



United Defense Photos

A Second Look at the Armored Gun System

This tracked candidate for the Medium Gun System role offers unique strengths

by Captain Francis J. H. Park

The current focus on improving the deployability of today's armor force has brought a number of systems to the forefront with the establishment of the new Interim Brigade Combat Team (IBCT) at Fort Lewis. Among the requirements for the IBCT is a medium gun system (MGS), one that would provide the brigade a highly mobile, direct fire anti-armor capability. Such a vehicle, with its specified requirement to fit inside a C-130 tactical lift aircraft, could also benefit current light infantry and airborne organizations. The development of the IBCT has brought the M8 Armored Gun System (AGS) back into consideration as a possible MGS platform — for which doctrine already exists. The capabilities of the AGS and its rapid deployability would make it an option for both the IBCT as well as traditional light infantry organizations, and it deserves a second look.

If the future of the Army is to transition light infantry divisions to something based on the IBCT or its successor, fielding a mounted gun system to the light infantry and airborne divisions would be a logical transition.

In the meantime, however, a mounted gun system, and more specifically, a revival of the light armor battalion, has utility now. Such an organization would dramatically increase the combat power of light infantry divisions, and more importantly, reintroduce further forc-

ible entry capabilities to the airborne division.

Until 1997, the 82d Airborne Division had its own light armor battalion in the 3d Battalion (Airborne), 73d Armor. The removal of the M551A1 Sheridan (due to lack of repair parts and the age of the platform) as well as the cancellation of the AGS (then-type classified XM8) dealt the airborne division a considerable loss in its ability to perform its primary mission of forcible entry. Other anti-armor systems exist within the division, but none have the same kind of immediacy that a direct fire gun system brings into the fight.

While aviation (primarily the OH-58D Kiowa Warriors in the attack helicopter battalion and reconnaissance squadron) enjoys superior mobility, its ability to remain on station and its survivability under sustained fire are inferior to that of a light armor unit. The M966 TOW HMMWVs found in the anti-armor companies can be dropped with the initial assault force, but lack the rapid fire, ready magazine capacity, and shock effect inherent to an armored gun. Finally, the Javelin missile system, while extremely lethal, cannot be delivered with the initial assault force except as part of a door bundle or as secondary cargo on a vehicle or pallet configured for low-velocity airdrop. The Javelin command launch unit can be safely jumped in an ALICE pack. However, the missile cannot be safely

jumped either as a single item of equipment or as a tandem load due to its weight.¹ None of the aforementioned systems are truly usable in the infantry support role (e.g., destroying bunkers) without quickly depleting valuable (and scarce) ammunition that may be required against a mechanized threat.

The anti-armor assets available from corps for forcible entry operations are just as limited in their utility. Corps-level attack aviation is available in the form of AH-64 Apaches, with the same limitations as divisional aviation assets. One asset available from the 3d Infantry Division (Mechanized) is the Immediate Ready Company (IRC). The IRC consists of four M1A1HC tanks, four M2A2ODS Bradleys, two M113s, and a CSS slice of HEMTTs. This capability, however, is handicapped. The IRC (which requires ten C-17 airframes to move), must airland off a C-5 or C-17. Such operations require both a secured runway (particularly so for the C-5, which requires a lengthy takeoff and landing), as well as the offload time required for the vehicles themselves.

Unfortunately, employment of the IRC overlooks three basic considerations. First, if an enemy counterattacks before the IRC can be airlanded, there is no way to introduce the IRC. In addition, if the airfield has an aircraft maximum on ground (MOG) of less than four, the time required to introduce the IRC increases dramatically.

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Second, the IRC is totally unavailable in the conceivable possibility that the initial assault force needs armor just to secure the objective. Finally, the responsibility to maintain an IRC (in *FORSCOM Regulation 525-5, Alert Force Requirements and Response Standards*) also details a heavy force IRC as well. Given the amount of airlift required just to move the initial assault force as well as the IRC, not to mention the possible requirements of a heavy force during a contingency operation, the IRC may not even be available. In a worst-case scenario, light forces will need their own light armor.²

A detailed overview of the AGS appears in now-MAJ John Nagl’s article in the July-August 1992 issue of *ARMOR*, but several points are worth highlighting in light of its utility to forces today.

One of the notable features of the AGS is that it shares commonality of components with a number of systems that are already in the inventory. From its weapons, suspension, engine, and electronics, this commonality of hardware (particularly LRUs) would also facilitate the training of soldiers in maintaining and operating the AGS. A force equipped with the AGS would be able to use the vast stocks available of M1, Bradley, M113, and HEMTT (to name a few systems) Class IX already in the inventory, which eases having to establish the stocks of Class IX parts required to sustain the system.

The AGS main gun is an XM35 low-recoil 105mm gun with autoloader. Although the 105mm APFSDS round’s armor penetration is inferior to its 120mm counterpart, there are other 105mm rounds that have immediate utility on the battlefield and are not available to the 120mm gun, such as white phosphorus smoke (for marking targets as well as suppressing infantry), anti-personnel beehive, and high explosive plastic (for use as a bunker defeat/obstacle reduction munition as well as against soft-skinned vehicles). Indeed, the vertical storage of the main gun rounds in the AGS ammunition

magazine allows the AGS to store and accurately fire WP, a capability that the M1, with its horizontal ammunition stowage, lacks.

One important safety feature in the AGS is a firewall splitting the turret down the center. Although the gunner can access the breech, he does so through a trap door. This automatically switches off the autoloader — eliminating the hazard of inadvertently crushing body parts. In addition, every crewman, to include the gunner, has his own hatch — an important issue when dismounting in a hurry.³

A preeminent safety issue for any armored vehicle, however, is survivability, and the AGS uses, notably, a tracked suspension. Paul Hornback, in his March-April 1998 article, “The Wheel Versus Track Dilemma,” notes that “The primary reasons for a tracked vehicle’s compactness are reduced suspension clearance, wheel turning clearance, and the absence of multiple transfer cases and drive shafts that are integral to the design of multi-wheeled vehicles.”⁴ In addition, tracked vehicles have the unique capability of pivot steering, a significant survivability enhancement, particularly on narrow roads or in built-up areas.

Although a wheeled chassis inherently has a faster road speed and quieter performance than its tracked counterpart, a tracked chassis is more resistant to small arms fire, as well as grenade and artillery fragments. Run-flat tires may offer some ability to “limp home” from a fight, but if a future combat force takes sustained small arms fire enroute to its objective, as the 3d Battalion, 75th Ranger Regiment encountered in Mogadishu, to “limp in” is of little benefit. The LAV-25, for example, has a range of only five miles when all eight tires are running flat, or 25 miles when four are flat.⁵ This reduced capability is unacceptable in light of the length of the operations (e.g., Somalia, Bosnia) any force may have to conduct. Given the limited PLL/ASL available



to a forcible entry (or the “early entry” envisaged in the IBCT mission statement)⁶ operation, or the possible separation of a light division’s supply trains from an initial lodgment, the ability of a system to conduct sustained combat operations becomes preeminent.

One unique feature of the AGS is the ability to accept add-on armor packages when the mission dictates the need for additional armor. The vehicle can only be dropped from a C-130 in its Level I configuration, but additional armor packages of Level II bolt-on plates and Level III reactive tiles can be mounted in theater.⁷ Such improved armor packages may mean survival in an environment where RPGs and heavier belt-fed weapons may be present. RPGs used in large numbers brought down MH-60 helicopters in Somalia. Similar tactics will probably be employed against ground vehicles.

The power train of the AGS is geared towards battlefield sustainability. The AGS engine shares over 90% commonality of parts with the HEMTT family of vehicles and uses a standard Bradley Fighting Vehicle transmission. Generating 550hp using JP8 fuel, the engine delivers a higher power-to-weight ratio than the M1. The powerpack can be rolled out to the rear of the vehicle using its OVE tools in five minutes. The pack can be replaced using those same tools in five minutes.⁸ The entire powerpack can be removed and replaced in an hour, and ground hopping the engine requires no disconnection of fluid lines. Not having to wait for a recovery vehicle to lift an engine out to conduct maintenance on the pack, not to mention eliminating the need for such a vehicle to arrive early, reduces

the overall airlift requirements for a force equipped with the AGS.

Like the M1A2, the AGS uses a MIL-STD-1553 data bus. This data bus is one of the standard protocols for the Army Tactical Command and Control Systems (ATCCS), among which is FBCB2 (Force XXI Battle Command Brigade and Below), the latest generation of the appliqué systems in use at Fort Hood. Any future combat vehicle will integrate FBCB2, and the IBCT draft doctrine covers FBCB2 TTPs in detail. Indeed, information management for the IBCT integrates FBCB2 throughout.

Additionally, some of the product upgrades that have been introduced for the M1A2 (particularly the improved LRUs in use with the M1A2SEP) may see some “trickle-down” to the AGS, partly due to the 1553 data bus, but also because of its view to compatibility with existing government off-the-shelf systems. For example, the AGS as originally produced uses the same TIS and laser rangefinder as the M1A1. However, the AGS can also use the greatly improved FLIR from the M1A2SEP in lieu of the original TIS, as well as the M1A2SEP eye-safe laser rangefinder (ESLR). This improvement in capabilities is tremendous, and as the M1A2SEP enters the force, its LRUs could very easily be fitted to the AGS.

Last, but certainly not least, anyone who has operated in conjunction with dismounted infantry will recognize the need for an infantry phone. The M60 series tanks had them, M1 tankers have had to jury-rig TA-1 field phones into AM-1780 amplifiers as a very imperfect substitute. The MGS requirements for an infantry phone and a 105mm gun point to the AGS as a logical choice, and the requirement to support infantry in the close fight¹⁰ also lends itself extremely well to integrating the IBCT MGS vehicle into existing light and airborne infantry organizations.

One possible distribution of the AGS to units would be similar to the earlier employment of the light armor battalion in the 82d Airborne Division, with one light armor battalion to each light infantry or airborne division. The tremendous combat power in the air assault division's three AH-64 attack helicopter battalions obviates the need



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for an assault gun or light armor battalion in the forcible entry or early entry role. Further light armor battalions could be organized at corps to augment the divisional light armor battalions.

These battalions would have four companies, one operating in direct support to each of the three maneuver brigades, with a fourth available as a division TCF or reserve. These companies, organized around three platoons of four AGSs, should have their own maintenance sections. Such a task organization would greatly facilitate the decentralized operations that they would conduct, a lesson learned from hard experience in 3-73 AR.

The battalion would have its own scout platoon of ten M1025/6 scout HMMWVs and a towed mortar platoon of six towed 120mm mortars. Although some may see such organizations as superfluous when the bulk of the light armor battalion operates in direct support to a light infantry brigade, such organizations also allow the battalion to conduct independent operations in support of division missions.

One other organization that would benefit from the capabilities of the AGS is, of course, the 2d Armored Cavalry Regiment (Light). Prior to the cancellation of the AGS, it was to be the regiment's primary anti-armor platform, in lieu of its TOW HMMWVs. There is little room for comparison between the AGS and the M966. Not only is the AGS more survivable (particularly in the economy of force missions the light ACR could conceivably perform), it has considerable deterrent value in peacekeeping or peace enforcement, both missions which 2ACR (L) has performed in the past.

Sheridans from 3-73 AR played key roles both in Panama and Haiti. In Panama, the 152mm main gun was devastatingly effective against walls and buildings, leveling sniper and small arms positions, and destroying armored vehicles.¹¹ When the 10th Mountain Division (Light Infantry) assumed peacekeeping duties in Haiti, Sheridans performed security and screening missions.¹² Fielding the AGS to 2ACR(L) would be a giant step in making the light cavalry regiment a truly effective



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force without sacrificing the deployability which sparked its inception.

As prior operations have shown, the value of a tracked gun system (compared to its wheeled counterparts) is considerable, not only in forcible entry operations, but also in the inevitable stability operations that would follow. The doctrine for such a role already exists in *FM 17-18, Light Armor Operations*, and the draft version of *FM 17-15-1, The MGS Platoon* covers operations both in conjunction with light infantry and with other light armored forces. In addition, *FM 17-15-1* covers stability operations as well as urban operations in depth.

At the personnel level, the light armor battalion would open new horizons for armor crewmen. The initial proposal for 3-73 AR was to open the battalion up to MOS 19K soldiers, giving these soldiers the opportunity to attend the basic airborne, jumpmaster, and ranger courses, professional development courses normally unavailable to those troops. In addition, cross-pollination of 19K armor soldiers to light units would be a vital first step in bridging the gap between what has ultimately become two largely separate entities, one light, the other mechanized.

The tremendous firepower of today's armored and mechanized infantry divisions is of little use if those forces are too heavy to deploy in a timely manner. Conversely, the rapid deployability of the light infantry division and airborne

division is all for naught if those forces lack the combat power to survive early or undertake forcible entry operations against what could very easily be a mechanized or motorized threat. Over the long term, the introduction of these vehicles to light forces will assist in developing the kind of tactics and battle drills that the Army will need into the coming century.

Notes

¹The missile itself does fit in the existing Dragon Missile Jump Pack, but is too heavy for most jumpers to use without causing a weak door exit, inducing either a partial or complete parachute malfunction.

²MAJ William D. Wunderle, *Forced In, Left Out: The Airborne Division in Future Forcible Entry Operations*, Monograph, U.S. Army Command and General Staff College School of Advanced Military Studies, First Term AY97-98, pp. 26, 29-31.

³John A. Nagl, “The Armored Gun System: Sheridan Replacement Offers Better Firepower Plus Worldwide Mobility,” *ARMOR*, July-August 1992, p. 28.

⁴Paul Hornback, “The Wheel Versus Track Dilemma,” *ARMOR*, March-April 1998, pp. 33-34.

⁵A presentation comparing wheels to tracks can be found online at <http://www.knox.army.mil/center/dfd/WVTbrf1.htm>.

⁶An IBCT overview can be found online at <http://www.knox.army.mil/center/mwfi/> under “Draft Brigade Organization.”

⁷FMC Corporation (now United Defense, L.P.), *AGS System Technical Overview*, 16-17 November 1993.

⁸Nagl, pp. 28-29.

⁹*Ibid.*, FMC.

¹⁰The online IBCT overview also contains the basic requirements for the MGS.

¹¹CPT Scott Womack, “The AGS in Low-Intensity Conflict: Flexibility Is the Key to Victory,” *ARMOR*, March-April 1994, p. 42.

¹²Wunderle, p. 16.

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CPT Francis J. H. Park is a 1994 Distinguished Military Graduate of the Johns Hopkins University with a Bachelor of Arts degree in history. He was commissioned in Armor and served as a tank platoon leader, scout platoon leader, assistant S3, and cavalry troop XO in the 1st Squadron, 7th Cavalry, 1st Cavalry Division, and as an assistant plans officer in G3 Plans, 82d Airborne Division. He is a graduate of the Armor Officer Basic, Scout Platoon Leader, Basic Airborne, Jumpmaster, and Infantry Officer Advanced Courses, and the Combined Arms and Services Staff School. He currently commands A Troop, 1st Squadron, 17th Cavalry, 82d Airborne Division.