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EDITORIAL ANALYSIS

Pralay and the Precision Revolution — Can India Build a Conventional Deterrent from Scratch?

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GS3

GS2

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MAINS RELEVANCE:

GS Paper 3

GS Paper 2



INTERVIEW ANGLE

"India has traditionally relied on nuclear deterrence for its strategic posture and imported weapons for conventional operations. Pralay represents a shift toward indigenous precision conventional deterrence. Is India's defence indigenisation mature enough to sustain this shift? What are the remaining gaps?"

WHY IN NEWS

DRDO's successful Pralay quasi-ballistic missile salvo trial confirmed India's indigenous precision strike capability at the 150-500 km range — a gap that previously forced India to rely on imported systems or cruise missiles. The Pralay trial, combined with the debut of Suryastra rocket launchers and Bhairav Light Commando Battalions at Republic Day 2026, signals a qualitative shift in India's conventional deterrence architecture.

THE CAPABILITY GAP INDIA IS FILLING

The concept of **conventional deterrence** — using the credible threat of devastating non-nuclear strikes to prevent aggression — requires two things: range sufficient to threaten an adversary's most valuable assets, and precision sufficient to destroy them efficiently. Nuclear weapons provide the ultimate deterrence but cannot be used for most military objectives. Conventional forces provide day-to-day deterrence — but conventional deterrence requires systems that can hit hardened, defended targets deep in adversary territory with precision.

India has faced a specific capability deficit in the **150-500 km conventional precision strike** domain. The gap existed between:

Short-range rockets (Pinaka, 45–90 km) — effective for battlefield support, insufficient for deep strike

Cruise missiles (BrahMos, 300 km+) — highly accurate but expensive (~₹25-35 crore per missile), cruise flight profile detectable by air defence

Ballistic missiles (Agni series, 700 km+) — nuclear weapons delivery systems, not conventional strike options

Pralay fills exactly this space: a **quasi-ballistic conventional precision missile at 150–500 km** that is cheap enough to deploy in quantity, fast enough to defeat air defence, and accurate enough to hit point targets.

WHY THE SALVO TRIAL IS STRATEGICALLY SIGNIFICANT

The January 2026 **salvo launch** — two Pralay missiles fired in rapid succession from the same launcher — is not a minor technical achievement. It represents a strategic capability:

Saturation: Modern air defence systems (China's HQ-9, S-400; Pakistan's LY-80) can engage a limited number of incoming targets simultaneously. Salvo fire — multiple missiles arriving near-simultaneously — overwhelms these systems. One or two missiles might be intercepted; a salvo of six or eight cannot all be stopped.

Redundancy at the strategic level: When planning a strike mission against a hardened target (a command bunker, a radar site, an airfield), a commander needs confidence that at least one missile will get through. Salvo fire provides that confidence without requiring perfect individual missile performance.

Doctrine shift: The capability to fire salvos means India can now plan for **time-on-target (ToT) attacks** — multiple missiles from different directions arriving at the same target simultaneously, multiplying the probability of penetrating integrated air defence.

THE INDIGENISATION ACHIEVEMENT

Pralay's supply chain is almost entirely indigenous. Solid rocket motors (from ASL, Hyderabad), guidance systems (RCI, Hyderabad), warhead design (TBRL, Chandigarh), and canisterised TEL (Indian private sector) are all locally sourced. This is a meaningful contrast to India's earlier dependence on Russian Smerch rockets and Israeli EXTRA systems for long-range conventional fires.

But the Pralay achievement must be contextualised:

The **seeker technology** (terminal phase guidance) still has elements that benefit from foreign components

Production scale — transitioning from DRDO prototype to Army-scale production requires supply chain investment that India is still building

Integration with C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance) — Pralay needs to be integrated into India's broader battle management architecture, which is less mature than the missile itself

India's defence exports have grown (₹23,622 crore in FY26), but the domestic procurement pipeline for high-tech systems like Pralay depends on DRDO-to-DPSUs-to-private sector technology transfer that often faces bureaucratic friction.

THE TWO-FRONT PROBLEM

Pralay's operational significance is primarily on India's **two active fronts** — Pakistan and China:

Western front (Pakistan): Pakistan's strategic assets — the Nur Khan Airbase (Rawalpindi), Sargodha Airbase, and the Kahuta enrichment plant — are all within Pralay's range. Pakistani air defence includes upgraded F-16 radars and Chinese-supplied systems. A quasi-ballistic Pralay salvo from forward-deployed positions could threaten these assets in a conventional escalation scenario.

Northern front (China): China's PLA Western Theatre Command has deployed **DF-12/M-20 quasi-ballistic missiles** at bases in Tibet that can hit Indian logistics nodes within 500 km. Pralay gives India reciprocal conventional strike depth — able to threaten PLA forward bases, logistics depots, and communication nodes without triggering nuclear thresholds.

The stability-instability paradox: Critics argue that enhancing conventional precision strike capability can increase crisis instability — an adversary facing a credible conventional first-strike capability may feel pressured to act pre-emptively. This is a real strategic concern. India's response — and its doctrine — emphasises that Pralay is a defensive counter-deterrence capability, not a first-strike weapon. The salvo capability is framed as reducing India's vulnerability to aggression, not enabling offensive escalation.

WHAT REMAINS TO BE DONE

Speed of induction: The gap between successful trials and actual army induction can be years in India's procurement system. Pralay needs to move from user trial approval to production contract to battalion-level deployment with trained crews.

Digital integration: A precision missile system is only as effective as its targeting data. India needs better ISR (Intelligence, Surveillance, Reconnaissance) — satellite imagery, UAV reconnaissance, signals intelligence — to provide targeting data for Pralay in real-time on both the Pakistan and China fronts.

Numbers: Conventional deterrence requires quantity, not just quality. India needs to produce and stockpile sufficient Pralay missiles to make their employment a credible threat — not a handful of test rounds.

UPSC RELEVANCE

Pralay (quasi-ballistic; RCI DRDO; 150-500 km; Mach 6; CEP <10m; solid fuel; salvo; Chandipur ITR); C4ISR; Pinaka MBRL (45-90 km); BrahMos (supersonic cruise; 300 km); Agni series (700 km+; nuclear); Suryastra (150-300 km; multi-calibre)

MAINS GS-3:

“Assess the significance of the Pralay missile in India’s conventional deterrence architecture and its implications for India’s two-front security challenge.” | “Evaluate India’s progress in defence indigenisation — what has been achieved through DRDO’s precision strike programmes and what structural gaps remain?”

MAINS GS-2:

“How does India’s conventional precision strike capability development affect the strategic stability in South Asia? Discuss in the context of the stability-instability paradox.”

INTERVIEW:

“India’s conventional deterrence has long relied on imported systems. Does indigenous development of platforms like Pralay represent a strategic shift, or is India still years away from genuine self-reliance in precision guided munitions?”

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INDIA'S PRECISION STRIKE ARCHITECTURE:

- Pinaka MBRL: 45-90 km; salvo-capable; indigenous; entering export orders
- Pralay: 150-500 km; quasi-ballistic; Mach 6+; CEP <10m; RCI DRDO; near induction
- Suryastra/URLS: 150-300 km; multi-calibre rocket launcher; ₹293 crore
- BrahMos: Supersonic cruise; 290 km (extended 450 km+); India-Russia JV; cost ~₹25-35 crore/missile
- Nirbhay: Subsonic cruise; 1,000 km; turbofan; stealth profile; under development

CONVENTIONAL VS NUCLEAR DETERRENCE:

- Nuclear deterrence: Strategic-level; massive retaliation; stabilising at extreme conflict levels
- Conventional deterrence: Tactical-operational; proportional response options; daily conflict prevention
- Stability-instability paradox: Nuclear umbrella can enable conventional adventurism by adversaries

KEY DRDO LABS (HYDERABAD):

- RCI: Navigation, guidance, control for missiles
- ASL: Solid rocket motors (Agni, Pralay propulsion)
- DRDL: Missile aerodynamics and structures
- TBRL (Chandigarh): Warheads, explosives, terminal ballistics

INDIA DEFENCE EXPORTS:

- FY2013-14: ₹686 crore | FY2025-26: ~₹23,622 crore | Target FY2029: ₹50,000 crore
- Key exports: BrahMos (Philippines); Pinaka systems (Armenia, Egypt); helicopters; radar systems

REGIONAL COMPARISON:

- China DF-12: Quasi-ballistic; 100-280 km; deployed in Tibet/Xinjiang
- Pakistan Fatah-II: Quasi-ballistic; ~400 km; in development
- Russia Iskander-M: 500 km; salvo-capable; used extensively in Ukraine
- Israel LORA: 430 km; quasi-ballistic; export system; proven in combat

Sources: The Indian Express, PIB, DRDO

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