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Air Power Musings: Maverick is Supersonic, will be there in Thirty Seconds...

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We have all seen Top Gun, where Maverick responds to all situations with the cool and vivacious dialogue, "Maverick is supersonic, will be there in thirty seconds." Those were the days of aerial close combat, designed to make the fighter pilot look good. The modern battlefield is a far cry from it. It is more lethal, complex, precarious, dense, and, more importantly, unforgiving.

A pertinent question that comes to the fore is what makes the modern aerial battlefield so different from the earlier one? There are no set patterns or definitions to understand the modern battlefield clearly. However, specific characteristics make it different from what was prevalent in the 20th Century. In the early days of air combat, there was a sensor and a shooter. The sensor would identify a potential target, and the shooter would decide whether it is hostile or not and shoot it down. The less time the sensor takes to shoot, the more effective the system. As technology improved, so did the sensors and capabilities of the shooter. With time, the number of sensors increased, and the shooter, therefore, had many inputs to work on and decide whether to shoot or not, eventually saturating the mind of the shooter with too much information, often termed as situational overload or SITOL. From one sensor and shooter, the battlefield transformed into multiple sensors and multiple shooters, and finally, there was a humongous network of sensors and shooters linked with each other to achieve the original aim of short sensor-to-shooter time. Technology like computers, complicated algorithms and multiple sensor tracking was introduced to sift through the vast amount of data available, so that a recognised and refined picture would be available for the shooter to take the call. With time, essential decisions started being taken by a series of professionals on the ground, who would identify hostile targets and hand them over to the shooter to do the needful. The aerial battlefield was linear with clearly defined players in the kill chain, and the need of the hour was information superiority, viz., the operational advantage derived from the ability to collect, process and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same. Maverick could handle it all and come out with flying colours.

The modern aerial battle space has a huge array of sensors and shooters constituting multiple kill chains spread across multiple of land, sea, air and cyberspace domains. Linear kill chains have transformed into complex kill webs; therefore, plain old information superiority isinefficient. This is where Kelly McGillis's character of Charlotte "Charlie" Blackwood, Instructor, Top Gun, comes in with the famous dialogue to Maverick, "It takes a lot more than just fancy flying." Maverick would therefore need to evolve and change because the modern aerial battlefield has also undergone a transformation. Decision superiority is required, viz., the degree of dominance in the cognitive domain an air force must achieve through its decision-making processes that enables it to acquire and maintain an advantage over its adversary. Maverick is just another lethal weapon system available, amongst many other systems which a commander could use to achieve kills. So, does that make Maverick irrelevant? The answer is no. Maverick will always remain relevant because, when used judiciously, only Maverick can deliver lethal and decisive firepower.

Key features of the modern aerial battle field are trans and cross domain operations, network centric architecture, technology ranging from small drones to Unmanned Combat Aerial Vehicles (UCAVs), Close-in Weapon Systems (CIWS) to Quick Reaction Surface to Air Missiles (QRSAMs), Medium and Long-Range Surface-to-Air Missiles (MR and LR SAMs), stealth aircraft, long range and stand-off precision weapons, electronic and cyber warfare; Hypersonic weapons and space-based combat support. All this is being augmented by the use of Artificial Intelligence (AI) and big data integration. As a result, the kill web that has been created is far more complex and therefore needs closer evaluation, critical thinking and unmatched decision superiority. Many questions come to the fore when we look at the attributes of war fighting in such an environment. How does one fight a war in such an environment? How will we decide which weapon system to use and when? What response options are available to a developing situation and which is most optimal? Are concepts like Favourable Air Situation (FAS), Air Superiority and Air Supremacy relevant? What doctrinal precepts are to be followed when fighting the modern war? Will the classical Offensive Counter Air (OCA) and Air Defence (AD) pan out the way we have seen in the past few years? When do the air, land and sea campaigns begin and end? How does one handle cyber and information warfare, which is spread across the entire spectrum of conflict, affecting the entire continuum? These are just a few questions that must be answered when planning for future warfare.

Certain events that have unfolded in the period following the dastardly terror attacks at Pahalgam give us all a glimpse of what is to come in the future. A lethal attack on innocent tourists by state-sponsored terrorists was the trigger event. The event triggered a response strategy by India against Pakistan, which involved action in the diplomatic, information, economic, and military domains. What was interesting was the way events unfolded in the military domain. In response to the terror attacks, India launched Op Sindoor with precision long-range attacks by the Indian Air Force (IAF) on terrorist infrastructure without physically crossing the International Boundary (IB) or the Line of Control (LoC). The Pakistani armed forces responded in the form of large-scale mass drone attacks with drones ranging from quad copters to large UCAVs on military targets successfully repelled by India's robust Air Defence (AD) comprising of weapons of differing vintage and capability, including hard and soft kill using Counter Unmanned Aerial Systems (CUAS). What followed was kinetic action using manned aircraft to target airfields and other critical military infrastructure, albeit from within their own territory by both sides. Under a nuclear overhang, this was a new kind of

war, far different from the one between Russia and Ukraine or Hamas and Israel. While the Indian Navy was deployed in a deterrent posture in the Arabian Sea and the land forces were looking eye to eye, no direct 'conventional' exchange of firepower took place between the two armies and navies. Tanks did not roll and heavy artillery had not fired, yet, there was significant damage to Pakistani critical military infrastructure and war-waging potential. No FAS or Air Supremacy was established, yet targets well within Pakistani and Indian territory were taken on. There was no formal declaration of war, nor can this be termed as Responses Short of War (RSOW). Civil defence measures like air raid sirens and blackout measures saw a return after decades of hibernation. Conventional wisdom on how wars between India and Pakistan would pan out has been thrown out of the window, and the war was swift, deadly, modern, sophisticated, and multi-domain; the ceasefire was the only thing that was swifter. In the entire gamut of things as they unfolded, our beloved Maverick was very relevant and instrumental in delivering decisive punches. Yet, he was also ever so vulnerable because our thought process on how to use him had not changed.

This war has brought out certain important lessons that must become inputs for revising our doctrines and helping us fight tomorrow's wars. This conflict has clearly shown us that, though the nature of war has not quite changed, the character of war has undergone significant changes. As Lt Col Frank G Hoffman wrote in his article on Hybrid Warfare and Challenges, "the most distinctive change in the character of modern war is the blurred or blended nature of combat. We do not face a widening number of distinct challenges but their convergence into hybrid wars."[1] As we debate the scale and shape of our Armed Forces, an acute appreciation of history's hard-earned lessons will remain useful. Tomorrow's enemies will still get a vote and remain as cunning and elusive as today's foes. They may be more lethal and more implacable. We should plan accordingly.[2] The problem will be response strategies to completely newer ways of warfighting—whether kinetic, non-kinetic, lethal, or non-lethal—directed not only at the armed forces but at the country in general. I want to end by bringing out certain takeaways from this war and highlight some facts on air power and its application in modern combat.

(a) There is and will remain adequate space for conventional and sub-conventional action in wars under a nuclear overhang. This, therefore, calls for recalibration of red lines and response options.

(b) Use of air power in this conflict has again demonstrated how it can seamlessly transcend the outer rings of Warden's model of centre of gravity and hit where it hurts.

(c) AD operations are inextricably linked to the conduct of OCA operations. The two campaigns will remain symbiotic.

(d) Air power may not achieve conventional levels of air control like FAS or Air supremacy. Still there will be windows of opportunity for conventional OCA forces to go through, and these must be fully exploited.

(e) There can never be adequate soft power without credible and adequate hard power. Ultimately, hard power will prove decisive and must be built up.

(f) There are glaring gaps in our hard power capability. Conventional air power needs a major impetus, especially in a scenario like the one we saw during Op Sindoor. IAF needs adequate squadrons and aircraft to remain relevant and effective because numbers matter. A strong and modern IAF will help deter any future misdeeds by Pakistan.

(g) Legacy weapon systems have an essential role and will always remain relevant. These systems' maintenance and life cycle management is essential to maintain the right balance.

(h) The classical OCA versus AD battle may not play out how it has been envisaged, and Maverick does not need to go through every time. There is a need to change that mindset. Offensive AD can do a lot, especially if one has the longer stick.

(j) Centralised planning, distributed control, and decentralised execution were amply displayed in this conflict. Integrated application of combat power, irrespective of ownership, is key to success in modern warfare.

(k) There is a need for a joint planning set-up at the apex level. Joint planning has always been our weak area and must be addressed. Towards this, setting up of Joint Forces Headquarters (JFHQ) is essential.

(l) Manned aircraft will always remain relevant because no number of unmanned systems can deliver lethal and decisive air power like a manned aircraft. We have seen the vulnerability of drones in a contested environment; therefore the narrative that unmanned systems will replace manned aircraft should be safely discarded. At best, they will augment but not replace.

(m)The present Japanese Navy Chief had mentioned in his address during Raisina Dialogue 2025 that the battlefield has changed from being platform-centric to network-centric and now to decision-centric. Kill chains have transformed into kill webs. We must invest in AI and big data to suitably handle such a complex battle space to enable decision superiority, which will prove decisive.

This war has been significantly different from previous ones, with many lessons that can be drawn. Air power as an instrument of war will always remain crucial and critical in any conflict and must therefore remain effective and credible. We cannot afford to dwindle air power away in penny pockets, nor can we let it deteriorate. While autonomous unmanned systems have utility, the manned fighter is irreplaceable and essential. Maverick will need to be called in at the right time and place to deliver the decisive blow, and for that we will need decision superiority, and a change of mindset. The fighter pilot is here to stay; wish him away at your peril. When Maverick requests a flyby, the classical Top Gun response, "Negative Ghostrider, the pattern is full", may be the right response untill that window of opportunity arises and he can go in, guns and missiles blazing.

Notes:

[1] Frank G. Hoffman, "Hybrid Warfare and Challenges," *Joint Force Quarterly*, Issue 52, 1st Quarter 2009, https://apps.dtic.mil/sti/pdfs/ADA516871.pdf, accessed on May 12, 2025.

[2] Ibid.