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MCTP 3-10D

Employment of Light Armored Reconnaissance Units

U.S. Marine Corps

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24 March 2023

FOREWORD

Marine Corps Tactical Publication (MCTP) 3-10D, *Employment of Light Armored Reconnaissance Units*, is intended for the Marine air-ground task force (MAGTF) commanders, their staff officers, and other supported units of the ground combat element. This publication will assist them in the planning and employment of light armored reconnaissance (LAR) operations. It describes how LAR units plan and conduct activities throughout the competition continuum at both the tactical and operational levels of warfare in support of the MAGTF. It highlights the unique enabling capabilities and versatility of LAR units, as well as the tactical and logistical planning considerations within the MAGTF, which are necessary to support and sustain operations. This publication addresses the fundamentals, organization, and employment of LAR units in respect toward their capabilities and limitations, logistical needs, and command and control considerations.

This publication supersedes MCTP 3-10D, *Employment of the Light Armored Reconnaissance Battalion*, dated 17 September 2009, erratum dated 2 May 2016, and change 1 dated 4 April 2018.

Reviewed and approved this date.

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CHAPTER 1.
LIGHT ARMORED
RECONNAISSANCE FUNDAMENTALS

Light armored reconnaissance (LAR) is the only ground combat element (GCE) reconnaissance maneuver force designed, organized, and equipped to fight for information that is critical to the commander. Light armored reconnaissance is not only an information-gathering reconnaissance unit, but also one with the mobility to move throughout the battlespace to find the enemy first, fight for information, and perform activities across the competition continuum.

Light armored reconnaissance is uniquely capable of providing an all-weather, ground-based, highly mobile, survivable, self-contained and supported, precisely lethal, persistent sensor-shooter capability. Light armored reconnaissance affords the supported commander time and space by providing combat information, such as the composition and disposition of enemy forces, that is directly injected into the tactical intelligence cycle to facilitate operations at the time and location of the commander's choosing. Light armored reconnaissance operations assist supported commanders in deciding where to maneuver forces to ensure an uninterrupted advance to objectives despite battlefield conditions, such as impassable routes or bridges, unfordable streams, contaminated areas, refugee columns, converging friendly units, or enemy forces.

Light armored reconnaissance affords the commander a military advantage by providing the information necessary to adapt, make, and implement decisions faster than the enemy. Light armored reconnaissance can provide a supported commander information to validate assumptions for the planning process. As opposed to a passive sensor, LAR units can locate the enemy and force them to reveal information about their intentions. Additionally, LAR units can counter enemy deception efforts and are effective ground counterreconnaissance assets. Light armored reconnaissance generates tempo by effectively disseminating information to commanders by answering intelligence requirements. At decisive points, LAR units can guide other maneuver units into engagements with the enemy, assist in rapidly massing and dispersing maneuver units, control routes and choke points, and monitor the movement of combat support and combat service support (CSS) units.

Light armored reconnaissance units operate with a high degree of independence and autonomy across extended lines of communication (LOCs). They operate as far forward or to the flanks of the supported units as the situation allows, thereby leveraging the LAR unit's strengths and maximizing the potential depth of reconnaissance and security. Key principles of LAR employment include the ability to preserve sufficient time to conduct critical reconnaissance, surveillance, and targeting tasks; gain and maintain contact with enemy forces; and trade space for time to enable the supported commander to orient on the enemy and take decisive action where and when desired.

ORGANIZATION

An LAR battalion is an independent unit within a Marine division. However, the division commander can direct the LAR battalion or its subordinate companies to be task-organized under the command of one or more subordinate GCE commanders, such as a regimental landing team (RLT), or as part of a Marine air-ground task force (MAGTF), such as a Marine expeditionary unit MEU).

Light Armored Reconnaissance Battalion Mission
The mission of the LAR battalion is to conduct armored reconnaissance, counterreconnaissance, surveillance, security operations in support of maneuver, and offensive and defensive actions to shape the battlespace for the supported commander.

Light Armored Reconnaissance Battalion Organization
The active and reserve component LAR battalions consist of a headquarters and service (H&S) company and multiple LAR companies. The primary platform of the LAR battalion is the family of light armored vehicles (LAVs). The capabilities of the LAV variants are maximized when the battalion is assigned independent maneuver space and missions. The LAR battalion can also be assigned missions that require placing it or its subordinate companies in support of other tactical tasks. The LAR battalion and each of its LAR companies have organic maintenance and recovery capabilities, as well as communications equipment for sustained independent operations. The LAR battalion staff is tailored to meet the needs of the highly mobile, independent nature of LAR missions and requirements for logistical and maintenance support efforts. See Table 1-1 for the current LAV distribution in the Active Component and Reserve Component battalions.
See Appendix A for the description of the family of light armored vehicle-mission role variants (LAV-MRV) and their specific capabilities and limitation.

Table 1-1. Light Armored Vehicle Distribution.

Family of LAVs								
Active Component Battalions	**25**	**AT**	**C2**	**L**	**M**	**R**	**MEWSS**	**Total**
H&S Company	4	0	6	6	0	3	4	23
Company A	14	4	2	4	2	1	0	27
Company B	14	4	2	4	2	1	0	27
Company C	14	4	2	4	2	1	0	27
Battalion Totals	46	12	12	18	6	6	4	104
Reserve Component Battalion	**25**	**AT**	**C2**	**L**	**M**	**R**	**MEWSS**	**Total**
H&S Company	8	0	4	4	0	2	0	18
Company A	14	4	2	4	2	1	0	27
Company B	14	4	2	4	2	1	0	27
Company C	14	4	2	4	2	1	0	27

Table 1-1. Light Armored Vehicle Distribution (Continued).

Family of LAVs								
Company D	14	4	2	4	2	1	0	27
Company E	14	4	2	4	2	1	0	27
Company F	14	4	2	4	2	1	0	27
Battalion Totals	92	24	16	28	12	8	0	180
LEGEND **AT** antitank variant								

NOTE: The mobile electronic warfare support system (MEWSS) vehicle is on the battalion table of organization for administrative and logistical support, but is an asset used at the MEF level for tasking and employment.

Headquarters and Service Company Mission

The mission of the H&S company, within the LAR battalion is to provide the LAR battalion commander with the means to effectively train, maintain, sustain, and command and control (C2) subordinate LAR units and attached units for the conduct of ground combat operations.

Headquarters and Service Company Organization

The H&S company is organized to plan for, coordinate, employ, supervise, and sustain the LAR companies in the execution of their assigned missions. It is composed of a battalion headquarters element to command, control, and sustain the battalion; a company headquarters to provide daily administrative leadership and support; a communications platoon to facilitate internal and external data and voice connects; a maintenance platoon to provide LAV maintenance; a service platoon to provide supply and food service support; a motor transport platoon to provide general support motor transport and organizational maintenance for light, medium, and heavy tactical and utility vehicles; and a medical platoon to provide health services. The H&S company commander reports to the LAR battalion commander. Staff and special staff officers report to the battalion executive officer (XO) for the execution of their staff functions. The organization of the H&S company is displayed in Figure 1-1. The H&S company is capable of fully integrating Reserve Component augmentation. The following sections provide a broad overview of the capabilities of H&S company by platoon; however, for a more detailed discussion about the LAR battalion's organic logistical capabilities supported by the H&S company platoons, see Chapter 10.
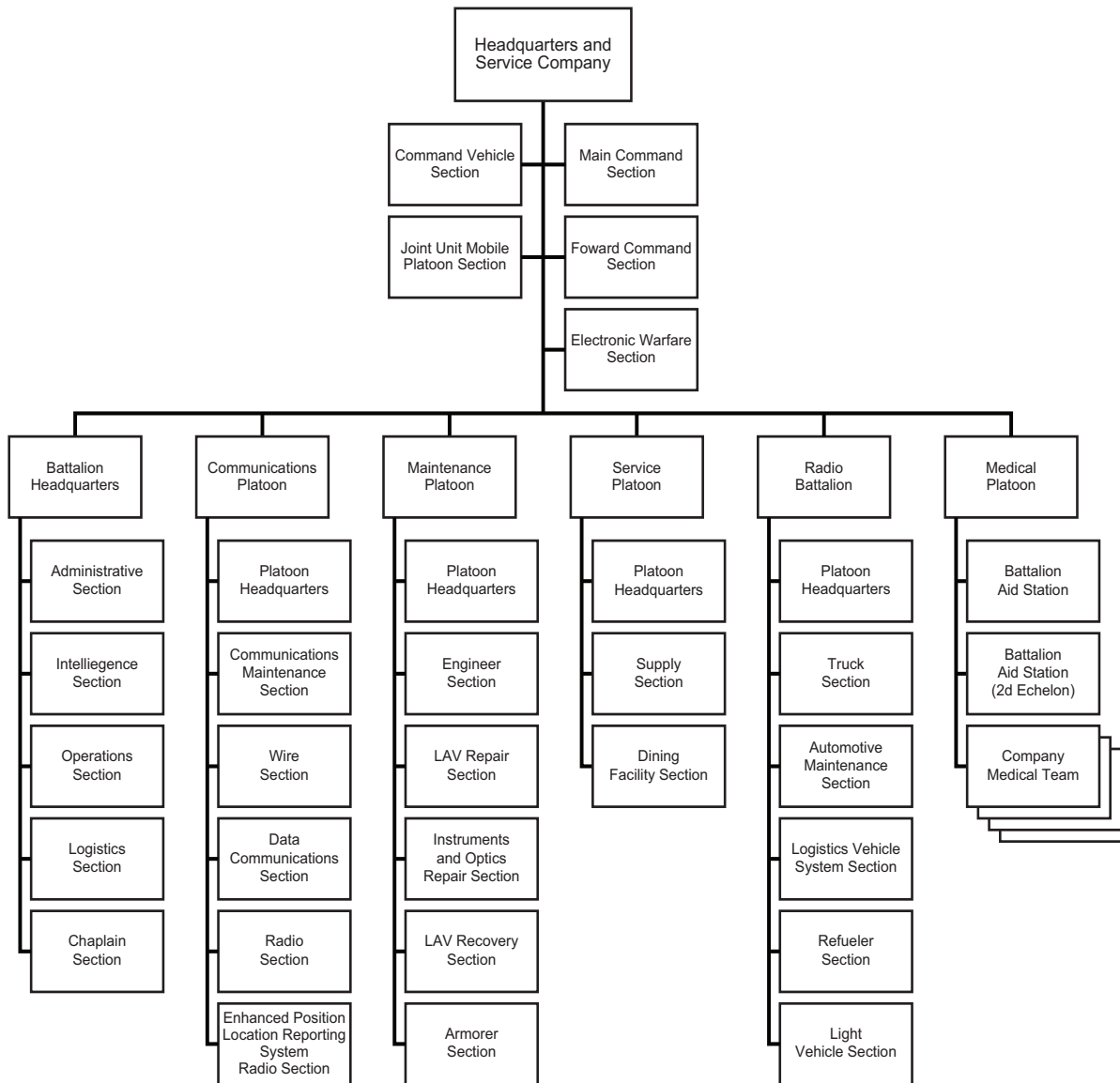
**Figure 1-1. Notional Light Armored Reconnaissance
Battalion, Headquarters and Service Company Organization.**

Headquarters and Service Company Capabilities and Concept of Employment

Utilizing the H&S company assets, the battalion commander conducts planning, makes decisions, issues orders, supervises and directs execution, and assesses operations to employ the battalion to accomplish assigned missions. The H&S company provides a task-organized security platoon and employs forward and main headquarters echelons that can conduct distributed operations. The battalion headquarters, communications, maintenance, motor transport, service, and medical platoons that support the entire battalion are located within LAR H&S company. Typically, the H&S company is organized with a forward headquarters echelon, a main headquarters echelon, combat trains, and field trains to support combat operations.

Command, Control, and Communications. The H&S company provides the means for the LAR battalion commander to command, control, and communicate with subordinate and attached or supporting elements while remaining highly mobile over large geographic areas and complex terrain.

The H&S company communication assets provide the means for timely, secure, beyond line-of-sight (BLOS) voice and data links to higher headquarters (HHQ), subordinate, attached, and adjacent units. Typically, the primary means of communication is secure radio transmission. Alternate means include satellite-based radio, visual signals, and messengers.

Intelligence. The battalion S-2 section, has the ability to plan, collect, and process combat information and produces and disseminates tactical intelligence products for consumption by HHQ and subordinate or attached elements. With the assistance of the LAR companies, organic small unmanned aircraft systems (SUASs), and non-organic sensors that can extend the battalion's sensing capability, the S-2 assists in defining the operational environment by confirming or denying initial assumptions to fill information gaps.

Fires. The battalion S-3 has the capability to deconflict and clear organic and supporting fires and airspace through the battalion fire support coordination center (FSCC). The medium-caliber cannon on the light armored vehicle-25 millimeter (LAV-25) provides direct fires that can defeat lightly armored vehicles, while medium and heavy machine guns, grenade launchers, and individual weapons provide additional direct fire weapons that are used for self-defense and local security.

Maneuver. The H&S company provides self-supportive ground and limited waterborne mobility with its organic LAV-MRVs, light and medium tactical vehicles, and heavy utility vehicles. The LAV-MRVs are the primary vehicles in forward LAR companies and main headquarters echelons. The LAV-MRVs can maneuver up to 400 miles without scheduled refueling. Additionally, each LAV-MRV has a limited waterborne capability that turns water obstacles into maneuver space. Light and medium tactical vehicles and heavy utility vehicles provide mobility for personnel, communications equipment, casualty evacuation (CASEVAC), ammunition, fuel, and other supplies. All assets within the H&S company are transportable by rail, amphibious and commercial shipping, or strategic airlift, and can be maintained aboard maritime prepositioning ships or land-based prepositioned stocks.

Logistics. The H&S company is organized and equipped to provide supply, maintenance, transportation, health services, food service, and other limited services focused on supporting expeditionary operations. The H&S company provides field-level preventive and corrective maintenance, and organizational maintenance using unit-level supply support, transportation, general engineering, routine and emergency medical services, personnel administration, and food service support to the LAR battalion and its subordinate elements. The S-4 is responsible for planning all functional areas of logistics in support of the battalion's operations. The S-4 section conducts continuous planning with the battalion staff, subordinate LAR and attached units, the supported GCE G-4/S-4 and supporting CSS units. The robust, organic logistical capabilities within the H&S company enable the LAR battalion to extend its operational duration and reach

and provides the LAR battalion the flexibility to execute tactical tasks at great distances from the supported commander and supporting CSS units. The following sections discuss the H&S company's capabilities within the six functional areas of logistics.

Maintenance. The H&S company provides organizational and preventative maintenance (i.e., first and second echelon) on the battalion's organic equipment (except for laser equipment), as well as intermediate corrective maintenance (i.e., third echelon) on LAVs and their unique weapon systems. The H&S company also provides limited intermediate corrective maintenance on electro-optical ordnance, night vision, and communications-electronic equipment.

Supply. The supply section provides organic support using unit-level supply support for the battalion. The supply section can receive, warehouse, and distribute supplies, as well as conduct fiscal management functions.

Transportation. Organic tactical and utility vehicles, augmented by light armored vehicle-logistics (LAV-L) variants, provide transportation for personnel, communications equipment, limited CASEVAC, ammunition, fuel, and other supplies. Within the motor transport platoon, two logistic trains can be task-organized to support the battalion and its companies. All logistic trains possess sufficient firepower and communications equipment to operate independently for extended periods of time. Based on the logistical requirements, the S-4, in conjunction with the battalion headquarters, organizes the appropriate size of logistic train and configures it to sustain operations.

General Engineering. The H&S company has the only organic general engineering capability in the LAR battalion, including material handling equipment, fuel and water storage and dispensing pumps, ground expedient refueling systems, welding trailers, environmental control units, demolition kits, electricians' equipment, and various generator sets to support the battalion's mobile electric power requirements. These assets significantly enhance the LAR battalion's sustainability and provide limited horizontal construction and obstacle reduction capabilities.

Health Services. The H&S company's medical platoon provides Level I care such as preventive medicine, treatment for minor illnesses and injuries, and emergency lifesaving for battle and non-battle casualties. With mobile and flexible medical support, two battalion aid stations (BASs) can be formed where injured or sick personnel are stabilized and subsequently evacuated to a higher level of care. The battalion headquarters coordinates with the supported HHQ to facilitate CASEVAC from the battalion to higher echelons of care.

Services. The LAR battalion's S-1 provides standard administrative functions, to include legal and limited postal services. The battalion's chaplain is responsible for implementing the commander's religious programs. The battalion's food service section operates a battalion mess in garrison or in the field. When required, the battalion has a limited capability to establish a company field mess. All services that are not organic to the battalion (e.g., disbursing, and exchange services) are sourced from the supporting logistics combat element (LCE) unit or the GCE headquarters.

Force Protection. Headquarters and service company personnel consider force protection during the planning process to ensure that adequate security is retained to accomplish the assigned mission while mitigating unacceptable risks to the force. Additionally, H&S company personnel provide their own internal force-protection requirements, mitigating hostile actions to personnel, resources, facilities, and critical information using organic assets and standing orders and directives.

Light Armored Reconnaissance Company Mission

The mission of the LAR company is to conduct armored reconnaissance, counterreconnaissance, surveillance, security operations in support of maneuver, and offensive and defensive actions to shape the battlespace for the supported unit commander.

Light Armored Reconnaissance Company Organization

The LAR company is organized to plan, coordinate, employ, supervise, and sustain its subordinate units in executing its reconnaissance and surveillance (R&S) missions, offensive and defensive missions, counterreconnaissance missions, and other security operations. The company's structure supports a Marine expeditionary brigade (MEB), MEU, infantry regiment, or similarly sized element of a joint force. Companies are composed of a headquarters element to exercise command and control, a logistics section to provide limited Class I, II, III, V, and IX supply support, an 81mm mortar section to provide indirect fire (IDF) support, an antitank section to defeat main battle tanks in an enemy's advance guard, and three LAR platoons to execute assigned missions. Companies are capable of fully integrating Reserve Component or augmenting the reserve battalion.

The LAR platoon consists of four LAV-25s and their crews. Each platoon has two sections of two vehicles each. Each LAV-25 has a crew composed of one vehicle commander, one gunner, one driver, and a three Marine scout team. The platoon can also have an enabler such as a corpsman, mechanic, or scout. A single LAV never operates without the mutual support of another LAV; this principal is key to the survivability of the vehicle and crew.

Light Armored Reconnaissance Company Capabilities and Concept of Employment

An LAR company is task-organized to operate as an independent maneuver element within MEBs, MEUs, RLTs, or similar-sized elements of a joint force. However, LAR can support other tactical units in those elements as either a company or by attaching one or more subordinate platoons. Although an LAR company might occasionally be tasked to provide platoons to support other elements of the command, it is best employed as a cohesive maneuver unit as unit integrity is critical to LAR operations.

The LAR company is the smallest LAR unit capable of conducting independent operations. It possesses the capabilities to fight for combat information critical to the commander of the supported force. Focused on collecting information and dominating the security area for the supported commander, LAR companies maneuver, conduct intelligence fusion, communicate, and engage enemy forces without becoming decisively engaged. They supply useful, near-real-time combat information and provide timely and accurate reporting to the main body to shape the operational environment for the supported commander.

Light armored reconnaissance company commanders evaluate intelligence and the operational situation to plan, coordinate, and execute operations in support of a HHQ commander. With the assistance of the company headquarters, they also provide the supported commander with subject matter expertise on the tactical employment and sustainment of the company.

Command, Control, and Communications. To gain situational awareness, LAR commanders position themselves where they can best develop their understanding of tactical operations as they unfold, while balancing command and control over subordinate actions. Light armored reconnaissance company operations typically cover large geographic areas that pose significant

command and control challenges. Those challenges are further compounded by the speed and mobility of the company's subordinate elements. The LAR company overcomes those challenges with a highly mobile and effective C2 structure to keep pace with operations and mitigate the effects of terrain and dispersion. The light armored vehicle-command and control (LAV-C2) variant provides the company commander a capability to perform command and control while maneuvering. The company commander employs the LAR company to accomplish assigned missions by planning, directing, supervising, and assessing progress. The company can accept and integrate additional maneuver elements, combat support, and CSS elements.

An LAR company maintains BLOS and line of sight (LOS) mobile ad-hoc networks for both voice and data communications with higher, adjacent, and subordinate units to rapidly, effectively, and securely transmit and receive information in the operational environment (i.e., combat, intelligence, and administrative). Secure radio transmission is the primary means of communications. Alternative communications means are satellite communications (SATCOM), visual signals, and messengers.

Intelligence. The LAR company executes reconnaissance and counterreconnaissance operations and is integrated into the supported commander's R&S plan. The LAR company is tasked to fill intelligence requirements as part of the supported commander's collection plan and thus can define the battlefield environment by confirming or denying initial assumptions. The company integrates electromagnetic warfare (EW) platforms and organic SUASs to extend its sensing capability. Company-level intelligence cells (CLICs) and specialists in information capabilities provide additional abilities to receive, process, and disseminate combat information that satisfies the supported commander's intelligence requirements.

The LAR scout is a reconnaissance and security specialist who is integral to (not separate from) the LAV crew which seeks to obtain, distribute, and, if required, fight for vital combat and battlefield information about the enemy, terrain, man-made structures, and environmental conditions. Scouts are the LAR commander's eyes and ears on the battlefield. They conduct ground reconnaissance, engineer reconnaissance, surveillance, vehicle security, limited mobility and countermobility tasks, and control supporting arms to shape the battlespace in support of the GCE scheme of maneuver. For more information about scouting, see part II of Marine Corps Tactical Publication (MCTP) 3-01A, *Scouting and Patrolling*.

Fires. The operational range of an LAR company frequently necessitates the need for it to operate outside the range of most conventional surface fires. This requires the company to leverage the MAGTF or joint force capabilities to generate flexible and responsive fire support plans that enable effective LAR offensive, defensive, reconnaissance, and security operations. Aviation support is of particular importance to LAR; it is critical to adding depth, lethality, and sustainment to LAR operations when outside the range of artillery support. Light armored reconnaissance units provide continuous, all-weather, light armored forces capable of locating, fixing, and prosecuting threat targets with organic and supporting fires, including aviation, UAS, IDF, EW, medium caliber cannon, antiarmor rockets and missiles, and machine guns. The LAR company deconflicts and clears fires and airspace through the supported unit's FSCC with the assistance of its company fire support team (CFST).

The main firepower for an LAR company is provided by the organic weapons of its LAR platoons. The company's weapons consist of—

- 14 LAV-25s with a total of 14 medium caliber cannons and 28 medium machine guns.
- Four light armored vehicle–antitank modernization (LAV-ATM) variants with double-tubed, tube-launched, optically tracked, wire-command link guided missile (wireless radio-guided missile) (TOW RF) launchers, and a medium machine gun.
- Four LAV-Ls, each with one medium machine gun.
- Two light armored vehicle-mortar (LAV-M) variants, each with one 81 mm mortar and one medium machine gun.
- One light armored vehicle-recovery (LAV-R) with a medium machine gun.
- Two LAV-C2s, each with one medium machine gun.
- Light and medium infantry weapons, light rockets, and grenades associated with LAR scouts and LAV crew members to execute dismounted tasks and provide local security.

Maneuver. Armored R&S are characterized by rapid and forceful zone, route, and area reconnaissance integrating both mounted and dismounted activities, which exploit LAR's speed, range, mobility, and lethality to fight for information and stimulate enemy responses in the security area. At both the tactical and operational level, the LAR company has self-supportive ground and limited waterborne mobility provided by the family of LAVs.

The LAV variants can maneuver up to 400 miles without scheduled refueling. Each LAV also possesses a limited waterborne capability that can turn water obstacles into maneuver space when necessary.

An LAR company can be transported via amphibious warfare shipping, commercial shipping, maritime prepositioning shipping, strategic airlift, and other strategic land, sea, and air assets.

Logistics. The LAR company is organized with the capabilities required for limited organic supply support, field-level preventive and corrective maintenance, and health services for routine and emergency medical care.

The LAR company is capable of organizational maintenance on LAVs within its table of equipment. It can sustain itself during operations for five days or 400 miles, but requires extensive CSS for longer-duration sustained operations, particularly Classes I, III, and V. Its organic logistical capabilities enable the LAR company to extend its operational duration and reach. The following sections describe the LAR company's capabilities within the six functional areas of tactical logistics.

Maintenance. The company is capable of organizational maintenance on all organic LAVs. It is also capable of limited ground radio and metal repair.

Supply. The LAR company does not stock supplies beyond its unit designated days of supply (DOS); however, it receives and distributes supplies as required.

Transportation. Organic vehicles provide limited means of transportation for rations; water; ammunition; petroleum, oils, and lubricants; batteries; and repair parts. Fuel must be supplied by the LAR battalion logistic trains, supporting LCE unit, or aerial delivery.

General Engineering. The LAR company does not possess any general engineering capability.

Health Services. The assigned corpsmen provide Level I care for preventative medicine, treatment for minor illnesses and injuries, and emergency lifesaving for battle and non-battle casualties. The company coordinates with the supported HHQ to facilitate responsive CASEVAC from the company to higher echelons of care. Injured and sick persons requiring hospitalization are stabilized and subsequently evacuated to a higher level of care.

Services. The LAR company has no organic services capability.

Force Protection. The LAR company commander considers force protection during the planning process to ensure adequate capability is retained to accomplish the assigned mission while mitigating unacceptable risks to the force. The purpose of the planning process is to ensure that unit commanders possess the requisite number of Marines, equipment, and supplies necessary to accomplish their missions, while identifying and assessing potential or actual hazards and threats and employing measures to mitigate them. Light armored reconnaissance maintains a critical balance between lethality, mobility, and survivability. As such, each LAV variant is equipped with sufficient ballistic and blast protection for likely threat encounters. The LAR scouts provide local vehicular security during both mounted and dismounted operations. Light armored operations in support of GCE maneuvers provides protection in the form of reaction time and maneuver space, with continuous observation of the enemy and combat information reporting to the supported unit.

Unit Integrity
The LAR battalion is task-organized to operate as an independent maneuver element; its capabilities are maximized when the battalion operates as a unified force. However, the LAR battalion can directly support other tactical units in the GCE with LAR units. Light armored reconnaissance companies typically support infantry regiments, while LAR platoons typically support infantry battalions. A task-organized LAR company is the smallest LAR unit capable of conducting sustained, independent operations. An LAR unit is best employed as a cohesive maneuver battalion or company, as unit integrity is critical to LAR operations. Careful consideration should be given before removing select LAV-MRVs to support other GCE tasks; it should only be done as a last resort. Employing LAR platoons and below or use of select LAV-MRVs reduces the LAR battalion or company capabilities, which can significantly degrade its ability to conduct command and control, fires, intelligence activities, and maneuver, and can increase its vulnerability to threat weapon systems or tactics.

Mobility
Mobility is the capability of military forces that permits movement from place to place while retaining the ability to fulfill their primary mission. Light armored reconnaissance units provide the supported commander a highly capable force that is mobile at the strategic, operational, and tactical levels. Light armored reconnaissance is a versatile and adaptable unit capable of accomplishing many tactical tasks, some of which can be conducted simultaneously because of its high mobility. Additionally, the battalion's mobility is a key factor in its survivability. When

planning LAR operations, the supported commander and staff should not be overly restrictive with control measures that inhibit the LAR's maneuver. Control measures must be carefully planned and coordinated with all elements of the force to reduce the risk of friendly fire and establish the appropriate boundaries that enable LAR operations.

The LAR battalion is usually employed as far forward or to the flanks of the main body as is tactically appropriate, providing reaction time and maneuver space for the supported commander. Light armored reconnaissance units often move back and forth across fire support coordination lines (FSCLs), which requires additional planning. Because of LAR's organic mobility and range, LAR units are ideally suited to rapidly cover extended distances on the battlefield. When provided external logistical support, such as aviation-delivered fuel and other common classes of supply, the operational reach of LAR units is greatly enhanced.

Tactical mobility is a function of speed and acceleration over short distances, which requires cross-country movement over various types of terrain in moderate to severe weather conditions. Light armored reconnaissance forces are designed for cross-country mobility and crossing inland waterways in support of maneuver. Generally, all LAVs can perform the following:

- Engage eight-wheel drive for cross-country driving or four-wheel drive on improved surface roads.
- Operate on diesel fuel, jet propulsion fuel, and similar fuels.
- Climb 60 percent grades and step-type obstacles up to 19 inches in height.
- Operate on 30 percent side slopes.
- Swim 6.5 miles per hour (mph), with preparation prior to swimming and post-swim operations maintenance.
- Run on flat tires for 25 miles at 30 mph (refer to Appendix A for more information on specific LAV-MRVs and their capabilities and limitations).

Communication
Light armored reconnaissance units have robust communication assets and can provide the supported commander a network of multi-source communication networks throughout the battlespace. Each LAV can be used as a retransmission site to ensure redundant communications.

Electromagnetic Warfare
Light armored reconnaissance units can provide the supported commander EW capabilities with the MEWSS. The purpose of the MEWSS vehicle is to intercept, collect, and disrupt enemy communications via a vast array of electronic warfare equipment.

Operational Capabilities for the Supported Commander
Like other combat units within the GCE, the LAR battalion has unique operational considerations that can impact its employment. Light armored reconnaissance units possess high mobility and lethality but low dismounted infantry capabilities. An LAR company has about a platoon's worth of infantry Marines who perform scout functions. Light armored reconnaissance scouts are not organized to perform the duties of an infantry platoon. They operate in small teams and have additional training in reconnaissance and security activities. Since LAR units are not mechanized infantry, they are not suited for large, protracted ground fights in predominantly dismounted

environments without significant support. While light in dismounted capabilities, they possess the necessary light armor, firepower, and mobility to conduct combat operations, as well as to fight for information to answer the commander's intelligence requirements. These unique capabilities allow LAR units to perform tasks where light infantry or foot-mobile reconnaissance units cannot. Light armored reconnaissance's flexibility allows the commander a multipurpose force that can be task-organized to meet mission requirements for deep, close, and rear areas. For example, aviation support can increase an LAR unit's capabilities by providing air-delivered fires; aerial delivery of fuel, parts, and ammunition; and air movement of reinforcing infantry. Conversely, the operational characteristics of LAR units enhance the capabilities and offset the limitations of aviation. Light armored reconnaissance units can be employed to develop situations on a battlefield that present opportunities for rotary-wing and fixed-wing attack aircraft, as well as to provide more detailed information, thus maintaining a continuous, all-weather reconnaissance presence in the battlespace.

FUNDAMENTAL ROLES OF LIGHT ARMORED RECONNAISSANCE

The fundamental role of LAR is satisfying critical intelligence requirements and shaping the operational environment by conducting R&S, security, and other tactical tasks that facilitate operations and enhance the supported commander's knowledge of the enemy and the operational environment. It is not exclusively an intelligence-gathering reconnaissance unit; it can move across the battlefield to locate the enemy first, fight for information, and perform the whole spectrum of security operations, with the caveat that it must be reinforced for a cover mission. Light armored reconnaissance units are enabling forces that—

- Develop situational awareness.
- Fight for information.
- Conduct counterreconnaissance.
- Provide early warning, reaction time, and maneuver space.
- Facilitate economy of force.

Develop Situational Awareness

The primary focus for LAR is gathering information for the supported commander. Light armored reconnaissance forces assist in the development of the common tactical picture (CTP), which is tailored to the supported commander's information requirements, such as information on friendly forces, threat forces, terrain, routes, and other critical factors within the operational environment. Situational awareness is built upon combat information collected during operations and shared with subordinate companies or adjacent commands. The subsequent increase in situational awareness enables the operations and intelligence processes, assisting the supported commander's ability to generate a higher operational tempo and adapt and rapidly make decisions to preserve or achieve desired outcomes.

Situational awareness helps the commander seize initiative by identifying fleeting or subtle opportunities. It provides time to decide to attack or repel threats, identify changes in the environment, and identify important gaps in information that must be collected. Light armored reconnaissance possesses a unique combination of systems and personnel trained to gather and

communicate information (e.g., digital and mobile high frequency [HF] communications, SATCOM, advanced thermal optics, and dismounted scouts with limited engineering capabilities). By employing LAR units, the supported commander strives to reduce the unknown threats and better understand the terrain. Light armored reconnaissance forces can confirm or deny information gained from other collection assets, and—where required—satisfy gaps in the R&S plan.

Fight for Information

Fighting for information entails the collection of information generated by limited, focused offensive action that exposes multiple echelons of the enemy's order of battle, potentially altering their decision cycle. It is applicable during reconnaissance and security operations. It is important to note that in many cases, fighting for information can—and should—be a collaborative effort with other sensors (e.g., UAS and signals intelligence). Light armored reconnaissance is not exclusively an intelligence gathering reconnaissance unit, but one that moves on the battlefield to see the enemy first and seeks to gain and maintain contact with the enemy on terms and conditions of their choosing. Light armored reconnaissance is a combined-arms formation that includes small arms, medium caliber cannons, antitank missiles, and mortars. Using a combination of dismounted, mounted, unmanned, and higher-echelon technical sensors, LAR gains contact with the smallest element possible while changing forms of contact to achieve desired effects (e.g., observe, deny, disrupt, interdict, or contain) within a desired area.

Counterreconnaissance

Counterreconnaissance is the sum of all actions taken at each echelon to counter enemy R&S efforts throughout the operational environment. When adversaries obtain information about friendly forces, it can accelerate   their decision-making process, enables them to control the tempo, forces friendly elements to react to their actions, and exponentially increases their chance of success. Counterreconnaissance seeks to deny the adversary's ability to obtain—by visual observation, electronic sensing, or other detection methods—information about the activities and resources of friendly forces, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. The purpose of counterreconnaissance is to destroy, defeat, or repel enemy reconnaissance elements within a unit's capabilities while following the established engagement criteria.

Light armored reconnaissance units strive to conduct effective counterreconnaissance against the enemy's cognitive processes. LAR units can use deception as well as limited attacks to disrupt the enemy's ability to sense (i.e., detect, locate, and identify) friendly elements for target engagement. These activities interrupt the enemy's target precedence and engagement criteria by denying targets or presenting false targets that slows the enemy's decision-making cycle by depriving enemy authorities of critical information. Although LAR units can conduct counterreconnaissance, the standard formation of a counterreconnaissance task force under a single commander with LAR, ground reconnaissance, and additional enablers (e.g., counterintelligence and human intelligence detachments, air defense, and engineers) exponentially increases the supported commander's success of the counterreconnaissance fight.

Provide Early Warning, Reaction Time, and Maneuver Space
Through aggressive reconnaissance and counterreconnaissance activities, LAR units provide a supported commander early warning, reaction time, and maneuver space. To create these advantages, LAR should be employed as far forward or to the flanks as the tactical or operational situation allows, thereby leveraging the unit's strengths and maximizing the potential depth of reconnaissance and security. Light armored reconnaissance units' inherent strengths are speed, mobility, extended range, firepower, and long-distance communications. They are best suited to perform reconnaissance and security missions in support of the GCE or MAGTF to enable infantry and armor to close with the enemy. Any task organization or mission tasking that does not capitalize on these strengths potentially wastes LAR's unique capabilities.

Light armored reconnaissance is optimally employed forward of the forward line of own troops (FLOT). This facilitates the LAR unit's ability to uncover threats early and determine their likely intent, thereby creating maneuver space and tempo for the supported commander. The improved reaction time achieved through sensing and collecting on the enemy enables the supported commander to make faster decisions on how to best defeat the threat and execute decisive action. A commander thinks and plans in terms of the time they have to affect the threat and the space required to maneuver and concentrate units against its weaknesses. The distance LAR units operate from the supported unit and the amount of combat power available determines how much time and space the supported commander will have to react to threats.

The speed, mobility, extended range, firepower, and long-distance communications of the LAV-MRVs allows LAR units to quickly seize, gain, or retain the initiative and to create or exploit opportunities as they occur during execution. The physical space gained by LAR employment provides increased reaction time, decision space, and increases maneuver space for decisive action. Creating physical space forward of the supported force's main body also allows LAR units to uncover threats early and determine their likely intent, further contributing to the supported commander's decision making.

Economy of Force
Light armored reconnaissance units support economy of force actions when the supported commander employs combat power in the most efficient way possible by minimizing essential by minimizing essential combat power spent on secondary efforts. Light armored reconnaissance units can perform deception tasks or feints that lead the threat away from the main effort. Light armored reconnaissance units can conduct limited objective attacks that force the threat to react in a favorable way or LAR units can conduct retrograde or delay operations utilizing man-made or natural obstacles to provide space and time for the supported commander. These actions can allow the supported commander to achieve mass elsewhere at the decisive point and time of their choosing. The flexibility of LAR units' capabilities provides the supported commander the ability to shape the battlespace and retain the combat power of other tactical units for employment when and where desired.

EMPLOYMENT OF LIGHT ARMORED
RECONNAISSANCE WITHIN A SPATIAL BATTLESPACE FRAMEWORK

Battlespace frameworks depict how a commander understands and conceptually organizes the battlespace to relate forces to one another in time, space, event, and purpose. Battlespace frameworks provide the commander a means to ensure the consideration of all essential elements of military operations during planning and execution. The two types of battlespace frameworks are spatial-based and purpose-based. Spatial-based is most applicable to LAR operations.

A spatial-based battlespace framework is organized into deep, close, and rear operations (see Figure 1-2), which can be either contiguous or non-contiguous. Spatial-based battlespace frameworks focus on arranging operations and forces in time, space, and geography. Most often associated with aspects of traditional warfare, a spatial-based battlespace framework is useful whenever the primacy of the tactical problem, mission, and situation is based on ground objectives, the enemy's physical capabilities, and the corresponding deployment of friendly forces. The operational and tactical mobility of LAVs enables the commander to employ LAR units to conduct activities that span the battlespace framework. Light armored reconnaissance units conduct operations across the deep, close, and rear areas for the supported commander.

MEF Rear	Division Rear	MEF Close Division Close	Division Deep	MEF Deep

LAR Battalion Operations
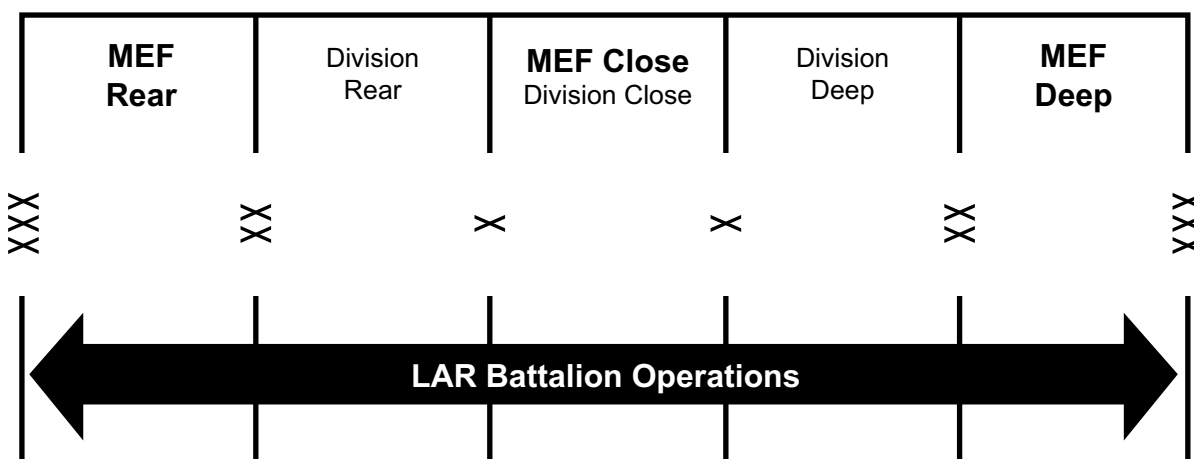
LEGEND
MEF   Marine expeditionary force

Figure 1-2. Span of Light Armored Reconnaissance Operations.

Deep Operations
Deep operations help locate the threat, restrict their freedom of action, disrupt the coherence and tempo of their operations, interdict their supplies, and isolate or destroy their forces. The supported commander can direct LAR units to conduct deep operations for various reasons, but primarily to shape the close battle. Deep operations support close operations through deep maneuver by landing a devastating psychological blow to destroy enemy centers of gravity (COG), critical capabilities, and critical requirements that cannot otherwise be destroyed because

of their proximity to sensitive sites or population concentrations, or because they simply cannot be located for strike. This might include identifying threat locations, determining enemy intentions and capabilities, attacking soft targets, or forcing the enemy to culminate early.

The aim of deep operations is to exploit gaps by attacking where the enemy is weak or gaining and maintaining contact with enemy surfaces to force premature commitment to battle at a point and time not of their choosing. Consideration should be given to support the LAR units with suitable air, CSS, and communications assets to sustain LAR beyond the range and duration of ground-delivered CSS. Light armored reconnaissance can achieve greater penetration, maximize its projection potential, and achieve gains for the supported commander based on the level of offensive air support and logistical sustainment that is combined with the inherent strengths of LAR units in speed, mobility, sensing, long-range communications, firepower, and self-sustainment. Ideally, success in deep operations reduces threat capabilities in the close battle, enabling decisive action. Commanders can execute deep operations from either an offensive or defensive posture.

Deep actions well suited to LAR units include—

- Reconnaissance in force.
- Reconnaissance pull.
- Raids or limited objective attacks against targets with significant operational or strategic importance.
- General or direct support of ground reconnaissance and special operations forces as a supporting effort or a reserve.
- Targeting or conducting battle damage assessment (BDA) of critical enemy components.

Light armor reconnaissance employment in deep operations can affect the threat by—

- Neutralizing its forces.
- Disrupting its command and control.
- Disrupting its tempo of operations.
- Destroying its forces.
- Preventing reinforcing maneuvers.
- Disrupting or destroying its installations and supply lines.
- Breaking its morale.

Deep operations objectives might include the following:

- Limiting the threat's freedom of action.
- Destroying or neutralizing enemy critical capabilities.
- Denying the threat the ability to concentrate forces.
- Isolating the close fight.
- Dedicating and committing more forces for security tasks.

Deep operations should be designed to achieve one or more of the following effects:

- Counterreconnaissance.
- Determining threat composition and disposition in depth.
- Destroying threat units and critical targets (i.e., by direct fires or aviation-delivered fires).
- Interdicting threat LOCs.
- Preventing the threat's counterattack or employment of follow-on forces.
- Cutting off routes of withdrawal.

By conducting deep operations, the supported commander can seize the initiative, create windows of opportunity for decisive action, restrict or deny the threat's freedom of maneuver, and disrupt its cohesion and tempo of operations. Deep operations might require coordination, planning, and integration with national-level assets, special operations, and joint forces. While conducting deep operations, LAR must balance survivability and the need to communicate information to the supported commander. Light armored reconnaissance forces achieve this balance by using their varied communication assets, emissions control, and signature management.

Close Operations
Close operations project power against threat forces in immediate contact to create decisive effects. Close operations include the battles and engagements of major maneuver and fire support units, in concert with the required combat support and CSS activities focused in support of a main effort to achieve a decisive outcome. Within close operations, LAR units are primarily employed with either reconnaissance or security tasks, or a combination of both, and can be designated as either a main effort or a supporting effort. As a main effort, the mission usually involves shaping the close battle for the commander by uncovering threats, forcing threat reactions, and determining the threat's course of action (COA). Additionally, light armored reconnaissance can conduct tactical tasks from a distance that directly or indirectly support the main effort. These actions include performing reconnaissance and security tasks.

When conducting reconnaissance tasks in close operations, LAR units might have to fight for information while avoiding decisive engagement. Conversely, security actions protect and conserve the combat power of friendly units, key areas, or facilities (i.e., force oriented) and are inherent to all military operations. At the tactical level, security actions protect the command against surprise attack and hostile aerial and ground observation. All units conduct security actions, while specific units can be tasked to conduct security missions.

Rear Operations
Rear operations are sustainment and security operations that ensure the force's freedom of action and the continuity of operations, logistics, and command and control. Rear area operations are not an ideal zone in which to use an armored reconnaissance force, but it could be a necessary economy-of-force mission for which LAR units are suited because of their inherent strengths of off-road mobility, firepower, long-range communications, and self-sustainment. It is best to use LAR units for rear area security once the supported commander's main objectives are satisfied. Rear area security operations for LAR should take advantage of the mobility, firepower, and

optics inherent to the LAV-MRVs. Careful consideration should be given before assigning an LAR unit to conduct security tasks that restrict full implementation of its strengths and place the unit in compromised positions.

POTENTIAL SECURITY LANDSCAPE FOR FUTURE LIGHT ARMORED RECONNAISSANCE OPERATIONS

The security landscape is characterized by volatility, instability, and complexity and complexity, all of which can present challenges as well as opportunities. In the future, these situations are expected to be encountered in the littorals (i.e., the congested and diverse areas where the maritime and land domains merge). Most maritime activities (e.g., commercial shipping, fishing, and oil and gas extraction) take place within 200 miles of a shoreline. Additionally, more than 80 percent of the world's population resides within 100 miles of a coastline, and that amount is increasing. In many cases, threats to our national interests might require littoral maneuver hundreds of miles inland to resolve crises or to secure key infrastructure or critical facilities.

As a result, the need for an all-weather, mobile sensor that can develop the situation and transmit timely information to the MAGTF, Navy expeditionary force, and joint force is expected to continue to increase. The armored reconnaissance formation requires greater capability at lower echelons that support distributed operations and survivability against a peer threat with advanced detection and targeting capabilities. These formations would require the ability to conduct reconnaissance and counterreconnaissance in the physical domains, as well as across the electromagnetic spectrum. Balancing new capabilities with risk-worthy maneuver elements requires trading historical capabilities and capacity for increased range of sensors and effectors. These new abilities would rely on a more robust communications and control infrastructure.

The combination of these new and improved capabilities can translate into smaller armored reconnaissance formations directly supporting the MAGTF and the naval and joint force. With more efficient ground mobility and more capable water mobility, those formations could penetrate long-range enemy weapon system threat ranges with a greater combination of maneuverability, connectivity, lethality, and survivability than any other unit in the joint force. By increasing the sensing capability at the platoon and company level, these formations would be able to detect enemy sensors and units outside of direct-fire weapon range. The C2 infrastructure would allow multiple bandwidths to transmit data and voice messages to the joint force network and adjacent units with low probability of detection, as well as to receive information and intelligence from other sensors in the joint force. This infrastructure would allow armored reconnaissance units to target BLOS with precision fires provided by loitering munitions that can attack moving targets on land or surface targets in littorals. The armored reconnaissance formation can be expected to continue to provide the supported commander with a flexible, all-weather, highly maneuverable, low-signature collector that is capable of mobile long-range communications and, when necessary, lethal fires. These formations will likely employ self-supporting and self-lifting capabilities that can provide advantages and expanded options in contested environments.

CHAPTER 2.
COMMAND AND CONTROL

Light armored reconnaissance operations are fast paced, characterized by uncertainty and fleeting tactical opportunities which require rapid and decisive action. Success of operations in a high-tempo environment depends on the effective and responsive use of command and control. Light armored reconnaissance must rely on mission tactics, which acknowledges the turbulence and uncertainty of war. Mission command empowers subordinate commanders to execute mission-type orders with disciplined initiative within the commander's intent, rather than missing opportunities by requiring a higher level of certainty. To gain situational awareness of operations, LAR commanders must position themselves where they can best develop their understanding of the tactical operations as they unfold. Light armored reconnaissance activities typically cover large geographic areas that pose significant C2 challenges. To overcome C2 challenges, keep pace with operations, and mitigate the effects of terrain and dispersion, LAR units must have a highly mobile and effective C2 structure. Mobile C2 platforms provide the LAR commander and the command group a capability to perform all staff actions.

FUNDAMENTALS OF COMMAND AND CONTROL

Command and control is the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. The C2 process enables the commander to exercise command across the breadth of the force. It provides the means for the commander to form an understanding of the situation, decide what action is required, transmit instructions to subordinate commanders, monitor the execution of instructions, and assess the results of the action. Command and control adds to our strength when executed effectively. However, when performed poorly, it invites disaster, even against a weaker enemy. Command and control helps commanders make the most of what they have—people, information, material, and often most importantly, time. Command and control encompasses all military functions and operations, establishing purpose and unifying them into a meaningful whole.

Command
Command is the exercise of authority that incorporates two vital components: the ability to lead and the ability to make timely decisions. Both components demand skill, wisdom, experience, and moral and physical courage. Command must—

- Envision a desired end state.
- Translate that vision clearly and concisely into a statement of intent, providing a single and unifying effort.
- Inspire success among subordinates.
- Remain flexible to adapt to a fluid battlespace.
- Provide the force of will required to concentrate overwhelming combat power at the decisive point.

Control

Control takes the form of feedback, which is the continuous flow of information about the unfolding situation returning to the commander. This allows the commander to adjust and modify command action as needed. Feedback is the mechanism that allows commanders to adapt to changing circumstances, exploit fleeting opportunities, respond to developing problems, modify schemes, or redirect efforts. As such, control involves the following:

- Acquiring and applying the means to accomplish the commander's intent.
- Defining limits.
- Computing requirements.
- Allocating resources.
- Describing interfaces.
- Monitoring statuses.
- Describing variances.
- Correcting deviations.
- Developing instructions from guidance.
- Measuring, reporting, and assessing performance.
- Projecting and directing change.

Combat Operations Center

One of the most significant advantages of LAR units is their ability to command and control from a highly mobile and redundant platform. There are two echelons of the combat operations center (COC): the forward and the main. In addition, LAR often uses a rear echelon headquarter element with the administrative and logistic center (ALOC). This redundant warfighting capability provides LAR battalions flexibility and survivability. The LAR battalion COC serves as the place at which current operations are monitored, directed, and assessed. If the forward COC is targeted, degraded, or destroyed, the main and rear can assume command and control until the forward COC displaces. Conversely, the same applies for the main COC. If possible, the rear attempts to remain outside the enemy weapon engagement zone (also referred to as WEZ) for survivability.

Representatives from each of the warfighting functions comprise the LAR battalion's COC to plan and execute battalion operations. Incoming reports from subordinate companies are received, analyzed, assessed, and updated to provide situational awareness for the battalion commander to make informed tactical decisions. The LAR battalion COC is increasingly supported by automated tactical information and data communication systems. These systems support the information processing and exchange requirements to better monitor and direct current operations. One echelon will always serve as a command post (CP) actively controlling the battalion, while the others solely conduct battle tracking in anticipation of assuming control. A COC operated from LAV-C2 vehicles can conduct command and control on the move or when stationary.

Information Reporting

The LAR battalion COC receives information by various means, such as voice and data. The information could originate from HHQ at the GCE or MAGTF, from subordinate battalion maneuver elements, or from the reports of adjacent or supporting units. Higher headquarters must

be cognizant of the requirements they levy on their subordinate units. A data requirement might limit or sacrifice an LAR unit's maneuverability, and ultimately, its survivability. The greater the signal requirements, the higher the emissions signature is required of the subordinate units. Light armored reconnaissance units prefer to operate on tactical systems in either short burst or specific windows to avoid detection in the electromagnetic spectrum rather than continuously emitting electronic signatures.

The LAR information management system should combine the characteristics of supply push and demand pull. It is recognized that supply push is the most effective way to provide much of the information routinely needed, but through unity of effort and a common operating picture Marines can use critical thinking to push information as well as needed supplies. Commanders can then pull only the information required to avoid the consequence of information overload. It is understood that commanders will likely be unaware of the need for certain information, so it is imperative that truly critical, time-sensitive information is pushed directly to them without delay.

Information flows into the cells of the COC through designated pipelines and systems. For example, operations information is passed through tactical networks; requests for supporting fires are passed through fire support coordination networks; and logistics, maintenance, and administrative information is passed through the administrative and logistics networks. Once information arrives to the LAR battalion, it must be tracked, recorded, and routed to the appropriate individual or staff section for timely analysis and dissemination. Much of the information reported to the battalion comes from the subordinate units' required routine combat reporting. These reports can be either administrative or tactical in nature. The submission and timing of routine reports are typically dictated by the battalion's battle rhythm and are submitted in formats prescribed in the battalion's tactical standing operating procedure (TACSOP). The EW threat might require reports be submitted only as needed compared to when the battle rhythm dictates. These reports can include logistics status, personnel status, or LAV readiness. Other reports might be tactically driven, such as contact reports and reconnaissance reports. When operating in a contested electromagnetic spectrum, communication windows and disciplined radio transitions and procedures must be strictly adhered to. Similarly, reporting guidance and precedence must be clearly articulated and followed.

COMMAND ECHELONS

At the LAR battalion, the headquarters can organize into one or a combination of three echelons: the forward, the main, and the rear echelon headquarters with the ALOC. In a low-threat environment, the forward is often embedded in the main command echelon. In a high-threat environment, all three command echelons operate independently to increase survivability. Although any of the headquarters' echelon can function as the COC, only one can command at a time. A headquarters' primary role is to facilitate the commander's command and control of operations. An LAR company does not have the personnel for redundant command echelons; it only has a company COC. For all GCE units, the headquarters echelon must include the functional capability for the coordination of fire support and maneuver within the area of operations (AO). A COC is composed of four elements: security, mobility, command and control (i.e., personnel, facilities, equipment, and procedures), and sustainment.

Each headquarters element of the LAR battalion has different degrees of capabilities and supports each other, feeds each other information, but only one can be in control at any given time. However, they are separated by distance, and the battalion staff is divided to accommodate both. Though not referred to as an A/B command, they essentially perform the same, except for fighting separate fights in different directions. Only one echelon can be in control of operations at any given time, and that echelon is designated as the COC. This distinction as the COC does not require the commander to be physically present. The CP is the echelon exercising control of operations, to include the clearance of fires, and acts as hub of the units C2 facilities. As the hub of the LAR battalion's command and control function, each echelon has staff members who obtain information, supervise activities, and make recommendations to the commander to facilitate tactical actions and timely decisions. Collectively, or as individual echelons, the staff can execute the seven warfighting functions: command and control, maneuver, fires, intelligence, information, logistics, and force protection.

Battalion command echelon configurations must balance capability requirements with the need for the LAR battalion's tactical mobility and the desire to influence subordinates directly or indirectly. See Table 2-1 for a common way of organizing key billet command echelon location.

Table 2-1. Key Billet Headquarters Echelon Location.

Staff Billet	Bn Fwd	Bn Main	Rear	Security Platoon
BN Commander				X
BN Executive Officer		X		
BN Sergeant Major			X	
Adjutant			X	
Administrative Chief			X	
Intelligence Officer	X			
Assistant Intelligence Officer			X	
Intelligence Chief		X		
Operations and Training Officer	X			
Assistant Operations and Training Officer		X		
Operations and Training Chief		X		
Assistant Operations and Training Chief	X			
Information Management Officer		X		
Information Environment Officer		X		
Information Environment Chief	X			
Fires Support Coordinator		X		
Air Officer		X		
Forward Air Controller	X			
Forward Air Controller			X	
Future Operations Chief			X	
Current Operations Chief		X		

Main Echelon

The main headquarters echelon is designed, staffed, and equipped to plan for, direct, and manage the actions of all organic, attached, and supporting units. It is responsible for monitoring and directing current operations, as well as for planning future operations. The main echelon provides the commander the ability to use LAR's inherent mobility to cover extended distances, maintain situational awareness, and influence decisive actions. The main echelon supports the continuity of the battalion's C2 processes and can manage all warfighting functions for an extended period. When the main echelon COC does not have control of the operations (i.e., is not serving as the CP), they continue to monitor communications between the COC and higher, adjacent, supported, and subordinate units.

The main echelon usually consists of battalion staff representatives for each warfighting function (see Table 2-1) and is equipped with four LAVs (three LAV-C2s and one LAV-L). One LAV-C2 is configured for operations, one for intelligence, and a third for fire support coordination. In conjunction with the security force, special staff can also be included, as required. The forward and main command echelons mirror each other in many aspects, but the main echelon has additional Marines for a sustained watch and a security force. The main echelon is also capable of detailed planning, controlling current operations, planning future operations, and can use limited digital assets to assist in the control of the tactical situation. Ideally, the main echelon would be in a location that can communicate with all elements in the forward security area and HHQ.

Forward Echelon

The forward headquarters echelon provides the commander the ability to use LAR's inherent mobility to cover extended distances, maintain situational awareness, and influence and implement decisive actions. The forward echelon supports the continuity of the battalion's C2 capabilities and processes to control operations across the warfighting functions. The forward echelon can also be used to move the main echelon closer to current operations. The forward echelon typically consists of the primary staff (see Table 2-1) and operates from three LAVs (two LAV-C2s and one LAV-L). One LAV-C2 is configured for operations and intelligence and the other for fire support coordination. In conjunction with the security platoon, special staff can also be included.

The forward echelon is highly mobile and relies on frequent displacement, its small size, and a low electronic signature to increase survivability. As with other COCs, the forward echelon maintains and can control ongoing operations and provide the commander with critical combat information that enables coordinate immediately available fire support. It should be noted that the forward echelon operates with limited data capability unless augmented with additional communications equipment.

Rear Headquarters Echelon

The battalion's rear headquarters echelon, which is a tertiary COC, maintains situational awareness of current operations and communication with HHQ as well as the forward and main echelons. Through communication assets, this command echelon can assist in the control of the tactical situation when required. This command echelon is collocated with the battalion's primary ALOC.

Administrative and Logistic Operations Center

The ALOC's primary responsibilities are to address important, but non-urgent staff functions and the administrative, logistics, and maintenance tasks required for sustained and uninterrupted effort. The ALOC can be located within a HHQ or joint rear area and is mostly composed of the LAR battalion's field trains. The disadvantage of having the ALOC collocated with the supported command's combat service support area is that the extended distances and the fact that their mobility is restricted to light terrain can make maintenance and logistical support difficult. Ideally, the ALOC will operate independently from a HHQ and have liaison officers (LNOs) embedded with the HHQ for external support. The ALOC does not have an inherent dedicated security force and, due to its heavy maintenance and logistical assets, is a lucrative, soft target if not defended or located outside the range of enemy weapon systems.

Security Platoon

An LAR battalion has a security platoon consisting of four LAV-25s. This platoon provides security for the command echelons, but can also be tasked as the base component for the commander's battlefield circulation element. This security platoon is neither a COC, nor a CP, and cannot serve as a headquarters echelon. This formation provides the commander the ability to conduct battlefield circulation but lacks the resources to control operations across the warfighting functions in a manner that defines a COC or a command echelon. The security platoon is employed in situations where the LAR battalion commander requires increased situational awareness, control, and direct observation of subordinates' actions. It affords commanders an ability to quickly establish their own positions forward on the battlefield. When employed, the security platoon communicates directly with subordinate unit commanders and the established CP, enabling the battalion commander to remain apprised of battalion staff actions while concurrently observing subordinate actions. Employing a commander's battlefield circulation unit can create security concerns for the controlling COC due to the loss of the security platoon. During all movements, this unit relies on using the speed and mobility of the LAV to increase its security.

Commanding General's Battlefield Circulation Detachment

Light armored reconnaissance units often facilitate supported commanders' (i.e., the commanding general's) battlefield circulation elements. A typical commanding general's battlefield circulation detachment consists of one LAV-C2 and one LAV-L. These assets are not a task-organized component of the LAR battalion and must be detached from the supporting unit.

Company Command and Control

The LAR company COC is controlled by the company XO and company operations chief and is established in the company's LAV-C2. The XO is assisted by members of the LAR company's headquarters section in the command and control and logistical support functions required to support company operations. The LAR company COC is the essential C2 node in maintaining communications and situational awareness between the battalion, supporting units, and adjacent maneuver elements. The LAR company COC serves a critical role in the coordination of air and ground operations and continually provides accurate and timely information to the LAR battalion COC to increase the battalion commander's or supported commander's understanding of the operational environment.

Combat Operations Center Security

Security for the COC of an LAR battalion is challenging due to the dispersed nature of LAR operations. The security for the main echelon's COC falls under the responsibility of the H&S company commander, who usually serves as the headquarters commandant. The headquarters commandant ensures all essential support functions, logistics, personnel, and force protection matters are maintained for the main echelon's COC throughout operations. Additionally, they are responsible to the operations section for the tear-down, site survey, movement, and establishment of the main echelon's COC during displacements. When the forward echelon's COC is operational, the battalion commander's options for deploying the security platoon are limited, since the security element for the forward echelon is provided by the H&S company's security platoon.

INFORMATION AND INTELLIGENCE REQUIREMENTS

The supported commander relies on LAR units to provide timely and accurate information to prioritize and assign responsibilities for collecting information. Commanders develop commander's critical information requirements (CCIRs). The CCIRs identify information on friendly activities, threat activities, and the environment that the commander deems critical to maintaining situational awareness, planning future activities, and assisting in timely and informed decision making. Commanders use CCIRs to help them confirm their vision of the battlespace, assess desired effects, determine how they will achieve a decision to accomplish their mission, or to identify significant deviations from that vision. Not all information requirements or intelligence requirements support the commander in decision making. Those designated as CCIRs must be linked to the critical decisions the commander anticipates making. Commander's critical information requirements focus the subordinate commanders' and staff's planning and collection efforts. The CCIRs must be limited to only those that support the commander's critical decisions, as too many CCIRs diffuse focus. Commander's critical information requirements help commanders tailor their C2 organizations. They are central to effective information management, which directs the processing, flow, and use of information throughout the battalion. While the staff can recommend CCIRs, only the commander can approve them. They are continually reviewed, assessed, and updated to reflect the commander's concerns and the changing tactical situation. Commander's critical information requirements are divided into two subcategories: priority intelligence requirements (PIRs) and friendly force information requirements (FFIRs). In addition to the CCIRs, commanders seek to understand essential elements of terrain information (also referred to as EETI) and protect essential elements of friendly information (also referred to as EEFI).

Priority Intelligence Requirement

A PIR is an intelligence requirement that allows the commander and staff to understand the threat and other aspects of the operational environment. A PIR is an intelligence requirement associated with a decision that will critically affect the overall success of the command's mission.

Friendly Force Information Requirement

An FFIR is information the commander and staff need to understand the status of friendly force and supporting capabilities. This information helps the commander develop plans and make effective decisions. Depending on the circumstances, information on unit locations, composition, readiness, personnel status, and logistics status could become FFIRs if they support critical decisions.

Essential Elements of Terrain Information

Essential elements of terrain information are those aspects of the terrain, both natural and man-made, that are identified as critical to mission success.

Essential Elements of Friendly Information

Essential elements of friendly information are specific facts about friendly intentions, capabilities, and activities needed by enemies and adversaries to plan and execute effective operations against friendly forces. Essential elements of friendly information must be shielded from enemies and adversaries. Their protection becomes critical when conducting counterreconnaissance.

COMMAND AND CONTROL COMMUNICATIONS

Effective and redundant communications are essential to LAR unit command and control. The reporting of combat information is a fundamental element of reconnaissance and security activities. This information is of equal interest to other maneuver units, as well as to the GCE and MAGTF headquarters staffs; therefore, it requires the widest dissemination possible. Light armored reconnaissance units frequently operate over long distances, wide frontages, and extended depths at great distances from the supported commander. Communications must be redundant and effective at long ranges to meet internal and external requirements. This is key to operating in the forward security area. Redundancy in planning through all stages of operations is critical for effective and responsive command and control. The ability to communicate across the electromagnetic spectrum is essential, particularly when faced with a degraded or denied communication environment. It should be expected that any communications system linked with the LAR battalion, regardless of the level of technology, is subject to disruption. Equally important when planning communications is the consideration of reducing emission control (EMCON) to avoid being detected and potentially targeted by the enemy.

Responsibilities

A senior unit is responsible for establishing communications with a subordinate unit. A tactical unit of any size is considered subordinate to the command to which it is attached. The responsibilities include—

- Supporting-to-Supported. A supporting unit is responsible for establishing communications with the supported unit.
- Reinforcing-to-Reinforced. A reinforcing unit is responsible for establishing communications with the reinforced unit.
- Passing-to-Stationary. A moving unit is responsible for establishing communications with the stationary unit during a forward passage of lines.

- Stationary-to-Passing. The stationary unit is responsible for establishing communications with a moving unit during a rearward passage of lines.
- Lateral Communications. Responsibility for establishing communications between adjacent units can be fixed by the next higher commander or by standing operating procedure (SOP).

If responsibilities are not described in orders, the commander of the unit on the left is responsible for establishing communications with the unit on the right; likewise, the commander of a unit positioned behind another unit establishes communications with the forward unit. Regardless of responsibility, all LAR units must take prompt action to restore lost communications.

Limitations

Without augmentation, the LAR battalion has limited wideband data communications, narrowband data BLOS (i.e., over-the-horizon) communications, and voice communications. Beyond line-of-sight and over-the-horizon communications are limited to HF and ultrahigh frequency (UHF) SATCOM. Because of the extended operating distances of the LAR companies from the LAR battalion and of the LAR battalion from the GCE headquarters, the supported commander must consider long-range and data communications during planning. The LAR battalion has a wideband data communications capability but cannot communicate via BLOS wideband data without augmentation from HHQ. Furthermore, the battalion's wideband data line-of-sight capability is limited due to its incompatibility with the current family of LAV vehicles' power amplification equipment. The limited availability of SATCOM assets, as well as the LAR battalion's inability to communicate via HF while on-the-move, combine to make communications a challenge.

MEANS OF COMMUNICATION

Communications are critical to facilitating effective command and control. This fact is further heightened by the operational range of light armored reconnaissance units. In addition, LAR units have the full range of available communications means which are described in the following paragraphs.

Wideband Transmissions

Light armored reconnaissance units maintain a very small aperture terminal (commonly known as VSAT) system that facilitates the capability to receive a satellite communications link established by the HHQ. The very small aperture terminal provides a wideband extension of Nonclassified Internet Protocol Router Network (NIPRNET) and SECRET Internet Protocol Router Network (SIPRNET), secure and non-secure global internet, email, chat, and telephone services. To achieve wideband transmissions, LAR units must halt and establish equipment to gain SATCOM. This effectively sacrifices an LAR unit's mobility, which risks its survivability if it is operating within the range of enemy weapon systems. Light armored reconnaissance units and their supported commands must be wary of their electronic signatures and emissions control procedures when operating.

Radio

Light armored reconnaissance operations heavily depend on radio communications as the primary means of sharing information. Network (hereafter referred to as net) discipline and SOPs provide measures for minimizing extraneous traffic. Light armored reconnaissance units strive to use all other means of communication to supplement radio communications to avoid detection by to avoid detection by direction finders. The LAR units select the lowest amplitude power setting possible to minimize their electronic signatures. This is particularly important when operating near other LAR units or in a stationary position, such as assembly areas, forward arming and refueling points (FARPs), or near command facilities. Once a unit comes in contact with the threat forces, the primary means of communication is frequency modulation voice. To facilitate command and control, the capabilities and limitations of radio communications, equipment, and the spectrums they use must be considered. The primary spectrums used by the LAR units include HF, very high frequency (VHF), and UHF. The purpose, capabilities, limitations, and employment considerations for each are described below.

High Frequency. The expansive geographic areas that typically characterize LAR operations make HF a critical communications capability. This highly available technology provides almost limitless BLOS ranges for single channel communications. The battalion has advanced HF radio technologies, such as 3G automatic link establishment (ALE). The 3G ALE has become a standard component of automated systems. It is routinely used to set up the channel for voice communications, telephone, e-mail, and Internet protocol traffic. It effectively provides a channel-access mechanism and an effective way to simultaneously use several channels. Additionally, the newest technology provides an LAR unit with low probability of interception and low probability of detection (LPD) modulations that enable hiding information amid the noise or other useless signals through an efficient modulation, making it difficult for the detector to capture and decipher. Proficiency in HF communications should be trained down to the LAR platoon level, ensuring communications can be established with the unit headquarters, regardless of location.

Very High Frequency. Although VHF has a maximum range of 35 kilometers (km), the range can be adversely affected by heavy vegetation or mountainous terrain. When operations require maneuvering units to operate outside the VHF range, LAR units can employ retransmission teams to expand the range of VHF radio nets out to 70 km.

Ultrahigh Frequency. The LAR battalion is provided with point-to-point SATCOM, ground-to-air communications (i.e., with aircraft), and data connectivity via terrestrial means through UHF systems. When available, SATCOM provides LAR units a reliable and simple means of BLOS communications. Ground-to-air communications allows maneuvering units to communicate with aircraft providing close air support (CAS) or other functions.

Light armored reconnaissance units also maintain a mobile ad-hoc network capability known as the Adaptive Networking Wideband Waveform (ANW2). The use of UHF assets properly configured to the unit's data network can facilitate access to all the capabilities established at the COC to maneuvering units in the battlespace, even while on the move. End user devices can also be connected to the UHF assets, allowing access to applications such as secure chat, common operational picture (COP) or CTP management software, Secure Voice over Internet Protocol [SVOIP], and others. Additionally, these systems provide LAR units with a capability for

situational awareness that can be configured to provide the unit headquarters automatically and periodically with position location information that can integrate into COP or CTP applications within the COC. Lastly, these networks are also fault tolerant and self-healing, which allows the data to continuously find a path between all live stations, regardless of the loss of any single station. A potential risk with the ANW2 network is its signature within the electromagnetic spectrum when transmitting.

Audial and Visual
Acceptable audial (i.e., sound) and visual signals are in the signals operating instructions of the operation order (OPORD) or standardized through the unit's SOP. The SOP may establish signals that are not included in the communications-electronics operating instructions of the OPORD. The battlespace offers many audial and visual cue potential. Commanders and staff planners carefully determine how audial and visual signals will be used and authenticated. Audial and visual signals include pyrotechnics, chemical lights, infrared lights, glint tape, infrared panels, hand and arm signals, flags, vehicle horns, metal-on-metal sounds, rifle fire, whistles, and bells.

Commercial Lines
Commercial lines are only used when approved by HHQ. If LAR units are forced to withdraw, any existing communication wire lines emplaced by higher or supporting units, including existing commercial lines, are cut and sections are removed so that the threat cannot use them.

Wire
Wire communications between LAVs are typically employed when the unit is to remain stationary for a longer period, such as when occupying a battle position, operation post, screen line, or assembly area. Wired communications assist in EMCON and signature management. Wired communications allow vehicles to tie in, if necessary, and for individual vehicles to communicate with their scouts—who might be dismounted—without sacrificing their signature.

CHAPTER 3.
INTELLIGENCE, INFORMATION, AND REPORTING

Intelligence drives operations. The speed at which collected information can be integrated into the decision-making process and decisions implemented in a fluid battlespace is critical to success in maneuver warfare. Accurate and timely intelligence generated by LAR units and other GCE units is essential to the planning efforts of the Marine division, MAGTF, or supported joint force. From the individual scout and crewmember to the systems on the LAV platforms, LAR units sense and collect for the supported commander. Light armored reconnaissance units provide the supported commander the capability to rapidly shift from collections to intelligence use, and it is capable of rapidly acting on the intelligence it has gathered.

Light armored reconnaissance units are more than a set of collection assets for the supported commander. They typically operate far forward or along the flanks of the Marine division, MAGTF, or joint force, providing reaction time, maneuver space, and early warning of the threat. The far-reaching operational mobility and speed of LAR units makes them ideally suited to collect information about the operational environment while performing reconnaissance or tactical security tasks. The major distinctions between LAR units (i.e., both mounted and dismounted reconnaissance) and foot-mobile reconnaissance units are that LAR has light armor protection, off-road mobility, and substantial organic firepower. These aspects enable LAR units to fight for information to satisfy information requests.

Light armored reconnaissance units operate deep within the security area and must consider issues and threats that the supported commander might not account for. Specifically, LAR units are likely to operate within the range of enemy weapon systems, whereas the supported commander or their HHQ might not. Signature management, EMCON, and threat detection and weapon systems must be considered. The intelligence preparation of the battlespace (IPB) performed by an LAR intelligence section must be detailed. Light armored reconnaissance units must consider enemy capabilities (i.e., intelligence, surveillance, and reconnaissance [ISR]; target acquisition; and weapon systems) and their ranges. Failure to account for these factors could result in LAR units being collected on and denied, degraded, or destroyed.

Intelligence has two objectives: to reduce uncertainty by providing accurate, timely, and relevant knowledge about the threat and the surrounding environment, and to assist in protecting friendly forces through counterintelligence. In analyzing intelligence to plan operations, LAR units must remain cognizant of threat deception efforts and the fog of war, which render certainty impossible. Knowledge about the operational environment is generated from focused efforts in the collection, processing, exploitation, evaluation, integration, analysis, and interpretation of information about the operational environment and the threat. The intelligence section provides centralized direction for the collection, production, and dissemination efforts of organic, attached, and direct support intelligence collection assets, as well as external collection resources, and ensures that these efforts remain focused on satisfying the PIRs that are essential to mission success. For more information about intelligence operations, refer to Marine Corps Warfighting Publication (MCWP) 2-10, *Intelligence Operations* and MCTP 2-10B, *MAGTF Intelligence Production and Analysis*.

INFORMATION AND INTELLIGENCE

Intelligence is not another term for information. Intelligence is more than an element of data or a group of information; it is a body of knowledge. Knowledge occupies a unique place in the information hierarchy, which is a framework to distinguish between various classes of information (see Figure 3-1). Giving a commander every piece of data without providing meaning can increase uncertainty by overloading the commander with incomplete, contradictory, or irrelevant information. To qualify as intelligence, data must be placed in context to provide an accurate and meaningful image of the situation. Intelligence is developed by analyzing and synthesizing (i.e., combining) data and information to produce knowledge about the threat and the environment. The commander and the staff combine this knowledge with awareness of the friendly situation and employ experience, judgment, and intuition to understand the situation. The commander then applies this understanding to decision making.
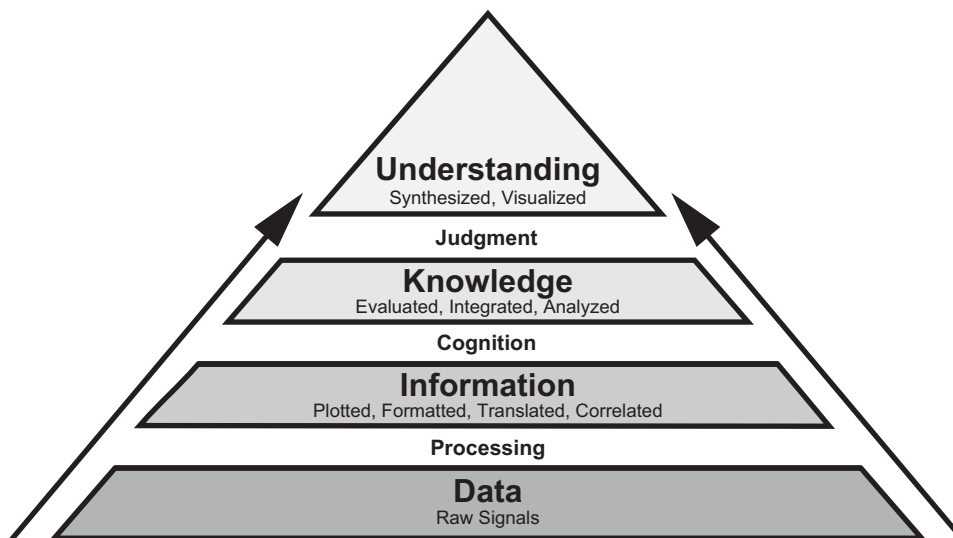
Figure 3-1. Information Hierarchy.

There is a distinct difference between information and intelligence. Information reported by LAR units during operations is not intelligence; it is combat information. Combat information is unevaluated data gathered by or provided directly to the commander, which because of its highly perishable nature or the criticality of the situation, cannot be processed into tactical intelligence in time to satisfy the user's tactical intelligence requirements. This information can include items such as threat positions, movement, equipment, or activities at a given time and place. These items of information reported by LAR units, in addition to information obtained from other collection sources, are entered into the intelligence cycle (see Figure 3-2). Within the intelligence cycle, information is compared, analyzed, and subsequently processed into intelligence, which is then used to support decision making.
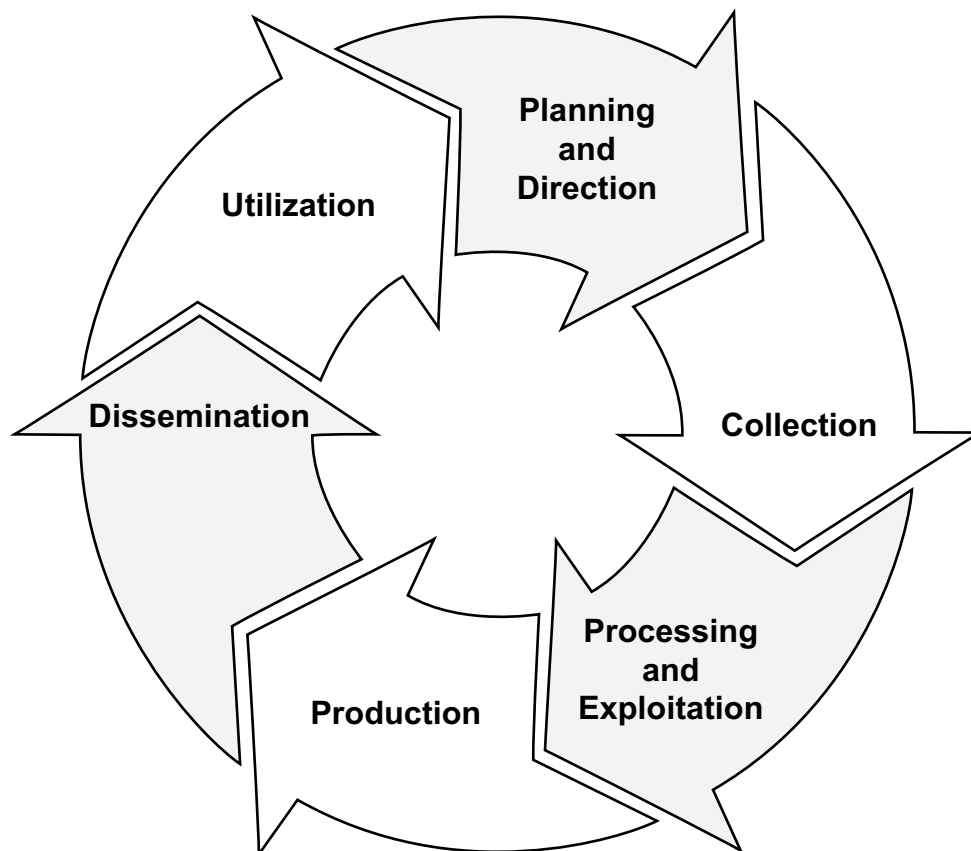
Figure 3-2. The Marine Corps Intelligence Cycle.

INTELLIGENCE OPERATIONS

Intelligence is not only inseparable from operations, but it also drives operations by shaping the planning and execution of operations. Operational actions logically develop from intelligence. A commander with effective intelligence knows the nature of the terrain, the weather impacts, the composition and status of the infrastructure in the AO, the makeup and attitude of the population that will be encountered, and how the combined effects of these factors will influence mission accomplishment.

Intelligence provides knowledge of threat capabilities, strengths, COGs, and critical vulnerabilities, along with assessments of the enemy's intentions. Integrating intelligence about the threat and the battlespace helps to provide the commander with situational awareness, which is used to determine the time and place for decisive action. Intelligence shapes the plan and provides knowledge that enables execution. It identifies changes in the situation which require modifying the plan or trigger decisions during an operation. Intelligence requirements and intelligence operations are continually evaluated to ensure that they are focused on supporting mission accomplishment. Light armored reconnaissance units complete the intelligence tasks, as described in the following paragraphs, to reduce uncertainty and support the decision-making process.

Describing the Battlespace

When describing the battlespace, a modified combined obstacle overlay can be a valuable tool. After describing the battlespace, it is necessary to identify key factors in the battlespace that can influence operations. Some specific LAR capability considerations are described in the following sections.

Restricted Terrain. In restricted terrain, LAR units can be canalized along predictable routes. Enemy elements use natural and reinforcing obstacles to make LAR units vulnerable to close-in attacks. To mitigate this vulnerability, LAR scouts can provide dismounted overwatch; in such cases, LAR units should move at the speed of their dismounted scouts.

Slopes. An LAV-MRV can climb 60 percent slopes and maneuver over obstacles that are 19 inches high. They can also operate on a side slope of 30 percent or less.

Avenues of Approach. Understanding the most likely routes a threat will use and identifying key terrain on those avenues is critical to weapon placement. In addition, LAV-MRVs have limited recovery capabilities and are not ideally suited for performing long-distance towing. Planners should evaluate distances and potential recovery and maintenance locations. Light armored vehicle-MRVs can also run on a flat tire for 25 miles at 30 mph.

Line-of-Sight Studies/Overlays. The height of an LAV-25 turret is 2.69 meters. Line-of-sight studies can help determine concealed avenues of approach, weapon and scout employment locations, and potential enemy observation posts.

Hydrology. Light armored vehicle-mission role variants are restricted to swim within the surf line when entering water from a landing craft and can only crossing bodies of water with a current of less than 8.2 feet per second. With proper preparation before and maintenance afterward, LAV-MRVs can swim at 6.5 mph. Key limiting factors for LAV-MRVs swim operations include ingress and egress grades, soil composition, and underwater obstacles, such as sandbars.

Weather Charts/Forecasts. Artic conditions might require the LAV-MRV to use snow chains to aid traction on ice, snow, and muddy terrain. Wet climate conditions and poor soil composition can seriously degrade off-road trafficability.

Defining and Evaluating Threat Capabilities Across All Domains

The LAV-MRVs provide LAR units the ability to define and evaluate threat capabilities across all domains for the supported commander.

Order of Battle. Light armored reconnaissance units will help a supported commander understand the threat based on the enemy's order of battle. As LAR units gain visual contact with the enemy's formation, they can provide the composition and disposition to facilitate a commander's decision making.

Electromagnetic Order of Battle. For employment of the light armored vehicle-electronic warfare (LAV-EW) variant, spectrum analysis and the enemy's communications architecture should be as detailed as possible.

Understanding the Enemy

After evaluating the battlespace and defining and evaluating threat capabilities, it is necessary to assess enemy intentions. In this process, it is critical to identify the enemy's COG and critical vulnerabilities, as well as to understand our own COG and vulnerabilities and how the enemy can exploit them.

Principles of Intelligence Operations and Intelligence Functions

To understand the relationship between the intelligence functions and intelligence operations, see Table 3-1. For more information about intelligence operations, see MCWP 2-10. The principles of intelligence operations include the following:

- Focus on tactical intelligence.
- Intelligence is focused downward.
- Intelligence drives operations.
- Intelligence activities require centralized management.
- G-2/S-2 facilitates the use of intelligence.
- Intelligence must be tailored and timely.
- Utilization is the final step of the intelligence cycle.

The intelligence functions include—

- Supporting the commander's estimate.
- Developing the situation.
- Providing indications and warning.
- Supporting force protection.
- Supporting targeting.
- Supporting combat assessment.

Table 3-1. Relationship Between Intelligence Functions and Operations.

Intelligence Functions	Decision Making	Operational Activities
Support to commander's estimate.	Plan a mission.	Develop and analyze COAs.
Situation development.	Execute the mission.	Monitor execution. Modify plan as necessary.
Indications and warnings.	Orient on contingencies.	Increase readiness. develop contingency plans.
Support to force protection.	Force protection.	Support operations security. Chemical biological and nuclear defense. Support deception plan.
Support to targeting.	Plan fire support.	Attack targets.
Support to combat assessment.	Re-orient forces. Plan future operations.	Consolidate, pursue, exploit. Reattack targets.

INTELLIGENCE ROLES AND RESPONSIBILITIES

Battalion Commander

The collection, analysis, and production of intelligence is the responsibility of the battalion commander. Although intelligence gathering and analysis is a team effort, the responsibility for directing intelligence activities rests solely with the battalion commander. The battalion commander must be personally involved in the intelligence process, providing specific guidance on what knowledge must be collected about the operational environment. Additionally, consideration must be given to how the battalion's collection efforts will be integrated to satisfy the information requests of the supported commander. Command, intelligence, and operations are inseparable processes, dependent on one another for success. By providing the necessary initial and ongoing guidance through the articulation of the commander's intent, the battalion commander provides direction and priorities to the intelligence section, defining the scope of the battalion's information requests. This is a continuous process in which the commander must assess the effectiveness of collections and adjust planning efforts as new information is uncovered. Through continual feedback, the battalion commander ensures that the intelligence section provides the intelligence required to meet the commander's intent. The battalion commander fills this role in the intelligence process by—

- Providing specific intent for all battalion intelligence activities.
- Focusing the intelligence effort and establishing clear priorities.
- Facilitating the intelligence efforts of the staff and subordinate units.
- Continuously participating in the intelligence process and providing feedback.
- Fusing intelligence into the decision-making process.
- Evaluating and assessing the effectiveness of intelligence activities.

Battalion Intelligence Section

Battalion Intelligence Officer. The S-2 is the principal advisor to the battalion commander on all matters related to intelligence and intelligence processes within the command. The S-2 manages the battalion's intelligence and counterintelligence efforts and identifies and implements the activities required to carry them out. Additionally, the S-2 is an invaluable participant in the commander's decision-making process, ensuring intelligence is effectively used throughout all phases of mission planning, execution, and operation assessment. In addition, they provide advice on capabilities, limitations, and intelligence processes and disseminate intelligence to the higher, adjacent, subordinate, and supporting commands. This is accomplished through education and training about intelligence capabilities.

The LAR battalion intelligence officer also—

- Provides support to information and stabilization activities through inputs to the stability assessment framework and the intelligence preparation of the operational environment.
- Provides and coordinates the battalion's intelligence training, as well as the augmentation of intelligence Marines to the company COCs when required.

- Supports the development of the situation and the commander's estimate of the situation by identifying threat capabilities, strengths, COGs, and critical vulnerabilities, as well as the opportunities and limitations presented by the operational environment.
- Identifies the various friendly, neutral, and threat networks in the operational environment, and anticipates their reactions to friendly and threat actions.
- Participates in the staff's effort to develop PIRs for recommendation to the battalion commander for approval.
- Ensures the command's information requests are received, understood, and acted on by collection assets or requested collection resources.
- Monitors collections and reporting for PIR triggers and recommends updates to the current PIRs.
- Ensures the staff is aware of the status of all PIRs and information requests to facilitate further intelligence planning and direction.
- Develops and disseminates all-source intelligence products tailored to the unit's mission and concept of operations, as applicable.
- Monitors the effective flow of intelligence throughout the command.
- Provides BDA and analysis to assist the combat assessment process.
- Directs the counterintelligence effort.
- Participates in the staff's effort to develop the IPB.

Assistant Intelligence Officer. The assistant intelligence officer is typically located in the intelligence section LAV-C2 and serves as the section's current intelligence operations officer. They assist the S-2 officer in leading special intelligence studies, developing target intelligence, collections management planning, and developing measures of performance and measures of effectiveness for operation assessment. The assistant intelligence officer serves as an external coordinator and point of contact for the battalion intelligence section with external agencies/units. The duties of the assistant intelligence officer and intelligence chief are interchangeable and are dependent on personality, strengths, the battalion's operations, and battle rhythm.

Intelligence Chief. The LAR battalion S-2 chief runs the intelligence operations center (IOC) and ensures that the IOC and battalion COC intelligence billets are properly staffed and functional. The S-2 chief ensures that outputs from the IOC, company COCs, and CLICs are integrated into the battalion COC. The S-2 chief is also responsible for the push and pull of intelligence between the HHQ and the IOC to maintain the continuous and timely flow of information. The S-2 chief manages the section's logistical and administrative needs, as well as those of attached or supporting intelligence enablers, ensuring coordination of effort. The duties of the assistant intelligence officer and intelligence chief are interchangeable and are dependent on personality, strengths, the battalion's operations, and battle rhythm.

INTELLIGENCE COLLECTION AT THE BATTALION

Collection tasks for the LAR battalion are derived from the supported commander's collection plan. Light armored reconnaissance units obtain the desired information through the collection process. The LAR battalion should consider additional support from external collection agencies or units while planning to answer the most critical information requests. In doing so, the battalion commander creates redundancy, which lends further depth and credibility to the battalion's collections.

The intelligence collection matrix is used to display the collected information This matrix ensures the full collection process is completed for designing specific information requirements (SIRs). It also determines whether requirements are answered, and which collection and reporting tasks were assigned to each asset. For the battalion to successfully satisfy tasks within the collection plan, the LAR battalion requires the following input and guidance when it is developing the collection matrix:

- A list of PIRs and information requests to collect on (from higher, their own, and subordinate elements).
- Where and when PIRs and information requests need to be answered.
- Which unit or asset (i.e., attached, supporting, or reachback) can best obtain or augment collection.
- From which location (e.g., ground, air, or other) the information can best be collected.
- A list of specific orders or requests to answer.
- The latest time information is of value.
- How the information must be delivered and reported.

The S-2 section works with inputs from the rest of the battalion staff to determine the most effective means of collecting information to support intelligence collection. This is referred to as collection management, which is the process of converting intelligence requirements into collection requirements, establishing priorities, tasking, or coordinating with appropriate collection sources or agencies, monitoring the results, and re-tasking, as required. Factors that are considered in collection include the collection means and their availability, capabilities, sustainability, vulnerabilities, and performance history. Once all considerations have been weighed, R&S planning can begin. For more information on collection, refer to MCTP 2-10A, *MAGTF Intelligence Collection*.

COMPANY-LEVEL INTELLIGENCE CELL

The CLIC is the lowest-level intelligence entity within the LAR battalion, but is not a substitute for the battalion intelligence section. The CLIC has a dedicated LAV-C2 vehicle and serves to enhance and facilitate intelligence operations at the lowest tactical level. Battalion and company planners must integrate the capabilities of the CLIC into their operations and their information and

data management plans. The CLIC supports the analysis and exploitation of information collected at the small-unit level. It provides the company commander with immediate on-scene intelligence support to deal with rapidly evolving enemy capabilities and reduces the intelligence and operational kill chain. Furthermore, the CLIC aids the company commander's decision making by its ability to collect, process, and disseminate intelligence to drive company operations. The CLIC is tied to the battalion for higher-level fusion, allowing those closest to the information the ability to process and make sense of it. Failure to implement the CLIC's capabilities will render ineffective intelligence operations at the company level. For more information about CLICs, see Marine Corps Reference Publications (MCRP) 2-10B.7, *Company-Level Intelligence Cell*.

A CLIC's responsibilities can include the following:

- Collect and evaluate information from the platoons.
- Conduct analysis to form intelligence.
- Disseminate intelligence up the chain of command.
- Develop intelligence requirements through named areas of interest (NAIs), indicators, SIRs, and specific orders or requests to answer information requests and PIRs.
- Serve as company subject matter expert on SUASs and the MAGTF secondary imagery dissemination system (MSIDS).
- Build the collection worksheet and matrix to manage the company collection plan.
- Advise in the tasking of organic collection assets (e.g., SUAS, MSIDS, and scouts) and request external collection resources to execute the collection plan.
- Construct necessary products to clearly display the overall collection plan. Products can include an NAI overlay, a collection worksheet, a synchronization matrix, and intelligence summaries.
- Provide targeting support to the fire support team leader as required.
- Provide regular education on threats to the company, both prior to and during deployments and exercises.

INTELLIGENCE COLLECTION AND MANAGEMENT TRAINING

The battalion commander ensures that intelligence collection and management training is provided to all Marines and Sailors within the command to maximize the collection efforts of the entire battalion. This includes the Marines and Sailors of the battalion's H&S company who commonly have contact with the host nation (HN) population on a limited basis. These Marines are primarily those within the battalion's logistics trains, operations section, and members of the intelligence section. Thought should be given to the potential of employing these Marines with a secondary task of intelligence collection. However, sending a convoy or patrol on a mission to satisfy various information requests will fail if the personnel comprising the convoy or patrol do not know what they are looking for, what other things they see that might be of value, and how to collect and record the information correctly. Therefore, these personnel must have basic training in intelligence and be included in debriefs following operations.

The battalion's intelligence training should be focused on the following:

- Training military occupational specialty (MOS) 0231 intelligence specialists and non-02XX MOS Marines within the CLIC.
- Training all battalion personnel in the importance of intelligence and how to be collectors (i.e., "Every Marine a Collector" training).
- Training in collection management and collection processes to ensure they are understood at all levels Light armored reconnaissance capabilities as a collections asset and collections management asset must be understood to employ LAR units and to execute LAR taskings.
- Training on reporting formats and procedures to familiarize Marines with the types of information needed and the method on which to report that information.
- Training in after-action or patrol debriefing techniques, including procedures to record and transmit information.

INTELLIGENCE ACTIVITIES

Intelligence Support to Planning

Intelligence supports every phase of the Marine Corps Planning Process (MCPP) and assists the battalion commander in uncovering the unknowns and other critical variables of the operational environment. This provides a deeper understanding of the environment, alerts the commander to new opportunities, and assists in assessing the effects of the battalion's actions. Much of the intelligence effort is dedicated early to support planning prior to the MCPP problem framing step. It is critical the S-2 be given ample time prior to formal planning to develop and tailor the intelligence products required to support planning efforts. Intelligence in the early phases of planning provides a comprehensive image of the operational environment and the threat, helping the battalion commander to assess effects, come to an understanding on the general direction of future actions, and anticipate possible threat actions and reactions.

The S-2 should actively engage with the battalion staff as much as possible throughout the IPB process and the planning process for two reasons. First, through continual integration, the S-2 gains more awareness of planning efforts, which in turn assists in providing the staff sections with the necessary estimates and intelligence products to support planning. Second, it allows the S-2 to better tailor the intelligence products to each section's needs to make them more tactically relevant. The planning support fundamentals of the battalion S-2 section do not change during planning activities. Prior to R&S missions the S-2 should provide, at minimum, the following planning considerations to the companies or subordinate elements:

- Battalion's assessment on the enemy situation as it relates to the mission.
- Collection against PIRs and information requests: purpose, method, end state regarding tasked requirements.
- Key terrain and NAIs as it relates to the company's task.
- Other collection assets and resources collecting and commander's guidance on interaction and cross-cueing with those assets and resources.
- Prioritization and tasking of UAS within the battalion.

The thoroughness and depth of planning, to include intelligence planning, is a function   of available time, staff, and resources. For more information on how intelligence support is integrated into the staff planning process, refer to MCWP 5-10, *Marine Corps Planning Process*.

Intelligence Support to Execution

The rapid and fluid nature of LAR operations requires timely, accurate, and responsive intelligence support during execution. During execution, the S-2 supports current operations and assists the battalion commander and staff in anticipating and continually assessing information requests for branch and sequel plans. Responsive intelligence ensures continuous dissemination of intelligence throughout the battalion as changes are presented from the operational environment. This continuous flow of information provides a more coherent and equally shared picture of the threat as it relates to the operational environment, and uncovers new requirements developed by subordinate units. Intelligence support to execution can be developed in hours, minutes, or even seconds. Success in execution often depends on the ability to provide immediate answers to critical questions concerning threat dispositions, actions, and likely intentions. During execution, intelligence support focuses on providing practical knowledge that presents potential advantages and opportunities over the threat that can be exploited to the battalion's advantage. Although eliminating uncertainty is impossible, focused intelligence reduces uncertainty by providing situational awareness and identifying opportunities as they present themselves. Intelligence support to execution provides indications and warnings of new or unexpected threat activities, enhances efforts to engage the threat through support to targeting, assists in protecting the force through counterintelligence measures, and supports planning future operations.

Intelligence Support to Assessments

The S-2 supports combat assessment through collecting and processing BDAs during operations. Additionally, the S-2 and key representatives (e.g., the collection manager) should be included as members of the assessment working group or planning team responsible for assessing operations. As an extension of the planning process, the S-2 should support the development of the operations assessment plan, to include measures of performance, measures of effectiveness, and indicators. The collection manager is responsible for ensuring all required information is collected on all indicators contained in the assessment plan. The S-2 is critical for monitoring and evaluating the indicators, as well as playing an integral role in working with the staff to make recommendations to the commander through the assessment process. The battalion commander can adjust the conduct of operations based on the information and recommendations provided during the assessment process by executing branch plans or sequels, or by taking immediate actions to correct damage resulting from tactical missteps. The S-2 section ensures assessments are incorporated into the battalion's battle rhythm. Figure 3-3 provides an overview of a notional assessment process. For more information on operations assessments, refer to MCRP 5-10.1, *Multi-Service Tactics, Techniques, and Procedures for Operation Assessment*.
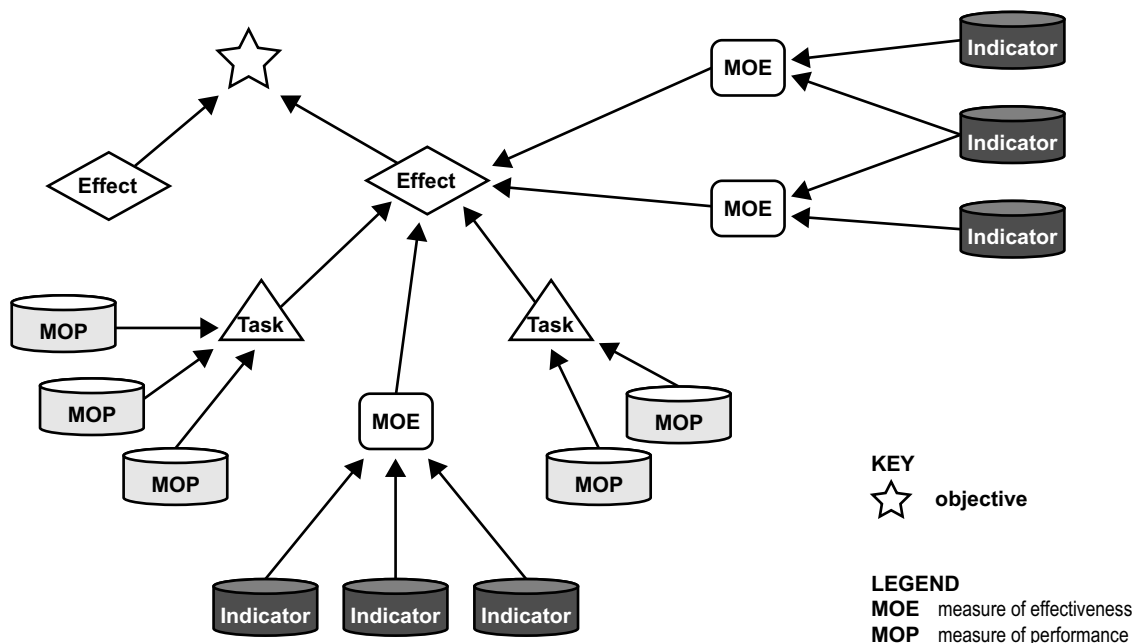
Figure 3-3. Notional Assessment Process.

Integrating Electromagnetic Warfare

Electromagnetic warfare provides three distinct capabilities: electromagnetic support, electromagnetic attack, and electromagnetic protection. To be effective, the commander must provide intent and clear guidance for the employment of EW to support the desired end state. Electromagnetic support is a function of the intelligence section and the electromagnetic warfare teams should be attached to the LAR company during operations.

INTELLIGENCE REPORTING

When LAR Marines are observing an area, it is crucial that they record the information gathered for later reporting and processing. Marines can use observation logs, sketches, and photographs to capture information. The Marine conducting observation must determine when it is appropriate to report the recorded information based on the answers to three questions:

- Is the Marine observing something related to an intelligence requirement that must be immediately reported?
- Is the information the Marine is receiving of immediate use to the tactical situation?
- Will providing the information immediately prevent an event or give friendly forces a tactical advantage over the threat?

Reporting Criteria

While it is important to report pertinent information, excessive information can overload and confuse higher and adjacent units. It is critical that Marines distinguish between fact and opinion when reporting. Marines must report the facts first, then report their own opinions of what they are

observing. To reduce complexity and increase clarity for the collector and recipient, standard reporting formats should be adhered to. Second-hand information should also be distinguished in the report.

A Marine does not always report up the chain of command but must be able to determine whether the information is of value to other individuals or units in the area. When reporting (or receiving) information, Marines should consider the impact of who the information could be critical to by using the HASS principle, which stands for higher, adjacent, supporting, and security. This can apply both to internal and external recipients. Critical questions Marines should ask include the following:

- What do I know (i.e., fact, assumption, or opinion)?
- Who needs to know it (i.e., element leaders, HHQ, adjacent, supporting, or security units)?
- Have I told them (i.e., timeliness of reporting, reporting format used, and supporting material)?

Intelligence Reporting Levels

Without clear reporting or deliberate debriefing, observed information is not effectively collected and stored. This information must be conveyed in a manner that meets the needs of information requests as well as facilitates intelligence production to answer the PIRs. The four levels of intelligence reporting used to facilitate the supported commander's information requests are explained in the following section. For more information about reporting, see MCRP 2-10A.7, *Reconnaissance Reports Guide*.

Level I: Intelligence Reports. Level I Intelligence reports consist of information of critical tactical value. This information is reported in near-real time from LAR formations.

Level II: Intelligence Reports. Level II intelligence reports consist of other information of tactical, operational, or strategic value collected during LAR activities. A level II report is submitted immediately upon return to a secure area. The unit leader will conduct an after-action review and report. The after-action reports, the level I intelligence reporting, and the battalion or company COC's debriefing from all employed elements will be fused to generate the reconnaissance after-action, information, dissemination, and exploitation report (RAIDERREP).

The RAIDERREP captures the AO and mission-specific information. This report is passed to the supported unit's G-2/S-2 and the battalion or company COC prior to the formal intelligence debriefing. Marines must report as completely and accurately as possible since this report will form the basis of the intelligence section's debriefing. The RAIDERREP focuses on information of value for follow-on forces and includes imagery for reference.

The RAIDERREP consists of the following:

- Mission statement.
- Patrol narrative by phase (i.e., insertion, infiltration, actions on the objective, exfiltration, and extraction).
- Considerations of key terrain, observation and fields of fire, cover and concealment, obstacles, and avenues of approach (also known as KOCOA) and their effects on friendly and enemy forces.

- Observed enemy tactics including order of battle.
- Civilian activities and infrastructures.
- Map errors or modifications.
- Communications.
- Consumption rates (e.g., batteries, food and water, fuel, ammunition).

Level III: Intelligence Reports. Level III intelligence reports consist of other information of tactical, operational, or strategic value collected during the CLIC or battalion S-2 debriefing. This information is then fused with reporting from other collectors to verify information and gain a better understanding of the operational environment.

Level IV: Intelligence Reports. Level IV intelligence reports are generated at the end of an operation, and include intelligence reports and debriefs from all collectors consolidated into one package, endorsed by the supported commander. Level IV intelligence reports, known as mission reports, are routed to HHQ and placed in an intelligence database for future reference.

Debriefing

Marines obtain and share information through debriefing. Debriefing LAR units should be conducted as soon as possible, preferably within two hours after completing a mission. All members of the LAR unit should, if possible, attend every phase of the debriefing process.

Debriefing chronologically covers the LAR unit's actions and all related details from the start of the mission through arrival at the debriefing site. Specific information collected as a result of the mission is obtained during debriefing. Additionally, questioning is used to obtain information regarding sightings or observations of a significance that might not be readily apparent to Marines. Debriefing is important in the intelligence collection effort, particularly when used to clarify and expound on information received via reporting. The debriefing process is usually conducted in the following sequence:

- Initial debriefing.
- Post-initial debriefing.
- RAIDERREP.
- Follow-up debriefing.

Initial Debriefing. This debriefing should help answer PIRs, information requests, SIRs, ISR tasks, and other request for information. The initial debriefing is quick and to the point, with the debriefer choosing the format and line of questioning. At the conclusion of the initial debriefing, the intelligence staff gathers all maps, logs, papers, exposed film, video tapes, photographs, recovered equipment, and other items of intelligence questions for the next stage of debriefing. The LAR unit remains separated from outside contact until after the follow-up debrief; however, recovery activities (e.g., post-mission maintenance, eating, showering, sleeping) can begin.

Post-Initial Debriefing. This debriefing is conducted with a communications representative and covers communication-specific information, such as when certain antennas worked best and which frequencies worked best.

RAIDERREP. The RAIDERREPs are produced when information is obtained that satisfies collection requirements of general interest or clarifies and expands level I intelligence reports. The RAIDERREP identifies the who, what, when, where, why, and how of the mission. It permanently records the LAR unit's major activities from planning to debriefing. Organized in accordance with the warfighting functions, the RAIDERREP serves as an extremely important template for comparison with past missions and planning for future operations. In this report, the vehicle commander reflects on the operation and makes recommendations for future operations. The LAR unit identifies what did and did not work, identifying how the unit's current tactics, techniques, and procedures (TTP) need to change.

Follow-Up Debriefing. At this debriefing, the vehicle commanders summarize the operation, focusing on the LAR unit's stated and implied missions. The debriefer and staff members take turns questioning the vehicle commanders, using the platoon's RAIDERREP as a reference. This debriefing gives the LAR unit members the opportunity to raise issues of support, communications, and coordination as well as any other deficiencies experienced during planning or execution. A trusted and knowledgeable intelligence representative conducts the follow-up debriefing. If a company intelligence representative is not available, the debriefing is conducted by a representative from the battalion's intelligence section. The Marine conducting the debrief prepares reports based on the information obtained during the debriefing. The timely collection, analysis, and dissemination of information recovered during the debriefing can provide many answers needed for follow-on missions in the objective area.

CHAPTER 4.
FIRE SUPPORT

The operational range of the LAR-MRV frequently necessitates the need for LAR units to operate outside the delivery parameters of most conventional surface fires. This characteristic of LAR units requires leveraging assets that generate flexible and responsive fire support plans that enable effective LAR operations. Of particular importance to LAR is support from the MAGTF's aviation combat element (ACE). The ACE's ability to perform the six functions of Marine aviation are critical to adding depth, lethality, and sustainment to LAR operations when operating outside the range of conventional fire support agencies.

FIRE SUPPORT PLANNING CONSIDERATIONS

The LAR battalion conducts detailed fire support planning in accordance with the requirements of the assigned mission. During planning, the LAR battalion staff identifies the fire support assets available and the additional requirements the battalion needs to accomplish its tasks. The supported commander and staff must understand the mission assigned to LAR units, their inherent limitations, and the potential risks in failing to provide LAR with adequate fire support to accomplish its tactical tasks. Operational range concerns must also be addressed in communications planning for fire support. As with all LAR operations, detailed communications plans for the coordination and clearance of fires are developed to ensure effective, reliable, and redundant communications are in place. All plans for fires in support of operations, fire support coordination, and clearance are optimized in full consideration of the ranges at which LAR units can be expected to operate.

In seeking lethal effects, the LAR battalion orchestrates the effects of its maneuver companies, scouts, 81mm mortars, antiarmor, supporting artillery, and aviation fires. Modern fire-support planning must also consider incorporating non-lethal effects, such as information capabilities and civil-military operations. This human aspect of fires and their effects are of particular importance with the exploding growth of world populations in the littoral regions. Light armored reconnaissance units must consider the effects that fires can have on the HN population, culture, political and social organizations (i.e., both foreign and domestic), critical infrastructure and facilities, and any external agencies or organizations within the operational environment. The total balance and consideration of these actions combine to create the greatest possible effect on the threat. For more information on fire support, see MCTP 3-10F, *Fire Support Coordination in the Ground Combat Element*.

FIRE SUPPORT COORDINATION

The LAR battalion's FSCC is the centralized hub for fire support coordination between subordinate companies and external fire support agencies. The FSCC executes fire support coordination by closely integrating multiple supporting arms with maneuver, ensuring that the supporting arms are joined with the battalion commander's concept, and providing a measure of assurance that friendly forces are not endangered. The FSCC is established within the battalion's COC, where centralized communications facilities and personnel operate. (See Figure 4-1 for an example of the LAR battalion FSCC LAV-C2 configuration.) The FSCC monitors, receives, and coordinates all fire support requests between the battalion and the supported fires and effects coordination center. The FSCC is tasked with coordinating and clearing all forms of fire support within the LAR battalion's area of responsibility. When required, supporting arms units provide representatives and specialized equipment to conduct coordination, targeting, and communications functions for their respective supporting agencies. The FSCC can also coordinate missions for observers to attack targets outside the battalion's area of responsibility. The LAR battalion FSCC staff consists of a permanently assigned fire support coordinator (FSC), a fire support chief, joint fires observers, and radio operators. The battalion also has a tactical air control party (TACP), consisting of an air officer (AirO) and assistant AirO, and an 81 mm mortar representative with mortar forward observers. Other personnel, such as LNOs from supporting arms agencies are assigned to provide fire support expertise.
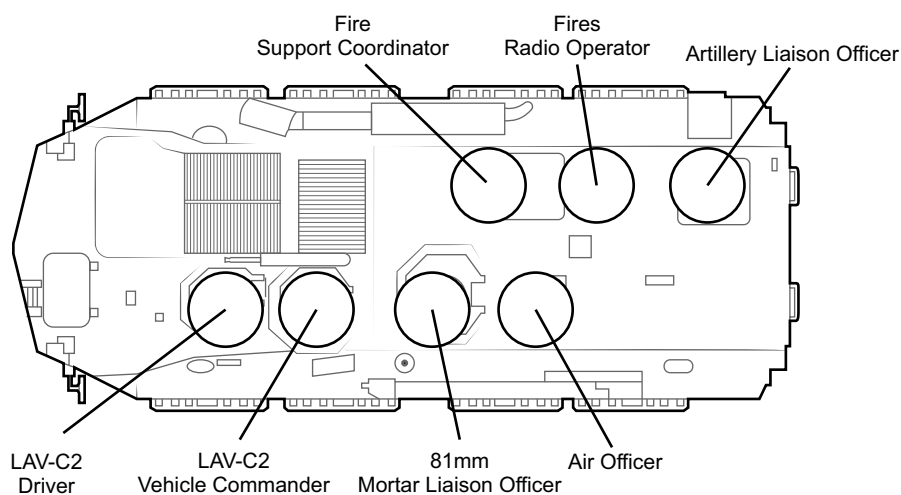
**Figure 4-1. Notional Light Armored Reconnaissance
Battalion Fire Support Coordination Center, LAV-C2 Configuration.**

ROLES AND RESPONSIBILITIES

Battalion Commander
Fire planning and effects are a direct responsibility of command. The LAR battalion commander is responsible for providing guidance and intent for the effects of all fires (i.e., both lethal and nonlethal). As operations unfold, battalion commanders must be constantly cognizant of fires and

their effects, ensuring fires meet their guidance and directing the assessments of their effectiveness. Commanders have the inherent ability to delegate this authority to subordinates as necessary; typically, the authority is delegated to the operations officers or executive officers in the commanders' absence.

Fire Support Coordinator

Light armored reconnaissance battalions are staffed with an assigned field artillery officer, MOS 0802, to serve as the FSC. The FSC organizes, trains, and supervises the FSCC personnel. The battalion commander typically delegates authority to the FSC to control and supervise the FSCC's operation. The duties of the FSC are to—

- Advise the commander on fire support.
- Coordinate preparing estimates of supportability.
- Participate in the targeting process.
- Provide guidance for automated information systems (e.g., high-payoff targets, target delay time, or firing asset preferences).
- Prepare the fire support plan, with help from the supporting arms representatives.
- Ensure that the fire support plan can be implemented with the assets available, and, if necessary, coordinate with the operations officer and the battalion commander to request additional assets or to modify plans.
- Recommend fire support coordination measures (FSCMs) to the battalion commander.
- Work with the operations officer in planning maneuver control measures (i.e., they will effect FSCMs).
- Clear or deconflict requests for fire missions and air strikes from subordinate units. Coordinate clearance of fires with higher and adjacent units when required. This can be delegated to the appropriate supporting arms representative.
- Disseminate target information received to other staff members, subordinate units, and commands requiring information.
- Advise the commander on target selection and attack guidance.
- Maintain close liaison with the operations officer and the intelligence officer to ensure the most effective planning and application of fire support.
- Execute the attack of targets based on the commander's guidance and the targeting process.

Battalion Air Officer

The battalion AirO is a Marine Corps aviator, MOS 75XX, and special staff officer assigned to the battalion in the S-3 section. The AirO provides aviation planning and employment expertise and representation inside the FSCC. The AirO's duties are to—

- Provide aviation information and expertise.
- Provide the commander's air support requirements to the appropriate air support control agency.

- Coordinate assault support requests (ASRs) and joint tactical air strike requests (also referred to as JTAR) from subordinate units to ensure targets are attacked adequately, to avoid duplication in attacking targets, and to protect friendly units.

- Receive target information relayed through Marine air command and control system agencies.

- Monitor the tactical air request/helicopter request (TAR/HR) net in the FSCC for information or clearance on immediate ASRs and joint tactical air strike requests.

- Supervise and coordinate TACP activities.

- Request suppression of enemy air defenses (SEAD) fires in support of air strikes from other supporting arms representatives as necessary.

- Maintain situational awareness on information pertaining to ASRs, prospective air support targets, assigned missions, and SEAD requirements.

- Provide necessary coordination with the direct air support center (DASC) in support of maneuvering battalion units.

- Coordinate with the ACE when planning FARPs within the battalion's boundaries.

- Plan and disseminate airspace control measures (e.g., air movement corridors and routes with minimum/maximum altitude, contact points, egress points, landing/pickup zones, rotary-wing battle positions).

- Coordinate the ingress and egress of aircraft through the unit's AO.

Artillery Liaison Officer

Depending on the tactical situation, the LAR battalion FSCC can be augmented with an artillery LNO and an accompanying liaison section. Typically, the LNO operates with the forward command element, coordinating artillery operations for the FSC, while the LNO artillery chief resides in the main command element to support operations when the forward echelon displaces. The artillery LNO's duties are to—

- Monitor the artillery conduct of fire (COF) net and provide clearance on requests for fire.

- Pass requirements for fire support to the appropriate fire direction center for action.

- Coordinate artillery unit requirements, such as approval for displacement and resupply routes, with the supported commander and the commander in whose AO the movement will occur, if outside the battalion's AO.

- Maintain situational awareness of current operations and logistics of artillery units and their firing status, keeping the FSC informed.

- Keep the supported unit S-2 or target intelligence officer advised of all target information received through artillery nets.

FIRE SUPPORT COMMUNICATIONS

One of the two LAV-C2s located in the battalion forward command element serves as the FSCC for the battalion. The LAV-C2 is equipped with radios (i.e., VHF, UHF, and HF) that the crew uses to manage the battalion's fire support plan and coordinate with higher and adjacent units. The

LAR battalion is equipped to integrate with all current digital fire support and C2 systems within the MAGTF. As previously stated, it is imperative to understand the operational distances over which LAR units will operate, the supporting assets, and the limits of the communication architecture, particularly when planning the use of digital systems to clear or coordinate fires for the battalion. When digital fire support coordination and clearance is required, the supported commander must place extra scrutiny on all communications plans to ensure the connectivity and effectiveness of digital networks.

To conduct fire support coordination as efficiently as possible, battalions must establish an effective and suitable network, that uses the minimum amount of communications assets, provides for redundancy, and can accomplish the mission. Radio communications allow monitoring by fire support agencies at all echelons. These nets can include those listed below and displayed in Figure 4-1. Refer to MCTP 3-10F for an example of a fire support radio net guard chart.

Very High Frequency Voice and Digital Communications
The VHF communications and digitally linked systems through VHF have limited range and are affected by terrain but are accepted as the most reliable and readily available means of communications. The following are VHF and digital nets and their use.

Battalion Conduct of Fire Net (VHF Voice/Digital). The battalion COF net (i.e., Arty COF) is established for observers to request and adjust artillery fire. The battalion FSC in the FSCC monitors and receives net traffic to coordinate requests for fire. Forward observers and LNOs can also use the net to exchange target and fire planning information.

Regimental Fire Support Coordination Net (VHF Voice/Digital). The regimental fire support coordination net (i.e., regimental FSC) is established to communicate traffic about fire plans, target information, FSCMs, and to coordinate cross-boundary fires with the battalion and regiments' FSCCs.

Artillery Battalion Fire Direction Net (VHF Voice/Digital). The artillery battalion fire direction (i.e., Arty Bn FD) net is established as required for the artillery fire support officer to monitor and maintain situational awareness of artillery fire planning and significant artillery missions.

Division/GCE Artillery Air Spot Net (VHF). The artillery air spot net provides a means by which aircrews can adjust artillery fire. Forward observers can use this net to coordinate with aircrews to attack targets in their AO.

Shore Fire Control Party Local Net (VHF). The shore fire control party (SFCP) local net (i.e., SFCP local) provides a means by which the battalion naval gunfire liaison officer coordinates the activities of the SFCP. It is also used for the officer in charge of the spot team to communicate with the members of the team when they are dispersed.

High Frequency, Ultrahigh Frequency, and Digital Communications
The HF frequencies have extended ranges and are unaffected by terrain; however, they are affected by interference from solar activity and weather. High frequency nets require skill to establish, operate, and maintain at high efficiency. The UHF frequencies (referred to as line of sight [LOS]) operate best when there are no obstacles between the sender and receiving stations such as aircraft to aircraft or air to ground.

Naval Gunfire Ground Spot Net (HF/VHF). The naval gunfire ground spot net provides a means for naval gunfire spot teams to request and adjust naval surface fire support, usually between a spot team and the assigned DS ship. The battalion naval gunfire liaison officer monitors the net to provide clearance or communications relay, if necessary.

Naval Gunfire Fire Air Spot Net (UHF/VHF). The naval gunfire air spot net is a dedicated net on which aircrews can request and adjust naval surface fire support. Naval gunfire spot teams can use this net to coordinate with aircrews to attack targets in their respective company AOs.

Tactical Air Request/Helicopter Request Net (HF Voice/Digital). The TAR/HR net connects the DASC to all potential direct air support aircraft requesters. It receives requests for immediate air support. The FSCC monitors and receives air requests and either approves, denies, or modifies them.

Tactical Air Direction Net (UHF/VHF). The tactical air direction net is used by the DASC, airborne coordinators, and terminal controllers to control and direct fixed-wing aircraft, and for air control agencies to brief support aircraft on target information and to conduct handoff to a forward air controller, forward air controller (airborne), or tactical air coordinator (airborne).

Tactical Air Control Party Local (VHF). The TACP local net provides a means of coordination between the battalion AirO in the FSCC and the battalion's subordinate TACPs. Stations on the net include the AirO (i.e., net control) and the TACPs.

FIRE SUPPORT SYSTEMS INTEGRATION

Integrating fires generates combat power to support maneuver. Integration is the orchestration of different fire support arms, and includes the agencies and systems required to plan, command, control, and execute fires to achieve the desired effects.

Artillery
The use of field artillery in support of LAR operations requires deliberate planning and appropriately prioritizing assets to synchronize fire support with the LAR mission and concept of operations.

Cannon Artillery. Cannon artillery provides an all-weather fire support platform, which offers a wide array of munitions and capabilities to support LAR operations. However, the range of cannon artillery is limited. The fast pace of LAR operations can quickly outrun the effective range of the cannons, requiring the artillery unit(s) to displace frequently to be within an adequate supporting range. Depending on the tactical situation, this can cause security concerns for the firing batteries.

Rocket Artillery. The High Mobility Artillery Rocket System (also referred to as HIMARS) possesses the requisite range to support LAR units in deep, highly mobile, and fast-moving operations. The LAR battalion's location at the forward edges of the battlespace makes it an excellent sensor for MAGTF target acquisition and attack during shaping efforts.

Mortars

Each LAR company has one organic section of two LAV-Ms (i.e., two 81 mm tubes), which offers the company commander a small, but responsive IDF support asset to enable company maneuver. When operating at ranges past conventional supporting arms, the company commander can use the 81 mm section for several tactical purposes including, engaging small enemy dismounted formations or observation posts, or for marking CAS and the conduct of SEAD missions with smoke or illumination. The mortar section's ability to mass fires is limited because of the large frontage of the LAR company and the low density of tubes. The operating ranges and related communications limitations (i.e., the distance of the 81 mm fire direction center to the battalion FSCC or other fire support agencies), make it essential that the coordination and clearance of 81 mm mortars reside with the CFST. Depending on the tactical situation, it may become necessary for the battalion to consolidate and mass the company mortar sections to serve the battalion in a general support role. When tactical situations require this, the battalion FSC establishes a battalion mortar COF net to coordinate and clear 81 mm fires.

INFORMATION WARFIGHTING FUNCTION

Information capabilities and specific activities are a function of the FSCC. They provide a nonlethal method for shaping the battlespace. The employment of information capabilities and conduct of specific information activities should be tied to preplanned events in the scheme of maneuver as detailed in Annex I (Knowledge and Information Management) of the OPORD. Using the fires and effects shaping methodology, information capabilities and specific activities become conditions-based and allow subordinate units to operate independently on commander's intent. (For more information, see Marine Corps Doctrinal Publication 8, *Information*, regarding Marine Corps information functions, and Appendix J of MCWP 5-10, regarding Annex I [Knowledge and Information Management] of the OPORD.)

AVIATION IN SUPPORT OF FIRES

Light armored reconnaissance units typically operate at extended distances from the other friendly forces and outside the range of surface-delivered fires. During these extended distance operations, Marine or joint aviation may be the sole source of fire support available to formations. During operations in which the LAR battalion is expected to operate for days or even weeks outside the range of surface fires, the supported commander may consider providing dedicated air support to LAR units. Marine aviation can provide support without diminishing the speed, mobility, and operating range of LAR units. The supported commander should consider how the following functions of Marine aviation can contribute to LAR operations.

Offensive Air Support

Offensive air support is one of the six functions of Marine aviation and is implemented to counter the threat's ability to maneuver, mass, or strike. Offensive air support is subdivided into deep air support (DAS) and CAS.

Deep Air Support. Deep air support is "air action against enemy targets at such a distance from friendly forces that detailed integration of each mission with the fire and movement of friendly forces is not required" (*Marine Corps Supplement to the DOD Dictionary*, hereafter referred to as the *USMC Dictionary*). Aircraft conducting DAS engage high-payoff targets that are identified during the targeting cycle. Deep air support can be conducted on either side of the FSCL. This is a particular concern to the LAR battalion, as it could be operating near or across the FSCL. The location and potential of proximity to LAR units determines the amount of integration and coordination required for DAS. The LAR battalion is an enabling ground force that can shape operations. In the same manner, the supported commander uses aviation units in the DAS role to further shape the battlespace. Deep air support can be used solely to support the commander's shaping requirements or to support specific ground forces, such as the LAR battalion, to divert, disrupt, delay, or destroy enemy forces without detailed integration with the fire and movement of the friendly surface forces. The LAR battalion can also be used to confirm BDA and the effects of DAS operations for the supported commanders. Deep air support missions include air interdiction, armed reconnaissance, and strike coordination and reconnaissance. For more information on DAS, refer to MCRP 3-20D.2, *Deep Air Support*.

Close Air Support. Close air support is defined as "air action by aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces" (*Department of Defense Dictionary of Military and Associated Terms* hereafter referred to as the *DoD Dictionary*). Pre-planned or on-call CAS is used to destroy or neutralize targets in support of LAR units' tactical tasks. During extended range operations, special consideration should be given to the distance LAR units are operating from the origination of CAS aircraft. The disaggregate nature of LAR units require enhanced situational awareness of friendly vehicles and dismounts for attack geometry. The distance and resulting aircraft responsiveness might necessitate requirements to stack CAS aircraft, develop additional plans for aerial refueling or FARP capabilities, or task-dedicate strip alert aircraft to support LAR missions. For more information on CAS, refer to Joint Publication 3-09.3, *Close Air Support*.

Aerial Reconnaissance
The on-board sensors of both fixed-wing and rotary-wing aircraft can complement the capabilities of LAR tasks and allow the LAR units to observe and locate targets farther forward of maneuvering units, buying additional maneuver space and time for friendly forces. This provides commanders the ability to make timely, informed decisions, as well as to confirm or deny threat courses of action.

SENSOR AND TARGET LOCATION

The LAR battalion has enhanced capabilities to locate targets over great distances. This makes LAR units very capable of supporting shaping operations in the deep battlespace. The LAV-25 is equipped with an eye-safe-laser range finder that can range targets out to 9,995 meters. This range finder has a far target locator which locates targets out to 8,000 meters with a circular error probable of 30 meters. This capability on the LAV-25 provides the supported commander a highly mobile targeting platform to adjust surface-to-surface and aviation delivered ordnance with a relatively high degree of accuracy. Circular error probable is a mathematical term of accuracy that

represents the distance in which fifty percent of the laser hits will land. Under most circumstances, further mensuration of target location by targeting software (or other means) must occur to have effects with global positioning system aided precision weapons not employed by a dynamic delivery platform (i.e., High Mobility Artillery Rocket System or Excalibur vice fixed-wing aircraft with targeting pod). However, the sensor aboard aircraft can be used to calculate data for multiple targets for engagement by artillery or mortars while DAS or CAS is in progress.

ESTABLISHING FIRE SUPPORT COORDINATION MEASURES

Fire support coordination measures facilitate the rapid engagement of targets throughout the battlespace while simultaneously providing friendly fire safeguards for friendly forces. Effective FSCM planning ensures that fire support will not jeopardize safety, interfere with the delivery of other fire support means, disrupt adjacent unit operations, or unnecessarily delay delivery. Because of the fast-moving pace of LAR operations, the battalion and its subordinate companies will frequently outrun the range of surface-delivered ground fires. During fire support planning for LAR operations, detailed planning should be conducted in determining the location of the coordinated fire line (CFL), battlefield coordination line, and when applicable the FSCL. While LAR units can operate forward of these coordinating measures, appropriate restrictive fire areas (RFAs) must be planned that are large enough for LAR units to operate in without being constrained. To prevent friendly fire, these RFAs must be disseminated early enough to be received throughout the MAGTF and adjacent GCE units. For example, if the LAR battalion is tasked to screen forward of a regiment that established a CFL, operations and logistics of artillery units and their firing status, keeping the FSC informed the battalion's frontage. Establishing the RFA in lieu of moving the CFL serves two main purposes. First, it offers a reasonable degree of protection to the LAR unit while creating additional time and space for the supported commander to make decisions. This decision space is created by the RFA and allows the LAR battalion to operate farther forward on the battlefield. Second, as when employing traditional reconnaissance assets, establishing an RFA avoids unnecessary complication or restrictions to the fire support plan.

The FSC must establish effective FSCMs and transparent fires guidance for subordinate companies. With the appropriate control measures and guidance, companies will have the ability to act on the commander's intent in the absence of communications with the FSCC. Company boundaries are very useful in fire support coordination and allow fires to be deconflicted at the company level. Targeting within a company's boundary in accordance with the FSC's guidance results in a shortened kill chain and quicker target acquisition.

Battle tracking of subordinate units is an essential task of the FSC. Rarely, if ever, will the FSCC have accurate locations of every vehicle in every company across the battalion. To track locations, phase lines must be used in conjunction with company boundaries, creating a left, right, and FLOT of the company. A modified position report can be used when the situation makes the implementation of these FSMCs impractical. The CFST can provide the four corners of the unit's location: leftmost, rightmost, forward, and most rearward. This boxes the company as a whole, facilitating a rapid position report from the CFST to the FSCC without needing grid locations of every individual vehicle.

Figure 4-2 provides a notional example of the LAR battalion operating forward of the CFL. Each tactical situation differs, and Figure 4-2 represents only one way of placing the RFA to facilitate LAR maneuver and fires. For more information on FSCMs, refer to Appendix B of MCTP 3-10F.
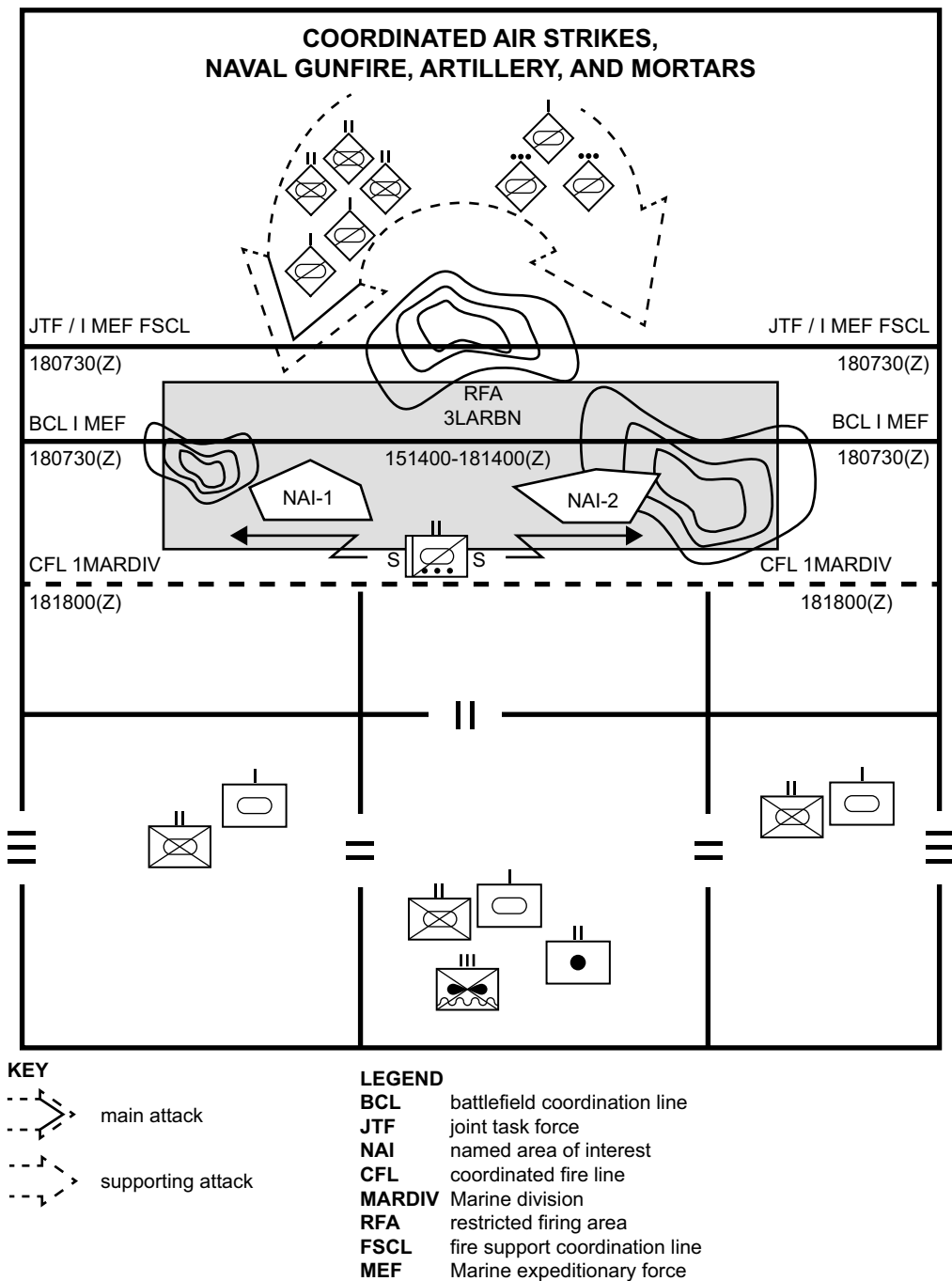
Figure 4-2. Notional Placement of Restrictive Fire Areas to Support Light Armored Reconnaissance Operations.

CHAPTER 5.
OPERATIONS

Light armored reconnaissance units conduct activities throughout the competition continuum in support of the Marine division, MAGTF, or a joint force commander. Light armored reconnaissance units conduct offensive, defensive, and other tactical operations for the supported commander. For additional information on LAR and GCE tactical operations, refer to MCWP 3-01, *Offensive and Defensive Tactics*.

LIGHT ARMORED RECONNAISSANCE TACTICAL UNIT CAPABILITIES

The tactical considerations of mission, enemy, terrain and weather, troops and support available—time available (METT-T) determines whether the LAR unit should be supported or reinforced for larger operations with additional MAGTF assets. These assets can include aviation, infantry, and engineers as well as armor from joint or coalition partners. Certain security operations in support of the offense and defense can require additional combat support, mobility, and countermobility assets. This is particularly applicable against larger mechanized threats or heavy armor formations. Additional assets attached to LAR units must be of comparable mobility to maintain maximum operational tempo.

The LAV, amphibious assault vehicle (AAV), and amphibious combat vehicles (ACV) should not be thought of as competing weapons platforms, but rather as complementary combat systems. Each is tasked with generating a specific effect in the battlespace for the supported commander. For example, assault amphibian units and are structured and have close parity with the infantry battalion to fight primarily in the close area of the battlespace. On the other hand, LAR has a platform that was designed for employment in the deep battlespace fight.

The LAR unit can rapidly transition between offensive, defensive, and security missions. When performing offense-related tasks, such as movement to contact or zone reconnaissance, the LAR battalion simultaneously plans for flexibility and prepares to defend across recently reconnoitered areas in the event of encountering a larger force. When performing defense- or security-related tasks in support of the supported commander, such as screening or defending from battle positions, the LAR battalion plans for offensive opportunities, striking at the threat's vulnerable areas or units to quickly enable offensive courses of action. Light armored reconnaissance relies on its speed and mobility to accomplish tactical tasks. In planning for LAR operations, the supported commander should consider the flexibility of LAR by preserving its freedom of maneuver and mobility, and not placing overly restrictive maneuver limitations or FSCMs that prohibit its ability to accomplish assigned missions.

OFFENSIVE OPERATIONS

Light armored reconnaissance units are well suited to conduct limited objective operations for a specific purpose, such as a raid or spoiling attack. Light armored reconnaissance units can also attack objectives deep in the advisory's rear areas. Offensive LAR operations use the warfighting function of maneuver by penetrating or enveloping the threat, outflanking its movement, or disrupting and destroying its LOCs or logistics. These offensive actions disrupt enemy command and control and cause the threat to become security conscious, forcing them to dedicate additional assets to security tasks and spread their combat forces thin and rendering them susceptible to further destruction by friendly forces.

Light armored reconnaissance units combined with air assets provide the supported commander a lethal attack capability. Light armored reconnaissance units in the threat's rear areas enable the ACE to sustain its deep interdiction tasks by providing continuous targeting intelligence, terminal guidance, suppression, accurate BDA, and exploitation of air strikes. The ACE can support LAR with concurrent aerial reconnaissance, fire support, and sustainment. Successful deep interdiction efforts can result in an area denial. In open terrain, the LAR unit's speed, long range, and cross-country mobility make it an ideal unit to support an air assault by securing the landing zone (LZ) and supporting the follow-on operations.

The LAR battalion can conduct offensive operations as part of a task-organized formation such as a RLT or a Marine littoral regiment. In such cases, the LAR battalion becomes the supporting effort best employed to conduct a force-oriented reconnaissance, feint, demonstration, routed enemy pursuit, exploitation, as well as to rapidly seize a lightly defended key objective before the main thrust. Light armored reconnaissance units can be used to accomplish the following offensive actions:

- Hasty attacks.
- Identify or create weak points.
- Suppress threat fires.
- Isolate the threat and maneuver against weak points.
- Pursue threat forces.
- Deceive or divert the threat.
- Within capability and with proper logistic support, attack deep into threat rear areas to destroy, seize, or secure critical threat units, infrastructure, facilities, or resources.

Force-Oriented Reconnaissance
Force-oriented reconnaissance is "a directed effort to quickly find a specific enemy force and stay with it wherever it moves on the battlefield" (*USMC Dictionary*).

Reconnaissance in Force
Reconnaissance in force is "a deliberate attack made to obtain information and to locate and test enemy dispositions, strengths, and reactions. It is used when knowledge of the enemy is vague and there is insufficient time or resources to develop the situation" (*USMC Dictionary*). The unit

conducting the reconnaissance in force is organized as if it is conducting offensive operations. The lack of enemy information dictates that the force is large and strong enough to develop the situation, protect the force, cause the enemy to react, and put the enemy at some risk. The less that is known about the enemy, the stronger the force conducting the reconnaissance in force should be.

Movement to Contact

A movement to contact is conducted when the tactical situation is not clear, or when the enemy has broken conduct. A properly executed movement to contact develops the combat situation and maintains the commander's freedom of action after contact is gained. The fundamentals of movement to contact include the following:

- Focusing all efforts on finding the enemy.
- Making initial contact with small, mobile, self-contained forces to avoid decisive engagements of the main body on ground chosen by the enemy.
- Task-organizing the force and using movement formations to deploy and rapidly attack in any direction.
- Keeping subordinate forces within supporting distances to facilitate a flexible response.
- Maintaining contact once contact is made.

Raid

A raid is an attack within enemy territory to accomplish a specific task with no intention of holding ground. The raid can dislocate, disrupt, and create chaos by targeting enemy headquarters, installations, key points, and logistic elements within enemy controlled terrain. A raid can also be conducted to capture a prisoner, obtain detailed information, and destroy a high-value or high pay-off target (particularly headquarters, aircraft or logistic installations) or to deceive, confuse, or harass the enemy. Accurate intelligence is key during raid missions. Consideration must be given on the size of the target and the number of scouts on hand that are able to mass. Preferably, the raid target is destroyed using the LAV's long-range fire capability with little to no requirements for scouts to assault the objective. When LAR units are not capable of conducting the raid, LAR units can support the raid force by conducting deception operations, reconnaissance on the objective, route reconnaissance to or from the objective, or support by fire positions.

Light armored reconnaissance can also be a supporting effort of a larger raid force. As a reconnaissance element, the LAR mission is to provide continuous observation of the objective, last-minute intelligence to the commander, and initial security for the raid force. The LAR reconnaissance element can be tasked with specific security tasks during movement, actions in the objective area, and the activity ends with a planned withdrawal upon completion of the assigned mission. For more information about raids, refer to MCWP 3-10, *MAGTF Ground Operations*. Offensive planning considerations for employment of the LAR battalion include the following:

- Task organization of the LAR unit based on METT-T requirements.
- Position and commitment of the supported commands reserve.
- Engagement and disengagement criteria.
- Allocation and requirements for fire support.
- Placement of maneuver and FSCMs to enable freedom of LAR mobility.
- Deception planning.

DEFENSIVE OPERATIONS

Defensive operations are temporary measures used to identify or create weaknesses to be exploited at the earliest opportunity by offensive action. The defense seeks to defeat threat attacks by destroying substantial parts of the attacking force while holding friendly losses to a minimum. Rather than repelling the threat's deliberate, combined arms attack, the LAR unit best serves to delay threat forces and strip away their C2 systems, reconnaissance units, and vulnerable supporting forces. The LAR battalion most often conducts defensive operations in support of (or as part of) screen, guard, cover, or area security missions. Defensive operations include defense from a battle position, defense in sector, and delay. The LAR battalion in the defense creates many options for the supported commander.

Light armored reconnaissance units can accomplish the following from a defensive posture:

- Gain time for the supported commander through early identification of the enemy's intent or delaying actions.
- Attrite threat forces in preparation for offensive operations.
- Control key terrain.
- Deceive the threat as to the location and intention of supported forces.
- Conduct limited offensive actions from within a larger supported defense.

Defensive planning considerations for employment of the LAR battalion include the following:

- Engagement area development to delay the threat and disrupt its C2 systems, reconnaissance units, combat support units, and vulnerable supporting forces.
- Allocation of weapons and battlespace.
- Engagement and disengagement criteria.
- Coordination of obstacles and fire support.
- Threat avenues of approach.
- Length of delaying operations.
- Size of the defensive sector.
- Critical defensive tasks to be accomplished.

OTHER TACTICAL OPERATIONS

Light armored reconnaissance units conduct other tactical operations to enable the supported command to conduct other operations. These operations are often a critical sequence of larger tactical actions and serve to enable the execution of other operations to create a decisive action for friendly forces. For example, LAR units can conduct a passage of lines to enable some other tactical action to occur, such as the handover the battle to a defending MAGTF force or to pass forward to counterattack threat forces in vulnerable areas. Successful planning and execution of

these other tactical operations set the stage for transition into follow-on tactical actions. One key aspect of other tactical operations is that the LAR unit and the supporting command must dedicate equally detailed planning and rehearsal time toward the design of these operations as they do to the operations that follow them. These plans are integrated and coordinated between all adjacent, subordinate, and supporting units. For additional considerations concerning TTP for other tactical operations, refer to MCWP 3-01.

An LAR battalion can conduct other tactical operations by itself or as a subordinate unit to a higher echelon. Other tactical operations routinely conducted by the LAR battalion include—

- Tactical movement.
- Tactical road march.
- Tactical formations.
- Wet-gap crossing.
- Assembly area establishment.
- Passage of lines.
- Linkup.
- Encirclement.
- Cordon.
- Tactical recovery of aircraft and personnel missions.

Tactical Movement and Maneuver

Light armored reconnaissance conducts tactical movement and maneuver to gain an advantage over the enemy. Tactical movement differs from maneuver because maneuver is movement while in contact, but tactical movement is movement in preparation for contact. The process by which units transition from tactical movement to maneuver is called "actions on contact." Light armored reconnaissance commanders select movement techniques (i.e., traveling, traveling overwatch, and bounding overwatch) based on analysis of several battlefield factors including—

- The likelihood of enemy contact.
- The type of contact expected.
- The terrain over which the moving element will pass.
- The balance of speed and security required during movement.

Traveling. Traveling is the continuous movement characterizing the traveling technique by all company elements. It is best suited for situations in which enemy contact is unlikely and speed is important.

Traveling Overwatch. Traveling overwatch (see Figure 5-1) is an extended form of traveling that provides additional security when speed is desirable, but contact is possible. The lead LAV-25 moves continuously. The trailing LAV-25 moves at various speeds and halts periodically to overwatch movement of the lead LAV-25. Dispersion between the two LAVs must be based on the trail LAV's ability to see the lead LAV and to provide immediate suppressive fires in case the lead

LAV becomes engaged. The intent is to maintain depth, provide flexibility, and maintain the ability to maneuver even if contact occurs. Terrain permitting, this technique can be applied using sections or platoons.
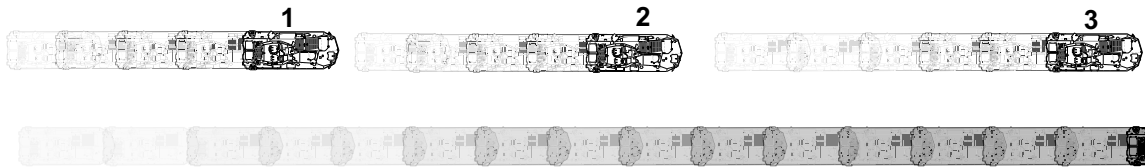
Figure 5-1. Traveling Overwatch.

Bounding Overwatch. Bounding overwatch is used when contact is expected. It is the most secure, but slowest, movement technique. The purpose of bounding overwatch is to deploy prior to contact, giving the unit the ability to protect a bounding element by immediately suppressing an enemy force. In all types of bounding, the overwatch element is assigned sectors to scan while the bounding element uses terrain to achieve cover and concealment. The bounding element avoids masking the fires of the overwatch element; it never bounds beyond the range at which the overwatch element can effectively suppress likely or suspected enemy positions. Light armored reconnaissance units can employ either of two bounding methods: alternate or successive.

Alternate Bounds. Covered by the rear element, the lead element moves forward, halts, and assumes overwatch positions. The rear element advances past the lead element and takes up overwatch positions. This sequence continues as necessary with only one element moving at a time. This method is usually more rapid than successive bounds. Figure 5-2 illustrates alternative bounds.
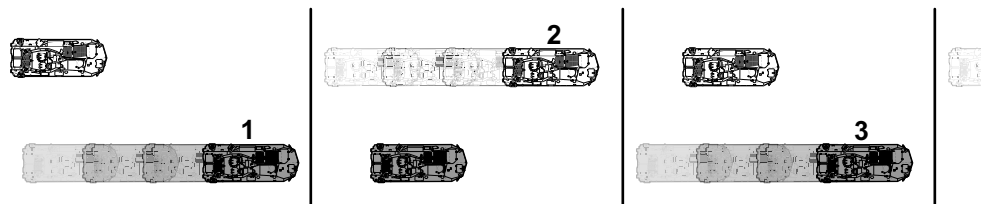
Figure 5-2. Bounding Overwatch (Alternate Bounds).

Successive Bound. In successive bounds the lead element, covered by the rear element, advances, and takes up overwatch positions. The rear element then advances to an overwatch position roughly abreast of the lead element and halts. The lead element then moves to the next position, and so on. Only one element moves at a time, and the rear element avoids advancing beyond the lead element. This method is easier to control and more secure than the alternate bounding method, but is slower. Figure 5-3 illustrates successive bounds.
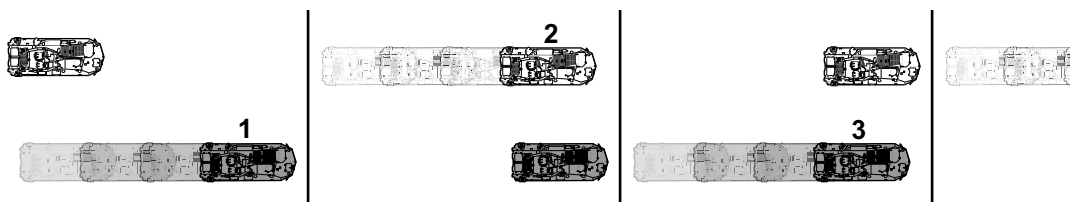
Figure 5-3. Bounding Overwatch (Successive Bounds).

Tactical Road March

A tactical road march is a tactical movement used to relocate units within the combat zone to prepare for future combat operations. Typically, LAR units travel long distances to position themselves to perform subsequent tactical missions. The primary consideration is the relative speed of movement vice the method of movement. The LAR unit must determine speed, formations, dispersion, and movement techniques based on METT-T. The techniques and principles of tactical road marches are the same as for any other unit. When the LAR battalion or a subordinate company conducts a tactical road march, it—

- Does not anticipate encountering significant threat ground forces.
- Conducts local security measures on the move and during halts.
- Maintains passive security measures against air threats.
- Maintains preparations to take immediate action against an ambush.

Tactical Formations

During tactical movements, LAR units use tactical formations based on METT-T. Formations include the following:

- File.
- Staggered column.
- On-Line.
- Wedge.
- Vee.
- Echelon.

See Table 5-1 for tactical formation considerations.

Table 5-1. Tactical Formation Considerations.

Formation	Security	Fires	Control	Speed	Enemy
File	Good to the flanks. Poor to the rear.	Good to the flanks. Poor to the rear.	Easy to control.	Fast	No known enemy threat.
Staggered Column	Good dispersion. good all-round security.	Poor to the front and rear. Excellent to the flanks.	Easy to control, very flexible.	Fast	No enemy contact is likely.
On-Line	Excellent to the front. Poor to the flank and rear.	Excellent to the front. Poor to the flank and rear.	Difficult to control, inflexible formation.	Slow	Enemy contact is imminent.
Wedge	Good all-around security	Excellent to the front.	Very difficult to control.	Slow	Enemy contact is likely.
Echelon	Good to the echeloned flank and front.	Good to echelons flank and front.	Difficult to control.	Slow	Enemy on one flank.

File. The file is the most basic formation, with the LAVs positioned one-behind-the-other during movement. This formation is used when enemy contact is unlikely, when speed is imperative, or when the unit is moving through restricted terrain on a specific route. This formation provides superior control and fires to the flanks, is adaptive to restrictive terrain, and is simplistic to control over long distances, at night, or during periods of limited visibility. The formations disadvantage is that it provides limited security and firepower to the front and rear. Figure 5-4 illustrates a file formation.
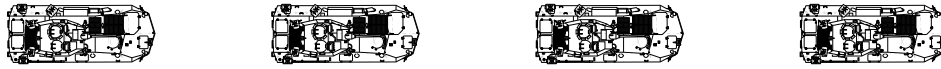
Figure 5-4. File Formation.

Staggered Column. Light armored reconnaissance units use the staggered column formation when speed is essential as it moves on a designated route. It provides all-round security and allows fast movement. It also provides dispersion and aids maneuver and control, particularly in limited visibility. The LAR units can deliver a limited volume of fire to the front and to the rear, but a high volume to the flanks. Figure 5-5 shows an example of the column formation.
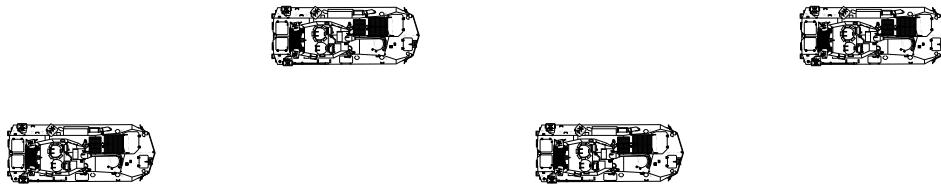
Figure 5-5. Staggered Column Formation.

On-Line. The on-line formation is used when crossing a danger area or there is a requirement to maximize firepower to the front. Vehicles move abreast of one another and are dispersed laterally. The formation is advantageous for maximizing firepower to the front or rear while providing the shock effect of a large unit of vehicles. The disadvantages of the formation are that it lacks depth and is difficult to control over long distances and during periods of limited visibility. It also permits minimum fires to the flanks and is vulnerable to fire from the flanks. Figure 5-6 shows an example of the line formation.
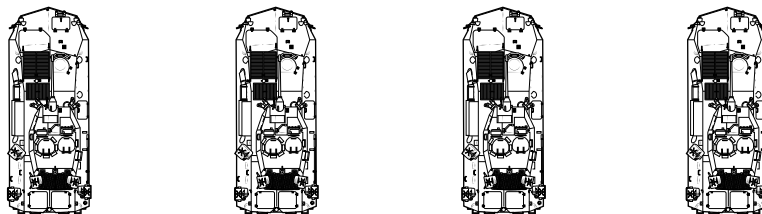
Figure 5-6. Line Formation.

Wedge. The wedge formation is used when the enemy situation is unclear or when contact to the front is probable. The lead vehicle is in the center of the formation with the remaining vehicles located to both flanks and rear. The advantage of the formation is that it provides security and firepower to the front and flanks, is controllable at high rates of speed, can be used with traveling overwatch techniques, and allows for rapid transition to bounding overwatch. The disadvantage of the wedge formation is that it is difficult to control in canalizing terrain, lacks rear security, and takes time to maneuver and optimize all weapon systems when contact is received from the flanks. Figure 5-7 shows an example of the wedge formation.
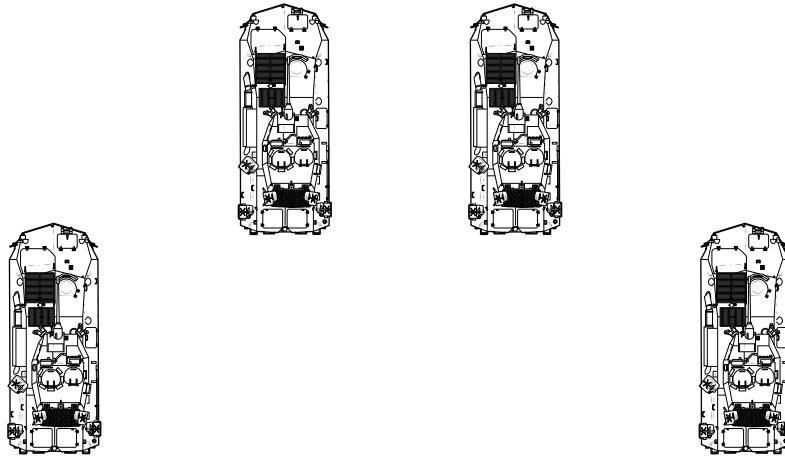
Figure 5-7. Wedge Formation.

Vee. This formation is used when enemy contact is probable. The center vehicle is in the rear of the formation, while the remaining vehicles are to the front of and outside of the center vehicle. The vee permits more firepower to the front than the wedge and affords good fires to the flanks; however, it is more difficult to control than the wedge and more difficult for vehicles to maintain proper orientation. It allows multiple vehicles in the formation to maintain freedom of maneuver when contact occurs and facilitates rapid deployment into any other formation. It can be used with the traveling overwatch techniques and allows rapid transition to bounding overwatch. Figure 5-8 shows an example of the vee formation.
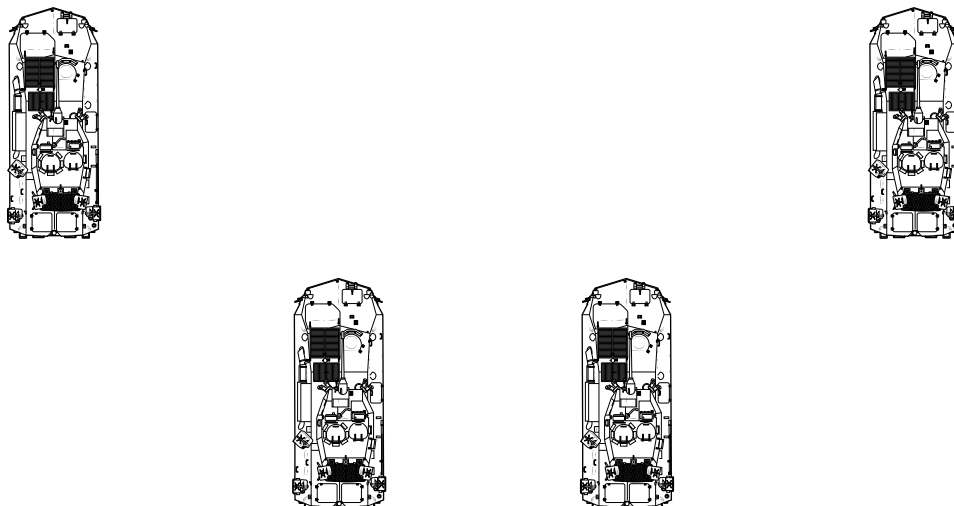
Figure 5-8. Vee Formation.

Echelon. The echelon formation is used when the unit desires to maintain security and observation primarily toward one flank and enemy contact is unlikely. The left or right echelon formation positions the lead vehicle farthest from the echeloned flank, with each subsequent element located to the rear and outside of the element in front of it. The advantages of the formation include superior security in the direction of the echelon movement, and it facilitates a rapid turning movement into a flanking action. The disadvantage to this formation is that it can be difficult to control while ensuring individual vehicle dispersion and offset angle while also being vulnerable to canalizing terrain and inward movement. Figure 5-9 shows an example of the echelon left and Figure 5-10 shows an example of the echelon right formation.
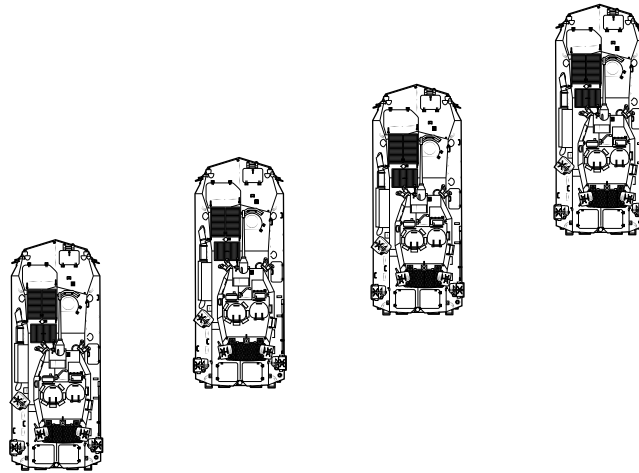
Figure 5-9. Echelon Left Formation.
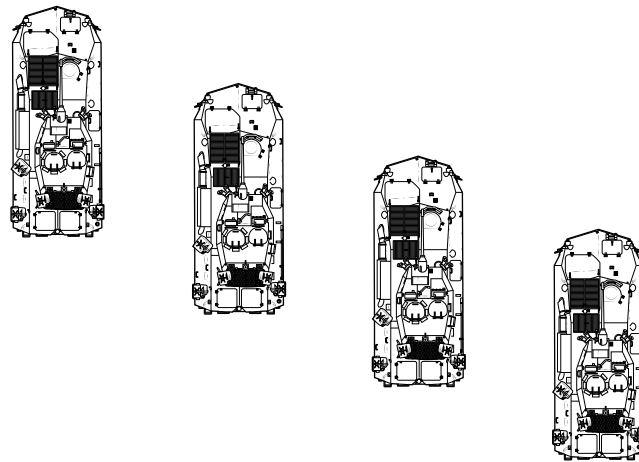
Figure 5-10. Echelon Right Formation.

One of the greatest advantages that LAR units afford a supported commander is the ability to conduct wet-gap crossings. Wet-gap crossings are among the most critical, complex, and vulnerable of military operations. Comparable to breaches, hasty crossings are preferred to maintain momentum and limit the amount of defensive preparation time available to the enemy. Light armored reconnaissance units can also support larger units when conducting wet-gap crossings by reconnoitering the area for threat s, designating vehicle locations, preparing the area

for occupation, and assisting incoming units during the occupation. Site selection considers activities that will need to occur in the assembly area. While LAVs can cross most terrain, the selected route is typically for follow-on forces with limited off-road capability. Attention must be paid to the entrance and exit route to and from the wet-gap site. Ideally, multiple sites are used to rapidly overwhelm enemy defenses, maintain the tempo of the attack, and to prevent targeting from stopping all movements. Once LAR has established immediate far-side security, forces must be pushed out to secure terrain that can influence the wet-gap site. For more information on wet-gap crossings, see MCTP 3-34A, *Combined Arms Mobility*.

Assembly Area Establishment

An assembly area is a site where a unit regroups into a complete unit or prepares for future operations. Assembly areas can be used for tasks such as planning, issuing orders, replenishing supplies, conducting maintenance, resting, or other tasks as required. Assembly areas have certain characteristics: concealment from observation; cover from direct fire; passable entrances, exits, and internal roads; enough space for dispersion of vehicles, personnel, and equipment; adequate defensibility and fields of fire; and good drainage and a ground surface that supports the unit's vehicles, personnel, and equipment. Overhead concealment is essential along with mitigating detection and facilitating signature management. Consideration must be made for rendezvous points in case of contact requiring the unit to displace.

Passage of Lines

A passage of lines is an operation in which a force moves forward or rearward through another force's combat positions to move into or out of contact with the enemy. A passage can be designated as a forward or rearward passage of lines. Light armored reconnaissance units are often tasked with this operation as it begins a zone, area, or route reconnaissance, occupies a screen, or executes a security mission. These are examples of the LAR units moving toward the threat and are considered forward passages of lines. When an LAR unit displaces from a screen, it can move away from the threat to conduct a rearward passage of lines.

There are four critical linked factors in planning a passage of lines. The first is to create the conditions necessary for both forces to complete their missions successfully after the passage. Tied directly to this is the second factor, maintaining contact with the threat and preventing its interference with the passage. A consideration to this is what to do if the threat attacks during the passage. Third is determining the movement, event, and conditions under which the battle handover between the forces occurs. The fourth is creating the close coordination, control measures, and positive control necessary to mitigate the intermingling of forces during the passage.

If dissimilar units, such as infantry and LAR, are directed to conduct a passage of lines the planning, preparation, and execution principles remain the same as if all were similar. In execution however, the amount and type of support the stationary unit can offer to the passing unit might be different. In some cases, such as an infantry battalion supporting the passage of LAR, a HHQ might need to provide additional resources to the stationary unit. In this example, the infantry battalion would need additional logistics support to widen and improve passage lanes, provide evacuation to vehicle casualties during the passage, etc.

After receiving the passage of lines warning order, the passing unit's commander and key staff collocate with the CP of the stationary unit to facilitate planning and a common situational understanding. If the passing unit cannot collocate with the stationary unit, it conducts extensive liaison instead. To prepare for the passage, the two units coordinate, at minimum, the following considerations:

- Methods for sharing intelligence and combat information to maintain joint situational understanding.
- Current maneuver, fires, information, and logistics plans, dispositions, and statuses, and determine their impacts on battlespace geometry.
- Determining requirements for additional maneuver control measures and FSCMs, and refining those directed by HHQ.
- Communications, call signs, frequencies, and determining the requirements for the retransmission of communications.
- Near- and far-range recognition signals and vehicle markings (for both day and limited visibility conditions).
- Determining when and under what conditions the battle handover occurs. It could be controlled by a location, an event, or a condition.
- Movement control details, such as primary and alternate routes, priorities of movement for routes and units, and the provision and location of guides.
- Advanced reconnaissance by elements of the passing unit.
- Security and risk mitigation of chemical, biological, radiological, and nuclear (CBRN) attack.
- Operations security (OPSEC) measures required before or during the passage, to include the use of periods of limited visibility and the employment of smoke.
- Allocation of terrain for use by the passing force.
- Air defense cover-up to and forward of the battle handover line.

When possible, CSS for the passing unit is provided by the stationary unit, in particular, fuel, maintenance, and medical treatment (i.e., casualty collection and movement). Alternatively, the passing unit might be required to move its own logistics forward to either collocate with the passed unit or serve their own passing unit.

Linkup
A linkup is a tactical operation in which the coordinated meeting of two friendly ground forces occurs in the presence of the threat. It might be called for when an advancing ground force reaches an objective area previously seized by an airborne or air assault force, when an encircled force breaks out to rejoin friendly forces, when a force comes to the relief of an encircled force, or when converging maneuver forces meet. Both forces might be moving toward each other, or one might be stationary. Units can be as small as squads or as large as a division. Joining forces exchange as much information as possible before starting the operation. The headquarters ordering the linkup establishes—

- The command relationships and responsibilities of each force before, during, and after linkup.
- Coordination of fire support before, during, and after linkup, including control measures.

- Recognition signals and communication procedures, including pyrotechnics, arm bands, vehicle markings, gun tube orientation, panels, colored smoke, lights, and challenges and passwords.
- The operations to be conducted following linkup.
- Linkup method(s).

There are two linkup methods, both involving one force moving and the other remaining stationary (even if the halt is only momentary). The first is the preferred method—a moving force stops at either an assigned limit of advance or a contact point near the other force, and advances security forces to conduct the linkup at a predetermined location. Units then exchange information and coordinate further operations. The second is the least preferred and only occurs in extraordinary circumstances during highly fluid operations, such as when a threat force is attempting to escape an encirclement, or when one of the linkup forces is at risk and requires immediate reinforcement. In the second method, the moving force uses a restrictive fire line (RFL) to deconflict fires but does not halt at the RFL. Rather, the force continues to move and conducts long-range recognition via radio or other means, stopping only when it makes physical contact with the other force. Linkup points are usually located near the established RFL or limit of advance and near the stationary unit's security forces. As discussed above, an RFL is still used in the second method of linkup. The stationary force typically facilitates the linkup and subsequent missions by breaching, proofing, and marking lanes in minefields or other obstacles, furnishing guides, and designating assembly areas.

Encirclement

Encirclement is "the loss of freedom of maneuver resulting from enemy control of all ground routes of evacuation and reinforcement" (*USMC Dictionary*). Light armored reconnaissance units can be required to conduct or participate in (i.e., as part of a larger force) offensive encirclement operations to isolate threat forces or conduct defensive encirclement operations as a result of the unit's isolation by a threat force. Encirclements occur because modern combat operations at all levels are often chaotic, extend across large areas relative to troop density, and involve continual maneuvering to obtain positional advantage.

Light armored reconnaissance commanders might be expected to conduct or participate in (i.e., as part of a larger force) an offensive encirclement to isolate threat forces during offensive operations such as a movement to contact or zone reconnaissance. Typically, encirclements result from penetrations and envelopments, or are extensions of LAR exploitation and pursuit operations. As such, they are not a separate form of offensive operations, but an extension of ongoing operations. They can be planned as sequels or result from exploiting an unforeseen opportunity. They usually result from the linkup of two encircling arms conducting a double envelopment. However, they can also be conducted in situations where the maneuvering LAR unit uses a major obstacle, such as a river or other terrain, as an impassable base with which to trap the threat. Although the LAR commander can designate terrain as an objective in an encirclement, the primary goal is isolating and defeating the threat force while preventing their maneuver or reinforcement. Ideally, an encirclement results in the encircled force's surrender. The LAR unit should be provided guidance for encircling a force and instruction as to whether it is to maintain the encirclement or hand over the encircled threat force to follow-on elements. Maintaining the encirclement degrades LAR units' capability to continue offensive operational tasks.

Cordon

An LAR unit can use cordons as shaping actions to enable subsequent tactical actions to occur. Cordons can be terrain or force oriented, preplanned, or conducted on-call as the tactical situation requires. The requirements to conduct a cordon can occur during offensive, defensive, or within stability operations, and their necessity can be driven by several reasons. These reasons could include the requirement to search an area during site exploitation, tactical callout of a criminal suspect or person of interest, to secure an area for relief supplies to be issued or delivered, etc. The LAR commander ordering the cordon provides additional guidance on the purpose of the cordon, what tactical actions must take place, their sequence, and the desired end state. An LAR company can be tasked with conducting a cordon around a city block to isolate the area, receiving appropriate support to execute that isolation. Similarly, the same company might establish the cordon as part of an operation to fix an adversary in place so that HN forces can conduct tactical operations to reduce a threat. The cordon resembles an encirclement with both inner and outer arms in that the cordon force must establish security outward to prevent enemy reinforcement and support and establish security inward to prevent withdrawal. The headquarters ordering the cordon establishes—

- The location, purpose, and intent of the cordon.
- Command relationships with other elements participating in, supporting, or conducting actions within the cordon.
- Coordination and geometry of fires.
- Coordinating instructions to include control measures, linkup procedures, etc.
- Tactical operations to be conducted following the cordon.

For more detailed information about cordons, refer to MCWP 3-01.

Relief in Place

A relief in place is an operation in which a unit is replaced by another unit. The incoming unit assumes responsibly for the mission and is assigned an AO. A relief can be conducted during reconnaissance, security, offensive, or defensive operations. A unit is relieved in place for the following reasons:

- Reconstitute a unit that sustains heavy losses.
- Relieve a unit that has been in prolonged combat.
- Decontaminate a contaminated unit.
- Conform to a larger tactical plan.
- Assign a new mission to the relieved unit.
- Commit a new unit to combat.

A relief in place occurs using three different methods with security becoming less of a concern: sequential, simultaneous, or staggered.

LIMITED ENGINEER OPERATIONS

The LAR battalion and company has the organic capability to conduct limited mobility, countermobility, and engineer reconnaissance. The LAR unit can conduct many of these missions without assistance from any other unit. However, most of these missions are completed in a hasty manner. A platoon from the combat engineer battalion—when available—attached to the LAR battalion provides the best support to complete combat engineer tasks. The attachment is usually best used in general support of the companies. For more information on engineering reconnaissance, see MCRP 3-34.3, *Engineer Reconnaissance.*

When employing LAR in engineer operations, the supported unit commander must consider the following:

- Light armored reconnaissance units typically perform combat engineer missions in support of their primary security or reconnaissance mission.
- If task-organized, an LAR unit can coordinate breaching missions. This requires attachment of a combat engineer platoon, mine clearing systems, and lane proofing vehicles (e.g., mine plows or armored combat earthmovers).
- If task-organized, an LAR unit can conduct more complex obstacle construction. This requires attachment of a combat engineer platoon, additional Class IV materials, earthmoving equipment and operators, and additional mines.

Mobility
Mobility tasks allow the unit to obtain and maintain the freedom of tactical maneuver and operational movement. Usually, when encountering an obstacle, the LAR unit will attempt to find a bypass. If a suitable bypass has been identified, LAR units will report to HHQ, mark the obstacle, and provide guides for follow-on units.

Countermobility
Countermobility is mine warfare and obstacle development designed to disrupt, fix, turn, or block certain enemy formations. Light armored reconnaissance units can perform the countermobility tasks shown in Table 5-2. Because of Class IV constraints, a battalion can employ obstacles across a company-sized avenue of approach, while a company can cover a platoon-sized avenue of approach. This does not reflect the amount of actual terrain that an LAR unit can defend.

Table 5-2. Light Armored Battalion Countermobility Tasks.

Task	Capability
Employ mines	Capable.
Employ wire obstacles	Capable.
Disrupting obstacles	Simple obstacle only (wire/mine combinations).
Fixing obstacles	Simple obstacle only (wire/mine combinations) and requires attachment.
Turning obstacles	Simple obstacle only (wire/mine combinations) and requires attachment to reduce obstacles.
Counter-obstacles	Explosive reduction of built-up obstacles.
Blocking obstacles	Not capable (too complex/equipment intensive).

CHAPTER 6.
RECONNAISSANCE AND SECURITY OPERATIONS

Light armored reconnaissance units can provide the Marine division, MAGTF, or joint force commander a tactically mobile ground ISR force that is highly capable of shaping the battlespace. More than just a reconnaissance element of the GCE, LAR units can conduct mounted and dismounted reconnaissance, security in support of maneuver, and other operations across the competition continuum. The performance of these tasks affords the supported commander a deeper understanding of the operational environment by providing an increased situational awareness, early warning of threat actions, and the maneuver space and time to make well-informed and timely tactical decisions. Light armored reconnaissance units will often transition from reconnaissance to security operations. Security activities are not divorced from reconnaissance. The main difference between security operations and reconnaissance operations is that security operations orient on the force or facility being protected, while reconnaissance is threat and terrain oriented. Security fundamentals and reconnaissance fundamentals complement each other. For more information about reconnaissance and security operations, see part four of MCWP 3-01.

RECONNAISSANCE OPERATIONS

Reconnaissance is a mission undertaken to obtain, by visual observation or other detection methods, information about the activities, intentions, and resources of an enemy or adversary; to secure data concerning the meteorological, hydrographic, or geographic characteristics of an area; or to develop an understanding of the civilian population characteristics and the human factors within an area. Light armored reconnaissance units perform reconnaissance to collect information to gain, confirm, or deny current intelligence or assumptions. In addition, LAR units specialize in a mix of mounted and dismounted reconnaissance. Light armored reconnaissance units also perform reconnaissance tasks in accordance with the commander's collection plan and it contributes with the other reconnaissance elements to provide as complete of a threat picture as possible for the supported commander. Reconnaissance is performed before, during, and after other operations to provide information used in the IPB process as well as by the commander to formulate, confirm, or modify a course of action.

An LAR unit's mobility and organic firepower enables it to fight for information to satisfy information requests. Light armored reconnaissance units conduct reconnaissance operations in a stealthy and deliberate manner often using supporting fires to neutralize or destroy threats and their organic weapon systems. However, when required, it can operate overtly, relying on speed, mobility, firepower, and the mutual support of organic LAV-MRVs to accomplish reconnaissance tasks. It is important to note that, during reconnaissance operations, LAR can conduct other

tactical tasks to gain information, or secure critical objectives such as bridges, road junctions, choke points, mountain passes or facilities and units critical to the mission. These tasks can occur concurrently and in concert with other ongoing activities.

The LAR unit formulates its plans to execute reconnaissance tasks based on commander's information and time requirements balanced against intent, time, guidance, and the mission's tactical requirements. In the performance of reconnaissance tasks, LAR aids the supported commander in gaining an understanding of the operational environment, including the threat, terrain, and civil considerations such as culture, infrastructure, facilities, and physical resources. In addition to providing the supported commander a deeper understanding of the operational environment, it also contributes to freedom of maneuver by uncovering threats early, developing options for maneuver, and providing critical time for decision making. The offensive aspect of reconnaissance operations enables the LAR unit to fight for information requests when conducting reconnaissance tasks. The LAR battalion links the purpose of the reconnaissance to one or more of the following requirements:

- Obtaining information to answer the commanders' information requirements.
- Obtaining information to fill voids in the unit's planning analysis by answering PIRs and SIRs.
- Supporting targeting requirements by conducting target acquisition and surveillance.

Fundamentals of Reconnaissance
The LAR unit uses the fundamentals of reconnaissance to prevent its maneuver elements or support units from being taken by surprise or interrupted. The reconnaissance tasks performed by LAR units enhance situational awareness and security to the supported command's ability to maneuver. The reconnaissance fundamentals assist planners in tasking an LAR unit in the conduct of reconnaissance operations. There are seven fundamental tasks common to all successful reconnaissance operations:

- Ensure continuous reconnaissance.
- Do not keep reconnaissance assets in reserve.
- Orient on the reconnaissance objective.
- Report information rapidly and accurately.
- Retain freedom of maneuver.
- Gain and maintain threat contact.
- Develop the situation rapidly.

Collection Planning
When the LAR unit is tasked with conducting reconnaissance operations, its tactical tasks should be integrated into the overall collection plan to avoid duplication of effort, conflicting requirements, and friendly fire between adjacent or supported units. Control measures are essential and include (at a minimum) reconnaissance objectives in the form of NAIs with associated PIRs, lateral boundaries, contact points, route designations, limits of advance (if applicable), and start and completion times. Intelligence collection efforts are reflected in the collections matrix within the G-2/S-2 sections.

Reconnaissance Planning Guidance

The LAR unit requires specific guidance in performing reconnaissance operations. A clear understanding of the reconnaissance objective, its tempo, focus, and the mission's engagement criteria is critical to LAR's ability to execute operations. This essential information provides clarity for the reconnaissance effort and must be articulated through the supported commander's guidance.

Focus

The supported commander orients the reconnaissance effort of each LAR unit by providing them reconnaissance objectives. This narrows the scope of operations directly to the information required for planning and allows the LAR unit to prioritize critical tasks to meet the end state. While all critical tasks have some degree of applicability in any given mission, certain tasks are more important for specific missions, and are clearly articulated at each level. Considerations related to the focus of reconnaissance tasks include the following:

- The critical reconnaissance tasks that are to be conducted or omitted.
- Threat—traditional and irregular forces, terrorist organizations, and/or known and suspected criminal elements.
- Society—human demographics (i.e., human intelligence and civil considerations).
- Terrain—bridges, trafficability of routes, and defensible terrain.
- Infrastructure—gas, oil, power facilities, hospitals, schools, religious sites, and nongovernmental organization facilities.
- Any other aspects of METT-T that are directly relevant to the mission.

Reconnaissance Tempo

Tempo is the relative speed and rhythm of military operations over time with respect to the threat. The commander articulates tempo through commander's intent by specifying whether the reconnaissance is to be stealthy or aggressive. This allows the LAR unit to establish and associate requirements and correlate them with planning of time to conduct tasks, move formations, establish engagement criteria, and determine movement methods such as mounted, dismounted or integration of aerial reconnaissance. Additionally, a key factor in reconnaissance tempo is conveyed by whether time or mission has priority. If this is not clearly articulated in the commander's intent, it must be requested during the planning process. Through the commander's intent, the commander defines when key reconnaissance tasks are to be accomplished in relation to the desired end state of the operation. This allows subordinate commanders to exercise initiative in determining how to meet the commander's intent. The tempo of reconnaissance can be characterized as stealthy, forceful, deliberate, or rapid. Each element of tempo has a direct effect on either the amount and detail of information collected, or the time expended or available to collect it (refer to Table 6-1).

Table 6-1. Reconnaissance Tempo.

Reconnaissance Tempo	Time Available	Information Requirements	Movement Method	Remarks
Deliberate	High	High	Covert	• Slow, methodical, and detailed. • LAR units tasked with collecting as much information as possible about the threat's capabilities, the terrain, routes, critical areas, infrastructure, and facilities.
Stealthy	High	High	Covert	• Great concern taken in not being detected. • Primarily dismounted. • To minimize LAV signature, vehicles may be placed in hide positions that are possibly unable to observe or directly support dismounted scouts.
Rapid	Low	Low	Overt	• Typically time driven due to limited information requirements. • Threat contact is not likely
Forceful	Low	Low	Overt	• Primarily conducted while mounted in LAVs when contact with threat is likely or imminent. • Prepared to fight for information. • Not concerned about being uncovered by the threat.

A key factor in reconnaissance execution is the time available to conduct the mission. Light armored reconnaissance units recognize and accept the increased risk to the reconnaissance element and the main body when the pace is accelerated. This risk can be offset by employing aerial reconnaissance and technical means to cover open terrain or areas of lower threat.

Stealthy Reconnaissance. Stealthy reconnaissance occurs when LAR is required to conduct a methodical, time-consuming mission that seeks to minimize the chance of being uncovered by the threat. Reconnaissance performed in this manner requires scouts to operate dismounted, reducing signatures to acquire more detailed information. Stealthy reconnaissance takes maximum advantage of covered and concealed terrain, off-route movement, and reduced battlefield signatures. This can involve placing LAVs in hide positions to prevent the LAR unit from being uncovered. However, hiding LAVs could possibly preclude the LAV crews from being able to support their dismounted scouts with direct firepower and observation through their vehicles' optics systems. Additionally, LAVs can also become vulnerable to ground threats when operating without its dismounted crew members.

Forceful Reconnaissance. By contrast, a forceful reconnaissance tempo is the opposite of stealthy and typically involves a mounted crew posture for a faster tempo. Occasionally, scouts might have to dismount to reconnoiter areas that restrict LAV trafficability or areas that pose threats to the vehicles' movement. Light armored reconnaissance units employing a forceful reconnaissance tempo conduct aggressive movement techniques paired with organic firepower to rapidly develop the situation. When required, LAR units use their organic direct fire and IDF systems and combined arms to fight for information. Firepower, aggressive exploitation of actions on contact, and well-rehearsed SOPs are critical for mission success.

Deliberate Reconnaissance. Deliberate reconnaissance is methodical and time intensive. It entails slow, detailed, broad-based operations where LAR units accomplish a myriad of focused reconnaissance tasks to support the commander's intelligence requirements. All subordinate elements must understand the slower tempo and the use of dismounted scouts to collect the required information.

Rapid Reconnaissance. Rapid reconnaissance focuses on collecting a few key pieces of information. The LAR commander can select a rapid tempo and employ a smaller LAR force to collect an immediate piece of information such as determining the trafficability of a route or the existence of a fording site.

Counterreconnaissance

A counterreconnaissance plan is just as important to the success of an operation as a reconnaissance plan. Counterreconnaissance is the sum of the actions and measures taken at all echelons throughout the depth of the AO to prevent hostile observation of a force, area, or place. Preventing the enemy from sensing, collecting, reporting, and disrupting friendly forces is the commander's responsibility. Many of the fundamentals of counterreconnaissance are the same as reconnaissance. Light armored reconnaissance units have the capabilities to defeat the enemy's reconnaissance efforts by using stealth and deception as necessary with direct fire and IDF.

ENGAGEMENT AND DISENGAGEMENT CRITERIA

Clear engagement and disengagement criteria are much more than just rules of engagement. The supported commander's engagement and disengagement criteria establishes the circumstances and threats that LAR units will identify, report, maintain contact, or bypass without engaging. They also determine which threats will be prosecuted with supporting arms; which threats will be engaged with organic weapons; and the circumstances when the unit will maintain contact, but trade space for time until the threat can be handed off to the supported unit's main force. Understanding the supported commander's engagement criteria enables the LAR unit to—

- Conduct the battalion's direct fire planning.
- Develop engagement areas.
- Plan for the destruction of specific targets.

Engagement criteria are generally defined using the terms aggressive and discreet. An aggressive reconnaissance is primarily a mounted, fast-paced mission with permissive engagement criteria that allows the force to fight for information. A discreet reconnaissance is characterized by restraint in initiating combat to gain information. However, merely defining engagement criteria using the terms aggressive or discreet is not sufficient. Engagement criteria must be defined using precise terms and must include tactical tasks to either be conducted or omitted.

The LAR commander issues specific planning guidance for execution, such as—

- Engagement criteria.
- Bypass criteria.

- Reconnaissance handover.
- Priority of fires.
- Rules of engagement or rules for use of force.

RECONNAISSANCE-PULL VERSUS RECONNAISSANCE-PUSH

Reconnaissance-Pull

Reconnaissance-pull is a reconnaissance method by which information derived from reconnaissance forces guides friendly force activities. As LAR units obtain combat information, they utilize this information to recognize opportunities that drive COA selection and tactical decisions. The LAR unit identifies the surfaces and gaps in overall threat dispositions, permitting the commander to shape the battlespace. Making rapid decisions based on the flow of information, GCE forces are drawn to and through the weak spots within threat defenses and seek to quickly exploit the advantages gained. Upon discovering these strengths and weaknesses, reconnaissance "pulls" the supported maneuver elements along the path of least resistance into positions of tactical advantage. Success is predicated on all maneuver units fully understanding the battalion commander's intent—this shared understanding is a bond that synchronizes the unit when operating in a decentralized, rapidly changing situation. Light armored reconnaissance units are opportunistic. Weaknesses are often discovered in the very midst of execution, necessitating the ability to rapidly shift and alter schemes of maneuver to exploit tactical opportunities. However, these modifications must be executed in accordance with the commander's intent. Reconnaissance pull knowingly emphasizes seizing opportunity at the expense of a detailed, well-rehearsed plan, and unity of effort. The reconnaissance pull technique requires the following:

- Early commitment of reconnaissance elements.
- An allowance for the time necessary to fully develop the reconnaissance picture.
- Flow of information from the reconnaissance elements directly to the supported commanders and those units in immediate need of reconnaissance data.
- A high tempo of operations to exploit the information in real-time.

Reconnaissance-Push

Reconnaissance-push is the reconnaissance method by which the information requests of preplanned tactical operations guide the employment of reconnaissance forces. As a commander prepares to execute an operation or commence the execution of another phase, they employ reconnaissance assets to determine specific information requirements to support COA development. The supported commander can use reconnaissance push by employing LAR units as the lead element of tactical operations in the detection of threat formations and dispositions, confirming or denying threat dispositions while the GCE maneuvers.

RECONNAISSANCE METHODS

Light armored reconnaissance formations use a combination of organic, attached, and direct supporting reconnaissance assets to assist in gaining a deeper understanding of the operational environment. These assets can be employed simultaneously, providing flexibility, depth, and redundancy throughout the battlespace. There are four reconnaissance methods used by LAR:

- Aerial reconnaissance.
- Mounted reconnaissance.
- Dismounted reconnaissance.
- Sensor reconnaissance.

Aerial Reconnaissance
Aerial reconnaissance is conducted by Marine Corps aviation or UASs. These platforms provide a flexible, relatively low-risk means for gaining basic information in the least amount of time. Aerial reconnaissance serves as a fast and accurate acquisition link between aerial sensors and ground reconnaissance units. Marine aviation employed in an aerial reconnaissance role can provide excellent assistance to ground reconnaissance tasks. The aircrew can communicate directly with LAR units on the ground, enabling the direct conveyance of aerial reconnaissance needs to the aircrew. Complex terrain, adverse weather, and threat deception and countermeasures can degrade aerial reconnaissance effectiveness. The LAR unit also possesses organic, portable SUASs for surveillance and reconnaissance. Although limited in loitering time, distance of flight path, and effected by adverse weather conditions, SUASs can be employed forward to facilitate reconnaissance in complex terrain to fill gaps in the reconnaissance plan and assist in unit security.

Mounted Reconnaissance
Mounted reconnaissance enables a more rapid tempo at the expense of detailed information, stealth, and security. Mounted reconnaissance increases the probability of threat detection and can compromise reconnaissance efforts. In mounted surveillance, information is gathered primarily using the LAR unit to observe from a greater distance, using the LAV's high-power thermal sight systems. Mounted reconnaissance operations might require situations where scouts temporarily dismount during movement to ensure security of the LAVs. The occasional use of dismounted tactics also increases the stealth and security of a mounted reconnaissance and should be used whenever possible while staying within mission timelines.

Dismounted Reconnaissance
Dismounted reconnaissance is the most time-consuming means of reconnaissance for LAR units. However, it permits collection of the most detailed information about the threat, terrain, civil populace, and infrastructure within a given area or zone, or along a route. Light armored reconnaissance units can use dismounted reconnaissance to collect detailed information about a fixed site, threat from proximity, or for tactical site exploitation.

Sensor Reconnaissance

Sensor operations cue a combination of aerial, electronic, and visual observer methods. They allow flexibility in economizing reconnaissance collection assets and resources and can be used to observe areas where contact is likely but cannot be directly observed. Some sensors can be emplaced to maintain surveillance of areas that require persistent observation over extended periods and can be employed as the "cue" for aerial and ground reconnaissance. Sensors provide redundancy when collection assets and resources are pushed forward to facilitate ground reconnaissance, and can extend surveillance distance, duration of observation, and cover observational gaps between ground reconnaissance and threat forces.

RECONNAISSANCE MANAGEMENT

No single reconnaissance method can answer every information request and there are rarely enough reconnaissance assets to cover every requirement. Given these facts, the LAR unit commander and staff employ a mix of reconnaissance management methods—cueing, mixing, and redundancy. These methods allow LAR units to use limited assets most effectively, collecting the most critical information with the fewest assets as quickly as possible. The following considerations are applicable to reconnaissance management.

Cueing

Cueing is the integration of one or more types of reconnaissance or surveillance systems (i.e., manned or unmanned) to provide information that directs follow-on collections of more detailed information by other systems. These systems can cue other ground and aerial reconnaissance assets to investigate specific areas to confirm, amplify, or deny information.

Mixing

Mixing is a collection strategy that entails two or more different collection assets and resources collecting against the same information requests. Employing a mix of systems is always desirable if the situation and resources available permit it. This method both increases the probability of collection and tends to provide more complete information. Mixing can also help defeat deception attempts by highlighting discrepancies in information reported by different collection assets and resources.

Redundancy

Redundancy is a collection strategy that employs the use of several same-discipline collection assets and resources to cover the same target.

RECONNAISSANCE HANDOVER

Coordinating the transfer of an assigned area from one element to another is known as reconnaissance handover. Information and responsibility for R&S of potential threat contact are shared by both elements involved in the handover. Assets such as ground sensors and UAS are also transferred. Reconnaissance handover is like a battle handover in that it can be conducted in conjunction with other tasks such as relief in place, linkup, and passage of lines. However, it does

not imply the assumption of a fight or being within the threat's direct fire range, but rather focuses on planning, preparing, and executing information of threat contact and the responsibility of an assigned area passing from one element to another. Reconnaissance handover is usually associated with a designated reconnaissance handover line and can entail handover of a sector or zone, NAI, target area of interest (TAI), or threat contact(s).

Reconnaissance and security operations require the unit conducting the handover to coordinate with higher, lower, and adjacent units. Planning for these operations requires the reconnaissance handover coordination to start at the higher echelons and execute at the lowest element. Reconnaissance handover assures that information requirements are transferred between units to maintain initiative, tempo, and to ease transitions. Well-planned and executed reconnaissance handover eases transitions in plans, phases, and priorities of effort and mitigates information gaps between units. Reconnaissance handover is typically associated with a trigger, coordination point, or phase line designated as the reconnaissance handover line to ensure positive control and chain of custody from the initial force to the force assuming responsibility and control.

Reconnaissance handover prevents gaps or seams from emerging that the enemy can exploit. Once handover is complete, the force transferring control either passes to the rear through the main body assuming responsibility for the reconnaissance objective as a rearward passage of lines or continues further into the zone to continue their reconnaissance mission.

The general planning considerations for conducting a reconnaissance handover include—

- Coordinating for redundant surveillance to assist in maintaining threat contact.
- Determining location and criteria for reconnaissance handover with the battalion.
- Establishing communications plans between elements.
- Synchronizing IDFs and exchanging targeting information.
- Identifying and coordinating for target handover, as necessary.
- Coordinating graphic control measures to facilitate reconnaissance handover.
- Selecting contact point of linkup point to collocate reconnaissance command facilities.
- Conducting rehearsals, coordinating transfer and acceptance of mission command between units.

For more information about reconnaissance management, refer to MCTP 2-10A, *MAGTF Intelligence Collection*.

TYPES OF RECONNAISSANCE MISSIONS

Light armored reconnaissance units perform reconnaissance missions for specific tasks. The degree of tasks and the depth of the execution are determined by the supported commander's guidance, intent, and information requests. In some situations, engineers can greatly increase the

effectiveness and accuracy of reconnaissance information by conducting engineer reconnaissance. For more information on engineer reconnaissance, refer to MCRP 3-34.3. The primary reconnaissance missions conducted by LAR include—

- Zone reconnaissance.
- Area reconnaissance.
- Route reconnaissance.
- Force-oriented reconnaissance.
- Reconnaissance in force.

Zone Reconnaissance

Zone reconnaissance is a directed effort to obtain detailed information concerning all routes, obstacles (to include chemical or radiological contamination), terrain, and threat forces within a defined zone. Typically, a zone reconnaissance is assigned when the threat situation is vague or when information concerning improved, unimproved, or cross-country trafficability is desired. It is a deliberate and time-consuming process that can be conducted over extended distances. When the reconnaissance objective is centered on a potential adversary force, commanders can choose to forgo a detailed sweep of the entire area and focus collection assets and resources on NAIs within the zone that would reveal dispositions and intentions of the adversary or threat, and terrain likely to affect movement and maneuver. Figure 6-1 depicts a zone reconnaissance. Zone reconnaissance critical tasks and planning considerations include—

- Finding, reporting, and (based on engagement criteria), clearing all threats and threat forces within the zone.
- Determining the trafficability of all terrain within the zone, including built-up areas.
- Locating and determining the extent of all contaminated areas in the zone.
- Evaluating all bridges, defiles, overpasses, underpasses, and culverts in the zone. (Only trained engineers can conduct bridge classification; however, LAR can collect information required to assist in an engineer bridge classification.)
- Locating any fords, crossing sites, or bypasses for existing and reinforcing obstacles (including built-up areas) in the zone.
- Locating all obstacles and creating lanes as specified in execution orders.
- Reporting the above information to the commander directing the zone reconnaissance, to include providing a sketch map or overlay.

As stated, a zone reconnaissance is very time-consuming and deliberate. Unless the orders directly specify which tasks to omit, all critical tasks listed in the previous discussion are implied in the mission statement. When speed is the primary concern, commanders modify the focus, tempo, and engagement criteria to prioritize the critical tasks for the LAR unit. The width of the zone is determined by the quantity of road networks, terrain features, vegetation, water features, anticipated threat activity, and time available to accomplish the mission. An SUAS can be used in an economy of force role to observe areas beyond the operational reach of ground reconnaissance elements, reinforcing their efforts and covering potential gaps.
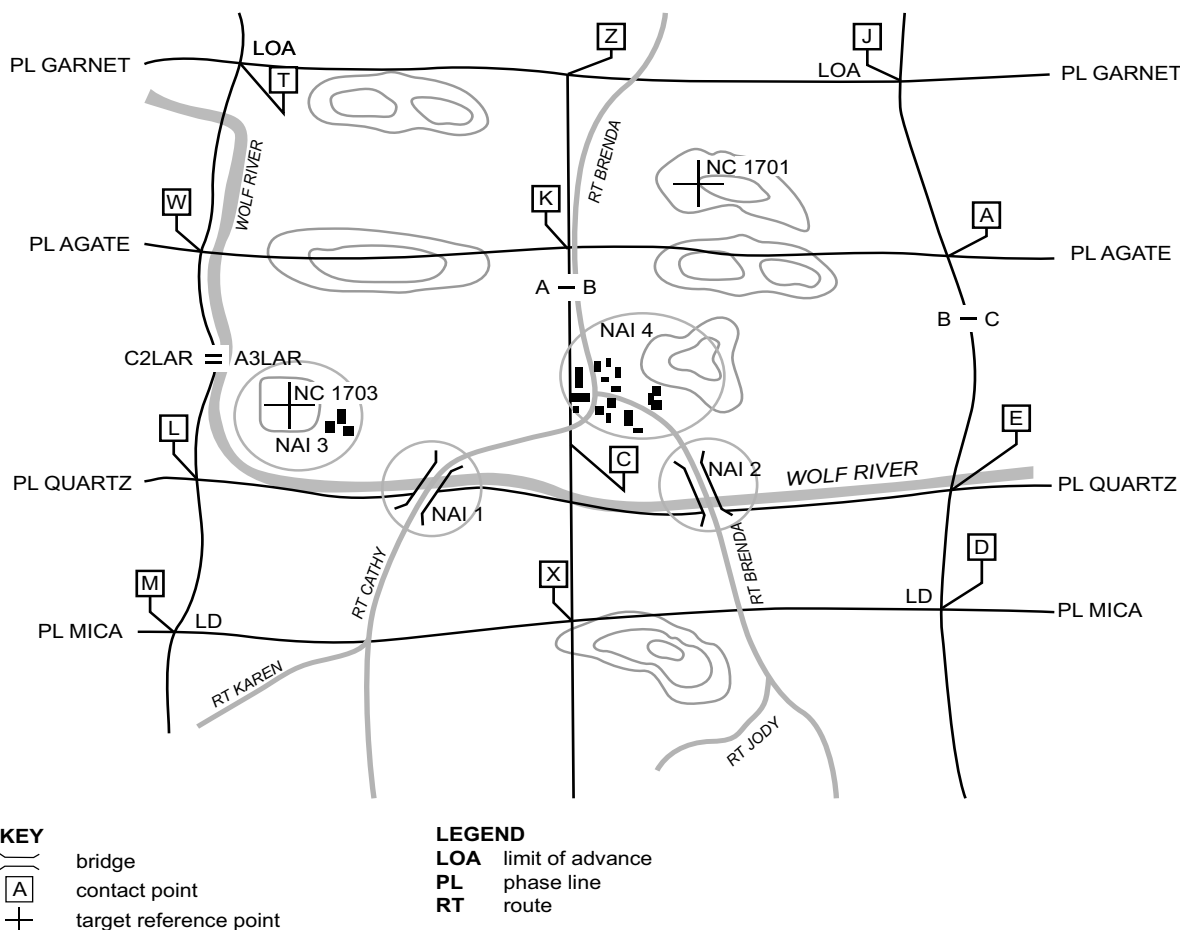
KEY

⁓ bridge

A contact point

+ target reference point

LEGEND
LOA limit of advance
PL phase line
RT route

For more information on symbols and their draw rules, see the most current version of
Military Standard (MIL-STD) 2525 Joint Military Symbology.

Figure 6-1. Light Armored Reconnaissance Battalion Zone Reconnaissance.

Area Reconnaissance

An area reconnaissance is a directed effort to obtain detailed information concerning the terrain or threat activity within a prescribed area, such as a town, mountain pass, dominant terrain surrounding a bridge, or other facilities and areas critical to operations. An area reconnaissance can be conducted within a zone reconnaissance to collect detailed information regarding a specific area(s) and is frequently assigned as a subset of a zone reconnaissance. The area to be reconnoitered is referred to, and graphically depicted as, NAI. The critical tasks for an area reconnaissance are the same as those for a zone reconnaissance. The primary difference that identifies an area reconnaissance is the reduced size of the area compared to a zone reconnaissance. Figure 6-2 shows a graphic depiction of an area reconnaissance.

During an area reconnaissance, LAR units reconnoiters the area thoroughly, including dominant terrain, both from within and from outside the designated area. An area reconnaissance that is conducted as a separate exclusive mission is generally a faster mission because the zone to the area or routes that lead to it might not need to be reconnoitered, or because prior information has already been attained. For example, other collection assets, such as aircraft or UASs, have identified a threat force's location, leaving the LAR unit to conduct further detailed area reconnaissance.
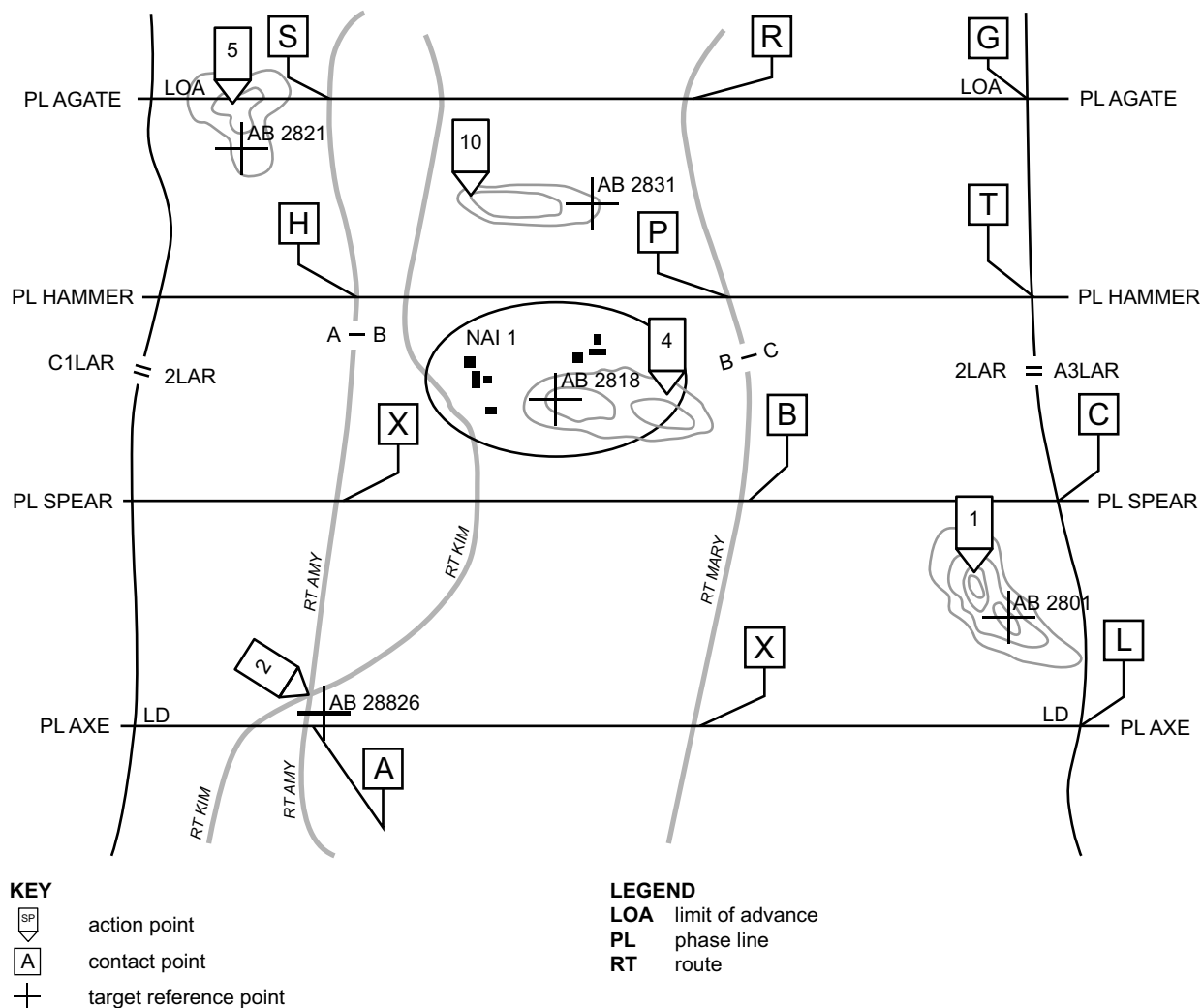
KEY

⬇SP action point

A̲ contact point

✛ target reference point

LEGEND
LOA limit of advance
PL phase line
RT route

For more information on symbols and their draw rules, see the most current version of
Military Standard (MIL-STD) 2525 Joint Military Symbology.

Figure 6-2. Light Armored Reconnaissance Battalion Area Reconnaissance.

Route Reconnaissance

A route reconnaissance is a directed effort to obtain detailed information on a specified route, as well as all terrain from which the threat could influence movement along the route. Route reconnaissance cab be oriented on a road, a cross-country mobility corridor, an axis, or a direction of attack. It provides new or updated information on route conditions, such as obstacles, bridge data evaluations, and threat and civilian activity along the route. A route reconnaissance can be conducted faster than a zone reconnaissance because route reconnaissance efforts are concentrated on the route and the terrain controlling it. Figure 6-3 shows a graphic depiction of a route reconnaissance.
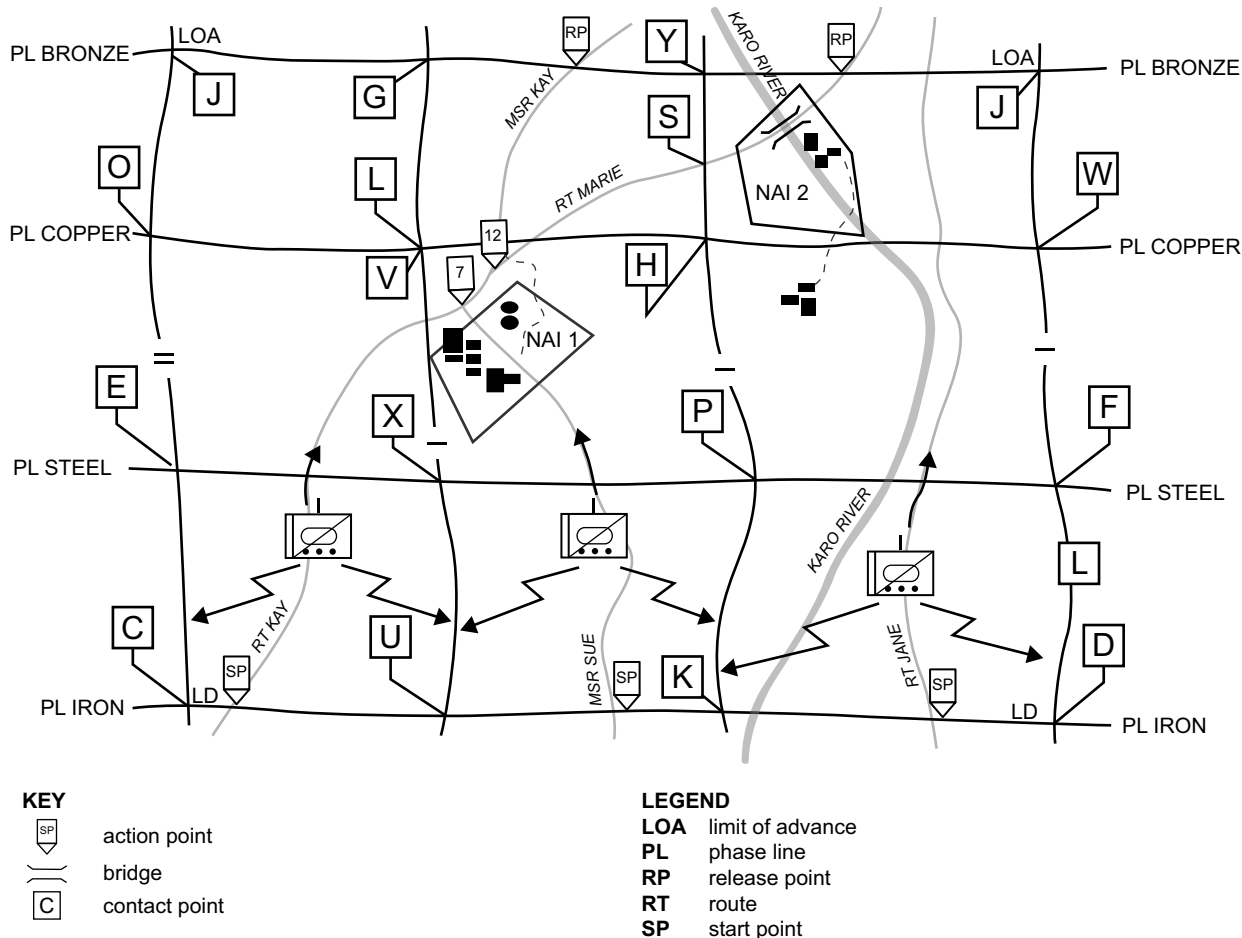
KEY

Symbol	Description
SP	action point
	bridge
C	contact point

LEGEND

LOA	limit of advance
PL	phase line
RP	release point
RT	route
SP	start point

For more information on symbols and their draw rules, see the most current version of
Military Standard (MIL-STD) 2525 Joint Military Symbology.

Figure 6-3. Light Armored Reconnaissance Battalion Route Reconnaissance.

Route reconnaissance critical tasks and planning considerations include the following:

- Find, report, and clear all threat forces that can influence movement along the route. The specified engagement criteria directed by the supported commander will determine what types of threats the LAR unit will engage. Light armored reconnaissance capabilities must also be considered when threats could include threat armor, etc. Additionally, the battalion can direct subordinate companies to either fix or contain threat forces for either capture, destruction by combined arms or follow-on forces.

- Reconnoiter and determine the trafficability of the route, to include significant ascending or descending grades, critical curves that prohibit large vehicle travel, and marking the location of identified mines or other obstacles. Routes are classified by the worst part of the route that could affect trafficability. These areas must be recorded (preferably by GPS data) and transmitted to the battalion or the supported commander. Additionally, determinations regarding the impacts of weather should be assessed in how precipitation such as rain or snow could potentially degrade trafficability.

- Reconnoiter all terrain that the threat can use to dominate movement along the route, such as choke points, ambush sites, and pickup zones, LZs, and drop zones (DZs).

- Reconnoiter all built-up areas less than one square km, contaminated areas, and lateral routes along the route.

- Reconnoiter all lateral routes to the limit of the unit boundary or as directed.

- If a lateral route intersects with an adjacent unit, information about the route should be passed to that unit who assumes the lateral route as it enters their area. These routes typically include contact points.

- Evaluate all bridges, defiles, overpasses, underpasses, and culverts along the route. Light armored reconnaissance units are not qualified or trained to classify bridges, overpasses, and underpasses. However, LAR units are trained to collect the required information and document it for transfer to engineers who can in turn use the information to evaluate the bridge for use by follow-on forces. Attached engineers can greatly increase reconnaissance effectiveness and accuracy of information.

- Locate any fords, crossing sites, or bypasses for existing and reinforcing obstacles (including built-up areas) along the route. Conducting these tasks requires specific guidance from the supported commander to focus and prioritize efforts. Generally, the LAR unit will look for bypasses and fording sites when a bridge is encountered within climates of high precipitation. Conversely, the LAR unit will not be as concerned about these tasks in more arid climates. Guidance could   include priorities, such as numbers of bypasses or fording sites, sites suitable for specific types of vehicles (wheeled or tracked), and approximate number of vehicles that will use the fording or crossing site. Collecting information on water movement velocity, bottoms conditions, and computing entrance/exit slope grade requires time. Additionally, it must be considered that most of these sites will degrade when under use if not improved for prolonged use. Therefore, multiple sites might be desired. Bypass routes around obstacles and built-up areas are classified, recorded (GPS preferred) and, when possible, marked. Obstacles can be natural or manmade.

- Inspect and evaluate all overpasses, underpasses, and culverts. These tasks primarily involve recording the exact location, measurement, and descriptions of construction material.

- Reconnoiter all defiles along the route within the unit's capability; clear all defiles and obstacles or locate a bypass.

- Report all route information to include providing either a sketch map or a route overlay (preferred).

The LAR unit must know whether time or mission has priority for a route reconnaissance; this determines the level of detail used in accomplishing critical and optional tasks. The LAR battalion must also know the start points and release points along the desired routes. Additionally, the order can specify—

- Unit boundaries.
- Phase lines.
- Named routes.
- Contact points.
- Limit of advance.
- Other reconnaissance objectives.

Force-Oriented Reconnaissance

A force-oriented reconnaissance is conducted when the threat is known to be operating within an area and adequate intelligence cannot be obtained by other means. It is A directed effort to quickly find a specific enemy force and stay with it wherever it moves on the battlefield A force-oriented reconnaissance is a limited objective operation to obtain information to locate and reconnoiter threat dispositions, strengths, and reactions. Light armored reconnaissance units orient on that specific force, moving when necessary to observe that unit and report all required information as well as any other pertinent observed and collected information. Light armored reconnaissance units assigned force-oriented reconnaissance missions can act as subordinates within larger reconnaissance efforts, such as a zone reconnaissance. Additionally, a force-oriented reconnaissance might employ several different ground reconnaissance units, technical resources, and sensors, passing observation responsibility from unit to unit as the target moves, enabling other units to reposition appropriately. Even though the LAR unit executes force-oriented reconnaissance primarily to gather information on the threat, it must be continually alert to seize any opportunity to exploit tactical success. If a force-oriented reconnaissance is to be conducted along a broad front, it might consist of a series of strong probing actions to test the threat's reactions at selected points. The threat reaction, or lack thereof, can reveal a weakness in defenses. The supported commander must carefully weigh the risks involved. For example, while the force-oriented reconnaissance can reveal a weak point in the threat's defenses, it could also lead to a general engagement under unfavorable conditions. Branch and sequel planning are critical for reinforcing the LAR unit during these actions, should it become decisively engaged by a larger force or support in exploiting success.

Planning and execution considerations for a force-oriented reconnaissance include—

- Penetrating the threat's security area(s) and determining its location, size, strength, capabilities, and depth.
- Reporting patterns, readiness, and changes in status of targeted enemy units and forces.
- Attacking threat positions to force a reaction by employing combined arms fires, adjusting positions, and employing specific weapon systems.
- Maintaining constant observation to include movement.
- Maintaining the ability to engage, direct the engagement, or a combination of both when engagement criteria are met.
- Locating and exploiting weaknesses in the threat's dispositions or identifying weaknesses that can be exploited by friendly forces.

Reconnaissance in Force

Reconnaissance in force is a deliberate combat operation designed to discover or test the enemy's strength, dispositions, and reactions or to obtain other information. A reconnaissance in force is a limited objective operation normally conducted by a battalion-sized task force or larger force and is assigned when the enemy is operating within a specific area and the commander cannot obtain adequate intelligence by other means. A reconnaissance in force is an aggressive reconnaissance which develops information and intelligence in contact with the enemy to determine and exploit enemy weaknesses. The commander plans in advance for extricating the force and exploiting success.

During a reconnaissance in force, subordinate elements conduct zone, area, and route reconnaissance missions. Reconnaissance in force missions can be done as the lead element of a larger force's movement to contact allowing the main body to maintain freedom of maneuver and mass combat power. Additionally, a reconnaissance in force can be assigned as a stand-alone mission or as the lead of a supported command's attack. Based on METT-T variables, LAR units might require augmentation with maneuver and fires elements to conduct a reconnaissance in force as a stand-alone mission.

Reconnaissance in force critical tasks and planning considerations include—

- Penetrating the enemy's security area and determining its size and depth.
- Determining the location and disposition of enemy forces for exploitation.
- Attacking enemy positions and attempting to force the enemy to react by using local reserves or major counterattack forces, employing fires, adjusting positions, and employing specific weapon systems.
- Locating obstacles and creating lanes as specified.
- Ensuring planning considerations are the same as a zone reconnaissance.

SECURITY OPERATIONS

Security operations enable higher echelons to accomplish their missions by providing early and accurate warning of threat actions, affording time and maneuver space to react to that threat, and developing a situation that allows the commander effective use of the protected force. Security operations are designed to aggressively and continuously seek out the threat and reconnoiter key terrain. When conducting security operations, LAR units are focused on the protected or supported unit. Light armored reconnaissance units can conduct security operations to the front, flanks, or rear of a stationary force or the flanks and rear of a moving force. Light armored reconnaissance units can perform security missions as part of a larger security force, or it can operate on its own with task-organized attachments. Security operations are shaping actions. As a shaping action, economy of force is often a condition of security operations. Security operations are selected by the supported commander in terms of the desired degree of security provided and the amount of combat power required to execute them. There are five types of security operations:

- Screen.
- Cover.
- Guard.
- Area security.
- Local security.

Table 6-2 illustrates LAR unit capabilities for security operations.

Table 6-2. Light Armored Reconnaissance Security Operations.

Security Option	Battalion	Company	Platoon
Screen	Capable	Capable	With Augmentation
Guard	With Augmentation	As Part of a Task Force	Not Capable
Cover	As Part of a Task Force	As Part of a Task Force	Not Capable
Area	Capable	Capable	As Part of a Task Force
Local	Capable	Capable	Capable

FUNDAMENTALS OF SECURITY OPERATIONS

Security operations are those operations undertaken by a commander to provide early and accurate warning of enemy operations, to provide the force being protected with time and maneuver space within which to react to the enemy, and to develop the situation to allow the commander to effectively use the protected force. Successful security operations depend on properly applying five fundamentals:

- Provide early and accurate warning.
- Provide reaction time and maneuver space.
- Orient on the force or facility to be secured.
- Perform continuous reconnaissance.
- Maintain threat contact.

For more information on fundamentals of security operations refer to MCWP 3-01, *Offensive and Defensive Tactics*, Part Four: Reconnaissance and Security Operations.

CONSIDERATIONS FOR SECURITY OPERATIONS

When conducting security operations, it can be necessary for the LAR battalion staff or unit leaders to help the supported commander and their staff in planning to ensure the following considerations are taken into account:

- Force to be secured.
- Location and orientation of the security area.
- Types of observation posts.
- Location of initial observation posts.
- Time to establish the security force.
- Criteria for ending the security mission.
- Augmentation of the security force.

- Intelligence support to security operations.
- Special requirements or constraints.
- Fire planning.
- Integration of ground and air operations.
- Planning the engineer effort.
- Reporting.
- Sustainment.
- Positioning of assets.

TACTICAL MOVEMENT DURING SECURITY OPERATIONS

Movement into Security Areas for Stationary Security Missions

All stationary security missions are established in a similar manner. When deploying into the security area, LAR must address competing requirements: to quickly establish the security area to meet mission requirements, and to provide the necessary level of security for itself. Light armored reconnaissance moves into the security area using one of three methods:

- Tactical road march.
- Movement to contact.
- Zone reconnaissance.

Movement During Moving Flank Security Missions

There are three techniques of occupying and moving in a flank security area for moving security missions based on how the security force crosses the line of departure (LD). The supported commander should not require the security force to make its own penetration when it faces prepared enemy defenses. This can prevent or significantly delay the security force from assuming its duties. The following three techniques are often combined:

- Security force crosses the LD separately from the main body and deploys to perform the mission.
- Security force crosses the LD separately from main body; lead elements conduct a movement to contact.
- Security force crosses the LD with the main body and conducts a zone reconnaissance out to the limit of the security area.

SCREEN

A screen is a security element whose primary task is to observe, identify, and report information, and that only fights in self-protection. A screening force provides surveillance and early warning of threat actions. It can employ as an economy of force measure in a low-risk area as it provides security on a broad frontage with limited assets. A screen force provides early warning to the main

body as it impedes and harasses the threat with direct fire and IDF within its capabilities. Additionally, a screen force destroys or repels threat reconnaissance units based on the higher commander's guidance and in coordination with other combat elements. Screen tasks are defensive in nature and provide the protected force with the lowest level of protection of any security mission. A screen is appropriate when operations have created extended flanks or gaps that cannot be secured in force, or when early warning is required. A screen is performed for a moving force to the flanks or rear of the main body, and it can be performed for a stationary force to the front, flanks, or rear of the main body. A screen mission is not performed forward of a moving force. Zone reconnaissance, movement to contact, or advance guard are missions more suited for operations forward of a moving force. Figure 6-4 shows a graphic depiction of a notional stationary screen mission. Figure 6-5 shows a graphic depiction of a notional moving screen mission.
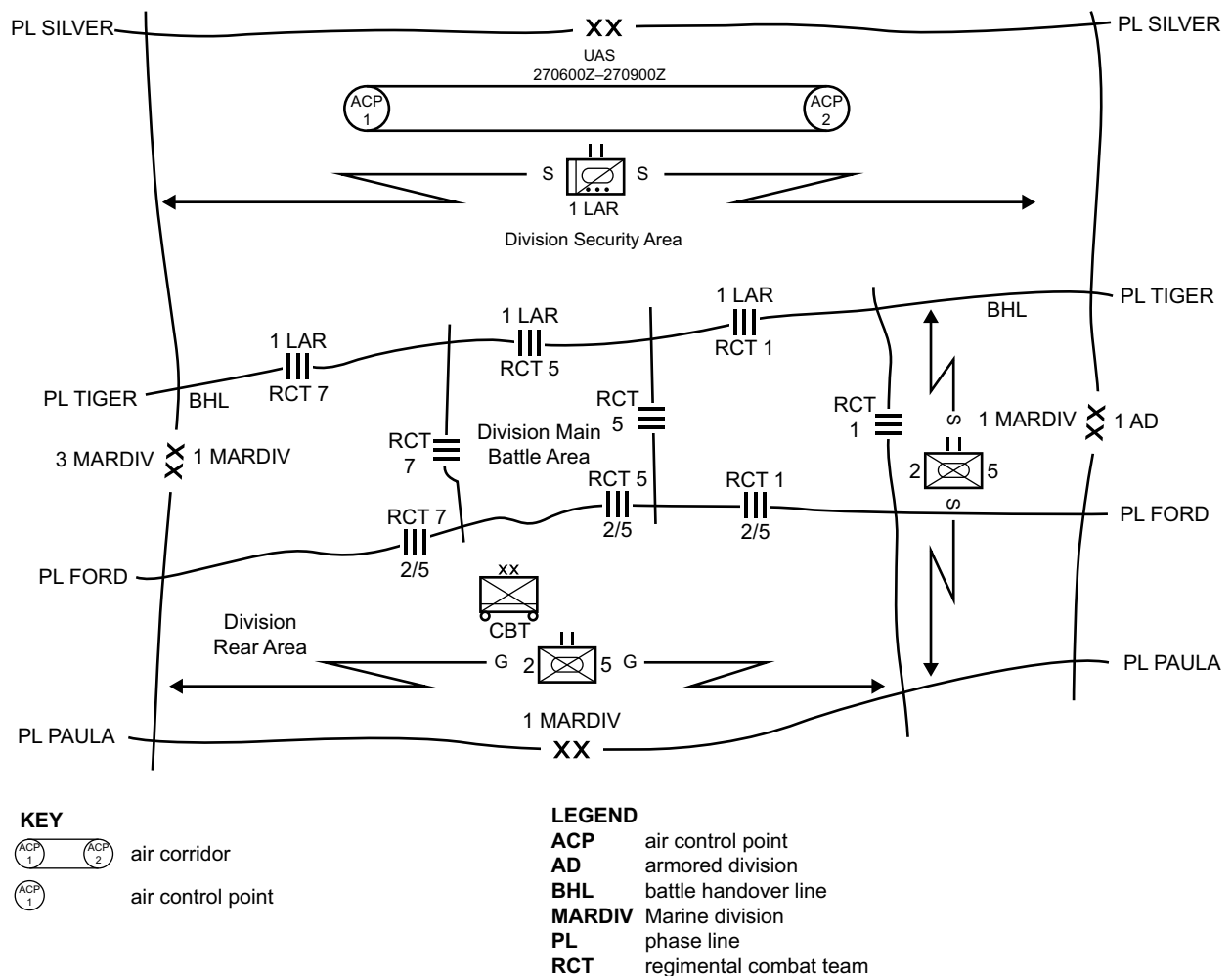
For more information on symbols and their draw rules, see the most current version of
Military Standard (MIL-STD) 2525 Joint Military Symbology.

Figure 6-4. Notional Light Armored Reconnaissance Battalion Screen (Stationary).
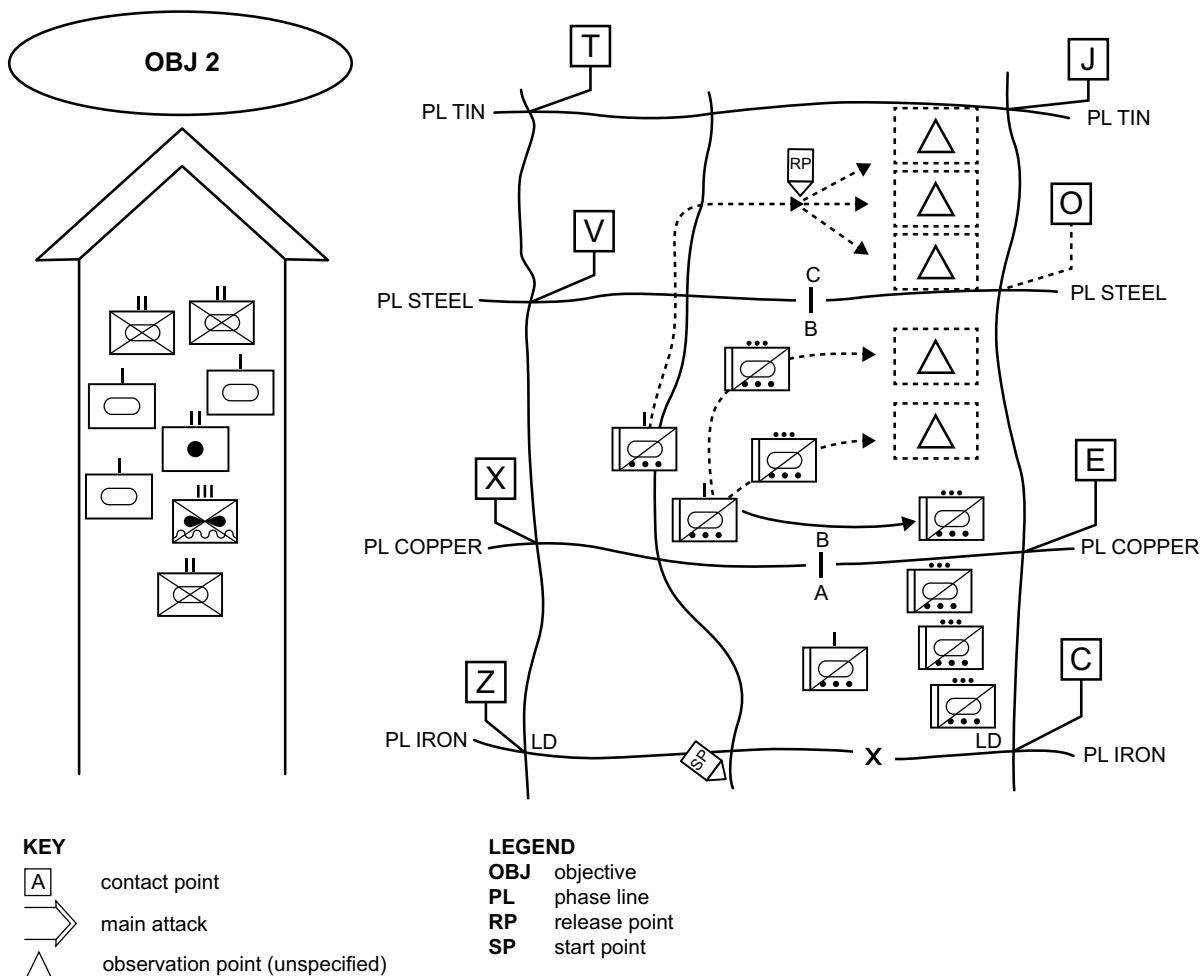
KEY

A	contact point
⟩	main attack
△	observation point (unspecified)

LEGEND
OBJ objective
PL phase line
RP release point
SP start point

For more information on symbols and their draw rules, see the most current version of
Military Standard (MIL-STD) 2525 Joint Military Symbology.

Figure 6-5. Notional Light Armored Reconnaissance Battalion Flank Screen (Moving).

Critical Tasks

The following critical tasks are accomplished to achieve the intent of a screening mission:

- Detect and report all enemy elements attempting to pass through the screen, both ground and aerial, to provide the protected force commander early warning of enemy activities.

- Maintain continuous surveillance of all avenues of approach that affect the main body's mission.

- Destroy or repel all threat reconnaissance patrols within its capabilities.

- Conduct counterreconnaissance to destroy, defeat, or disrupt all enemy reconnaissance elements, within capabilities and according to engagement criteria.

- When facing an echeloned enemy force, locate and identify the lead elements that indicate the enemy's main attack, prescribed in the enemy's order of battle based on IPB.

- Determine the direction of enemy movement, maintain contact, and report threat activities even while displacing.

- During displacement, impede and harass the enemy within capabilities without becoming decisively engaged, thereby providing the protected force commander with additional time and maneuver space.
- Maintain contact with threat forces and report any activity in the AO.
- Maintain contact with the main body and any security forces operating on its flanks.

Planning Considerations
The supported commander provides the following security guidance to the LAR unit:

- The general trace of the screen and the time at which the screen should be established.
- The width of the screened sector.
- The protected force to be screened.
- The rear boundary of the screening force.
- Possible follow-on missions.

The LAR unit screens a stationary force by establishing a series of observation posts along a designated screen line. Note that when the term "screen line" is used, it only describes the trace along which security is provided, not the linear positioning of assets. Planning for depth is critical for the screening force to achieve success. Depth allows for reconnaissance handover of threat contact from one element to another without displacing. It is achieved by employing stationary observation posts and surveillance assets as part of the overall mission. Depth is used to achieve the following results:

- Prevent the threat from easily identifying and penetrating the screen.
- Prevent gaps from occurring when observation posts displace or are destroyed.
- Facilitate the destruction of threat reconnaissance elements without compromising critical observation posts.

Displacement of the screen elements to subsequent positions is event-driven. It can be dictated by the approach of an identified and specified threat element, detection by a threat force, relief by a friendly unit, or movement of the protected force. Collapsing of the screen provides security and maintains contact for the battalion as it displaces; this is executed by well-rehearsed drills performed at all levels. The protected force commander does not usually place a time requirement on the duration of the screen unless the intent is to provide a higher level of security to the protected force or to provide a tentative time frame for subordinate unit planning. As the screening force executes its movements from one screen line to the next, the commander maintains close communications with the main body. The main body commander decides when, and if, the screening force can move behind a battle handover line and hand over the battle to the main body.

When planning, the screening force commander develops branch plans that account for changes in mission (e.g., transitioning from a screen operation to a guard operation to gain the main body more time). The requirements for observing specific NAIs or TAIs are identified during the IPB process. If the screened force is to engage or control the engagement of a threat at a TAI, the main body commander provides adequate resources. A screening force can maintain a moving screen along the flanks or rear of the protected force. The screen movement is keyed to time and distance

factors associated with the main body's movement. Responsibilities for a moving flank screen begin at the front of the main body's lead combat element and end at the rear of the protected force. Responsibilities for a moving rear screen begin at the trail element of the main body. A force executes a moving screen in the same way it conducts a stationary screen, but includes movement techniques.

GUARD

A guard is a form of security operation whose primary task is protecting the main force by fighting to gain time, while also observing and reporting information. A guard operation is usually conducted within artillery range of the protected force. If not within range of artillery, the LAR unit must have dedicated CAS. A guard differs from a screen in that the guard force must contain sufficient combat power to defeat, cause withdrawal of, or fix threat combat forces before they can engage the protected force. A guard force reconnoiters, screens, attacks, defends, and delays as required to prevent ground observation of and direct fire against the main body. A guard force routinely engages threat forces with all available means, including direct fire and IDF, to prevent threats from moving to positions where they could observe and engage the main body. The guard mission can entail decisive engagement of threat forces. Typically, a guard force is deployed along a narrower front than a screen due to its requirement to fight and provide physical protection. Lastly, the LAR unit requires reinforcement with armor and mechanized forces, as well as receipt of priority of fires for artillery and CAS.

Advanced Guard
An advanced guard for a stationary supported unit deploys forward and defends the main body. Once LAR makes contact, they continue to defend or delay within the AO consistent with the supported commander's intent. An advance guard for a moving force is offensive in nature, finding and defeating enemy units along the axis of advance. Light armored reconnaissance units conducting an advance guard provide for the uninterrupted movement of the protected force. If the advance guard encounters enemy forces beyond its capability, the advance guard transitions to a defense to protect the supported command, continues reconnaissance to develop the situation, and prepares to pass elements of the main body forward. The advance guard maintains an interval from the protected force guiding the main body through gaps in the enemy force to take advantage of opportunities.

Flank Guard
A flank guard protects an exposed flank of the main body. In performing this mission, the LAR unit operates beyond the assigned zone or sector of the protected force. A flank guard for a stationary force performs a zone or area reconnaissance when establishing the initial security line, allowing the flank guard to become familiar with the terrain they will defend. Upon reaching their initial positions, the flank guard establishes a defense and goes through the steps of engagement area development. Once the flank guard makes contact, it continues to defend or delay according to the commander's intent.

Critical Tasks

Unless otherwise directed, the guard force accomplishes the following critical tasks:

- Destroy the enemy's advance guard.
- Maintain contact with threat forces and report activity in the AO.
- Maintain continuous surveillance of avenues of approach into the AO under all visibility conditions.
- Impede and harass the threat within its capabilities while displacing.
- Cause the main body to deploy and then report its direction of travel.
- Allow no ground element to pass through the security area undetected and unreported.
- Destroy or cause the withdrawal of all threat reconnaissance patrols.
- Maintain contact with its main body and any other security forces operating on its flanks.

A guard is appropriate when contact is expected, operations have created extended flanks or a threat force to the rear, the protected force is conducting a retrograde operation, or there is a requirement for greater protection than a screen can provide.

Planning Considerations

The supported commander provides the following broad direction and assets in support of the LAR unit:

- Provides adequate combat and combat support assets to the guard force.
- Ensures responsive fire support to the guard force.
- Provides engagement, disengagement, and bypass criteria.
- Identifies the duration of the guard mission.

COVER

A cover is a type of security operation that protects the force from surprise, develops the situation, and gives commanders time and space in which to respond to the threat's actions. A covering force operates independently from the main body for the purpose of intercepting, engaging, delaying, disorganizing, or deceiving the threat before it can attack the force. It is an independent, tactically self-contained maneuver unit that operates at a considerable distance to the front, flank, or rear of a moving or stationary force in an offensive or defensive role. If the covering force cannot defeat the threat force, it deceives, delays, and disorganizes the threat until the main body can effectively react. A covering force implies the capability of close decisive combat. It requires significant firepower against a mechanized and mobile opponent, and considerable troop density against a dismounted opponent. The LAR battalion usually lacks the necessary organic firepower and troop density to function independently as a covering force. A task-organized LAR task force, with attached artillery, CSS, tanks provided by the US Army or coalition partner, and dedicated aviation in DS, is usually necessary for LAR to operate as a covering force. Figure 6-6 shows a graphic depiction of a cover mission.
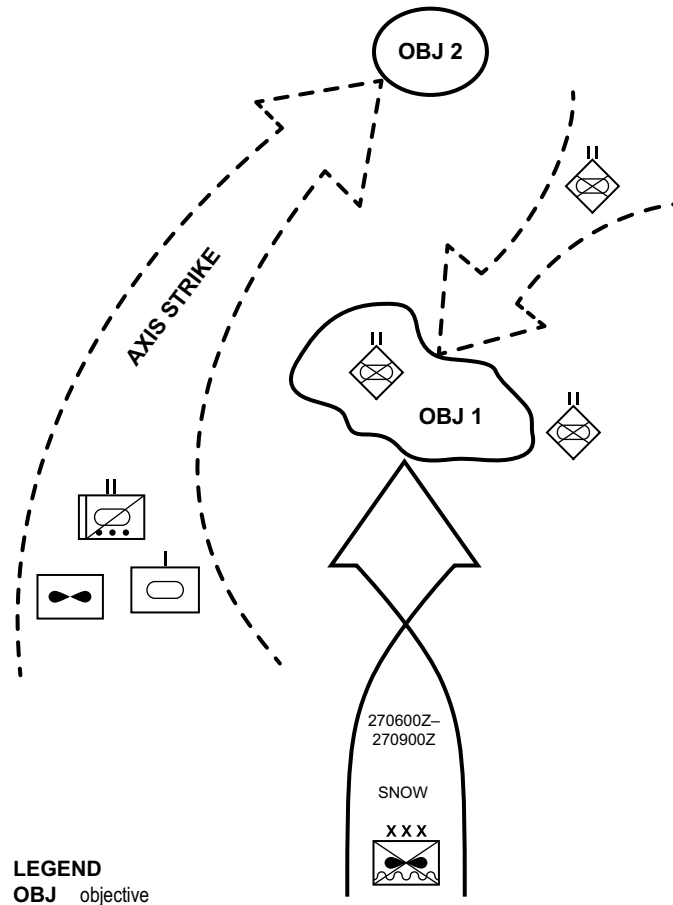
Figure 6-6. Notional Light Armored Reconnaissance Battalion Cover Mission.

Critical Tasks

A covering force's critical tasks include—

- Conducting reconnaissance along the supported main body's axis of advance.
- Denying the threat information about the size, strength, composition, and objective of the supported main body.
- Destroying or repelling threat reconnaissance and security zone forces within capability.
- Developing the situation to determine the threat strengths, weaknesses, and dispositions.
- Defeating, repelling, or fixing threat forces as directed by the supported commander.
- Exploiting opportunities until the supported main body forces are committed.

Planning Considerations

A covering forces planning considerations include the following:

- The LAR battalion typically requires reinforcement to perform a covering force operation.
- The LAR battalion can be teamed with the ACE to act as a MAGTF covering force.
- The LAR battalion can operate beyond the range of the main body's artillery.

AREA SECURITY

Area security is conducted to protect friendly forces, installations, routes, and actions within a specific area and deny the threat the ability to influence friendly actions within it, or to deny the threat use of an area for its own purposes. It includes reconnaissance of the area specified for protection, including personnel, airfields, unit convoys, facilities, main supply routes (MSRs), LOCs, equipment, and critical points. The LAR battalion must be assigned a mission and intent in relation to an AO. Convoy and route security are considered area security missions.

LOCAL SECURITY

Local security is continuous and the responsibility of all Marines. Local security includes any measures taken by units to prevent surprise and mitigate enemy actions. It involves avoiding enemy detection or deceiving the enemy about friendly positions and intentions. It also includes finding any enemy forces in the immediate vicinity and knowing as much about their positions and intentions as possible. Local security prevents a unit from being surprised, and it is an important part of maintaining the initiative. The requirement for maintaining local security is an inherent part of all operations. Local security combines both active and passive measures. Some local security measures that specifically apply to LAR during halts in movement are listed below.

Short Halts
During short halts of tactical movement LAR units use the herringbone formation. The herringbone formation provides 360-degree security during a march column, and scouts will dismount to provide greater security. Upon exiting the LAV, the scouts will conduct "0, 5's, and 25's" to identify hazards, explosive devices, and mines. The herringbone formation can widen to permit passage of vehicles down the center of the column. All vehicles should move completely off the road if terrain allows. Vehicle commanders will reposition their vehicles as necessary to take advantage of the best cover, concealment, and fields of fire. Figure 6-7 illustrates a LAV platoon conducting a herringbone formation.
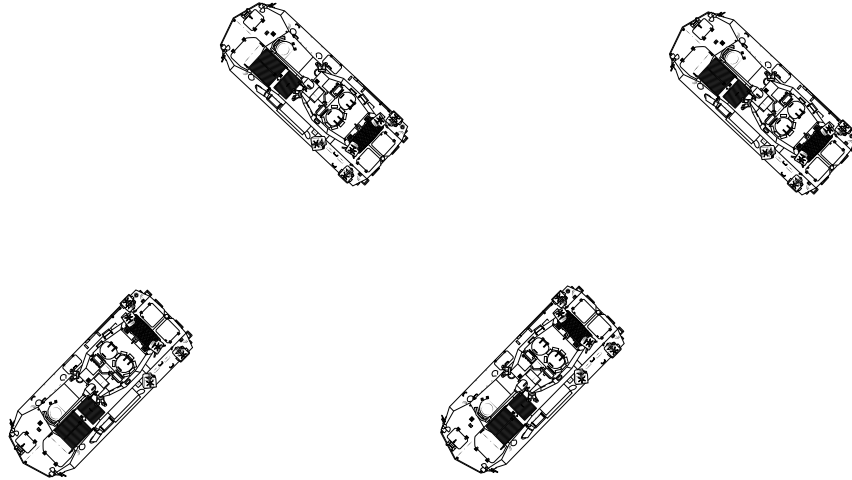
Figure 6-7. Platoon Herringbone Formation.

Long Halts

During a long halt in operations and based on METT-T, LAR units will use the coil formation, which provides all around security and observation. Each vehicle has a particular position to occupy in the coil, and the unit leader designates the orientation of the coil using a cardinal direction. In the absence of orders, the direction of travel becomes 12 o'clock. Vehicles position 100 to 150 meters apart or as dictated by terrain. Unit SOP establishes specific TTP for LAV coils. Figure 6-8 illustrates a LAV in a platoon coil formation.
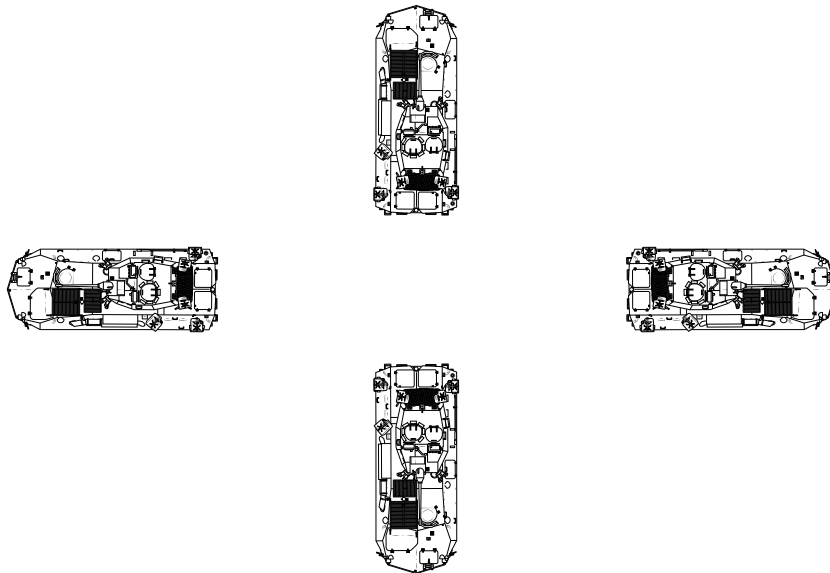
Figure 6-8. Platoon Coil Formation.

Vehicle Concealment

There are three types of protection afforded to LAVs: a hide position, turret defilade, and hull defilade. (See Figures 6-9 through 6-11). Movement of personnel in and around these positions and failure to conceal from overhead observation can compromise these battle positions. Vehicles should use their camouflage nets whenever possible and noise and light discipline must be enforced.

A Hide Position. A vehicle is in the hide position when no part of the vehicle or commander is exposed to the front (see Figure 6-9).
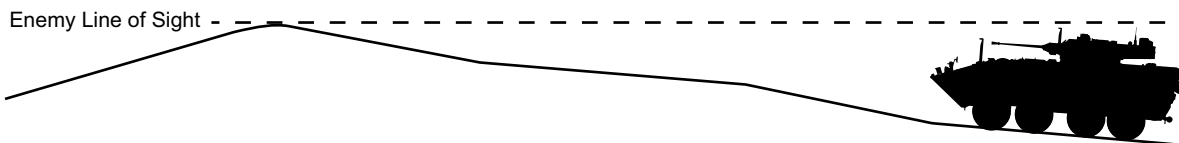
Figure 6-9. A Hide Position.

Turret Defilade. An LAV is in turret defilade (also referred to as turret-down) when the entire vehicle is in defilade or behind cover except the vehicle commander who can observe to the front while standing in the turret (see Figure 6-10).
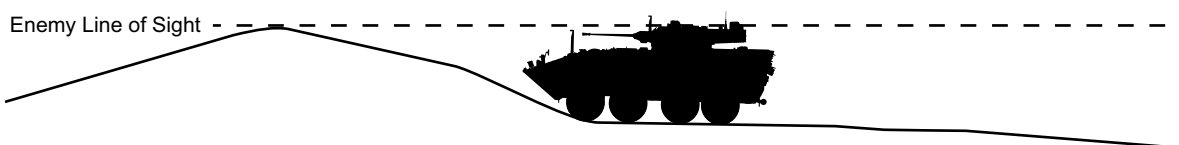
Figure 6-10. Turret Defilade.

Hull defilade. Hull defilade (also referred to as hull-down) is a posture where the turret is the lowest part of the vehicle exposed. This position allows the vehicle to fire its primary weapon while still protecting its hull (see Figure 6-11).
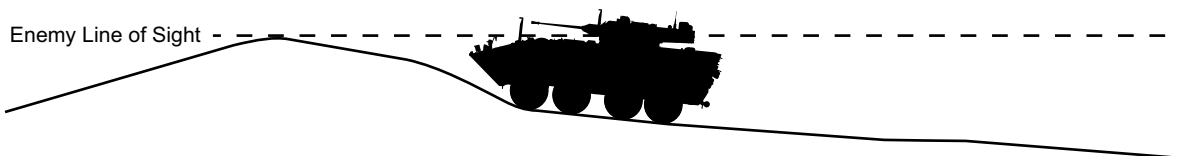
Figure 6-11. Hull Defilade.

SCOUT INTEGRATION

Vehicle and scout integration must be absolute. Light armored reconnaissance cannot perform its mission without the symbiotic team of the LAV crewmembers and scouts. In all tasks, functions, and missions, scouts enhance the capabilities of the LAV and its crew. When dismounted, scouts become the eyes and ears of LAR. The scouts can cover dead spaces between vehicles or establish listening and observation posts where vehicles cannot maneuver into and. Scouts can direct fires for the entire family of LAVs, enhancing the lethality of LAR. Scouts evaluate routes and obstacles for follow-on forces, identify LAV positions, and assist LAV movements when moving through restrictive terrain or wet-gap crossings. Scouts can cover up vehicle tracks leading into hide positions and provide local security when both mounted and dismounted. Scouts protect the LAV in urban or canalizing terrain. As a sensor, scouts can use SUASs and conduct reconnaissance ahead of LAVs that are in cold positions to minimize signatures and observe targets from multiple vantage points.

CHAPTER 7.
URBAN OPERATIONS

The urban environment is a trifold equation consisting of complex man-made physical terrain, a population of significant size and density, and a supporting infrastructure. The combination of natural landscape characteristics and man-made construction creates a complicated and fluid environment that influences the conduct of military operations in unique ways.

CHARACTERISTICS OF THE URBAN ENVIRONMENT

An urban environment is a dense and complex system expressed through a multi-dimensional physical system, an information system, and a social system composed of a population of significant size and varied configuration. These systems are interconnected. Damage to one will have reverberating implications to all. Conflict, at any scale, will magnify any fragilities in these systems. The urban environment is characterized by cities and their surrounding areas. These characteristics interact to make each urban environment a complex and dynamic system of systems, with unique features.

Urban operations are multi-dimensional; activities can take place on the surface, super surface, and within subsurface areas, magnifying the environmental complexity. Urban terrain creates urban canyons that restrict and canalize the maneuver of LAR units and other mounted forces during operations along predictable and constricted routes. The LAV family of vehicles is designed for operations in open terrain where they can use their inherent speed, mobility, and firepower to maneuver to engage threats with standoff distance. Urban terrain forces LAR units to operate at close range to threats, making them vulnerable to close attack tactics or to isolation and defeat in detail. This aspect of the urban environment places a greater requirement and interdependence on dismounted infantry support for LAR employment and survivability. The degree of support is dictated primarily by the threat and the type of urban environment—permissive, uncertain, or hostile.

Operations in urban areas are mainly conducted among the people who work and reside within the urban operations area. In most cases, operations are directed against specific threats existing within a larger neutral populace within which the threat hides. This fact makes the support of the population extremely critical to affecting change. The human aspect is inherently fluid and difficult to assess. Social characteristics affect each area's uniqueness and complexity and can vary in each part of a given urban environment. Regardless of the type of threat, the social differences, and the degree of instability or conflict within an urban area, each society has a substantial effect on operations. A few key aspects of societies are as follows:

- A government (whether functional or not) and a political system.
- Leadership figures and prominent personalities.
- Ethnicity and culture.
- Population demographics.

- Interconnectivity of technology.
- Health.
- History.
- Religion.
- Economics.

URBAN OPERATIONS PLANNING CONSIDERATIONS

The density of the population, the complexity of the infrastructure, the sheer scale of the metropolitan area, and the interconnectedness of its systems will all influence military decision making. An urban environment is alive. It continuously changes and adapts. In addition, the growth and availability of technology will exacerbate the threats of adversaries. Urban operations are planned and conducted on or against objectives within this multifaceted environment and can occur sequentially or (more often) simultaneously. The complexity of the urban environment affects the overall conduct of the mission, regardless of the types of operations conducted or whether the urban area is the single focus of the operation or only one component of a larger operation or campaign. Urban environments are initially assessed by intelligence as either permissive, uncertain, or hostile to US forces. It is not uncommon for conflicts and instability within urban areas to contain all three simultaneously. Planners of urban operations must be able to—

- Understand the urban environment to determine decisive points and devise methods to continually assess their effects.
- Successfully integrate and exploit the "city systems" (e.g., power, sewer, police).
- Shape the operation to set the conditions for success.
- Precisely mass the effects of combat power to engage the decisive points that lead to COGs.
- Continually consolidate gains essential to retain the initiative.
- Transition the urban area to the control of another allied military, agency, or legitimate and functioning HN security force.

LIMITATIONS OF THE LIGHT ARMORED VEHICLE IN URBAN ENVIRONMENTS

Light armored vehicles, as the name implies, are "lightly armored." Despite ballistic protection upgrade package (BPUP) armor and underbelly blast kits, which enhance crew survivability, LAVs are still vulnerable in urban environments. The vulnerabilities that are common for all LAV-MRV are as follows:

- When equipped with the BPUP, vehicle and crew survivability chances are significantly improved against ballistic threats of light and medium caliber machineguns, but automotive hulls remain extremely vulnerable to improvised explosive devices (IEDs) and anti-armor fires such as antitank guided missiles (ATGMs) and rocket propelled grenades (RPGs).
- Lacks maneuverability in being able to rapidly change direction when forced to an unexpected halt in front of obstacles or ambushes.

- If the tactical situation requires the crew to secure their hatches, visibility is limited to gunsights and periscopes making it vulnerable to top attack tactics from rooftops and windows (refer to the warning below).
- There is significant visual and weapons dead space around the LAV in which the vehicle's crew can neither observe nor fire its weapons at close threats. Without extremely observant local security, the enemy can attack—and has—from both rooftops and sewer systems that are within visual and weapon dead space.
- Enemy threats in proximity to the vehicle neutralize the vehicles weapons systems and require the scouts or crewmembers to engage with personal weapons.
- The LAVs do not carry enough dismounts to provide for adequate local security in hostile urban environments.
- In urban environments, movement is primarily restricted to streets and road surfaces.
- Buildings, telephone poles, etc. create the likelihood of barrel strikes against a hard object. This could hinder the LAV-25's ability to traverse on target or damage the vehicle and/or injure the crew. Exposed power lines, typical in undeveloped and dilapidated urban environments, create safety hazards to both the crew and vehicle.
- The LAV is not able to use its hull to breach walls or large obstacles but might be able to employ its 15,000-pound winch or tow pintle to pull or drag obstacles off roadways and streets. Objects cannot not be pulled around a corner so the obstacle could potentially stay in the same direction of travel. Scouts are required to connect the cable to the obstacle.
- The 25 mm rounds lack the power to create breaches in concrete, brick, or mud buildings. However, armor-piercing discarding sabot–tracers (APDS-Ts) have the potential to over-penetrate a target causing collateral damage and/or friendly fire due to the max effective distance of the round.
- Structures canalize fires, often only allowing the main gun and coax to fire down a street.
- Except for the LAV-25, the other LAV variants do not have dedicated personal such as scouts to provide local security.

> **WARNING: Only the LAV-25 and the LAV-ATM can employ weapons when the vehicle's crew is closed up tightly and securely when artillery or small arms fire could be expected (commonly referred to as "buttoned up"). All other LAV-MRVs cannot employ their machineguns because this requires the crew's vehicle commander to be exposed. The only system that these LAV-MRV crews can employ is the ancillary M-257, 40 mm smoke grenade launcher systems. Additional protection requirements from dismounted infantry should be considered for protecting light armored vehicles.**

First Battle of Gronzny: Russian Army

The First Battle of Grozny was the Russian Army's invasion and subsequent conquest of the Chechen capital, Grozny, during the early months of the First Chechen War. The attack lasted from December 1994 to March 1995, resulted in the military occupation of the city by the Russian Army, and rallied most of the Chechen nation around the separatist government of Dzhokhar Dudayev. The initial assault resulted in very high Russian Army causalities and an almost complete breakdown of morale in the Russian forces. Chechen units were divided into combat groups consisting of 15 to 20 personnel, subdivided into 3- or 4-person fire teams. A fire team consisted of an antitank gunner, usually armed with Russian-made RPG-7s or RPG-18s, as well as a machine gunner and a rifleman. To destroy Russian armored vehicles in Grozny, five or six hunter-killer teams deployed at ground level, in second and third stories, basements, and the sewer systems. Snipers and machine gunners would pin down the supporting infantry while the antitank gunner would engage the armored vehicle aiming at the top, rear, bottom, and sides of vehicles. Initially, the Russians were taken by surprise, and their armored columns—which were supposed to take the city without difficulty—were decimated. As a short-term measure, the Russians used self-propelled antiaircraft guns to engage the Chechen combat groups, as the main gun of the tanks could not be raised or lowered enough to engage the teams, and the armored vehicle's machine gun could not suppress the fire of several different teams simultaneously. It took the Russians another two months of heavy fighting and a change in their tactics, before they were able to capture Grozny.

DISMOUNTED SCOUTS IN THE URBAN ENVIRONMENT

Within urban environments, LAR dismounts are essential to the local security and survivability of the unit. The LAV crew are a two-part (mounted and dismounted), symbiotic system—each dependent on the other for survival. If one part of this system is degraded or eliminated, the other will likely follow the same fate. With typically only three dismounts per LAV-25, urban engagements can quickly escalate beyond their capacity to protect themselves and their LAV. This fact adds risk to the mission and must be considered by planners when determining the augmentation to the LAR unit. When operating in the urban environment, LAR dismounts provide limited local security and protection by expanding the mounted LAV crew's observational depth by identifying threats that are hidden to the mounted crew.

Scouts can place fires into these areas as well as direct LAV-25 fires onto threats as they are uncovered. Prior to movement into or through an urban environment, LAR dismounts can be aggregated by LAR companies to provide initial limited reconnaissance of urban areas to determine the tactical situation. To perform these tasks, LAR scouts use a variety of patrolling and observation techniques, ideally conducted from multiple locations. While moving through urban terrain, LAVs are employed in sections (of two LAVs-25 each) and use dismounts in a travelling overwatch method to ensure vehicles remain in mutual support and maintain limited 360-degree security.

Light armored reconnaissance scouts can be used to assist in clearing intersections, corners, bridges, and underpasses. Additionally, they can identify possible vehicle hide positions and provide security during short and extended duration halts. The dismounts do not have the manpower or time to clear larger buildings. Once the focus of the scouts shifts away from threats to the LAV, the LAV crew becomes extremely vulnerable to close attack. However, this does not mean that scouts cannot be employed with additional tasks. These tasks can include conducting limited searches, engaging the local populace for atmospherics in the collection of critical environmental variables and other information requirements. These scout tasks support both the supported commander's understanding of the operational environment and LAR movement within or through the urban environment.

EMPLOYMENT OF LIGHT ARMORED RECONNAISSANCE IN THE URBAN ENVIRONMENT

There are two aspects for consideration for LAR urban employment: to employ LAR in or outside the urban area. Based on the type of urban environment, the supported commander can select from both methods to support various operations. These operations can comprise a simultaneous blend of reconnaissance, security, offensive, defensive, and stabilization activities. It can be rare for the entire battalion to be employed as an aggregated unit inside an urban environment due to its footprint size, daily sustainment requirements, vulnerability to close attack tactics, and requirements for larger operational space. It is likely to be more advantageous for the commander to consider assigning LAR units to operate on the fringes of, or external to, dense urban areas to assist in shaping the urban periphery. This method allows the LAR battalion commander to assign areas of responsibilities and missions to subordinate companies to control and shape the approaches to and exits from the urban area. Lastly, the commander might also consider directing the LAR battalion to support other GCE elements of the MAGTF with one or more of its LAR companies.

Reconnaissance Operations in the Urban Environment

Light armored reconnaissance units can conduct zone, area, and route reconnaissance on the periphery and in the urban environment to collect critical information during urban operations for the supported commander. As a mounted reconnaissance element, performance and conduct of these missions within urban areas can be somewhat limited, primarily to information on routes, potential threats, critical areas or infrastructure and general population atmospherics. Because of the fluid nature of urban environments, in which threat actions can quickly change the environment, reconnaissance information is only accurate when zones, areas, or routes are under constant observation. When tasked with reconnaissance operations within the urban environment, the LAR unit must have a clear understanding of how information requirements relate to the overall mission and intent. To collect information, the LAR unit can use a combination of traditional techniques of information collection through observation paired with interaction with the local population to collect on atmospherics and development of network engagement activities. Typically, the LAR unit can be expected to perform other general reconnaissance tasks such as—

- Determining trafficability of routes and lateral routes to create mobility advantages for attacking, reinforcing, or defending forces.
- Identifying controllable access points to the urban area such as bridges.

- Identifying and determining the suitability of future lodgment areas or logistics sites.
- Identifying large subterranean entry points and systems.
- Supporting the information warfighting function to uncover and isolate threats from sources of support and mitigate misinformation.

Security Operations in Support of Maneuver

Light armored reconnaissance can conduct security operations from within and external to urban areas. Security operations assist in denying the threat's capability to access and influence friendly operations, enhance force protection, and provide for the freedom of maneuver. Light armored reconnaissance units are best employed with area security tasks external to the urban area that support protection of friendly forces, installations, critical areas, and routes. Of particular concern within urban areas is maintaining security for the civilian population and the denial of the threat's ability to gain access or generate sources of support from within it.

Employing the LAR unit in security roles enables the supported commander to accomplish other tactical activities. As with any security mission, the LAR unit does this by providing observation and early warning of threat actions, which provide reaction time and maneuver space for the commander to make informed tactical decisions. The battalion or its subordinate companies will typically perform security missions as part of a larger security force supporting other GCE elements of the MAGTF during the conduct of urban offensive, defensive, or stabilization activities.

Security operations orient on the force or facility being protected and are normally associated with shaping actions. This includes reconnaissance of the area specified for protection, including personnel, airfields, facilities, MSRs, LOCs, equipment, and critical points. Consideration of LAR employment in security tasks should build upon the LAR units' mobility to cover large areas such as assisting in border security or controlling the approaches to urban areas that will limit the threat's the ability maneuver into and out of the urban area.

Offensive Actions in the Urban Environment

Light armored reconnaissance offensive actions within an urban environment enable maneuver by penetrating or enveloping the threat. Light armored reconnaissance units can outflank, disrupt, and destroy the enemy, their LOC, and their logistics. During combat operations, LAR units do not usually operate within the urban environment because of the lack of armor protection; however, they can be used to secure the avenues of approach around the perimeter of the area and to support isolation of objectives. The LAR unit will typically conduct offensive urban actions as a supporting element of a larger task-organized formation. During offensive actions in urban operations, LAR units can conduct the following tasks and missions:

- Participate in reconnaissance in force.
- Identify or create weak points in the enemy's defense.
- Suppress threat fires.
- Isolate and contain threats to provide for maneuver.
- Exploit success.
- Pursue threat forces outside the urban area or conduct spoiling attacks to massing threats.

- Deceive or divert the threat.
- Conduct attacks deep outside of the urban area into threat rear areas to destroy threats, seize or secure critical threat infrastructure, facilities, or resources.

Direct Support of Infantry Offensive Operations

Offensive tasks for LAR within the urban area will likely have LAR as a supporting element to an infantry unit as part of a larger offensive operation. Light armored reconnaissance units can be employed in the urban environment to assist dismounted forces in seizing and clearing streets and buildings but need an infantry force dedicated to assist LAR in local security as it moves. Light armored reconnaissance units can be employed to assist infantry during high intensity urban conflict by—

- Providing lethal firepower to gain footholds, assist in the reduction of strong points covered by fire, clearing streets, and suppressing fires from buildings.
- Assisting in securing avenues of approach or cordons around select areas to support isolation.
- Using vehicle thermal sight systems to engage targets in limited visibility conditions that typically accompany urban fighting environments.
- Using the stabilized turret's ability to assist in uncovering targets and engaging them at near or extended ranges, providing additional firepower for maneuvering infantry.
- Using the precision of the LAV-25's systems to reduce the risk of collateral damage to noncombatants and damage to local infrastructure.
- Employing obscuration smoke using the LAV's M-257, an ancillary system capable of firing either four or eight 40 mm smoke grenades at once.
- Employing the LAV-L for emergency logistical and medical support.

Defensive Actions in the Urban Environment

As the stronger form of combat, a defense within an urban environment possesses key advantages over the attacker. Light armored reconnaissance units are well suited to augment the defensive scheme from inside and outside of the urban area. Ideally, LAR is better suited to establish or reinforce urban defenses outside of the urban area to shape or degrade, disrupt, or deny the threat the capability to maneuver on friendly defenses. From within the urban area, LAR can provide lethal defensive fires along threat routes of advance, reinforce obstacles, or provide antitank fires.

Light armored reconnaissance elements can be selected to assume area defensive tasks such as defense of towns, villages, or smaller urban areas; border defenses; bridges; railheads; or other critical infrastructure and facilities. They can also be tasked to defend from an urban area to support operations elsewhere. Additionally, light armored reconnaissance supports the offensive mindset of the defense when employed as a highly mobile exploitation, reserve, or counterattack force to pursue, destroy, or capture threat forces. During expeditionary operations, urban areas can be used as initial lodgment areas such as airfields, expeditionary airfields, and maritime port facilities in which LAR can be tasked to defend until adequate forces transition ashore. Light armored reconnaissance can be selected to assist in the defense of urban areas for various reasons such as—

- Defeating a threat attack.
- Buying time.

- Economizing forces.
- Protecting a HN's political institutions and economic infrastructure.
- Protecting an urban population.
- Shaping conditions for decisive offensive operations.
- Shaping conditions for executing stability or defense support of civil authorities' tasks.

Stabilization Activities

Light armored reconnaissance units can be expected to conduct the following missions in support of stabilization activities:

- Secure sections of urban areas.
- Conduct cordon and search.
- Support information warfighting function themes.
- Support to identity operations (i.e., biometrics).
- Control and overwatch of critical routes and infrastructure.
- Secure and/or expand lodgment areas.
- Secure airfields.
- Assist in securing border areas.
- Serve as a quick reaction force (QRF).
- Convoy escort and security.
- Conduct route security and overwatch.
- Assist combat engineer units in route clearance operations.
- Secure critical facilities and infrastructure.
- Conduct checkpoint operations.
- Separate belligerents.
- Security of key individuals.

CHAPTER 8.
AMPHIBIOUS OPERATIONS

An amphibious operation is "a military operation launched from the sea by an amphibious force to conduct landing force operations within the littorals" (*DoD Dictionary*). The primary purpose of amphibious operations is to transition the landing force ashore from the amphibious task force (ATF). Because of their lightweight, operational mobility, and capability to conduct distributed operations, LAR units represent a middleweight force capable of rapid deployment in support of amphibious operations.

ROLES OF LIGHT ARMORED RECONNAISSANCE WITHIN AMPHIBIOUS OPERATIONS

During amphibious operations, LAR units are employed to develop situational awareness and to extend operational reach by capitalizing on their speed and ability to quickly move into and past the littorals. Typically, LAR units conduct initial amphibious operations as a company or company (-) from a forward-deployed MEU. The LAR unit can deploy aboard amphibious shipping as part of a special purpose MAGTF, a MEB, or aggregated from forward-deployed LAR companies within MEUs already embarked at sea. Due to the LAR battalion's size and the requirements for ATF to move additional personnel and critical equipment, the battalion is rarely formed and shipped via sealift as a cohesive, aggregated battalion. Typically, the LAR battalion deploys to conduct extended amphibious operations using several methods. These can include a combination of time-phased sealift, strategic airlift, and maritime prepositioning force operations. Methods are determined by the joint force commander or implemented through established time-phased force deployment data delineated within standing operation plans. The LAR battalion possesses the inherent ability to rapidly project combat power to provide the amphibious force a mobile and lethal force that helps shape and define the battlespace. For prescriptive TTP and information on amphibious operations, refer to JP 3-02, *Amphibious Operations*, and for more information on maritime prepositioning force operations, refer to MCTP 13-10D, *Maritime Prepositioning Force Operations*.

TYPES OF AMPHIBIOUS OPERATIONS

From company to battalion-sized elements, LAR units are useful in supporting or conducting the five types of amphibious operations:

- Amphibious raid.
- Amphibious demonstration.
- Amphibious assault.
- Amphibious withdrawal.
- Amphibious force support to crisis response and other operations.

Amphibious Raid

An amphibious raid is an operation involving a swift incursion into or the temporary occupation of an objective to accomplish an assigned mission, followed by a planned withdrawal. An amphibious raid can be conducted to temporarily seize an area to secure information, confuse an adversary, capture personnel or equipment, or to destroy a capability.

Amphibious Demonstration

An amphibious demonstration is a show of force intended to influence or deter a threat's decision. The intent is to deceive the threat, causing it to select an unfavorable COA. For example, during Operation DESERT STORM, an amphibious force composed of 4th MEB, and ships of an amphibious strike group conducted operations such as raids, fire missions, feints, mine and lane clearance, and beach reconnaissance to convince Iraqi commanders that the main attack would come from the sea. This caused a shift of Iraqi forces from the southern flank to reinforce Kuwait City, thereby weakening the Iraqi defenses where the true coalition main effort would conduct its attack.

Amphibious Assault

An amphibious assault involves establishing a force on a hostile or potentially hostile shore. Moreover, the organic capabilities of a MEB or Marine expeditionary force (MEF)-sized landing force, including fire support, logistics, and mobility, can facilitate access to a crisis area by forcible entry. An amphibious assault can be designed to serve as the initial phase of a campaign or major operation where the objective is to seize and establish a military lodgment (e.g., ports, airfields, and advance bases) to support the introduction of follow-on forces, to occur simultaneously with other operations, or to deny adversaries freedom of movement.

Amphibious Withdrawal

Amphibious withdrawals are conducted to recover forces from a hostile or potentially hostile shore in ships or craft. They can be conducted in permissive, uncertain, or hostile environments to obtain forces needed elsewhere or to remove forces whose missions are completed. From 9 January to 3 March 1995, LAR units participated in Operation UNITED SHIELD, ensuring the safe amphibious withdrawal of all United Nations peacekeeping forces from Somalia.

Amphibious Force Support to Crisis Response and Other Operations

In addition to projecting power, other operations conducted by amphibious forces can include noncombatant evacuation operations, foreign humanitarian assistance, foreign disaster relief or civil support, or other support to crisis response. These actions intend to provide a rapid response to crises, deterring war, resolving conflict, promoting peace, and supporting civil authorities in response to domestic crises. Amphibious forces routinely conduct support to other operations, such as security cooperation, foreign humanitarian assistance, noncombatant evacuation operations, peace support operations, recovery operations, or protecting US facilities and personnel abroad. The LAR battalion can be simultaneously tasked with two or more of these operations, distributed over vast distances.

Ship-to-Objective Maneuver

Light armored reconnaissance units are exceptionally well suited to execute ship-to-objective maneuver (STOM) due to the LAV's moderate fuel consumption, and relatively small logistical requirements. Light armored reconnaissance units provide the MAGTF a flexible, tactical, and operational maneuver force capable of a wide range of missions that can influence actions into and beyond the littorals while being sustained by sea-based logistics. As a tactical application of the concept of operational maneuver from the sea, STOM initially uses the sea as a maneuver space in which the amphibious force can position to land forces. It provides the amphibious force a methodology to project forces through entry point(s) to maneuver toward or onto objectives without the need to secure and hold a beachhead to transition combat power ashore. This option provides an ability for amphibious landings to be executed in a more distributed manner combining several methods. These methods could include establishing lodgments ashore to support landing of landing craft and lighterage transporting vehicles, personnel, and logistics, while more mobile elements capable of self-landing of the landing force conduct STOM, such as air assault forces in helicopter or tiltrotor aircraft and AAVs. Ship-to-objective maneuver exploits the use of seabasing. Seabasing provides more of the command and control, logistics, sustainment, medical support, and other capabilities which allows forces using STOM to maintain momentum with a smaller footprint ashore. Although the LAV has the ability to swim across lakes and slow-moving streams and rivers, it is not capable of self-movement directly from amphibious shipping to the shore like the AAV. All LAR units require sea surface connectors to transition to ground operations.

Operation ENDURING FREEDOM: Task Force 58

Task Force 58 (TF-58) was initially established in 2001 for the purpose of conducting amphibious raids in southern Afghanistan. Ultimately, TF-58 conducted an amphibious assault 350 miles inland to seize a desert airstrip south of Kandahar, which was then renamed forward operating base (FOB) Rhino. This lodgment facilitated the introduction of additional joint forces, eventually leading to the isolation and seizure of the city. Task Force 58 was formed by aggregating two forward-deployed amphibious forces, the USS Peleliu ARG/15th MEU and the USS Bataan ARG/26th MEU, as well as a small fly-in headquarters staff of approximately 32 personnel. Brigadier General James Mattis, USMC, TF-58's commander, chose to employ the two MEUs separately rather than attempt a complex reorganization into a single MAGTF. The timing of the operation was coordinated with a lull in special operations elsewhere, thereby leveraging a Navy SEAL detachment for the special reconnaissance of FOB Rhino and beach hydrographic observations to support surface landings in Pakistan, while simultaneously conserving TF-58 assets for the actual assault. Employing STOM and in-flight refueling, as assault force comprising CH-53 helicopters from USS Peleliu seized the airfield that became FOB Rhino. Additionally, the establishment of a craft landing zone and beach landing site, coupled with the granting of diplomatic access to a C-17 capable airfield and two intermediate stating bases in northern and eastern Pakistan, proved critical for the pre-staging, buildup, and sustainment of combat forces, as well as for refueling the AH and UH-1 helicopters escorting the CH-53s. Within 90 minutes of the initial assault, Marine KC-130 aircraft started landing at FOB Rhino to begin building up combat power. Three days later, US Air Force C-17 aircraft began delivering Navy Seabees, their construction equipment, and the supplies needed to improve and maintain the runway. Throughout these actions, carrier and land-based aircraft provided fire support to the landing force. Following the establishment of FOB Rhino, the landing force transferred from the joint force maritime component commander to the joint force land component commander: however, a support relationship with the ATF was maintained to provide sea-based logistical, administrative, medical, and other support to the landing force.

During the amphibious assault conducted by TF-58 described above, LAR units participated in the first major deployment of conventional forces into Afghanistan by supporting the security of FOB Rhino, conducting interdiction operations, securing the Kandahar International Airport, and supporting a raid in Maiwand. The flexibility of LAR was effectively demonstrated during this amphibious operation in November 2001, when Bravo Company, 1st LAR battalion landed via landing craft, air cushion (LCACs) in Pasni, Pakistan and staged two high mobility multipurpose wheeled vehicles (HMMWVs) and 16 LAVs for strategic airlift via C-17 aircraft into FOB Rhino. The C-17s could carry six LAVs per aircraft, which were embarked and flown from the commercial airport in Pasni, Pakistan directly into FOB Rhino. The location of FOB Rhino, 90 miles south from Kandahar, was identified as key terrain to conduct interdiction operations on LOCs from Lashkar Gah to Kandahar via Highway 1. On 14 December 2001, Bravo Company, 1st LAR battalion, in addition to Task Force Sledgehammer, which contributed six additional LAVs and 14 TOW vehicles from the 26th MEU, led the mobile assault convoy that secured the Kandahar International Airport as a lodgment for follow-on forces. On 1 January 2002, as part of the 26th MEU's raid against Maiwand's military complex, LAR served as the raid force's security element in a force consisting of eight HMMWVs and 15 LAVs. The contribution of LAR to the initial actions in support of Operation ENDURING FREEDOM were possible due to the versatility, mobility, command and control, and logistical capabilities of the units, which made it possible for them to participate in a wide variety of operations. The involvement of LAR in Task Force-58's 350-mile amphibious assault and subsequent operations ashore represented the first major operation by US armored vehicles in support of the Global War on Terrorism (GWOT). Additional equipment such as bar-armor or D-kits negate the vehicles' ability to use strategic lift due to the increase in size, lack of ground clearance, or weight restraints.

LANDING FORCE TASK ORGANIZATION

The landing force is task-organized and formed according to the specific type of amphibious operation to be performed and its   operational requirements. Certain amphibious operations, such as raids and assaults, seek to exploit the element of surprise and capitalize on threat weaknesses by projecting and applying combat power precisely at the most advantageous location and time. Because of its small size, lightweight, and tactical flexibility, LAR units maximize the relative combat power for space on surface connectors and provide tactical options when amphibious operations require a unit capable of speed, focus, and rapid maneuver to fight for information and exploit opportunity off the beach. Since LAR units require surface connectors to reach the shore, an LAR unit contributes most to subsequent operations ashore after the initial landing. An LAR units' loss of capability must be accounted for when it is deployed as a company (-) for MEUs. To increase its self-sustaining abilities at the company level or below, enablers from the MEU, MEB, etc., must be accounted for in the off-load planning to project long-range power.

Amphibious landing forces often have limited mobility and direct fire support to engage and destroy threat forces during amphibious assault and in subsequent operations ashore. Once ashore, LAR units can counter threat forces maneuvering to contain the amphibious entry.

MANEUVER DURING AMPHIBIOUS ASSAULTS

An LAR unit disembarked ashore early in an amphibious operation provides a versatile maneuver element that supports gaining and maintaining a foothold, which is critical in an amphibious assault. By employing LAR units ashore, the MAGTF gains the ability to fight for information and win counterreconnaissance engagements during the initial phases of operations. By denying a threat the ability to dislodge the landing force's foothold, LAR units enable the landing force's ability to gain and retain tactical initiative and generate operational flexibility while taking advantage of force dispositions and weaknesses. Maneuver warfare in an amphibious environment requires forces that are tactically and strategically mobile to be present, make forcible entry, and defeat defending forces. In terrain that would be restrictive to other units, LAR units can project combat power from the shore as an organically self-supportive combined arms element. Light armored reconnaissance units' capabilities in mobility, combined arms, command and control, and logistics provide MAGTF planners tactical flexibility and increased options for tactical missions during subsequent operations ashore.

ENEMY LONG-RANGE WEAPONS THAT DENY ACCESS

During amphibious operations in an antiaccess or area denial environment, LAR units can be employed to enhance the success of the landing by either conducting ISR, striking directly at operational objectives, exploiting critical vulnerabilities, or executing a feint to divert threat forces away from landing sites. Light armored reconnaissance can form part of a separate landing group to participate in pre-assault operations, subsidiary landings, feints, demonstrations, or raids. It can support the isolation of the landing area to deny the threat's ability to interrupt landing force elements phasing ashore, reconnoiter coastal and inland defenses, deceive the threat, neutralize or destroy targets protected from attack by other means, and deny area usage to the threat. It can participate in the main landing, moving ashore in scheduled waves to protect an open flank, or remain on-call to exploit success. For example, an LAR unit might land on an unopposed beach and conduct reconnaissance and movement to contact to locate and destroy threat air defense positions, thereby enabling the landing force to use air assault forces to attack a nearby critical objective. Finally, an LAR unit can serve as part of the covering force during an amphibious withdrawal, providing both static and mobile defense for the landing force as it is recovered back aboard amphibious shipping.

CONTRIBUTIONS TO SEA CONTROL AND SEA DENIAL

As a highly mobile, self-sustaining ISR platform, LAR units can increase the number of sensors and shooters while complicating adversary targeting. In addition, LAR units can easily deploy to seize key maritime terrain to improve the security of sea lines of communications and chokepoints or deny their use to the enemy.

SEIZING AND SECURING LODGMENT

Subsequent operations demand that the landing force rapidly seize and hold airheads and beachheads to establish and expand the lodgment for the phased flow of follow-on forces during amphibious operations. A lodgment is "a designated area in a hostile or potentially hostile operational area that, when seized and held, makes the continuous landing of troops and materiel possible, and provides maneuver space for subsequent operations" (*DoD Dictionary*). A lodgment can be an airhead, a beachhead, or a combination thereof. Whether independently or in conjunction with air assault elements, LAR units employed to secure a lodgment can be rapidly directed to secure airfields and landing strips, simultaneously denying the threat the ability to surge reinforcements to contain a forcible entry while setting conditions for the buildup of friendly forces at airheads. Additionally, LAR units can push far forward from the shore to delay the advance of threat forward echelons tasked to contain or disrupt the landing force's lodgment. This capability adds protection for the main assault force's freedom of maneuver while developing the forward situation in the battlespace.

AMPHIBIOUS PLANNING CONSIDERATIONS

Planning for the conduct of amphibious operations generally follows the MCPP. When required, the MCPP can be adapted for time critical mission execution and compressed planning timelines using the rapid response planning process. Planning for amphibious operations must be conducted in conjunction with Navy planners and control agencies of the ATF. All planning must be detailed, concurrent, and parallel. It is imperative that the LAR battalion staff and company leaders develop a habitual relationship with Navy planners to ensure effective planning and efficient execution.

Amphibious Planning Phases

The execution of amphibious operations generally follows the sequential phases of planning, embarkation, rehearsal, movement, and action (PERMA). The PERMA sequence is conducted by forces not already forward deployed aboard naval shipping based on an assigned mission. The sequence can vary when amphibious forces are already forward deployed (such as a MEU), or when subsequently tasked following the termination of a previous amphibious operation. This alternate sequence is embarkation, movement, planning, rehearsal, and action. The embarkation, movement, planning, rehearsal, and action sequence is used to make best use of available space on shipping without a specific mission being assigned; it is usually conducted by forces already forward deployed aboard naval shipping. It is important to note that neither PERMA nor embarkation, movement, planning, rehearsal, and action are conducted exclusively. In practice, some combination of the two methods takes place. Refer to JP 3-02, for more details about planning amphibious operations. For more detail regarding ship-to-shore movement planning and considerations, refer to MCTP 13-10E, *Ship-to-Shore Movement*. A brief depiction of the phases of amphibious operations is provided in Table 8-1.

Table 8-1. Amphibious Operations Planning Phases.

Phase	Remarks
Planning	A continuous process from receipt of the order initiating the amphibious operation to terminate the operation. Results in— • Landing force concept of operations ashore. • Landing plan. • Loading plan. • Amphibious force organization.
Embarkation	Period in which the landing force is embarked aboard shipping. For MEB- or MEF-sized operations, landing force can be organized into assault echelons and assault follow-on echelons.
Rehearsal	Typically conducted during the movement phase to test the feasibility and adequacy of the landing plan, the timing of detailed operations, the combat readiness of participating forces, and to test communications.
Movement	Period in which the amphibious force departs the embarkation and rehearsal area and proceeds to the amphibious objective area. Can be organized into movement groups. Operations during movement are— • Supporting operations. • Advance force operations.
Assault	Begins when enough of the amphibious force is in position within the landing area to initiate the ship-to-shore movement and terminates with mission accomplishment. This phase includes— • Supporting arms. • Ship-to-shore movement. • Logistics and CSS. • Patient movement.

Command and Control Planning

Planning effective command and control of LAR units during amphibious operations can become complicated by the nature of the operational environment, the transition of command and control and operations ashore, the integration of disparate forces with different but supporting tasks, and the coordination required in optimizing supporting forces. Detailed planning and clear command relationships are especially important for LAR units during amphibious operations. The LAR units might initially belong to task-organized units to complete specific tactical tasks during the initial phases or steps of an amphibious operation. Follow-on tactical tasks require the adjustment of command relationships. This is particularly important for continued logistical sustainment of LAR operations. For instance, if an LAR unit is placed under the tactical control of a RLT for the seizure of initial lodgment objectives, passage of control might be required to revert to another element of the MAGTF in support of other tactical tasks or objectives after the lodgment is seized.

Control Organizations

During the ship-to-shore movement, the commander, amphibious task force (CATF), in concert with the commander, landing force (CLF), will be in overall command of all movements of the landing force (i.e., both surface and aviation). The CATF is supported in their responsibilities by several command and control organizations. It can be beneficial for LAR to place LNOs as needed within these organizations to maintain awareness until command and control is transitioned ashore. Some of these Navy control organizations afloat are described below.

Navy Control Group. The Navy Control Group includes the combat cargo officer and the primary control officers, who establish loading priorities and operations within the well decks. Additionally, they keep the CATF, CLF, and other designated commanders and agencies informed of the progress of the surface movements, including the landing of waves ashore. The combat cargo officer is particularly important to the LAR unit in ensuring that load plans within the ship are staged within the well deck in a manner that provides for the efficient and timely offload as per the landing plan. Last minute changes in offload plans can dramatically affect the timing of the offload if the combat cargo officer is required to reposition equipment.

Navy Tactical Air Control Center. The Navy tactical air control center (also referred to as Navy TACC) is responsible for the control and coordination of aircraft and the airspace management of all air ship-to-shore aviation, under the oversight of the tactical air officer. The Navy tactical air control center is also responsible for the monitoring and promulgation of air defense threat conditions and warnings that affect the safety of flight of the landing force's aircraft.

Tactical-Logistical Group. The tactical-logistical (TACLOG) group is a temporary agency composed of landing force personnel that advises Navy control organizations of landing force requirements during ship-to-shore movement to assist in the support and movement of the landing force ashore. The TACLOG group is the central source of information for the CLF regarding the status of landing force units transitioning ashore. The TACLOG group provides the link between the landing force support party, the landing force operations center (LFOC), and other Navy control organizations to monitor and advise on the status of the offload.

Landing Force Operations Center. The LFOC is a facility aboard an amphibious ship optimized for command and control by the landing force headquarters. The LFOC is usually organized to support the MAGTF's command element. The LAR unit typically posts LNOs in the LFOC if required to assist with decision making, situational awareness, and to monitor operations. If not located in the LFOC for landing operations, the LAR battalion commander maintains voice connectivity with the LFOC through the battalion's LNOs (typically the battalion S-3A). Once established ashore, the battalion command group maintains connectivity with subordinate units and HHQ through tactical communications and the control ship assigned to coordinate the battalion's landing.

Supporting Arms Coordination Center. The supporting arms coordination center is under the supervision of the supporting arms coordinator, who is the direct representative of the CATF for matters related to supporting arms coordination. Requests for fire support from the battalion's units ashore are coordinated by landing force representatives within the supporting arms coordination center to ensure continuity of support and unity of effort.

Surveillance and Reconnaissance Coordination Center. The surveillance and reconnaissance coordination center (SARCC) is a single location consisting of centralized communications facilities and personnel necessary for the coordination of all forms of intelligence and reconnaissance support. A SARCC exists from the MAGTF command element to battalion levels. The number of personnel and amount of equipment varies with the level of command and responsibility, the size and complexity of the forces involved, the degree of planning and coordination required, and the desires of the commander. Supporting intelligence and reconnaissance units provide representatives and equipment to conduct coordination, targeting,

and communications functions for their respective supporting assets as required. Liaison cells are composed of ground reconnaissance personnel sent by their unit to the MAGTF SARCC or to another supported unit's SARCC. The establishment and maintenance of this liaison function is to ensure the proper use of reconnaissance assets and products. Light armored reconnaissance units provide liaison personnel to the unit(s) they are supporting. For additional information about the SARCC, refer to MCRP 2-10A.6, *Ground Reconnaissance Operations*.

Logistical Planning

Light armored vehicles are strategically mobile. In addition to their ability to be embarked aboard amphibious shipping, they can be transported in support of amphibious operations by strategic airlift as an assault follow-on echelon or on forward-deployed maritime prepositioning ship squadrons. See Table 8-2 for the number of LAV-25s that can fit on typical transporters. Table 8-3 provides LAV-MRV dimensions. In amphibious planning, the S-4 assists the S-3 in the development of the serial assignment table. The S-3 is responsible for developing the landing sequence table in coordination with MAGTF staff and other Navy control elements aboard amphibious shipping. Additional information regarding LAR battalion logistical matters can be found in Chapter 10. For more detailed information about the embarkation phase, refer to JP 3-02 and MCTP 13-10C, *Unit Embarkation*.

Table 8-2. Light Armored Vehicles Lighterage and Weight Capacities.

Transporter	LAV-A2 (15 tons)
LCAC	4*
LCU	6
LCM-8	1
Rail Car	2-4
Lowboy	1-2
CH-53E	1
C-17	4**

NOTES
*Landing craft, air cushions can carry four LAV-25s; however, during routine maneuvers only three LAV-25s are carried for ship-to-shore movement to keep the integrity of the LCAC frame. These vehicles re loaded with fuel tanks three quarters full. The LAV-25 cannot be offloaded from a LCAC with the D-kit
(i.e., underbody blast protection) installed. The reason for this is that the D-kit will damage the ramp of the LCAC as the LAV exits the craft.
**Light armored vehicles aboard C-17s must contain no more than a quarter tank of fuel.

Table 8-3. Light Armored Vehicle-Mission Role Variants Dimensions.

Variant	Length (inches)	Width (inches)	Height (inches)
LAV-25	253	99	101
LAV-L	255	99	109
LAV-R	291/262*	99	109
LAV-ATM	253	99	139/123**
LAV-M	253	99	85
LAV-C2	259	99	110
LAV-MEWSS	261	111/104	192/109

NOTES
* Length is with the boom forward
** Reduced height is achieved with the LAV-ATM's hammerhead configured in the low-stow position.

Surface Connectors

Surface connectors provide the necessary lift to transport personnel, vehicles, and other equipment required for operations and sustainment to shore There are only two surface connectors capable of transporting LAR units (including LAVs) to shore—the LCAC and the land craft, utility (LCU).

Landing Craft, Air Cushion. Due to its speed and short turnaround time, the LCAC is the optimal transport for amphibious operations when faster force establishment ashore is critical. One LCAC can carry three LAVs during normal operations, or four LAVs in extremis. Additionally, operations with cargo between 120,000 and 140,000 pounds require a waiver, thereby allowing for four LAVs. In the four-LAV configuration, vehicles are loaded with three-quarter full tanks of fuel. The LAVs cannot be offloaded from a LCAC with the underbody blast protection kit (i.e., D-kit) installed.

Landing Craft, Utility. Although much slower, the LCU is a sufficient surface connector due to its carrying capacity. Ocean and beach conditions can hinder the ability to get ashore based on the tide and the composition of the beach floor. One LCU can carry up to six LAVs.

CHAPTER 9.
IRREGULAR WARFARE

The operational environment is characterized by increasing instability and conflict, poverty, competition for resources, urbanization, over-population, and extremism. Irregular warfare (IW) is defined as "a struggle among state or non-state actors to influence populations and affect legitimacy" (*DoD Dictionary*). Light armored reconnaissance units have a history of involvement in IW and are prepared for continued involvement due to the readiness provided by forward-deployed, sea-based forces. Light armored reconnaissance battalions participated in Operation JUST CAUSE in Panama in 1990, Operation RESTORE HOPE in Somalia in 1992, Operation JOINT GUARDIAN in Kosovo in 1999, and Operation ENDURING FREEDOM—Afghanistan and Operation IRAQI FREEDOM from 2001 to 2014; all of which fall within the spectrum of IW. Given that 70 percent of historical Marine Corps operations and activities are associated with IW, the MAGTF will continue to employ the LAR battalion in complex operational environments across the competition continuum.

STABILITY ACTIONS

Stabilization is a core military mission conducted outside the continental United States in coordination with other US Government components to maintain or re-establish a safe and secure environment, provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief. Stabilization activities capitalize on coordination, cooperation, and integration among military and non-military organizations. These complementary civil-military efforts aim to strengthen legitimate governance, restore or maintain the rule of law, support economic and infrastructure development, and foster a sense of national unity that enables the HN government to conduct civil administration.

Stabilization activities are often viewed as difficult or even unattainable due to the perceived intangible tactical results. However, this perception is flawed. Throughout history, from the Banana Wars to Operation ENDURING FREEDOM, Marines have conducted stabilization activities with great success. Like offensive and defensive operations, stability can easily be understood with the simple planning, execution, and assessment model.

Stabilization activities are not limited to post-conflict applications, nor to counterinsurgency (COIN) operations, and can occur at any point in the competition continuum. In complex operational environments, military dominance alone can be insufficient to accomplish the mission. Stabilization tasks and activities are often required to achieve the desired end state.

Fundamentally, stabilization activities are not a kind of operation or isolated skill set. Instead, they are the very actions that allow the Marine Corps to effectively address and affect mission-relevant population dynamics across mission types—from crisis response to major

combat operations. Stability is the desired end state, and stabilization is the aggregation of activities to restore the functions of the legitimate authorities. For more information on stability actions, see MCWP 3-03, *Stability Operations*.

EMPLOYMENT CAPABILITIES

Light armored reconnaissance forces provide the supported commanders a flexible force with exceptional mobility, command and control, precise and discriminating firepower, and protection for employment in a wide range of mission profiles. Light armored reconnaissance units are well suited to support operations in IW environments because they are trained, equipped, and organized to command and control assets and acquire the information needed to solve complex problems found in the IW environment. Light armored reconnaissance units provide the supported commander with options to meet operational requirements during stability, security, transition, and reconstruction (SSTR) operations and during counter insurgency operations.

Reconnaissance Support

Light armored reconnaissance units conduct reconnaissance to support HHQ lines of operation (LOOs) toward the achievement of stability goals. These LOOs can focus on specific aspects of the local situation, such as the activities of host-nation security forces, local development projects, and restoration of essential services. This often involves reconnaissance to gather information on the status of infrastructure in the AO, the state of civil control, local atmospherics, and other information typical of an IW environment. Light armored reconnaissance units can conduct much of this reconnaissance in support of SSTR. These actions complement concurrent offensive and defensive operations, or can be conducted separately, based on the character of the dominant major operation. Specified tasks can be generated to gather information on the security of local populace or assist in defining the irregular threat. This reconnaissance is planned and executed to support accomplishing the primary stabilization activities.

Assumption of Battlespace

Assigning an LAR battalion battlespace increases the GCE's area of influence, but it can limit the LAR units' strengths or capabilities. Light armored reconnaissance units are best suited to conduct operations in areas that cannot be adequately addressed by infantry units with limited operational reach. If assigning battlespace to an LAR unit, the GCE should consider assigning it control of a larger area with sparser population centers on favorable terrain for vehicle operations. The assignment of battlespace can also require the augmentation of the LAR battalion's task organization with enablers and supporting attachments to execute SSTR tasks. These can be determined by analyzing the METT-T considerations, civil considerations, and other relevant factors. One methodology to analyze civil considerations is to examine the areas, structures, capabilities, organizations, people, and events (ASCOPE). An LAR battalion that is assigned battlespace possesses less capability to provide a mobile operational reserve that could be surged to support parallel operations.

Economy of Force

The GCE often employs LAR units during IW by using the principle of economy of force. Battlespace in IW often requires units to be widely distributed and beyond mutually supporting range and in the conduct of non-linear activities and operations, often in small contiguous operational areas. The GCE's assumption of extensive AOs requires an optimization of organic combat power according to the assessment of the threat and ASCOPE. The extensive operational range, speed, and logistical strengths of LAR provides the GCE the capability to rapidly surge LAR units to reinforce other operations within the AO or to act as an independent element to rapidly conduct operations outside the close battlespace to extend operations within the area of influence.

Stability, Security, Transition, and Reconstruction Operations

Light armored reconnaissance units can effectively support SSTR operations as the HN seeks to counter the threat of insurgency and establish legitimacy. Light armored reconnaissance can provide the GCE a variety of options when conducting stabilization activities by virtue of their extensive operational reach, dismounted and mounted organizational versatility, and robust organic logistical capabilities. Additionally, LAR units can operate across several LOOs applied to SSTR operations. During stabilization activities, LAR can assist special operations forces in foreign internal defense at the tactical level by providing mentoring and training to the HN mounted and dismounted infantry. Because of LAR's vehicular composition, LAR units are ideal at developing and enhancing HN security capability for infantry and vehicle integration and armored reconnaissance and security tasks. When called to support a security sector reform mission for a HN, the LAR unit's ability to influence far-reaching, non-permissive rural areas makes it an optimal unit to support HN security efforts. The organic logistics capability of LAR units and the mobility of the LAV enable the GCE to expand influence. By developing security forces outside of key population centers, this allows the HN government to expand its influence into sectors not fully under government rule of law. The organic firepower of LAR units is ideally suited for observing and securing expansive spaces along national borders. In environments that are not prioritized for government influence in security sector reform operations, LAR can rapidly project persistent combat power and provide security for the HN, Department of State, and other US Government organizations acting in support of restructure and reform.

Marine Corps history has several examples—even before Operations ENDURING FREEDOM and IRAQI FREEDOM—of LAR units that were successfully employed in support of operations similar to SSTR. The GCE often relied on LAR to shape the environment during reconnaissance missions while in support of peacekeeping operations. The deployment of the 2d and 3d Light Armored Infantry Battalions to Somalia during Operation RESTORE HOPE, and of Company D, 2d LAR Battalion's deployment to Kosovo in 1999 during Operation JOINT GUARDIAN, provide examples of how effective LAR units are in an IW environment. In both Somalia and Kosovo, LAR units disrupted belligerent activities between two factions through rapid response and engagement. These LAR units prevented belligerent activity by controlling key LOCs and by providing a persistent presence in troubled areas. Additionally, they accomplished other tactical tasks, such as conducting random vehicle checkpoints to disrupt belligerent freedom of movement or functioning as a QRF in support of other units within the GCE.

Counterinsurgency Operations

Light armored reconnaissance units give the GCE flexibility in the projection of combat power in a COIN environment. Theorists in guerrilla warfare such as Mao Tse-Tung and Truong Chinh, as well as Al Qaida's doctrine for insurgency, have common themes that LAR is well-suited to counter. These themes include striking the opponent where it is weak, such as in rear areas; attacking extended LOCs; or attacking remote and isolated outposts. These theorists further advocate the need for freedom of movement, safe havens, and means of logistical resupply in areas that the opponent cannot influence. It is in these areas that LAR units are most effective. The LAV family of vehicles are designed for high intensity combat, and special attention must be given to the employment of light armor in a COIN environment. Where the threat relies on irregular tactics such as IEDs, the COIN environment requires LAR battalions to adopt additional protective measures in the form of D-kits and mine rollers. Additionally, both nonlethal and lethal capabilities must be employed to achieve desired effects.

Light armored reconnaissance units conventionally operate as mounted units with scouts and can support COIN tasks located on the periphery of population centers. In such environments, LAR units employ TTP that maximize the capabilities of the LAVs while overcoming their limitations. LAR units tactically integrate LAVs and scouts while conducting security force assistance, and civil military operations, in order to achieve stability in COIN operations. An LAR unit's mobility and operational reach provide the GCE a valuable capability when conducting COIN, since it can influence rural areas over extended distances where the GCE presence is limited by distance. Its methods of conducting reconnaissance operations remain intact regardless of whether an LAR unit is participating in traditional warfare or if it is countering irregular threats.

Tactical tasks such as screening, interdiction, and disruption are common in COIN. Light armored reconnaissance units can neutralize insurgent LOCs or deny freedom of movement through disruption and interdiction. As the GCE expands security zones, insurgents often displace into areas that are outside the GCE's area of influence. It is in these types of areas where LAR units are most effective. During COIN operations, LAR units can also protect key LOCs that are susceptible to easy disruption by insurgent activity. Additionally, LAR units can be used with great effectiveness in conducting targeted raids over extended distances. When the GCE conducts offensive operations in a COIN environment, LAR units can be used to weight the GCE's main effort. They often function as supporting elements tasked with isolating objectives, conducting pursuits or movements to contact, or as QRFs.

HISTORICAL VIGNETTES OF LIGHT ARMORED RECONNAISSANCE IN IRREGULAR WARFARE

Operations NIMROD DANCER, JUST CAUSE, and PROMOTE LIBERTY: 1989-1990

The 2d Light Armored Infantry (2d LAI) Battalion deployed sequentially four companies to Panama between May 1989 and June 1990 as part of Marine Forces Panama to protect American lives and property during Operation NIMROD DANCER and for the intervention to remove General Noriega from power during Operation JUST CAUSE. Additionally, 2d LAI participated in Operation PROMOTE LIBERTY as a nation building, civic action mission to restore democracy to Panama. During these operations, LAI executed a variety of missions ranging from nation building to combat operations in an irregular warfare environment. During Operation NIMROD DANCER, initial missions consisted of a convoy escort covering US Army units, area and route reconnaissance, mounted and dismounted security patrolling, and reaction force missions. The LAR company participated in exercises aimed to provide a show of force, and on several occasions swimming the Panama Canal to demonstrate operational maneuverability in an environment where Panamanian Defense Force was routinely attempting to impede movement of US forces. Also, LAI conducted reconnaissance and security patrols and inserted Surveillance and Target Acquisition teams. An advantage of wheeled vehicles over tracks was captured by Captain John S. Dunn, Company Commander, Company B, 2d LAI when he wrote: "The US Army possessed M113 armored personnel carriers but was prevented from conducting vehicle reconnaissance through towns due to possible road damage caused by tracks." After removing General Noriega from power and the end of Operation JUST CAUSE, Colonel Charles E. Richardson wrote in an after action report the value added by the LAV: "The Light Armored Vehicles' firepower, mobility, and armor coupled with the Fleet Antiterrorist Security Team's highly trained Close Quarters Combat Team (CQBT) provided a versatile and potent force, particularly for offensive operations and as a quick reaction force." During Operation PROMOTE LIBERTY, LAI conducted stability operations to assist in the restoration of democracy in a "post-Noriega" Panama and demonstrated the capability of LAI units to conduct stability operations as they maintained civil order and reinforced government authority. In thirteen months, LAI participated in three major operations and numerous smaller ones. The inherent mobility of the LAV enabled LAI units to traverse the country with ease, maintain freedom of movement for US forces, provide security for convoys, conduct reconnaissance over large areas, move quickly to reinforce US forces and facilities, and act in support of civic actions forces over much of the country. LAI was often employed using the principle of economy of force to reduce emergent roadblocks, raid communication facilities, and provide security while the bulk of US troops were employed elsewhere in the AO. The firepower organic to the LAV was sufficient to deter or defeat their opposition.

Operation RESTORE HOPE: 1992-1993

During Operation RESTORE HOPE, from December 1992 to April 1993, LAR operations in Somalia offer an example of a battlefield framework with noncontiguous areas that required LAR employment by the Unified TAS Force to extend reach to the deep area of the countryside. Operation RESTORE HOPE proved an ideal environment for LAR to be employed in support of convoy operations. The LAVs came from MEUs and a fly-in-company from 3d LAI comprised of two companies and a HQ element joined LAVs off of maritime pre-positioned ships. Once ashore, the range and mobility of LAVs enabled the route reconnaissance and security of the line of communication between Mogadishu, Baidoa, Bardera, and Kismayo. The speed of the LAV supported interdiction of threat vehicles and enabled the search of civilian vehicles during convoy operations without the loss of momentum and operational tempo. The flexibility of the vehicles was proven in the variety of missions they performed, ranging from reconnaissance and security to show of force, disarmament, support for civic action, MOUT operations, and as a raid and reaction force. This combination of flexible options was a good match for the operation's irregular warfare environment. Ultimately, 4,000 metric tons of grain was delivered to outlying areas and 400 day and night security patrols were conducted in support of the operation.

Light Armored Reconnaissance Operations in the Global War on Terrorism: 2001-2012

During the GWOT, LAR operations demonstrated the LAR battalion's ability to adjust from conventional to irregular warfare. Using LAR battalions as battlespace owners in Operations IRAQI FREEDOM and ENDURING FREEDOM significantly changed how LAR was employed, as the GCE sought to balance the benefits of giving LAR battlespace while retaining its capability to serve as an operational reserve. At the beginning of the GWOT, operations were typically conventional. During Operation IRAQI FREEDOM, the 1st MARDIV chose an LAR-based task force, Task Force Tripoli, to capture the last remaining holdout for Saddam Hussein's regime, the northern city of Tikrit. This LAR-based force had the speed, sustainability, and lethality required for the long-range mission that stretched the division's supply lines an additional 200 km to the north, ultimately extending the division's LOC to a historic 800 km from the ports of Kuwait. As the GWOT evolved into irregular warfare, LAR battalions were assigned expansive battlespaces up to 22,000 square kilometers because of their long operational reach, robust organic logistical capabilities, and ability to operate as a dismounted infantry or a vehicle-based unit.

During Operation IRAQI FREEDOM, LAR conducted security and stability operations in the Al Anbar province of western Iraq that called for patrolling LOCs that ran to the borders of Iraq to prevent the infiltration of insurgents and equipment. While conducting partnering, interdiction patrolling, and maintaining security on the LOCs within the assigned battlespace, LAR battalions provided forces to support RCT missions that called for LAR to surge to operations intended to defeat insurgent forces.
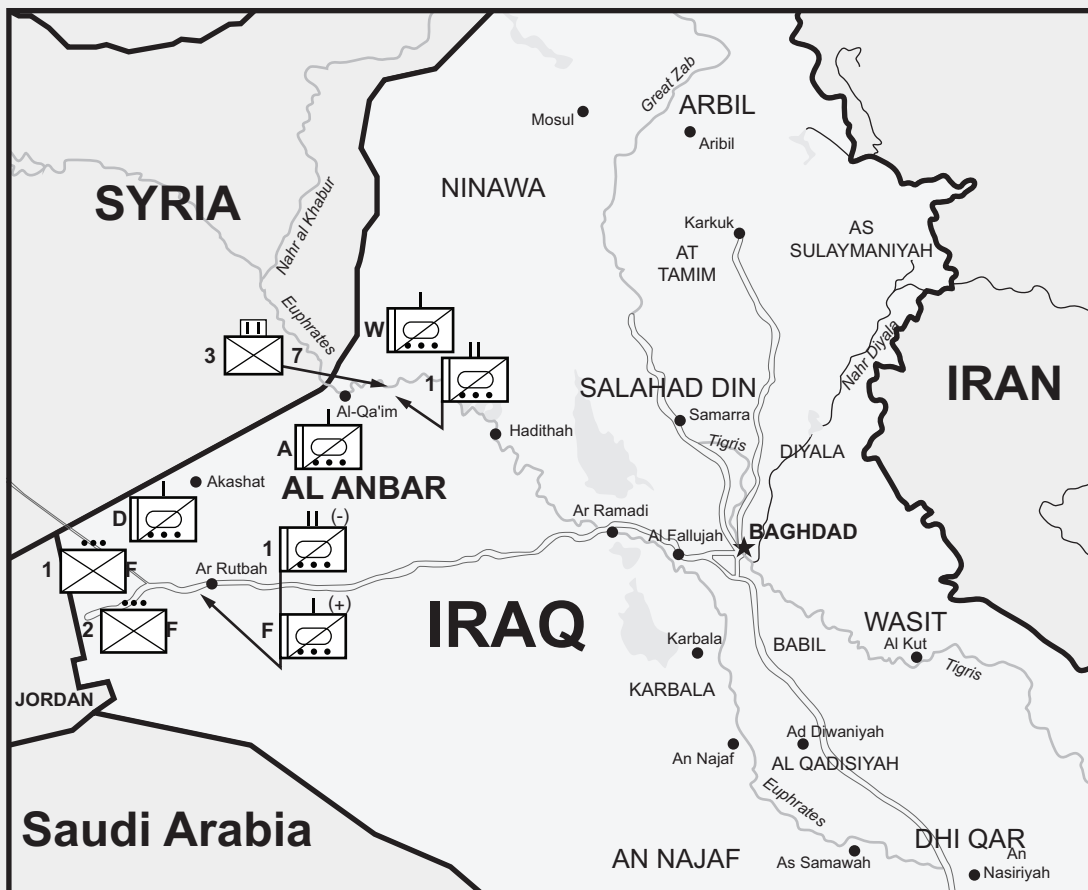
During Operation ENDURING FREEDOM in 2010, an LAR battalion conducted a 150 km night movement to seize Khan Neshin and took battlespace over 14,000 square kilometers in the Khan Neshin district. Months later, the battalion executed Operation STEEL DAWN, a long-distance raid on the southern border of Afghanistan at Barham Chah that achieved operational success in restricting threat weapons, IED components, and drugs throughout Helmand providence. This operation is an example of an LAR battalion's ability to mass combat power, execute a conventional operation, and return to operations typically associated with COIN. Following Operation STEEL DAWN, LAR units conducted partnered operations to establish the Government of the Islamic Republic of Afghanistan's legitimacy, while conducting extensive interdiction operations north and south of the Helmand River. Despite IED threats, LAR maintained relevancy in the IW environment in Iraq and Afghanistan by adjusting vehicular design and improving survivability.

In both Iraq and Afghanistan, LAR units successfully conducted conventional, COIN, and stability operations within the IW environment in support of the GCE. The LAR battalions' ability to transition from conventional operations to irregular operations while in support of the GWOT received accolades from the highest levels of US military leadership. In March 2009, the Commander for United States Central Command, General David H. Petraeus, submitted an action memo to the Chairman of the Joint Chiefs of Staff and Secretary of Defense, praising the LAR units' capability. The memo highlighted LAR unit's effectiveness regarding operations conducted in Iraq and Afghanistan stating it provided commanders with a "flexible force, with exceptional mobility, flexible C2, precise and discriminating firepower, and adequate protection for employment in a wide range of mission profiles," validating LAR roles during GWOT and future IW conflicts.

For prescriptive TTP and information on operations within IW, refer to JP 3-24 *Counterinsurgency*; JP 3-57, *Civil-Military Operations*; Joint Operating Concept for Irregular Warfare: Countering Irregular Threats; and the Marine Corps and Special Operations Command Multi-Service Concept for Irregular Warfare.

CHAPTER 10.
LOGISTICS

Logistics is "planning and executing the movement and support of forces" (*DoD Dictionary*). It includes those aspects of military operations that deal with design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; movement, evacuation, and hospitalization of personnel; acquisition or construction, maintenance, operation, and disposition of facilities; and acquisition or furnishing of services. At the tactical level, logistics is CSS. The LAR battalion S-4 officer is primarily responsible for the planning of all functional areas of logistics in support of the battalion's operations. As the battalion's principal planner and coordinator of sustainment, the S-4 conducts continual planning with the battalion staff, subordinate units, the supported GCE G-4, and supporting LCE units. Continual and concurrent logistical planning across all staffs is essential to the development of effective sustainment planning.

The LAR battalion S-4 must continually analyze and balance these principles to evaluate logistical supportability and responsiveness to ensure adequate sustainment of the battalion's operations. For more information about tactical-level logistics, refer to MCTP 3-40B, *Tactical-Level Logistics*.

BATTALION ORGANIC LOGISTICAL CAPABILITIES

The LAR battalion is capable of self-administration, organic use of unit-level supply support, food service support, and medical services, which provide routine and emergency medical care. It is also responsible for all field-level preventive and corrective maintenance on all organic equipment to maintain its operational readiness. The battalion possesses sufficient motor transportation assets to transport all organic personnel, equipment, and short-term sustainment requirements. The battalion possesses sufficient organic capacity to sustain operations for several days, but requires extensive CSS for sustained operations, particularly Classes I, III, and V. The LAR battalion's robust organic logistics capabilities are what enables it to extend its operational duration and reach. These capabilities provide the LAR battalion commander the flexibility to execute tactical tasks at a greater distance from the supported commander's main body and supporting LCE units. Tactical-level logistics, or CSS, is categorized in six functional areas:

- Supply.
- Maintenance.
- Transportation.
- General engineering.
- Health services.
- Services.

Supply

The LAR battalion supply section can provide organic capabilities using unit-level supply support for the battalion. The battalion uses a combination of supply techniques to push and pull support to the subordinate companies through the establishment of repair and replenishment points (RRPs). Resupply actions can be either preplanned (i.e., scheduled) during operations or effected by rapid request using designated formats found in the TACSOP of the battalion. In addition, the LAR battalion, per their TACSOP, conducts similar techniques with the supported GCE's logistics section.

Maintenance and Recovery

The battalion is capable of organizational field-level maintenance on all equipment organic to the battalion, except for laser equipment, as well as intermediate field-level maintenance on the LAV and its unique weapons systems. The battalion has a limited intermediate maintenance capability on electro-optical ordnance, night vision, and communications-electronic equipment. Ordnance maintenance is focused on organizational maintenance at the company level and on intermediate maintenance at the battalion level.

The LAR battalion conducts vehicle recovery using the LAV-R and LAV-L, which have reinforced tow pintles and are the only two LAV variants capable of towing. Each LAR company has one LAV-R and four LAV-Ls. The battalion maintenance platoon possesses three LAV-R and three LAV-L variants. These vehicles are typically task-organized into two recovery teams with one LAV-R and one LAV-L each. These recovery teams are capable of independent recovery operations or operating as part of the battalion's combat trains. In coordination with the appropriate LCE unit, the LAR battalion designates maintenance collection points, at which to transfer responsibility of inoperable equipment to be transported and evacuated to higher echelon repair sites or facilities. Other organic recovery vehicle options include the medium tactical vehicle replacement (MTVR) wrecker variant and the logistics vehicle system replacement (LVSR) wrecker variant, which are also capable of towing the LAV. The LVSR system has a heavy equipment transport trailer (i.e., "low boy") that can be used for LAV recovery. Equipment that is assessed to be beyond the possibility of repair or that cannot be safely evacuated can be selected for destruction in place as a last resort. Specific details for performing a destruction in place are usually provided in the OPORD or through the G-4/S-4 section.

Transportation

The logistics officer task-organizes transportation assets to meet the battalion's mission requirements. Forward positioned combat trains can be in direct support or attached to the maneuver elements, as appropriate for the mission. The LAR battalion also possess the flatrack refueling capability (FRC), which is LVSR-transportable and consists of a 2,500–3,000-gallon tank, an on-board pump, a filter assembly and hoses and equipment. Proper coordination with the various H&S company staff sections ensures the appropriate distribution of capabilities between the battalion's combat trains and the field train.

General Engineering

The LAR battalion has very limited engineering capabilities and relies on support from the combat engineer battalion or the LCE for requirements above its organic capabilities. Simultaneously, by its nature as a highly mobile unit, the battalion's engineering requirements are often very limited. Because of the battalion's limited engineering resources, identifying, sourcing

(or weighing and accepting risk), and planning for capabilities and tasks from supporting units is critical. Combat engineering is a combat support function and is planned within the S-3. General engineering is a CSS function and is planned by the logistics officer in the S-4. The engineer equipment chief within the battalion maintenance platoon can assist with planning engineering requirements. The LAR battalion is equipped with a tractor rubber-tired articulated steering multi-purpose (also referred to as TRAM), extended boom forklift, bulk fuel and water containers with associated dispensing pumps, ground expedient refueling systems (also referred to as GERS), welding trailers, climate control units, demolition kits, electricians' equipment, and various generator sets to support the battalion's power requirements. These assets significantly enhance the LAR battalion's sustainability, as well as provide limited horizontal construction and obstacle removal capabilities.

Health Services

The BAS provides Level I medical care and is typically collocated near the battalion main. Each LAR company rates 11 Navy corpsmen to provide immediate medical treatment and support. The battalion has 23 total personnel in the medical platoon and the remaining corpsmen are dispersed by the battalion medical officer between the battalion forward and main and the battalion trains, as required.

Casualty Collection. The subordinate LAR companies coordinate casualty collection points (CCPs) with the S-4. The battalion's CCP is typically at the BAS, though it can be collocated with the battalion forward or a combat train while the main is relocating. The battalion notifies the supported HHQ of its CCP grid coordinates to facilitate the responsive evacuation of casualties to higher echelons of care.

Casualty Evacuation. Due to its speed and ability to transport directly to the appropriate level of care, air CASEVAC is the preferred method for urgent casualties. However, routine and some priority casualties might be evacuated via ground to reserve air assets for more urgent requirements. During planning, the logistics officer coordinates with the S-3 to determine the locations of ambulance exchange points (AXPs) for ground CASEVAC in support of the subordinate companies, and with the supported commander for evacuation to higher-level care, if required. The selection of AXPs must consider time and distance factors, the threat situation, and the tactical situation. The AXP is often a natural mid-point between a subordinate unit's CCPs and the supporting combat train and ambulance team. Ambulance exchange points should also support a LZ if casualties worsen in transit and require air CASEVAC to advanced medical care facilities upon arrival at the AXP. The CASEVAC vehicle relays all pertinent information to the ambulance team, which treats the patient in transit. The LAR battalion rates two 4-litter ambulances and two 2-litter ambulances. The 4-litter variant provides a CBRN-resistant patient protection capability.

Casualty Treatment. The BAS requires dedicated tent space, reliable power, and air conditioning to facilitate optimal casualty treatment. These requirements must be coordinated with the S-4 prior to deployments and field training exercises. Each authorized medical allowance list has different capabilities (refer to Table 10-1).

Table 10-1. Battalion Aid Station Allowances.

Type of AMAL	Allowance for LAR Battalion	Primary Function	Patients Supported per AMAL	Days of Support per AMAL	Patients Supported for 30 Days
AMAL 635 BAS Equipment	2	Provides equipment to stand up a BAS.	2 separate aid stations.	N/A	N/A
AMAL 635 BAS Supply	4	Ability to do initial resuscitative and stabilizing care.	50 surgical patients with major wounds.	30 days of aid kits.	200
AMAL 637 PREV MED Maneuver	1	Supplies preventative medicine hospital corpsmen for 30 days.	N/A	30	N/A
AMAL 699 Sick Call	4	Routine sick call support.	300	30	1200
LEGEND **AMAL** authorized medical allowance list **BAS** battalion aid station **PREV MED** preventative medicine **N/A** not applicable					

Casualty Tracking. The S-3 is usually the first to gain details on casualties, and it should notify the battalion surgeon immediately. The battalion surgeon and medical chief then begin to actively track the casualties. Casualty information is then routed through the S-1 and the ALOC to the supported HHQ. The S-1 submits, tracks, and maintains a personnel casualty report for all casualties, updates the duty statuses of wounded and injured personnel, and any other administrative requirements. Typically, a casualty remains with their unit for reporting purposes until otherwise directed by the battalion commander or executive officer. The S-4 submits transportation requests for routine casualties when time allows. Following the evacuation of any casualties to higher echelons of care, casualty tracking is equally facilitated by the S-1 and BAS. The BAS assists with interpreting reports on treatment progress, estimates the potential for return to duty, and estimates recovery timelines. The S-1 must ensure casualties' duty status and location are continually up to date, as they can be moved several times to receive care.

Mortuary Affairs. The BAS, in conjunction with the S-1 and S-4 help the commander maintain responsibility for fatality management and the recovery of human remains. This process begins at the point a Marine or Sailor dies. Formal chains of evacuation and accountability begin at the small-unit level by establishing search and recovery teams and following reporting procedures. These search and recovery teams properly recover and evacuate human remains with care, dignity, and respect to the nearest mortuary affairs collection point. For detailed discussion about fatality management, the recovery of human remains from a unit, and the commander's responsibilities, refer to MCRP 3-40G.3, *Multi-Service Tactics, Techniques, and Procedures Mortuary Affairs in Theaters of Operations*.

Services
The sections below describe the organic services the LAR battalion provides to its personnel.

Administration. The LAR battalion's S-1 section within the H&S company provides all standard administrative functions, to include legal and limited mail services. It typically works with the S-4 in the ALOC.

Religious Services. The battalion's chaplain is responsible for implementing the commander's religious programs. As such, they coordinate with the S-3 and S-4 for security and transportation requirements to conduct religious services according to the commander's guidance.

Field Messing. The LAR battalion rates three tray ration heating systems and a section of seven food service specialists (MOS 3381) within the H&S company. The tray ration heating system is designed to be secured within a high-back HMMWV to provide mobile hot meal preparation and food service capabilities. The section uses HMMWVs to carry the tray ration heating systems, tables, food containers, beverage containers, and other items required to provide hot meals for upwards of 250 personnel per meal. During load planning, the logistics officer and motor transport officer typically allocate one high-back HMMWV per tray ration heating system. Field mess elements can attach to the battalion from LCE units during distributed operations or be centralized with the battalion main. They can also be attached to independently operating combat trains or be centralized with the field train. The S-4 officer task-organizes the field mess section to meet mission requirements in coordination with the mess chief. Hot meals and supplements to combat rations are important for sustained operations, individual nutritional requirements, and morale. However, meal planning must be coordinated with the operations section, and sufficient time must be allocated for food service to prepare and deliver or serve Marines. Failure in doing so can result in wasted rations, and unplanned resupply requirements from within and external to the battalion.

ADMINISTRATIVE AND LOGISTIC OPERATION CENTER

To keep pace with the distance and rapid tempo of LAR operations, the S-4 positions logistics assets as far forward as possible to maintain responsiveness. The dilemma is balancing responsiveness with survivability. As stated in Chapter 2, the ALOC, when established, is the tertiary COC and must maintain situational awareness and communication with the forward and main. Consideration should be given to collocating the ALOC with the HHQ combat service support area.

Operations and Staffing
The following billets and sections are represented within the ALOC (see Chapter 2, Table 2-1 for more information on COC staffing):

- Logistics.
- Administration.
- Intelligence.
- CBRN.
- Operations.

- Communications.
- H&S company staff.

The LAR battalion's COC houses most of the communications and data systems required to control and sustain operations. All logistics movements and locations (including the positioning of logistics trains and recovery teams) are controlled by the COC but are supervised and tasked by the S-4 in the ALOC. The LAVs aligned to the commanding general's battlefield circulation detachment (if not used by the commanding general) will be allocated to the ALOC. The crews of these LAVs will support and provide security for the ALOC.

Configuration

The establishment and configuration of the ALOC depends on METT-T. The ALOC uses a combination of digital and analog displays to track and display information, depending on the operational situation and communications architecture. The following tracking and display boards (i.e., digital or analog) are common in the ALOC:

- COP.
- Unit movement control center (UMCC) mission tracker.
- UMCC available resource tracker.
- Material readiness board.
- Logistics status report (LOGSTAT) tracker.
- Requisition tracker.
- Personnel status tracker.

The ALOC and its UMCC levy the COP to display the trafficability status of MSRs and alternate supply routes in the battalion's AO. The UMCC's mission tracker lists active, ongoing logistics missions, and includes vehicle icons from the available resource tracker to reflect asset allocation to planned and active missions. The available resource tracker, which is overseen by the battalion S-4 chief, gives a visual description of all logistics assets, their location, and their maintenance status. As assets are assigned to a mission, those icons are moved over to the mission tracker board. The materiel readiness board tracks all mission essential equipment and principal end items in the battalion and is overseen by the battalion maintenance management officer. The LOGSTAT tracker displays on-hand, bulk quantities of critical classes of supply at the battalion and subordinate unit-levels, and available quantities from supporting units and elements; it is overseen by the S-4A and the supply section. The requisition tracker displays the estimated time of arrival for shipments of supplies and is overseen by the battalion supply section. The personnel status tracker displays the status of the battalion's units, casualties, detainees, and detainee basic information; it is overseen by the S-1 and updated by routine personnel status reporting and other reports. The number of workstations in the ALOC chiefly depends on the available bandwidth. The distribution and assignment of SIPRNET and NIPRNET workstations varies during theater deployments. The supported commander and the LAR battalion determine whether augmentation by additional communications equipment and personnel is required to sustain effective communications between the units.

Communications
The communications systems described below are used within the ALOC.

Data Systems. Because of the operational reach of the LAR battalion, data systems are the preferred means of communicating the battalion's LOGSTAT and requirements up to the GCE, MAGTF, and out to supporting LCE units. The capabilities of data systems allow more robust information to be quickly communicated and to be visible to all units subscribing to the network. Data enables HHQ and supporting units to have the detailed information needed to provide the LAR battalion with timely, accurate, and efficient logistics support. This is the key reason data use at the battalion main is an enabler, not a hindrance, to maneuver. Data systems enhance support, which enhances survivability. Because data systems are primarily satellite based, they enable the battalion main to be positioned farther forward without sacrificing effective communications to the rear.

Voice Radio and Tactical Chat. In situations where the battalion does not have the ability to use data systems, it uses HF or VHF voice and HF tactical chat to submit standardized reports and requests. These forms of communication are less capable of carrying larger amounts of information, are less reliable, and can easily be miscommunicated, misunderstood, or lost in transmission before the appropriate agency receives the message. Furthermore, these methods place a higher degree of reliance on receiving agencies to publish the LAR battalion's requirements to other support elements. This could result in a reduction of accurate or updated information and overall situational awareness of present and future sustainment requirements for operations.

BATTALION LOGISTICS TRAINS

Battalion Combat Trains
Combat trains are task-organized, organic logistical support elements that provide critical logistics support to their units in forward areas. Ideally, LAR battalion combat trains are kept as small as possible and are positioned to move in trace of the supported unit while remaining under the security of that unit to the highest degree possible. All combat trains possess sufficient firepower and communications equipment to operate independently for extended periods of time. Based on the logistical requirements of current or future operations, the battalion selects the appropriate size of combat train required and configures it to sustain operations. For example, a small LAR battalion combat train might include a security team and logistics vehicles (e.g., two heavy machine gun HMMWVs and three to four MTVRs) carrying supply Classes I, III, and V. Conversely, a larger battalion combat train might include an ambulance, a radio re-transmission team (i.e., two communications vehicles), a field mess vehicle, a maintenance contact team vehicle, other cargo vehicles, replacement vehicles, or recovery assets. The LAR battalion's combat trains possess their own firepower, employing the H&S company's organic logistics vehicles and heavy machine gun vehicles.

Battalion Field Trains

A field train consists of the remainder of the battalion's logistics and mobility assets that are not in the combat trains. When battalion combat trains are not dispatched, they are usually collocated with the field train. The field train typically consists of representatives from the S-1, S-2, S-4, S-6 (including communications and electronics maintenance), BAS, battalion maintenance platoon, supply, field mess, armory, and motor transport (including recovery assets), along with the bulk supplies required to sustain operations.

EXTERNAL COMBAT SERVICE SUPPORT

Whether the LAR battalion is operating in support of its parent division or a separate GCE element, all support requests are routed through the HHQ. When the tactical situation requires, the supported unit coordinates with the supporting LCE or ACE for support augmentation. Support to the LAR battalion's operations is frequently provided by the direct or general support combat logistics regiment, or in combination with supporting aviation assets from the ACE. It is important to note that motor transport assets for the LAR battalion's logistical requirements are not organic to the battalion's subordinate companies. Units receiving LAR companies as attachments from the battalion must plan accordingly to determine whether these additional assets are necessary, and coordinate with the LAR battalion S-3 and S-4 to request these capabilities.

External Resupply

During the planning of sustainment operations, the LAR battalion designates an RRP or LZ that is typically located to the rear of the main to facilitate subsequent ground linkup or the aerial delivery of logistics through an external resupply. It is the LAR battalion's responsibility to have a plan for the receipt of supplies and to coordinate that plan with the supporting element. Receipt and delivery plans should include multiple options that are adequate and supportable to the delivering element, as well as to the battalion. Resupply points or areas should support resupply via ground and air when possible, and be ideally positioned in secure areas adjacent to MSRs and alternate supply routes between the LAR battalion and the supporting unit.

Resupply Request Submission. Resupply and other sustainment requirements for the LAR battalion are determined through the staff planning process. Once identified, resupply requests are either pre-planned (i.e., scheduled) or submitted as logistics support requests to supporting agencies. Typically, requests are submitted through the Global Combat Support System-Marine Corps (also referred to as GCSS-MC) or Common Logistics Command and Control System (also referred to as CLC2S) automated systems, or by an alternate means of data or voice communication. Data systems are the preferred method when feasible because they provide superior redundancy and wider visibility as compared to other methods. Voice communications can be misinterpreted easily, particularly regarding national stock numbers (NSN), national item identification numbers, and specific quantities of bulk liquids. Data transmission enables the battalion to provide accurate, up-to-date logistics statuses, as well as to pull accurate, efficient resupply mission information from the supporting LCE or ACE. Without detailed and timely information, the supporting LCE unit is compelled to push standardized blocks of supplies

forward to ensure the battalion's requirements are met. Pre-packaged supply blocks rarely contain the correct assortment of supplies that the battalion needs, which can place undue burden on the battalion's field train to manage the excess materiel.

Supply Point Distribution. Supply point distribution is when elements of the battalion's field train travel to the rear to pull support. Supply point distribution are appropriate during reception, staging, onward movement, and integration, or while assigned as a reserve unit near the MAGTF main body. However, it should be a last resort during most operations conducted by an LAR battalion. In supply planning, all elements of the battalion must collect anticipated supply requirements before-hand. The battalion's equipment density list must be determined well in advance to allow Class III, V, and IX requirements to be determined and coordinated with the LCE.

Unit Distribution Method. The LAR battalion must leverage the unit distribution method to the maximum extent possible to maintain its pace of operations. In this technique, the supporting unit (LCE or ACE) delivers supplies directly to the LAR battalion and LAR companies.

Aerial Resupply. Due to the characteristics of LAR operations, logistical support can be challenging when the battalion is operating at extended ranges and when widely dispersed throughout the battlespace. Due to this fact, the MAGTF should consider maximizing aviation support to sustain LAR versus heavy reliance on ground resupply. Assault support or airdrop provided by the ACE is timely, avoids threats to ground convoys, and enables the LAR battalion to extend its operational duration and range. Furthermore, it enables the battalion's COC main to be positioned farther from the main body and closer to subordinate companies, providing more responsive logistics support.

Aerial Delivery of Supplies. A DZ can be a pre-designated RRP, or it can be hastily selected based on a map and terrain analysis. The S-4 coordinates DZ selection with the S-3 and supporting ACE unit, sets up the DZ, recovers the parachutes, and coordinates their return to the parent unit. The S-4 section should always maintain at least one DZ kit to facilitate airdrop resupply. Air delivery is beneficial because it minimizes aircraft time on station. The drawback is the potential for error during delivery (i.e., the actual landing site not being at the DZ), the potential for damage to materials, and the requirement to coordinate the return of parachutes. The LAR battalion rates one landing support specialist (MOS 0481) in the S-4, who serves as the subject matter expert for DZ selection and operation. Air officers within the S-3 can also provide valuable input for DZ selection.

Aerial Delivery of Fuel. Air-delivered fuel for ground refueling is an essential bulk fuel delivery method for the LAR battalion. The LAR battalion's field train typically contains three FRCs, each holding approximately 2,500 gallons of fuel, to receive fuel resupply and distribute it to subordinate units. The FRCs can simultaneously fuel or defuel one aircraft or two ground vehicles in less than 10 minutes. The FRCs are mounted on a standard, container-sized flatrack base on a LVSR, which allows Marines to rapidly emplace, operate, maintain, and recover it without the requirement of material handling equipment (i.e., employing the self-loading and unloading capability of the LVSR). The ACE's tactical bulk fuel delivery system (TBFDS) can carry 2,400 gallons of fuel on board a CH-53E. When used with a MV-22, its capacity is limited to

1,200 gallons. Three CH-53Es or six MV-22s, each with a TBFDS, can refill all three of the of the battalion's FRCs. While the ACE possesses other capabilities that can be used to provide fuel resupply to the LAR battalion, the TBFDS is the most logistically and tactically feasible.

Using the air–delivered, ground-refueling method reduces the number of ground resupply missions and their associated vulnerability to ground attack. The one-to-one pairing of CH-53Es and FRCs minimizes aircraft time on station and their associated vulnerability. Ideally, the LAR unit receives air-delivered ground fuel and distributes it using motor transport equipment (i.e., LVSRs with FRCs); however, fuel resupply directly from an aircraft to LAVs is also feasible in some situations (see Figure 10-1 and Table 10-2).

KEY
— fuel line
● fuel pump
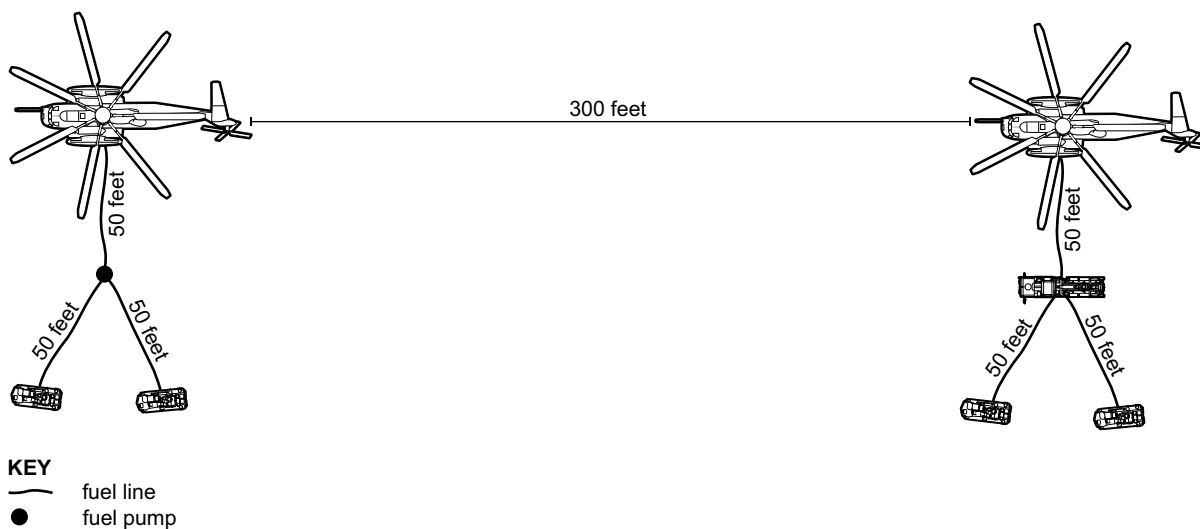
Figure 10-1. Notional Air-Delivered, Ground-Refueling Operations.

Table 10-2. Coordinating Information for Air-Delivered, Ground-Refueling Example.

Grid	11SNU03130303	Supported Unit: HMH-462 (2xCH-3Es)	"HEAVY 11"
Latitude/Longitude	N 320 52.47' W 1160 57.28'	Supported Unit: 3LARBN (4x LAV-25s)	"WOLFPACK AIR"
Elevation	1680 FT MSL	Land Time:	0950 (T)
Composition/Size	SHALLOW GRASS/550 FT	Ready To Fuel:	1000 (T)
Communication	PRI: 32.30 SCPT ALT: 40.80 SCPT TERT: 235.3	Depart/Lift Time:	1100 (T)
Lost Communication	Orange Air Panel = Clear To Land	Expected Give:	800 GAL (MIN) 2,400 GAL (MAX)

NOTE: For information about the planning, coordination, marking establishment, and operations of LZs, refer to MCTP 3-01B, *Air Assault Operations*.

Maintenance and Recovery Support

Data systems enable the battalion to obtain accurate, reliable, and responsive support from the supporting LCE. This is particularly evident in maintenance support, which by nature is a detail-oriented process. It is crucial for the LAR battalion to input accurate data entries daily into Global Combat Support System–Marine Corps, particularly when reconciling Class IX (i.e., repair parts) service requests. This gives supporting units and establishments the ability to assess data accurately for parts usage, which enables them to develop accurate Class IX parts blocks in support of operations. The battalion ALOC is the primary conduit to coordinate maintenance and supply support from supporting units or HHQ. The maintenance production sections typically rely on supply administration and maintenance management personnel working in the ALOC to obtain maintenance and supply support by whatever means available. The S-4 can request maintenance support teams or equipment evacuation from the supporting LCE units.

When recovery support is required from a supporting LCE unit, the LAR battalion designates a maintenance collection point, which is typically co-located with the battalion maintenance platoon. The battalion also informs the logistics section of the HHQ of its maintenance collection point grid location to facilitate the linkup of the units. The supporting LCE unit typically evacuates deadlined or degraded equipment and vehicles for corrective maintenance that repairs and restores the equipment and vehicles to serviceable condition. In addition to traditional ground recovery options, CH-53Es are also capable of sling-loading LAVs when they are stripped of excess equipment and have minimal fuel. This technique can be applied in situations when a LAV is too heavily damaged or is in a position that makes it difficult to recover with ground assets due to the threat or terrain. The battalion can request a helicopter support team from the LCE to facilitate the recovery. Alternately, the battalion's landing support specialist can be tasked with supervising sling-loading operations if a helicopter support team is unavailable, and time is a significant factor.

Transportation Support

External transportation support is coordinated through the G-4/S-4. Because of the high quantity of wheeled assets within the LAR battalion, transportation support is not usually required to move elements of the battalion. However, transportation support might be required for deployment, redeployment, resupply, CASEVAC, or for transportation of enemy prisoners of war, detainees, and displaced persons. Refer to the transportation planning factors in Appendix B for load capacities on various aircraft and maritime surface connectors.

General Engineering Support

Because of the LAR battalion's limited organic engineering assets, general engineering support can play a pivotal role when properly planned. Engineer support units can greatly assist LAR operations in providing mobility, countermobility, and survivability tasks. These tasks often involve more detailed planning and preparation and higher standards of design and construction than typical combat engineer tasks. Additionally, these tasks can often require significant additional quantities of Class IV (i.e., fortification and barrier materials). The LAR battalion S-3 and S-4 must identify these requirements as early as possible in the staff planning process to ensure that materials are available, packaged, and coordinated for delivery in a timely manner. As a reconnaissance unit, LAR is often the first MAGTF element to determine engineering requirements for mobility and countermobility.

In addition to general engineering capabilities stated in Chapter 5, some situations might warrant attaching combat engineer formations to the LAR battalion or its subordinate units to conduct more technical reconnaissance (i.e., engineer reconnaissance) or to provide specific mobility, countermobility, or survivability capabilities.

Health Service Support

The LAR units frequently operate far away from supporting units. Time and distance to gain surgical care are critical planning factors, which can prove to be limiting factors to the battalion's operations. In such cases, the LAR units can petition the MAGTF to adjust their concept of support. If more timely surgical support cannot be provided, the LAR units commander will advise the MAGTF commander on potential impacts to operations. The division surgeon is the primary conduit for assistance in the planning of medical support, such as the resident medical and dental battalions' capabilities the within the Marine logistics group. Annexes and appendices within the HHQ's OPORD or operations plan will provide the finer details of coordination, levels, and location of medical care for the theater of operations.

Services

For extended operations, it is necessary to provide adequate shower and laundry services. Requests are coordinated through the HHQ and sourced from logistics support elements. The logistics officers at both levels of command must ensure that sufficient time is allocated to coordinate and provide these services to the battalion. Due to the amount of water and specialized equipment necessary to operate expeditionary showers and laundry, it must be a detailed, well-timed, and coordinated effort. All other command services (i.e., postal, messing, disbursing, exchange) will also be sourced from the supporting logistics elements.

CHAPTER 11.
FORCE PROTECTION

Force protection, as defined by the DoD, is a "preventive measure taken to mitigate hostile actions against Department of Defense personnel (including family members), resources, facilities, and critical information" (*DoD Dictionary*). The Marine Corps further amplifies this definition as "actions or efforts used to safeguard own centers of gravity while protecting, concealing, reducing, or eliminating friendly critical vulnerabilities" (*USMC Dictionary*). As a warfighting function, LAR units consider force protection during the planning process to ensure that they retain enough capabilities to accomplish the assigned mission, while mitigating unacceptable risks to the force. Force protection is integrated from the beginning of the planning cycle. The purpose is to ensure that unit commanders possess the requisite number of Marines, equipment, supplies, and facilities necessary to accomplish their missions while identifying and assessing potential or actual hazards and threats and employing measures to mitigate them. Implementation of force protection measures for LAR operations should not be perceived as hindering execution or requiring a particular COA's selection or denial. In truth, the analysis, identification, evaluation, and implementation of sound force protection measures provides for a more clearly defined study of unacceptable risks and hazards to LAR activities. Most importantly, force protection provides for a higher degree of tactical success by enabling leaders at all levels to emplace sufficient plans and controls in reducing potential negative effects. Force protection is applied both inwardly and outwardly. While internal protection measures protect the force against its own actions, external protection measures seek to protect it from the threat. Force protection and the planning of force protection must be integrated from the beginning of the planning process. Force protection is not a generic function: it must be operationalized to help identify threats.

RISK MANAGEMENT CONCEPT, METHODOLOGY, AND APPLICATION

Employment of LAR units forward of the supported commander will always involve a high degree of risk. For example, during the Persian Gulf War of 1991 LAR units were mistakenly targeted and engaged by friendly aircraft. The risk management process and methods provide tools to help calculate the demands of mission accomplishment against acceptable risks in terms of combat power. Risk management is an evaluation process used to identify hazards and balance risk. It should not be perceived as a lock-step process that dictates a COA or a process that will remove all risk. The underlining importance of risk management is its importance as a thought process that is incorporated into the staff planning process, rather than an outcome that generates methodology. This process is one in a range of tools used by personnel at all levels to reduce risk to an acceptable level. There are four basic principles of risk management:

- Accept risk when benefits outweigh the cost.
- Accept no unnecessary risk.

- Anticipate and manage risk by planning.
- Make risk decisions at the right level.

LEVELS OF RISK MANAGEMENT

The risk management process is applied on three levels:

- In-depth.
- Deliberate.
- Time-critical.

While it is preferable to perform a deliberate or in-depth risk management process for all tactical missions or training exercises, adequate time and resources are not always available. The basic factor that differentiates each level is the amount of time available to plan and prepare. One of the objectives of risk management training is to develop sufficient proficiency in applying the risk management process so that it becomes an automatic or intuitive part of all Marines' decision-making methodologies. Figure 11-1 illustrates the three levels of the risk management process and how they relate to each other and provides a general list of how risk management controls are integrated into planning and execution.

Time Critical
- Fragmentary "Saddle" Orders
- Mission Changes
- Unanticipated Threat Action
- Vehicle Breakdown
- Lost Communications

Deliberate
- MCPP or Rapid Response Planning Process
- Operation Order/Operations Matrix
- Sand Tables
- Leader's Reconnaissance
- Combined Arms Rehearsals

In-Depth
- Standing Operations Plans
- Marine Corps Orders and Directives
- Time Phased Force Deployment Data
- LAV Technical Manuals
- Formal Schools Training

Less Time

More Time

Figure 11-1. The Relationships of the Three Levels of the Risk Management Process within LAR Operations.

In-Depth
The in-depth level applies when time is not a limiting factor and it provides a very thorough risk assessment analysis. An in-depth study might include items such as safety data, trends, evolving threat TTP, new or emerging friendly capabilities, COG analyses, the development of new tactics, or training programs.

Deliberate
The deliberate level applies when ample time is available to apply risk management processes during planning. During the deliberate level risk management process, groups of more experienced personnel are typically used to analyze hazards, review mishap trends, and develop controls.

Time-Critical
The time critical level of the risk management process is most evident and applicable during the execution phase of a mission. At this level, there is little to no time available to fully use the risk management process. With this level of risk management, leaders are encouraged to use the time critical risk management model as a method for assessing immediate risk in compressed time scenarios (refer to Marine Corps Order [MCO] 3500.27, *Risk Management*).

RISK MANAGEMENT PROCESS

Risk management is typically evaluated through a five-step analysis process using a tool known as operational risk management (ORM) worksheet. An ORM worksheet can be generated at any tactical or operational level of operations For instance, when the battalion tasks an LAR company with a mission to conduct a tactical road march to an assembly area, the LAR company commander can develop a risk assessment to identify hazards and determine ways of mitigating the associated risks that could preclude the company from accomplishing the mission. The risks can vary and can include threat forces that prohibit unit movement, such as anti-armor ambushes, IEDs, or small arms fire. There can also be internal threats such as mechanical breakdowns, lost communications, or intervisibility lines that preclude overwatch abilities or the employment of certain weapons systems. The process can be formal (but does not have to be) and is drafted to a level of detail that time and the available information permits. There are five basic steps in ORM:

1. Identify the hazards.
2. Assess the hazards.
3. Make risk decisions.
4. Implement controls.
5. Supervise.

For more information on ORM assessment methods and procedures for developing the ORM worksheet, refer to MCO 3500.27 and the Marine Corps Institute's product ORM 1-0, *Operational Risk Management*.

External Force Protection
External force protection measures enable the LAR battalion to mitigate known or potential threats to the battalion, and in some situations to HN forces and civilian populations. During the planning process, the COA development and COA war game steps provide critical inputs on hazards and threats to the battalion. Many hazard controls that apply to the threat(s) are tactical in nature. Branch and sequel plans can help mitigate risk should the threat execute a different COA(s) than what was perceived as most likely. With each branch and sequel, plans for risk

mitigation should be considered based on information available during the planning process. When evaluating friendly COAs, the LAR battalion staff must initially consider the following questions:

- What must the battalion, companies, and subordinate units do and avoid (i.e., constraints and restraints of the mission or tactical tasks)?
- What threats can derail execution of the battalion's mission (i.e., identify hazards and risks)?
- What degree of risk is acceptable (i.e., risk assessment)?
- What is the battalion doing to mitigate the risk (i.e., the emplacement of controls)?

Equally, LAR units must consider the enemy's COAs during the planning process and consider the following questions:

- What is the enemy trying to accomplish in relation to friendly forces?
- What are they most likely trying to achieve with their desired results (i.e., key terrain or potential choke points)?
- What assets does the enemy possess to observe friendly forces?

Operations Security

Operations security is defined as "capability that identifies and controls critical information, indicators of friendly force actions attendant to military operations, and incorporates countermeasures to reduce the risk of an adversary exploiting vulnerabilities" (*DoD Dictionary*). Operations security is applicable across the competition continuum and within all operational environments, as well as in training. There are both active and passive forms of OPSEC. Some examples of active measures within the LAR units include FSCMs, remote antennae clusters, or frequently changing frequencies and call signs. Passive measures could include items such as the LAV's BPUP armor system, using infrared panel markers, and camouflaging vehicles. All OPSEC measures are taken into consideration during all facets of the planning process. The OPSEC process considers five steps in evaluating security vulnerabilities:

1. Identification of critical information.
2. Analysis of threats.
3. Analysis of vulnerabilities.
4. Assessment of risk.
5. Application of appropriate countermeasures.

When conducting LAR operations, OPSEC vulnerabilities are continuously evaluated with respect to the operational environment, host-nation security forces, coalition partner forces, and civilian populations. (For detailed information regarding the procedures and methods for Marine Corps OPSEC, refer to MCTP 3-32B, *Operations Security [OPSEC]*, and MCO 3070.2, *The Marine Corps Operations Security [OPSEC] Program*.)

Combating Terrorism

Combating terrorism consists of the actions, including antiterrorism and counterterrorism, taken to oppose terrorism throughout the entire threat spectrum. Terrorism is the calculated use of unlawful violence or the threat of unlawful violence to instill fear, intended to coerce or intimidate

governments or societies in pursuit of goals that are generally political, religious, or ideological. Threats that do not possess the requisite manning, training, or equipment to defeat LAR units in a conventional fight commonly resort to IW and terrorist tactics. The degree and frequency with which these tactics are conducted are predicated on popular support from the HN population, the availability of resources, and their will to fight. These limited objective tactics are a continual cycle that change frequently as the threat adjusts to friendly actions, reactions, and counteractions. Therefore, it is imperative that the LAR units emplace methods to monitor, evaluate, assess, and update the battalion's offensive counterterrorism measures and defensive antiterrorism measures to deter or defeat terrorist attacks. Because of the mobility of LAR, it is equally important to consider that they are frequently one of the first units to uncover threat TTP. Therefore, the timely and accurate reporting of these threat tactics to the supported commander is critical. There are two elements of combating terrorism, counterterrorism and antiterrorism.

Counterterrorism. Counterterrorism consists of the actions taken directly against terrorist networks and indirectly to influence and render global and regional environments inhospitable to terrorist networks. Counterterrorism measures are those offensive actions taken to prevent, deter, and respond to terrorism. Although LAR units do not typically conduct counterterrorism operations, they can conduct traditional offensive operations in support of counterterrorism operations, such as cordons, raids, and coordinated air strikes.

Antiterrorism. Antiterrorism is defined as defensive measures used to reduce the vulnerability of individuals and property to terrorist acts, to include rapid containment by local military and civilian forces. As part of force protection, the LAR battalion (as well as the subordinate companies if conducting independent, semi-independent, or dispersed operations) must always consider antiterrorism measures when conducting operations. These measures are applicable whether the battalion is in the offense, defense, or conducting stabilization activities. As a forward and highly mobile element of the MAGTF, the LAR battalion will always be a high priority target for terrorists to attack to reduce the MAGTF's capabilities, as well as to generate notoriety and popular support for their cause.

Chemical, Biological, Radiological, and Nuclear Defense

The LAR battalion's CBRN defense section has the capability to analyze CBRN threats within the battalion's battlespace. Force protection measures in a potential CBRN environment include timely warning and reporting, effective individual protection measures, and well-trained CBRN R&S teams and decontamination teams. During planning and execution, the CBRN officer advises and assists the operations officer in determining friendly COAs that provide LAR units protection and the ability to continue operations. Additionally, the CBRN officer assists the intelligence officer in the assessment of likely threat COAs, as well as the logistics and medical officers in planning for decontamination and medical support. Concerns in dealing with CBRN matters rests on three basic principles: avoidance, protection, and decontamination.

While evaluating CBRN hazards or threats, it is critical that the battalion can maintain an adequate force protection posture to continue its assigned mission and tactical tasks. The LAR battalion's tasks in a CBRN environment can include the following:

- Providing early warning of CBRN weapons use.
- Providing recommendations for CBRN avoidance.

- Determining the type(s) of CBRN weapons encountered by conducting sample analysis.
- Identifying and marking CBRN hazard areas.
- Delineating and marking routes around contaminated areas for follow-on forces.
- Providing information on confirmed or suspected CBRN delivery methods.
- Providing information on suspected or identified CBRN storage site locations.
- Providing recommendations for current or future decontamination locations.
- Providing recommendations of locations for casualty collection and treatment.

The most important initial consideration for the LAR battalion when encountering a CBRN environment is maintaining the force for continued operations. Commanders meet force protection requirements in the CBRN environment primarily through well-rehearsed drills, individual protection measures, well-trained CBRN R&S teams, contamination avoidance and passive defense, and effective decontamination operations. For more information on CBRN defense, refer to MCTP 10-10E, *MAGTF Nuclear, Biological, and Chemical Defense Operations*.

Counter-Unmanned Aircraft Systems

Counter-unmanned aircraft systems is mostly about reducing signatures (e.g., thermal, visual, electronic). Dispersion, camouflage, cover, and concealment, and basic field-craft such as terrain-masking, and use of deception are the best protection from UAS. Scouts should be used as air sentries to visually scan sectors from the horizon overhead. In lieu of sufficient equipment or sufficient quantities of counter-unmanned aircraft systems, LAR platforms must be active in detecting enemy systems. If it is known that the enemy has "x" as their primary UAS system, LAR units must consider the range, duration, elevation, and capabilities of that system in their threat assessment Analyzing the specific system can create a better plan for force protection.

Spectrum Management

To protect the force from electromagnetic support or electromagnetic attack, LAR units must monitor and manage all electromagnetic and acoustic emissions through EMCON. Emission control should optimize command and control capabilities while minimizing detection by enemy sensors. The goal of EMCOM is to reduce, not eliminate, the possibility of identification or interference by the enemy, and electromagnetic interference among friendly systems Emission control includes radios, radio frequencies, radio identification tags cellphones, computers; visible light, infrared light, thermal signatures; and acoustic emissions from engines, Marines, and human activities such as Light armored reconnaissance units must manage EMCON and as the threat level increases, become more disciplined and restrictive in their emissions throughout all spectrums.

INTERNAL FORCE PROTECTION

Internal force protection measures protect against the effects of friendly fire, such as negligent discharges, equipment or communications failures, and other items that are within the control of the LAR units that could negatively affect mission accomplishment and morale. These measures can occur at any time during the planning or execution phase of an operation or training exercise. Many internal force protection measures already reside within the LAR units' TACSOP or

standing policies directed by the unit commander. Regardless, it does not absolve unit leaders from reiterating and supervising the employment of these force protection measures. These could include, but are not limited to the following examples:

- LAR unit movement techniques.
- Procedures for rendering the 25 mm automatic gun and other weapons systems safe.
- Mortar firing procedures.
- Night driving procedures using the LAV driver's thermal viewer.
- LAV ammunition reception, accountability, loading, and unloading procedures.
- LAV loading plans for personnel and equipment.
- Ground guiding LAVs during daylight or low light visibility conditions.
- Daily sight counts of personnel and critical equipment.

FRIENDLY FIRE PREVENTION AND BATTLESPACE GEOMETRY

Due to the lethality and range of the LAR battalion's weapons systems, friendly fire represents a real and continually present threat to force protection and mission accomplishment. The understanding and development of battlespace geometry is critical to safeguard Marines from unintended consequences of fires and to optimizing the employment of weapons and maneuver. Fire support coordination and tactical maneuver control measures assist the LAR unit in the prevention of friendly fire by deconflicting fires and maneuver. Detailed planning, coordination, employment, supervision, dissemination, and when necessary, the revision of these measures facilitates control and contributes to a shared COP in understanding battlespace geometry. The elements of battlespace geometry include—

- The locations of all friendly positions within the AO (i.e., both joint, special operations, and HN) and associated surface danger zones and areas.
- Threat positions.
- Threat weapon range rings.
- Ordnance minimum safe distances (i.e., for training) or risk estimate distance (i.e., for combat).
- Artillery and mortar firing positions, targets, and gun target lines.
- Fixed-wing CAS attack headings, weapon delivery cones, and targets.
- Rotary-wing CAS battle positions.

Critical toward the effectiveness of this shared understanding of the COP is dissemination and deconfliction of these measures with the battlespace, to include higher, adjacent, and supporting units. Additionally, this is of particular concern when operating within a joint operational environment. Dissemination provides for increased situational awareness that ideally results in reduced levels of potential friendly fire for LAR units' locations, movements and enhances the effectiveness of operations.

APPENDIX A.
FAMILY OF LIGHT ARMORED VEHICLES

LIGHT ARMORED VEHICLE-LIGHT ASSAULT

See Table A-1 for technical characteristics.

Table A-1. Light Armored Vehicle Assault (LAV-25A2).
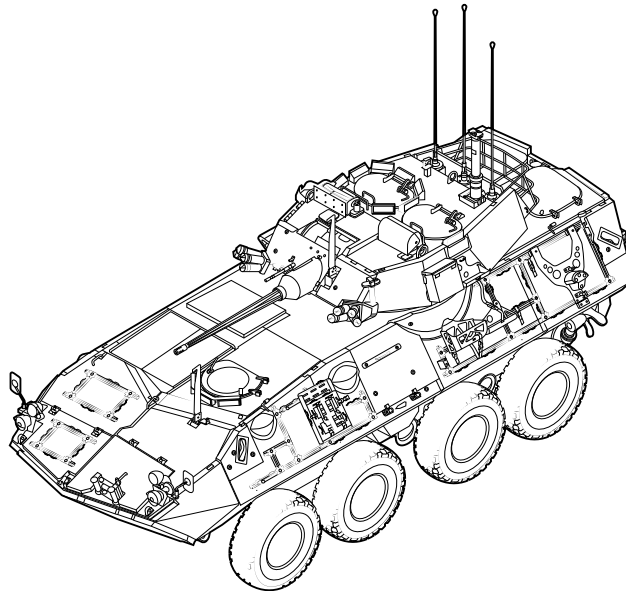
The LAV-25A2 has a two-manned turret armed with a M242, 25 mm automatic cannon and a coaxially mounted M240, 7.62 mm machine gun. Additionally, it is armed with a pintle-mounted machine gun, 7.62, M240B and has a M257 grenade launcher for self-protection. The LAV-25A2 uses two AN/PRC-152 as part of the AN/VRC-110 multiband radio system. The LAV-25A2 delivers accurate and destructive direct fire against personnel, lightly armored vehicles, and material targets. Its capability to rapidly deploy and redeploy troops with a battle area permits their arrival at the point of commitment with reduced causalities and fatigue. It carries a crew of three (driver, gunner, and commander), plus three scouts, and one enabler (corpsman, mechanic, or engineer). A company has 14 LAV-25A2s on its T/O. All LAV variants have BPUP armor package installed as a baseline configuration.

Technical Characteristics
Armament:
Machine gun, 7.62 mm, M240B
Coax machine gun, 7.62 mm M240
Cannon, automatic, 25 mm M242
Weight:
Combat-loaded 31,752 lbs (14, 402 kg)
Empty curb 27, 820 lbs (12, 619 kg)
Dimensions:
Length 252.6 inches (642 cm)
Width 98.4 inches (250 cm)
Height 100.9 in (256 cm)
Max Speed:
Land 62.2 mph (100 km/h)
Water 6.5 mph (10.4 km/h)
Fuel Capacity: 71 gal (286.73 L) Range 400 mi (643.6 km)
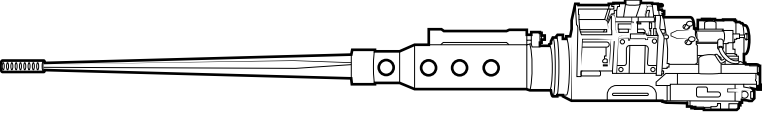
GUN, ENHANCED, AUTOMATIC, 25 MM, M242

See Table A-2 for technical characteristics.

Table A-2. Enhanced Automatic Gun (M242, 25 mm).
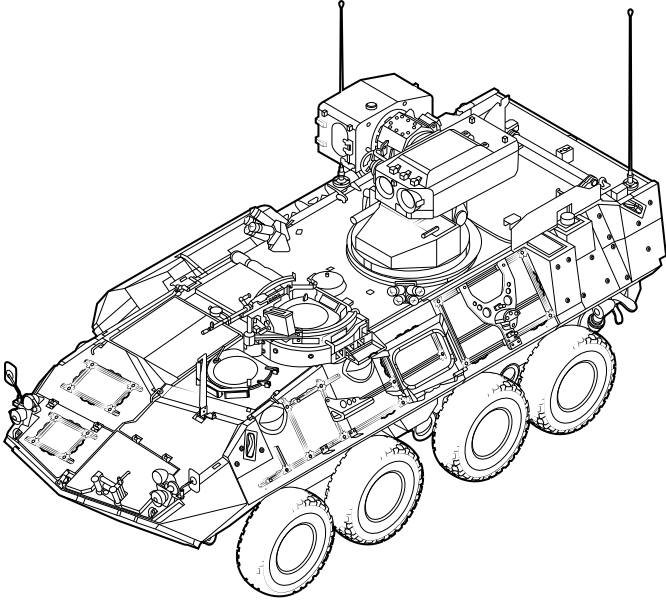
The M242, 25 mm enhanced automatic gun is the main gun for the LAV-25. An electric motor, located on the bottom and to the rear of the auto gun receiver, drives all the moving parts inside the gun to perform ammunition feeding, loading end firing, extraction, and ejection. The auto gun receiver is attached to a rigid mount and does not recoil when the gun is fired, only the barrel, breech, and bolt assemblies recoil. The firing pin is cocked just before firing to ensure safe operation during the ram cycle. The bolt is seared (locked in the "open-bolt" position) when the trigger is released. A receiver assembly mechanical interlock system stops the gun with the bolt locked in the breech position if there is no recoil (round misfires or hang fires).

Technical Characteristics
Weight: 256 lbs (116.1 kg)
Length: 108.7 inches (276.1 cm)
Barrel: 82.36 inches (209 cm)
Width: 13 inches (33 cm)
Height: 15 inches (38 cm)
Range:
Max: 14,472m
Effective APDS-T: 2000m/HEI-T: 2,200m
Rate of Fire: Three selections for rate of fire: single shot, 100 or 200 rounds per minute.

LIGHT ARMORED VEHICLE-ANTITANK

See Table A-3 for technical characteristics.

Table A-3. Light Armored Vehicle-Antitank (LAV-ATMA2).

The LAV-ATMA2 is armed with the M220 TOW II (RF) antitank guided missile (ATGM), which is fired from a modified Emerson Electric (M901A1) weapon station. The LAV- ATMA2 delivers accurate and destructive fire from defilade positions against tanks and armored vehicles. It carries a crew of four (driver, 4362 commander, gunner, and loader), the TOW weapon system, and ammunition. The TOW weapon system can be deployed by the LAV crew from a ground mounted position. The vehicle utilizes two AN/PRC-152 as part of the AN/VRC-110 multiband radio. The vehicle can carry two missiles in the hammerhead with 14 missiles stowed. A company has four LAV-ATM's in its T/O. All LAV variants have a BPUP armor package installed as a baseline vehicle configuration.

Technical Characteristics
Armament:
Machine gun, 7.62 mm, M240B
TOW II (RF) antitank guided missile (ATGM)
Weight:
Combat-loaded 32,643 lbs (14, 807 kg)
Empty curb 29, 249 lbs (13, 267 kg)
Dimensions:
Length 251.6 inches (639 cm)
Width 98.4 inches (250 cm)
Height Erect 138.5 in (286 cm) Stowed 123 inches (312 cm)
Max Speed:
Land 62.2 mph (100km/h)
Water 6.5 mph (10.4 km/h)
Fuel Capacity: 71 gal (286.73 L) Range 400 mi (643.6 km)

LIGHT ARMORED VEHICLE-MORTAR

See Table A-4 for technical characteristics.

Table A-4. Light Armored Vehicle-Mortar (LAV-MA2).
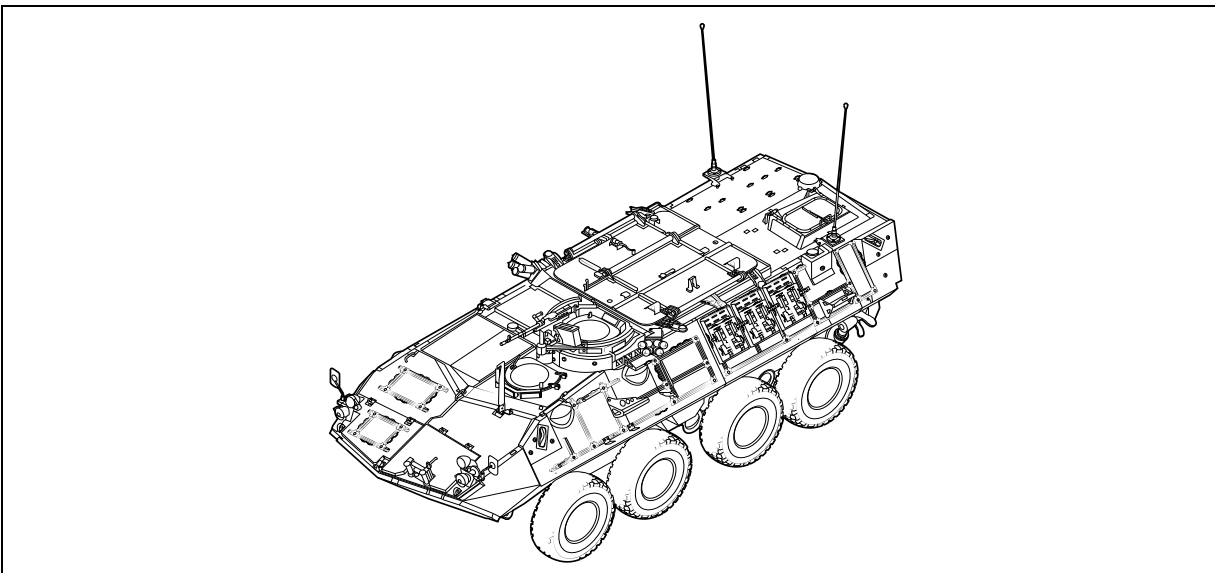
The LAV-MA2 is armed with the M252 81 mm mortar, which can be fired from inside or outside the vehicle. The LAV-MA2 provides indirect fire support and carries a crew of five (driver, commander, gunner, loader, and ammo handler), the mortar, and 90 rounds of 81 mm ammunition. The LAV-MA2 is armed with a pintle-mounted machine gun, 7.62 mm, M240B. Mortar weapon systems can be deployed by the LAV crew from a ground-mounted position.

Technical Characteristics
Armament:
Machine gun, 7.62 mm, M240B
TOW II (RF) antitank guided missile (ATGM)
Weight:
Combat-loaded 32,643 lbs (14, 807 kg)
Empty curb 29, 249 lbs (13, 267 kg)
Dimensions:
Length 251.6 inches (639 cm)
Width 98.4 inches (250 cm)
Height Erect 138.5 inches (286 cm)
Height Stowed 123 inches (312 cm)
Max Speed:
Land 62.2 mph (100km/h)
Water 6.5 mph (10.4 km/h)
Fuel Capacity: 71 gal (286.73 L) Range 400 mi (643.6 km)
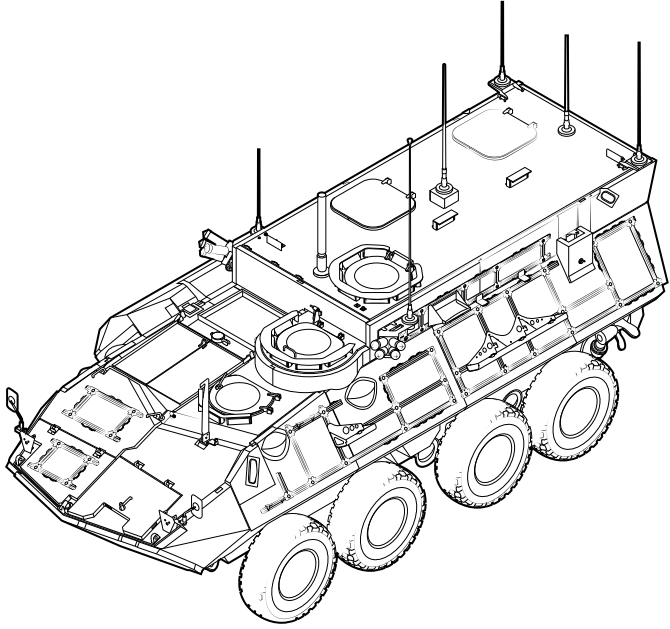
LIGHT ARMORED VEHICLE-COMMAND AND CONTROL

See Table A-5 for technical characteristics.
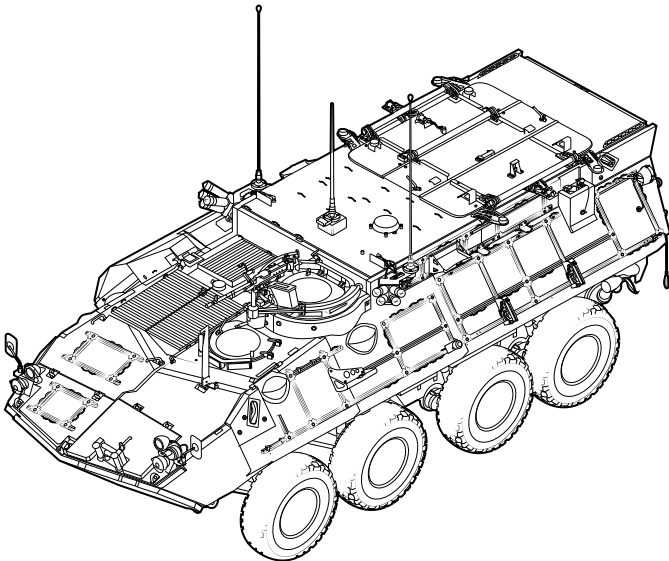
Table A-5. Light-Armored Vehicle-Command and Control (LAV-C2A2).

The LAV-C2A2 is armed with a pintle-mounted machine gun, 7.62 mm, M240B. The vehicle carries a suite of radios, a portable shelter, and an auxiliary power unit (also referred to as APU) to substitute for vehicle power when needed. The LAV-C2A2 has the capability to effectively command and control the battalion, company, or combat team. The crew is comprised of a driver, vehicle commander, and has five workstations for command and control. The LAV-C2 is comprised of six AN/PRC-148s and one AN/PRC-150, in addition to an onboard vehicle network (also referred to as OVN), and SATCOM on the move. The vehicle is VHF, HF, and UHF capable.

Technical Characteristics
Armament:
Machine gun, 7.62 mm, M240B
Weight:
Combat-loaded 31,405 lbs (14,245 kg)
Empty curb 27,950 lbs (12,678 kg)
Dimensions:
Length 259 inches (658 cm)
Width 98.4 inches (250 cm)
Height 110 inches (279 cm)
Max Speed:
Land 62.5 mph (100km/h)
Water 6.5 mph (10.4 km/h)
Fuel Capacity: 71 gal (286.73 L) Range 400 mi (643.6 km)

LIGHT ARMORED VEHICLE-LOGISTICS

See Table A-6 for technical characteristics.
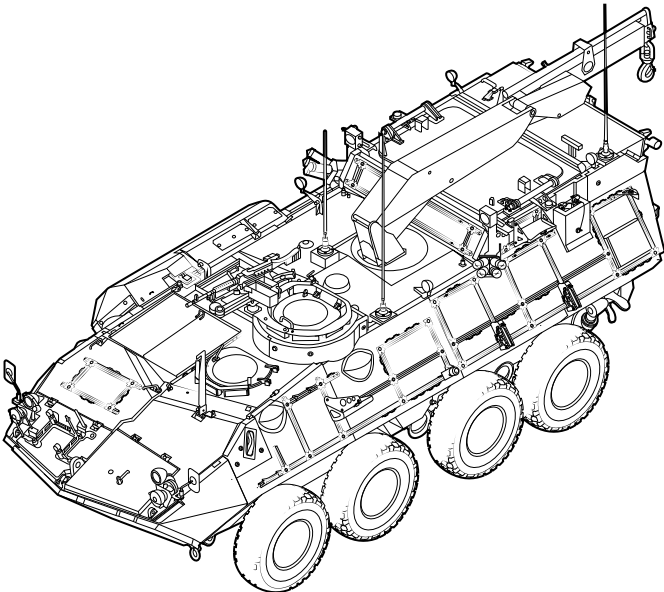
Table A-6. Light Armored Vehicle-Logistics (LAV-LA2).

The LAV-LA2 possesses loading and unloading hatches and a maximized payload capability for added volume and weight. The LAV-LA2 is armed with a pintle-mounted machine gun, 7.62 mm, M240B. The LAV-LA2 delivers rations, ammunition, fuel, spare parts, and equipment to light armored vehicles and units deployed away from main roads and networks. The LAV-LA2 has a cargo capacity of 5,600 lbs, reinforced flooring in the rear compartment, and recessed tie downs. The LAV-LA2 is capable of being loaded by forklift or crane for rapid resupply. The LAV-LA2 can come equipped with a casualty evacuation kit, which can hold two litters. It carries a crew of three (driver, commander, and logistics crewmember).

Technical Characteristics
Armament:
Machine gun, 7.62 mm, M240B
Weight:
Combat-loaded 29,620 lbs (13,435 kg)
Empty curb 26,720 lbs (12,120 kg)
Dimensions:
Length 254.6 inches (642 cm)
Width 98.4 inches (250 cm)
Height 109 inches (277 cm)
Max Speed:
Land 62.2 mph (100 km/h)
Water 6.5 mph (10.4 km/h)
Fuel Capacity: 71 gal (286.73 L) Range 400 mi (643.6 km)

LIGHT ARMORED VEHICLE-MAINTENANCE/RECOVERY

See Table A-7 for technical characteristics.

Table A-7. Light Armored Vehicle-Maintenance/Recovery (LAV-RA2).

The LAV-RA2 is equipped with a boom crane, winch, air compressor for pneumatic tools, fuel, a filter/transfer pump, floodlights, and additional stowage capabilities. The LAV-RA2 serves as the primary maintenance vehicle and is used to recover/tow dead lined LAVs, as well as to perform organizational and limited intermediate field level maintenance. The LAV-RA2 has a 6,600 lb-rated extendable rotating boom and a 30,000 lb-rated rearward winch. The LAV-RA2 provides repair and recovery services at the organizational and intermediate field maintenance levels. The LAV-RA2 is armed with a pintle-mounted machine gun, 7.62-mm, M240B. The LAVRA2 carries a crew of three (driver, commander, and rigger).

Technical Characteristics
Armament:
Machine gun, 7.62 mm, M240B
Weight:
Combat-loaded 32,934 lbs (14,939 kg)
Empty curb 29,814 lbs (13,523 kg)
Dimensions:
Length 290.4 inches (738 cm)
Width 98.4 inches (250 cm)
Height 109 inches (277 cm)
Max Speed:
Land 62.2 mph (100km/h)
Water 6.5 mph (10.4 km/h)
Fuel Capacity: 71 gal (286.73 L) Range 400 mi (643.6 km)

APPENDIX B.
LIGHT ARMORED RECONNAISSANCE BATTALION LOGISTICAL PLANNING FACTORS

CRITICAL CLASSES OF SUPPLY

Class I

Table B-1. Class I (Water) Requirements.

Element	Number of Personnel per T/O	Water Consumption (gallon per day)*	Total Consumption (per day)
LAR Company	138	3	414
LAR Company	138	3	414
LAR Company	138	3	414
LAR Company	138	3	414
H&S Company	430	3	1,290
Battalion Total	982	3	2,946
NOTE *Consumption is calculated for initial basic needs.			

Table B-2. Water Transport System Organic to the LAR Battalion.

Type of Water Container	T/E Quantity	Gallons Per System	Total Capacity
Water SIXCON	4	850	3,400
M149 water trailer	6	400	2,400
Battalion Total*			5,800
LEGEND **SIXON** six containers together **T/E** table of equipment **NOTE** *5 gallon water containers are not factored into the above water capacities.			

Table B-3. Class I (Rations) Requirements.

Element	Personnel per T/O	Meals per Day	Meals Consumed per Day	Cases of MREs*	Pallets of MREs*	UGR Heat and Serve (Mods)**
LAR Company	138	3	414	34.5	.72	5.52
LAR Company	138	3	414	34.5	.72	5.52
LAR Company	138	3	414	34.5	.72	5.52
LAR Company	138	3	414	34.5	.72	5.52
H&S Company	430	3	1,290	107.5	2.24	17.20
Battalion Total	982	3	2,946	245.5	5.15	39.28

LEGEND
Mods   six container together
MRE   meal, ready to eat
UGR   unitized group rations

NOTES
*Calculated numbers represent consumption of MREs for all three meals.
**Calculated numbers represent consumption of two meals of UGRs per day. Standard feed plans for sustained operations and field training are usually two hot meals and one MRE per day.

Class III

Table B-4. Class III (w) Ground Fuel Requirements and Capacities.

Element	Equipment Type	T/E Quantity	Gallons per Tank	Total Gas Tank Capacity	Approximate DOS*
LAR Company	LAVs	25	71	1,775	3
LAR Company	LAVs	25	71	1,775	3
LAR Company	LAVs	25	71	1,775	3
LAR Company	LAVs	25	71	1,775	3
H&S Company	LAVs	14	71	994	3
	HMMWVs	32	25	800	3
	MTVRs	37	80	2,960	3
	LVSRs	5	166	830	3
Battalion Total		188		12,684	

LEGEND
T/E   table of equipment

NOTE
*Fuel consumption varies greatly depending on the mission. A day of supply of fuel is an illogical unit of measure. The S-4 must have a full understanding of the mission requirements to accurately anticipate the fuel consumption based on expected miles and hours of operations.

Table B-5. Fuel Transport Systems Organic to Light Armored Reconnaissance Battalion.

Type of Fuel Container	T/E Quantity	Gallons per System	Total Capacity
Fuel SIXCON	19	850	16,150
Flatrack Refueling Capability (FRC)	3	2,500	7,500
Ground Expedient Refueling System (GERS) (Medium)	2	620	1,240
GERS (Small)	2	168	336
Battalion Total	26		25,226
LEGEND **SIXCON** six containers together **T/E** table of equipment **NOTE** 5 gallon fuel containers are not factored into fuel capacities.			

Table B-6. Class III (p) Petroleum, Oils, and Lubricants.

POL Placement	Type of POL	Amount per LAV
Engine	15/40	6.5 Gallons (Gal)
Engine Coolant	50/50 Antifreeze	13 Gallonos
Transmission / T-Case	10W	5.8 Gal/1 Gal
Planetaries, Winch, Gearbox, Diffs, Marine Drivers, Prop Drivers	90W	5.5 Gal
Hydraulic Reservoir	FRH	12 Gal (14.5 Gal for LAV-AT)
Break Reservoir (4)	Brake Fluid	4 Gal
Recoil Mechanism	Damping Fluid	16 ounces

Class V

Table B-7. Typical Ammunition Combat Load Out Per Company.

DODIC	Type of Ammo	LAV-25 (x14)	LAV-ATM (x4)	LAV-M (x2)	LAV-L (x3)	LAV-R (x1)	LAV-C2 (x1)	Company Total (25 LAVs)
A131	7.62 4x1 LINK	1,800	800	800	800	800	800	34,000
G826	Grenade, Launcher Smoke IR screen M76	16	16	16	16	16	16	400
A974	25mm APDS-T M791	180						2,520
A975	25mm HEI-T M792	450						6,300
WH50*	BGM-71H-1 bunker Buster TOW		8					32
WF95*	BGM-71F-5 Gen 3A TOW 2B Aero		8					32
C896**	CTG, 81mm HE M889A1			70				140
C870**	CTG, 81mm SMK RP M819			10				20
C871**	CTG, 81mm ILLUM M853/A1			10				20

NOTES
*TOW rounds are mission dependent; each LAV-ATM can carry 16 missiles.
**81-mm mortar rounds are mission dependent; each LAV-M can carry 90 stowed rounds.
***A full LAR company combat load requires 19.5 to 20 pallets of ammunition including small arms ammunition.
****A full LAR company combat load requires two to three MTVRs with M105 trailers.

Transportation (Strategic Airlift and Sealift)

Table B-8. Strategic Lift Vehicle Capabilities.

Aircraft or Surface Connector	Number of LAVs per Planning Allowable Cabin Load	Number of LAVs per Maximum Equipment Capabilities
C-130	1	1
C-17	4	4
C-5	4	8
C-5M	5	8
LCAC	3	4
LCU	9	N/A

GLOSSARY

Section I. Acronyms and Abbreviations

AAV .... amphibious assault vehicle
ACE .... aviation combat element
AirO ....air officer
ALE... Automatic Link Establishment
ALOC...administrative and logistic operations center
ANW2 .... Adaptive Networking Wideband Waveform
AO...area of operations
APDS-T .... armor-piercing discarding sabot–tracer
ASCOPE .... areas, structures, capabilities, organizations, people, and events
ASR.. assault support request
ATF... amphibious task force
ATGM.. antitank guided missile
AXP ....ambulance exchange point

BAS..battalion aid station
BDA .... battle damage assessment
BLOS ....beyond line-of-sight
BPUP ....ballistic protection upgrade package

C2..command and control
CAS .... close air support
CASEVAC... casualty evacuation
CATF .... commander, amphibious task force
CBRN...chemical, biological, radiological, and nuclear
CCIR ....commander's critical information requirement
CCP.. casualty collection point
CFL .... coordinated fire line
CFST ....company fire support team
CHD .... Counterintelligence/Human Intelligence Detachments
CLF .... commander, landing force
CLIC ....company level intelligence cell
COA .... course of action
COC .... combat operations center
COF..conduct of fire
COG .... center of gravity
COIN..counterinsurgency
COP.. common operational picture
cm..centimeter
CP.. command post

CSS .... combat service support
CTP ....common tactical picture

DAS ....deep air support
DASC... direct air support center
DOS ....day(s) of supply
DZ ....drop zone

EMCON ....emission control
EW ....electromagnetic warfare

FARP .... forward arming and refueling point
FFIR ....friendly force information requirement
FLOT ....forward line of own troops
FOB...forward operating base
FRC.. flatrack refueling capability
FSC ....fire support coordinator
FSCC.. fire support coordination center
FSCL...fire support coordination line
FSCM.. fire support coordination measure

G-2 ....assistant chief of staff, intelligence/intelligence staff section
G-4 .... assistant chief of staff, logistics/logistics staff section
GCE ....ground combat element
GWOT .... global war on terrorism

H&S ....headquarters and service
HF .... high frequency
HHQ...higher headquarters
HMMWV...high mobility multipurpose wheeled vehicle
HN..host nation

IDF..indirect fire
IED..improvised explosive device
IOC.. intelligence operations center
IPB ....intelligence preparation of the battlespace
ISR ....intelligence, surveillance, and reconnaissance
IW ....irregular warfare

JP...joint publication

km .... kilometer

LAI... light armored infantry
LAR ....light armored reconnaissance
LAV .... light armored vehicle
LAV-25 .... light armored vehicle-25 millimeter

LAV-AT .... light armored vehicle-antitank
LAV-ATM .... light armored vehicle-antitank modernization
LAV-C2 .... light armored vehicle-command and control
LAV-L ....light armored vehicle-logistics
LAV-M .... light armored vehicle-mortar
LAV-MRV .... light armored vehicle-mission role variant
LAV-R .... light armored vehicle-recovery
LCAC ....landing craft, air cushion
LCE ....logistics combat element
LCU ....landing craft, utility
LD .... line of departure (land warfare)
LFOC .... landing force operations center
LNO .... liaison officer
LOC ....line of communications
LOGSTAT ....logistics status report
LOO .... line of operation
LOS .... line of sight
LPD ....low probability of detection
LVSR .... logistics vehicle system replacement
LZ..landing zone

MAGTF ....Marine air-ground task force
MCO .... Marine Corps order
MCPP..Marine Corps Planning Process
MCRP ....Marine Corps reference publication
MCTP...Marine Corps tactical publication
MCWP ....Marine Corps warfighting publication
MEB..Marine expeditionary brigade
MEF ....Marine expeditionary force
METT-T.........mission, enemy, terrain and weather, troops and support available—time available
MEU..Marine expeditionary unit
MEWSS .... mobile electronic warfare support system
MOS.. military occupational specialty
mm ....millimeter
mph .... miles per hour
MSIDS ....MAGTF secondary imagery dissemination system
MSR ....main supply route
MTVR...medium tactical vehicle replacement

NAI .... named area of interest
NIPRNET..Nonclassified Internet Protocol Router Network

OPORD .... operation order
OPSEC .... operations security
ORM .... operational risk management

PERMA ....planning, embarkation, rehearsal, movement, and action
PIR ....priority intelligence requirement

QRF...quick reaction force

RAIDERREP ..... reconnaissance after-action, information, dissemination, and exploitation report
R&S .... reconnaissance and surveillance
RFA.. restrictive fire area
RFL.. restrictive fire line
RLT..regimental landing team
RPG...rocket-propelled grenade
RRP ....repair and replenishment point

S-1 .... personnel officer/personnel office
S-2 .... intelligence officer/intelligence office
S-3 ....operations and training officer/operations and training office
S-3A ....assistant operations officer
S-4 ....logistics officer/logistics office
S-6 .... communications system officer/communications staff office
SARCC .... surveillance and reconnaissance coordination center
SATCOM...satellite communications
SEAD ....suppression of enemy air defenses
SFCP ....shore fire control party
SIPRNET ....SECRET Internet Protocol Router Network
SIR ....specific information requirement
SOP ....standing operating procedure
SSTR..stability, security, transition, and reconstruction
STOM ....ship-to-objective maneuver
SUAS ....small unmanned aircraft system
SVOIP.. Secure Voice over Internet Protocol

T/O .... table of organization
TACLOG ....tactical-logistical
TACP .... tactical air control party
TACSOP .... tactical standing operating procedure
TAI..target area of interest
TAR/HR..tactical air request/helicopter request
TBFDS .... tactical bulk fuel delivery system
TTP ....tactics, techniques, and procedures

UAS .... unmanned aircraft system
UHF .... ultrahigh frequency
UMCC.. unit movement control center

XO...executive officer

Section II: Terms and Definitions

area reconnaissance
A directed effort to obtain detailed information concerning the terrain or enemy activity within a prescribed area such as a town, ridge line, woods, or other features critical to operations. (USMC Dictionary)

battlefield coordination line
A fire support coordination measure, similar to a fire support coordination line, that facilitates the expeditious attack of targets with surface indirect fires and aviation fires between this measure and the fire support coordination line. To facilitate air delivered fires and deconflict air and surface fires, an airspace coordination area will always overlie the area between the battlefield coordination line and the fire support coordination line. The battlefield coordination line location is graphically portrayed on fire support maps, charts, and over-lays by a solid black line with the letters "BCL" followed by the establishing headquarters in parentheses above the line and effective date-time group below the line. (USMC Dictionary)

close operations
Military actions conducted to project power decisively against enemy forces that pose an immediate or near-term threat to the success of current battles or engagements. These military actions are conducted by committed forces and their readily available tactical reserves, using maneuver and combined arms. See also deep operations; rear operations. (USMC Dictionary)

commander's critical information requirement
(See DoD Dictionary for core definition. Marine Corps amplification follows.) Information regarding the enemy and friendly activities and the environment identified by the commander as critical to maintaining situational awareness, planning future activities, and facilitating timely decision-making. The two subcategories are priority intelligence requirements and friendly force information requirements. Also called **CCIR**. (USMC Dictionary)

contact point
In land warfare, a point on the terrain, easily identifiable, where two or more units are required to make contact. (DoD Dictionary, part 1 of a 3-part definition)

counterreconnaissance
All measures taken to prevent hostile observation of a force, area, or place. (USMC Dictionary)

covering force
A self-contained maneuver force that operates beyond the range of friendly artillery positioned with the main force. To operate independently, a covering force may task-organize to include aviation, artillery, reconnaissance, and combat service support. (USMC Dictionary, part 3 of a 3-part definition)

cueing
External actions or inputs that cause a surveillance or target acquisition device to turn on and search a suspect area. (USMC Dictionary)

deep operations
Military actions conducted against enemy capabilities that pose a potential threat to friendly forces. These military actions are designed to isolate, shape, and dominate the battlespace and influence future operations. See also close operations; rear operations. (USMC Dictionary)

electromagnetic warfare
Military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. Also called **EW**. (DoD Dictionary)

essential elements of friendly information
>   Specific facts about friendly intentions, capabilities, and activities needed by enemies and adversaries to plan and execute effective operations against our forces. Also called **EEFI**. (USMC Dictionary)

essential elements of terrain information
>   Those aspects of the terrain, both natural and manmade, that are identified as critical to mission success. Also called **EETI**. (USMC Dictionary)

force-oriented reconnaissance
>   A directed effort to quickly find a specific enemy force and stay with it wherever it moves on the battlefield. (USMC Dictionary)

friendly force information requirement
>   (See DoD Dictionary for core definition. Marine Corps amplification follows.) Information the commander needs about friendly forces in order to develop plans and make effective decisions. Depending on the circumstances, information on unit location, composition, readiness, personnel status, and logistic status could become a friendly force information requirement. Also called **FFIR**. (USMC Dictionary)

guard
>   A form of security operation whose primary task is to protect the main force by fighting to gain time while also observing and reporting information, and to prevent enemy ground observation of and direct fire against the main body by reconnoitering, attacking, defending, and delaying. A guard force normally operates within the range of the main body's indirect fire weapons. (USMC Dictionary, part 2 of a 2-part definition)

headquarters commandant
>   Operating under the staff cognizance of the chief of staff, the officer responsible for local operational, administrative, and logistic support of the headquarters. Also called **HQCMDT**. (USMC Dictionary)

information requirements
>   (See DoD Dictionary for core definition. Marine Corps amplification follows.) All information elements the commander and staff require to successfully conduct operations, that is, all elements necessary to address the factors of mission, enemy, terrain and weather, troops and support available—time available. Also called **IR**. (USMC Dictionary)

linkup
>   An operation wherein two friendly ground forces join together in a hostile area. (USMC Dictionary)

named area of interest
>   (See DoD Dictionary for core definition. Marine Corps amplification follows.) A point or area along a particular avenue of approach through which enemy activity is expected to occur. Activity or lack of activity within a named area of interest will help to confirm or deny a particular enemy course of action. Also called **NAI**. (USMC Dictionary)

passage of lines
>   An operation in which a force moves forward or rearward through another force's combat positions with the intention of moving into or out of contact with the enemy. (DoD Dictionary)

priority intelligence requirement
>   (See DoD Dictionary for core definition. Marine Corps amplification follows.) An intelligence requirement associated with a decision that will critically affect the overall success of the command's mission. Also called **PIR**. (USMC Dictionary)

rear area
>   That area extending forward from a command's rear boundary to the rear of the area assigned to the command's subordinate units. This area is provided primarily for the performance of combat service support functions. (USMC Dictionary)

rear operations
Military actions conducted to support and permit force sustainment and to provide security for such actions. See also close operations; deep operations. (USMC Dictionary)

reconnaissance
A mission undertaken to obtain information about the activities and resources of an enemy or adversary, or to secure data concerning the meteorological, hydrographic, geographic, or other characteristics of a particular area, by visual observation or other detection methods. (DoD Dictionary)

reconnaissance in force
A deliberate attack made to obtain information and to locate and test enemy dispositions, strengths, and reactions. It is used when knowledge of the enemy is vague and there is insufficient time or resources to develop the situation. (USMC Dictionary, part 1 of a 2-part definition)

route reconnaissance
A directed effort to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along that route. (USMC Dictionary)

screen
A security element whose primary task is to observe, identify, and report information, and only fight in self-protection. (USMC Dictionary, part 1 of a 2-part definition)

security area
The area that begins at the forward edge of the battle area and extends as far to the front and flanks as security forces are deployed, normally to the forward boundary of the area of operations. Forces in the security area conduct reconnaissance to furnish information on the enemy and to delay, deceive, and disrupt the enemy. (USMC Dictionary)

security force
The detachment deployed between the main body and the enemy (to the front, flanks, or rear of the main body) tasked with the protection of the main body. The security force may be assigned a screening, guard, or covering mission. (USMC Dictionary)

supported commander
In the context of a support command relationship, the commander who receives assistance from another commander, and who is responsible for ensuring the supporting commander understands the assistance required. (DoD Dictionary, part 3 of a 3-part definition)

zone reconnaissance
A directed effort to obtain detailed information concerning all routes, obstacles (to include chemical or radiological contamination), terrain, and enemy forces within a zone defined by boundaries. A zone reconnaissance normally is assigned when the enemy situation is vague or when information concerning cross-country trafficability is desired. (USMC Dictionary)

REFERENCES

Department of Defense Publications

Joint Publications (JPs)
2-0   Joint Intelligence
2-01.3   Joint Intelligence Preparation of the Operational Environment
3-0   Joint Campaigns and Operations
3-02   Amphibious Operations
3-02.2   Joint Doctrine for Amphibious Embarkation
3-07   Joint Stabilization Activities
3-09.3   Close Air Support
3-24   Counterinsurgency
3-57   Civil-Military Operations

Military Standard (MIL-STD)
2525_   Department of Defense Interface Standard Joint Military Symbology

Miscellaneous
DoD Dictionary of Military and Associated Terms

Marine Corps Publications

Marine Corps Doctrinal Publications (MCDPs)
1   Warfighting
1-0   Marine Corps Operations with Changes 1, 2, and 3
1-3   Tactics
6   Command and Control
8   Information

Marine Corps Warfighting Publications (MCWPs)
2-10   Intelligence Operations
3-01   Offensive and Defensive Tactics
3-03   Stability Operations
3-10   MAGTF Ground Operations
3-20   Aviation Operations
3-31   Marine Air-Ground Task Force Fires
3-32   Marine Air-Ground Task Force Information Operations
5-10   Marine Corps Planning Process

Marine Corps Tactical Publications (MCTPs)

2-10A	MAGTF Intelligence Collection
2-10B	MAGTF Intelligence Production and Analysis
3-01A	Scouting and Patrolling
3-01B	Air Assault Operations
3-03A	Marine Air-Ground Task Force Civil-Military Operations
3-10E	Artillery Operations
3-10F	Fire Support Coordination in the Ground Combat Element
3-20E	Assault Support
3-32A	Marine Air-Ground Task Force Combat Camera
3-32B	Operations Security (OPSEC)
3-34A	Combined Arms Mobility
3-34B	Combined Arms Countermobility
3-34C	Survivability Operations
3-40B	Tactical-Level Logistics
3-40F	Distribution and Transportation Operations
10-10E	MAGTF Nuclear, Biological, and Chemical Defense Operations
13-10C	Unit Embarkation
13-10D	Maritime Prepositioning Force Operations
13-10E	Ship-to-Shore Movement

Marine Corps Reference Publications (MCRPs)

2-10A.6	Ground Reconnaissance Operations
2-10A.7	Reconnaissance Reports Guide
2-10B.1	Intelligence Preparation of the Battlefield/Battlespace
2-10B.7	Company Level Intelligence Cell
3-20D.2	Deep Air Support
3-34.3	Engineer Reconnaissance
3-40F.7	Multi-Service Tactics, Techniques, and Procedures for Tactical Convoy Operations (TCO)
3-40G.3	Multi-Service Tactics, Techniques, and Procedures for Mortuary Affairs in Theaters of Operations
5-10.1	Multi-Service Tactics, Techniques, and Procedures for Operation Assessment

Marine Corps Orders (MCOs)

3070.2	The Marine Corps Operations Security (OPSEC) Program
3500.27	Risk Management

Miscellaneous

Marine Corps Supplement to the DOD Dictionary of Military and Associated Terms