
LINE 5 – NUMBER AND TYPE OF CASUALTIES.	_____
Provide a complete, accurate list.	
LINE 6 – SECURITY OF PICKUP SITE.	_____
Describe conditions for security at the LZ/PZ.	
LINE 7 – SIGNALING AND SITE MARKING.	_____
Specify the signaling and marking methods to be used.	
LINE 8 – PATIENT NATIONALITY AND STATUS.	_____
Provide a complete, accurate list.	
LINE 9 – NBC CONTAMINATION AREA.	_____
Specify locations of any contaminated areas affecting the evacuation operation.	

Figure 13-2. Nine-line air evacuation request format.

NBC Reports

All shelling and NBC reports are forwarded to the TOC over the command net.

- NBC-1. Used by the observing unit to report initial and subsequent data of an NBC attack.
- NBC-2. Used for passing evaluated data of an NBC attack. (**NOTE:** The format for the NBC-2 report is not included here.)
- NBC-3. Used for immediate warning of expected NBC contamination.
- NBC-4. Used to report radiation dose rate measurements.
- NBC-5. Used to report locations of NBC contamination or hazards.

NBC-1 – Observer's Initial Report

Format. To send this report, state "NBC ONE" and give the type of NBC incident (nuclear, biological, or chemical). Other information that may be sent includes precedence of the report, date and time of the report (ZULU time), and security classification with "from" and "to" times the classification is applicable. Provide all pertinent information on the following lines:

Line ALPHA: Strike serial number (if known).

Line BRAVO: Position of observer (UTM coordinates or name of place).

Line CHARLIE: Grid or magnetic bearing (specify which is used) or azimuth of attack from observer (in degrees or mils; specify which is used).

Line DELTA: DTG attack started (ZULU).

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Line ECHO: Illumination time in seconds (for nuclear burst); time the attack ended (toxic agent attack only).

Line FOXTROT: Location of attack (UTM coordinates) and/or vicinity of attack (actual or estimated; specify which is given).

Line GOLF: Means of delivery (if known).

Line HOTEL: Type of burst (air, surface, unknown), type of toxic agent, or type of attack.

Line INDIA: Number of shells; other data (for toxic attack only).

Line JULIET: Flash-to-bang time (in seconds).

Line KILO: Crater present or absent; diameter in meters (if known).

Line LIMA: Cloud width (degrees or mils; specify which) 5 minutes after burst.

Line MIKE: Cloud height (top or bottom; specify which) 10 minutes after burst (degrees or mils; specify which).

Line SIERRA: DTG of reading (local or ZULU time).

NOTE: DO NOT DELAY REPORTS in an attempt to provide complete format information. Omit information that is not applicable or available. Items that must always be reported are the type of report; lines D and H; and one of the following lines: B, C, F, or G.

NOTE: Carefully specify the units of measure used (such as degrees, mils, or grid azimuth).

Examples. The Table 13-1 shows sample transmissions sent in NBC-1 reports for the three types of NBC attack. Note that some lines are omitted when information is not applicable or available.

Table 13-1. Example NBC-1 reports.

LINE	NUCLEAR	CHEMICAL	BIOLOGICAL
B	"TU 440810"	"MARBERG"	
C	"GRID 242 DEGREES"	"MAGNETIC 2650 MILS"	
D	"270400 ZULU"	"270400 ZULU"	"270400 ZULU"
E		"270410 ZULU"	"270412 ZULU"
F		"TU459830, ESTIMATED"	"OBERG, ACTUAL"
G		"ROCKET"	"AERIAL"
H	"UNKNOWN"	"NERVE"	"BIOLOGICAL"
I		"135"	
J	"65"		
K			
L	"100 MILS"		
M			
S		"270445 ZULU"	"270430 ZULU"

"THIS IS RED 1. NBC-1, NUCLEAR. LINE BRAVO: I SET DX, IMNUWS. LINE DELTA: 020945 ROMEO. LINE HOTEL: AIR. LINE LIMA: 100 MILS, ESTIMATED."

"THIS IS RED 1. NBC-1, CHEMICAL. LINE DELTA: 261003 ROMEO. LINE FOXTROT: NB783089. LINE GOLF: ARTILLERY. LINE HOTEL: VAPOR."

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NBC-3 – Immediate Warning of Expected Contamination

Format. This report is sent by radio. State "NBC THREE," followed by pertinent information on these lines:

Line ALPHA: Strike serial number (if known).

Line DELTA: DTG when attack started.

Line FOXTROT: Location of attack (actual or estimated; specify which).

Line PAPA: Area of expected contamination.

Line YANKEE: Bearing or azimuth of left, then right radial lines (specify degrees or mils; use 4 digits for each line).

Line ZULU: Effective downwind speed (in kmph; use 3 digits), downwind effective distance of zone (in km; use 3 digits), and cloud radius (in km; use 2 digits).

Examples. Table 13-2 shows sample transmissions sent in NBC-3 reports for nuclear and chemical/biological attacks. Note that lines are omitted whenever information is not applicable or available.

Table 13-2. Example NBC-3 reports.

LINE	NUCLEAR	CHEMICAL/BIOLOGICAL
A	"54-1"	"23"
D	"270400 LOCAL"	"270400 ZULU"
F	"LB 187486, ESTIMATED"	"LB 206300, ACTUAL"
P		"LB 208320, LB 210320, LB 206310, LB 204310"
Y	"02700310"	
Z	"01902505" or "011"	

NBC-4 – Report of Radiation Dose-Rate Measurement

When Used. The NBC-4 report, used for nuclear activity only, is submitted immediately after any radiation is detected and thereafter as required by the OPORD.

Format. To send this report, state "NBC FOUR," followed by pertinent information on these lines:

Line QUEBEC: Location of reading; use friendly graphics or encryption. Omit this line when transmitting on a wire net.

Line ROMEO: Dose rate in cGy/hr (average total dose rounded to the nearest 10 cGy). Specify whether the dose rate is "INITIAL," "INCREASING," "PEAK," or "DECREASING"; specify "SHIELDED" if the dose rate was measured inside a vehicle.

Line SIERRA: DTG of reading. Specify the time zone.

NOTE: Repeat lines Q, R, and S as often as necessary. Radiation dose rates ideally are measured in the open, one meter above the ground; if the rate must be measured in a shielded location, it is converted (as accurately as possible) to a rate in the open.

Examples. "THIS IS RED 1. NBC FOUR. LINE QUEBEC: LB 123987. LINE ROMEO: 1, INITIAL. LINE SIERRA: 201735 LOCAL."

"THIS IS RED 1. NBC FOUR. LINE QUEBEC: LB 123987. LINE ROMEO: 60, PEAK. LINE SIERRA: 201805 LOCAL."

NOTE: Users of NBC-4 reports are not confined solely to the use of the letter items shown in these examples.

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NBC-5 – Report of Areas of Contamination

To send this report, state “NBC FIVE.” Other information that may be sent includes precedence of the report, date and time of the report (ZULU), and security classification with “from” and “to” times the classification is applicable. Provide all pertinent information on the following lines:

Line ALPHA: Strike serial number, if known.

Line OSCAR: Reference DTG for estimated contours of contaminated areas.

Line SIERRA: DTG when contamination was initially detected.

Line TANGO: H+1 DTG or DTG of latest reconnaissance of contamination in the area.

Line UNIFORM: Coordinates of contour lines marking dose rate of 1,000 cGy/hr.

Line VICTOR: Coordinates of contour lines marking dose rate of 300 cGy/hr.

Line WHISKEY: Coordinates of contour lines marking dose rate of 100 cGy/hr.

Line X-RAY: Coordinates of contour lines marking dose rate of 20 cGy/hr.

DIGITAL REPORTING AND C2 MESSAGES

In addition to its capabilities related to providing situational awareness data, FBCB2 offers a variety of functions that can enhance C2 in the reconnaissance platoon. The system has four categories of C2 messages:

- Alerts and warnings (examples include NBC reports and warnings of danger zones such as NBC contaminated areas, obstacles, or enemy locations).
- Joint support information (interfaces with other branches of service). (**NOTE:** This type of digital information is not covered in this discussion.)
- Combat reporting (such as the commander's SITREP).
- Mission planning information (including OPORDs and FRAGOs).

Alerts and Warnings

Alerts and warnings are sent via reports, free text messages, or geo-referenced messages (see Table 13-3). They are posted on the flash immediate priority routine (FIPR) message queue and are displayed on the function bar of the main FBCB2 screen and as a symbol on the map screen.

When the platform penetrates the safety radius of a danger zone, the FBCB2 alarm is triggered, an alert message is displayed on the warnings/alerts marquee, and an entry is made in the warnings tab group. The danger zone tab group will display the type, distance, direction, location and originator of all danger zone information received. Danger zone information is transmitted in specific joint variable message format (JVMF) messages as situational awareness data. FBCB2 receives the message and displays the situational awareness/danger zone information in the danger zone tab group.

Table 13-3. FBCB2 danger zone messages.

Message Type	Type of Danger Zone	Safety Radius (Meters)
NBC-1	Chemical	500
Obstacle Report / NBC-1	Biological	500
Obstacle Report / NBC-1 / Strike Warning	Nuclear	1000
Spot Report	Aircraft	5000
Spot Report	Formation	4000
Spot Report	Field Fortifications	1500
Spot Report	Multiple Rocket Launcher	4000
Spot Report	Air Defense Artillery	4000
Spot Report	Assembly Area	4000
Spot Report	Buildings	1500
Spot Report	Equipment	4000
Spot Report	Command Center	1500
Spot Report	Supply Dump	1500
Spot Report	Rocket Missiles	4000
Spot Report	Vehicles	4000
Spot Report	Armor Combat	4000
Spot Report	Artillery	4000
Spot Report	Mortar	8000
Spot Report	Weapons	1500
Spot Report	Personnel	1500
Spot Report	Unknown	4000
Spot Report	Fire Mission	600

Table 13-3. FBCB2 danger zone messages (cont).

Message Type	Type of Danger Zone	Safety Radius (Meters)
Obstacle Report	Minefield, Antipersonnel	500
Obstacle Report	Minefield, Antitank	500
Obstacle Report	Minefield, Mixed	500
Obstacle Report	Minefield, Unknown	500
Obstacle Report	Chemical, Nerve	500
Obstacle Report	Chemical, Blood	500
Obstacle Report	Chemical, Blister	500
Obstacle Report	Chemical, Choking	500
Obstacle Report	Booby Traps	500
Obstacle Report	Abatis	500
Obstacle Report	Craters	500
Obstacle Report	Antitank Ditch	500
Obstacle Report	Scatterable Mines	500
Obstacle Report	Bunker Strongpoint	1500
Strike Warning	Conventional	1000
Threat Warning	NBC	500
Threat Warning	Antiaircraft Artillery	4000
Threat Warning	Aircraft	10000
Threat Warning	Air-to-Air Missile	10000
Threat Warning	Surface-to-Air Missile	1500
Threat Warning	Surface-to-Surface Missile	10000
Threat Warning	Air-to-Surface Missile	15000
Threat Warning	Unknown	4000

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Combat Reporting Messages

These JVMF messages have been modified and grouped together to provide single-button access to the message template, requiring fewer keystrokes to complete and send the message. Combat messages are the following:

- SALT.
- MEDEVAC.
- Fire mission (call for fire).
- Check fire.
- SITREP.

Mission Planning Information

Mission planning information includes orders and request-type messages that contain JVMF message templates. They include the following:

- Warning orders.
- OPLANs and OPORDs.
- FRAGOs.
- Logistics orders and requests.
- Free text messages.

Geo-referenced Messages

These messages, which can be used in the C2 categories discussed earlier, create icons linked to a location on the FBCB2 map. They are also disseminated across the TI as situational awareness data. Geo-referenced messages can be used for the following:

- Obstacle reports.
- NBC-1 reports.
- Bridge reports.
- Supply point status reports.
- Contact reports.
- Engagement reports.

DIGITAL REPORTS

The following are example FBCB2 reports, included are illustrations showing FBCB2 report screens for sample situations.

Digital Blue-1 Report (SPOTREP)

The digital Blue-1 report (Figure 13-3) is sent to the entire platoon and company/troop when contact occurs. The best way to send this report is by using the far target locator. In addition, if approved by the platoon leader, a call for fire can be requested simultaneously with the Blue-1.

221042ZJAN2002 R R 0 0 1 0

Grab Zoom View

Nav... --- Auto Center

F1R 1... Top...

CDR-M2/1BN22IN

11SNV 80318 67878

F1 Map... F2 Filters...

F3 Combat Msgs... F4 Messages...

F5 Status... F6 Admin...

F7 Apps... F8 Help

1x 10:42

Combat Messages

SALT MEDEVAC NBC 1 Fire Mission Check Fire All SITREP

Equipment 1: (Target)

Equipment 2:

Equipment 3:

Activity:

Location:

DTG:

Speed:

Course:

Method of Engagement:

CFF Msg

Immediate Suppression

No messages sent this session.

Send Save Long Form Message... Close Help

Figure 13-3. Digital Blue-1 report (SPOTREP).

Digital Blue-2 (SITREP)

The digital SITREP (Figure 13-4) is sent twice daily to the PSG (for example, at 0600 and 1800) or as necessary during tactical situations. The criteria for each category (GREEN, AMBER, RED, and BLACK) are the same as in analog SITREPs; refer to the discussion earlier in this section. Each vehicle will send the Blue-2 to the platoon leader and PSG for consolidation. The PSG will forward the consolidated report to the company/troop commander, XO, and 1SG.

SALT		MEDEVAC		NBC 1		Fire Mission		Check Fire All		SITREP	
Self		Unit									
Self	Fuel	Mun	Pers	Eqmt	Unit	DTG					
CDR-M2/1BN22IN	G	G	A	A	A	221036ZJAN2002					
No messages sent this session.											
Send		Save		Long Form Message...		Close		Help			

Figure 13-4. Digital Blue-2 report (SITREP).

Digital Yellow Report

The digital Yellow report (Figure 13-5) is a combination of the analog Yellow 1, 2, and 3 reports. When sending this report, all classes of supply are reported. Each vehicle sends this report to the platoon leader and PSG. The PSG consolidates this information and forwards a platoon rollup to the 1SG, XO, maintenance team chief, and medics. At a minimum, this report is sent once daily before 0900 hours.

Class	Supply Item (Unit of Measure)	Comments...	On-Hand/ Operational Item Count	Authorized Item Count	Required Item Count
I	MEAL READY-TO-EAT INDIVIDUAL MENUS		36	48	12
III	TURBINE FUEL AVIATION JP8 (GALLON)		380	500	120
V	CARTRIDGE 120MM APFSDS-T M829A1 (EAC)		23	27	4
VII	TANK COMBAT FULL TRACKED: 120MM GUN		1	1	0

Figure 13-5. Digital Yellow report (logistics report).

Digital Red-3 Report (Medical Evacuation Request)

The digital Red-3 MEDEVAC request (Figure 13-6) is sent to the PSG, 1SG, medics, and maintenance team.

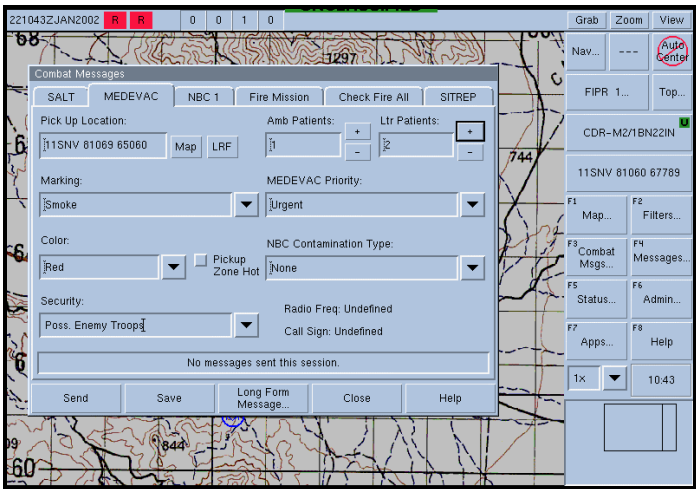


Figure 13-6. Digital Red-3 report (MEDEVAC request)

Digital NBC-1 Report (Observer's Initial Report)

The digital NBC-1 report (Figure 13-7) is sent on confirmation of contact with NBC weapons. The report is sent to the entire company/troop.

221044Z JAN2002 0 0 1 0

Combat Messages

SALT MEDEVAC NBC 1 Fire Mission Check Fire All SITREP

NBC Event Type: Chemical

Delivery Means: Shell

Attack Location 1: 11SNV 78549 65776 Map LRF

Attack Location 2: Map LRF

Attack Time 1 (Zulu): NOW

Day: 22 Hour: 10 Minute: 44

Attack Time 2 (Zulu): NOW

Day: 22 Hour: 10 Minute: 44

No messages sent this session.

Send Save Long Form Message... Close Help

Grab Zoom View Nav... Auto Center

F1 Map... F2 Filters... F3 Combat Msgs... F4 Messages... F5 Status... F6 Admin... F7 Apps... F8 Help

1x 10:44

Figure 13-7. Digital NBC-1 report (observer's initial report).

Digital Obstacle Report

The digital obstacle report (Figure 13-8) is sent by the vehicle that can best identify the dimensions and type of the obstacle. The report is sent to the entire company/troop.

221047ZJAN2002 0 0 1 0 Grab Zoom View

Create: Obstacle Report

UNCLASSIFIED

Outline Preview

Obstacle Report Data

Obstacle Control Designator: ENEMY

Obstacle Type: MINEFIELD - ANTI-TANK

Impact on Movement: DISRUPT

Obstacle Status: EXECUTED

Obstacle Location: 11SNV 8086 6307

Obstacle Location: 11SNV 8123 6325

Obstacle Location: 11SNV 8134 6306

Observer Identification: COR-M2/1BN22IN

Observation DTG: 221047Z-----

Refresh

Obstacle Report Data

Obstacle Control Designator: ENEMY

Obstacle Type: MINEFIELD - ANTI-TANK

Impact on Movement: DISRUPT

Obstacle Status: EXECUTED

☐ Effective Date/Time Data

Message Addressing... Save Save As... Delete

Send Print Close Help

1... Top... M2/1BN22IN 79962 68035 F2 Filters... F4 Messages... F6 Admin... F8 Help 10.47

Figure 13-8. Digital obstacle report.

Chapter 14

TECHNICAL DATA

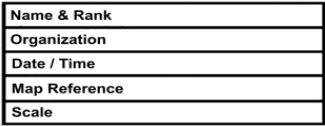
RECONNAISSANCE OVERLAY SYMBOLS

As a minimum, the following information will be included on the route-classification overlay:

- The route-classification formula.
- The name, rank, and SSN of person in charge of performing the classification.
- The unit conducting the classification.
- The date-time group (DTG) that the classification was conducted.
- The map name, edition, and scale.
- Any remarks to ensure complete understanding of the information on overlay.

Figure 14-1 shows an example of how graphics are used in overlays. Figure 14-2 outlines a variety of symbols that can be used to illustrate reconnaissance data on overlays. For more information on route classification and technical data, refer to FM 3-20.98, Chapter 9.

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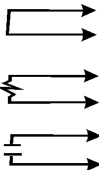
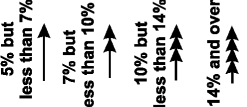
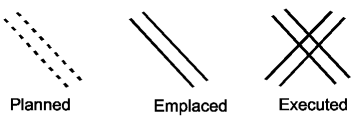
Symbols for use in the reconnaissance overlay	
Symbol	Description and criteria
<p>BYPASSES</p>  <p>BYPASSES: Are local alternate routes which enable traffic to avoid an obstruction. Bypasses are classified as EASY, DIFFICULT or IMPOSSIBLE. Each type bypass is represented symbolically on the line extending from the symbol to the main location and defined as follows:</p> <p>BYPASS EASY: The obstacle can be crossed within the immediate vicinity by a US 5 ton truck (or NATO equivalent) without work to improve the bypass.</p> <p>BYPASS DIFFICULT: The obstacle can be crossed within the immediate vicinity, but some work will be necessary to prepare the bypass.</p> <p>BYPASS IMPOSSIBLE: The obstacle can only be crossed by one of the following methods:</p> <ol style="list-style-type: none"> (1) Repair of item, i.e. bridge. (2) New construction. (3) Detour using an alternate route which crosses the obstacle some distance away. 	
<p>STEEP GRADES</p>  <p>STEEP GRADES: (An obstruction.) Any grade 7% or higher. Actual % of grade will be shown. Arrows always point uphill, and length of arrow represents length of grade if map scale permits. (The percent of slope is written to the right of the arrow.)</p>	
<p>OBSTACLES</p>  <p>OBSTACLES: Are natural or man-made restrictions which impede the flow of traffic along a designated route.</p>	

Figure 14-2. Reconnaissance overlay symbols.

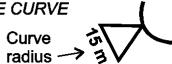
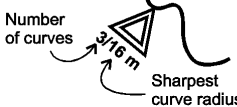

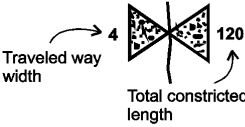
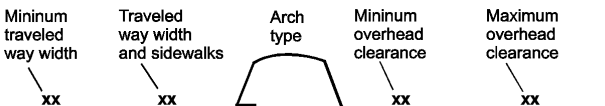

Symbols for use in the reconnaissance overlay	
Symbol	Description and criteria
SINGLE CURVE  <p>Curve radius → 3</p>	SHARP CURVE: Any curve with a radius of 25 meters or less is an obstruction. All curves with a radius less than 45 meters are reportable.
MULTIPLE CURVES  <p>Number of curves → 3 Sharpest curve radius → 16 m</p>	SERIES OF SHARP CURVES: The figure to the left indicates the number of curves; that to the right, the minimum radius of curvature in meters.
CRITICAL POINT  <p>Number critical points in order and describe them on DA Form 1711-R.</p>	CRITICAL POINT: A key geographic point or position important to the success of an operation; a point in time, a crisis or turning point, or any point along a route of march where interference with troop movement may occur.
CONSTRUCTION  <p>Traveled way width → 4 Total constricted length → 120</p>	CONSTRUCTION: (An obstruction.) Any reduction in the traveled way below the minimum required. The figure to the left indicates the width of the constriction; that to the right, the total constricted length, both in meters.
UNDERPASS  <p>Minimum traveled way width → xx Traveled way width and sidewalks → xx Arch type Minimum overhead clearance → xx Maximum overhead clearance → xx</p> <p>UNDERPASSES: Show shape of structure (obstruction) when overhead clearance is less than 4.3 meters.</p>	
ROUTE DESIGNATION  <p>(495)</p>	ROUTE DESIGNATION: Civil or military route designation. Written in parentheses along route.

Figure 14-2. Reconnaissance overlay symbols (continued).

Symbols for use in the reconnaissance overlay	
Symbol	Description and criteria
BRIDGE <i>Full NATO Bridge Symbol</i>	<p>When full NATO bridge symbol is used on an overlay, the additional information column on the DA Form 1249 will not contain bypass length, traveled way width, or overhead clearance.</p>
BRIDGE <i>Abbreviated Bridge Symbol</i>	<p>When abbreviated symbol is used, DA Form 1249 must be attached.</p>
TUNNEL	<p>TUNNEL: (Includes man-made snow sheds.) Show the shape of structure or obstruction when overhead clearance is less than 4.3 m.</p>

Figure 14-2. Reconnaissance overlay symbols (continued).

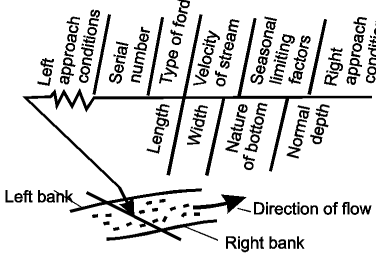


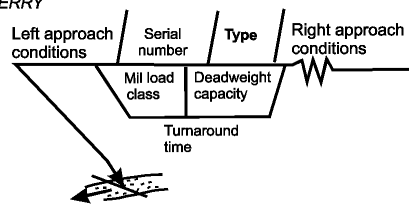



Symbols for use in the reconnaissance overlay	
Symbol	Description and criteria
<p>FORD</p>  <p>FORD: All fords are considered as obstructions to traffic.</p> <p>Type of ford: V-- Vehicular P-- Pedestrian</p> <p>Seasonal limiting factors: X-- No seasonal limitation except for limited duration sudden flooding. Y-- Significant seasonal limitations.</p> <p>Approach conditions:  Difficult  Easy</p> <p>Nature of bottom: M-- Mud C-- Clay S-- Sand G-- Gravel R-- rock P-- Artificial paving</p>	
<p>FERRY</p>  <p>FERRY: All ferries are considered as obstructions to traffic.</p> <p>Type of ferry: V-- Vehicular P-- Pedestrian</p> <p>Approach conditions:  Difficult  Easy</p>	
 <p>LIMITS OF SECTOR: Limits of reconnoitered sector or of route having some road classification formula.</p>	

Figure 14-2. Reconnaissance overlay symbols (continued).

Symbols for use in the reconnaissance overlay	
Symbol	Description and criteria
RAILROAD CROSSINGS	
	Level grade crossing
	Overhead obstruction
	Combination
RAILROAD: (RR) CROSSING: Passing trains will interrupt traffic flow. The figure indicates overhead clearance.	
RAILROAD BRIDGES	

Figure 14-2. Reconnaissance overlay symbols (continued).

ROUTE CLASSIFICATION FORMULA

The route-classification formula is derived from the information gathered during the route recon. The formula is recorded on the route-classification overlay and consists of the following:

- Route width, in meters.
- Route type (based on ability to withstand weather).

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- Lowest military load classification (MLC).
- Lowest overhead clearance, in meters.
- Obstructions to traffic flow (OB), if applicable.
- Special conditions, snow blockage (T) or flooding (W), if applicable.

Example: 5.5m / Y / 30 / 4.6 (OB) (W)

Route Width

See Figure 14-3 and Table 14-1 for information to determine route width and traffic flow capability.

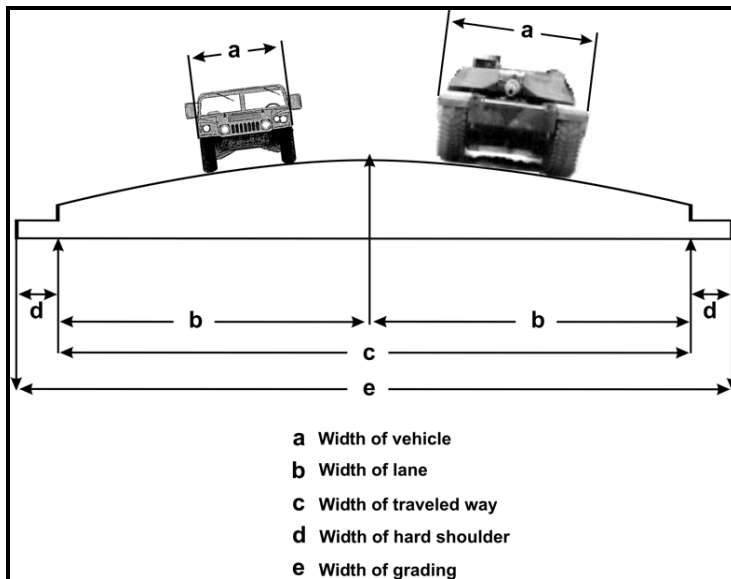


Figure 14-3. Route width.

Table 14-1. Traffic-flow capability based on route width.

	Limited Access	Single Lane	Single Flow	Double Flow
Wheeled	At least 3.5 m	3.5 to 5.5 m	5.5 to 7.3 m	Over 7.3 m
Tracked and combination vehicles	At least 4.0 m	4.0 to 6.0 m	6.0 to 8.0 m	Over 8 m

Route Type

Type X—An all-weather route that, with reasonable maintenance, is passable throughout the year. This route is normally formed of roads having waterproof surfaces. This type of route is never closed because of weather effects other than snow or flood blockage.

Type Y—A limited, all-weather route that, with reasonable maintenance, is passable throughout the year. This route is normally formed of roads that do not have waterproof surfaces. This type of route is closed for short periods (up to one day at a time) by adverse weather conditions.

Type Z—A fair-weather route passable only in fair weather. This type of route is so seriously affected by adverse weather conditions that it may remain closed for long periods. Improvement of such a route can only be achieved by construction or realignment.

Military Load Classifications

The basis for MLC is the effect (load, vehicle speed, tire width, and so forth) a vehicle has on a bridge when crossing. Heavy loads, such as artillery and tanks, make vehicle classification a very important factor when determining what can travel down a route.

Requirement for Classification Numbers

Classification numbers are mandatory for all self-propelled vehicles having a total weight of 3 tons or more, as well as all trailers with a payload of 1 ½ tons or greater (see STANAGs 2010 and 2021). Trailers with a rated capacity of less than 1-1/2 tons are usually combined with their towing vehicles for classification. During the classification process, vehicles are divided into two further groups—those with trailers (vehicle combination class number [CCN]) and those without (single vehicle classification number)—and calculated accordingly.

Procedures for Vehicle Classification

The actual mathematical computation of a vehicle's MLC is beyond the capability of route recon teams. However, temporary procedures are described below. MLC information is found in the vehicle's TM or on the dash's dataplate.

Temporary procedure for vehicle classification. When a single vehicle tows another vehicle at a distance less than 30.5 meters and the vehicles are not designed to operate as one unit, the temporary vehicle MLC number may be assigned to this combination. The classification number assigned is nine-tenths the sum of the normal vehicle classification numbers if the total of both classifications is less than 60. If the sum of the two military classification numbers is 60 or over, then the total becomes the MLC number for the nonstandard combination.

$$\text{CCN} = 0.9 (A + B) \text{ if } A + B < 60$$

$$\text{CCN} = A + B \text{ if } A + B > 60$$

where—

A = class of first vehicle

B = class of second vehicle

Expedient procedure—wheeled-vehicle classification. On occasions when you need to classify a vehicle in the field, simply observe and compare the unclassified vehicle to a vehicle that is similar. Compare the axle loads, gross weight, and dimensions of the unclassified vehicle with those of a similar classification. Example: The expedient classification for a wheeled vehicle is estimated to be 85 percent of its total weight. Therefore, you must determine the vehicle's gross weight. Multiply the air pressure in the tires (in pounds per square inch [psi]) by the total area (in square inches) of the tires in contact with the ground. If a gage is not available, use 75 psi as an average value. This yields an approximate weight of the vehicle in pounds. Convert this figure to tons and find 85 percent of the weight in tons. This resulting figure is the expedient classification.

Expedient procedure—tracked-vehicle classification. Tracked vehicles weigh about one ton per square foot of track contact with the ground. By determining the area of track in contact with the ground, the vehicle's gross weight can be assigned. When vehicles weigh a fraction over whole tonnage, the next higher classification number is assigned.

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Obstructions

- Overhead obstructions with a clearance of less than 4.3 meters.
- Reductions in traveled-way widths that are below the standard minimums.
- Curves with a radius of 25 meters and less (see Figure 14-4).
 - The following method of determining a curve's radius is based on the formula $R = (C^2/8M) + (M/2)$ (all measurements are in meters):
 - R = radius of the curve.
 - C = the distance from the centerline of the road to the centerline of the road at the outer extremities of the curve.
 - M = the perpendicular distance from the center of the tape to the centerline of the road.
 - Example: If C is 15 meters and M is fixed at 2 meters, the formula becomes $R = (15^2/8) + 2/2 = 15.0625$.
 - The result of this calculation (a radius of slightly more than 15 meters) would be an obstruction to traffic flow, and "OB" would be entered in the route classification formula.

NOTE: When conditions warrant, set M at 2 meters from the centerline, then measure C 2 meters from the centerline. Use this method when there is a time limitation or when natural or man-made restrictions prevent proper measurements.

- Slopes (gradients) of 7 percent or greater (see Figures 14-5, 14-6, and 14-7).

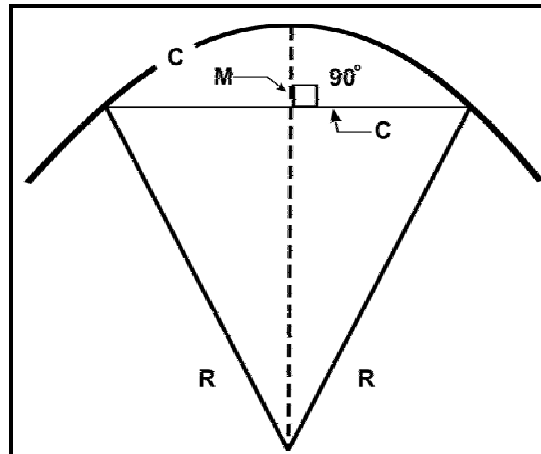


Figure 14-4. Formula method for determining curve radius.

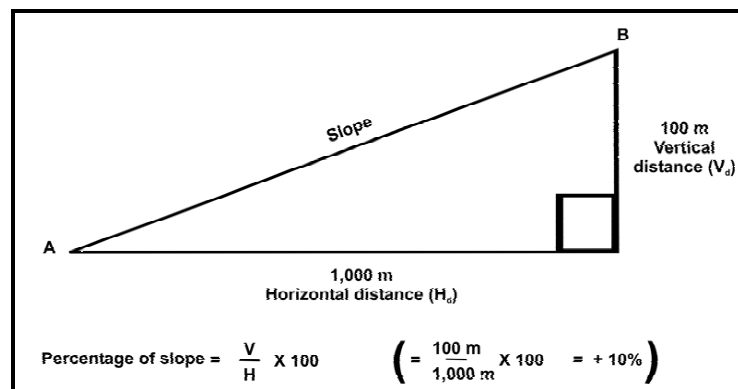


Figure 14-5. Formula for slope percentage.

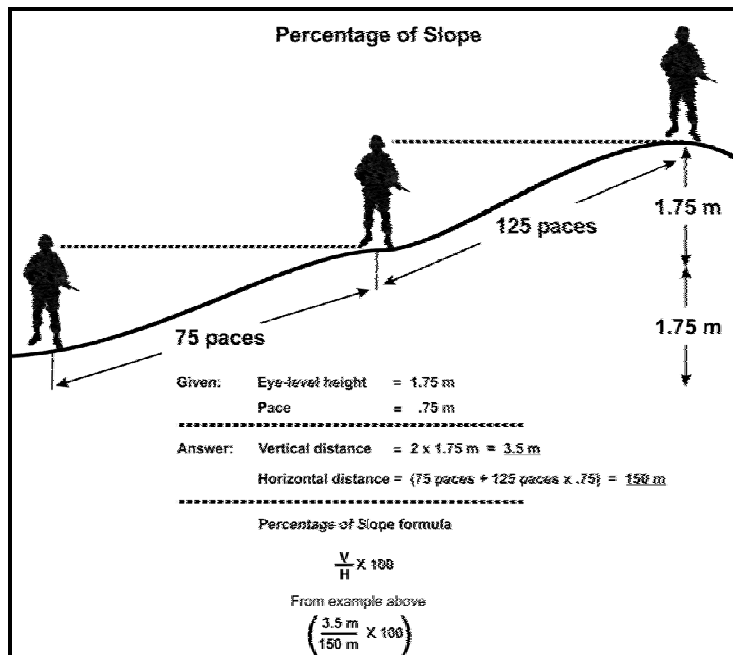


Figure 14-6. Pace method for percent of slope.

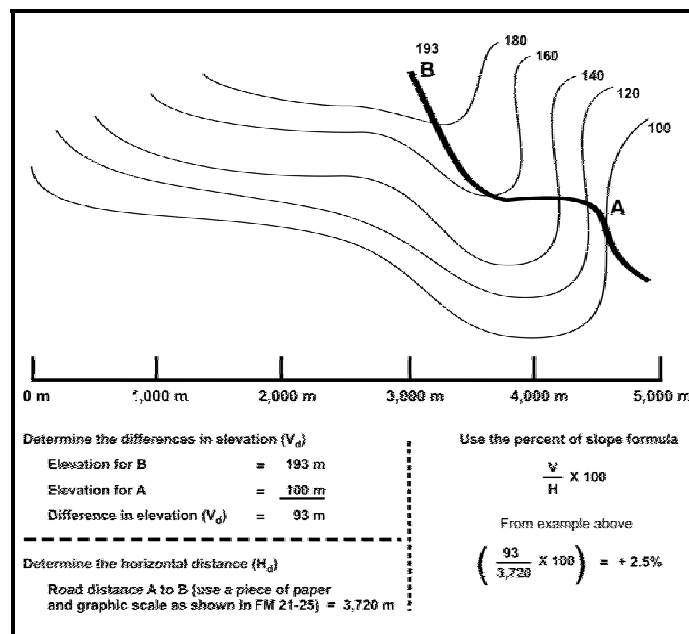


Figure 14-7. Map method for percent of slope.

Special Conditions

When snow blocks traffic on a regular and recurrent basis, the symbol following the route-classification formula is “T.” When flooding blocks traffic on a regular and recurrent basis, the symbol following the route-classification formula is “W.”

STREAM WIDTH AND VELOCITY

Measuring stream width is depicted in Figure 14-8. Measuring stream velocity is depicted in Figure 14-9.

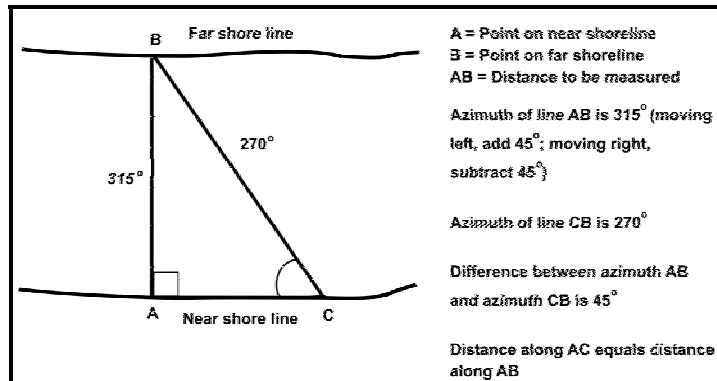


Figure 14-8. Measuring stream width with a compass.

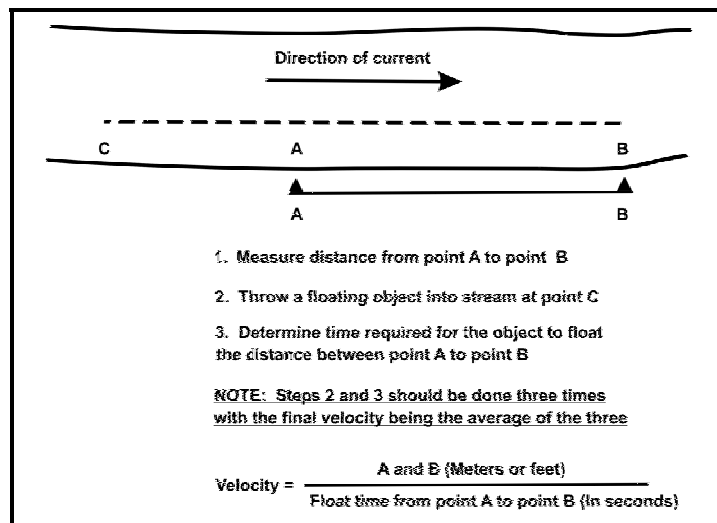


Figure 14-9. Measuring stream velocity.

MEASUREMENT CONVERSIONS

Figure 14-10 (part one) lists inches to centimeters and feet to meters conversions.

INCHES to CENTIMETERS	FEET to METERS
1 inch = 2.54 centimeters	1 foot = 0.30 meters
2 inches = 5.08 centimeters	2 feet = 0.61 meters
3 inches = 7.62 centimeters	3 feet = 0.91 meters
4 inches = 10.16 centimeters	4 feet = 1.22 meters
5 inches = 12.70 centimeters	5 feet = 1.52 meters
6 inches = 15.24 centimeters	6 feet = 1.83 meters
7 inches = 17.78 centimeters	7 feet = 2.13 meters
8 inches = 20.32 centimeters	8 feet = 2.44 meters
9 inches = 22.86 centimeters	9 feet = 2.74 meters
10 inches = 25.40 centimeter	10 feet = 3.05 meters
20 inches = 50.80 centimeters	20 feet = 6.10 meters
30 inches = 76.20 centimeters	30 feet = 9.14 meters
40 inches = 101.60 centimeters	40 feet = 12.19 meters
50 inches = 127.00 centimeters	50 feet = 15.24 meters
60 inches = 152.40 centimeters	60 feet = 18.29 meters
70 inches = 177.80 centimeters	70 feet = 21.34 meters
80 inches = 203.20 centimeters	80 feet = 24.38 meters
90 inches = 228.60 centimeters	90 feet = 27.43 meters
100 inches = 254.00 centimeters	100 feet = 30.48 meters

Figure 14-10. -English to metric distance measurement conversions (part one).

Figure 14-10 (part two) lists yards to meters and miles to kilometers conversions.

YARDS to METERS	MILES to KILOMETERS
1 yard = 0.91 meters	1 mile = 1.61 km
2 yards = 1.83 meters	2 miles = 3.22 km
3 yards = 2.74 meters	3 miles = 4.83 km
4 yards = 3.66 meters	4 miles = 6.44 km
5 yards = 4.57 meters	5 miles = 8.05 km
6 yards = 5.49 meters	6 miles = 9.66 km
7 yards = 6.40 meters	7 miles = 11.27 km
8 yards = 7.32 meters	8 miles = 12.87 km
9 yards = 8.23 meters	9 miles = 14.48 km
10 yards = 9.14 meters	10 miles = 16.09 km
20 yards = 18.29 meters	20 miles = 32.19 km
30 yards = 27.43 meters	30 miles = 48.28 km
40 yards = 36.58 meters	40 miles = 64.37 km
50 yards = 45.72 meters	50 miles = 80.47 km
60 yards = 54.86 meters	60 miles = 96.56 km
70 yards = 64.00 meters	70 miles = 112.65 km
80 yards = 73.15 meters	80 miles = 128.75 km
90 yards = 82.30 meters	90 miles = 144.84 km
100 yards = 91.44 meters	100 miles = 160.94 km

Figure 14-10. -English to metric distance measurement conversions (part two).

Chapter 15

DEMOLITIONS AND OBSTACLES

This chapter deals with demolitions and obstacles that scouts may have to breach or construct.

DEMOLITIONS

This section outlines basic guidelines for the employment of demolitions in military operations. GTA 5-10-33 (Demolition card) is a useful quick reference card that may also be used while conducting demolition operations.

Table 15-1 summarizes the characteristics and uses of military explosives.

WARNING

The following discussion and accompanying illustrations may not provide enough information to allow safe employment of explosives; therefore, scouts must be thoroughly familiar with fuzes, charge settings, and firing demolitions before using this information. Refer to FM 3-34.310 [5-34] and FM 3-34.214 [5-250] for further information.

Table 15-1. Characteristics of military explosives.

EXPLOSIVE	USE	RE FACTOR	SIZE, WEIGHT, AND PACKING
TNT	Breaching	1.00	1 lb: 48-56/Box; ½: 96-106/Box
C4 M112	Cutting and Breaching	1.34	30 1¼ lb Blks/Box
Sheet Exp M118	Cutting	1.14	4 ½ Sheets/Pack With 20 Packs Per Box (1 Sheet = 3"X1¼"X12")
Det Cord	Priming		3 1,000-ft Rolls or 8 500-ft Rolls/Box
Crater Charge	Craters	0.42	1 40-lb Cannister/Box
Bangalore M1A2	Wire and Breaching	1.17	10 5-ft Sections/Box (176 lb)
Shaped Charges	Cutting		
M2A4		1.17	4 15-lb Shape Charges/Box
M3A1		1.17	1 40-lb Shape Charge/Box

Priming Explosives

Explosives may be primed, either electrically or nonelectrically, with a detonating cord. See Figure 15-1.

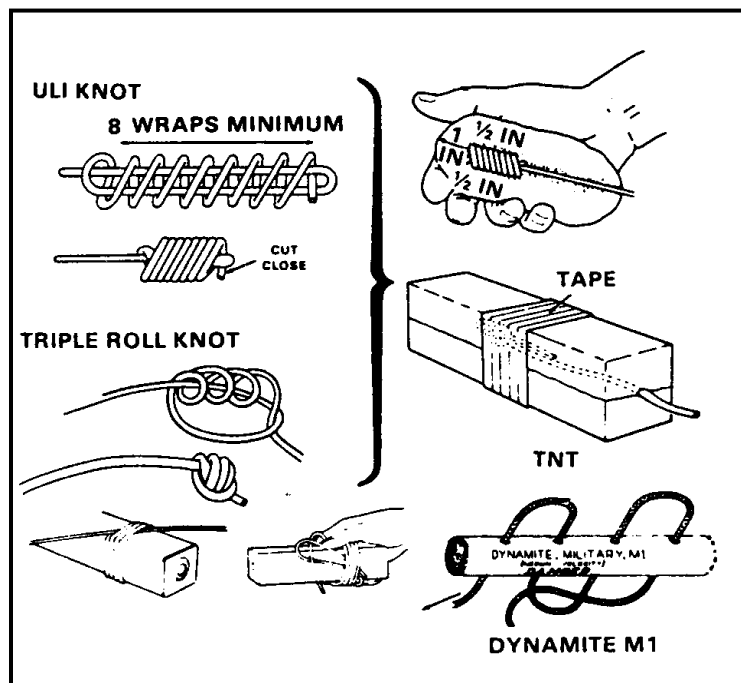


Figure 15-1. Detonating cord priming.

Firing Systems

A dual-firing system is composed of two completely separate systems. They may be dual electric, dual nonelectric, or a combination of electric and nonelectric. See Figure 15-2.

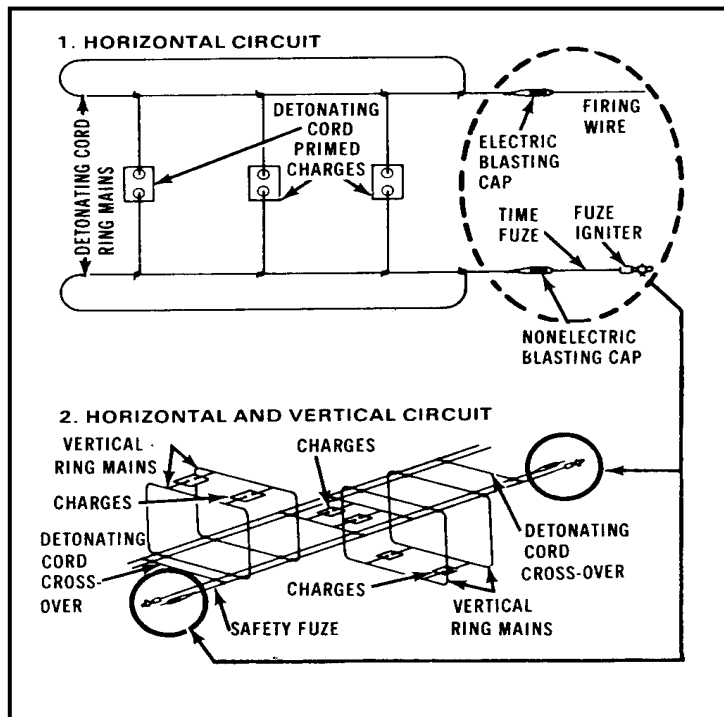


Figure 15-2. Combination dual-firing system.

Safety

To ensure safety in the employment of explosives, scouts must maintain a minimum safe distance. See Table 15-2.

Table 15-2. Minimum safe distances for explosives.

EXPLOSIVES (pounds of charge)	SAFE DISTANCE in meters (feet)	EXPLOSIVES (pounds of charge)	SAFE DISTANCE in meters (feet)
1 to 22	300 (900)	120	534 (1,590)
24	311 (930)	140	560 (1,690)
28	327 (980)	160	585 (1,750)
32	342 (1,020)	180	609 (1,820)
36	356 (1,070)	200	630 (1,890)
40	369 (1,100)	220	651 (1,950)
48	392 (1,170)	240	670 (2,000)
56	413 (1,240)	260	688 (2,070)
64	431 (1,290)	280	705 (2,100)
72	449 (1,330)	300	722 (2,160)
80	465 (1,390)	320	737 (2,210)
100	500 (1,500)	340	750 (2,250)
NOTE: The safe distances listed in this table will normally apply to peacetime conduct of ranges. To detonate a road crater (about 4 X 40 pounds of cratering charges), it would not be appropriate to move 800 meters away, especially when using an electric circuit to detonate it.			

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Explosives may be prematurely detonated by induced currents. Figure 15-3 shows the distances at which transmitters can detonate explosives by transmitted induced currents. The left column indicates average power and peak power for all other transmissions.

Electric firing should not be performed within 155 meters (504 feet) of energized power transmission lines. When it is necessary to conduct blasting operations at distances closer than 155 meters, nonelectric firing systems should be used or the power lines de-energized.

MINIMUM SAFE DISTANCE FROM TRANSMITTER ANTENNAS	
AVERAGE OR PEAK <u>TRANSMITTER POWER</u> WATTS	MINIMUM SAFE DISTANCE <u>TO TRANSMITTER</u> METER (FEET)
30 - 50 (Normal FM Radios)	50 (165)
(AM Radios)	230 (755)

Figure 15-3. Premature detonation by induced current.

CAUTION

If electric blasting caps are to be transported near operating transmitters or vehicles (including helicopters) in which a transmitter is to be operated, the caps must be placed in a metal can. The cover of the can must be snug and lap over the body of the can to a minimum depth of 1/2 inch. Caps should not be removed from the container in proximity of the operating transmitters. The metal container must have metal-to-metal contact with the lid.

Misfires should be handled by the person who placed the charge. Allow 30 minutes for cook-off on all nonelectric or buried charges. Aboveground misfires should be blown in place by priming at least 1 pound of explosive and placing it as close as possible to the charge without disturbing it. When dealing with buried misfires, remove excess earth, except for at least 1 foot of earth around the charge. Then blow the charge in place with at least 2 pounds of explosive. Do not attempt to move or disarm a misfire, and do not abandon misfired explosives.

Modern Demolition Initiator Firing Systems

Modern demolition initiators (MDI), a family of nonelectric blasting caps and associated items described in Table 15-3, have been used in the civilian sector for more than 20 years. The snap-together components simplify initiation systems and some types of explosive priming. The MDI system was developed to effectively replace electric demolition systems. It removes the requirement to dual-initiate demolition systems except when there is a high probability of the system becoming cut. Refer to FM 3-34.310 [5-34] and FM 3-34.214 [5-250] for more information on MDI.

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Table 15-3. MDI components.

Components	Description	Packaging
M11	High-strength, nonelectric blasting cap, factory crimped to a 30-ft length of shock tube—used to prime all standard military explosives, including det cord, or to initiate the shock tube of other MDI blasting caps. A red flag is attached 1 meter from the cap, and a yellow flag is attached 2 meters from the cap.	6/pkg, 10 pkg per box
M12	Low-strength, nonelectric blasting cap ¹ , factory crimped to a 500-ft length of shock tube—used as a transmission line from an initiator to another relay cap or to a high-strength, shock-tube blasting cap which initiates military explosives. Can actuate up to five shock tubes held by the connector.	8 spools/ cardboard box, 6 boxes/pack- ing box
M13	Low-strength, nonelectric blasting cap ¹ , factory crimped to a 1,000-ft length of shock tube; used as a transmission line from an initiator to another relay cap or to a high-strength, shock-tube blasting cap which initiates military explosives. Can actuate up to five shock tubes held by the connector.	4 spools/ cardboard box, 6 boxes/pack- ing box
M14	High-strength, nonelectric, delay blasting cap, factory crimped to a 7 1/2-ft length of time-blasting fuse—instead of the usual yellow band every 18 in, a marker band and the minimum burning time in minutes (from the band to the detonator) are marked on the fuse. Used to detonate all standard military explosives or initiate shock-tube blasting caps and detonating cord about 5 minutes after being ignited.	1/pkg, 60/ wooden box
M15	Nonelectric blasting cap, delay ² —consists of two blasting caps, factory crimped at each end of a 70-ft length of shock tube. One blasting cap is low-strength to initiate another piece of shock tube, while the second is high-strength to initiate other explosives. A red flag is attached 1 meter from the high-strength blasting cap, and a yellow flag is attached 2 meters from the low-strength cap. Used to create staged detonations, as required for quarrying, ditching, and cratering operations.	30/box, 4 boxes/pack- ing box
M9	Blasting cap and shock tube holder—clamping device used to hold the shock tube's branch lines secure to a high-strength blasting cap of the M11 or M14. Can hold up to five shock tubes and one blasting cap. Can also connect a MDI blasting cap to detonating cord.	
M81	Time-blasting fuse igniter with shock-tube capability—M81 and M60 fuse igniters are almost identical except the plug and screw end cap are colored black on the M81. ³	5/paper- board box/ pkg, 6 pkg/ wooden box
<p>NOTE: The M81 has a stronger primer than the M60</p> <p>¹Does not have enough output to initiate most military explosives.</p> <p>²Blasting caps are slightly larger than standard military blasting caps and will not fit into standard cap wells.</p> <p>³The M60 fuse igniter will not reliably initiate the shock tube.</p>		



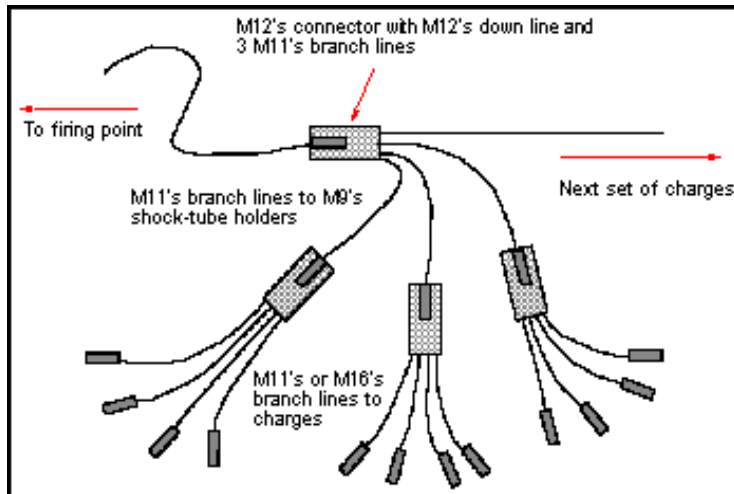


Figure 15-5. Branch-line array (M11s or M16s).

CAUTION

When making multiple shock tube installations, take care to protect the shock tubes from the effects of nearby relay caps and charges. The shrapnel produced by a cap or charge could easily cause a (partial or complete) misfire. When there are many shock tubes involved in a shot, place them carefully away from the junction.

WARNING

Do not dispose of used shock tubes by burning them because of potentially toxic fumes given off from the burning plastic.

Safety Procedures

When conducting training and missions with MDIs, follow the general safety considerations for demolitions as given in FM 3-34.310 [5-34], FM 3-34.214 [5-250], and AR 385-63. Because MDI components are delivered from the factory precrimped, they are more reliable and safer to handle and use than the current standard military blasting caps.

MDI Misfire Clearing Procedures

In most misfires of shock tube blasting caps, which are nonelectric, these standard rules apply:

- If the primer in the M81 does not fire (the most common problem), recock the M81 by pushing in on the pull rod to reset the firing pin, and then actuate the igniter again. If two or three retries result in a nonfiring, cut the shock tube, replace the igniter with a new one, and repeat the firing procedure.
- If the M81 fires and blows the shock tube out of its securing mechanism without it firing, cut about 3 feet from the end of the shock tube, replace with a new igniter, and repeat the firing procedure.
- If the M81 appears to have functioned properly but the charge did not fire, cut a 1-foot section from the shock tube starting 6 inches from the igniter. Hold the 1-foot piece of shock tube so one end is over your palm; gently blow through the other end. If a fine powder comes out from the shock tube, it has not fired. Install a new igniter on the freshly cut end of the priming shock tube and repeat the firing procedure. If no fine powder comes out from the shock tube or the shock tube was heard to fire or its flash

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was seen, wait for 30 minutes before moving downrange to check the components in the firing system.

- After waiting 30 minutes, proceed downrange and check all components in the firing system.

Timber-cutting Charges

Use composition C4 for untamped, concentrated, external charges because it can be easily tied or fastened to the target. Because types of timber vary widely from locality to locality, it is impractical to try to cut all kinds of timber with charges calculated from a single table. It may be necessary, therefore, to make test shots to determine the size of charge needed to cut a specific type of timber. Table 15-4 shows the amount of M112 (1¼-pound blocks) C4 needed for various sizes of timber.

Table 15-4. Amount of C4 (M112) required for timber-cutting charges.

SMALLEST DIMENSION OF TIMBER CM (IN)	EXPLOSIVE C4 M112 (1¼-POUND BLOCKS)		
	TYPE OF CHARGE		
	INTERNAL	EXTERNAL	ABATIS
15.2 (6)	1	1	1
20.3 (8)	1	2	2
25.4 (10)	1	2	2
30.5 (12)	1	3	2
38.1 (15)	1	4	3
45.7 (18)	1	6	4
53.3 (21)	2	7	6
61 (24)	2	9	8
68.6 (27)	2	12	9
76.2 (30)	3	14	11
83.8 (33)	3	17	14
91.4 (36)	4	20	16

Place the charge in a borehole parallel to the greatest dimension of the cross section and tightly tamp it with moist earth. If the charge is too large for one borehole, make two boreholes side by side in the dimensional timber. For round timber, make two boreholes at approximate right angles to each other, but do not intersect them. Tamp both boreholes and fire the charges simultaneously. Figure 15-6 shows several formulas for determining timber-cutting charges and illustrates charge placement.

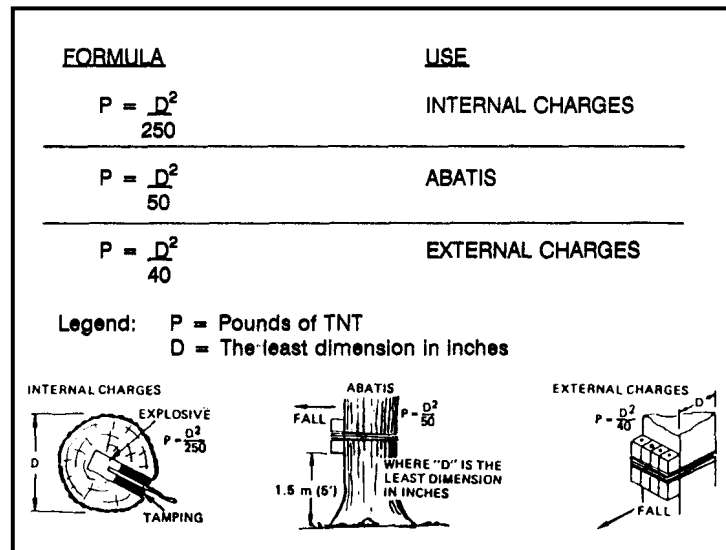


Figure 15-6. Timber-cutting formulas and charge placement.

Cratering Charges

Figure 15-7 includes explanations and illustrations for procedures to be used in creating various types of road craters.

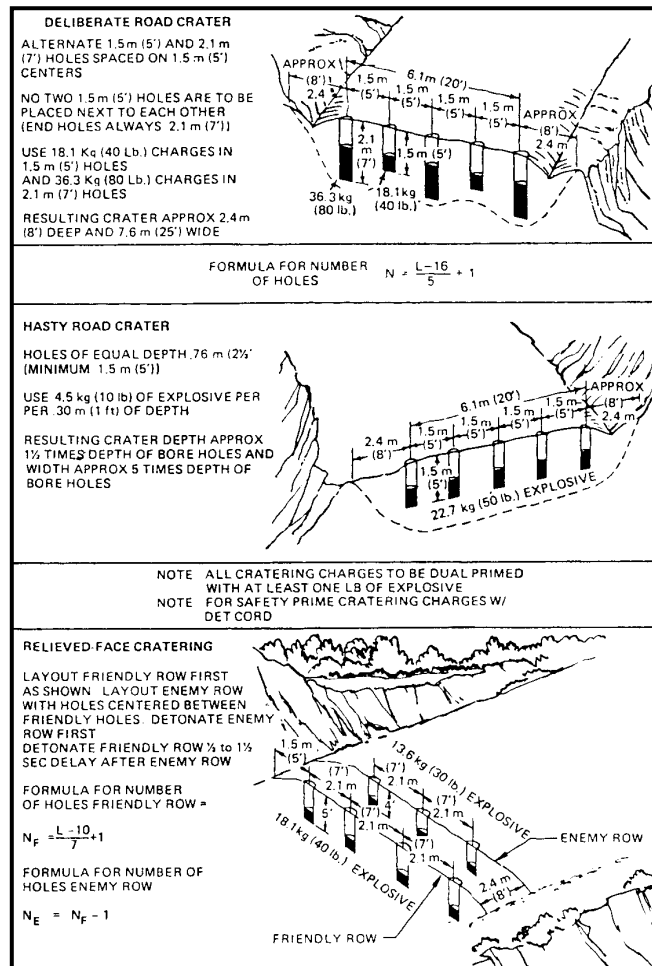


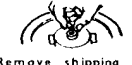






Figure 15-7. Road cratering charges.



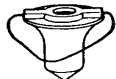




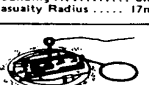









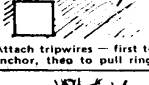

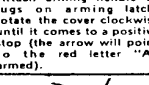
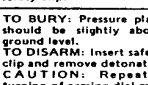
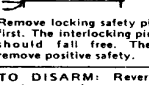
MINES







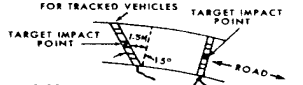





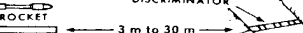
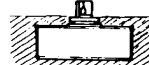


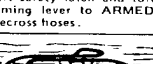
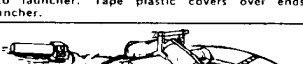
Mines Employed by US Forces

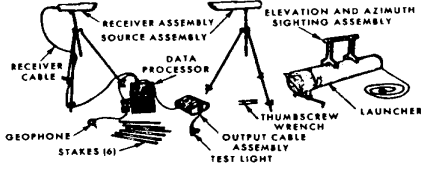

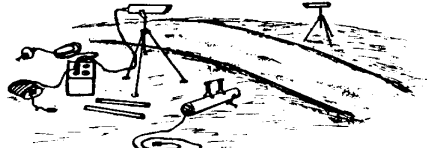


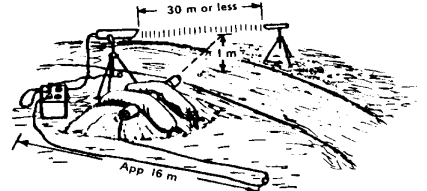


The information on the following pages covers characteristics of US military mines and firing devices and procedures for mine installation, arming, and disarming.



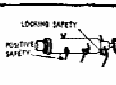




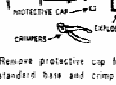




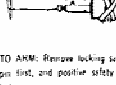
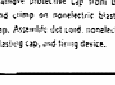
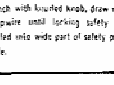


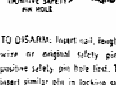

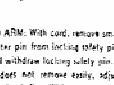




M18A1 FRAGMENTATION ANTIPERSONNEL MINE	M15 HEAVY ANTITANK MINES	M15 ANTITANK MINE USED WITH M608 FUZE	M19 PLASTIC HEAVY ANTITANK MINE
			
Wt 3.5 lbs. Explosive 1.5 lb. C4 Projectiles 700 (steel balls) Equipment: One electric cap 30m firing wire per mine. One electric firing device per mine. One Tester per 6 mines.	Wt 30 lbs. Explosive 22 lbs. Fuze M603 Secondary fuze wells ... 2 Functioning: 300 to 400 lbs.	Functioning ... 200-350 lbs. for 250-450 milliseconds. Resistant to blast type countermeasures.	Wt 28 lbs. Explosive 21 lbs. Fuze M606 integral (with pressure plate) Secondary fuze wells ... 2 Functioning: 350 to 500 lbs.
 TEST CIRCUIT: Mate firing device, circuit tester and blasting cap. Depress handle. Light should show in window. Separate test components.	 Remove plug and inspect fuze well.	 LOCKING RING FUZE BASE	 Remove pressure plate-fuze.
AIMING: IN AIMING THE M18A1, WHEN USING THE SLIT TYPE PEEP SIGHT, AIM THE MINE AT AN INDIVIDUAL'S HEAD WHEN STANDING 45M FROM THE MINE. WHEN USING THE KNIFE EDGE SIGHT, AIM THE MINE AT AN INDIVIDUAL'S FEET WHEN STANDING 50M FROM THE MINE.	 Inspect fuze and remove safety.	Remove plug and inspect fuze well. Insure fuze is in SAFE position. Thread fuze into mine.....HAND TIGHT.	 Remove shipping plug check position of striker (offset). Remove safety fork, then turn dial to ARMED position. Check position of striker (center). Turn to SAFE and replace safety fork.
 Remove shipping plug-priming adapter, insert blasting cap and screw into either cap well.	 Insert fuze	 Hold fuze to prevent rotating, turn locking ring down until it locks against pressure plate.	 Screw threaded detonator into detonator well.
 Unroll firing wire and connect directly to firing device with safety engaged.	 Replace plug with dial in safe position.	 Place mine in hole and remove pull pin from fuze.	 Place mine in hole, remove safety fork; and turn dial to ARMED.
 FIRING POSITION: A minimum of 16 meters from rear of mine to fox hole. Friendly troops at side and rear should be under cover at a minimum of 100 meters.	 Turn dial to ARMED.	 Turn dial from SAFE to ARMED.	 Complete camouflage
TO FIRE: Disengage safety bail and depress handle.	TO BURY: Put mine in hole with pressure plate at or slightly above ground level.	TO DISARM: Reverse procedure except DO NOT replace pull pin.	TO BURY: Put mine in hole with pressure plate at or slightly above ground level.
TO DISARM: Reverse arming procedure.	TO DISARM: Reverse arming procedure.		TO DISARM: Reverse arming procedure.

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M14 BLAST ANTIPERSONNEL MINE	M16A1 BOUNDING ANTIPERSONNEL MINES	M25 BLAST ANTIPERSONNEL MINE (ELSIE)	M26 BLAST ANTIPERSONNEL MINE
			
Wt 3 1/3 oz. Explosive ... 1 oz. TETRYL Fuze Integral (with Belleville Spring) Functioning 20 to 35 lb. Penetrate Boot & Foot	Wt 8.25 lb. Projectiles Steel Fuze M605 (Combination) Functioning: Pressure ... 8 to 20 lbs Pull 3 to 10 lbs Bounding Ht .6-1.2m Casualty radius 30m	Wt 2 3/4 oz. Explosive ... 1/3 oz. shape Fuze Integral (w/ball release) Functioning .. 14 to 26 lbs Penetrate Boot & Foot	Wt 2.2 LBS Projectiles Pellets Fuze Integral Functioning: Pressure 14-28 lbs Pull 4-8 lbs Bounding Ht 3m Casualty Radius 17m
 Unscrew shipping plug from bottom of mine. Turn pressure plate to ARMED position with arming tool.	 Remove shipping plug and screw in fuze.	 Push mine into ground. Keep dust cap in place. If ground is hard, dig hole with bayonet.	 Remove arming handle. (If tripwire is to be used install tripwire; attach slack wire to lever; and place mine in ground flush with top of ground.)
 Remove safety clip and check for malfunctioning.	GROUND LEVEL  Pressure installation	 Remove dust cap.	 Remove arming latch retaining pin.
 Replace safety clip.	 Tripwire installation	 Insert charge.	 Attach arming handle to lugs on arming latch, rotate the cover clockwise until it comes to a positive stop (the arrow will point to the red letter "A" armed).
 Screw detonator into detonator well.	 Attach tripwires — first to anchor, then to pull ring.	 Remove safety clip.	 Remove arming latch by pulling straight out with the arming handle.
 Bury mine and remove safety clip. TO BURY: Pressure plate should be slightly above ground level. TO DISARM: Insert safety clip and remove detonator. CAUTION: Repeated turning of arming dial may cause excessive wear.	 Remove locking safety pin first. The interlocking pins should fall free. Then remove positive safety. TO DISARM: Reverse arming procedure.	TO DISARM: Reverse arming procedure.	TO DISARM: Reverse arming procedure.
US Mines.			8-2

M21 METALLIC (KILLER) ANTITANK MINE	M21 ANTITANK MINE USED WITH M612 FUZE	M24 OFF-ROUTE ANTITANK MINE
		<p>INSTALLING AND ARMING</p>  <p>DISPENSER POUCH ACCESSORIES POUCH</p>
<p>Wt. 18 lbs. Explosive 10.5 lbs. Fuze M607 Functioning 290 lbs. (Pressure or pressure ring or 20° deflection of tilt rod)</p>	<p>Has two 2.7m pneumatic leads, safety latch and arming lever.</p>	 <p>DISCRIMINATOR M61 FIRING ASSEMBLY BIPOD SIGHTING ASSEMBLY</p>
 <p>Remove closing plug, insert M120 booster in bottom, and replace closing plug.</p>	 <p>Remove closing plug, insert M120 booster.</p>	<p>Remove above items from accessories pouch. Insert batteries (issued separately) in firing device.</p> <p>DISCRIMINATOR LAID FOR TRACKED VEHICLES</p>  <p>TARGET IMPACT POINT TARGET IMPACT POINT</p> <p>DISCRIMINATOR LAID FOR WHEELED VEHICLES</p>
 <p>Remove closure assembly from fuze.</p>	 <p>Remove shipping plug from mine. Screw in fuze.</p>	<p>Unreel discriminator starting at far side of road (perpendicular to edge for wheeled vehicles; about 15° from perpendicular for tracked vehicles).</p> <p>BROWN MARKS</p>  <p>DISCRIMINATOR</p>
 <p>Remove shipping plug from mine and screw in fuze, then screw in tilt rod extension.</p>	 <p>Bury mine. Cross and extend hoses.</p>	<p>FIRING DEVICE</p> <p>Attach discriminator wire to DETECTOR of firing device (toggle switch on SAFE). Stand on two brown marks on discriminator nearest firing device. If lam lights, circuit is good; otherwise, discard system.</p> <p>DISCRIMINATOR</p>  <p>ROCKET LAUNCHER</p> <p>3 m to 30 m</p>
 <p>Bury mine.</p>	 <p>Lift safety latch and turn arming lever to ARMED. Recross hoses.</p>	<p>Disconnect discriminator wire from firing device. Remove launcher from dispenser pouch and place in position. Remove packing blocks, push rocket forward to safety band, and remove band. Depress ejection pin and push rocket back into launcher until contact pin is exposed at base. Grounding clip must be connected. Remove tagged shorting clip and push rocket back into launcher. Tape plastic covers over ends of launcher.</p>
 <p>Remove safety (pull ring assembly) and complete camouflage.</p> <p>For pressure type mine bury with fuze cap flush with ground surface. Tilt Rod-mines should be seated firmly in snug-fitting hole. Most effective in tall brush or grass.</p> <p>TO DISARM: Reverse arming procedure.</p>	 <p>Complete camouflage.</p> <p>Timer provides a 30 ± 5 minute safe separation period. Both leads must be depressed for initiation.</p> <p>TO DISARM: Reverse arming procedure.</p>	 <p>Position launcher on bipod assembly or mound of earth. Mount sighting assembly and sight along discriminator to target impact point about 1m above road (soldier's belt buckle). To aim, move launcher not sight. Fill poucher with dirt, lay over launcher, recheck sight, remove sight, re-connect discriminator wire to firing device (light out), connect rocket cable to firing device, and push toggle switch to ARM. The system is now armed and will fire when pressure applied to the discriminator. See TM 9-1345-200.</p>

M 66 OFF-ROUTE ANTITANK MINE	M 23 AND M 1 1 GALLON CHEMICAL LANDMINES
 <p>Assemble tripods, source and receiver assemblies. Install battery in source assembly.</p>	 <p>When armed for pressure detonation, emplace in same manner as the M15 antitank mine.</p>
 <p>Select well camouflaged sites across road. Aim source assembly at receiver and about 1 meter above road center. Stake legs of tripod to ground. Aim receiver at source assembly. Connect Geophone cable, output cable w/test light, and receiver assembly cable to data processor. Install batteries in data processor. Hold Geophone steady and place hand in front of receiver. If test light functions system is operative (If light does not function check connections and source/receiver alignment). Disconnect Geophone and place hand in front of receiver. Test light should not function (If light functions system is inoperative and should not be used). If light does not function connect Geophone cable and press spike into ground.</p>	 <p>Wt. 11 lb. loaded; has a 1.2m length of detonating cord for burster charge. May be armed for electric or tripwire actuation.</p> <p>Electric Firing</p>  <p>Attach burster charge—1.2m length of detonating cord—to side of mine.</p>
 <p>Unwind firing cable from rocket, slide rocket forward from launcher enough to remove safety. Depress ejection pin and slide back into launcher. Position launcher and sight on impact point 1m above road center on source/receiver line. Secure launcher with sandbags. Position output cable and firing cable as shown. Test light should not function. If it does recheck connections and source/receiver alignment. Remove shorting plug and connect cables.</p>	 <p>Bury mine 10cm and attach detonating cord to controlled firing system.</p> <p>Nonelectric Firing</p>  <p>Bury mine as above and attach nonelectric detonator to burster.</p>
<p>WARNING: Make sure all personnel are clear of launcher when testing circuits.</p> <p>NOTE: ALL MINES MUST BE COMPLETELY CAMOUFLAGED TO BE EFFECTIVE.</p>	<p>WARNING: Soldiers preparing, laying, and removing chemical landmines, must wear protective clothing.</p>

M5 PRESSURE-RELEASE FIRING DEVICE	M49A1 TRIP FLARE	M1 PULL FIRING DEVICE	M1A1 PRESSURE FIRING DEVICE	M3 PULL-RELEASE FIRING DEVICE
 <p>RELEASE SAFETY PIN</p> <p>INTERCEPTOR HOLE</p> <p>INITIATING ACTION: Lifting 1.59 cm or removing restraining weight (50 or more)</p>	 <p>Burning period: 55 to 70 sec Initiation radius: 200m</p> <p>Initiated by heat or loose tripwire</p>	 <p>LOCKING SAFETY</p> <p>POSITIVE SAFETY</p> <p>INITIATING ACTION: 3 in 5 in pull on tripwire</p>	 <p>LOCKING SAFETY</p> <p>POSITIVE SAFETY</p> <p>Initiating pressure: 10 lb or more</p>	 <p>LOCKING SAFETY</p> <p>POSITIVE SAFETY</p>
 <p>NONELECTRIC BLASTING CAP</p> <p>CRIMPER</p> <p>STANDARD BASE</p> <p>LENGTH: 10-GAUGE WIRE</p> <p>PLYWOOD PRESSURE BOARD</p> <p>Insert length of 10-gauge wire in interceptor hole and holding release plate down; remove safety pin. Replace safety pin with length of No. 18 wire. Assemble cap, firing device and mine.</p>	 <p>Attach flare to post, trip, etc.</p>	 <p>Remove protective cap from standard base and crimp up nonelectric blasting cap. Attach firing device assembly to charge. Attach anchored tripwire.</p>	 <p>Remove protective cap from base and crimp up nonelectric blasting cap. Assemble det cord nonelectric blasting cap and firing device.</p>	 <p>Remove protective cap and crimp on a nonelectric blasting cap. Attach firing device assembly to activated charge (must be firm enough to withstand pull of at least 6-10 lbs. pull on tripwire). Put free end of anchored tripwire in hole in which with knurled knob, draw up tripwire until locking safety is pulled into wide part of safety pin hole.</p>
 <p>HEAVY WIRE</p> <p>TO ARM: Remove this wire (locking safety) and then heavy wire (positive safety) from interceptor hole. FOLLOW ARMING PROCEDURE CAREFULLY.</p>	 <p>TO ARM: Remove safety clip.</p>	 <p>TO ARM: Remove locking safety pin first, and positive safety pin last.</p>	 <p>TO ARM: Remove locking safety pin first, and positive safety pin last.</p>	 <p>TO ARM: With card, remove small safety pin from locking safety pin, and withdraw locking safety pin. It is not now removed easily, adjust which winding. With card, pull out positive safety pin.</p>
 <p>HEAVY WIRE</p> <p>TO DISARM: Insert length of 10-gauge wire in interceptor hole. Bend wire to ground dropping out. Proceed carefully, as the slightest disturbance of restraining weight may detonate mine. Disassemble firing device and mine.</p>	 <p>TO DISARM: Insert safety pin.</p>	 <p>TO DISARM: Insert full length of wire or original safety pin in positive safety pin hole first. Then insert similar pin in locking safety pin hole. Cut tripwire and separate firing device and explosive. Uncrew standard base.</p>	 <p>TO DISARM: Remove safety clip. Then positive safety pin.</p>	 <p>TO DISARM: THE M3 IS DANGEROUS TO DISARM. IT SHOULD BE BLOWN IN PLACE.</p>
 <p>HEAVY WIRE</p> <p>TO DISARM: Insert length of 10-gauge wire in interceptor hole. Bend wire to ground dropping out. Proceed carefully, as the slightest disturbance of restraining weight may detonate mine. Disassemble firing device and mine.</p>	 <p>Check both ends of tripwire and cut near length.</p> <p>WARNING: Never look directly at burning flare. Note: For those tripwire initiation, attach tripwire to right of safety pin.</p>	 <p>The M1 pull firing device can be used as an arming device on the M15 or M15 AT mines. The arming procedures are the same as above. The device is employed in the side, face well and a tripwire attached from the M1 to a slave secured underground near the mine.</p>	 <p>TO DISARM: Insert wire, nail or original pin in positive safety hole. Replace safety clip, if available. Uncrew base assembly from firing device.</p>	<p>NOTE: If the device must be disarmed proceed as follows: Insert length of wire, nail or original pin in positive safety pin hole first. Then insert length of wire, nail or original locking pin in locking pin hole. Disassemble tripwire, firing device and explosive.</p>

Foreign Mines

The following references contain detailed information on foreign mines:

- FM 3-34.310 [5-34], *Engineer Field Data*.
- FM 3-24.32 [20-32], *Mine/Countermining Operations*.
- FM 3-24.33 [TC 20-32-3], *Foreign Mine Handbook (Balkan States)*.
- FM 3-24.34 [TC 20-32-4], *Foreign Mine Handbook (Asia)*.

Types of Minefields

The reconnaissance platoon may employ or encounter one of six main types of minefields shown in Table 15-5.

Table 15-5. Minefield types and characteristics.

TYPE	DESCRIPTION	TACTICAL USE	REPORTS REQUIRED	RECORDS REQUIRED	MINES USED			AUTHORITY (Delegated to) **
					AP	AT	S*	
Hasty protective	Above-ground; random pattern; no antihandling devices	Aids in unit's local, close-in protection of defensive perimeter	Intention Initiation Completion Change/ removal	DA Form 1355-1-R (to parent unit)	X	X	X	Brigade commander (Battalion or company commander)
Deliberate protective	Standard pattern; fenced and marked	Same as hasty deliberate minefield	As above (to authorizing HQ)	DA Form 1355 (to authorizing HQ)	X	X		Division commander (Installing commander)
Tactical	Standard or random pattern; scatterable	As part of obstacle plan	As above	DA Form 1355 (to authorizing HQ)	X	X	X	Division commander (Brigade commander)
Point	Random pattern; surface or buried	Enhance obstacles; hinder use of key areas	As above	As above	X	X	X	Brigade commander (Battalion commander)
Interdiction	Placed on or behind threat location	Separate, destroy, or disrupt threat forces	As above	As above after execution			X	Corps commander (Division commander)
Phone	Same as live minefield being simulated	Simulate other types of minefields	Same as simulated minefield	Same as simulated minefield				Same as simulated minefield
* Use the scatterable minefield report and records for all scatterable minefields (under "S" column).								
** The corps commander is the initial employment authority for all scatterable minefields ("S" column). Long self-destruct minefields (more than 24 hours) may be delegated to division and brigade level. Short self-destruct minefields (24 hours or less) may be delegated to battalion/task force level.								

Hasty Protective Minefield

Hasty protective minefields are generally emplaced by small units at outposts, work sites, bivouac areas, or ambush sites. The reconnaissance platoon may also use them to supplement manned weapons, prevent tactical surprise, or provide early warning of threat advances.

Mines should be readily detectable and removable. They should be sited across likely avenues of approach and within range of organic weapons and visual observation. Depending on the situation, the field should be marked by signs or fences or have guards to warn friendly troops.

The hasty protective minefield should be recorded on DA Form 1355-1-R (see Figure 15-8). If the form is not available, improvise one. The unit that installs the minefield should warn adjacent units and inform higher headquarters. This unit must either remove the field before leaving the area or transfer the responsibility to the relieving unit commander.

HASTY PROTECTIVE MINEFIELD RECORD
(FM 20-32)

INSTRUCTIONS

1. DESIGNATE AN EASILY IDENTIFIABLE REFERENCE POINT ON THE GROUND (A TREE, A STUMP, A STAKE OR THE LIKE) ORIENT THE FORM (THE BLANK FORM ON THE REVERSE) BY TYING IN THE CENTER POINT OF THE CIRCLE TO THE DESIGNATED REFERENCE POINT ON THE GROUND.
2. TIE IN REFERENCE POINT TO A LAND MARK, SUCH AS A ROAD JUNCTION, HOUSE CORNER, ETC.
3. COMPLETE THE AZIMUTH BLOCK.
4. COMPLETE THE FOLLOWING INFORMATION IN THE IDENTIFICATION BLOCK: UNIT, REF. PT., REMARKS, MAP, AND SHEET NO., NAME, SIGN OR OIC.
5. STARTING FROM THE REFERENCE POINT, RECORD THE MAGNETIC AZIMUTH IN DEGREES (°) AND DISTANCE IN PACES (P) OF EACH LEO FROM THE FRIENDLY POSITION TOWARD THE ENEMY POSITION AND FROM RIGHT TO LEFT OR LEFT TO RIGHT ACROSS EACH ROW OF MINES. HOWEVER, ALL ROWS MUST BE RECORDED IN THE SAME DIRECTION, WHICHEVER DIRECTION IS USED. THE STARTING POINTS OF THE ROWS MUST BE MARKED A1, B1, ETC., AND THE ENDING POINTS MARKED A2, B2, ETC. AS SHOWN IN THE EXAMPLE. EACH MINE IN EACH ROW WILL BE NUMBERED SEQUENTIALLY FROM THE STARTING POINT TO THE LAST MINE IN THE ROW.
6. FILL IN THE TABULAR BLOCK. (SEE EXAMPLE!)
7. FILL IN THE SCALE BEING USED WHERE SPACE IS PROVIDED: "SCALE: 2CM- "AND FILL IN THE PACE (P) READINGS IN THE RIGHT MARGIN.
8. MAKE ALL MINEFIELD REPORTS INTENTION, INITIATION, COMPLETION, TRANSFER AND CHANGE(S) BY SOME SECURE MEANS.
9. NOTE WHAT HAS BEEN USED TO IDENTIFY A1 & B1 (E. G. 24" DRIVEN FLUSH WITH GROUND, STEEL PICKET OR FENCE POST WRAPPED WITH ENGINEER TAPE, ETC.)

SCALE: 2cm = 25 paces

AZIMUTH BLOCK

Enemy Mag North

100 p
75 p
50 p
25 p
0 Pace
25 p
50 p
75 p
100 p

TABULAR BLOCK

Row	Type	Activation	Mine number
A	M16A1	TRIPWIRE	1, 2, 6
	M16A1	PRESSURE	3, 4, 5
B	M16A1	TRIPWIRE	1, 3
	M2	CONTROLLED	2

Remarks LANDMARK IS SE. CORNER CONCRETE BRIDGE NA 12343409

IDENTIFICATION BLOCK

Unit 2nd PLT, A Co, 1-4th 2 BDE, 1 CAVALRY

Ref Pt U SHAPED STEEL STAKE

Remarks POINTS A1 & A2, B1 & B2 ARE MARKED WITH 2"x2" STAKES

Map & Sheet No TRL/307 556B

Name/son of OIC LEE, M. J. 43

Signature [Signature] 1700 6 JAN 16

Mines removed

Mines transferred

DA Form 1355-1, R

Figure 15-8. Hasty protective minefield record.

Minefield Marking

Figures 15-9 and 15-10 illustrate a standard pattern minefield with appropriate markings and show several methods of marking lanes through a minefield.

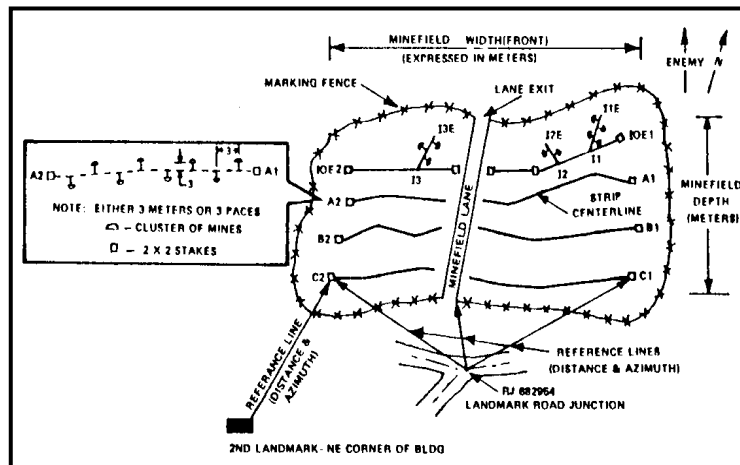


Figure 15-9. Standard pattern minefield (fenced, marked, and referenced).

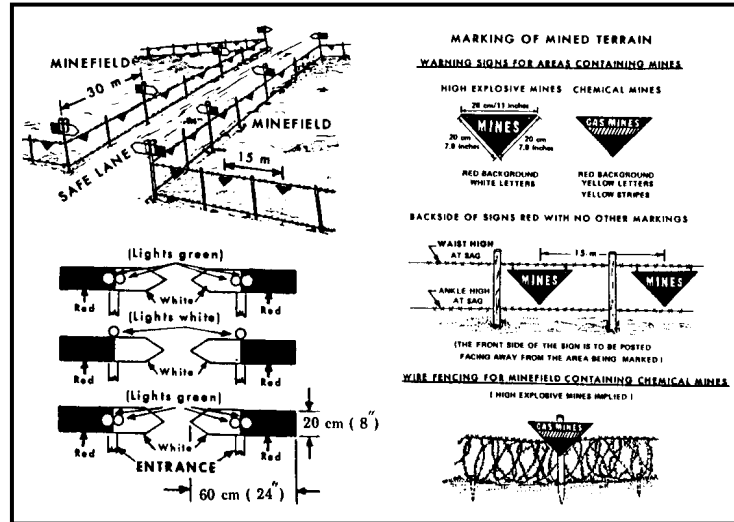


Figure 15-10. Standard rear area lane marking procedures.

OBSTACLE CHARACTERISTICS

Obstacle Types

Figure 15-11 shows various obstacles that the reconnaissance platoon may encounter during combat operations.

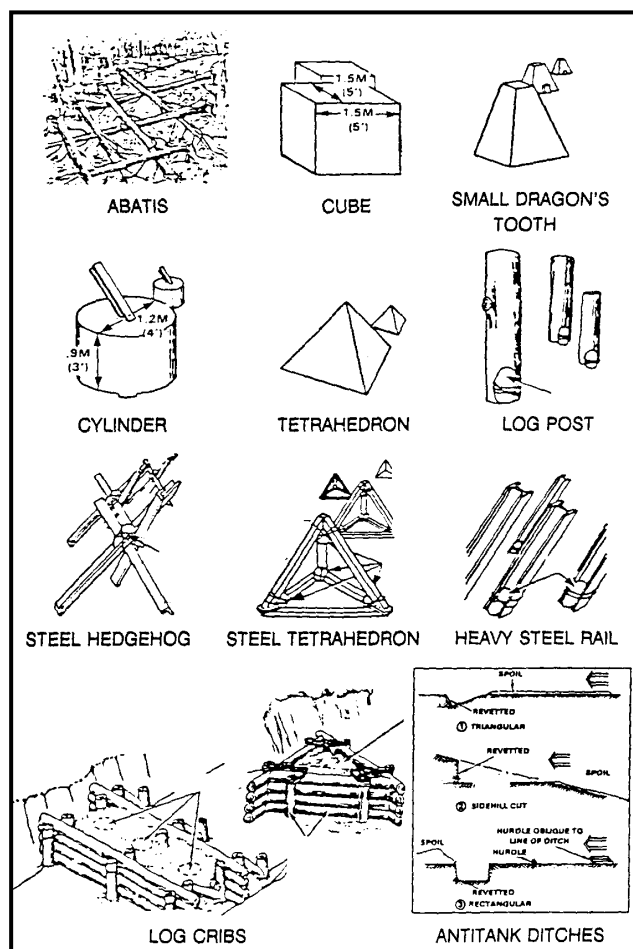


Figure 15-11. Common obstacle types.

FIELD-EXPEDIENT MINES AND DEMOLITIONS

When constructing and employing improvised mines, the reconnaissance platoon must consider safety, neutralization, and disarming requirements. Authorization of employment depends on the minefield in which the mine is to be used. Figures 15-12 through 15-16 provide design and function guidance for expedient mines. Actual construction will depend on several factors, including the availability of materials.

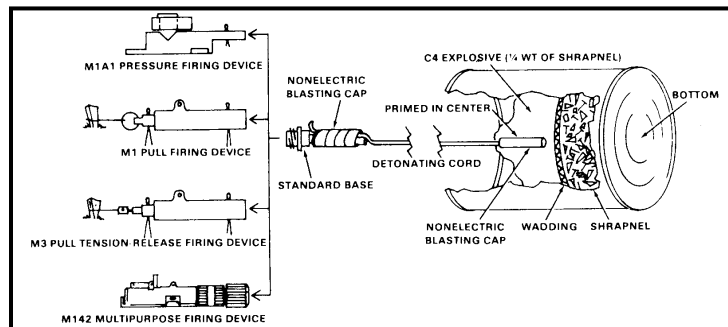


Figure 15-12. Grapeshot antipersonnel mine.

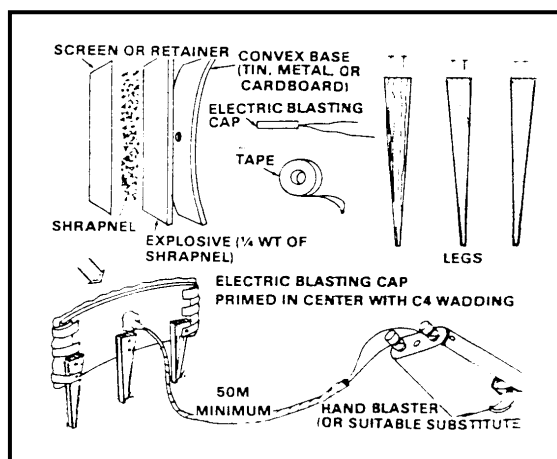
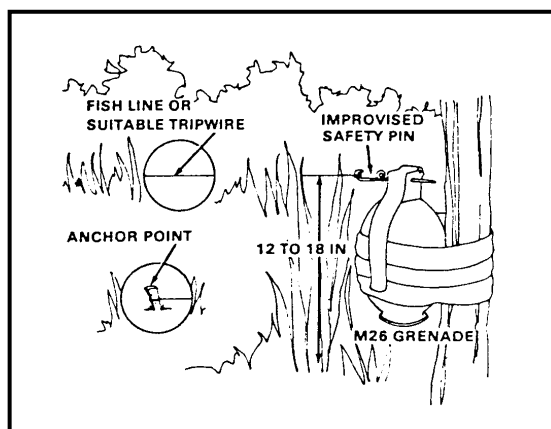


Figure 15-13. Improvised Claymore mine.



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**Figure 15-14. Fragmentation grenade mine
(with 5-second delay).**

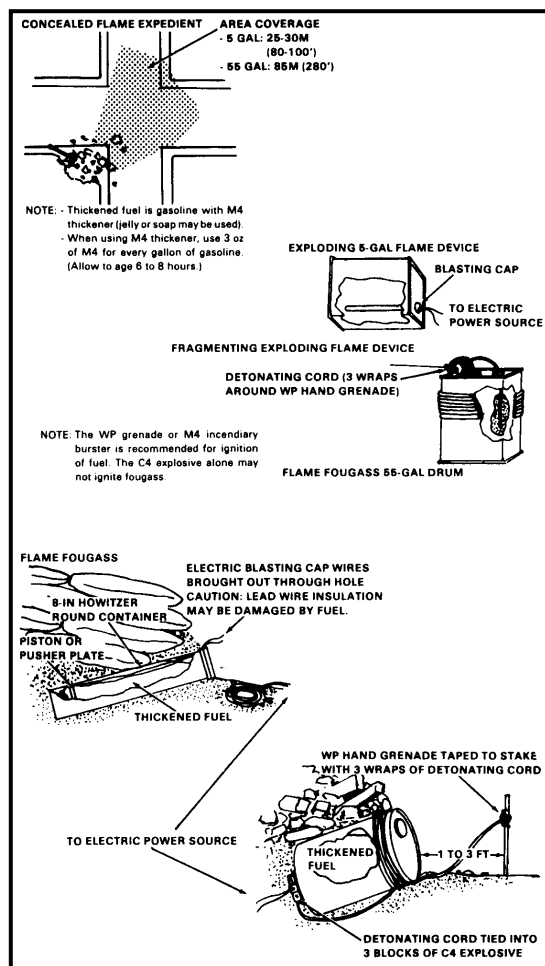


Figure 15-15. Improvised flame mines.

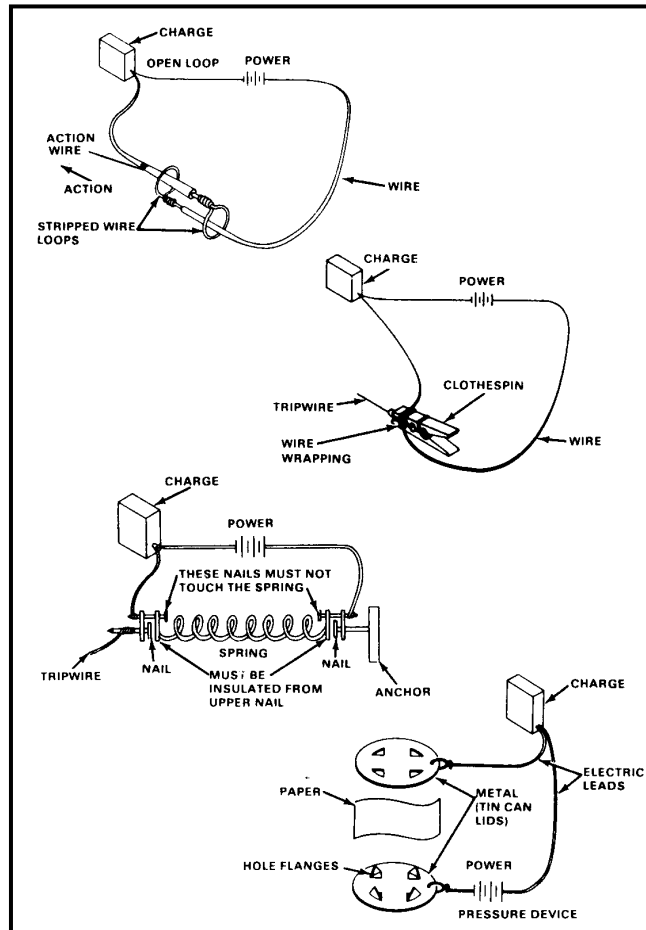


Figure 15-16. Expedient firing devices.

Expedient Demolitions

Cratering Charge

To make a cratering charge, use a mixture of dry fertilizer (at least one-third nitrogen; refer to the package contents list) and liquid (diesel fuel, motor oil, or gasoline) at a ratio of 25 pounds of fertilizer to a quart of liquid. Mix the fertilizer and liquid and allow the mixture to soak for an hour. Place half of the charge in a hole; add 1 pound of primed explosive, and then pour in the other half of the charge.

Shaped Charge

Figure 15-17 illustrates how to construct an expedient shaped charge.

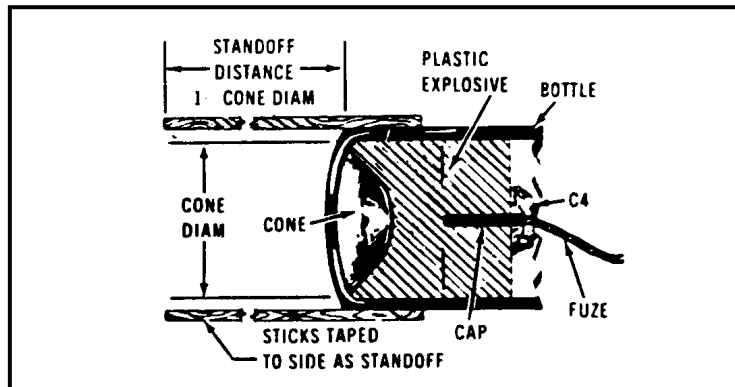


Figure 15-17. Improvised shaped charge.

Satchel Charge

Melt ordinary paraffin (wax) and stir in ammonium nitrate (fertilizer) pellets. Make sure the paraffin is hot while mixing. Before the mixture hardens, add a ½-pound block of TNT, or its equivalent, as a primer. Pour the mixture into a container. Shrapnel material can be added to the mixture if desired, or it can be attached on the outside of the container to give a shrapnel effect.

Improvised Bangalore Torpedo

The principal use of an improvised bangalore torpedo is to clear paths through barbed-wire entanglements using one of the following methods:

- Use any length of pipe with an approximate inside diameter of 2 inches and a wall thickness of at least .025 inch (24 gauge). Pack the pipe with 2 pounds of explosive per foot of length. Close one end of the pipe with a threaded cap, wooden plug, or damp earth.
- Use any length of U-shaped picket. Pack the inside section of the picket with 2 pounds of explosives per foot of length. Place the steel section of the U-shaped picket upward.
- Use any length of board. Attach 4 pounds of explosive per foot of length. Place the explosives to the top side of the board.

Detonating Cord Wick

Use a detonating cord wick to widen the boreholes; one strand will generally widen a hole by 1 inch. Tape the desired number of strands together, and prime one stick of dynamite with one of the strands. (The dynamite is used to clean the hole.) Place the wick and the dynamite in a hole. The wick must extend from the bottom of the

hole to the surface. Prime the wick and detonate the dynamite. Make sure the hole is "cold" before putting in any other explosives.

Expedient Time Fuze

Soak a length of clean string (1/8 inch in diameter) in gasoline. Hang it to dry; then store it in a tightly sealed container. Handle expedient fuzes as little as possible, and test them extensively before use.

Miscellaneous Improvised Demolitions

Thermite

Using any size can, tie or tape sticks to the sides, and cut a small hole in the bottom. Cover the bottom with paper. Place a round stick wrapped in paper in the middle of the can. Fill the bottom of the can with 1/4 inch of magnesium. Over this, place a mixture of three parts ferric oxide and two parts aluminum powder. Remove the stick, and fill the hole with a mixture of three parts potassium chlorate and one part sugar. On top of this, place a paper bag containing the chlorate-sugar mixture. Place a fuze in the top, and tamp with dirt or clay. See Figure 15-18.

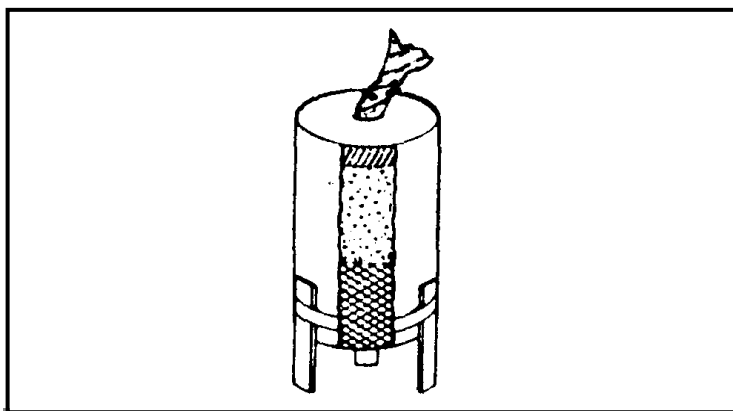


Figure 15-18. Thermite demolition.

Molotov Cocktail

Fill a bottle with napalm, jelly gas, or a 2-to-1 mixture of gas and oil. Insert a rag wick dipped in wax. Light the wick before throwing the bottle. (**NOTE:** Cotton rags burn slower than some other materials, such as silk. Use a rag wick that will burn long enough so the Molotov cocktail reaches the target before exploding.) See Figure 15-19.



Figure 15-19. Molotov cocktail.

Satchel Charge

Fill a #10 can with a mixture of ammonium nitrate and melted wax, stirring vigorously to ensure a complete mix. Add a small amount of C4 or TNT, and prime the charge with a time-fuze cord before the mixture hardens. Add a rope handle to create a convenient improvised satchel charge.

Common Chemicals in Field-expedient Demolitions

Table 15-6 lists a number of chemicals that are commonly used in expedient demolitions. The table includes sources for these substances, including local sites that may provide the reconnaissance platoon with access to necessary chemicals.

Table 15-6. Common chemicals in expedient demolitions.

CHEMICAL	SYMBOL	POSSIBLE SOURCES
Potassium permanganate	KMNO ₄	Drug store, hospital, gym
Potassium chlorate	KClO ₃	Drug store, hospital, gym
Potassium nitrate	KNO ₃	Fertilizer or explosives factory
Sodium nitrate	NgNO ₃	Fertilizer or glass factory
Ammonium nitrate	(NH ₄)NO ₃	Fertilizer or explosives factory
Ferric oxide	Fe ₂ O ₃	Hardware or paint store
Powdered aluminum	Al	Paint, electric, or auto parts store
Magnesium	Mg	Auto, machine, or chemical factory
Glycerin	C ₃ H ₅ (OH) ₃	Drug store, soap/candle factory
Sulfuric acid	H ₂ SO ₄	Garage, machine shop, hospital
Sodium chlorate	NgClO ₃	Match or explosives factory
Sulfur	S	Drug store, match factory

Chapter 16

FIRST AID

The nature of patrolling operations causes casualties to become a greater consideration than on other missions. It is essential that all personnel know how to diagnose and treat injuries, wounds, and illnesses. The unit should also have a plan for handling KIAs.

LIFESAVING STEPS

These lifesaving steps apply to all injuries:

- Open the airway and restore breathing.
- Stop the bleeding and protect the wound.
- Check, treat, and monitor for shock.

Detailed procedures for administering these lifesaving steps and other first aid treatments are outlined in the following paragraph.

IMMEDIATE FIRST AID ACTIONS

- Determine responsiveness as follows:
 - If unconscious, arouse by shaking gently and shouting.
 - If no response—
 - Keep head and neck aligned with body.
 - Roll victims onto their backs.
 - Open the airway by lifting the chin.
 - Look, listen, and feel for air exchange.

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- If victim is not breathing—
 - Check for a clear airway; remove any blockage.
 - Cover victim's mouth with your own.
 - Pinch victim's nostrils closed.
 - Fill victim's lungs with **2** slow breaths.
 - If breaths are blocked, reposition airway; try again.
 - If breaths still blocked, give **5** abdominal thrusts:
 - Straddle the victim.
 - Place a fist between breastbone and belly button.
 - Thrust upward to expel air from stomach.
 - Sweep with finger to clear mouth.
 - Try **2** slow breaths again.
 - If the airway is still blocked, continue (c) through (f) until successful or exhausted.
 - With open airway, start mouth-to-mouth breathing:
 - Give **1** breath every 5 seconds.
 - Check for chest rise each time.
- If victim is unconscious, but breathing—
 - Keep head and neck aligned with body.
 - Roll victim on side (drains the mouth and prevents the tongue from blocking airway).
- If breathing difficulty is caused by chest trauma, refer to *paragraph 1d, Treat Chest Injuries*.

CAUTION

DO NOT remove an impaled object unless it interferes with the airway. You may cause more tissue damage and increase bleeding. For travel, you may shorten and secure the object.

- Control bleeding as follows:
 - Apply a pressure dressing (Figure 16-1).
 - If **STILL** bleeding—
 - Use direct pressure over the wound.
 - Elevate the wounded area above the heart.

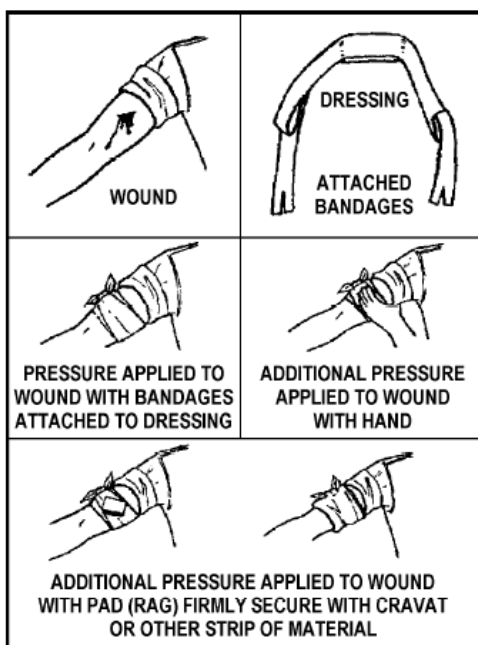


Figure 16-1. Application of a pressure dressing.

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- If *STILL* bleeding—
 - Use a pressure point between the injury and the heart (Figure 16-2).
 - Maintain pressure for 6 to 10 minutes before checking to see if bleeding has stopped.

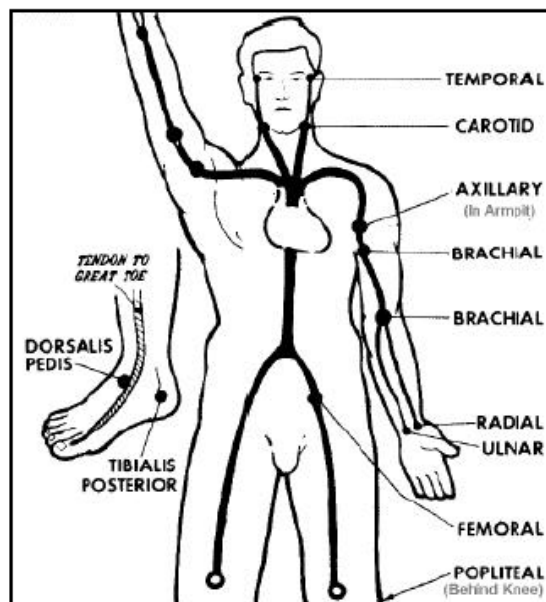


Figure 16-2. Pressure points.

CAUTION

Use of a tourniquet is a **LAST RESORT** measure. Use **ONLY** when severe, uncontrolled bleeding will cause loss of life. Recognize that long-term use of a tourniquet may cause loss of limb.

- If a limb wound is **STILL** bleeding—
 - Apply tourniquet (TK) band just above bleeding site on limb. A band at least 3 inches (7.5 cm) or wider is best.
 - Follow steps illustrated in Figure 16-3.
 - Use a stick at least 6 inches (15 cm) long.
 - Tighten only enough to stop arterial bleeding.
 - Mark a **TK** on the forehead with the time applied.
 - **DO NOT** cover the tourniquet.

CAUTION

The following directions apply **ONLY** in survival situations where rescue is **UNLIKELY** and **NO** medical aid is available.

- If rescue or medical aid is not available for over 2 hours, an attempt to **SLOWLY** loosen the tourniquet may be made 20 minutes after application. Before loosening—
 - Ensure pressure dressing is in place.
 - Ensure bleeding has stopped.
 - Loosen tourniquet **SLOWLY** to restore circulation.
 - Leave loosened tourniquet in position in case bleeding resumes.

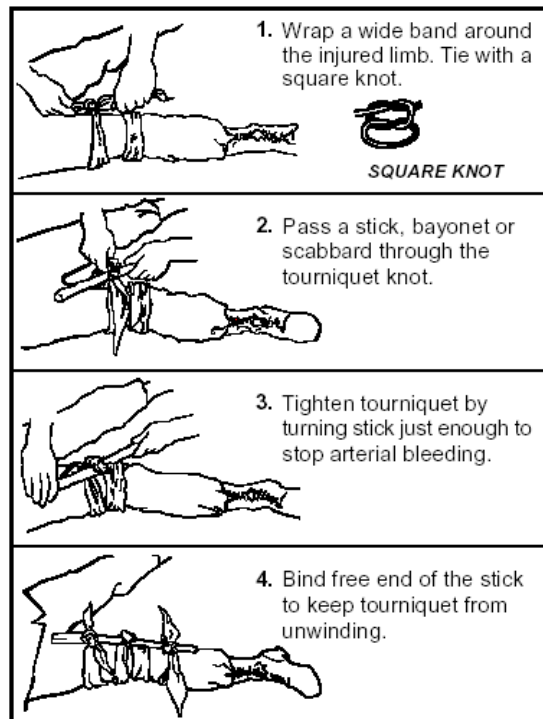


Figure 16-3. Application of a tourniquet.

- Treat shock. (Shock is difficult to identify or treat under field conditions. It may be present with or without visible injury.)
 - Identify by one or more of the following:
 - Pale, cool, and sweaty skin.
 - Fast breathing and a weak, fast pulse.
 - Anxiety or mental confusion.
 - Decreased urine output.
 - Maintain circulation.
 - Treat underlying injury.
 - Maintain normal body temperature.
 - Remove wet clothing.
 - Give warm fluids.
 - **DO NOT** give fluids to an unconscious victim.
 - **DO NOT** give fluids if they cause victim to gag.
 - Insulate from ground.
 - Shelter from the elements.
 - Place conscious victim on back.
 - Place very weak or unconscious victim on side, this will—
 - Allow mouth to drain.
 - Prevent tongue from blocking airway.
- Treat chest injuries.
 - Sucking chest wound. This occurs when chest wall is penetrated; may cause victim to gasp for breath; may

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cause sucking sound; may create bloody froth as air escapes the chest.

- **Immediately** seal wound with hand or airtight material.
- Tape airtight material over wound on **3 sides only** to allow air to escape from the wound but not to enter.
- Monitor breathing and check dressing.
- Lift untapped side of dressing as victim **exhales** to allow trapped air to escape, as necessary.
- Flail chest. Results from blunt trauma when **3 or more** ribs are broken in **2 or more** places. The flail segment is the broken area that moves in a direction opposite to the rest of chest during breathing.
 - Stabilize the flail segment as follows:
 - Place rolled-up clothing or bulky pad over site.
 - Tape pad to site.
 - **DO NOT** wrap tape around chest.
 - Have victim keep segment still with hand pressure.
 - Roll victim onto side of flail segment injury (as other injuries allow).
- Fractured ribs.
 - Encourage deep breathing (painful, but necessary to prevent the possible development of pneumonia).
 - **DO NOT** constrict breathing by taping ribs.
- Treat fractures, sprains, and dislocations.
 - Control bleeding.

- Remove watches, jewelry, and constrictive clothing.
- If fracture penetrates the skin—
 - Clean wound by gentle irrigation with water.
 - Apply dressing over wound.
- Position limb as normally as possible.
- Splint in position found (*if unable* to straighten limb).
- Improvise a splint with available materials:
 - Sticks or straight, stiff materials from equipment.
 - Body parts (for example, opposite leg, arm-to-chest).
- Attach with strips of cloth, parachute cord, etc.
- Keep the fractured bones from moving by immobilizing the joints on both sides of the fracture. If fracture is in a joint, immobilize the bones on both sides of the joint.

CAUTION

Splint fingers in a slightly flexed position, **NOT** in straight position. Hand should look like it is grasping an apple.

- Use **RICES** treatment for 72 hours.
 - Rest.
 - Ice.
 - Compression.
 - Elevation.
 - Stabilization.
- Apply cold to acute injuries.

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- Use 15 to 20 minute periods of cold application.
 - **DO NOT** use continuous cold therapy.
 - Repeat 3 to 4 times per day.
 - Avoid cooling that can cause frostbite or hypothermia.
- Wrap with a compression bandage after cold therapy.
- Elevate injured area above heart level to reduce swelling.
- Check periodically for a pulse beyond the injury site.
- Loosen bandage or reapply splint if no pulse is felt or if swelling occurs because bandage is too tight.

AEROMEDICAL EVACUATION

When required, use the nine-line air evacuation request format illustrated in Figure 16-4.

NOTE: See Chapter 8, Aviation, for PZ operations and responsibilities.

NINE-LINE AIR EVACUATION REQUEST FORMAT	
Units must use the following nine-line format to provide the necessary information when requesting air evacuation (either MEDEVAC or CASEVAC) for casualties.	
LINE 1 – LOCATION.	_____
Specify the grid coordinates for the six-digit grid location, preceded by the 100,000-meter grid identification.	
LINE 2 – RADIO FREQUENCY/CALL SIGN.	_____
The frequency and call sign should be that of the radio at the site of the unit requesting evacuation.	
LINE 3 – PATIENT CATEGORY OF PRECEDENCE.	_____
Classify the casualties' priority for evacuation using the following terms:	
<ul style="list-style-type: none"> • Urgent. Evacuation required within 2 hours to save life or limb. • Priority. Patient's medical condition will deteriorate, becoming urgent within 4 hours. • Routine. Evacuation required, but patient's condition is not expected to deteriorate for several hours. • Tactical immediate. Evacuation required so casualties do not endanger the tactical mission. 	
LINE 4 – SPECIAL EQUIPMENT/EMERGENCY MEDICAL SUPPLIES.	_____
List all requirements.	
LINE 5 – NUMBER AND TYPE OF CASUALTIES.	_____
Provide a complete, accurate list.	
LINE 6 – SECURITY OF PICKUP SITE.	_____
Describe conditions for security at the LZ/PZ.	
LINE 7 – SIGNALING AND SITE MARKING.	_____
Specify the signaling and marking methods to be used.	
LINE 8 – PATIENT NATIONALITY AND STATUS.	_____
Provide a complete, accurate list.	
LINE 9 – NBC CONTAMINATION AREA.	_____
Specify locations of any contaminated areas affecting the evacuation operation.	

Figure 16-4. Nine-line air evacuation request format.

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BITES AND STINGS	
TYPE	FIRST AID
Snakebite	<ol style="list-style-type: none">1. Get the casualty away from the snake.2. Remove all rings and bracelets from the affected extremity.3. Reassure the casualty and keep him quiet.4. Apply constricting band(s) 1-2 finger widths proximal to the bite. One finger should be able to be slipped between the band and skin. ARM or LEG Bite - Place one band above and one band below the bite site. HAND or FOOT Bite - Place one band above the wrist or ankle.5. Immobilize the affected limb in a position below the level of the heart.6. Kill the snake, if possible, (without damaging its head or endangering yourself) and send it with the casualty.7. Seek medical treatment immediately.
Brown recluse Black Widow Spider bites	<ol style="list-style-type: none">1. Keep the casualty calm.2. Wash the area.3. Apply ice or a freeze pack, if available.4. Seek medical treatment.
Tarantula bite, Scorpion sting, Ant bites	<ol style="list-style-type: none">1. Wash the area.2. Apply ice or a freeze pack, if available.3. Apply baking soda, calamine lotion, or meat tenderizer to the bite site to relieve pain and itching.4. If site of bite(s) or sting(s) is on the face, neck (possible airway blockage), or genital area, or if reaction is severe, or if the sting is by the dangerous Southwestern scorpion, keep the casualty as quiet as possible and seek immediate medical aid.
Bee stings	<ol style="list-style-type: none">1. If the stinger is present, remove by scraping with a knife or finger nail. DO NOT squeeze venom sack on stinger, more venom may be injected.2. Wash the area.3. Apply ice or freeze pack, if available.4. If allergic signs or symptoms appear, be prepared to perform CPR and seek medical assistance.
Human and Other animal Bites	<ol style="list-style-type: none">1. Cleanse the wound thoroughly with soap or detergent solution.2. Flush bite well with water.3. Cover bite with a sterile dressing.4. Immobilize injured extremity.5. Transport casualty to a medical treatment facility.6. Kill the animal, if possible, without damaging its head or endangering yourself, and send it with the casualty.

BITES AND STINGS (Continued)	
TYPE	FIRST AID
Sharks, Barracuda, and Alligators	<ol style="list-style-type: none"> 1. Control the bleeding. 2. Prevent shock. 3. Provide basic life support. 4. Splint any orthopedic injuries. 5. Provide immediate medical attention.
Turtles, Moray Eels, Corals	<ol style="list-style-type: none"> 1. Clean the wound(s) thoroughly. 2. Splint if necessary.
Jellyfish, Portuguese Man-o- War, Anemones, etc.	<ol style="list-style-type: none"> 1. Gently remove clinging tentacles with a towel. 2. Apply diluted ammonia, alcohol, meat tenderizer, or talcum powder. 3. Seek medical attention.
Spineyfish, Urchins, Stingrays, and Conch shells	<ol style="list-style-type: none"> 1. Soak the wound in warm water for 30-60 minutes. 2. Seek further first aid as necessary.

HEAD INJURY

- Symptoms:
 - Bleeding.
 - Deformity.
 - Unconsciousness.
 - Memory loss.
 - Clear fluid or blood leaking from nose and ears.
 - Staggering/dizziness.
 - Change in pulse.
 - Breathing problems.
 - Nausea or vomiting.
 - Convulsions.

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- Slurred speech.
 - Confusion.
 - Sleepiness.
 - Black eyes.
 - Eye problems.
 - Paralysis.
 - Headache.
- Treatment:
 - Maintain open airway.
 - Place a dressing over wounded area.
 - Do not attempt to clean the wound.
 - Keep casualty warm.
 - Do not attempt to remove an impaled object from the head.
 - Do not give the casualty anything to eat or drink.
 - Do not administer morphine or similar drugs.
 - Do not attempt to push any brain matter back into the head.
 - Keep the airway clean.
 - Position the casualty on his side opposite the site of injury.

ENVIRONMENTAL INJURIES

INJURY	SIGNS/SYMPTOMS	FIRST AID
COLD INJURIES		
CHILLBLAIN	Red, swollen, hot, tender, itching skin. Continued exposure may lead to infected (ulcerated bleeding) skin lesions.	<ol style="list-style-type: none"> 1. Area usually responds to locally applied warming (body heat). 2. Do not rub or massage area. 3. Seek medical treatment.
IMMERSION FOOT/ TRENCH FOOT	Affected parts are cold, numb, and painless. As parts warm they may be hot, with burning and shooting pains. Advanced stage: skin pale with bluish cast: pulse decreases, blistering, swelling, heat hemorrhages, and gangrene may follow.	<ol style="list-style-type: none"> 1. Gradual warming by exposure to warm air. 2. DO NOT massage or moisten skin. 3. Protect affected parts from trauma. 4. Dry feet thoroughly: avoid walking. 5. Seek medical treatment.
FROST BITE NOTE 1	<p>SUPERFICIAL: Redness, blisters in 24-36 hours and sloughing of the skin.</p> <p>DEEP: Preceded by superficial frostbite; skin is painless, pale-yellowish, waxy, "wooden" or solid to touch, blisters form in 12-36 hours</p>	<p>SUPERFICIAL:</p> <ol style="list-style-type: none"> 1. Keep casualty warm; gently warm affected parts. 2. Decrease constricting clothing, increase exercise and insulation. <p>DEEP:</p> <ol style="list-style-type: none"> 1. Protect the part from additional injury. 2. Seek medical treatment as fast as possible.
SNOW BLINDNESS	Eyes may feel scratchy, watering, redness, headache, increased pain with exposure to light can occur.	<ol style="list-style-type: none"> 1. Cover the eyes with a dark cloth. 2. Seek medical treatment.

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INJURY	SIGNS/SYMPTOMS	FIRST AID
COLD INJURIES (Continued)		
DEHYDRATION	Similar to heat exhaustion.	1. Keep warm, loosen clothes. 2. Replace lost fluids, rest, and seek additional medical treatment.
HYPOTHERMIA	Casualty is cold, uncontrolled shivering, until shivering stops, rectal (core) temp less 95 degrees F consciousness may be altered, uncoordinated movements may occur, shock and coma occur as body temperature drops.	MILD HYPOTHERMIA: 1. Warm body evenly and without delay. (Heat source must be provided.) 2. Keep dry, protect from elements. 3. Warm liquids may be given to conscious casualty only. 4. Be prepared to start CPR. 5. Seek medical treatment immediately. SEVERE HYPOTHERMIA: 1. Quickly stabilize body temperature. 2. Attempt to prevent further heat loss. 3. Handle the casualty gently. 4. Evacuate to nearest medical treatment facility as soon as possible.

HEAT INJURIES NOTE 2, 3		
HEAT CRAMPS	Casualty experiences muscle cramps in arms, legs and/or stomach, may also have wet skin and extreme thirst.	<ol style="list-style-type: none"> 1. Move the casualty to a shaded area and loosen clothing. 2. Allow casualty to drink 1 quart of cool water slowly per hour. 3. Monitor casualty and provide water as needed. 4. Seek medical attention if cramps persist.
HEAT EXHAUSTION	Casualty experiences loss of appetite, headache, excessive sweating, weakness or faintness, dizziness, nausea, muscle cramps. The skin is moist, pale and clammy.	<ol style="list-style-type: none"> 1. Move the casualty to a cool, shaded area and loosen clothing. 2. Pour water on casualty and fan to increase cooling effect of evaporation. 3. Provide at least one quart of water to replace lost fluids. 4. Elevate legs. 5. Seek medical aid if symptoms continue.
HEAT-STROKE (SUN-STROKE) NOTE 4	Casualty stops sweating (hot, dry skin), may experience headache, dizziness, nausea, vomiting, rapid pulse and respiration, seizures, mental confusion. Casualty may suddenly collapse and lose consciousness. <u>THIS IS A MEDICAL EMERGENCY!</u>	<ol style="list-style-type: none"> 1. Move casualty to a cool, shaded area, loosen clothing, remove outer clothing if the situation permits. 2. Immerse in cool water. If cool bath is not available, massage arms and legs with cool water. Fan casualty to increase the cooling effect of evaporation. 3. If conscious, slowly consume one quart of water. 4. <u>SEEK MEDICAL AID AND EVACUATE AS SOON AS POSSIBLE.</u> Perform any lifesaving measures.

NOTE 1: DO NOT attempt to thaw deep frostbite. There is less danger of walking on feet while frozen than after they have thawed.

NOTE 2: The first aid procedure for heat related injuries caused by wearing individual protective equipment is to move the casualty to a clear area and give him water to drink.

NOTE 3: When in a chemical environment, DO NOT loosen or remove casualty's protective garments.

NOTE 4: Can be fatal if not treated promptly and quickly.

USING PLANTS FOR MEDICINE

In a survival situation you will have to use what is available. In using plants and other natural remedies, positive identification of the plants involved is as critical as in using them for food.

Terms and Definitions

The following terms, and their definitions, are associated with medicinal plant use:

- *Poultice*. The name given to crushed leaves or other plant parts, possibly heated, that you apply to a wound or sore either directly or wrapped in cloth or paper.
- *Infusion or tisane or tea*. The preparation of medicinal herbs for internal or external application. You place a small quantity of an herb in a container, pour hot water over it, and let it steep (covered or uncovered) before use.
- *Decoction*. The extract of a boiled down or simmered herb leaf or root. You add herb leaf or root to water. You bring them to a sustained boil or simmer to draw their chemicals into the water. The average ratio is about 28 to 56 grams (1 to 2 ounces) of herb to 0.5 liter of water.
- *Expressed juice*. Liquids or saps squeezed from plant material and either applied to the wound or made into another medicine.

Many natural remedies work slower than the medicines you know. Therefore, start with smaller doses and allow more time for them to take effect. Naturally, some will act more rapidly than others.

Specific Remedies

The following remedies are for use only in a survival situation, not for routine use:

- *Diarrhea.* Drink tea made from the roots of blackberries and their relatives to stop diarrhea. White oak bark and other barks containing tannin are also effective. However, use them with caution when nothing else is available because of possible negative effects on the kidneys. You can also stop diarrhea by eating white clay or campfire ashes. Tea made from cowberry or cranberry or hazel leaves works too.
- *Antihemorrhagics.* Make medications to stop bleeding from a poultice of the puffball mushroom, from plantain leaves, or most effectively from the leaves of the common yarrow or woundwort (*Achillea millefolium*).
- *Antiseptics.* Use to cleanse wounds, sores, or rashes. You can make them from the expressed juice from wild onion or garlic, or expressed juice from chickweed leaves or the crushed leaves of dock. You can also make antiseptics from a decoction of burdock root, mallow leaves or roots, or white oak bark. All these medications are for external use only.
- *Fevers.* Treat a fever with a tea made from willow bark, an infusion of elder flowers or fruit, linden flower tea, or elm bark decoction.
- *Colds and sore throats.* Treat these illnesses with a decoction made from either plantain leaves or willow bark. You can also use a tea made from burdock roots, mallow or mullein flowers or roots, or mint leaves.
- *Aches, pains, and sprains.* Treat with externally applied poultices of dock, plantain, chickweed, willow bark, garlic,

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or sorrel. You can also use salves made by mixing the expressed juices of these plants in animal fat or vegetable oils.

- *Itching.* Relieve the itch from insect bites, sunburn, or plant poisoning rashes by applying a poultice of jewelweed (*Impatiens biflora*) or witch hazel leaves (*Hamamelis virginiana*). The jewelweed juice will help when applied to poison ivy rashes or insect stings. It works on sunburn as well as aloe vera.
- *Sedatives.* Get help in falling asleep by brewing a tea made from mint leaves or passionflower leaves.
- *Hemorrhoids.* Treat them with external washes from elm bark or oak bark tea, from the expressed juice of plantain leaves, or from a Solomon's seal root decoction.
- *Constipation.* Relieve constipation by drinking decoctions from dandelion leaves, rose hips, or walnut bark. Eating raw daylily flowers will also help.
- *Worms or intestinal parasites.* Using moderation, treat with tea made from tansy (*Tanacetum vulgare*) or from wild carrot leaves.
- *Gas and cramps.* Use a tea made from carrot seeds as an antifatulent; use tea made from mint leaves to settle the stomach.
- *Antifungal washes.* Make a decoction of walnut leaves or oak bark or acorns to treat ringworm and athlete's foot. Apply frequently to the site, alternating with exposure to direct sunlight.

ADMINISTRATIVE REPORTS

A DA Form 1156 is completed when a casualty occurs or as soon as the tactical situation permits. Known information should be completed on the form before a casualty occurs. The form can then be placed in a common location (for example, top pocket of BDU). The PSG then forwards the completed form to the 1SG, battalion S1, or medical personnel. A brief description is included on how the casualty occurred, the place, the time, the activity performed, and who or what inflicted the wound. If the squad leader does not have personal knowledge of how the casualty occurred, he obtains this information from a soldier who does. DA Forms 1155 and 1156 are completed within 24 hours or as soon as the tactical situation permits. This information is used to inform the casualty's next of kin and to provide a statistical base for analysis of friendly or enemy tactics (see Figures 16-5 and 16-6).

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CASUALTY FEEDER REPORT (AR 600-10)		CONTROL NO.	CHECK APPLICABLE BOX <input checked="" type="checkbox"/> HOSTILE ACTION <input type="checkbox"/> NON-HOSTILE ACTION
1. LAST NAME - FIRST NAME - MIDDLE INITIAL RAMIREZ, RICHARD			
2. SERVICE NO. 000-00-0000	3. GRADE E5	4. HOUR AND DATE OF INCIDENT 20 2200 Z OCT 89	
5. UNIT 5CT PLT 7-6 INF	6. GEOGRAPHICAL LOCATION (Primary town) and GRID COORDINATES BAMBERG		
7. TYPE OF CASUALTY (Check applicable boxes)			
<input type="checkbox"/> KILLED IN ACTION	<input type="checkbox"/> MISSING IN ACTION	<input checked="" type="checkbox"/> WOUNDED OR INJURED IN ACTION	
<input type="checkbox"/> DIED OF WOUNDS OR INJURIES	<input type="checkbox"/> CAPTURED	<input type="checkbox"/> LIGHTLY WOUNDED OR INJURED IN ACTION	
<input type="checkbox"/> DIED NOT AS RESULT OF HOSTILE ACTION	<input type="checkbox"/> DETAINED	<input type="checkbox"/> SPRIALLY WOUNDED OR INJURED IN ACTION	
<input type="checkbox"/> BODY RECOVERED <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> INTERNEED	<input type="checkbox"/> SPRIALLY INJURED NOT AS RESULT OF HOSTILE ACTION	
<input type="checkbox"/> BODY IDENTIFIED <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> MISSING	<input type="checkbox"/> LIGHTLY INJURED NOT AS RESULT OF HOSTILE ACTION	
8. EVACUATED TO BN AID STATION			
* To be indicated by medical personnel only.			

DA FORM 1156, 1 JUN 86

REPLACES EDITION OF 1 MAY 81, WHICH WILL BE ISSUED AND USED UNTIL EXHAUSTED.

9. WITNESSES WHO SAW INCIDENT OR IDENTIFIED REMAINS (Name, grade, service number and unit)		
JEFF RHEINWALD E6 000-00-0000, 5CT PLT, 7-6 INF		
JIMBO KELLER E4 000-00-0000, 5CT PLT, 7-6 INF		
10. REMARKS (Additional circumstances, any religious ministrations performed, etc.)		
SGT RAMIREZ STEPPED ON A LAND MINE WHILE TRYING TO MOVE AROUND A MINEFIELD.		
11. FOR USE BY C.O. OR MED OFF (only for casualties not the result of hostile action)		
AUTHENTICATED BY (CO or Med Off)		
VERIFIED BY (First Off)		
LINE OF DUTY: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNDETH		
UNIT 5CT PLT, 7-6 INF	GRADE E7	SERVICE NO. 000-00-0000
DATE 20 OCT 89		
SIGNATURE OF PERSON ORIGINATING REPORT <i>Charles Connor Kinkhede II</i>		

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Figure 16-5. Example of DA Form 1156.

WITNESS STATEMENT ON CASUALTY INCIDENT (AR 600-10)		CHECK APPLICABLE BOX	
1. LAST NAME, FIRST NAME MI (of casualty) <i>FUE, ROBERT</i>		2. SSN <i>-</i>	3. RANK 4. SEX <i>SP4 M</i>
5. ORGANIZATION <i>C BATTERY 3/21ST FA</i>		6. DATE OF DEATH OR WHEN LAST SEEN <i>2030, 12 NOV 82</i>	
7. GEOGRAPHICAL LOCATION OF INCIDENT (include grid coordinates and nearby town) <i>AB 122 344 FULDA, FRG</i>		8. OTHER PERSONS WHO MAY HAVE WITNESSED THIS INCIDENT OR HAVE FURTHER INFORMATION <i>1SG SMITH C BATTERY 3/21ST FA</i>	
9. CIRCUMSTANCES SURROUNDING INCIDENT (if known, include cause of death or condition when last seen, or how identified) <i>SP4 FUE WAS THE RADIO OPERATOR FOR 2LT JONES, WHO WAS ATTACHED TO OUR PLATOON FOR A MISSION.</i>			
(continued on back)			

DA FORM 1155 REPLACES EDITION OF 1 JUN 66, WHICH WILL BE ISSUED AND USED UNTIL EXHAUSTED.

9. CIRCUMSTANCES SURROUNDING INCIDENT (Continued)		
<i>HE WENT IN PATROL WITH 2LT JONES ON 12 NOV 82. HE LEFT OUR LINES AT 2030. NEITHER ONE RETURNED. THEY DIDN'T ANSWER THE RADIO. FIRING WAS HEARD FORWARD OF OUR POSITION ABOUT 2300 HOURS.</i>		
10. NAME OF PERSON MAKING STATEMENT <i>Q. T. WILLIAMS</i>	11. RANK <i>PSG</i>	12. SSN <i>000-00-0000</i>
13. UNIT <i>C BATTERY 3/21ST FA</i>	14. DATE <i>13 NOV 82</i>	15. SIGNATURE <i>Q. T. Williams</i>

Figure 16-6. Example of DA Form 1155.

Chapter 17

SURVIVAL, ESCAPE, RESISTANCE, AND EVASION (SERE)

SURVIVAL

Reconnaissance teams must know the principles of survival and must be proficient in survival techniques to successfully return alive when placed in a survival situation. (See FMs 3-05.70 [21-76] and 3-97.12 [31-70] for more information on the principles and techniques of survival.)

The information in the list below corresponds to the letters in the word “survival.”

- **S – Size up the situation and your surroundings, physical condition, and equipment.**
 - **Size up the situation.** If you are in a combat situation, find a place where you can conceal yourself from the enemy. Remember, security takes priority. Use your senses of hearing, smell, and sight to get a feel for the battlefield. What is the enemy doing? Advancing? Holding in place? Retreating? You will have to consider what is developing on the battlefield when you make your survival plan.
 - **Size up your surroundings.** Determine the pattern of the area. Get a feel for what is going on around you. Every environment, whether forest, jungle, or desert, has a rhythm or pattern. This rhythm or pattern includes animal and bird noises and movements and insect sounds. It may also include enemy traffic and civilian movements.

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- **Size up your physical condition.** The pressure of the battle you were in or the trauma of being in a survival situation may have caused you to overlook wounds you received. Check your wounds and give yourself first aid. Take care to prevent further bodily harm. For instance, in any climate, drink plenty of water to prevent dehydration. If you are in a cold or wet climate, put on additional clothing to prevent hypothermia.
- **Size up your equipment.** Perhaps in the heat of battle, you lost or damaged some of your equipment. Check your equipment and see what condition it is in.

Now that you have sized up your situation, surroundings, physical condition, and equipment, you are ready to make your survival plan. In doing so, keep in mind your basic physical needs—water, food, and shelter.

- **U – Use all your senses; undue haste makes waste.** You may make a wrong move when you react quickly without thinking or planning. That move may result in your capture or death. Don't move just for the sake of taking action. Consider all aspects of your situation (size up your situation) before you make a decision and a move. If you act in haste, you may forget or lose some of your equipment. In your haste you may also become disoriented so that you don't know which way to go. Plan your moves. Be ready to move out quickly without endangering yourself if the enemy is near you. Use all your senses to evaluate the situation. Note sounds and smells. Be sensitive to temperature changes. Be observant.

- **R – Remember where you are.** Spot your location on your map and relate it to the surrounding terrain. This is a basic principle that you must always follow. If there are other persons with you, make sure they also know their location. Always know who in your group, vehicle, or aircraft has a map and compass. If that person is killed, you will have to get the map and compass from him. Pay close attention to where you are and to where you are going. Do not rely on others in the group to keep track of the route. Constantly orient yourself. Always try to determine, as a minimum, how your location relates to—
 - The location of enemy units and controlled areas.
 - The location of friendly units and controlled areas.
 - The location of local water sources (especially important in the desert).
 - Areas that will provide good cover and concealment.
- **V – Vanquish fear and panic.** The greatest enemies in a combat survival and evasion situation are fear and panic. If uncontrolled, they can destroy your ability to make an intelligent decision. They may cause you to react to your feelings and imagination rather than to your situation. They can drain your energy and thereby cause other negative emotions. Previous survival and evasion training and self-confidence will enable you to vanquish fear and panic.
- **I – Improvise.** In the United States, we have items available for all our needs. Many of these items are cheap to replace when damaged. Our easy come, easy go, easy-to-replace culture makes it unnecessary for us to improvise. This inexperience in improvisation can be an enemy in a survival situation. Learn to improvise. Take a tool designed for a specific purpose and see how many other uses you can make of it. Learn to use natural objects around you for

different needs. An example is using a rock for a hammer. No matter how complete a survival kit you have with you, it will run out or wear out after a while. Your imagination must take over when your kit wears out.

- **V – Value living.** All of us were born kicking and fighting to live, but we have become used to the soft life. We have become creatures of comfort. We dislike inconveniences and discomforts. What happens when we are faced with a survival situation with its stresses, inconveniences, and discomforts? This is when the will to live- placing a high value on living-is vital. The experience and knowledge you have gained through life and your Army training will have a bearing on your will to live. Stubbornness, a refusal to give in to problems and obstacles that face you, will give you the mental and physical strength to endure.
- **A – Act like the natives.** To get a feel of the area, watch how the natives go about their daily routine. When and what do they eat? When, where, and how do they get their food? When and where do they go for water? What time do they usually go to bed and get up? These actions are important when you are trying to avoid capture.
 - If in a friendly area, one way you can gain rapport with the natives is to show interest in their tools and how they get food and water. By studying the people, you learn to respect them, you often make valuable friends, and, most important, you learn how to adapt to their environment and increase your chances of survival.
 - Animal life in the area can also give you clues on how to survive. Animals also require food, water, and shelter. By watching them, you can find sources of water and food. Keep in mind that the reaction of animals can reveal your presence to the enemy.

WARNING

Animals cannot serve as an absolute guide to what you can eat and drink. Many animals eat plants that are toxic to humans.

- **L -Live by Your Wits, But for Now, Learn Basic Skills.** Without training in basic skills for surviving and evading on the battlefield, your chances of living through a combat survival and evasion situation are slight.
 - Learn these basic skills now, not when you are headed for or are in the battle. How you decide to equip yourself before deployment will impact on whether or not you survive. You need to know about the environment to which you are going, and you must practice basic skills geared to that environment. For instance, if you are going to a desert, you need to know how to get water in the desert.
 - Practice basic survival skills during all training programs and exercises. Survival training reduces fear of the unknown and gives you self-confidence. It teaches you to live by your wits.

Survival Kit

A useful technique for organizing for survival is the individual survival kit. The content of each phase of the kit depends on the environment in the area of operations and available supplies. This is only an example of the contents of a survival kit.

- (Moderate). Soldiers with load-bearing equipment. Load-bearing equipment should contain a small survival kit. Kit should be tailored to the area of operation and should only contain basic health and survival necessities.

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- 550 cord, 6 feet (cordage, tiedown, fishing line, weapons, snares).
- Waterproofed matches or lighter (fire starter).
- Waterproofed iodine tablets (water purification, small cuts).
- Fish hooks or lures (fishing).
- Heavy duty knife with sharpener, bayonet type (heavy chopping or cutting).
- Mirror (signaling).
- Tape (utility work).
- Aspirin.
- Clear plastic bag (water purification, solar stills).
- Candles (heat, light).
- Surgical tubing (snares, weapons, drinking tube).
- Tripwire (traps, snares, weapons).
- Dental floss (cordage, fishing line, tiedown, traps).
- Upholstery needles (sewing, fish hooks).
- (Slight). Soldier with load-bearing equipment and rucksack. Rucksack should only contain minimal equipment. The following are some examples:
 - Poncho (shelters, gather water such as dew).
 - Water purification pump.
 - Cordage (550), 20 feet.
 - Change of clothes.
 - Cold and wet weather jacket and pants.
 - Poncho liner or lightweight sleeping bag.

NOTE: Items chosen for survival kits should have multiple uses.

Improvised Shelters

In case of emergency, you must know how to protect yourself from the effects of the weather. If natural shelters such as caves or rock ledges are available, they should be used. If they are not, a temporary improvised shelter must be built. The type of shelter to be built depends on the equipment and materials available.

Natural Shelters

Do not overlook natural formations that provide shelter. Examples are caves, rocky crevices, clumps of bushes, small depressions, large rocks on leeward sides of hills, large trees with low-hanging limbs, and fallen trees with thick branches. However, when selecting a natural formation—

- Stay away from low ground such as ravines, narrow valleys, or creek beds. Low areas collect the heavy cold air at night and are therefore colder than the surrounding high ground. Thick, brushy, low ground also harbors more insects.
- Check for poisonous snakes, ticks, mites, scorpions, and stinging ants.
- Look for loose rocks, dead limbs, coconuts, or other natural growth that could fall on your shelter.

Debris Hut

For warmth and ease of construction, this shelter is one of the best. When shelter is essential to survival, build this shelter (see Figure 17-1). Figures 17-2 and 17-3 illustrate additional types of shelters.

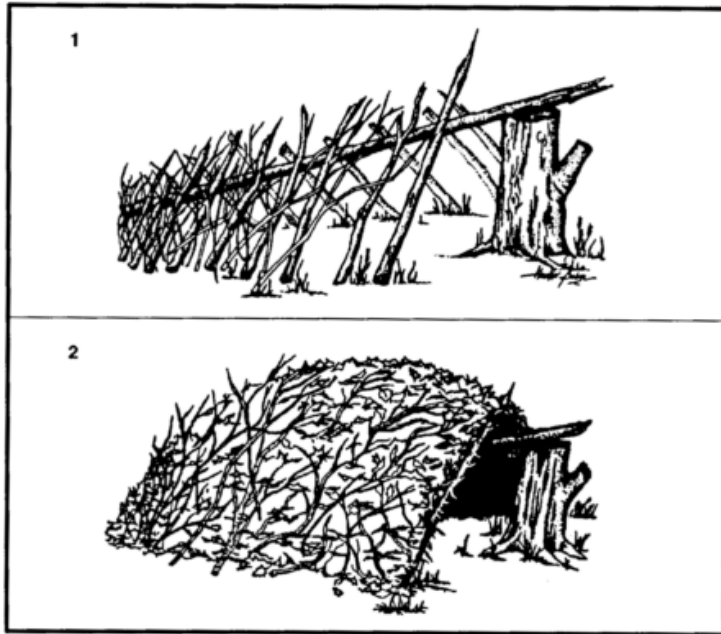


Figure 17-1. Debris hut.

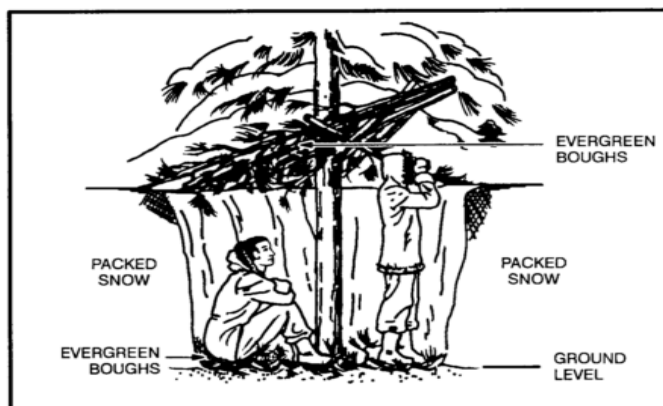


Figure 17-2. Tree-pit snow shelter.

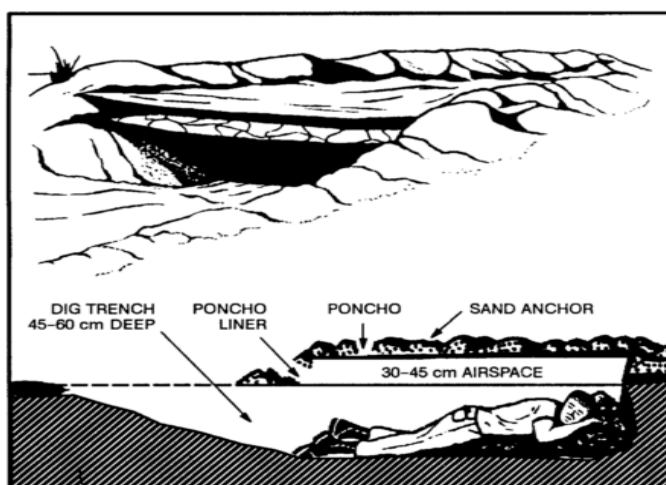


Figure 17-3. Desert shelter.

Snow Caves

A snow cave can be used as an improvised shelter in the open areas where deep and compacted snow is available (Figure 17-4).

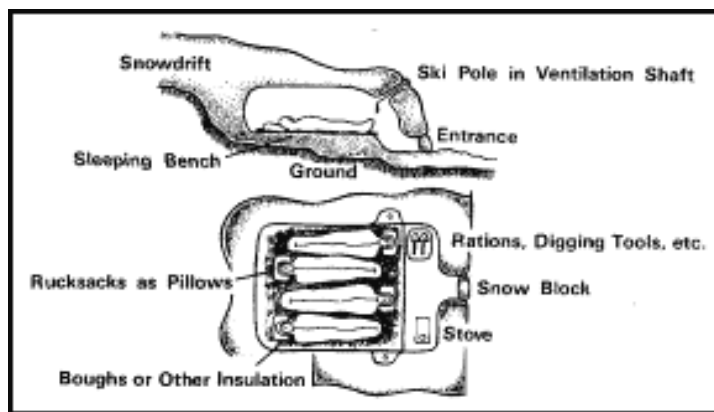


Figure 17-4. Snow cave.

Water

Water is one of your most urgent needs in a survival situation. You can't live long without it, especially in hot areas where you lose water rapidly through perspiration. Even in cold areas, you need a minimum of 2 liters of water each day to maintain efficiency.

More than three-fourths of your body is composed of fluids. Your body loses fluid as a result of heat, cold, stress, and exertion. To function effectively, you must replace the fluid your body loses. So, one of your first goals is to obtain an adequate supply of water. See Figures 17-5 and 17-6.

Environment	Source of Water	Means of Obtaining and/or Making Potable	Remarks
Frigid areas	Snow and ice	Melt and purify.	<p>Do not eat without melting! Eating snow and ice can reduce body temperature and will lead to more dehydration.</p> <p>Snow and ice are no purer than the water from which they come.</p> <p>Sea ice that is gray in color or opaque is salty. Do not use it without desalting it. Sea ice that is crystalline with a bluish cast has little salt in it.</p>
At sea	Sea	Use desalter kit.	Do not drink seawater without desalting.
	Rain	Catch rain in tarps or in other water-holding material or containers.	If tarp or water-holding material has become encrusted with salt, wash it in the sea before using (very little salt will remain on it).
	Sea ice		See remarks above for frigid areas.

Figure 17-5. Water sources.

Environment	Source of Water	Means of Obtaining and/or Making Potable	Remarks
Beach	Ground	Dig hole deep enough to allow water to seep in; obtain rocks, build fire, and heat rocks; drop hot rocks in water; hold cloth over hole to absorb steam; wring water from cloth.	Alternate method if a container or bark pot is available: Fill container or pot with seawater; build fire and boil water to produce steam; hold cloth over container to absorb steam; wring water from cloth.
Desert	Ground <ul style="list-style-type: none">• in valleys and low areas• at foot of concave banks of dry river beds• at foot of cliffs or rock outcrops• at first depression behind first sand dune of dry desert lakes• wherever you find damp surface sand• wherever you find green vegetation	Dig holes deep enough to allow water to seep in.	In a sand dune belt, any available water will be found beneath the original valley floor at the edge of dunes.
	Cacti	Cut off the top of a barrel cactus and mash or squeeze the pulp. CAUTION: Do not eat pulp. Place pulp in mouth, suck out juice, and discard pulp.	Without a machete, cutting into a cactus is difficult and takes time since you must get past the long, strong spines and cut through the tough rind.

Figure 17-5. Water sources (continued).

Environment	Source of Water	Means of Obtaining and/or Making Potable	Remarks
Desert (continued)	Depressions or holes in rocks		Periodic rainfall may collect in pools, seep into fissures, or collect in holes in rocks.
	Fissures in rock	Insert flexible tubing and siphon water. If fissure is large enough, you can lower a container into it.	
	Porous rock	Insert flexible tubing and siphon water.	
	Condensation on metal	Use cloth to absorb water, then wring water from cloth.	<p>Extreme temperature variations between night and day may cause condensation on metal surfaces.</p> <p>Following are signs to watch for in the desert to help you find water:</p> <ul style="list-style-type: none"> • All trails lead to water. You should follow in the direction in which the trails converge. Signs of camps, campfire ashes, animal droppings, and trampled terrain may mark trails. • Flocks of birds will circle over water holes. Some birds fly to water holes at dawn and sunset. Their flight at these times is generally fast and close to the ground. Bird tracks or chirping sounds in the evening or early morning sometimes indicate that water is nearby.

Figure 17-5. Water sources (continued).

CAUTION

Do not substitute the following fluids for water:

Alcoholic beverages— Dehydrate the body and cloud judgment.

Urine—Contains harmful body wastes. Is about 2 percent salt.

Blood—Is salty and considered a food; therefore, requires additional body fluids to digest. May transmit disease.

Seawater—Is about 4 percent salt. It takes about 2 liters of body fluids to rid the body of waste from 1 liter of seawater. Therefore, by drinking seawater you deplete your body's water supply, which can cause death.

CAUTION

Do not keep the sap from plants longer than 24 hours. It begins fermenting, becoming dangerous as a water source.

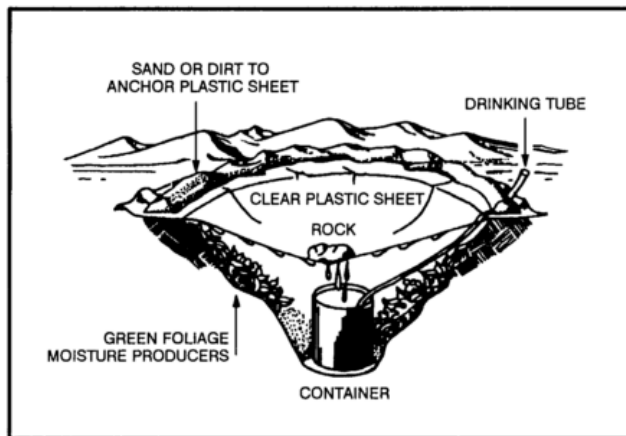


Figure 17-6. Belowground still.

Food***Insects***

The most abundant life-form on earth, insects are easily caught. Insects provide 65 to 80 percent protein compared to 20 percent for beef. This fact makes insects an important, if not overly appetizing, food source. Insects to avoid include all adults that sting or bite, hairy or brightly colored insects, and caterpillars and insects that have a pungent odor. Also avoid spiders and common disease carriers such as ticks, flies, and mosquitoes.

Worms

Worms (*Annelidea*) are an excellent protein source. Dig for them in damp humus soil or watch for them on the ground after a rain. After capturing them, drop them into clean, potable water for a few minutes. The worms will naturally purge or wash themselves out, after which you can eat them raw.

Crustaceans

Freshwater shrimp range in size from 0.25 centimeter up to 2.5 centimeters. They can form rather large colonies in mats of floating algae or in mud bottoms of ponds and lakes.

Fish

Fish represent a good source of protein and fat. They offer some distinct advantages to the survivor or evader. They are usually more abundant than mammal wildlife, and the ways to get them are silent.

Amphibians

Frogs and salamanders are easily found around bodies of fresh water. Avoid any brightly colored frog or one that has a distinct "X" mark on its back. Do not confuse toads with frogs. Several species of toads secrete a poisonous substance through their skin as a defense against attack. Therefore, to avoid poisoning, do not handle or eat toads.

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Reptiles

Reptiles are a good protein source and relatively easy to catch. You should cook them, but in an emergency, you can eat them raw.

Birds

All species of birds are edible, although the flavor will vary considerably. You may skin fish-eating birds to improve their taste.

Mammals

Mammals are excellent protein sources and, for Americans, the most tasty food source. There are some drawbacks to obtaining mammals. In a hostile environment, the enemy may detect any traps or snares placed on land. The amount of injury an animal can inflict is in direct proportion to its size.

Traps and Snares

For an unarmed survivor or evader, or when the sound of a rifle shot could be a problem, trapping or snaring wild game is a good alternative. Look for the following:

- Runs and trails.
- Tracks.
- Droppings.
- Chewed or rubbed vegetation.
- Nesting or roosting sites.
- Feeding and watering areas.

Use of Bait

Baiting a trap or snare increases your chances of catching an animal.

Trap and Snare Construction

Figures 17-7 through 17-9 show various forms of trap and snare construction.

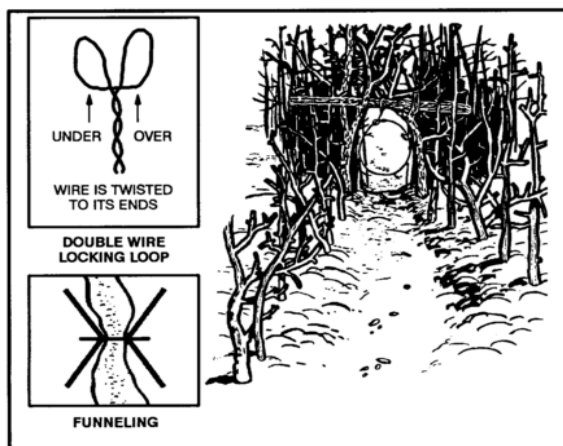


Figure 17-7. Drag noose.

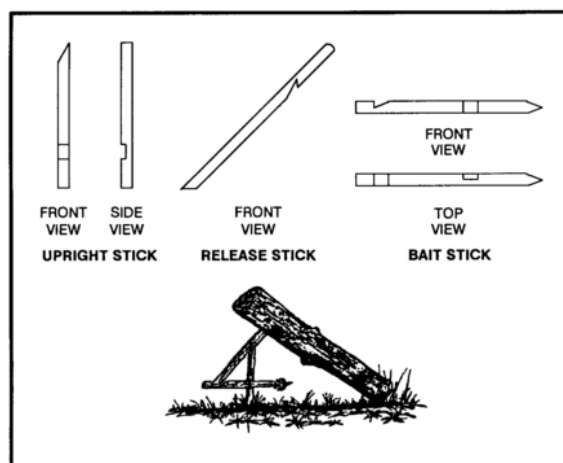


Figure 17-8. Deadfall.

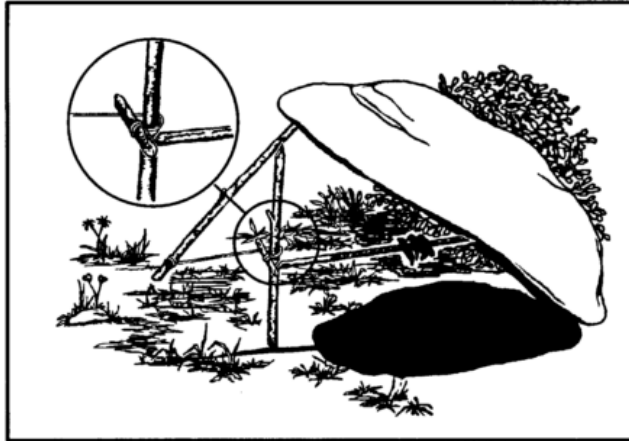


Figure 17-9. Paiute deadfall.

Fishing Devices

You can make your own fishhooks, nets, and traps and use several methods to obtain fish in a survival situation. See Figures 17-10 through 17-12.

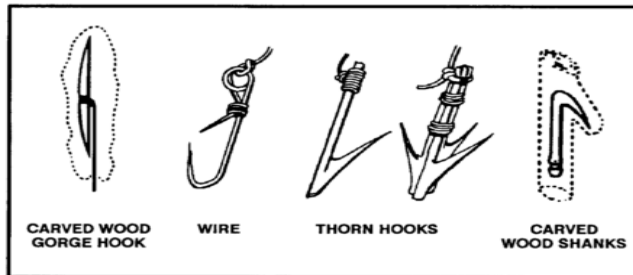


Figure 17-10. Improvised fishhooks.

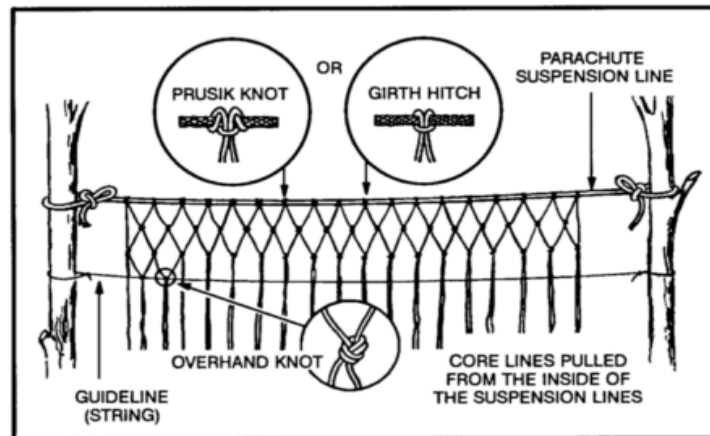


Figure 17-11. Gill net construction.



Figure 17-12. Grill net use.

Skinning and Butchering Game

Snakes

After killing the snake, cut off its head, slit the belly, and remove innards before skinning it (see Figure 17-13).

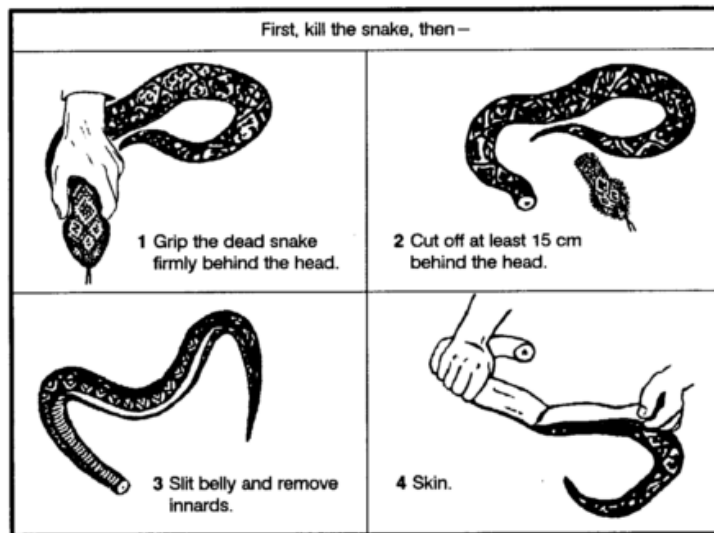


Figure 17-13. Skinning a snake.

Birds

After killing the bird, remove its feathers by either plucking or skinning. Remember, skinning removes some of the food value. Cook by boiling or roasting over a spit. Before cooking scavenger birds, boil them at least 20 minutes to kill parasites.

Mammals

Bleed the animal by cutting its throat. If possible, clean the carcass near a stream. Place the carcass belly up and split the hide from throat to tail, cutting around all sexual organs (see Figure 17-14). Remove the musk glands to avoid tainting the meat. For smaller mammals, cut the hide around the body and insert two fingers under the hide on both sides of the cut and pull both pieces off (see Figure 17-15). Remove the entrails from smaller game by splitting the body open and pulling them out with the fingers. Do not forget the chest cavity.

NOTE: When cutting the hide, insert the knife blade under the skin and turn the blade up so that only the hide gets cut. This will also prevent cutting hair and getting it on the meat.

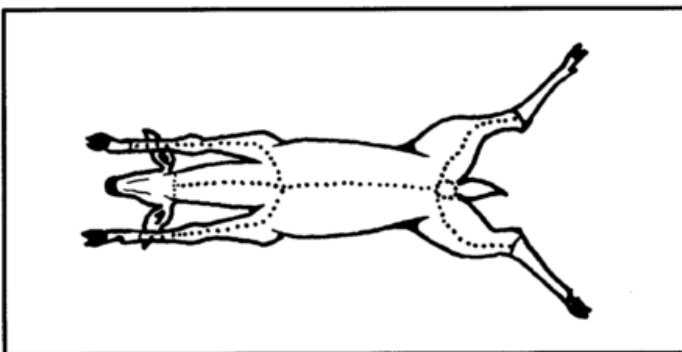


Figure 17-14. Skinning large game.

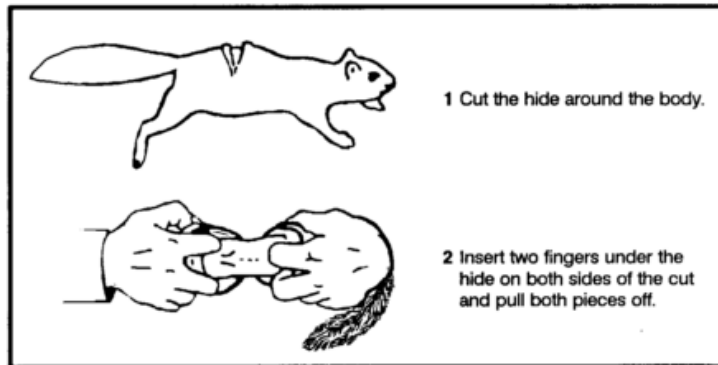


Figure 17-15. Skinning small game.

Edibility of Plants

Plants are valuable sources of food because they are widely available, easily procured, and, in the proper combinations, can meet all your nutritional needs.

WARNING

The critical factor in using plants for food is to avoid accidental poisoning. Eat only those plants you can positively identify and you know are safe to eat.

Absolutely identify plants before using them as food. Poison hemlock has killed people who mistook it for its relatives, wild carrots and wild parsnips. If in doubt, follow the procedure in Figure 17-16.

1	Test only one part of a potential food plant at a time.
2	Separate the plant into its basic components – leaves, stems, roots, buds, and flowers.
3	Smell the food for strong or acid odors. Remember, smell alone does not indicate a plant is edible or inedible.
4	Do not eat for 8 hours before starting the test.
5	During the 8 hours you abstain from eating, test for contact poisoning by placing a piece of the plant part you are testing on the inside of your elbow or wrist. Usually 15 minutes is enough time to allow for a reaction.
6	During the test period, take nothing by mouth except purified water and the plant part you are testing.
7	Select a small portion of a single part and prepare it the way you plan to eat it.
8	Before placing the prepared plant part in your mouth, touch a small portion (a pinch) to the outer surface of your lip to test for burning or itching.
9	If after 3 minutes there is no reaction on your lip, place the plant part on your tongue, holding it there for 15 minutes.
10	If there is no reaction, thoroughly chew a pinch and hold it in your mouth for 15 minutes. Do not swallow.
11	If no burning, itching, numbing, stinging, or other irritation occurs during the 15 minutes, swallow the food.
12	Wait 8 hours. If any ill effects occur during this period, induce vomiting and drink a lot of water.
13	If no ill effects occur, eat 0.25 cup of the same plant part prepared the same way. Wait another 8 hours. If no ill effects occur, the plant part as prepared is safe for eating.
CAUTION Test all parts of the plant for edibility, as some plants have both edible and inedible parts. Do not assume that a part that proved edible when cooked is also edible when raw. Test the part raw to ensure edibility before eating raw. The same part or plant may produce varying reactions in different individuals.	

Figure 17-16. Universal edibility test.

Firecraft

Remember, weigh your need for fire against your need to avoid enemy detection.

Basic Fire Principles

To build a fire, it helps to understand the basic principles of a fire. Fuel (in a nongaseous state) does not burn directly. When you apply heat to a fuel, it produces a gas. This gas, combined with oxygen in the air, burns.

Figure 17-17 illustrates a technique for building a fire pit known as a Dakota fire hole. Figure 17-18 lists materials for creating fire.

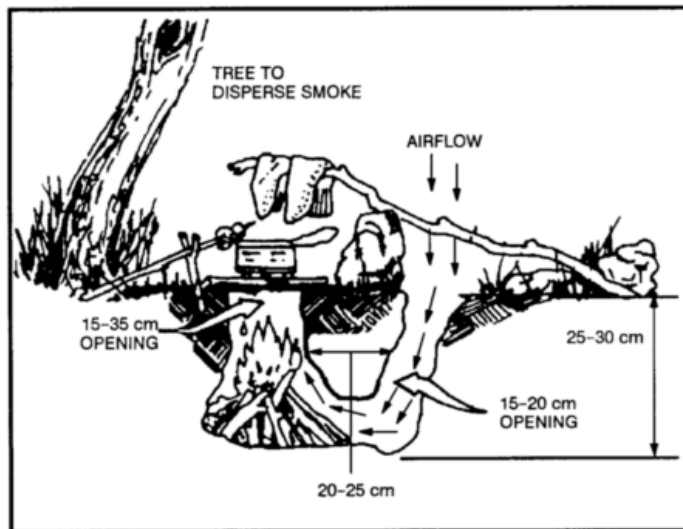


Figure 17-17. Dakota fire hole.

Tinder	Kindling	Fuel
<ul style="list-style-type: none"> • Birch bark • Shredded inner bark from cedar, chestnut, red elm trees • Fine wood shavings • Dead grass, ferns, moss, fungi • Straw • Sawdust • Very fine pitchwood scrapings • Dead evergreen needles • Punk (the completely rotted portions of dead logs or trees) • Evergreen tree knots • Bird down (fine feathers) • Down seed heads (milkweed, dry cattails, bulrush, or thistle) • Fine, dried vegetable fibers • Spongy threads of dead puffball • Dead palm leaves • Skinlike membrane lining bamboo • Lint from pocket and seams • Charred cloth • Waxed paper • Outer bamboo shavings • Gunpowder • Cotton • Lint 	<ul style="list-style-type: none"> • Small twigs • Small strips of wood • Split wood • Heavy cardboard • Pieces of wood removed from the inside of larger pieces • Wood that has been doused with highly flammable materials, such as gasoline, oil, or wax 	<ul style="list-style-type: none"> • Dry, standing wood and dry, dead branches • Dry inside (heart) of fallen tree trunks and large branches • Green wood that is finely split • Dry grasses twisted into bunches • Peat dry enough to burn (this may be found at the top of undercut banks) • Dried animal dung • Animal fats • Coal, oil shale, or oil lying on the surface

Figure 17-18. Fire materials.

How to Light a Fire

Always light your fire from the upwind side.

Convex lens. The lens can come from binoculars, camera, telescopic sights, or magnifying glasses. Angle the lens to concentrate the sun's rays on the tinder.

Battery. Use a battery to generate a spark. Use of this method depends on the type of battery available. Attach a wire to each terminal. Touch the ends of the bare wires together next to the tinder so the sparks will ignite it.

Gunpowder. Often, you will have ammunition with your equipment. If so, carefully extract the bullet from the shell casing, and use the gunpowder as tinder. A spark will ignite the powder. Be extremely careful when extracting the bullet from the case.

Fire-Plow. The fire-plow is a friction method of ignition. You rub a hardwood shaft against a softer wood base (see Figure 17-19). The plowing action of the shaft pushes out small particles of wood fibers. Then, as you apply more pressure on each stroke, the friction ignites the wood particles.

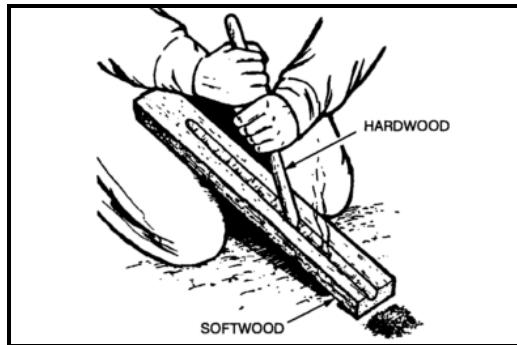


Figure 17-19. Fire-plow method.

Water Survival

Figure 17-20 illustrates the method for treading water.

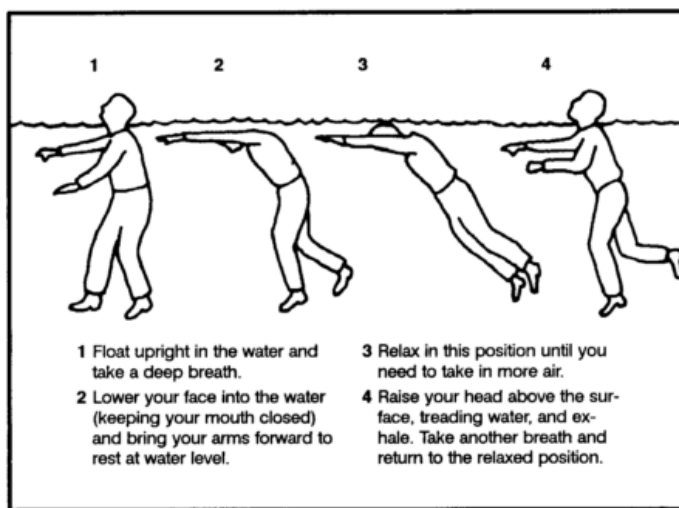


Figure 17-20. Treading water.

The following are the best swimming strokes during a survival situation:

- *Dog paddle.* This stroke is excellent when clothed or wearing a life jacket. Although slow in speed, it requires very little energy.
- *Breaststroke.* Use this stroke to swim underwater, through oil or debris, or in rough seas. It is probably the best stroke for long-range swimming: it allows you to conserve your energy and maintain a reasonable speed.

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- *Sidestroke*. It is a good relief stroke because you use only one arm to maintain momentum and buoyancy.
- *Backstroke*. This stroke is also an excellent relief stroke. It relieves the muscles that you use for other strokes. Use it if an underwater explosion is likely.

Useful Knots

Square Knot

This knot is used to tie two ropes of equal diameter together. It has two interlocking bites 180 degrees away from each other, with running ends exiting on same side of the standing portion of rope. Each running end is secured with an overhand knot on the standing end flush with the bite. See Figure 17-21.

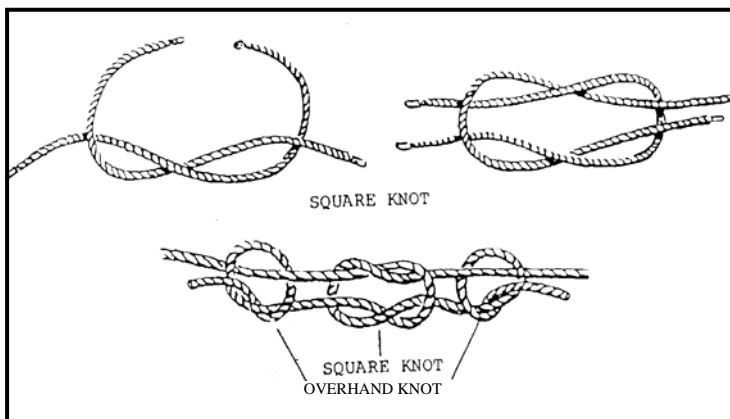


Figure 17-21. Square knot with overhand safeties.

End of the Rope Prusik

The end of the rope prusik is used to attach a movable rope to a fixed rope. The knot consists of two round turns with a locking bar perpendicular to the standing end of the rope. A bowline is tied no more than 6 inches from the locking bar. A minimum 4-inch tail remains after dressing the bowline. The knot does not move freely on the fixed rope. See Figure 17-22.

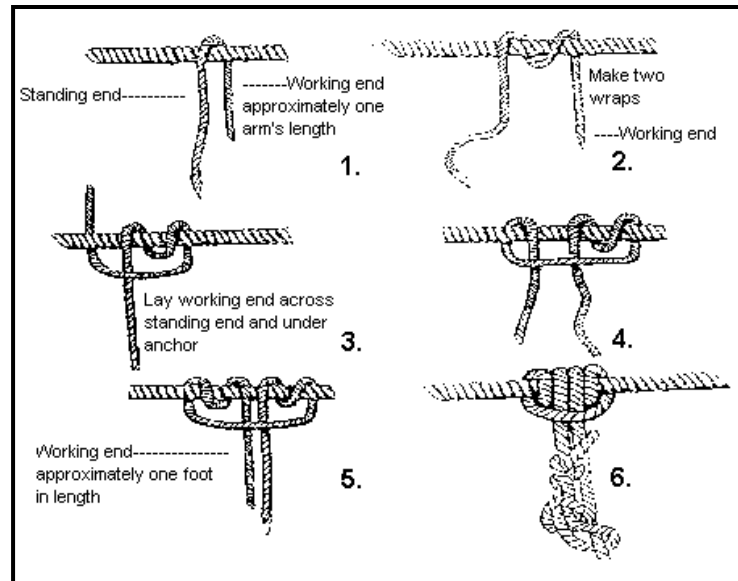


Figure 17-22. End of rope prusik.

EVASION AND ESCAPE

Evasion is eluding the enemy during a mission or following contact. Escape is breaking away from the enemy when surrounded. Together, evasion and escape refer to the act of returning to friendly lines by foot, essentially escaping from the enemy and evading him to reach friendly lines. (See FM 21-76-1 [3-25.77] for more information on evasion.)

Characteristics of successful long-range evasions include—

- Being able to cover greater distance from friendly forces.
- Knowing survival techniques.
- Knowing travel restrictions are greater.
- Conserving supply.
- Having a strong will to survive: sense of responsibility (the strong help the weak), family and home ties, panic control, continuous planning, patience and endurance, self-preservation, and knowledge of survival and evasion.
- Knowing special considerations: where to go; attitude of the population; customs of the people; advantages and disadvantages of civilian contact; travel restrictions, curfews, checkpoints, and roadblocks.
- Knowing available courses of action: exfiltrations, deceptions. At times, it is impossible to travel without coming in contact with civilians. Evasion by deception under these circumstances is necessary. Deception may require the use of a disguise and a cover story. Deception is perhaps the most difficult type of evasion to take. A combination of exfiltration and deception may apply in some situations.
- Collecting information.

General Evasion

When a soldier becomes isolated and is unable to return to his unit or is unable to continue his assigned mission, he must find a safe hiding place where he can make an estimate of the situation and plan his courses of action. He considers the following:

- **Travel.** Travel is critical for the evader because chances of capture are greater, while on the move. Some planning considerations are—
 - Avoid major roads and populated areas.
 - Always use camouflage and concealment.
 - Use a disguise as much as possible.
 - When possible, travel during darkness. However, if it is likely that the enemy or local civilians know the location, move immediately. Whenever possible, the terrain to be traversed at night should be observed during the day. Be especially attentive to concealment and to obstacles in the travel path.
 - Use maps and shelter.
 - Measure progress on the ground by the stopover points that are reached. Speed and distance are secondary. Do not let failure to meet a precise schedule inhibit the use of a plan.
- **Obstacles.** Obstacles can impede or influence the selection of travel routes. Obstacles are in two categories: natural and man-made.
 - Natural obstacles are rivers, streams, and mountains.
 - Man-made obstacles include electric fences, contaminated areas, border and front-line crossings, friendly teams, and friendly outposts.

Assisted Evasion

Behind enemy lines, there may be people who are dissatisfied with the existing condition of the country. They may assist in a number of ways. The team avoids contact with personnel during an evasion and escape, unless instructed to do so or has no other option. Preferred contact is with farmers, fishermen, older persons. Stay away from towns, the rich, the young, women, and natives in a group as a general rule.

- **Evasion and escape lines.** These are organized to contact, secure, and evacuate friendly personnel. They may provide the following assistance:
 - Shelter, food, equipment, clothes, and credentials acceptable to the area.
 - Information on the enemy.
 - Guides and medical treatment, plus local currency and transportation.
- **Aids.** Some aids to assist the evader to return to friendly lines are—
 - Blood chit. The blood chit is a small cloth depicting the American flag and a statement in several languages. It identifies the bearer as a member of the US forces and promises a reward for the bearer's safe return to US control.
 - Pointee talkee. The "pointee talkee" is a language aid that contains selected English phrases on one side of the page. The foreign language translation is on the other side. The soldier determines the question or statement to be used in English, then points to its foreign language counterpart.

- **Conduct of evasion and escape lines.** Evasion and escape lines include contacting the line. The following actions must be considered when contacting the line, approaching the line, making contact with the line, and procedures after making contact.
 - Establishing identity. During planning, all team members complete a DD Form 1833, Isolated Personnel Report (ISOPREP).
 - Having patience while awaiting movement on the line.
 - Obeying those assisting the evasion and escape.
 - Planning for escape in case of compromise of the line.

Team Evasion Planning

The commander starts by identifying the team evasion corridor. The corridor begins in the objective area and ends at a point the commander anticipates friendly forces will control at the end of the evasion (see Figure 17-23). He gives the team the timetable to schedule recovery areas for activation.

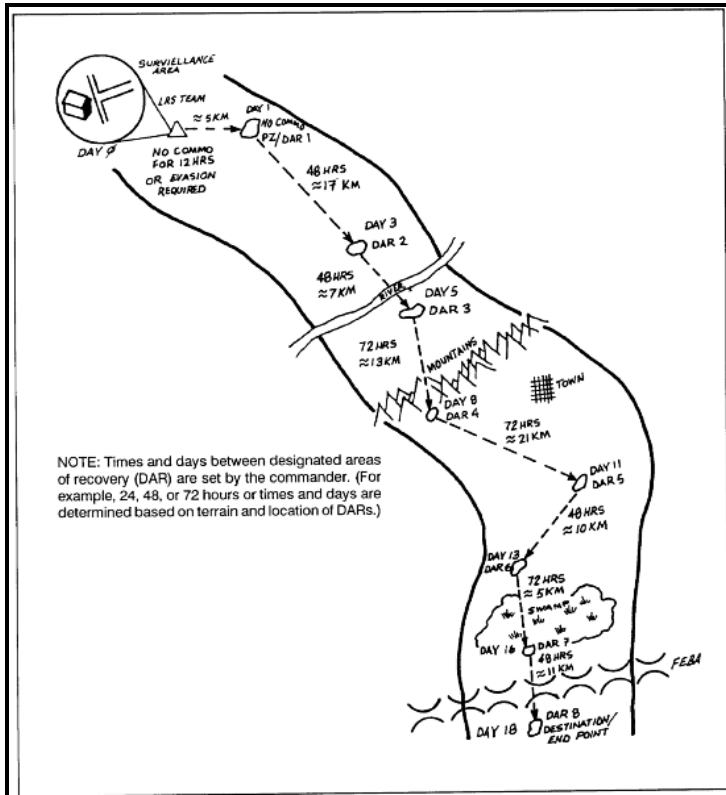


Figure 17-23. Evasion corridor.

RESISTANCE

CODE OF CONDUCT

I am an American fighting in the forces that guard my country and our way of life, I am prepared to give my life in their defense.

I will never surrender of my own free will. If in command, I will never surrender the members of my command while they still have the means to resist.

If I am captured I will continue to resist by all means available. I will make every effort to escape and aid others to escape. I will accept neither parole nor special favors from the enemy.

If I become a prisoner of war, I will keep faith with my fellow prisoners. I will give no information or take part in any action which might be harmful to my comrades. If I am senior, I will take command. If not, I will obey the lawful orders of those appointed over me and will back them up in every way.

Should I become a prisoner of war, I am required to give name, rank, service number, and date of birth. I will evade answering further questions to the utmost of my ability. I will make no oral or written statements disloyal to my country and its allies.

I will never forget that I am an American fighting for freedom, responsible for my actions, and dedicated to the principles which made my country free. I will trust in my God and in the United States of America.

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Resistance is the ability to mold the captive environment to your needs and objectives. This first requires a dedicated decision to live.

Some fundamental considerations when a POW are:

- Remember that information is usually time sensitive, resist providing any information, other than what is required by the code of conduct, to the best of your ability.
- Preserve your strength and attempt to remain fit.
- Eat as much and as often as you can.
- When senior, take charge.
- Maintain discipline.
- Maintain team unity amongst fellow POWs.
- Seek support from fellow POWs.
- Maintain a sense of humor.
- Stay busy.
- Exercise the mind, remain mentally sharp.
- Successful escape is the ultimate form of resistance and the obligation of every POW.
- Most successful escapes occur within the first 72 hours of capture.

Figures 17-24 and 17-25 illustrate techniques to maintain communications if captured.

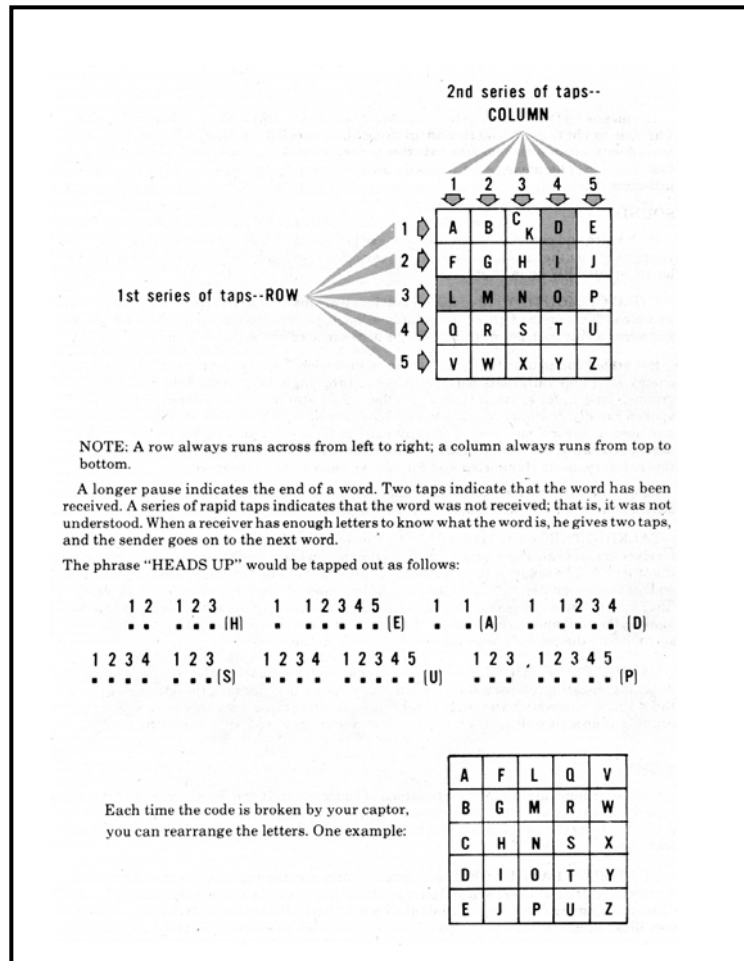


Figure 17-24. Tap code.

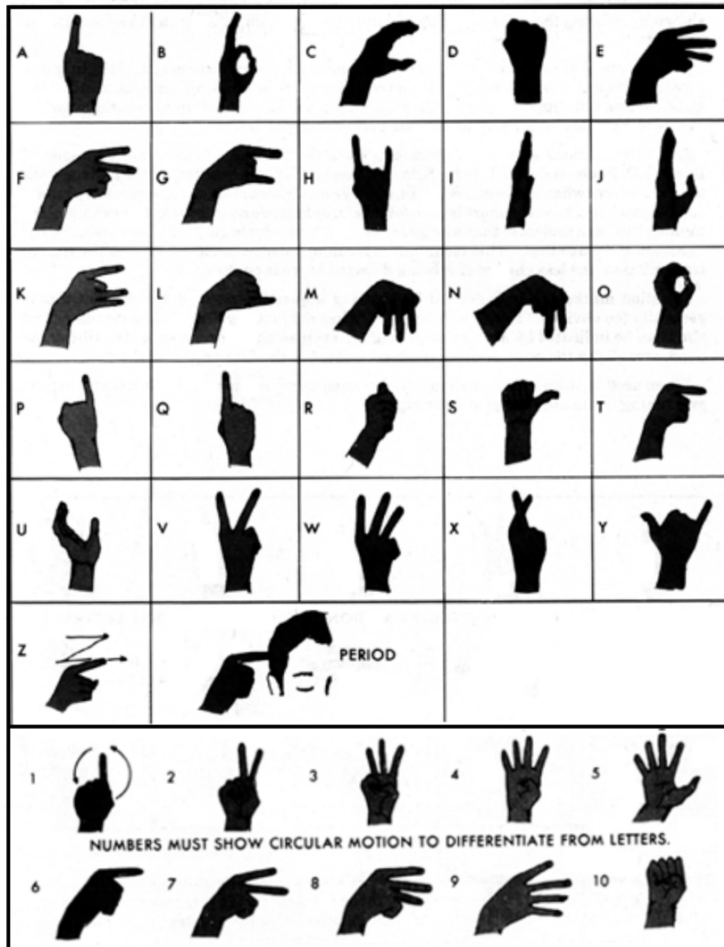


Figure 17-25. Sign language.

Chapter 18

LOGISTICS

LOGPAC

The recce platoon in a RSTA squadron or reconnaissance platoons in divisional or regimental squadrons usually receive all of its CSS through its parent troop. The PSG is the CSS coordinator and coordinates with his 1SG for everything the platoon requires.

The battalion task force reconnaissance platoon presents complex logistical problems for the task force staff. It can be resupplied in one of several ways. One method entails the battalion dedicating a LOGPAC to the platoon. The platoon can also use the nearest company team's CSS assets for its resupply and maintenance. This requires coordination with the supporting company team.

Another method is to make the scouts responsible for their own supplies. Not only must the PSG coordinate for supplies, but he also must pick up the LOGPAC, distribute the supplies, and return the LOGPAC to its parent-unit location. **As a result, this is the easiest method of resupply for the battalion but the worst for the platoon.**

Whatever support the reconnaissance platoon receives must be keyed to a fast transfer of supplies. Creative means of resupply must be considered, and may become necessary, especially during extended operations. See Figures 18-1 through 18-4 for classes and methods of supply.

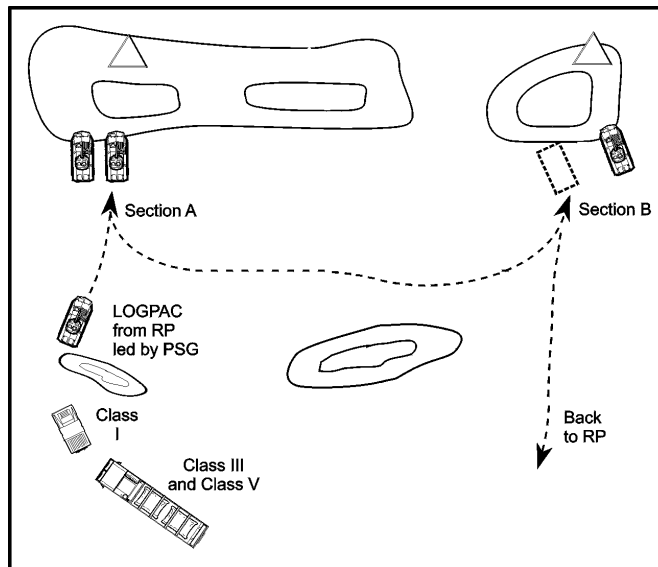


Figure 18-1. Tailgate resupply technique.

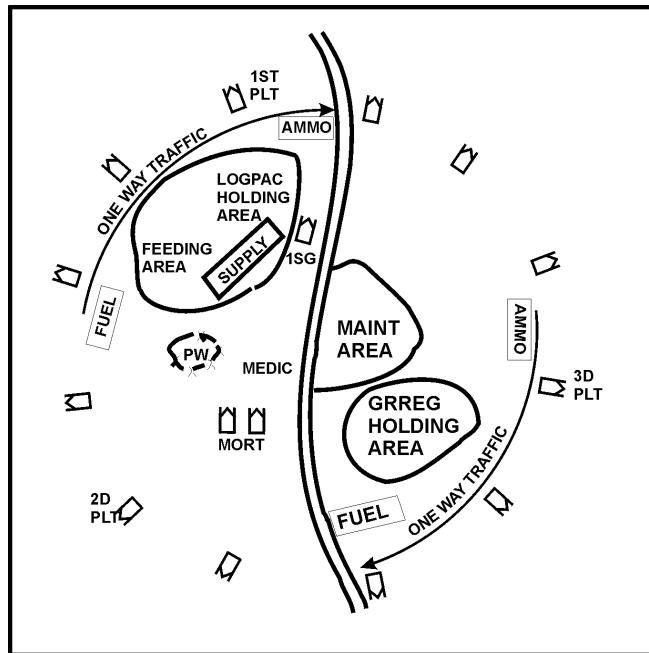


Figure 18-2. Tailgate issue method
in a troop assembly area.

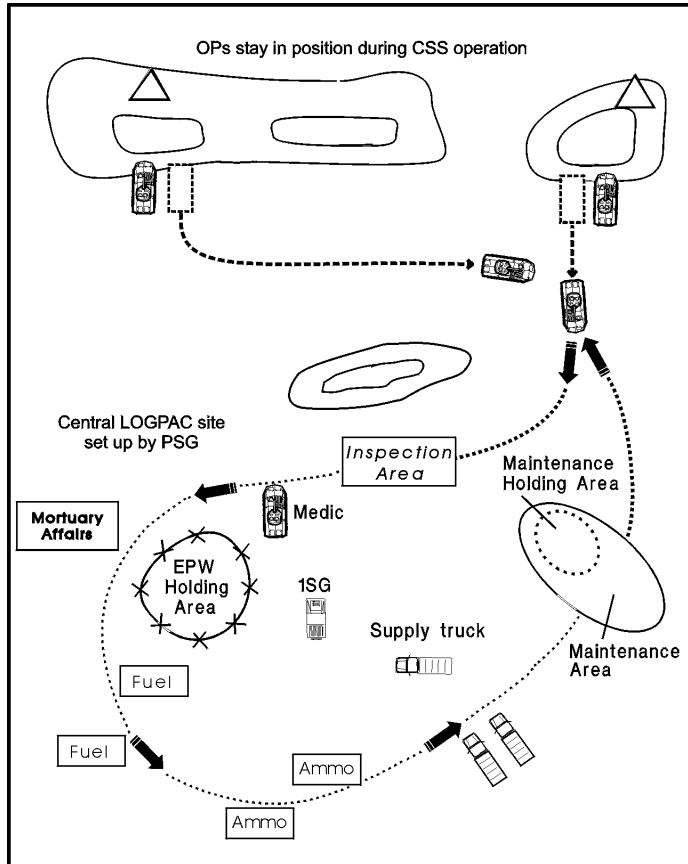


Figure 18-3. Service station resupply technique.











CLASSES OF SUPPLY		
CLASS	DESCRIPTION	SYMBOL
I	Rations	
II	Expendables	
III	POL	
IV	Barrier material	
V	Ammunition	
VI	Sundry	
VII	Major end items	
VIII	Medical	
IX	Repair parts	
X	Materiel to support nonmilitary programs	

Figure 18-4. Classes of supply.

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Aerial Resupply

Helicopters can be a vital lifeline when scouts are forced to operate forward of friendly lines for extended periods; they reduce the risks associated with conducting ground resupply operations under such conditions.

Medical Resupply

Because the reconnaissance platoon does not have an organic medic or medical vehicle, it must depend on its parent unit for medical services, including resupply. The PSG is responsible for monitoring the platoon's medical supply status (Class VIII) and for ensuring that the combat lifesavers are resupplied through the LOGPAC.

PRISONERS AND CAPTURED MATERIAL

EPWs and captured threat equipment, materiel, and documents are excellent sources of combat intelligence; they must be processed and evacuated to the rear quickly.

Handling Prisoners of War

The basic principles for handling EPWs are covered by the "five-S" procedures (see Figure 18-5). In addition to these steps, the reconnaissance leader must ensure that prisoners are tagged with all necessary information before they are transported to the rear.

SEARCH	Remove and tag all weapons and documents. Return to the EPW those personal items of no military value. The EPW keeps his helmet, protective mask, and gear to protect him from immediate dangers of the battle area.
SEGREGATE	Break the chain of command; separate EPWs by rank, sex, and other suitable categories. Keep the staunch fighters away from those who willingly surrender.
SILENCE	Prevent EPWs from giving orders, planning escapes, or developing false "cover stories."
SPEED	Speed EPWs to the rear to remove them from the battle area and to obtain and use their information.
SAFEGUARD	Prevent EPWs from escaping. Protect all EPWs from violence, insults, curiosity, and reprisals of any kind.

Figure 18-5. The “five-S” principles for handling EPWs.

Before evacuating the EPW, leaders must ensure that a tag is attached to him listing all pertinent information and procedures. The tag should contain the following information:

- Date of capture.
- Name of prisoner.
- Prisoner’s rank.
- Prisoner’s serial number.
- Prisoner’s date of birth.
- Prisoner’s unit.
- Location of capture.
- Capturing unit.
- Special circumstances of capture.
- List of weapons or documents in the prisoner’s possession at the time of capture.

Captured Threat Documents and Equipment

Captured threat documents (such as maps, orders, records, and photographs) and equipment are excellent sources of intelligence. These items must be evacuated to the next level of command as rapidly as possible.

The captured items should be tagged with the following information:

- Type of item (such as document or piece of equipment).
- Date and time of capture.
- Location of capture.
- Capturing unit.
- Special circumstances of capture, including the names of EPWs in possession of the captured items.

Civilians

Civilians who are captured as the result of curfew violations or suspicious actions are treated the same as EPWs. The platoon evacuates them quickly to higher headquarters using the “five-S” principles. They should be tagged in the same manner as prisoners.

Pre-positioning and Cache

These resupply techniques, also called prestock resupply, differ in the level of security provided for the supplies. In pre-positioning, supplies are generally left unattended, without security, although steps should be taken to prevent detection of the location by threat elements.

The following discussion covers the 12-point cache report format and key operational considerations in cache operations.

- Type of cache.
- Method of caching.
- Contents.

- Description of containers.
- General area.
- Immediate area.
- Cache location.
- Emplacement details:
 - Burial.
 - Concealment.
 - Submersion.
- Operational data and remarks.
- Dates of emplacement and duration of the cache.
- Sketches and diagrams (see Figures 18-6 and 18-7).
- Radio message for recovery.

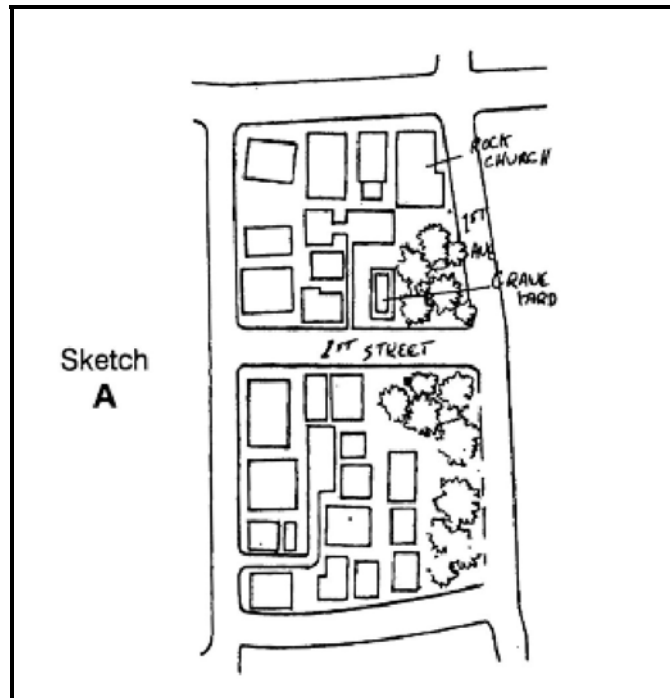


Figure 18-6. Sketch A. Route from immediate reference point to final reference point.

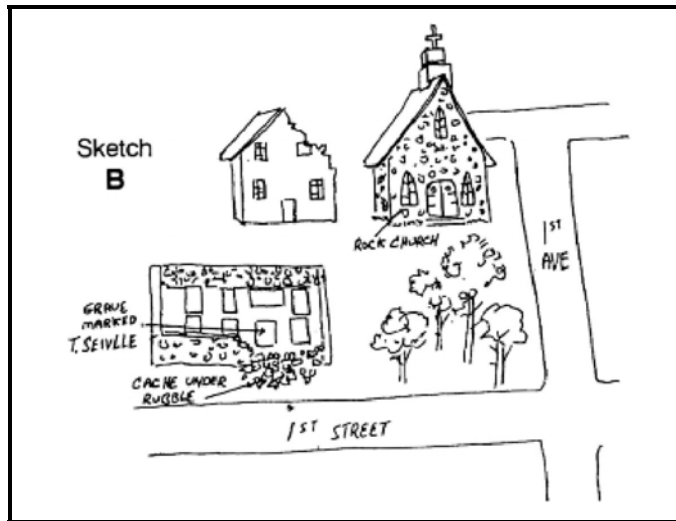


Figure 18-7. Sketch B. Cache site diagram.

MAINTANANCE

Vehicle commanders are the platoon's first-line maintenance supervisors. In large part, the platoon's maintenance status, and thus its combat readiness, depends on their commitment to proper maintenance procedures. The vehicle commander's duties in this area include the following:

- Ensure that DA Forms 5988-E and 2408-18 are filled out and updated in accordance with DA Pam 738-750.
- Ensure that the crew is properly trained in PMCS procedures and that PMCS are performed on the vehicle

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and all assigned equipment in accordance with the appropriate technical manuals.

- Ensure that, as a minimum, the assigned vehicle driver or equipment operator is properly trained and licensed. In preparing for continuous operations, vehicle commanders must ensure that all crewmembers are trained and licensed as drivers.
- Ensure that repair parts are installed upon receipt or are stored in authorized locations.
- Ensure that all tools and basic issue items (BII) are properly marked, stored, maintained, and accounted for.
- Ensure that the vehicle is always topped off in garrison and that it receives as much fuel as possible at every opportunity in the field.
- Constantly update the PSG on the maintenance and logistics status of the vehicle.

Chapter 19

PRECOMBAT CHECKLIST

INDIVIDUAL PREPARATIONS

Uniforms and Equipment

These preparation guidelines apply:

- BDUs/NOMEX are worn with appropriate accoutrements (name tapes, US Army tape, rank insignia, and unit patch).
- The Kevlar helmet is worn with camouflage cover, rank (sewn on), and camouflage Kevlar headband (cat eyes visible). The soldier's last name is clearly printed, sewn, or embroidered on the camouflage band, centered on the front of the helmet; the battle roster number is printed on tape and fastened to the band, centered on the right side of the helmet. The chin strap is fastened with loose ends secured with tape.
- The protective mask (with eyeglass inserts, if required) is prepared and placed in its carrier to ensure the soldier can mask in 9 seconds or less. The M40/M42 masks include the following components:
 - Complete mask assembly in accordance with prescribed TM.
 - TM 3-4240-339-10.
 - M8 detector paper.
 - M1 waterproof bag.

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- Mark 1 nerve agent autoinjector kits (NAAK) (3 each).
- M291 charcoal decontamination kit.

NOTE: As protection in case the injectors discharge, ensure the TM and M8 paper are between the injectors and the individual.

- MOPP gear preparation covers these considerations
 - Gear is on hand and serviceable, to include boots and gloves.
 - Soldiers are in correct MOPP gear according to the prescribed MOPP level.
 - Individuals must be able to get into MOPP 4 gear within 8 minutes.
- Individual weapons preparation covers the following:
 - Weapons are clean and functional.
 - The prescribed number of magazines (combat load) is on hand (7 for the M16 or M4; 3 for the M9).
- The seasonal or adverse weather uniform is on hand and serviceable, if required.
- The following identification items must be on hand:
 - Valid ID tags (dog tags).
 - Valid ID card.
 - Current driver's license (at a minimum, all vehicle commanders and drivers).
 - Updated DA Form 5988 (dispatched properly with authorization signature).

- The following load-bearing equipment (LBE)/load-bearing vest (LBV) items are prepared:
 - Individual equipment belt.
 - One-quart canteen with cup and cover (one extra canteen is optional). Ensure that canteens are filled and that the NBC cap is on all canteens.
 - First-aid case with serviceable bandages.
 - Ammunition cases (2 for the M16 or M4; 1 for the M9).
 - Suspenders (load-bearing equipment).
 - M9 pistol holster with lanyard (as required).
 - Flashlight (as required).
 - Earplugs.

“A” Alert Bag

This bag (rucksack, field combat) and its contents must be serviceable. It includes the following items:

- Wet weather suit.
- Boot overshoes (1 pair).
- Black gloves with liner.
- NBC protective suit and gloves.
- Towel (1 each).
- Shaving equipment.
- Underwear (cotton T-shirt, 2 each).
- Underwear (cotton drawers, 2 each).
- Socks (OD wool, 2 pair).
- Washcloth (1 each).
- Sleeping mat (rolled; tied on top flap of rucksack).

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- Sweater (wool, 1 each; seasonal).
- BDUs (1 set).
- Entrenching tool with cover.
- Gortex jacket with pants (if issued).
- Poncho and poncho liner.

Scout Roll

The scout roll, carried with the “A” alert bag and placed in a waterproof bag, includes the following equipment:

- Shelter half, tent.
- Sleeping bag (seasonal).
- Tent pins (5 each).
- Tent poles (3 each).
- Tent rope (1 each).

“B” Alert Bag

The duffel bag is used to carry the following equipment:

- Barracks laundry bag (1 each).
- Waterproof bag (1 each).
- BDUs (2 sets)/NOMEX (2 sets).
- Combat boots (1 pair).
- Cold-weather cap (seasonal).
- Cold-weather boots (if issued).
- NOMEX jacket (as prescribed).
- Hood (extreme cold weather; seasonal).

- Field jacket liner (seasonal).
- Parka liner (seasonal).
- Mitten inserts (1 pair; seasonal).
- Mitten shells (1 pair; seasonal).
- Parka (cold weather; seasonal).
- Wool scarf (seasonal).
- Socks (OD wool, 3 pair).
- Sweater (brown, 1 each; seasonal).
- Underwear (cotton drawers, 4 each).
- Underwear (cotton T-shirt, 4 each).
- Underwear (wool/cotton or polypropylene bottoms; seasonal).
- Underwear (wool/cotton or polypropylene tops; seasonal).

“C” Alert Bag

The duffel bag or crew NBC ready bag is used to carry the following items:

- Roll of M9 detection paper (1 per “C” bag).
- Individual chemical equipment (ICE) pack (1 per crewman). An inventory sheet will be visible from the outside of each soldier’s ICE pack. The list will show sizes, lot numbers, and expiration dates of the following items in the pack:
 - Protective hood.
 - M258A1 decontamination kits (2 each).
 - Protective gloves.
 - Protective overshoes.

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- Protective overgarment.
- M291 charcoal decontamination kit.
- Filter element.

Dismount Kit

This kit, used during dismounted operations such as OPs, includes the following items:

- Map of the area, with required graphic only.
- Compass.
- Communications equipment (wire and/or radio).
- Observation devices (binoculars, observation telescope, and/or NVDs).
- SOI extract.
- Report formats.
- Weapons (personal, crew-served, and/or LAWs; mines are included, if necessary).
- Seasonal uniform and LBE/LBV.
- Appropriate NBC equipment to achieve the highest MOPP level prescribed in the OPORD.

Individual Knowledge

This is a critical part of precombat preparations. To help ensure mission accomplishment, leaders must provide soldiers with effective training and accurate information. Individual preparations include the following areas:

- Thorough briefing on the operation for each soldier, covering this information:

- Mission and the soldier's duties in support of the mission.
 - Threat situation.
 - SP/LD time and location.
 - Formation and order of march.
 - Actions on contact.
 - Specific information requirements (SIR).
- First-aid procedures, including the following:
 - Life-saving steps.
 - Cold-weather injuries and treatment.
 - Heat injuries and treatment.
- NBC procedures, including the following:
 - MOPP levels 1 through 4.
 - Use of Mark I NAAK injectors.
 - Basic soldier skills for decontamination procedures.
 - Use of NBC detection equipment.
- MOS-related subjects.
- Threat and friendly vehicle identification.
- Basic map-reading and navigation.
- Effective use of individual and crew-served weapons.

Leader's Packet

Each vehicle must have a leader's packet, which will include the following items:

- Map in case with appropriate control measures and graphics posted and current overlays (threat/friendly).
- Map marking pens.

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- Notebook with pen and pencil.
- Unit TSOP (ST 3-20.983 or unit SOP for platoon/troop/squadron).
- Bridge classification card (GTA 5-70-7).
- Demolitions card (GTA 5-10-28).
- Mine card.
- NBC card (GTA 3-6-3).
- Tags for EPWs and captured documents.
- Rigging card.
- Route classification card.
- NBC report formats.
- Battle roster numbers for section/crew.
- Watch and compass (worn/carried by individual).
- Binoculars and/or miniature eye-safe laser infrared observation set (MELIOS) (if issued).
- Cold weather card (GTA 8-6-8).
- Heat injuries card (GTA 8-6-10).
- Lifesaving steps card (GTA 8-6-9).
- Witness statement (DA Form 1155).
- Casualty feeder report (DA Form 1156).
- Vehicle identification cards or reference book.
- Protractor.
- FM 3-20.98 (Reconnaissance Platoon).
- M2 compass (if issued).

VEHICLE PREPARATIONS

General

The preparation of scout/reconnaissance vehicles focuses on mission success by ensuring that appropriate tasks are accomplished and/or that prescribed conditions are attained. PCC/PCI procedures and unit SOPs cover specific requirements, including the following:

- Vehicles loaded and cargo tied down in accordance with the unit load plan, with the load plan posted.
- Fuel tanks topped off.
- POL package products and weapons oil on hand.
- Water cans full.
- Markings legible.
- MREs stowed.
- Unit ID panels on hand and clean.
- Complete weapons cleaning kits on hand.
- PMCS and appropriate maintenance form(s) completed based on the appropriate TM.
- Prepare-to-fire checks completed based on the appropriate TM.
- Complete first-aid kits/combat lifesaver bags on hand.
- Vehicles properly dispatched.
- Operator's manuals on hand.
- Complete tool kit on hand.
- Basic load of maps on hand.
- BII/AAL/CEOI complete and serviceable.

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NOTE: Crewmen who prepare vehicle systems as outlined in the following paragraph should adhere to this short-cut reminder during precombat operations: **CLEAN AIR, CLEAN OIL, CLEAN FUEL, WARM-UP AND COOL-DOWN.**

Automotive Systems

Preparation of scout/reconnaissance vehicle systems focuses on ensuring that the following tasks and conditions are accomplished or attained:

- No fuel leaks detected.
- Fuel filters drained.
- Fire extinguishers (fixed/portable) sealed, tagged, and updated. (**NOTE:** Ensure that the pressure needle is in the green portion of the gauge.)
- The following fluid levels correct:
 - Engine.
 - Transmission.
 - Power steering.
 - Master cylinder.
 - Radiator.
- Batteries serviceable and clean, with levels correct and cables secure.
- Air filters clean and serviceable.
- Suspension components serviceable.
- Tires serviceable.

- Bilge pumps operational.
- Cold start system operational.
- Belts serviceable.
- U-joints and drive train components serviceable.
- All gauges operational.
- All access plates installed.
- Lights operational.
- Interior clean.

Armament

Preparation of scout vehicle armament systems focuses on ensuring that the following tasks and conditions are accomplished or attained:

- Firing circuits operational.
- All gunnery sights clean and operational.
- Covers off periscopes and weapons.
- Vision blocks clear.
- Traversing and elevating systems functional.
- Safeties functional.
- All ammunition serviceable.
- Crew-served weapons meet these conditions:
 - Clean and functional.
 - BII complete, clean, and serviceable.
 - Guns properly mounted.

COMMUNICATIONS EQUIPMENT

Radios

Preparation of vehicle radios focuses on ensuring the following tasks and conditions are accomplished or attained:

- All radio units operational.
- All units properly mounted and secured.
- Proper frequencies set.
- Handsets and CVC helmets operational and connected properly.
- Antennas tied down.
- Spare batteries on hand.
- AN/PRC-119 backpacks and accessories complete.
- Operator's manuals on hand and maintenance checks completed.
- All connectors and receptacles clean.
- All required nets entered and operational.

Other Equipment

Preparation of other communications equipment focuses on ensuring that the following tasks and conditions are accomplished or attained:

- Secure equipment operational and proper fills set.
- Longwire and field expedient antenna kits on hand.
- TA-312 complete and operational.
- WD-1 wire and reeling equipment complete and operational.
- OE-254 antenna complete.
- VIC-1 operational.
- Pyrotechnics on hand as required for mission.\

NBC EQUIPMENT

NBC preparations ensure that required equipment is on hand and that tasks and conditions are accomplished or attained as follows:

- Serviceable DAP 13 decontamination apparatus mounted in designated vehicles.
- M8A1 chemical agent alarm meets these conditions:
 - BA-3517/U on hand.
 - M273 maintenance kit on hand.
 - BA-3030 (4 per alarm) on hand.
 - A 1/4-mile reel of WD-1 wire on hand.
 - Appropriate TMs on hand.
- M256 chemical detection kit (1 per squad) on hand.
- Contamination marking sets (2 per platoon) on hand.
- IM-93 or IM-147 dosimeters on hand.
- P-1578A or PP-1578/PD radiac chargers on hand.
- IM-174 radiacmeter on hand.
- AN/PDR-27 or AN/VDR-2 radiac set (with serviceable batteries) on hand.
- CAMs on hand.

ANCILLARY EQUIPMENT

Preparation of ancillary equipment focuses on ensuring that the following tasks/conditions are accomplished or attained:

- Demolition kits complete.
- Mine detectors complete and operational.
- Mobility/counter mobility kits complete.
- Night vision devices (UAS-11/12A; AN/TVS-5; AN/PVS-4) complete and operational, with spare batteries on hand.

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- Command launch unit AAWS-M complete and operational.
- PEWS complete and operational.
- PVS-6 operational.
- GPS operational.
- Camouflage systems complete.
- Vehicle power conditioner operational.
- Chain saws on hand.
- Tape measures on hand.

CLASS V

Precombat preparations focus on ensuring that basic loads of the following types of Class V are on hand and serviceable:

- 25-mm.
- 7.62-mm.
- 5.56-mm.
- 9-mm.
- Caliber .50.
- MK-19 40-mm.
- M203 40-mm.
- Hand grenades.
- AT-4.
- Demolitions.
- Javelin missiles.
- Vehicle smoke grenades.
- Pyrotechnics.
- TOW-IIB.

Chapter 20

ROE/ROI AND MEDIA CONSIDERATIONS

RULES OF ENGAGEMENT (ROE)

ROE are politically imposed restrictions on military operations (see Figure 20-1). The ROE are directed by higher military authorities based on the political and tactical situations and the level of threat. ROE must be considered during the planning and execution of all operations. *The unit's TTP will require adjustment based on each particular situation's ROE.*

ROE provide the authority for the soldier's right to self-defense. *Each soldier must understand the ROE and be prepared to execute them properly in every possible confrontation.* In addition, ROE violations can have operational, strategic, and political consequences that may affect national security; the threat can be expected to exploit such violations.

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All threat military personnel and vehicles transporting threat personnel or their equipment may be engaged subject to the following restrictions:

- A. When possible, the threat will be warned first and asked to surrender.
- B. Armed force is the last resort.
- C. Armed civilians will be engaged only in self-defense.
- D. Civilian aircraft will not be engaged, except in self-defense, without approval from division level.
- E. All civilians should be treated with respect and dignity. Civilians and their property should not be harmed unless necessary to save US lives. If possible, civilians should be evacuated before any US attack. Privately owned property may be used only if publicly owned property is unavailable or its use is inappropriate.
- F. If civilians are in the area, artillery, mortars, AC-130s, attack helicopters, and tube-launched or rocket-launched weapons should not be used against known or suspected targets without the permission of a ground maneuver commander (LTC or higher)
- G. If civilians are in the area, all air attacks must be controlled by FAC or FO, and close air support, white phosphorus weapons, and incendiary weapons are prohibited without approval from division.
- H. If civilians are in the area, shoot only at known threat locations.
- I. Public works such as power stations, Water treatment plants, dams, and other public utilities may not be engaged without approval from division level.
- J. Hospitals, churches, shrines, schools, museums, and other historical or cultural sites will be engaged only in self-defense against fire from these locations.
- K. All indirect fire and air attacks must be observed.
- L. Pilots must be briefed for each mission as to the location of civilians and friendly forces.
- M. Booby traps are not authorized. Authority to emplace mines is reserved for the division commander. Riot control agents can be used only with approval from division level.
- N. Prisoners should be treated humanely, with respect and dignity.
- O. Annex R to the OPLAN provides more detail. In the event this card conflicts with the OPLAN, the OPLAN should be followed.

DISTRIBUTION: ONE FOR EACH SOLDIER DEPLOYED (ALL RANKS)

Figure 20-1. Example rules of engagement.

RULES OF INTERACTION AND GRADUATED RESPONSE

ROI and graduated response embody the human dimension of operations; they lay the foundation for successful relationships with the myriad of factions and individuals that play critical roles in these operations (see Figure 20-2). ROI encompass an array of interpersonal communication skills, such as persuasion and negotiation. Graduated response deals with the process of applying greater levels of force to a situation in response to the changes in that situation.

These are tools the individual soldier will need to deal with the nontraditional threats that are prevalent in many of today's operations, including political friction, unfamiliar cultures, and conflicting ideologies. In turn, ROI and graduated response enhance the soldier's survivability in such situations. They are based on the applicable ROE for a particular operation; they must be tailored to the specific regions, cultures, and/or populations affected by the operation. Like ROE, ROI and graduated response can be effective only if they are thoroughly rehearsed and understood by every soldier in the unit.

Graduated Response Card	
<p>Situation: Your unit is conducting an operation (i.e., secure a weapons storage facility). Signs have been posted that no crowds are allowed near the facility. After a period of time, a crowd of civilians begins to gather. You are given the order to disperse the crowd as quickly and safely as possible. Use the following steps, listed in ascending order of intensity, either independently or in combination to disperse the crowd:</p>	
1.	Employ linguists assigned to your unit to inform the crowd that it must disperse.
2.	Employ airborne speaker teams to transmit instructions to the crowd to disperse.
3.	Employ bullhorns to relay instructions to the crowd to disperse.
4.	Use loud noise speaker teams to assist in dispersing the crowd.
5.	Honk the horns of unit vehicles to disperse the crowd.
6.	Emplace concertina wire to keep the crowd from gaining access to the area.
7.	Start the unit vehicles to show the crowd that you will move on them if necessary.
8.	Employ mechanized vehicles (IAVs) as a show of force to the crowd.
9.	Take pictures or videotape of instigators in the crowd.
10.	Employ military working dogs to disperse the crowd.
11.	Fix bayonets .
12.	Conduct procedures as prescribed in civil disturbance drills .
13.	Use pepper spray to disperse the crowd.
14.	Show the crowd that you have CS gas canisters .
15.	Employ CS gas to disperse the crowd.
16.	Employ helicopter blade wash to disperse the crowd.
17.	Fire rounds into the air.
18.	Employ the use of deadly force .

Figure 20-2. Example graduated response card.

Leaders must plan for contingencies when preparing personnel for operations. The ROE/ROI must be clear and flexible enough to accommodate rapid changes in any situation that may develop. Figure 20-3 lists some examples of situations encountered at checkpoints, along with possible responses.

SITUATION	POSSIBLE RESPONSES
<ul style="list-style-type: none"> • Diversions covering the efforts to sneak or rush through the checkpoint, such as: <ul style="list-style-type: none"> - Sniper attack. - Ambulance arriving at checkpoint, with sirens blaring. - Staged fights or riots near the checkpoints. • Sniper fire. • Thrown projectiles. • Imminent harm. • Civilian casualty. • Drive-by shooting. 	<ul style="list-style-type: none"> • Close the checkpoint; rapidly emplace barricades to stop and contain both vehicular and pedestrian traffic in and around the checkpoint. • Use reaction force to handle situations outside checkpoint so that checkpoint personnel do not have to leave it. • Remain calm; report to higher headquarters. • Take cover. • Employ smoke. • Protect wounded. • Identify location of sniper. • Report. • Respond in accordance with ROE. • Maintain standoff. • Protect self and others. • Do not throw objects back. • Report. • Respond with force in accordance with ROE. • Protect self and others. • Use force in accordance with ROE. • Report. • Provide first aid. • Report; request MEDEVAC. • Take cover. • Report. • Respond with force in accordance with ROE.

Figure 20-3. Example responses to situations at a checkpoint.

MEDIA CONSIDERATIONS

The presence of the media is a reality that confronts every soldier involved in operations. All leaders and soldiers are subject to instantaneous worldwide scrutiny as a result of the growth of news coverage via international television and radio broadcasts and the Internet.

Reconnaissance platoon soldiers must learn how to deal effectively with broadcast and print reporters and photographers. Guidance should cover any information restrictions imposed on the media. Soldiers must also gain an understanding of which subjects they are authorized to discuss and which ones they must refer to higher authorities, such as their chain of command or the public affairs office (PAO). PAOs usually issue daily guidance dealing with these subjects. As a general rule, soldiers do not discuss future operations or operational capability. Soldiers should not use the phrase “no comment” or make of the record statements.

Chapter 21

RISK MANAGEMENT

The primary objective of risk management is to help units protect combat power through accident prevention, enabling them to win the battle quickly and decisively, with minimum losses. Risk is the chance of injury or death for individuals and damage to or loss of vehicles and equipment. Risks, and/or the potential for risks, are present in every combat and training situation the platoon faces.

Risk management must take place at all levels of the chain of command during each phase of every operation; it is an integral part of all tactical planning. The reconnaissance platoon leader, his NCOs, and all crewmen must know how to use risk management, coupled with fratricide reduction. The five steps of risk management are the following:

- Identify the hazards.
- Assess the hazards to determine risks.
- Develop controls and make risk decisions.
- Implement controls.
- Supervise and evaluate.

For detailed procedures, refer to the discussion of risk management in FM 3-20.98 (Appendix J).

RISK ASSESSMENT

Figure 21-1 lists sources of battlefield risk (by METT-TC factors).

MISSION <ul style="list-style-type: none"> • Duration of the operation. • Complexity/clarity of the plan. (Is it easily understood?) • Proximity and number of maneuvering units.
ENEMY <ul style="list-style-type: none"> • Knowledge of enemy situation/capabilities. • Availability of time and resources for reconnaissance.
TERRAIN AND WEATHER <ul style="list-style-type: none"> • Visibility conditions, including light, dust, fog, and smoke. • Precipitation and its effect on mobility. • Extreme heat or cold. • Additional natural hazards (broken ground, inclines, water).
TROOPS <ul style="list-style-type: none"> • Equipment status. • History of units conducting the operation in working together. • Danger areas associated with platoon's weapon systems. • Soldier/leader proficiency. • Soldier/leader rest situation and acclimatization. • Impact of new leaders and/or crew members.
TIME AVAILABLE <ul style="list-style-type: none"> • Time available to subordinates for TLP and rehearsals. • Time available for PCCs/PCIs.
CIVILIAN CONSIDERATIONS <ul style="list-style-type: none"> • Applicable ROE and/or ROI. • Potential stability/support operations involving civilian contact (NEOs, refugee/disaster assistance, counterterrorism). • Potential for media contact/inquiries.

Figure 21-1. Sources of battlefield risk.

Figure 21-2 shows a sample risk management worksheet.

ENVIRONMENTAL PROTECTION

It is the responsibility of all unit leaders to decrease, and if possible eliminate, damage to the environment when conducting all types of operations. Environmental risk management parallels safety risk management and is based on the same philosophy and principles.

The environmental risk assessment and management process consists of the following steps:

- Identify the hazards.
- Assess the hazards.
- Make environmental risk decisions.
- Brief the chain of command.
- Implement controls.
- Supervise.

For detailed procedures, refer to the discussion of risk management in FM 3-20.98. Figure 21-3 shows a sample environmental management worksheet.

Environmental Risk Assessment Worksheet

Environmental area:	Rating:
Unit operations:	Risk impact:
Movement of heavy vehicles/systems	(5) 4 3 2 1 0
Movement of personnel & light vehicles/systems	5 4 (3) 2 1 0
Assembly area activities	5 4 3 2 1 0
Field maintenance of equipment	5 4 3 (2) 1 0
Garrison maintenance of equipment	5 4 3 2 (1) 0

Overall Environmental Risk Assessment Form

	Movement of heavy vehicles/systems	Movement of personnel and light vehicles/systems	Assembly area activities	Field maintenance of equipment	Garrison maintenance of equipment	Risk impact value
Air pollution	2	2	0	1	0	5
Archeological/historical sites	2	2	0	0	0	4
Hazardous materials/waste	3	3	3	3	4	16
Noise pollution	2	2	1	2	1	8
Threatened/endangered species	1	1	0	0	0	2
Water pollution	5	3	3	2	1	14
Wetland protection	5	2	2	2	1	12
OVERALL RISK IMPACT VALUE						61

Risk Impact Value Categories

Category	Range (points)	Environmental Damage Risk	Decision-maker
Low	0-58	Little or none	Appropriate level
Medium	59-117	Minor	Appropriate level
High	118-149	Significant	Division commander
Extremely High	150-175	Severe	MACOM commander

Figure 21-3. Example environmental risk assessment worksheet.

FRATRICIDE PREVENTION

Figure 21-4 is a worksheet for evaluating fratricide risk in the context of mission requirements. The worksheet lists six mission-accomplishment factors that affect the risk of fratricide, along with related considerations for each factor. Leaders should assess the potential risk in each area (low, medium, or high) and assign a point value to each (one point for low risk, two for medium risk, three for high risk). They then add the point values to calculate the overall fratricide assessment score.

The resulting score is used only as a guide, however. The leader's final assessment must be based both on observable risk factors, such as those listed on the worksheet, and on his "feel" for the intangible factors affecting the operation.

Factors affecting fratricide	Potential risk categories (with variable conditions and point values)		
	Low risk (1 point)	Medium risk (2 points)	High risk (3 points)
UNDERSTANDING OF THE PLAN			
Commander's intent Complexity Threat situation Friendly situation ROE/ROI	Clear Simple Known Clear Clear	↔	Vague Complex Unknown Unclear Unclear
ENVIRONMENTAL FACTORS			
Intervisibility Obscuration Battle tempo Positive target ID	Favorable Clear Slow 100 %	↔	Unfavorable Obscured Fast None (0 %)
CONTROL MEASURES			
Command relationships Audio communications Visual communications Graphics SOPs Liaison personnel Location/navigation	Organic Loud / clear Easily seen Standard Standard Proficient Sure	↔	Joint/combined Jammed Obscured Not understood Not used Untrained Unsure
EQUIPMENT (compared to US equipment)			
Friendly Threat	Similar Different	↔	Different Similar
TRAINING			
Individual proficiency Unit proficiency Rehearsals Habitual relationships Endurance	MOS-qualified Trained Realistic Yes Alert	↔	Untrained Untrained None No Fatigued
PLANNING TIME (based on 1/3 - 2/3 rule)			
Higher headquarters Own unit Subordinate elements	Adequate Adequate Adequate	↔	Inadequate Inadequate Inadequate
Overall risk assessment (by total point value)	Low risk 26 - 46 points	Medium risk 42 - 62 points	High risk 58 - 78 points
NOTE: Point values alone may not accurately reflect fratricide risk. The commander must tailor his assessment to the unit's requirements.			

Figure 21-4. Fratricide risk assessment worksheet.

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Fratricide reduction and prevention involves five key principles:

- Identify and assess potential fratricide risks in the estimate of the situation. Express these risks in the OPORD and/or applicable FRAGOs.
- Maintain situational awareness. Focus on such areas as current intelligence; unit locations/dispositions; denial areas (minefields/scatterable mines); contaminated areas, such as ICM and NBC; SITREPs; and METT-TC factors. FBCB2 will provide the reconnaissance platoon with a distinct advantage in situational awareness.
- Ensure positive target identification. Review vehicle and weapons identification cards. Become familiar with characteristics of potential friendly and threat vehicles, including silhouettes and thermal signatures. This knowledge should include the conditions, distance (range) and weather, under which positive identification of various vehicles and weapons is possible. Enforce the use of challenge and password, especially during dismounted operations.
- Maintain effective fire control. Ensure fire commands are accurate, concise, and clearly stated. Make it mandatory for crewmen to ask for clarification of any portion of the fire command that they do not completely understand. Stress the importance of the chain of command in the fire control process; ensure crewmen get in the habit of obtaining target confirmation and permission to fire from their leaders before engaging targets they assume are threat elements. Know who will be in and around the area of operations.
- Establish a command climate that emphasizes fratricide prevention. Enforce fratricide prevention measures, placing special emphasis on doctrinally sound TTP. Ensure constant supervision in the execution of orders and the performance of tasks and missions to standard.

Chapter 22

OPERATIONAL TERMS

DEFINITIONS

The following operational terms are used to shorten the length of radio transmissions. Among other benefits, this helps to prevent confusion by eliminating the need for long transmissions on distorted radio nets.

ASSEMBLE	Call sign principals (orders group) report to specified location.
BANDITS	Enemy aircraft; observer announces the direction to bandit: "BANDITS, EAST."
BEADWINDOW	Radio check/vehicle status.
BENT	Equipment inoperative; report problem and location.
BLITZ	Move out now.
BOG	Area that will not support unit's heaviest vehicle.
BOGEY	Unidentified aircraft; observer announces direction to aircraft: "BOGEY, WEST."
CANDLES	Artificial illumination.
CHATTER	Communications jamming.
CINDERELLA	Change of frequency.

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DISK	Conduct reconnaissance. Example: "EXECUTE DISK, A14, B63, B41, A33."
ESTABLISHED	Unit consolidated on designated control measure, ready to continue mission.
EAGLES	Obstacle reconnaissance.
FIX	Send me your location.
FLASH	Clear the net immediately; critical traffic follows. Repeated 3 times: "FLASH, FLASH, FLASH."
GAS	Chemical attack.
GEAR	Movement technique, designated as follows: Gear 1: Bounding overwatch. Gear 2: Traveling overwatch. Gear 3: Traveling.
GEIGER CHASE	Conduct radiological survey or monitoring.
GEIGER SOUR	Area monitored or surveyed is contaminated.
GEIGER SWEET	Area monitored or surveyed is clear of contamination.
GET	Put the person specified by call sign on the radio.
GUIDONS	Net call subordinates answer in order.

HOLD	Ground indicated will hold unit's heaviest vehicle.
HOMESTEAD	Establish an assembly area or OP to remain for more than 12 hours.
HUSH	Levels of signal security, designated as follows: Hush 1: Free net. Hush 2: Directed net. Hush 3: Directed net with silence imposed.
JINK	Movement involving abrupt and erratic changes of direction and speed to avoid direct fires.
LOW SKY	Hull down.
MIDDLEMAN	Radio relay.
MOVE	Move, movement, or move to.
NO ANSWER, OUT	Negative contact; net clear after 3 contact attempts.
NOTHING HEARD	Station called does not answer.
NOVEMBER, NOVEMBER, NOVEMBER	Actual emergency; cease fire and/or freeze; stay on radio.
ORDERS	Oral orders to follow, prepare to copy, and put call sign principal on the radio (GET).

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PRESENT	Call sign principal report to specified location.
RACEHORSE	Displace; move is covered.
REDCON	Numerically graduated system to inform a commander of a subordinate's preparation and readiness (in terms of time) to perform an assigned mission (refer to paragraph IIg of this SOP for a detailed explanation of REDCON levels).
RV	Meet at.
SET	Used during maneuver to indicate that the sender (bounding unit) has completed its bound and is prepared to overwatch from its present position.
SIDE CAR	Displace; move not covered.
SPRINT	Rapid road movement in column formation or using traveling technique; speed is paramount.
STAND-TO	Alert condition with unit fully prepared to fight.
STATUS	General enemy/friendly summary or commander's assessment; a quick and informal exchange of information between commanders and operations officers; not a formatted report.
STIRRUP	Platoon.
STRIP	Route.

SWITCH	Change to alternate frequency; specify which frequency: "SWITCH ALPHA JULIET." Example of an antijamming switch: "SWITCH N5F32" (the frequency of the unit whose commander is N5F3).
TOP HAT	Turret down.
VISIT	Establish an assembly area or OP to remain 12 hours or less.
WEAPONS FREE	Engage targets not identified as friendly.
WEAPONS HOLD	Do not fire unless attacked.
WEAPONS TIGHT	Engage targets positively identified as enemy.
ZAP, ZAPPED	Not recoverable, combat loss, destroyed, or maintenance deadlined. Examples: "THREE SLANT BRAVO, ZAPPED." "TEN TANKS ENGAGED, ZAPPED EIGHT."
Z-1	Conduct road march.
Z-2	Conduct attack.
Z-3	Conduct defense or block.
Z-4	Conduct passage of lines.
Z-5	Conduct route reconnaissance.
Z-6	Conduct advance guard or zone reconnaissance.
Z-7	Conduct area reconnaissance.
Z-8	Conduct screen.
Z-9	Conduct delay.

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USE OF SPARES

Preplanned terms, called spares and taken from the SOI, may be used if no other operational term will convey the desired message. For example, in the OPORD, the platoon leader says that "XBE" will signal the scouts to make lateral contact with adjacent units. During the operation, he transmits the following: "RED 2, THIS IS RED 1. XBE, CP 2, OVER." Scouts then make contact with units at contact point 2.

PURPOSE OF WARNING COLOR CODES

Color codes are used to indicate the likelihood of enemy contact or attack. Formerly associated with ADA, the following color codes now apply to all combat operations:

WHITE	Attack or contact is not likely.
YELLOW	Attack or contact is likely.
RED	Attack or contact is imminent or in progress.

REFERENCES

SOURCES USED

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GLOSSARY

AA	assembly area; avenue of approach
AB	abatis (in situation report)
ABF	attack by fire
ACF	aviation close fires
ACR	armored cavalry regiment
ACS	Army Community Service
ADA	air defense artillery
AER	Army Emergency Relief
AGL	above ground level
A/L	administrative/logistics
AM	amplitude modulation
ANCD	automated net control device
AO	area of operations
AOR	area of responsibility
AP	antipersonnel
APDS	armor-piercing, discarding sabot (ammunition)
APERS	antipersonnel (ammunition)
APFSDS	armor-piercing, fin-stabilized, discarding sabot (ammunition)
APFT	Army Physical Fitness Test
AT	antitank
ATK	attack
AVLB	armored vehicle launched bridge
AZ	azimuth
bde	brigade
BDU	battledress uniform
BHL	battle handover line
BII	basic issue items
BMNT	beginning of morning nautical twilight
bn	battalion
BP	battle position
BRIDGEREP	bridge report
BRT	brigade reconnaissance troop

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C2	command and control
CAM	chemical agent monitor
CANA	convulsive antidote, nerve agent (diazepam)
CAS	close air support
CASEVAC	casualty evacuation
CCIR	commander's critical information requirements
CEOI	communications-electronics operating instructions
CEV	combat engineer vehicle
CFV	cavalry fighting vehicle
CFZ	critical friendly zone
cGy	centigray(s)
cGy/hr	centigray(s) per hour
co	company
COA	course of action
COMSEC	communications security
CP	command post
CROSSREP	crossing report
CS	combat support
CSS	combat service support
CVC	combat vehicle crewman
CW	continuous wave; concertina wire (in situation report)

DA	Department of the Army
DAP	decontamination apparatus
DART	downed aircraft recovery team
DEROS	date eligible for return from overseas
DPICM	dual-purpose improved conventional munition
DS2	decontaminating solution No. 2
DTG	date-time group
DZ	drop zone

EA	engagement area
ECCM	electronic counter-countermeasures
ECM	electronic countermeasures
EENT	end of evening nautical twilight

Glossary-2

EL	elevation
EO	electro-optical
EOC	Emergency Operations Center
EOD	explosive ordnance disposal
EPLRS	enhanced position location reporting system
EPW	enemy prisoner of war
ESTAT	equipment status (report)
ETA	estimated time of arrival
ETS	estimated time of separation
EW	electronic warfare
1SG	first sergeant
FA	field artillery
FBCB2	Force XXI battle command brigade and below (system)
FDC	Fire Direction Center
FIPR	flash immediate priority routine
FIST	fire support team
FKSM	Fort Knox supplementary material
FM	field manual; frequency modulation (radio)
FOM	figure of merit (FBCB2 control panel)
FP	fire plan
FPF	final protective fires
FRAGO	fragmentary order
FRH	fire-resistant hydraulic
FS	fire support
FSO	fire support officer
GAA	grease, automotive and artillery
gal	gallon(s)
GIRS	grid index reference system
GPS	gunner's primary sight; global positioning system
GRC	graduated response card
GSR	ground surveillance radar
GTA	graphic training aid

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HB	heavy barrel
HE	high explosive
HEAT	high explosive antitank (ammunition)
HEAT-MP	high explosive antitank-multipurpose (ammunition)
HEDP	high explosive dual-purpose (ammunition)
HEI-T	high-explosive incendiary-tracer
HEP	high explosive plastic (ammunition)
HMMWV	high-mobility multipurpose wheeled vehicle
hr	hour(s)
HUMINT	human intelligence
IAV	interim armored vehicle
IAW	in accordance with
ICE	individual chemical equipment
ID	identification
IMINT	imagery intelligence
INFOSEC	information security
IP	Internet protocol
IPB	intelligence preparation of the battlefield
IR	intelligence requirements; infrared (lenses)
ISR	intelligence, surveillance, and reconnaissance
ITV	improved TOW vehicle
IVIS	intervehicular information system

JAG	Judge Advocate General
JVMF	joint variable message format

KIA	killed in action
km	kilometer(s)
kmph	kilometer(s) per hour

LAW	light antitank weapon
lb	pound(s)
LBE	load-bearing equipment
LBV	load-bearing vest

Glossary-4

LD	line of departure
LD/LC	line of departure/line of contact
LOA	limit of advance
LOGPAC	logistics package
LOS	line of sight
LP	listening post
LRAS3	long range advanced scout surveillance system
LRF	laser range finder
LRP	logistics release point
LT	lieutenant
LZ	landing zone
m	meter(s)
MANPADS	man-portable air defense system
MASINT	measurement and signal intelligence
MBT	main battle tank
MCOO	modified combined obstacle overlay
MDI	modern demolition initiator (firing system)
MDL	mission data load
MDMP	military decision making process
MEDEVAC	medical evacuation
METT-TC	mission, enemy, terrain (and weather), troops, time available, and civil considerations
MF	minefield (in situation report)
MG	machine gun
MGS	mobile gun system
MHz	megahertz
MIA	missing in action
MILES	multiple integrated laser engagement system
MIJI	meaoning, intrusion, jamming, and interference
MLC	military load classification
mm	millimeter(s)
MOPP	mission-oriented protective posture
MPAT	multipurpose antitank
MPAT-OR	multipurpose antitank obstacle reducing
mph	miles per hour

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MRE	meals, ready to eat
MSR	main supply route
MTP	mission training plan (ARTEP)
NA	not applicable
NAAK	nerve agent antidote kit
NAI	named area of interest
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, chemical
NCO	noncommissioned officer
NCOER	NCO evaluation report
NCOIC	noncommissioned officer in charge
NCS	net control station
NEO	noncombatant evacuation operations
NG	National Guard
NGF	naval gunfire
NLT	not later than
NMC	not mission capable
NOD	night observation device
NVD	night vision device
obj	objective
OCOKA	observation and fields of fire; cover and concealment; obstacles; key terrain; and avenues of approach (considerations in evaluating terrain as part of METT-TC analysis)
OEG	operational exposure guidance
OI	operations and intelligence
OIC	officer in charge
O/O	on order
OP	observation post
OPCON	operational control
OPORD	operation order
OPSEC	operations security
ORP	objective rally point
OVM	on-vehicle material

Glossary-6

PAO	public affairs office(r)
PCC	precombat check
PCI	precombat inspection
PCKT	packet (data mode - SINCGARS radio)
PCS	permanent change of station
PD	point of departure
PDDE	power-driven decontamination equipment
PEWS	platoon early warning system
PIR	priority intelligence requirements
PL	phase line; platoon leader
PLGR	precision lightweight GPS receiver ("Plugger")
plt	platoon
plt ldr	platoon leader
PMCS	preventive maintenance checks and services
POL	petroleum, oils, and lubricants
pos	position
POSNAV	position navigation (system)
POW	prisoner of war
prox	in proximity of
PSG	platoon sergeant
psi	pounds per square inch
PTT	press-to-talk (button on communications equipment)
PU	processor unit
PZ	pick-up zone
QRF	quick reaction force
qt	quart
R&S	reconnaissance and surveillance
RACO	rear area combat operations
RATLO	radio-telephone operator
RBF	reconnaissance by fire
RC	road crater (in situation report)
REDCON	readiness condition
REMBASS	remotely monitored battlefield sensor system

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RES	radiation exposure status
RFL	restrictive fire line
RHOL	reconnaissance handover line
RMS	root mean square
rnd(s)	round(s)
ROE	rules of engagement
ROI	rules of interaction
ROM	refuel on the move
ROUTREP	route report
RP	release point
RSTA	reconnaissance, surveillance and target acquisition
RTE	route
RTO	radio-telephone operator
RTP	radiotelephone procedures
SALT	size, activity, location, time
SALUTE	size, activity, location, unit identification, time, and equipment (format for reporting enemy information)
SAW	squad automatic weapon
SBF	support by fire
SENSEREP	sensitive items report
SERE	survival, escape, resistance, evasion
SFC	sergeant first class
SGT	sergeant
SHORAD	short-range air defense (system)
SIGINT	signal intelligence
SINCGARS	single channel ground/airborne radio system
SINCGARS SIP	single channel ground/airborne radio system advanced system improvement program
SIR	specific information requirements
SITEMP	situation template
SITMAP	situation map
SITREP	situation report
SOFA	Status of Forces Agreement
SOI	signal operation instructions
SOP	standing operating procedures

Glossary-8

SOR	specified orders and requests
SOSRA	suppression, obscuration, security, reduction, and assault (actions executed during breaching operations)
SP	start point; self-propelled; support platoon
SPOTREP	spot report
SSB	single side band
SSG	staff sergeant
STANREP	stand-to report
STATREP	status report
STRIKEWARN	strike warning
T&EO	training and evaluation outline (in an ARTEP)
TAC CP	tactical command post
TAI	target area(s) of interest
TD	tank ditch (in situation report)
TF	task force
TIRS	terrain index reference system
TLP	troop-leading procedures
TM	technical manual
TOC	tactical operations center
TOE	table(s) of organization and equipment
TOR	terms of reference; time of receipt
TOW	tube-launched, optically tracked, wire-guided (missile)
TRP	target reference point
TSOP	tactical standing operating procedures
TTP	tactics, techniques, and procedures
TUAV	tactical unmanned aerial vehicle
UAV	unmanned aerial vehicle
UBL	unit basic load
UMCP	unit maintenance collection point
URO	user readout (EPLRS radio)
US	United States
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy

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UTM	universal transverse mercator (grid)
VEESS	vehicle engine exhaust smoke system
VHR	vertical half-rhombic (antenna)
WARNO	warning order
WIA	wounded in action
WP	white phosphorus
XO	executive officer

The Legend of Fiddler's Green

Halfway down the trail to Hell
In a shady meadow green
Are the souls of all dead troopers camped
Meet a good old-time canteen.
And this eternal resting place
Is known as Fiddlers' Green.

Marching past, straight through to Hell
The Infantry are seen.
Accompanied by the Engineers,
Artillery and Marines,
For none but the shades of the Cavalrymen
Dismount at Fiddlers' Green.

Though some go curving down the trail
To see a warmer scene,
No trooper ever gets to Hell
Ere he's emptied his canteen
And so goes back to drink again
With friends at Fiddlers' Green.

And so when man and horse go down
Beneath a saber keen,
Or in roaring charges of fierce melee
You stop a bullet clean,
And the hostiles come to get your scalp,
Just empty your canteen,
And put your pistol to your head
And go to Fiddlers' Green.

--Author Unknown