

Beat: Technology

## US Artillery: striking the right balance between firepower and projection

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**USPA NEWS** - Let's face it: the US Army has a kink for firepower. Throughout its modern history, big guns have been at the core of the American military. But recent times have put US commanders and military planners in front of a paradox: what are large -and effectively unmovable - guns good for, when most warzones are far away and require quick deployment?

The United States has experienced a rapidly shifting history, in military terms, throughout their relatively short existence. In the former half of the 20th century, they went from a virtually non-existent army to the first military power in the world, a position it still holds firmly to this day. But one thing has always remained: the US strategy has always strived to keep combat zones as far as possible, so as to protect the crucial industrial asset its domination relies on. American commanders went so far as to take the risk of deploying to not one, but two, distant war theaters, during World War 2, in order to keep the fighting as far away as possible from the American industrial powerhouse. To this day, no US act of combat has ever occurred on domestic territory - save the anecdotal and mostly-symbolic Japanese attack on Fort Stevens. The strategic reflex kicked in again, after the 9/11 attacks, when President George W. Bush immediately transferred the fighting zone to Afghanistan. Indeed, Americans like to strike hard, and far.

Large guns have become symbolic of US firepower, which is one of the main stilts of American hegemony. US Abrams tanks are equipped with the finest German Rheinmetall 120mm smoothbore guns, and Paladin howitzers tote 155mm tubes on top of a nearly-30-ton armored shell. The evolution of General Purpose vehicles clearly illustrates the American bias for size and girth. In less than 50 years, the everyday mobility vehicle for GIs went from the ultra-light Willys Jeep, to the considerably-bulkier HumVee, and was even sometimes replaced by the humongous MRAP in recent operations.

But this display of force, while very satisfying for those who exert it, comes at a sharp operational price: if equipment is large and heavy, then it will necessarily be difficult to move and slow to deploy. As reported by Defense News Jen Judson: "The Abrams M1A2 SEPv3 upgrades introduce suitability concerns," the Director of Operational Test and Evaluation wrote in a recent report covering the program's full operational test and evaluation and some live fire testing. "Weight growth limits the tank's tactical transportability. The M1A2 SEPv3 is not transportable by current recovery vehicles, tactical bridges or heavy equipment transporters."

This is a large stumbling stone for a country which has needed to quickly deploy firepower across the globe, several times in the past couple of decades. Iraq and Afghanistan have shown the limits of heavy armor, with their inability to access certain types of terrain, and their reliance on road or sea transport. Naturally, simple downsizing of equipment would circumvent this paradox, but this would entail a reduction in firepower, something US commanders would hardly be favorable to.

Strategy expert Kevin Zhang writes about the "two particular problems with the heavy vehicles that fill our armored formations: maintenance and mobility [...] Speaking on the heavy maintenance requirements of the US Army's armored platforms—the 70-ton Abrams and 30-ton Bradley—Morgan writes that this vulnerability will only increase "as maintenance decentralization becomes similarly required in the near future for the US Army [...] The weight and size of US armored vehicles pose a massive challenge to any potential deployment".

An interesting configuration may be coming from the French partner, with its new Caesar artillery system. The Gun-On-A-Truck (affectionately nicknamed GOAT) system mounts a 155mm gun, very comparable to - and compatible with - existing American howitzers, on a 6x6, or 8x8 truck chassis. This system substantially reduces the weight of the overall system, and increases its mobility considerably, once it is deployed. This configuration offers equivalent firepower, range and increased mobility, compared to tracked and armored howitzers, and can fit into planes with no difficulty for rapid deployment.

Through their recent military activity, some of which alongside American allies, the French have shown their tactical edge when it comes to artillery coverage, and now have a combat-proven vehicle which is both powerful and deployable. The producer, Nexter, writes: "During this period, the CAESAR has been deployed in many theaters of operation (Afghanistan, Sahel-Saharan strip, Lebanon, Iraq) and sometimes under heavy demand." The crew is protected from small arms fire by a light armored cabin, while the overall system relies on its shoot-and-scoot ability for protection.

The Caesar truck would additionally have a small impact on US Army logistics and operations, as it is one of the few guns in the world to be compatible with high-performance US-type artillery shells, such as rocket-assisted rounds, BONUS rounds, insensitive rounds and Excalibur rounds, successfully tested a few times ago.

The US Army may therefore have found the solution to its dilemma with its European ally, the artillery systems of which it is currently appraising. Janes reports that "Nexter is joining the field vying to win the US Army's towed howitzer replacement competition, and is proposing its CAMionÉquipé d'un Système d'Artillerie (CAESAR) truck-mounted 155 mm artillery system [...] The CAESAR system can be equipped with a protected cab, inertial navigation system, muzzle velocity radar, ammunition and charge loading system, thermal camera for direct firing, improvised explosive device (IED) jamming unit, communications suite, and a ballistic computer. Provisions are also available to link it with artillery command, control, communications, computers, and intelligence (C4I) systems."

The strategic logic behind building large, heavy guns was valid during the cold war, when the game was about protecting immense swathes of territory, in the context of a total - albeit potential - war. But, since the 1990s, the tasks which the US Army has been entrusted with have systematically been to rush thousands of miles away, to establish strategic control - something difficult to do when guns are too large and heavy to fit in a military cargo plane.

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