Global Cavalry

by Captain William S. Riggs

Author's light armored cavalry concept would be based on LAVs or similar vehicles.

The U.S. Army lacks a rapidly deployable mounted force with the necessary firepower, mobility, protection, and supportability to meet America's worldwide commitments.

Since the collapse of the Soviet Union and the ensuing "peace," the armed forces of the United States have participated in over 25 major deployments in a 7-year period, as opposed to 10 major deployments during the 40 years of the cold war (Army Vision 2010).

Current Military Capabilities (USMC, Light, Heavy)

The Armed Forces of the United States in the post-cold war era are constantly required to do more with less. This applies to all aspects of our Defense Department and greatly affects our ability to carry out national policy. In an ever-changing world with greater volatility and a reduced U.S. military capability, American defense planners are having to re-look theories of power projection and force composition. Reviewing the types of possible missions, three come to mind with the early deployment of force central to all. 1) Major Regional Conflict (MRC), 2) Stability and Support Operations (SASO), and 3) Forced entry operations in support of either 1 or 2. All three mission types require the early introduction of credible combat units that are able to support/secure follow-on forces or take direct action themselves. Regardless of statements made by other services, ground forces (i.e., the Army) ultimately are required to win conflicts and demonstrate American resolve, which argues that future conflicts must be truly joint operations maximizing the strengths of each service. The Air Force and Navy can gain air superiority over most nations, and in most types of terrain can limit the enemy's ability to reposition large formations. However, their ability to secure drop zones, airfields, and port facilities are limited. Army forced-entry operations revolve around securing airfields, while Marines focus on port facilities, each designed to facilitate the deployment of follow-on forces. This presents a potential enemy with few options to counter in his defense against the introduction of U.S. forces (airfields and ports). With these considerations in mind, what ground forces does the country possess that can actually carry out rapid power projection operations?

The Marine Corps is equipped, organized, and trained to be the country's expeditionary force. The Marine MEU (light infantry battalion-sized unit) possesses the ability to seize limited objective from the sea as long as the objective is relatively near an ocean. If objectives are in land-locked countries, or located far from the sea, the Marines are severely limited. In addition, with the procurement of advanced missile technology by many nations, the employment of Marine forces places considerable risk on the ships bringing them ashore.

Consider the problems and losses faced by the British in the Falklands against Argentinian defenses. The Marine Corps is currently working on equipment and doctrine for extended projection operations from ships over the horizon that would enable small forces to move up to 500 miles inland for short periods of time on specific missions. However, in the end, the ability to project credible ground combat power into a theater is not a Marine Corps function.

The Army's rapid deployment light forces (82nd Airborne) are billed as "strategically mobile," yet possess limited combat power and mobility once on the ground and, thus, are not a realistic solution to forced entry operations in other than situations where the enemy lacks a cohesive military and/or armored force. Light forces also must be dropped within walking distance of their objectives, thus their employment is quite predictable for a defending enemy. The method of dropping airborne forces onto airfields revolves around the assumption that the enemy does not possess sufficient antiaircraft gun and missile defenses to defend their key airfields and ports.

Due to the limited tactical mobility and firepower of American airborne forces, their ability to quickly expand air-heads and initiate offensive operations is severely limited. (Note: This is why Soviet airborne forces were mechanized.)

Heavy forces have two realistic options for deployment. 1) Forward-deployed units (Germany, Korea, and Kuwait) can rail, barge, or HET into theater, as seen in Bosnia, or 2) Pre-positioned ships. The movement and sustainment of heavy forces of any useful size by air is not a realistic option and therefore not considered in this article. With either forward-deployed forces or pre-positioned ships, the movement of heavy forces is slow and cumbersome, not to mention the tremendous amounts of logistical support required once in the theater of operations.

The use of pre-positioned ships depends on a multitude of factors, ranging from having a secure port to disembark vehicles to air-heads that will support troop transports flying in soldiers to link up with their equipment. All of this assumes that the enemy has not sunk the pre-positioned ships prior to their arrival at a port facility. Therefore, the use of heavy forces in support of power projection operations is limited to their ability to be shipped and is therefore, realistically, not a good option if time is a factor.

Role of the Army and Force Projection Missions

The Army is faced with the unpleasant but necessary task of restructuring while retaining the ability to win future conflicts. Army Vision 2010 outlines seven major missions for the Army. The majority of these missions discuss the employment of light forces, special operations forces, and information systems. The employment of heavy forces is limited to major conflicts and limited SASO-type missions.

This article revolves around this issue: the nation doesn't have a rapidly deployable mounted force able to get where it is needed (within hours) and have credible combat power once on site. If this capability existed, the mounted force could set the conditions for the follow-on forces to be successsful in their missions.

The days of large field armies of massed tanks facing the Soviets at the Fulda Gap are much less likely now. In Desert Storm, we were given the "war of choice," one in which we were allowed months to build up forces; a war our equipment, organizations, and doctrine were specifically designed to fight. In addition, the campaign took place on the best possible armored warfare terrain.

Today, we cannot clearly identify our future foes. Possible enemies range from thugs and bandits armed with AK-47s in Haiti, to hodgepodge armies in Bosnia, to manpower-intensive armies like North Korea and China, to the most modern and best equipped armies of the Middle East. The current threat is whomever the national policy makers decide it is and, thus, we must be prepared to meet all levels of threat with the best possible force mix available today within the constraints of allocated resources. Clearly, based on the past ten years, operations in the future will revolve around missions like Bosnia, Albania, Zaire, Rwanda, Haiti, and Somalia. This is not to say that we should not plan on fighting a large conventional land army with advanced technology, but rather that we acknowledge the reality of our world and plan for it.

To some extent, larger conventional threats will be kept in check by global political and economic pressure and by our unquestionable ability to wage high-tech conventional warfare through the use of precision munitions and electronic means. Countries that are not part of the global economy will be the scenes of future conflict due to the inability of world organizations to influence them. In a world of "haves" and have-nots," most future Army operations probably lie with the "have-nots."

Requirements

The Army fights and wins ground wars. The problem facing us today is our ability to get to those wars quickly with the correct mix of forces. The question faced by the mounted force today is, can we get to a conflict with a credible force in a timely manner and influence events in our favor? With a smaller overall force structure, we need to refocus the employment of the force to ensure that we get the most bang for the buck, as well as maximizing the strengths of our emerging technologies and our sister services. The Marines have a niche market for what they do. The Army has the ability to win most wars if it can get to them. The "can get there" issue is the dilemma. If a large conflict develops, we must call up National Guard and Reserve forces to round out the Army, train units, prepare for deployment, deploy, receive equipment, move into theater, and start operations. The commitment of credible U.S. ground forces is a time-phased issue, which may lead to an unfavorable resolution for the nation due to the Army's inability to physically influence events on the ground in a timely manner.

The force required would have to possess some traits not found in today's Army. The force envisioned should be deployable, mobile, lethal, survivable, supportable, and employ the latest information technology.

- *Deployable*: The organization must be instantaneously deployable by all Air Force cargo aircraft in force packages that can accomplish a variety of missions.
- *Mobile*: The organization must possess the mobility necessary to self-deploy once in theater, operate across all types of terrain, to include river crossings with light bridges, as well as the ability to operate over long distances with minimal support.
- *Lethal (Firepower):* The organization must have organic firepower that will enable it to defend itself, as well as realistically present a threat to the enemy force.
- *Survivable (Protection)*: The equipment should provide a level of protection to the crew equal to or greater than the current BFV. Protection for vehicles should include electronic and information-sharing technologies as well as conventional armor.
- *Supportable*: The force should be totally supportable by air. The organization should have very limited logistical requirements and be able to operate without supplies for two to three days.
- *Technology*: Every vehicle in the organization should share a common appliqué-type information system. The organization should also have access to theater and national intelligence assets.

Deployability: The rapid deployability of the organization is key and should be viewed as strategic mobility. In addition, the force should be permanently task-organized to facilitate immediate deployment and training as a combined arms team. The entire organization should be deployable by C-130 aircraft or larger.

***Mobility*:** There are three major types of mobility — strategic, operational, and tactical. The proposed organization must maximize mobility in all three areas.

- *Strategic:* With the shift from forward-deployed forces to CONUS-based forces, the Army should maintain a rapidly deployable, task-organized or modular-packaged mounted force at all times. This force should be deployable by all U.S. Air Force cargo aircraft and should be immediately available once on the ground. The current use of airborne and Ranger units to seize airfields is extremely dangerous and presents great risk to the infantry commander once on the ground with enemy armored forces. Strategically mobile mounted forces could present the enemy with multiple challenges. No longer could he focus his forces on likely U.S. entry points (ports and airfields), but he would have to watch every road and dirt track capable of supporting a C-130 or C-17. Once mounted forces were on the ground and able to influence the enemy, introduction of conventional infantry and armored forces becomes much simpler.

- *Operational:* Operational mobility is best described as the *organization's* ability to operate over extended distances in support of operational objectives. The immediate movement of the organization from a port, airfield, or landing area to the area of operations is critical. Currently, HET or rail support is necessary to move heavy units from the port of entry to the battlefield. Operational mobility also includes the ability to cross unimproved bridges and water obstacles unaided to position the force when and where it is needed. A major factor seldom considered is the constraint on mobility imposed on heavy organizations by the extensive logistics tail required for sustained operations. Combat vehicles

can cross rough terrain, while supporting logistical organizations cannot. Supporting logistical organizations can move great distances with organic assets, while the combat vehicles cannot. Logistical support requirements must always be considered as part of a unit's overall mobility.

- *Tactical:* When discussing the mobility of a vehicle, most people picture tanks crossing a World War I-type "no-man land." Mobility should take into consideration all aspects of the vehicle AND the overall organization's mobility requirements. Mobility should be viewed as a vehicle/organization's ability to cross open terrain, bridges, water obstacles (rivers), factoring in distance, speed, and logistical support. Overall, the organization should possess better mobility than HMMWV-based units.

Lethality **(firepower):** The organization must possess the same or better firepower than found in today's mechanized infantry battalions. However, firepower should not be restricted to the size of the gun carried by a particular vehicle but rather the effects that the organization can bring to bear. The organization should possess the latest precision munitions and have the ability to direct munitions from other systems and services to maximize the lethality and flexibility of the unit.

Survivability **(protection):** The system should possess equal or greater protection than the Bradley Fighting Vehicle. Today's weapons systems bring into question traditional ideas of survivability. In the past, designers of armored vehicles focused on the ability of a vehicle to withstand a hit, within the front 60-degree arc, from the highest caliber or most dangerous antitank weapon of the day. However, with advances in mine warfare (smart mines, top attack mines, etc.), precision guided munitions, handheld antitank charges, top attack missiles, hyper-velocity or kinetic missiles, and kinetic energy tank rounds, most armored vehicles are obsolete before they roll off the production line.

Future concepts of protection will revolve around a mix of armor and active defenses to protect the vehicle. With that in mind, we must re-evaluate our concepts of survivability and focus on all aspects of protecting a vehicle. If almost any antitank type of munitions can penetrate an armored vehicle (with the exception of select Western main battle tanks), what remains? Mobility! The vehicle should take advantage of all available electronic detection and warning devices (laser, mine, NBC detection/warning devices), crew survivability measures (spall liners, fire suppression, mine blast protection, and mobility following a mine strike), mobility (the ability to move faster than an enemy can acquire, track, and engage), and information systems (digital network allowing situational awareness). The concept of adding armor packages to a vehicle, like the ill-fated Armored Gun System, presents a false sense of security while increasing the vehicle's weight and decreasing its mobility.

Supportability**:** The organization should require limited logistical support relative to that of heavy forces. The limited logistical concept supports the limitations of forced entry operations and the amount of logistics that they are able to move, as well as the requirement to support the unit by air. Logistical support from the air is not seen as the primary method of resupply, but rather as a viable option during initial entry operations and long-range reconnaissance missions. The force envisioned would operate from a single vehicle chassis, drastically reducing the number of different parts that must be carried, while significantly increasing the number of parts that can be carried for the common family of vehicles (FOV). The single FOV concept also reduces the number and type of mechanics necessary to fix the vehicles. Fuel economy must be similar to that of a truck or BFV and the entire organization should be able to travel two to three days without any external logistical support. The organization's logistical support equipment must be fully integrated into all digital networks and possess the ability to go wherever their supported unit goes (i.e., no LOGPAC; logistic vehicles use digital networks to maneuver independently over extended distances, water obstacles, and around enemy positions to deliver supplies).

Information Systems**:** The envisioned organization should maximize all available information technologies (digital information/communications network, long range radios, secure mobile phones, TACSAT, TELE-MEDICINE, ASAS, UAV, and access to theater and national intelligence assets (J-STARS, AWACS, and satellite imagery), as well as the capability to expand as new systems become available. All vehicles in the organization should possess digital information/communications packages that enable independent operations at all levels (scouts through CSS operations). Radios must be multi-functional SINCGARS/UHF/VHF for long range communications over rough terrain and with other services. Communications systems must also enable the organization to communicate for support or to pass intelligence in a joint and/or coalition environment. When considering communications and information systems, we should attempt to maximize all available assets, to include commercial off-the-shelf systems.

This article proposes giving the U.S. Army a truly "full spectrum force," capable of rapid global deployment, with the firepower, mobility, protection, information, and logistical ease of support necessary for a range of missions. The organization would not take the place of heavy units, but would rather be a mounted force that specialized in rapid deployment/forced entry, SASO, and theater-level ground reconnaissance during Major Regional Conflicts (MRCs).

The critical argument is that of time; most agree that the HMMWV is not the ideal reconnaissance platform, nor was it designed to be. On the other hand, can we afford to wait until 2010 for the development of an FSCS type vehicle designed to optimally operate in open country (NTC), as opposed to its more likely employment environments (urban and restricted terrain) as seen in all global conflicts other than the Gulf War? The proposed organization is not intended to take the place of the FSCS, which is a superb concept, but rather meets an existing requirement that — since the death of the AGS and other light systems — has gone unmet. Many will scoff at the idea of fielding an organization that does not fit traditional "Armor" or "Cavalry" structure, or conduct traditional roles. These arguments have been heard many times before with the advent of the machine gun, the tank, the airplane, and the all-helicopter division. Of concern is a growing fascination with technologies that reduce the number of soldiers required while the experience of each deployment brings cries from joint force commanders for more infantry and tanks. Also of concern is that a technologically inferior, yet competent, enemy may nullify our advantages by changing battlefield conditions (note U.S. experiences in Vietnam and Somalia, and Russian experiences in Afghanistan and Chechnya). The current trend is to do more with fewer soldiers; however, we should look for realistic ways to balance technology with combat realities. The answers for the Army do not all lay with technology, but rather with a healthy balance of the two, erring on the side of the soldier. Recently, technology has aided the fight, but has not reduced the actual need for more and more soldiers with the ability to apply

physical force to decide the final outcome of a situation or collect intelligence through the Mark I eyeball (HUMINT).

Certainly, this mounted rapid deployment force is not the "be-all, do-all" force, nor will it solve all of the Army's problems. This article attempts to generate professional discussion within the force by highlighting current weaknesses within the mounted force and outlining a possible solution.

Concept of design

When setting out to design the "objective" organization, all aspects of a force were examined. The design attempted to incorporate ideal manning levels, weapon systems, command relationships, logistical requirements, and operational employment theories, regardless of political, financial, or branch bias.

The organization design focuses on the concept of self-contained packages while giving the commander all necessary assets to accomplish a range of missions. All organizations are permanently task-organized to maximize effectiveness and to establish relationships as we actually fight. Headquarters were designed to command and control only; they were stripped of control of all units other than those organic to subordinate maneuver units (i.e., no engineers or MI company at regimental level because these assets are broken down to the troop and squadron level).

The General Motors (GM) Light Armored Vehicle (LAV) Family of Vehicles (FOV) is the platform proposed for employment in the "medium" ACR concept. The proposed LAV organization can be fielded today with equipment available "off the shelf" and serve as a valuable addition to our force structure while meeting the needs of the Army.

Traditional procurement procedures can be radically reduced if testing and evaluation data are accepted from other countries currently operating the vehicle. Vehicles can be leased, and select DS and depot-level maintenance can be contracted. Why not send the vehicle back to GM for depot-level work, rather than creating an infrastructure to support the system? In times of limited funding, we must develop innovative ways of resourcing to maximize benefit to the operational forces, not Army infrastructure and the defense industry.

The ageless argument of wheels versus tracks will not be discussed, as data can be presented to support either case. However, military employment of wheeled vehicles around the world clearly indicates the effectiveness of these systems to meet a range of missions across all types of terrain.

Overview

The proposed LAV-based unit is organized along cavalry regiment lines and is designed to operate on a non-linear battlefield and during SASO. The regiment integrates the latest technology in communications, surveillance, and intelligence collection systems with ground troops, aviation troops, UAVs, and joint systems. The organization crosses traditional branch boundaries to incorporate the best systems available, while maximizing the overall effectiveness of the unit. With the advent of the tactical internet, satellites, JSTARS, UAVs, LRAS, laser warning devices and other advanced systems, we must reexamine our methods of employment and collection, as well as our ability to support/conduct actual maneuver warfare.

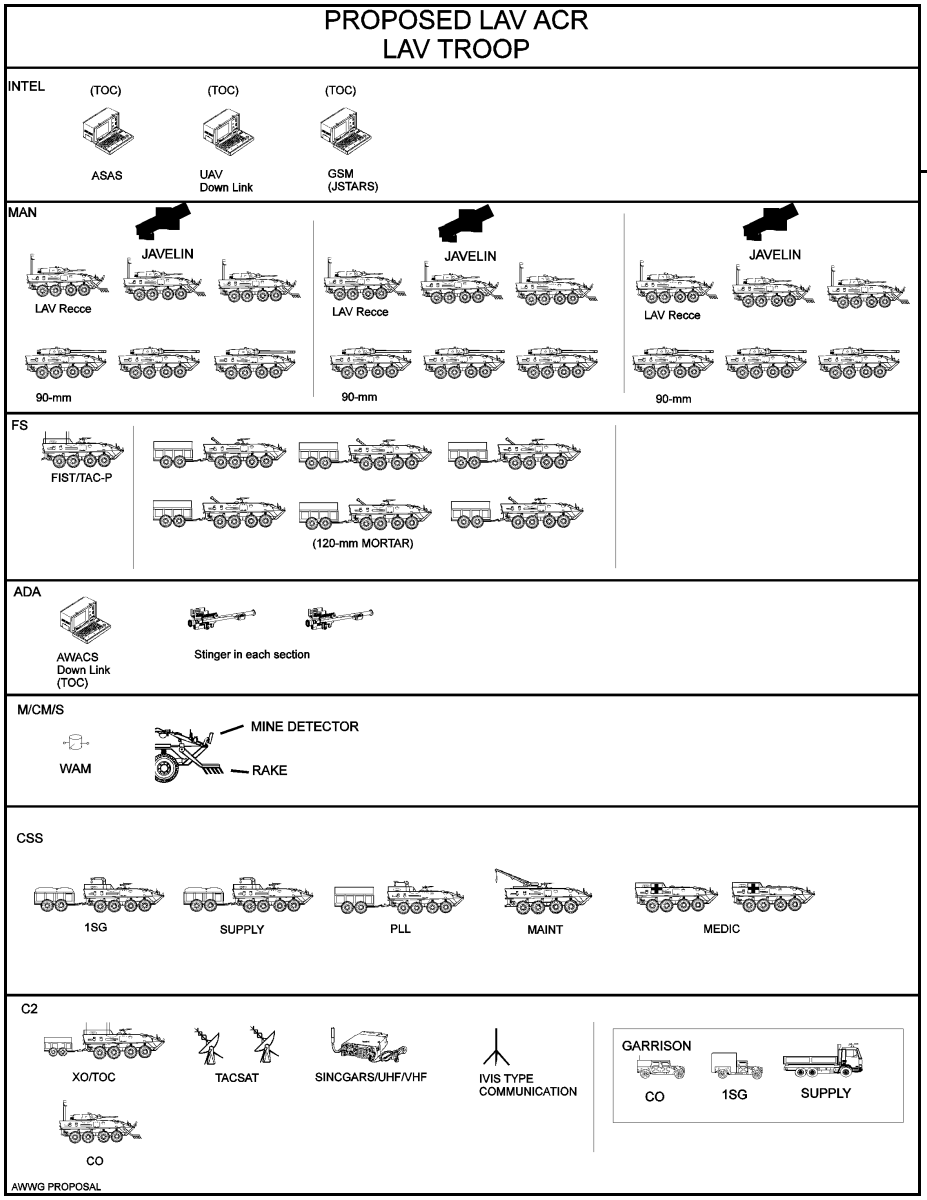
The units (from troop level up) are designed to be deployable packages or modules. Each troop can receive data from joint and national assets while deployed independently of the squadron.

Employment Scenarios

Rapid Deployment/Forced Entry Support: The LAV cavalry organization is exceptionally well-suited to support rapid deployment and forced-entry operations. The LAV cavalry troop is a self-contained (modular) package with the mobility, firepower, protection, and logistical structure necessary for the support of light forces. Since the deactivation of the 82d Airborne Division's 3-73rd Armor, the mounted force has failed to provide a rapidly-deployable mounted force in support of the light infantry. The Javelin missile has been designated as the stopgap for the loss of the Sheridans, however, it is not designed to blow large holes in buildings, nor is it well-suited for rapid armored maneuver against enemy forces. Traditional methods of air-dropping LAVs can be employed, if required, to support landing zone operations. However, the LAV offers an option to traditional airborne employment of vehicles. Why not land the unit along a remote road or strip, then move off to collect intelligence or to fight the enemy on terms favorable to us? The C3I capabilities of an LAV troop may also aid the "operational ground commander" as light forces lack advanced digital "situational awareness" and communications packages. The relatively light logistical impact of an LAV-based unit is also of value as initial entry forces do not have the support structure necessary to support large logistical requirements.

SASO Employment: The LAV organization is particularly well suited for SASO environments. The organization has the ability to operate independently across extended distances with the protection and firepower necessary to deter and defend. The LAV organization is well-suited for SASO in that it can operate immediately in a logistically "immature" theater of operations, thus providing the necessary protection and presence for the introduction of conventional forces. With a digital communication system that provides "situational awareness," the troop/squadron commander has the ability to monitor a much larger area than previously possible with conventional forces. Major tasks for mounted units in SASO environments include: convoy security over long distances, checkpoint operations, observation point duties, and quick reaction force (QRF) operations. Fast, wheeled organizations lend themselves well to these tasks, as seen by wheeled organizations employed in Bosnia by European nations during UN and later IFOR operations. Wheeled units have the ability to cross small bridges, (the majority of bridges in the Third World) which are incapable of supporting armored vehicles, as well as the ability to travel extended distances, at road speeds, with the supported unit.

Major Regional Conflict (MRC): (Theater reconnaissance) The proposed organization is not designed to "fight" like a traditional ACR, due to its enhanced mobility, lack of armor protection, and improved "situational awareness." The organization will focus on the theater commander's Critical Information Requirements (CCIR) that cannot be effectively answered/detected by electronic means. Based on this concept, the organization will operate as small, semi-independent section/platoon-sized units across the battlefield to collect specific intelligence for the commander. The employment of this type of organization



also enables the commander to simultaneously attack targets throughout the depth of enemy territory, thereby giving him a mounted "Deep Strike" capability, as was required in western Iraq to hunt SCUDs during Desert Storm. One of the principle features of LAV-based units is the human aspect of reconnaissance. Modern electronic systems provide exceptional and timely battlefield information but lack the ability to collect HUMINT-type intelligence by talking to locals, interrogation of prisoners, physical inspections of sites and equipment, and route and area reconnaissance.

Testing of New Equipment: Due to its unique abilities, the LAV ACR offers an excellent platform for testing new technologies. In addition, it may form a link to the development of doctrine for the Army After Next. However, testing should be "field testing" by troops, not AWE type testing with umbilical cords tied to contractors' test benches. The unit must retain its rapid deployment capabilities.

For the purpose of this article, only the LAV troop and LAV squadron will be addressed.

The LAV Troop

Intelligence: Each troop has the capability to receive intelligence data from multiple sources. J-STARS down-link, All Source Analysis System (ASAS), and UAV down-links may be options, but to maximize the troops' capabilities, they must have the ability to see the "whole" picture. These assets are normally found in brigade and higher echelons; however, due to the troops' requirement to deploy quickly in immature theaters and operate over large distances, these systems are needed at the lowest level. This enables individual vehicles/sections to avoid enemy concentrations and seek only the information required by the commander.

Maneuver: The LAV cavalry troop is designed as a "complete package" with the assets necessary to conduct a range of operations. The unit organization is designed to stand alone or operate as part of a squadron. The troop consist of three scout platoons of three reconnaissance LAVs and three 90mm or 105mm LAVs. The reconnaissance LAV (Canadian "Coyote" recce vehicle) is equipped with a Long Range Acquisition System (LRAS) suite (GSR/FLIR/thermal sight/camera/laser) on a 10m telescopic mast or ground-mounted, laser detection/warning, munitions guidance laser, 25mm cannon, Javelin ATGMs, and an appliqué-type digital information/communication package. Each section consists of a reconnaissance vehicle and an LAV 90mm/105mm. The LAV 90mm/105mm, as the wingman, provides the necessary protection for the recce vehicle.

Fire Support: Traditional "high explosive" artillery support is not employed by the LAV unit. Scout sections rely on troop-organic, breech-loading 120mm mortar fires for HE and smoke support. When targets of interest to the theater commander are located, the unit calls for CAS, Army Aviation, MLRS, or ATACMS. Each scout LAV and select others have laser designators and the ability to digitally call for Hellfire support. Hellfire missiles can be fired from LAV-based Hellfire vehicles, or from OH-58D helicopters. Mortar LAVs may operate independently of their platoon in support of scout platoons/sections.

Air Defense: No dedicated ADA vehicles move as part of the troop. The troop has an organic ADA capability with an AWACS down-link, and each section-sized unit is issued STINGER missiles. With the ability of each vehicle to "see the battlefield" through the appliqué system, air battle management can effectively be coordinated and directed. The troop XO's C2 LAV has an AWACS down-link capability. During forced entry operations and long range reconnaissance operations, air defense becomes a critical asset. The ability of the unit to maintain situational awareness of air operations is significant when considering the troop's reliance on CAS/Army aviation support. During forced entry operations, the troop has the ability to quickly

expand the SHORAD air defense umbrella over friendly forces and air fields.

Mobility/Countermobility/Survivability: Troop mobility is provided by vehicle-mounted light Israeli rakes and magnetic pre-detonation/detection devices. Countermobility is provided by MOMPS/WAM mines. Organic, engineer type, survivability equipment is not necessary due to mobile nature of the organization. If survivability positions are required, theater heavy engineers can be requested. NBC protection/detection is provided by organic chemical detection equipment. In an NBC environment, LAVs could locate contaminated areas and pass their locations via their digital information/communications network.

CSS: The key to the LAV organization is its ability to operate with limited logistical support. However, to maximize the troop's capabilities, the CSS systems must be capable of providing long range support, primarily fuel, independently, over all terrain. The LAV squadron CSS system would not operate a traditional LOGPAC but rather would independently maneuver forward through the use of digital communications to exchange fuel/water and ammunition trailers. The 1SG, XO, and supply sergeant LAV each tow a trailer (1SG=fuel, XO=fuel, Supply=water/fuel). Sections or individual vehicles link-up, when necessary, with the 1SG/XO/supply sergeant for fuel, water, and rations. When the 1SG/XO/supply sergeant's trailers become low, squadron CSS LAVs maneuver forward and exchange full trailers for empty ones. Ammunition resupply is conducted on an as-needed basis.

The key to independent operations of LAV resupply vehicles, as opposed to central control, is the ability to use appliqué type systems to avoid enemy concentrations, minefields, and built-up areas. The troop has two medic LAV ambulances. Troop medics should be trained to 18-series standards and be able to employ digital TELE-MEDICINE technologies. The section's leader should be a PA, at a minimum, to provide critical medical treatment forward. The two medic LAVs give the troop the necessary medical support to operate over extended distances and on a wide frontage.

The maintenance/recovery LAV is able to repair minor faults/damage forward as well as cannibalize damaged LAVs. If required, it can recover damaged LAVs back to squadron maintenance collection points.

A PLL supply LAV carries a robust PLL capable of supporting the troop's Class IX requirements with limited external support for an extended period. A significant advantage of a single FOV is the ability to carry an increased PLL for one type of vehicle, the ability to cannibalize damaged/destroyed vehicles, and the requirement for only one type of hull mechanic. An additional benefit of the LAV FOV is the ability to use commercial truck parts for repairs.

C2: The principle feature that enables the LAV organization to conduct independent long range operations is the appliqué type digital information system. Every vehicle is given the whole picture, "situational awareness," and is able to operate independently within the framework of an interconnected communication system. The troop commander is provided with a recce LAV to enable him to move forward and "see" the actual battlefield through his own sights/eyes. The XO is mounted in a C2 LAV (TOC) which is the troop's combat information center with an ASAS, Ground Station Module (GSM)/J-STARS down-link, and UAV down-link. The vehicle contains all necessary electronic systems to enable the troop to conduct independent operations. The troop has two TACSAT communication systems and all vehicles have an integrated SINCGARS/UHF/VHF radio/data system.

Garrison: Two HMMWVs and an FMTV are provided for garrison operations. These vehicles are not intended for deployment.

The LAV Squadron

Intelligence: The intelligence platoon of the squadron consists of an S2 C2 LAV, a DF/Jammer LAV, four UAV LAVs (4 UAV, 2 control stations), and a Trojan Spirit LAV. The squadron commander has a CTT (Commanders Tactical Terminal) LAV assigned as his vehicle. The S2 LAV contains an ASAS, GSM (JSTARS) down-link, and a UAV down-link. Once the squadron is deployed, the intelligence platoon provides all "intelligence" related inputs into the common digital appliqué-type system, thus providing all vehicles with a common picture of the battlefield. The DF/Jammer LAV supports the reconnaissance effort in locating enemy electronic signatures and jamming when required. The UAV section flies missions in support of the reconnaissance effort, as well as finding routes through difficult terrain or around enemy positions for the ground troops.

Maneuver

AT Company: Squadron ground "killing" capabilities are in the form of the Hellfire AT company. Employed as a company or in platoons, Hellfire vehicles maneuver in support of the reconnaissance troops. The company consists of three platoons of four vehicles each and a HQ platoon consisting of the CO, XO, 1SG, supply, maintenance, and medics. All vehicles have digital communication systems and the ability to operate independently in support of the squadron or troops.

Aviation Troop: Once deployed, the LAV squadron gains an aviation troop consisting of OH-58Ds (Warrior). The aviation troop is employed in support of squadron/troop reconnaissance objectives or to provide Hellfire missile support.

Lift Platoon: Once deployed, the squadron gains a UH-60 lift platoon, consisting of four utility aircraft and two medevac helicopters.

Fire Support: Squadron fire support consists of an ALO/Tactical Air Control Party (TAC-P) LAV, and an FSO LAV. The squadron should never be in a position where it has the need for massed conventional artillery. CAS and Army Aviation are the squadron's primary methods of engaging targets throughout the depth of the enemy rear. Division and Corps MLRS and ATACMS are used on select targets, based on target importance.

Air Defense: As with the troop, air defense is provided by all squadron vehicles coordinated through the common digital information/communications network. The air defense fight is managed by the TOC C2 LAV with an AWACS down-link. The ability of the unit to maintain situational awareness of air operations is significant when considering the reliance on CAS/Army aviation support. During forced entry operations, the ability to quickly expand the SHORAD umbrella over friendly forces and airfields is critical.

Mobility/Countermobility/Survivability: The squadron engineer platoon consists of six squads of engineers mounted in

LAV APCs with light Israeli mine rakes and vehicle-mounted magnetic pre-detonation devices. Mobility is provided by the mine rakes, vehicle-mounted magnetic pre-detonation devices, and MICLICs, while countermobility is provide by Volcano/MOMPS/WAM mine systems. Engineer survivability assets are not included in the LAV regiment due to the nature of the organization and types of missions foreseen. If digging assets are required, they can be attached from corps. The squadron's mobility assets are primarily reserved for critical mobility needs. Countermobility equipment can be used to quickly establish obstacles to delay enemy forces or to aid in the establishment of a squadron, CAS, or aviation engagement area.

CSS: CSS is coordinated through the digital appliqué network, but is operated as semi-independent sections/vehicles.

Medical Platoon: Two LAV aid stations (MAS/FAS) are each manned by a surgeon and 18-series medics. Each aid station has TELE-MEDICINE capabilities. Platoon equipment includes six LAV ambulances, and two attached UH-60 ambulances.

Support Platoon: Capabilities include the ability to move supplies forward, through enemy territory, and on to the troops. The support platoon consists of a HQ section (PL and PSG) mounted in two CSS LAVs, a fuel section consisting of 12 CSS LAVs with fuel trailers, and a cargo section consisting of 12 CSS LAVs with cargo trailers. The fuel section transports all squadron bulk fuel in trailers, while water and other supply items are transported in the LAV's internal cargo bed.

The ability of each vehicle to "see" the battlefield through the digital network enables independent movement forward, cross-country, and across water obstacles, while avoiding enemy contact. The support platoon must also be able to setup and execute Forward Area Arming and Refueling Points (FAARPs). Attached aviation lift aircraft give the platoon flexibility in methods of resupply as well as providing general lift support to the squadron.

Maintenance Platoon: The maintenance platoon consists of a HQ element, a recovery section, a maintenance/PLL section, and a Maintenance Support Team (MST) that is organic to the squadron. The HQ element consists of the SMO and SMT mounted in an APC LAV. The recovery section is mounted in three recovery LAVs and assists in recovering troop and squadron vehicles. The recovery section is also responsible for the maintenance of squadron and HHT vehicles. The maintenance/PLL section consists of three CSS LAVs with cargo trailers. The maintenance/PLL LAV section performs general maintenance for the squadron, stocks PLL, and processes the squadron's Class IX requests. The squadron PLLs must be robust enough to support all squadron vehicles, for an extended period of time, without relying on the RSS Authorized Supply List (ASL).

The MST: The MST is organic to the squadron to provide direct support maintenance capabilities. The MST consists of a turret LAV, a missile LAV, and two Communications and Electronics (C&E) LAVs.

C2: The squadron command group is mounted in three C2 LAVs (SCO, SXO, CSM). The commander is mounted in a C2 LAV with the CTT communication package for the overall BC of the squadron. The S3 has two C2 (CTT) LAVs, one for himself (TAC) and one for the "battle captain" (TOC). The TOC C2 LAV is the squadron combat information center with an ASAS, a GSM (J-STARS) down-link, and a UAV down-link. The squadron S1 and S4 are also mounted in C2 LAVs. The squadron is authorized a permanent S5 and CA team also mounted in an LAV. The communications section consists of two LAV C2 vehicles which aid in squadron communications. The squadron is authorized two TACSAT communication systems.

HHT: The HHT commander and XO each have an APC LAV. The 1SG and supply sergeant are mounted in CSS LAVs with fuel trailers. The mess section is mounted in two CSS LAVs with cargo trailers.

Conclusion

The concept of fielding a new "specialized" organization of wheeled vehicles in direct financial competition with future systems may not seem practical. Arguments can be made that we should not buy an "Okay" system but rather we should hold out for the "perfect" system. The LAV-based organization does not meet the needs of the heavy TF reconnaissance platform (FSCS) due to increased size and other concerns when operating close to heavy conventional units. The current force mix of light infantry forces or heavy mechanized forces does not give the Army much flexibility during deployments, nor does it support actual warfighting requirements. Either the U.S. sends light infantry (low cost, low return) or it gears up TRANSCOM and deploys a heavy mechanized force with excessive logistical requirements (high cost, limited return). There is no middle ground.

As a mounted force, we must ask ourselves one question. Do we want to remain relevant? If we rest on the glories of Desert Storm and wait for the next "big one," we will see more and more reductions in our force. This has started with the reduction of four tank companies to three in the heavy battalion.

We must sell ourselves to the Army and the joint community as a critical element in any operation, not just major conflicts. We must become the first ground asset a CinC demands upon receipt of mission.

The LAV cavalry regiment meets the needs of the Army today as well as acting as a stepping stone to the Army After Next. To ensure that the mounted force remains a valuable and desired player in the evolving roles and functions of the nation's armed forces, we should explore all options available in pursuit of the optimum force.

For more information on the proposed LAV regiment, please refer to the AWWG web page at:

http://www.awwg.org/docs/currentproj/index.html#2acrlav

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