Missiles, Drones, and Intelligence, Surveillance, and Reconnaissance Fusion in Current Conflicts: Lessons for India's Air Defence, Deterrence, and Escalation Management

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Abstract

The Jun 2025 Iran–Israel–United States conflict—marked by Israeli strikes on Iranian nuclear infrastructure, direct American B-2 employment against hardened underground facilities, and Iran's subsequent closure of the Strait of Hormuz in Mar 2026—is the most operationally significant state-on-state air and missile exchange since the Gulf War. Its consequences on global energy security are still visible. Taken alongside the Russia–Ukraine conflict's demonstration of drone-enabled attrition, the Houthi campaign's systematic coercion of global maritime trade, and the multi-front Israel–Hamas–Hezbollah confrontation, it forms a coherent and urgent body of battlefield evidence with direct implications for India's strategic posture.

This article draws on these four conflict theatres to identify structural lessons for India's air defence architecture, deterrence posture, and escalation management. The central finding is that the battlefield fusion of low-cost unmanned systems,

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precision long-range missiles, persistent intelligence, surveillance and reconnaissance, and electronic warfare is fundamentally altering the conditions under which deterrence holds. For India—which must simultaneously manage military pressure from two nuclear-armed adversaries across the Himalayas and the western plains without the benefit of formal alliance support, and whose energy security depends heavily on the Indian Ocean and Persian Gulf sea lanes that are increasingly vulnerable to disruption—these are not distant strategic challenges but immediate operational concerns. *The article concludes with five recommendations addressed to India's military planners, acquisition community, and strategic leadership.*

Introduction

The four active conflict theatres—Russia–Ukraine, the Israel–Hamas–Hezbollah confrontation, the Houthis' Red Sea campaign, and the Iran–Israel–United States (US) conflict—have produced a body of campaign evidence that strategists can no longer treat as geographically remote.[1] The common thread is the fusion of low-cost drones, precision long-range missiles, persistent Intelligence, Surveillance, and Reconnaissance (ISR), and networked command architectures, leading to conditions in which deterrence is more fragile, escalation harder to control, and military success increasingly dependent on resilience rather than platform quality. High-value, low-density systems—tanks, warships, advanced aircraft—are absorbing attrition from weapons, costing a fraction of their replacement value.[2] The side that sustains operational tempo through redundancy and adaptive logistics holds an advantage that small inventories of exquisite platforms cannot offset.

India faces simultaneous military pressure from two nuclear-armed adversaries across the Himalayas, western plains, and maritime frontiers, while lacking the security cushion of a formal alliance. At the same time, more than 85 per cent of its crude oil imports originate from the Persian Gulf region, underscoring its strategic vulnerability. Hence, it cannot treat these lessons as just peripheral. The article analyses how the above-mentioned conflicts

have changed the conditions of deterrence, and what steps India can take.

The Changing Character of Warfare

Low-cost unmanned systems have restructured the economics of lethality. First-Person View (FPV) drones, commercially modified quadcopters, and purpose-built loitering munitions have compressed the cost of destroying a main battle tank or artillery piece to a few hundred dollars—a fraction of the target's replacement value.[3] Watling and Reynolds have documented this cost compression in the Ukrainian context as "The exchange rate between defender interceptors and attacking munitions is already unsustainable for a force built around small numbers of expensive platforms".[4] When defenders exhaust interceptors faster than attackers exhaust munitions, defensive perimeters collapse. This calculation has played out in observed operational data across every theatre examined in this article, and not in theoretical modelling.

The companion shift is the erosion of information opacity at the tactical level. Commercial satellite imagery, medium-altitude long-endurance Unmanned Aircraft System (UAS) with electro-optical and infrared payloads, and aggregated open-source intelligence have produced near-continuous tactical surveillance, which analysts describe as 'Transparent Battlefield'.[5] Kill chains that once took hours now close in minutes; in documented instances, sensor-to-strike has been measured in seconds when sensor and shooter share a common network.[6] This compression places a premium on pre-delegated authority, decision agility, and command survivability rather than centralised deliberation.

Electronic Warfare (EW) has migrated from a supporting function to a decisive variable. Drone swarms rely on radio-frequency links that can be jammed, Global Positioning System (GPS)-guided munitions remain susceptible to spoofing, and air-defence radars can be located through their emissions and neutralised by anti-radiation missiles.[7] Non-state actors now contest the EW environment using commercial software-defined radio and open-source tools—a proliferation threshold that India's state and non-state adversaries have already crossed.

The established answer to massed attack—layered architectures combining long-range Surface-to-Air Missiles (SAM), medium interceptors, Short-Range Air Defence (SHORAD), directed energy, and electronic jamming—confronts an unresolved cost-exchange problem. Israel's Iron Dome, David's Sling, and Arrow triad is the most mature public example, yet the Apr 2024 Iranian barrage required full activation of allied inventories to achieve near-total interception.[8] Threat systems grow cheaper while defensive layers do not. The only resolution pairs active defence with offensive strike against the attacker's launch infrastructure, degrading capability at source rather than exhausting interceptors at the terminal end.

Lessons from Four Conflicts

Russia–Ukraine: Attrition, Adaptation, and Industrial Depth.

- Ukraine has invalidated two foundational assumptions of post-Cold War military thinking—advanced platforms confer decisive advantage, and superior technology enables rapid decision.[9] Gady and Kofman identified the governing dynamic, stating that the "Mass combined with precision and networked ISR remains the dominant variable; industrial depth to sustain it is the decisive enabler".[10] The drone–EW contest demonstrates this continuously. The Ukrainian FPV operators and Russian EW units have cycled through frequency bands, navigation protocols, and anti-jamming techniques at a pace which no procurement cycle replicates. Advantage belongs to states with manufacturing depth to absorb attrition, software architecture to update systems in the field, and tactical agility to adapt faster than the adversary can counter.

- Long-range precision strike has simultaneously erased the concept of a secure rear area. Kalibr, Iskander, and Shahed-136—matched against army tactical missile system, Storm Shadow, and high mobility artillery rocket system—have struck command posts, logistics hubs, and industrial infrastructure hundreds of kilometres from the contact line.[11] Neither side has achieved the air superiority classical doctrine, which is a prerequisite for decisive ground operations. Both operate in permanently contested airspace at low altitude, under electronic protection, in coordination with surface fires, creating an environment for which most air forces are not yet fully trained.

Israel–Hamas–Hezbollah: Multi-Front Attrition and the Limits of Precision.

- The multi-front confrontation across Gaza and Lebanon demonstrated that even a technologically superior military faces qualitative degradation when sustaining high-tempo precision operations across simultaneous urban and sub-state theatres. Israel's deep munitions consumption across both fronts exposed the fragility of precision-strike inventories under sustained pressure.[12] Non-state actors exploiting tunnel networks, civilian infrastructure, and dispersed launch cells forced constant recalibration of targeting thresholds, with direct implications for escalation management and operational legitimacy.

- Adversaries denied conventional military parity will systematically exploit terrain, demography, and the cost-exchange asymmetry of attrition warfare. For India, which simultaneously faces a high-technology state adversary in China and a hybrid threat environment along its western frontier, maintaining adequate stocks of precision-guided munitions and the capacity to sustain joint operations across geographically separated theatres is a strategic imperative rather than merely a procurement preference.

Yemen and the Red Sea: Maritime Coercion by Non-State Actor.

"The 21st Century will be more about the Indian Ocean than either the Atlantic or the Pacific, and the sooner we fully realise that in the US, the better".

— Admiral James Stavridis, *Sea Power: The History and Geopolitics of the World's Oceans,* Penguin Press, 2017[13]

- From late 2023, the Houthi forces using Iranian-supplied anti-ship ballistic missiles, cruise missiles, and maritime drones forced a global re-routing of commercial shipping and compelled the US to sustain a costly naval counter-strike campaign.[14] The US Navy's use of million-dollar Standard Missile (SM)-2 and SM-6 interceptors against far cheaper Houthi munitions is perhaps the clearest maritime example of the cost-exchange problem. It pits a finite shipboard missile inventory against an adversary whose resupply constraint is

determined less by its own capacity than by the production rate of its state sponsor.[15] Knights assessed this campaign as marking the arrival of effective sea denial by sub-state actors—a threshold with immediate implications for any state whose energy security depends on the Indian Ocean trade lanes.[16]

- India's counter-piracy operations in the region have provided valuable operational experience. The transition from escort duty to sustained area denial against a missile-armed adversary demands qualitatively different capabilities and significantly deeper magazine depth—a distinction that India's maritime force planning must now address explicitly.

Iran–Israel–United States Conflict and the Strait of Hormuz Crisis: Compellence, Ballistic Missile Defence Stress, and Energy Security Under Fire.

- The Jun 2025 conflict constitutes the most analytically significant state-on-state air and missile exchange since the Gulf War. Operation Rising Lion targeted Iranian nuclear enrichment and missile production infrastructure at Fordow, Natanz, and Isfahan; the US deployed B-2 strategic bombers carrying massive ordnance penetrators against hardened underground facilities beyond the reach of conventional munitions. Iran responded with Fattah-1 hypersonic glide vehicles, Kheibar-Shekan medium-range ballistic missiles, and Shahed-series loitering munitions in coordinated multi-axis attacks.[17]

- The conflict's immediate strategic consequence and its direct relevance to India is the closure of the Strait of Hormuz, the waterway through which approximately 20 per cent of global oil supply transits every day. Iran's parliament voted unanimously on 22 Jun 2025 to close the Strait in retaliation for American strikes on its nuclear facilities.[18] Iran deployed naval mines, activated Islamic Revolutionary Guard Corps (IRGC) fast-attack craft in harassment and interdiction roles, and used Global Navigation Satellite System (GNSS) jamming and satellite signal spoofing to compound navigational risk for commercial shipping—a layered asymmetric maritime package that no single defensive measure could defeat. Mines laid in the Strait created a compounding hazard. Iran reportedly lost tracking of a portion of the ordnance it had

planted, making full reopening technically impossible even when politically desired.[19] War-risk insurance premiums for tanker transits escalated from 0.125 per cent to 0.4 per cent of ship insurance value per voyage, thus, adding a quarter of a million dollars per transit for a very large crude carrier while suppressing commercial traffic regardless of the formal legal status of the passage.

- India has partially offset its supply exposure by re-routing crude through the United Arab Emirates' (UAE) Habshan-Fujairah pipeline, which delivers Murban crude to the Gulf of Oman outside the Strait at approximately 1.5 mn barrels per day, and through Saudi Arabia's East-West pipeline to Yanbu on the Red Sea.[20] Combined bypass capacity does not exceed 6.5 mn barrels per day against a normal Hormuz throughput of approximately 20 mn—making these routes a buffer, and not merely a substitute. The UAE's withdrawal from the Organisation of the Petroleum Exporting Countries, effective 01 May 2026, frees Abu Dhabi from quota constraints and may partially ease India's crude supply crunch, though the strategic vulnerability of chokepoint dependence remains unchanged.[21]

- Following the failure of the Islamabad Talks in mid-Apr 2026, the US imposed a naval blockade on Iranian ports, clarifying that it would not impede freedom of navigation for vessels transiting to non-Iranian destinations.[22] By 23 Apr, three US carrier strike groups were operating in the US Central Command area; US Ship (USS) Chief and USS Pioneer, supported by underwater drones, were conducting mine countermeasure operations in the Strait. US President Donald Trump authorised its Navy to engage any vessel observed laying mines.

- The International Institute for Strategic Studies (IISS) assessed that Israel's layered air defence, even with active Aegis and terminal high altitude area defence support, achieved imperfect interception under high-salvo conditions.[23] Imperfect interception in a high-salvo environment is the planning baseline, not an exceptional contingency. The US B-2 employment confirmed that compellence against hardened nuclear infrastructure required capabilities which the regional partner did not possess. It is a direct lesson for India, whose

deterrence requirements against China's tunnel-protected missile storage and Pakistan's hardened command infrastructure cannot be outsourced.[24]

- Escalation termination required back-channel crisis communication with Tehran that no formal bilateral framework provided.[25] India has no comparable architecture with China or Pakistan—a structural gap the Hormuz crisis has made impossible to defer.

- The crisis has produced immediate India-specific consequences. 22 India-flagged vessels were stranded in the Persian Gulf, including six Liquefied Petroleum Gas (LPG) carriers and four crude oil tankers. Indian Prime Minister Narendra Modi spoke directly to Iranian President Masoud Pezeshkian; the Indian Navy deployed under Operation Sankalp and Operation Urja Suraksha, with Indian Naval Ship Shivalik escorting LPG carriers Motor Tanker (MT) Ratnagiri and MT Dwaraka through the Strait.[26] India's strategic autonomy—the ability to engage Tehran on terms unavailable to US-aligned partners—proved its worth in real conditions rather than doctrinal declarations.

- The limits of this strategic autonomy were equally visible. On 18 Apr 2026, two Indian-flagged vessels were fired upon by IRGC gunboats near Larak Island and forced to turn back, despite prior diplomatic assurances.[27] No amount of diplomatic engagement can substitute for credible maritime deterrence when IRGC fast-attack craft are operating in the waterway. The gap between India's declared ambition as a net security provider in the Indian Ocean and the operational capacity required to guarantee passage through a contested chokepoint against a state actor willing to use force against civilian shipping is measurable and urgent.

Deterrence, Coercion, and Escalation Management

"Brute force succeeds when it is used, whereas the power to hurt is most successful when held in reserve. The power to hurt is bargaining power. To exploit it is diplomacy—vicious diplomacy, but diplomacy".

- Thomas C Schelling, *Arms and Influence,* Yale University Press, 1966[28]

The conflicts examined share a structural feature that strains classical deterrence theory: the increasing difficulty of controlling escalation in environments characterised by cheap distributed strike systems, persistent ISR, proxy actors, and ambiguous attribution. Classical deterrence assumes a dyadic relationship with identifiable capabilities, clear thresholds, and rational cost-benefit calculations.[29] Each of these assumptions is under acute stress in current operating environments.

The proliferation of loitering munitions introduces a specific challenge: individual attacks below the level that conventionally justifies military response can, in aggregate, constitute a sustained and strategically significant coercive campaign. Formulating a calibrated, attributable, and proportionate response doctrine for sub-threshold drone attrition has emerged as one of the most pressing priorities in India's strategic planning—a need strongly underscored by the evidence surveyed in this article, yet only partially explored in existing scholarship.[30]

The 2024 Israeli–Iranian exchanges demonstrated that precision strikes now serve as a form of diplomatic signalling: the decision over which targets to avoid can carry as much strategic significance as the targets that are hit. When allied air defence relied on American and Jordanian interception capacity, the threshold for escalation became a multilateral political negotiation rather than a bilateral military calculation. India cannot assume comparable allied support against China or Pakistan. Self-reliant air defence capability constitutes the structural basis of credible deterrence—an operational necessity underscored beyond serious analytical doubt by the evidence emerging from four ongoing conflicts.

Dissenting View and its Limits

Before deriving operational conclusions, it is important to address a counter-argument circulating among some Indian strategic analysts—one that warrants direct engagement in any candid assessment.

Some Indian strategic analysts have implicitly suggested that the urgency of recalibration is overstated. Assessments pointing to the S-400 acquisition, the Medium-Range SAM (MRSAM) fielding programme, and the expansion of the indigenous UAS production

base as an evidence that India's layered deterrence already places it ahead of what most regional powers have circulated in policy circles, with the structural gaps identified in the article characterised as manageable within current procurement trajectories.[31] In this article, the comparison with Israel—a state facing an existential, multi-directional threat simultaneously and with unambiguous allied kinetic support—overstates the urgency of India's exposure.

This argument underestimates two realities. India's threat environment is structurally more demanding than Israel's in one critical respect: it spans two simultaneous nuclear-armed adversaries across continental and maritime frontiers, without the allied integration that amplified Israeli defensive capacity in Jun 2025. The Hormuz crisis has added a third dimension by exposing India's energy security to chokepoint coercion by a state actor—an issue that bilateral diplomatic engagement alone has thus far been unable to resolve. The consumption data from Ukraine and the Middle East make it clear that existing inventories, despite appearing capable in theory, are inadequate for a sustained multi-day high-intensity exchange. Sufficiency in peacetime force structure is not an adequacy in wartime consumption.

Implications and Recommendations for India

India confronts the most demanding strategic geography of any major democracy: two nuclear-armed adversaries across continental and maritime frontiers, no formal alliance, and critical sea lanes exposed to the coercion that the Hormuz crisis has now enacted at the state level. Drawing on operational experience in managing air defence systems—where the interval between radar detection and engagement is measured in seconds—the author argues that the latency caused by inter-service data-link incompatibility is not merely an abstract systems-engineering issue, but often the decisive factor between a successful intercept and the loss of a critical asset. The five recommendations below are urgent requirements grounded in the evidence of current conflicts and the realities of India's own air defence architecture.

Shivshankar Menon identified this as India's defining strategic reality: no other major democracy must simultaneously manage deterrence against two nuclear-armed adversaries across continental and maritime frontiers without the alliance architecture that amplifies defensive capacity.[32]

System or Layer	Estimated Holdings (Open Source)	Est Intercept Rate Per Salvo	Est 72-hr Consumption	Assessment
S-400 (Long-range BMD)	Five regiments (~120 launchers)	High vs BM; Limited vs HGV	High: 60–80 per cent stock in 72 hrs	Critical Gap: Insufficient reserves for two-front scenario
MRSAM/ Barak-8 (Medium-range)	Army + Navy (~6–8 batteries)	Effective vs cruise missile/ UAS	Moderate–High: 50–70 per cent stock in 72 hrs	Gap: Production rate below consumption rate
Akash/Akash NG (Short-range SAM)	~25+ squadrons (legacy + NG)	Moderate vs low-alt UAS	Moderate–30–50 per cent stock in 72 hrs	Partial: Akash NG fielding ongoing
VSHORAD/ MANPADS (Very short range)	Multiple regiments legacy Igla-1M; Igla-S initial induction (one regiment, 2024); Starstreak — initial batch received 2025, regimental induction ongoing	Effective vs low-slow UAS	Very High: 70–80 per cent stock in 72 hrs	Critical Gap: FPV/ swarm vulnerability
Dedicated Counter-UAS	Limited: DRDO LDEW trial stage	Low — not yet operationally deployed at scale	N/A — capability gap	Urgent Priority: No operational C-UAS architecture

Table 1: India's Air Defence Layers—Indicative Inventory vs Estimated 72-Hour High-Intensity Consumption

Sources: IISS Military Balance 2025; Defence Research and Development Organisation (DRDO) Annual Report 2024–25; Behera (IDSA, 2025); open-source analysis.

Note: All figures are indicative estimates. Actual classified holdings may differ. HGV = Hypersonic Glide Vehicle; BM = Ballistic Missile; UAS = Unmanned Aerial System; LDEW = Laser-Directed Energy Weapons.

Recommendation 1: Accelerate Integrated Air Command and Control System (IACCS)-Akashteer integration across all operational zones, including maritime approaches. Akashteer's integration of sensors, weapons, and command nodes into a networked picture underpins the sensor–shooter architecture that current conflicts validate as decisive.[33] Centre for Joint Warfare Studies identifies it as the single most consequential near-term air defence investment.[34],[34] Extension to forward areas, logistics nodes, and coastal zones must be treated as an emergency priority, not a routine procurement timeline.

Recommendation 2: Build an interceptor magazine depth calibrated to high-intensity consumption rates. The Jun 2025 exchanges and the Apr 2024 Iranian barrage depleted interceptor inventories at rates which demanded emergency resupply. India must hold strategic reserves of S-400 missiles, MRSAM rounds, Akash-New Generation interceptors, and Very SHORAD (VSHORAD) munitions, sufficient for multi-day high-intensity operations.[35] The Manohar Parrikar Institute for Defence Studies and Analyses flags stockpile depth as a critical vulnerability.[36] Ukraine's experience, with pre-war inventories exhausted within weeks, is a relevant benchmark.

Recommendation 3: Develop and field a comprehensive counter-UAS architecture at the formation level. India's DRDO has demonstrated directed energy capability through the LDEW in 2023, and the Directionally Unrestricted Ray-Gun Array-II programme remains in development. However, a technology demonstration is a different thing from a fielded operational capability.[37] The Army's Integrated Air Defence Weapon System programme must translate proof-of-concept achievements into deployed architecture across all commands. Hard-kill systems—Quick Reaction SAM, VSHORAD, Kamikaze counter-drones—must be integrated with EW systems defeating drone navigation and command links across the full frequency spectrum. Israeli and Ukrainian operational experience is the benchmark that India has not yet met. Fielding at scale, not demonstration at test ranges, is the governing standard.[38]

Recommendation 4: Evolve IACCS into a genuinely joint sensor–shooter architecture. Real-time multi-domain coordination—as seen in Jun 2025 and across the Hormuz naval operations—requires pre-integrated data links, shared threat tracks, and exercised deconfliction procedures. India needs a single fused air and maritime picture from the integrated theatre command level to the formation air defence officer, linking the Indian Air Force's (IAF) IACCS, Army's Akashteer, and Navy's Trigun through uniform data link standards.[39] The Observer Research Foundation has identified inter-service data link incompatibility as the most operationally consequential structural gap in India's joint warfighting architecture.[40] The Larak Island incident on 18 Apr 2026—in which Indian-flagged vessels were fired upon and forced to turned back while INS Shivalik's situational awareness of the developing IRGC

threat was delayed by the inter-service latency—illustrates the cost in concrete terms. Joint data architecture is as much a maritime security requirement as it is for land-air defence.

Recommendation 5: Develop a national electronic warfare strategy and build credible at-sea deterrence for chokepoint contingencies. EW is India's most consequential capability gap. IRGC's GNSS jamming and spoofing in the Strait degraded commercial navigation. India's naval forces must be equipped to operate in GPS-denied conditions while maintaining fire control.[41] A national EW strategy developed jointly by the IAF, Indian Army, Indian Navy, and the National Technical Research Organisation must define frequency domains, concepts, and acquisition requirements for a coherent offensive–defensive architecture. India must simultaneously develop credible at-sea deterrence for chokepoint scenarios—guaranteeing passage for Indian-flagged vessels against state-level opposition, not merely escorting in permissive environments. Air Marshal R Nambiar has identified EW as the missing dimension that no platform programme can substitute.[42]

Conclusion

"Thus far, the chief purpose of our military establishment has been to win wars. From now on, its chief purpose must be to avert them. It can have almost no other useful purpose".

— Bernard Brodie*, Strategy in the Missile Age,* Princeton University Press, 1959[43]

The Strait of Hormuz blockade is currently ongoing; Indian-flagged vessels are under threat; India's energy security is being tested in real time by the same asymmetric maritime tools that the Houthi campaign introduced at sub-state level and the IRGC has now deployed as a sovereign policy. The pattern across all four theatres—cheap drones attriting expensive platforms, persistent ISR eliminating the secure rear, EW determining if sensor–shooter networks function at all, maritime chokepoints weaponised against energy-dependent economies—is India's present operational environment, and not a future contingency.

India's response to the Hormuz crisis—deploying warships, securing diplomatic passage for LPG carriers, and engaging Tehran directly at the highest political level—has confirmed that strategic

autonomy produces results. The firing on Indian-flagged vessels near Larak Island confirmed its limits. Closing that gap—in air defence depth, joint command integration, magazine resilience, counter-UAS coverage, and at-sea deterrence—is the institutional task the evidence of 2023–26 has placed before India's strategic leadership. The adversaries India faces are adapting with purpose and at battlefield tempo. India's institutions must match them.

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[28] Thomas C Schelling, Arms and Influence (New Haven: Yale University Press, 1966), 2–3. Schelling was awarded the Nobel Memorial Prize in Economic Sciences in 2005 partly for this work, which developed the concept of the "Diplomatic use of force" and remains a foundational text in coercive bargaining theory.

[29] Lawrence Freedman, Deterrence (Cambridge: Polity Press, 2004), 26–29.

[30] The argument that sub-threshold drone attrition requires a dedicated Indian response doctrine is the author's own analytical conclusion, grounded in the operational evidence surveyed here. For the institutional capability gap it addresses, see Kumbar, "IADWS", 19–22; and Anit Mukherjee, "India's Joint Warfighting Challenge", Strategic Analysis, vol. 47, no. 2 (2023), 112–130. On escalation through sub-threshold action, see James M Acton, "Escalation through Entanglement", International Security, vol. 43, no. 1 (Summer 2018), 56–108.

[31] This assessment draws on the general thrust of: Ryan Bauer et al., Conference Proceedings on Asia-Pacific and Indian Military and Defense Consequences of the Russia-Ukraine War, RAND Corporation, CF-A2613-2 (Santa Monica: RAND, 2024); and Manoj Joshi, "A Survey of India–US Defence Cooperation", ORF Special Report no. 224 (New Delhi: Observer Research Foundation, Mar 2024). Neither source argues explicitly that India's recalibration is unnecessary; the overall assessment of a regionally superior Indian posture is a recurring implicit conclusion of procurement-focused analyses.

[32] Shivshankar Menon, India and Asian Geopolitics: The Past, Present (Washington DC: Brookings Institution Press, 2021), Chapter 1. Menon argues that India's simultaneous deterrence challenge across two nuclear-armed frontiers without formal alliance support is structurally unique among major democracies.

[33] Indian Army, Integrated Air Defence: Akashteer Programme Overview (New Delhi: Directorate of Air Defence, 2024), unclassified brief.

[34] Vinayak Kumbar, "IADWS: India's Indigenous Quest for Strategic Air Defence", CENJOWS Monograph (New Delhi: Centre for Joint Warfare Studies, Sep 2025), 14–18.

[35] Laxman Kumar Behera, "India's Defence Budget and Procurement Priorities", *IDSA Issue Brief* (New Delhi: Manohar Parrikar IDSA, Jan 2025).

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[40] Rajeswari Pillai Rajagopalan, "Jointness and Integration: India's Continuing Challenge", *ORF Issue Brief* no. 621 (New Delhi: Observer Research Foundation, Mar 2024).

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[43] Bernard Brodie, *Strategy in the Missile Age*, (Princeton: Princeton University Press, 1959), p. 76. Brodie, widely regarded as the founding theorist of nuclear deterrence in the United States, articulated this principle in the context of the early nuclear era; its application has only broadened as the instruments of coercion have proliferated.