Ballistic Missile Defense: The Illusion of an Impenetrable Shield

By
Atiqa Tariq

Published: November 10, 2026

The proliferation of advanced missile defenses by regional actors has triggered the expansion of missile defense systems. The expiration of New Start in February 2026 launched a new great power competition. The long-standing principles supporting the link between missile defense and strategic stability are being challenged. The rapid development and deployment of increasingly sophisticated Ballistic Missile Defense (BMD) systems is reshaping the offence-defense balance, as one state increasingly develops a missile defense system to seek greater protection from missile threats, other states rely heavily on offensive missile capabilities to maintain deterrence.

What happens when one state develops sophisticated BMD systems and believes that it can defend against other's retaliatory capabilities while the other relies on offensive military capabilities to maintain deterrence? The answer to this question is no longer confined to the realm of technological competition. Modern missile defense has been presented as a technological answer to the old-age problem of vulnerability. However, the recent conflicts have suggested a more uncomfortable reality, the more sophisticated the missile defense has become, the greater the temptation to be overly optimistic about its capabilities.

As the missile defenses become more sophisticated and capable, they also alter the perception of vulnerability, survivability, and adversary's retaliatory capability as it provides am illusion of security. Traditionally, strategic stability is founded in mutual vulnerability. However, BMD systems reduce this mutual vulnerability as it shifts states' defense strategy from deterrence by punishment to deterrence by denial. Yet the ability to intercept incoming missiles does not necessarily translate into an impenetrable shield. Be it a conflict between Russian and Ukraine, India and Pakistan, or Iran, Israel, and US, all have demonstrated both the importance of air and missile defense systems as well as the persistent challenges of saturation, limited interceptor inventories, evolving offensive capabilities, and countermeasures. The strategic concern, therefore, is not simply that BMD can intercept missiles, it is the overconfidence of possessors in the defensive capabilities that ultimately creates a false sense of security and leads to adventurism and aggressive posturing.

The most notable limitation of missile defense becomes apparent when defensive systems confront the challenge of saturation. A BMD system does not operate against an abstract missile threat. It must respond to many incoming missiles, drones, and other ariel threats with a finite supply of interceptors and launchers. The system faces saturation when a high volume of incoming threats overwhelms their tracking radars, command computer, and ultimately inceptors inventories. Recently, the Russia-Ukraine war has demonstrated how sustained and diversified missile and drone attacks can exhaust a sophisticated missile defense system. Recently, Ukraine has suffered heavy missile bombardment from Russia, arguably the most severe since the war began, failing Ukraine's defense to keep pace. Recent reports describe that Russia is increasing and diversifying missile and drone attacks while Ukraine is facing a shortage of Patriot interceptors.

Data from the Ukrainian Air force suggested that in July 2026, 180 ballistic and quasi-ballistic missiles including 9M723, Kinzhal, and Zircon, were launched by Russia, out of which 143 could not be intercepted. During the overnight salvo on June 1-2, 2026, Ukraine's Air Force reported interception of 11 out of 41 ballistic and hypersonic missiles. This represents a 26.8% high-tier intercept rate against a largest single combined ariel assault Russia has ever launched. Furthermore, the Defense Ukraine analysis of Patriot supply crisis argued that the US is unable to replenish the high-altitude of Ukrainian air defense after the drawdown of the Gulf's Patriot stockpiles. Therefore, the challenge is not whether an individual interceptor can successfully engage an incoming missile, but whether a defensive system can remain effective against the complexity, scale, and duration of such a large, sustained attack.

The Iran-Israel-US conflict also highlights a critical paradox of modern missile systems. Advanced layered missile defenses of the Middle East were able to intercept a considerable proportion of incoming missile threats and reduce the effect of the attack. However, the sustained reliance on high-end interceptors places considerable pressure on missile stockpiles and replenishment. According to the assessment by Center for Strategic and International Studies (CSIS), the US Patriot inventories had fallen to approx. 800 interceptors from 2330 interceptors and THAAD inventories to roughly 250 interceptors from 452 interceptors, while noting that the air defense campaign has been largely successful, though not perfect. A report by The Atlantic highlighted that US has consumed approximately 80% of THAAD interceptors in ten months that took roughly nine years to build. The Pentagon seeks billions of dollars to increase production, while Department of War Secretory Pete Hegseth has stated that it would take years to replenish US inventories. According to CSIS analysis, these depleted inventories have created a near to medium term vulnerability for US readiness to fight a potential war against China in Western Pacific.

Furthermore, missile defense forms a continuing offence-defense competition in which improvements on one side lead another side to generate countermeasures to overwhelm, evade, or complicate defensive architectures. This creates a dynamic in which advancements in defensive capabilities do not necessarily eliminate vulnerability but instead encourage further innovations in offensive capabilities. Ukraine spent four years to adapt its air and missile defenses to counter one-way drone attacks by Russia, and it achieved remarkable success. The interception of the Russian Geran propeller-driven one-way unmanned ariel vehicle (UAV) reached approximately 90%. However, Russia in-turn has adapted the jet-powered, advanced variant of its Geran as a countermeasure against Ukraine's interceptors. Russia has replaced the piston engine and propellor with small turbojets, raising the cruising speed from about 180 km/h to between 350 and 500, thereby dropping the Ukrainian interception rate form 90% to around 60%t. This dynamic has illustrated that the shield is never confronting the same threat twice. As defensive technologies evolve so do the methods designed to penetrate them.

None of these conflicts demonstrates that missile defense is ineffective. The defensive system can reduce vulnerability without eliminating it. BMD systems can enhance survivability, protect critical assets, and complicate adversary's calculations. However, when the capability becomes confused with invulnerability, defense itself can become a source of strategic risk. The illusion of invulnerability may alter threat perception, encourage greater risk-taking, and compel adversaries

to develop new means of overcoming defensive advantages, thereby fueling an arms race by eroding mutual vulnerability. The real danger, therefore, is not an imperfect shield, it is the illusion of a perfect one.

Atiqa Tariq is an MPhil scholar in Strategic Studies at the National Defence University, Islamabad, with a research focus on deterrence, conventional-nuclear entanglement, and South Asian security dynamics. Views of the author are their own.