

The Ultra-Light Tactical Vehicle

How working with industry and the FMF can result in a Swiss Army Knife for future lethality

by Maj Cesar Lopez

The idea for the Utility Task Vehicle (UTV) was first introduced in the form of an Urgent Needs Statement from the FMF. They needed a lightweight, internally transportable, agile, and off-road logistics vehicle to fill a capability gap within the light tactical vehicle fleet. A commercially available solution already existed and was fielded to the U.S. Special Operations Command (SOCOM). The Marine Corps teamed with SOCOM and adopted the Polaris MRZR for Marine Corps infantry and reconnaissance units. This partnership enabled the Marine Corps to deliver the UTV to the FMF quickly and without the usual extended procurement schedule necessary for developmental programs.

Now, nearly five years later, the UTV fleet is reaching the end of its economically useful life. The FMF, having grown to depend on the UTV fleet, will be getting the new Ultra-Light Tactical Vehicle (ULTV) as a replacement vehicle. The ULTV is a more capable platform that is able to adapt to any future battle space. Thanks to our partnership with SOCOM and the commercial industry, the ULTV's modular design will be able to operate in various missions supporting the Joint Concept for Contested Logistics and the Expeditionary Advanced Base Operations.

The requirement for a logistical transport vehicle is not new. The original requirement saw the acquisition of a developmental program: the Internally Transportable Vehicle (ITV). The ITV sought to combine two very difficult objectives. It had to fit inside an MV-22,

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yet be powerful enough to maneuver through rough terrain while carrying a fire team of Marines and their gear. After years of design, testing, and eventual fielding, the ITV fleet was ultimately retired in 2015.

The Marine Corps acquisition process of material solutions to fill a capability gap is infamously long, tedious, cumbersome, and frustrating at times. The process is purposely designed to prevent waste of taxpayer dollars and to ensure that money is not repetitively used in a gap that can be fulfilled by a fielded solution or by modifying tactics, techniques, and procedures. When requirements come directly from the using units, the folks in charge of defining requirements and acquisition processes are able to better capture the true nature of the required capability.

A critical step in the requirements definition and subsequent acquisition process is the constant communication with expert Marines in the field that requested the material solution. This communication ensures that it goes through a rigorous evaluation, verification, and assessment process that is representative of what the system will likely encounter once fielded before a material solution can be implemented fully. It is important that operators have

ample time to fully assess the suitability of that solution and to make adjustments and configuration changes as needed before this capability is fully adopted. Instead, the acquisition process tends to get lost in contracting rules, regulations, and risk mitigation and avoidance such that the "assessment" becomes a multiple choice or binary checklist that does not fully capture any feedback from the operators.

In the book *The Kill Chain*, Christian Brose argues that

one of the biggest failings of the U.S. defense establishment ... is that we stopped doing meaningful experimentation ... [we must] work out those requirements iteratively by enabling military operators to experiment with new technologies.¹

Field-unit evaluations are a good way to certify these capabilities for Marine Corps use, but if the future plan to create battalions of Marines dedicated to experimental warfighting techniques also includes the experimentation of warfighting capabilities, the Marine Corps must replicate the current success experienced with the ULTV in other programs of record.

The advantage of using commercially available systems to fulfill capability gaps is that warfighters can receive state-of-the-art technology quicker while minimizing risks and money. The acquisition of commercial items, codified in the Federal Acquisition Regulations, promotes competition and ingenuity to a commercial industry that does not have to rely on Government-unique projects to build and sustain their business. After the fielding of the UTV, the program office Light Tactical

Vehicles (PM LTV) learned that lesson. Partnering with SOCOM was the first step into that revelation.

While SOCOM is known for executing irregular warfare-type missions, their lesser known but equally important community is their acquisition section. Led by a Marine lieutenant colonel, the program office for the Family of Special Operations Vehicles is tasked with the quick delivery of specialized equipment to fulfill an ever-changing mission environment, without an abundance of resources, but with seemingly unlimited flexibility to conduct acquisitions at the speed of technology. One of the best lessons PM LTV learned from the partnership with the Family of Special Operations Vehicles program office is that the relationship between operators, original equipment manufacturers, and other commercial vendors—who are willing to learn more about the needs of the warfighters—cannot be overstated.

The development of the ULTV began soon after the fielding of the UTV. Shortly after this commercial vehicle reached the infantry and reconnaissance units, the Marines began implementing and testing its capability in their operations. PM LTV received feedback and requests for enhancements almost immediately. Anything from clutch improvements to reduce CVT belt ruptures to taller and more robust front trailing arms were just a couple of the solutions PM LTV was able to quickly implement thanks to an off-road community that provides an abundance of commercially-available upgraded parts. Three years after fielding, the UTV has had multiple upgrades and now serves as one of the most versatile vehicles in the Marine Corps' tactical vehicle fleet.

Not all of these upgrades were performed by the original equipment manufacturer, but PM LTV did keep the manufacturer informed of all the changes. In return, the manufacturer provided research and recommendations after the vehicle encountered unique issues. Additionally, the manufacturer of the UTV provided guidance, suggestions, and recommended different vendors and solutions that expedited the delivery of solutions to the warfighter. Many other



The Ultra-Light Tactical Vehicle. (Photos provided by author.)

well-known, off-road manufacturers also took notice and PM LTV maintained constant communication with interested parties. The interest displayed by the manufacturers was evident in the request for proposals for the Marine Corps' ULTV and SOCOM's Light Tactical All-Terrain Vehicle late in 2019. Competition was fierce. Solutions to replace the UTV encompassed enhanced, yet simple, designs that showcased their ability to adapt to any climate and place. At the end, the Marine Corps and SOCOM's warfighters were the true winners.

The ULTV is currently undergoing verification testing and it is scheduled to begin fielding in the middle of 2022. The ULTV's proposed solution has captured every enhancement applied to the UTV as a standard option. Further, its modular design enables PM LTV to implement kits addressing future Marine Corps requirements on the vehicle. The UTV kits were an innovative approach from the manufacturer, funded with their own investment lines, after concluding that the missions and tactics of both SOCOM and the Marine Corps

adapt and evolve with the ever-changing battlefield of future wars.

The risk from the manufacturer of investing into an unknown future is mitigated by the understanding that the quick delivery of a solution will be appropriately rewarded. This risk acceptance is also a product of the relationship established with commercial manufacturers and by allowing them to understand our risk when searching for material solutions to fill our own future and currently unknown capability gaps.

Just as it happened with the UTV, the ULTV will introduce new tools to accomplish a mission. By providing limited constraints, such as the requirement to be internally transportable, manufacturers had the flexibility for adapting their commercial vehicles to perform military operations.

The ULTV is the product of a relationship built in trust and surrounded by the passion to defend a nation. This is the inexpensive, yet quality solution

the Commandant of the Marine Corps challenged his Marines to seek. It allows the Marine Corps to maintain the pace, and potentially gain a step ahead, of the fast-moving advancement in off-road vehicle technology. In a statement to

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the House Appropriations Committee, the Commandant of the Marine Corps said,

We can no longer view warfare through the binary lens of war and peace, but should recognize the existence of a cyclical continuum of competition that occurs every day and involves all elements of national power.²

He also teases that the stand-in force concept will be in a strictly expeditionary, highly mobile and resilient posture. This requirement, though unknown at the time the ULTV was developed, will be fully supported by a vehicle that truly is a Swiss Army Knife for future lethality.

Notes

1. Christian Brose, *The Kill Chain*, (New York, NY: Hachette Books, 2020).

2. U.S. Congress, *Statement of the Commandant of the Marine Corps to the House Appropriations Committee*, (Washington, DC: 2021).



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