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Armored Gun System

The **Armored Gun System**, or **AGS** for short, was a US Army competition in the 1980s to design a light tank to replace the M551 Sheridan and TOW-equipped HMMWVs. It was the ultimate incarnation of several research programs run in the 1970s with the aim of providing air-mobile light infantry forces with the firepower needed to last in the battlefield.

The FMC Close Combat Vehicle-Light ultimately won the AGS contest. Here a pre-production XM8 fires its 105 mm main gun.

There were three primary entries into the AGS contest. Cadillac Gage offered its Stingray light tank with the traditional four-man layout. FMC offered the Close Combat Vehicle-Light (CCVL) with a three-man configuration. Teledyne offered its Expeditionary tank which had a two-man layout with an unmanned turret.

In 1992, FMC's design was selected and given the name M8 Armored Gun System. However, purchases of the M8 were cancelled in 1997. The role was ultimately filled by the Stryker series of wheeled vehicles.

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History

M551

The need for a new light tank for the US Army was an ongoing concern that stretched into the 1950s. A series of experiments ultimately led to the M551 Sheridan entering service in 1967. The M551 faced a difficult problem; guns capable of destroying main battle tanks at a reasonable range were too heavy to fit onto a lightweight chassis. The M551 solved this with the M81 gun/launcher, which fired HEAT shells at low velocity for short-range work, and the MGM-51 Shillelagh missile for long-range shots.

Although effective, in practice the M81 proved to be unreliable, and the guidance system for the missile was a source of continual failures. When tested during the Vietnam War, the missile system was simply not fit and the tank was used in the anti-infantry role. Reviews were mixed; it was praised for its mobility

and resistance to getting stuck in mud, but was also prone to destruction by mines and RPG-2 rounds that larger tanks would shrug off.

ARMVAL

By the early 1970s the limitations with the M551 were clear, and in 1976 the Army began the Armored Combat Vehicle Technology problem to come up with a design that combined the firepower of a front-line tank while improving its survivability through very small size as opposed to heavy armor. The US Marine Corps were studying similar concepts as part of their efforts to replace the M50 Ontos, itself a former Army program who's rejection led to the M551 program. The two forces combined their efforts in 1978 as the Advanced Antiarmor Vehicle Evaluation (ARMVAL).[1]

One of the first products of the ARMVAL program was a new gun system known as the "over-head gun" or OHG. This consisted of a tank gun mounted on a remote-control turret with the gun itself on a rotating arm. Normally the gun was close to flush with the top of the chassis, but when the tank stopped, the arm could be rotated upward, elevating the gun about a meter (yard) to allow it to be fired while the tank was completely under cover. The original gun was later replaced by the ARES 75 mm smoothbore rapid-fire hyper-velocity gun, and the system was renamed ELKE, for Elevated Kinetic Energy Vehicle.[2] The ARES concept was to fire multiple rounds at a target in order to break down its composite armor.[1]

The final vehicle of the ARMVAL series was HIMAG, for High Mobility/Agility test vehicle. This combined the ARES gun with a new chassis with more armor. HIMAG was further modified with an eye to allowing the gun to be used in the anti-aircraft role. This version lost the OHG elevation system and replaced it with a somewhat more conventional turret, but had a well in the chassis that the breach could depress into, allowing the gun to elevate to 40 degrees. The chassis was further upgraded with armor on the front to allow it to absorb frontal hits and included a newer "hunter/killer sight" and laser rangefinder. In this form, it became the High Survivability Test Vehicle/Light (HSTV/L).[1]

However, by the time the HSTV/L was being tested, the Army concluded that the ARES gun would not be effective against newer Soviet tanks. The Royal Ordnance L7 105 mm gun was now considered the minimum, and there were concerns that the gun's recoil would be too much for the lightweight chassis to handle.[1] The Marines were not convinced the ARES would not be effective, especially for their beach-landing role. They continued developing the concept under the name Mobile Protected Weapons System (MPWS). The forces ultimately ended their collaboration in 1981, while the Marines continued looking for light weapons systems, including adding the ARES to the LAV-25.[3]

RDF and Air Land Battle

While the ARMVAL program was ongoing, in 1979 Jimmy Carter ordered the formation of the Rapid Deployment Joint Task Force, or RDF. Until this time the US's focus was almost entirely on a "heavy" war in Europe, but the Vietnam War and a number of events in the early 1970s led to concerns that they were completely unprepared in case war began anywhere else. This point was driven home during the 1979 Iran hostage crisis, when it was realized there was very little the US could do if the Soviets invaded Iran; the first troops could not arrive for weeks at a minimum, and air power in the area was limited to the B-52 Stratofortress flying from bases in the Indian Ocean, Naval air power could not reach the northeastern areas where the Soviets would operate.[4]

The RDF concept, although short-lived in its original form, once again demonstrated the need for a new light tank in order to allow the forces to be airlanded and still be able to last until the heavier forces arrived by ship. In 1982, RDF essentially consisted of the 82nd Airborne and 101st Airborne, still

equipped with the M551. The desire to add further power to their mobile forces was the impetus for a sweeping series of changes known as Air Land Battle. This called for a much larger group of light forces to be able to act as a stop-gap in Europe while the heavier forces arrived, as well as be ready for rapid deployment to brushfire wars. The ARMVAL tank, a militarized dune buggy and the new Light Helicopter Experimental helicopter, were required to give these forces the firepower they needed while the main forces arrived.[5]

AGS

At this point $30 million had been invested in ARMVAL with no production order to show for it. After a series of changes in direction, and several rounds of budget cuts, it was the appointment of Carl E. Vuono to Army Chief of Staff in 1986 that led to the concept once again becoming a primary development program under its new name, AGS. At the time, Vuono indicated that the light divisions would require about 700 of the new design by the 1990s.[3]

Three vehicles were submitted for evaluation; the Cadillac Gage Commando Stingray had a fairly conventional layout with a four-man crew, FMCs Close Combat Vehicle, Light had a three-man crew and autoloader, and the Teledyne Continental Expeditionary tank had a crew of two in the hull with a remote-control auto-loaded turret.[5] FMC, by this time known as United Defense, won the contest in 1992.[6]

Four evaluation vehicles were built and tested at Fort Bragg, leading to a 1996 low-rate order for the initial production vehicles. Only one year later, Defense Secretary William Perry instructed the Army to reduce manpower by another 20,000 as part of the FY1997 budget. The Army instead suggested reducing weapons programs and other efficiencies. The final budget left the troop count at 495,000, but AGS was one of the victims of the cuts.[6]

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