



The 155 mm Howitzer Shell – The New Battlefield Fad

A quiet revolution is sweeping the global ammunition industry as defence planners rush to stockpile 155mm artillery projectiles at an unprecedented scale. This sudden surge in demand has been driven primarily by the intense artillery duels between Russian and Ukrainian forces. At the peak of the conflict, Ukrainian troops were firing nearly 2,000 rounds of 155mm shells daily, while Russian forces responded with a staggering 10,000 shells per day.

Modern warfare was once expected to be short and intense, but the ongoing conflict—stretching beyond three years—has shattered those concepts. The sheer volume of artillery ammunition fire exchanged daily has caught military planners off guard. The demand for 155mm shells surged once again with the outbreak of the Israel-Hamas war in October 2023.

But why the specific preference for 155mm shells over other calibres, such as 105mm? The answer lies in their effectiveness and versatility. The “155” refers to the howitzer shell having a diameter of 155 millimetres and also the bore of the gun barrel of equal dimensions. Artillery units worldwide favour 155mm shells because they offer the best balance of firepower, range, and cost-efficiency. While heavier munitions, such as 100-kilogram or more bombs, are deployed by combat aircraft to strike deep within enemy territory, 155mm shells—each weighing around 45 kilograms—are light enough for a soldier to handle and load into a gun, yet powerful enough to deliver significant destruction.

Historically, larger artillery pieces have proven impractical. During World War II, Germany developed enormous guns capable of firing 7,000-kilogram shells over distances of nearly 50 kilometres. However, their immense cost, logistical challenges, and lack of mobility rendered them ineffective for modern warfare. No military has pursued such massive artillery systems since.

The 155mm high-explosive rounds, by contrast, are optimal in size, weight, range, and cost. Like the heavy German guns of the past, 155mm artillery can strike targets up to 40-50 kilometres away. However, unlike their oversized predecessors, modern 155mm guns are designed for "shoot and scoot" tactics—allowing them to quickly relocate after firing. This mobility is crucial, as weapons locating radars of the enemy can detect artillery positions, enabling retaliatory strikes via return fire, drones, or aerial bombardment. The 155 mm guns and the shells thus tick both the boxes of optimal destructive power by ground forces and at the same time the gun system can be extremely mobile.

The 155 mm rounds come in two types: guided and unguided. Unguided variants are more affordable and widely used, while guided howitzer shells, equipped with built-in rocket propellants, ignite mid-air after leaving the gun barrel, extending their range to approximately 80–100 kilometres. These precision-guided shells as the name suggests require a precision guidance system, typically GPS, to ensure accurate targeting.

Countries such as the United States, China, Russia, and India are also developing ramjet-powered shells. A ramjet engine operates by oxidizing rocket fuel using incoming air from ducts within the shell, enabling high velocities that can reach supersonic speeds. Under test conditions, these advanced shells have achieved remarkable ranges of over 110 kilometres.

The demand for large calibre ammunition has surged as nations grow increasingly concerned about geopolitical instability. In Europe, for example, countries are realizing their vulnerability as U.S. security guarantees against an expansionist Russia gradually weaken. Consequently, both Eastern and Western European nations are rapidly stockpiling weapons, driving the expansion of 155 mm HE shells production lines. Similarly, countries in the Asia-Pacific region are bolstering their arsenals in response to an increasingly assertive China.

According to a Fortune Business Insights report from March 2025, the global 155 mm ammunition market was valued at USD 3,981.4 million in 2023 and is expected to grow from USD 4,487 million in 2024 to USD 6,986.3 million by 2032, reflecting a CAGR of 5.69%. 155 mm shell manufacturers in the USA dominated the market with a 12.1% share in 2023 and are projected to maintain their lead for at least the next decade. Other key manufacturers and consumers include Russia, China, France, Israel, India, South Korea, Taiwan, Turkey, Iran, and Saudi Arabia. Meanwhile, Germany, Spain, and the United Kingdom are rapidly expanding their capabilities and are expected to become significant players in the sector.

In spite of the tremendous advancement in rocketry and missile technologies, the significant utility of the 155 mm calibre shells is ensuring that the good old canon continues to be a very effective battlefield weapon for years to come.