

# Lightened ammo, increased lethality

Soldier Modernisation talks with True Velocity President Chris Tedford about the company's composite-cased munitions

**Q: Thank-you for your time. Could you give me some background on True Velocity and its mission?**

**A:** True Velocity is a U.S.-based, advanced technology company focused on the manufacture of superior lightweight ammunition. Our mission is to produce the best ammunition in the world, in an effort to provide the American and Allied warfighter with an unfair advantage on the field of battle. Our revolutionary manufacturing capabilities enable us not only to engineer and manufacture ammunition capable of performance superior to that of legacy brass-cased ammunition, but to do so with a level of efficiency, consistency and quality control that far exceeds that of traditional brass-cased ammunition manufacturing. We currently manufacture a strategic range of calibers including 5.56x54mm, 7.62x51mm, 6.8TVCM, 6.5 Creedmoor, .338 Norma Magnum and 12.7x99mm.

**Q: Can you tell us about the work you are currently doing with the U.S. military and, in particular, the Next Generation Squad Weapon program?**

**A:** The U.S. military has made it abundantly clear over the course of the last two years that lightweight ammunition is a critical path forward for our fighting forces. And to that end, we are seeing more and more ammunition requirements being written specifically with lightweight ammo in mind.

True Velocity is participating in a number of these programs as we speak, but I would say the most publicized of those is certainly the Next Generation Squad Weapon program.

The NGSW program is designed to provide the U.S. Army's Close Combat Force with an enhanced 6.8mm cartridge replacement for the currently fielded 5.56x45mm round, as well as to replace the M249 Squad Automatic Weapon and the M4A1 with next-generation weapons. We think the NGSW program is a particularly well-designed program because it identifies a specific problem that the U.S. Army is facing, and it leverages the problem-solving capabilities of industry partners to find a solution. And that's exactly what we've done, in partnership with General Dynamics Ordnance & Tactical Systems.

In August 2019, True Velocity was selected as one of three ammunition manufacturers to continue into the final phase of evaluation by the U.S. Army. Since then, we have delivered more than 170,000 rounds of our 6.8TVCM lightweight ammunition to the U.S. Army for testing and evaluation, and we'll deliver several hundred thousand more in January 2021.

Our 6.8 TVCM composite-cased cartridge is capable of unprecedented ballistic performance, while simultaneously exceeding the Army's expectations in terms of weight reduction and precision.





**Q: Why is the U.S. Army considering a composite case instead of standard casing materials?**

**A:** Well, first of all, I think you would need to ask the Army that question directly. I certainly will not speak on their behalf. But I do think the advantages of composite-cased ammunition are significant and well-documented. The narrative to date has been driven largely by weight reduction and the need to lighten the load for the soldier, and our composite-cased ammunition does just that. Our loaded cartridges are, on average, about 30 percent lighter than a comparable brass-cased cartridge, and our empty composite case is 50 percent lighter than a brass case. So, as you can imagine, the operational and logistical benefits to be had by that sort of weight reduction are tremendous and, in some cases, life-saving.

But the narrative doesn't end with weight reduction. The manufacturing technology employed to build our composite cases allows us to achieve a much higher level of consistency and process control, and the manner with which our cases are molded affords us the opportunity to manipulate characteristics of the case that cannot be altered in the brass world. The result is a composite-cased cartridge that is capable of much more efficient ballistic performance, more consistent muzzle velocity and, thus, noticeably improved accuracy. Likewise, our cases mitigate heat transfer to the weapon, which reduces wear and tear, and they reduce or eliminate muzzle flash due to an incredibly efficient powder burn.

To the credit of our leadership team, True Velocity has established a culture of innovation that allows us to leverage best practices from a range of industries to find solutions to problems that have plagued the brass ammunition for decades or centuries. Recently, True Velocity was asked by a customer within the U.S. Department of Defense to develop a prototype subsonic 7.62 composite-cased cartridge on an extremely constrained timeline. Despite having only 10 days of development time, we were able to deliver these functioning prototypes for initial evaluation by leveraging our culture of innovation and state-of-the-art, 21st Century manufacturing technology.

True Velocity's ammunition – and particularly our 6.8 TVCM cartridge – are changing the paradigm. It turns out you don't have to operate at unsafe chamber pressures in order to generate increased velocity, enhanced terminal performance and improved accuracy. Our cartridge achieves all of these things, while maintaining safe operating pressures even at environmental extremes, where metallic cases generate excessive and dangerous chamber pressure.

**Q: If we look at composite ammunitions for a military with less spending power than the U.S, is it cost effective to change over?**

**A:** Conversely, I would ask whether those countries can afford NOT to make the transition. A reliance on brass-cased ammunition carries with it a commensurate reliance on certain precious metals that are controlled, to a large extent, by our adversaries. Transitioning to composite-cased ammunition reduces or eliminates that supply chain risk, while simultaneously providing an improvement in operational effectiveness and significant logistical cost-savings.

I think it's also important to look at the weapon system as a whole, inclusive of the ammunition. For example, True Velocity's 6.8TVCM cartridge is capable of providing significantly enhanced ballistic performance over a standard 7.62x51mm NATO round, and it can do so at safe operating pressures. We've proven that you can take an existing weapon that was originally chambered for 7.62x51mm NATO, and with little more than a barrel swap, you can configure that weapon to accept our 6.8TVCM round, instantly increasing effective range, improving accuracy and reducing weight.

In short, the total value proposition of True Velocity ammunition is extremely competitive with legacy brass ammunition, and the fiscal implications of transitioning to composite-cased ammunition extend far beyond the price per unit. When you consider the opportunity for low-cost improvements in operational effectiveness by transitioning existing 7.62 weapon platforms to accept a vastly superior round in our 6.8TVCM, the logistical cost-savings associated with a 30-percent reduction in weight, and the value of supply chain risk mitigation, the numbers skew far in favor of composite-cased ammunition, even for countries with limited defense budgets. ■

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