

# Weapons Of War

Throughout history, military forces have innovated and adapted a wide range of weapons for warfare, demonstrating the endless creativity and resourcefulness in the art of combat. Dogs, once used by the Soviets as suicide bombers and by North Korea for similar purposes, highlight the diverse application of living creatures in warfare. The Germans, during World War II, developed the Goliath tracked mines—a remote-controlled bomb, producing over 7,500 of these single-use weapons.

Assyrian siege towers from the 9th and 8th centuries BCE and the curious, ultimately abandoned, Tsar Tank of Imperial Russia in 1914 underscore the long history of siege and armored warfare. In modern times, the US Military's research into pulsed energy projectiles (PEP) indicates the ongoing evolution towards non-lethal means of combat, heralding a future where war may become less about taking lives.

Kevlar's invention in 1965 by Stephanie Louise Kwolek and the Roman centurions' use of the gladius both exhibit how combat gear and personal armaments have evolved to meet the changing demands of warfare. From the ancient Egyptians' masterful use of chariots, introduced by the Hyksos around 1650 BCE, to Robert Mainhardt and Art Biehl's development of gyrojet guns in the 1960s, the tools and technologies of war have continually adapted over the centuries.

The US Army's transition to the M4A1 carbine from the M16 in 2010, alongside the invention of unique weapons like the urumi from India and the continued use of traditional tactics like the “Parthian shot” by ancient Iranian peoples, showcases both innovation and the enduring value of historical strategies in military doctrine.

Despite advancements, some projects like the high-cost airborne lasers have been scrapped, while others like the vortex ring gun and the personnel halting and stimulation response rifle (PHASR) explore non-lethal methods of engagement. The

varied history of weapons development, from the mundane to the bizarre, illustrates the breadth of human ingenuity applied to the science of war, from the earliest recorded history to the speculative future of combat.