

From Exquisite Platforms to Attritable Mass: Rethinking India's Defence-Industrial Preparedness

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Abstract

This article examines the structural transformation underway contemporary warfare and its implications for India's defence-industrial preparedness. Drawing lessons from conflicts in Ukraine, West Asia, and the Red Sea, it argues that modern conflict is increasingly shaped by attritable mass, persistent intelligence, surveillance, and reconnaissance, battlefield adaptation, industrial resilience, and software-enabled targeting architectures rather than platform sophistication alone. However, these lessons must be tempered by India's unique strategic reality of two inimical nuclear-armed neighbours, contested borders across difficult terrain, and the requirement for a sustained conventional deterrence. The article contends that India must begin with doctrinal integration: amalgamating legacy systems with unmanned capability, precision long-range strike systems, electronic warfare, and distributed battlefield awareness under persistent surveillance conditions.

Introduction

The 'Black Rain' that fell over Tehran in Mar 2026 was not just an environmental catastrophe; it was the physical condensation of a global industrial order that has quite literally gone up in smoke.¹

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Recent conflicts have exposed a structural shift in warfare that defence establishments can no longer treat as a temporary anomaly. While global attention remains fixated on oil prices crossing USD 120 per barrel, the broader strategic implications of the crisis risk being overlooked.² The world is not merely facing an energy crisis; it is in a 'Civilisation Crisis'—one where the 'Exquisite' defence models of the West have been exposed as fundamentally naked and the supply chains of the modern world are unravelling at their chemical seams. For India, this shift presents a unique strategic paradox: the country must prepare for a future defined by high-technology attrition while managing the immediate, gritty reality of two inimical neighbours and contested borders in some of the world's most difficult terrain. Unlike the expeditionary forces that operate in choice-based environments, Indian Armed Forces remain locked in a perpetual stare with its adversaries across high-altitude peaks and dense jungles.

The starting point for Indian strategic thought must be the formulation of a doctrine that amalgamates legacy systems with the new-generation technology of unmanned systems and precision long-range strike capabilities, all operating under a persistent battlefield glare. Across Ukraine, Red Sea, and West Asia, expensive and technologically sophisticated military platforms are increasingly being challenged—not always symmetrically, but often effectively—by cheaper, networked, and more replaceable systems.³ This does not mean that advanced platforms have become irrelevant. Rather, it means that they are no longer sufficient on their own. Military effectiveness is now being shaped by industrial adaptability, software integration, and the modernisation of legacy systems through the incorporation of new-generation capabilities.

India's challenge is to move beyond the old model of selective acquisition toward an ecosystem built around industrial resilience and rapid battlefield adaptation. India should understand that the 'Emperor's Clothes' of Western military superiority—woven from trillion-dollar Armor and 'Best-in-the-World' rhetoric—have been shredded by reality. The failure of the Reaper drone is the failure of the belief that complexity equals capability.⁴ As Ukraine whispered and Iran is now shouting, the future of warfare belongs to the attritable mass—cheap, decentralised, and autonomous. This shift is the greatest opportunity for the Indian private defence industry since independence.

The Autopsy of Hubris: Western Doctrine and its Paymasters

To understand the current failure, it is important to analyse the background of the authors of the 'Western Defence' doctrine. Organisations like the Research and Development Corporation and the Atlantic Council—frequently funded by the very contractors they evaluate—have long championed exquisite platforms.⁵ They prioritised highly sophisticated systems with superior sensors and high lethality, viewing them as symbols of deterrent prestige. While they argued that a USD 30 mn platform with a 2.8-secs satcom latency was 'Survivable' because it was sophisticated, the Iranian forces proved it incorrect. In the skies over the Gulf, the United States (US) has lost 10 per cent of its active Reaper fleet in under a fortnight.^{6, 7} This is not an outlier; it is a structural collapse. The 'Fat Five'—Lockheed Martin, Boeing, Ray Tracing Texel eXtreme (RTX), Northrop Grumman, and General Dynamics—have spent the last five years prioritising shareholder buybacks over the surge capacity needed for a real war. RTX alone spent USD 43.5 bn on buybacks and dividends between 2020 and 2024.⁸ They invested heavily in creating a 'Ghost Fleet', which appears robust in inventories and procurement reports but whose operational effectiveness remains largely untested. This overconfidence has laid bare the vulnerabilities of the American defence establishment, exposing a facade of superiority that cannot withstand the high-attrition reality of modern electronic warfare and cheap, mass-produced interceptors. In a peer conflict, an extraordinarily capable but too scarce platform becomes strategically brittle.

Developing Battlefield Adaptation: Integrating the User

A critical weakness in India's current structure is that its battlefield adaptation capability remains nascent. To overcome this, India must develop a framework that incorporates the soldier on the front line directly into the innovation loop. The Russians have decisively mastered this capability, demonstrating that the speed of software and hardware adaptation on the battlefield often matters more than the original sophistication of the platform.⁹ Innovation can no longer be confined to traditional defence laboratories.

Much of the most relevant wartime adaptation now occurs through the interaction of military users, private firms, software teams, and rapidly evolving production ecosystems. By compressing feedback loops, systems can be field-tested, modified,

and re-certified in short cycles. This user-centric design ensures that technology serves the soldier in the difficult terrains of India's contested borders, rather than forcing the soldier to adapt to inflexible technology. This integration of ex-servicemen into the defence-industrial ecosystem provides an underutilised advantage; The integration of ex-servicemen into the defence-industrial ecosystem represents a largely untapped strategic advantage. Their operational experience and user-centric perspective help ensure that products are aligned with the practical realities and requirements of frontline personnel. Strengthening this link creates a qualitatively different battlespace where attrition is no longer just a by-product of war, but a central organising condition of it.

The Eastern Shift and the Grouping of China, Russia, Iran, and North Korea Innovation Loop

The Eastern perspective, often characterised by the CRINK (China, Russia, Iran, and North Korea) innovation loop, offers a starkly different approach to the exquisite Western model. Analysts in Shanghai and Tehran have long ridiculed the Western obsession with high-margin, low-volume 'Miracle Weapons'. Instead, they have focused on mass, decentralised production, and sheer volume. They understand that in a war of attrition, quantity has a quality of its own. While a single US Patriot interceptor costs upwards of USD 4 mn, it can be exhausted by a swarm of drones costing less than USD 5,000 each.¹⁰ This economic asymmetry is the primary driver of the current shift. The oriental and Indian perspectives further emphasise that true strategic autonomy cannot be bought from foreign original equipment manufacturers with proprietary 'Walled Gardens'. It must be built on open architectures that allow for rapid, localised adaptation. The failure of the MQ-9 in the Gulf is not just a hardware failure; it is the failure of a closed-source, contractor-locked industrial philosophy that prioritises quarterly dividends for its paymasters over the survivability of the soldiers who depend on its technology.

The Sulphur-Nickel-Nitrogen Trinity: The Hidden Vulnerability

The Western press focuses on 'Freedom of Navigation' and oil barrels, but they rarely discuss the chemical precursors that make modern civilisation possible. This is where the civilisation crisis hides. 92 per cent of the world's sulphur is a by-product of oil and gas refining.¹¹ Sulphur is the precursor to sulphuric acid, and the

single most produced chemical on Earth. In the defence sector, sulphuric acid is the 'Workhorse' of the mining industry—the extraction of copper for wiring, nickel for super-alloys, or cobalt for drone batteries requires sulphuric acid. The 'Black Rain' over Tehran is the global supply of battery-grade nickel washing away. Indonesia, which produces 60 per cent of the world's nickel, relies on high-pressure acid leaching that consumes massive quantities of sulphur.¹² As West Asian refineries burn, the 'Sulphur Squeeze' will hit the electric vehicles and defence sectors, simultaneously. By mid-2026, the world will witness a bidding war between the agricultural sector and the defence sector for fertiliser and missiles, respectively. This chemical interdependence creates a massive, singular chokepoint that threatens every battery and microchip on Earth.

The Fragility of Modern Civilisation

Furthermore, the nitrogen collapse is the most dangerous domino. Synthetic nitrogen fertiliser, created via the Haber-Bosch process, sustains four billion people—half of the human population.¹³ One-third of the world's nitrogen feedstock moves through the Strait of Hormuz. If that chokepoint stays closed, global agricultural output will not just decline; it will collapse. Western analysts, often funded by the fossil fuel lobby, downplay this link to avoid admitting that national defence is tethered to the same fragile chokepoints as global food security.¹⁴ The intersection of energy, sulphur, and nitrogen forms a 'Trinity of Survival' that is currently exposed at a 21-nautical-mile chokepoint. The global industrial capacity for the coming months is being literalised as acid rain falling on 15 million people in Tehran. Every drop that falls represents a unit of capacity that the world will not have for the critical manufacturing tasks ahead. This is not an energy crisis; it is a fundamental challenge to the stability of modern industrial civilisation. The vulnerability of Taiwan, which relies on Qatari Liquefied Natural Gas for the power required by Taiwan Semiconductor Manufacturing Company's machines, adds another layer of fragility. The dearth of gas would impact chips production, the shortage of sulphur would affect battery manufacturing, similarly, the shortage of nitrogen would impact food supply.

The Contractor Trap and Cost-Plus Cancer

The American model is hollowing out from within due to cost-plus contracts. These are deals where the government pays for all costs along with a percentage of profit. It is a system that literally rewards failure, delays, and over-engineering. For example, the F-35 program is seven years late with USD 900 bn in overruns, and the Patriot system has seen a 77 per cent cost escalation while the US stockpiles remain at just 25 per cent of strategic needs.¹⁵ In contrast, India's private sector, unburdened by these legacy 'Paymaster' structures, can lead the fixed-price revolution. In India, frugal engineering is not just a buzzword; it is a survival mechanism. India has the software talent to lead in Artificial Intelligence (AI)-enabled Swarm-C2 and the manufacturing base to build an Integrated Defence Manufacturing Hub (IDMH) across friendly countries and allies that bypasses the 'Fat Five' model. This hub must focus on 'Owned by India' Internet Protocol (IP), ensuring that every design document, source code, and circuit layout is held domestically, shielding the industry from foreign proprietary locks.

The Ukrainian Blueprint and the Wardrobe of War

Ukraine has revolutionised the 'Wardrobe' of war. They are not building USD 30 mn reapers; they are producing three million first-person view drones annually worth USD 500 each.¹⁶ They have moved to open architecture, where sensors, flight controllers, and AI algorithms are interchangeable across platforms. This model achieves 24X7 Persistent Intelligence, Surveillance, and Reconnaissance (ISR) through rotation and redundancy. It is a mathematical inevitability that no 'Golden Dome' missile shields—which has a 55 per cent success rate after USD 67 bn in spending—can economically defeat. The 'Drone Line' initiative, which neutralises one in four enemy soldiers through mass-produced tactical unmanned aerial vehicles, is the template for modern land defence.¹⁷ India must adopt this 'Swarm' mentality, leveraging its software prowess to develop jam-resistant autonomy that survives without constant satellite communication links. The persistence of ISR in the Ukraine model is achieved through a layered, mass-scale ecosystem providing real-time data to battlefield management platforms like Delta.¹⁸ This decentralised approach allows for quick regeneration and absorbs losses that would be catastrophic for a US MQ-9 fleet.

India's Strategic Opportunity and the *Atmanirbhar* (Self-Reliant) Reality

India stands at a historic crossroads. Its defence exports have hit INR 23,622 cr, but India is still largely playing in the 'Old' world of legacy hardware.¹⁹ To win in 2026, India must become the global hub for attributable technology. The future belongs to firms like Arigni Defence that can bypass the cost-plus inefficiencies of the West and build IDMH on friendly countries. India must learn from the 'Black Rain' and secure its 'Chemical Sovereignty'. It cannot be *Atmanirbhar* if it is dependent on imported sulphur or Qatari gas for Indian chips. The government must incentivise domestic production of chemical precursors and diversify supply chains toward an Indo-Pacific corridor to ensure minerals and microchips remain accessible even when Middle Eastern chokepoints are closed. The Government of India (GoI) must recognise that the private defence industry is the engine of this transition. For too long, the industry has been dominated by state-owned giants that lack the agility of private micro, small, and medium enterprises.

A 10-Point Roadmap for Strategic Autonomy

To promote the Indian private defence Industry and secure the country's future, the GoI must act with wartime urgency.

- The government must mandate positive-exchange fixed-price contracts for all attributable systems, specifically targeting the modernisation of legacy hardware by clothing them in new-gen sensors and unmanned capabilities. This means rewarding firms that build interceptors costing significantly less than the target they destroy, flipping the economic war in India's favor by punishing over-engineering and rewarding cost-efficiency.
- The government must expand the current Innovations for Defence Excellence framework into an INR 10,000 cr Manufacturing-Focused Subsidy Scheme (as proposed in the 2026 Budget) to scale production from thousands to millions.²⁰
- The GoI should create a dedicated Ex-Servicemen Defence Manufacturing Scheme that integrates retired officers into the development loop. This initiative would leverage the leadership and tactical understanding of veterans to manage

private manufacturing hubs, ensuring that battlefield adaptation is driven by those who have lived the reality of the front line and understand the user requirements in difficult terrain.

- The Draft Defence Acquisition Procedure 2026 must be updated to prioritise Indian IP ownership, ensuring design control remains domestic.²¹
- A National Mineral and Chemical Reserve for sulphur, nitrogen, and helium must be established to bypass Persian Gulf chokepoints.
- The military should shift to a 'Drone-as-a-Service' model, contracting private firms for ISR to keep the tech cycle fast.²²
- Dual-use tech startups must be incentivised with tax breaks to bridge the gap between civilian AI innovation and military applications.
- The GoI must support the creation of 'Distributed Manufacturing' hubs in allied nations, specifically within South-East Asia, to build an IDMH. This network must focus on the amalgamation of legacy platforms with indigenous unmanned tech to provide a credible alternative to foreign influence while diversifying Indian industrial risk.
- A 'Digital Directorate General of Aeronautical Quality Assurance' must be created for real-time certification, incorporating a 'User-in-the-Loop' validation process.²³ Modern warfare moves too fast for legacy inspection; India needs an automated assurance process that utilises veteran oversight to certify mass-produced intelligence machines as they roll off the line, ensuring they meet the specific operational needs of contested borders.
- A Sovereign Defence Cloud must be built to protect Indian manufacturing data.

Structural Reformation for Conflict Readiness

These ten steps represent a fundamental restructuring of how India prepares for war. The 'Fat Five' model in the West is in a 'Death Spiral' because it cannot produce at scale or at a viable price point. India must avoid this trap by ensuring its industrial base remains lean, private-sector-led, and highly attritable. The

focus on Indian IP ownership ensures that the 'Guts' of India's Defence systems are not subject to foreign 'Kill Switches'. By building a National Mineral Reserve, India addresses the 'Hidden' vulnerabilities exposed by the 'Black Rain'. It must secure molecules as aggressively as India secures borders. Only a comprehensive, integrated approach that combines financial incentives, veteran leadership, and chemical sovereignty can transform India into the primary global arsenal. The US push for a 'Golden Dome' missile shield is fundamentally doomed.²⁴ It relies on astronomical costs and space-based sensors that are a distraction from the real threat: massed, low-cost drone salvos. India must not fall into this trap; its strength lies in mass, reliability, and cost. While the West builds gilded fantasies, India should build the 'Leaden Reality'.

Manufacturing for the Battlefield, Not the Boardroom

The 'Fat Five' contractors have become Software as a service platform with a hardware problem. They prioritise high-cost sustainment and proprietary lock-in over operational readiness. This is the 'Civilisation Crisis'—a world where the ability to surge production is lost because Indian factories are built for dividends. India's IDMH must be the answer. By utilising private sector agility, India can surge production to meet conflict demands. While the US struggles with satellite communication latency, China has pivoted to decentralised mesh technologies.²⁵ They are integrating commercial satellite data with drone-based relays to create resilient communication webs. India must compete in this arena by offering a technologically superior and more trustworthy alternative, clothing existing legacy systems in new-generation capabilities to enhance their survival under persistent glare.²⁶ This is a strategic imperative; the shared threats from the CRINK loop mean that collaboration between India and its allies is no longer optional—it is a matter of survival in a world where the old 'Emperor's Clothes' no longer provide protection.

The Tailor's Mission for the Global South

The price point of these Eastern systems should terrify anyone relying on traditional models. They are designed to be 'Good Enough' at a fraction of the cost. India's unique advantage is its ability to bridge the gap between high-end software and low-cost manufacturing. An Indian-owned drone hub in the Association of

Southeast Asian Nations can provide a credible alternative to Chinese influence, built on a foundation of open architecture and fixed-price reliability.²⁷ This is the 'Tailor's' mission: to provide a new set of 'Clothes' for the global Defence order fit for the fight. By focusing on mass, autonomy, and trust, India can ensure it is not just a participant, but a leader. The Global South is looking for an alternative to Western over-engineering or Eastern authoritarianism. If India can align procurement reform, private manufacturing, and veteran experience with a doctrine that amalgamates legacy and new-gen tech, it will build a defence-industrial base capable of enduring the pressures of 21st Century warfare while maintaining a credible deterrent in an increasingly unstable strategic environment.

Conclusion

The era of the 'Emperor's Armor' is over. The 'Black Rain' over Tehran is a physical warning that the global supply chain is too fragile and domestic systems too exquisite. India has the tailors, the fabric, and the engineering genius to lead this paradigm shift. By empowering the private sector, securing chemical precursors, and embracing the 'Attritable Mass' model, India becomes the arsenal of the new civilisation. The message from Kharkiv and the sky over the Gulf is clear: the next swarm will not wait for a five-year procurement cycle. It will be decentralised, cheap, and relentless. India must act now to build industrial capacity and sovereign IP. The country must move beyond the hubris of the past and the hollowing out of the present. It is time to dress for the fight and build a future where Indian defence industry is as resilient as its soldiers. Prepare accordingly.

Endnotes

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