



**Delhi Policy Group**

Advancing India's Rise as a Leading Power



# POLICY BRIEF

## Comprehensive Conventional Deterrence: Development of India's Missile Strike Force (MSF)

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## Cover Photographs:

DF-26 "China's Ship-Killer" missiles attending a military parade in Beijing, capital of China on September 3, 2015. Source: [Military of China](#)

INS Mormugao, the latest guided-missile Destroyer, successfully hit 'Bulls Eye' during her maiden Brahmos Supersonic cruise missile firing on May 14, 2023. Source: Twitter ([@IN\\_WNC](#))

DRDO successfully conducts second flight-test of indigenously developed conventional Surface-to-Surface missile 'Pralay' on December 23, 2021. Source: [DRDO](#)

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by  
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# Comprehensive Conventional Deterrence: Development of India's Missile Strike Force (MSF)

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## Introduction

The recent announcement of India developing its own conventional "Missile Strike Force" (MSF) based on existing short and medium range missile systems is a long-contemplated step whose time has finally come. Missile forces today are part of comprehensive conventional deterrence that spans tactical, operational, and strategic domains. Necessity of this concept for India is defined by the fact that both of India's strategic competitors have credible conventional capabilities and are nuclear powers with a strong military collusive partnership.

The continuing border standoff with China, now in its fourth year, marked by a major force and infrastructure buildup, continuing aggressive behaviour and no signs of an early resolution of the boundary dispute, underscores the possibility of conflict escalation at short notice. The situation along the Line of Control with Pakistan, although reasonably stable, has the potential of escalation on account of the continuing proxy war carried out through cross-border terrorism, and the paranoid nature of the Pakistani security establishment.

In the present framework of the force capability matrix of our two adversaries, operations will largely be below the nuclear threshold, with non-contact capabilities as in "Anti Access and Area Denial" playing an important part of overall conventional deterrence. This has been sufficiently highlighted in the Ukraine conflict, where the use of missiles for operational and strategic targeting has become part of the overall conventional war-fighting. All types of missile systems including ballistic, cruise and hypersonic are being employed by both sides to strike at operational, strategic, and logistical targets. Use of multiple missiles has now become a standard force capability in modern wars.

The announcement regarding creation of an MSF was sketchy in terms of envisaged doctrinal thinking, operational role, and concept of employment. Perspective thinking is that the MSF will broadly mirror the Chinese Rocket Forces, based on its doctrine of "dual deterrence and dual operation" against regional assertions and conflict scenario.

To understand the possible role and employment of the MSF, a good starting point will be to examine in broad terms the role of conventional missiles as part of PLA Rocket Forces, that comprise both conventional and nuclear forces, in enhancing conventional deterrence in support of joint operations.

## Overview of China's Conventional Rocket Forces (PLARF)

China as a continental power has always thought to protect its mainland from adversaries by developing weapons that have the capacity to strike at long ranges. The intent has been to use the country's land borders, coastal areas and island territories to simultaneously strike an adversary's forward troops and depth areas, thereby overwhelming the enemy. The Chinese call this concept as the 'battle of systems'. Following Mao's thoughts, the 'Second Artillery Corps' was raised in 1966. In 2016, this was elevated to the PLA Rocket Force, functioning directly under the Central Military Commission with an array of both conventional and nuclear missiles.

PLARF comprises both co-located nuclear and conventional missiles forces. These are located at bases spread all over the country based on China's threat perspective. Importantly, while the total number of nuclear warheads of all types are estimated to number between 275-400 and are considered likely to go up to 1500 by 2035, the missile vectors are many times more, estimated to be numbering between 2,200-4,000. These are of various types and ranges, including dual-use ICBMs, IRBMs, SRBMs, Anti-Ship Ballistic Missiles, as also hypersonic glide vehicles, among others.

An important deduction from the above is that China's strategic deterrence is based on the duality of nuclear and conventional missile systems, with conventional missiles playing an important role in its operational and strategic military planning. Second, the absence of a clear separation between nuclear and conventional assets allows China to create an interwoven strategic deterrence. Additionally, conventional rocket forces employed in depth targets are also used for critically highlighting thresholds of tolerance, that could spread to the nuclear dimension. In short, conventional rocket forces are the first tier of escalation response in any conflict scenario.

Within the above backdrop, China's strategy of utilising conventional missile forces is based on the following broad principles:

- Conventional missile systems are both for deterrence and retaliation. Their usage is based on "strike first, strike hard, strike precisely and rapidly". This

is an important criterion in evaluating the operational role of Indian missile forces.

- Pre-emption and striking critical targets as part of a conventional strike campaign. The aim is to weaken the enemy's strength through physical and psychological degradation, thereby seizing initiative and escalation control.

The above highlights important criteria of a conventional missile force. First and most important is the range and accuracy. Chinese rocket forces are divided into three categories in terms of range, largely based on their anti-access and area denial strategy. These include Short Range (up to 1000 kms), Medium Range (1000–2000 kms), and Intermediate Range (2000–3500 kms) systems. A more important element, however, is precision strike capability with an extremely small Circular Error of Probability (CEP). This requires both range and strike accuracy ensuring target degradation at various ranges in a multiple terrain environment, including at sea.

## Pakistan's Missile Force

Pakistan has practically no conventional missile force of note. Further, given its economic constraints, even the development of significant delivery vectors is deemed limited. It can thus be presumed that Pakistan can at best have a restricted conventional missile strike capability, which can be supplemented by missiles from China. It needs to be noted that Pakistan professes a nuclear war fighting doctrine, and believes it can manage nuclear risk and escalation, despite India's massive retaliation doctrine.

## Role and Employment of India's MSF

Taking a leaf from this broad overview of the PLARF's conventional missile forces, the first driver of such a force must be based on the doctrine of credible response in any conflict scenario. This is particularly so given the large force and technological asymmetry vis a vis China. India thus must have the capability of preventing and disrupting Chinese theatre deployments (operational and strategic) and forcing them to operate from extended lines. The aim must be to raise the costs of intervention, using asymmetric and disruptive capabilities.

The first task of the missile force must be "Area Denial", akin to Chinese AA/AD strategy, by developing the capability of striking simultaneously at operational and strategic targets, such as depth airfields, logistic and communication

nodes, and communication centres. An important aspect is that their employment must not only be credible, but also value for exchange.

This will require formalised theatre level conventional plans that are aimed at seizing the initiative in the early stages of a conflict. This in turn requires physical capabilities to deter, strike and neutralize enemy operational capabilities. The above requires missile vectors with ranges and precision strike capabilities from at least short to medium range in the first instance, and intermediate range later.

An important facet of employing missile forces is surveillance and targeting. This requires enhanced and integrated, 24X7, ISR capability over continental China and Pakistan, as also over the Indian Ocean region. Such a capability must transcend ELINT, COMINT, CYBER, SPACE, Optical and other means, an important part of which must be data fusion.

## Targeting Philosophy

The fundamental issue that needs to be resolved in developing credible conventional MSF is the nature of targets and possible ranges. As brought out earlier, targets must include area denial and those which seriously impair the opponent's war waging potential. These will generally be in operational and strategic depth areas including the hinterland, and include command and control centres, logistic installations, military troops/equipment concentrations, or industrial hubs contributing to the war effort. In the ongoing Ukraine war, even economic hubs and civilian areas have been struck by missiles. Given the nature of China's missile capabilities, it is apparent that Indian missiles must have the capability to strike such targets in the enemy's depth areas, as also its hinterland.

## Likely Targets

### China

In the India-China context, the main centre of gravity in the continental domain is the operational area of the PLA's Western Theatre Command (WTC), being the centre of all-ground operations against India. Our missile force must be able to target all critical areas within the WTC. In addition, the Western Theatre also has several industrial hubs (about eight to ten) within approximately 1500 kms from the LAC. We must have the capability to engage them in a contingency.

The next important Chinese centre of gravity is the “Pearl River Delta (PRD)”. Covering only 1% (56,000 sq. kms) of Chinese territory and housing 4.3% (60 million) of its population, this region is the biggest economic hub of the country and is responsible for 26.8% of the country’s exports. The World Bank has recognised the PRD as the largest urban area in the world with a GDP of over \$1.5 trillion, which equals 9.1% of Chinese output. It has the highest concentration of buildings, including skyscrapers, of any place on earth. This region is about 1500-2000 kms away from the LAC. It is important that Indian missiles must have the capability to reach this area, as an important part of dissuasive deterrence.

## Pakistan

In so far as Pakistan is concerned, it is a country with limited width; all of its most all-important targets can be engaged by missiles of ranges between 300-800 kms. Because of short distances resulting in ‘low time of flight’, a mix of subsonic and supersonic missiles would be adequate to engage targets anywhere in Pakistan.

## The Maritime Domain

India has a 7500-km coastline and an EEZ covering over 2.3 million square kilometres which is likely to increase even further based on fresh scientific data provided to the United Nations by India.

China with its declared aim of becoming “A World Class Power” by the mid-21<sup>st</sup> century, has started to project power in the Indo-Pacific, and is now eyeing major deployments into the Indian Ocean Region where it is acquiring strategic ports in various countries in consonance with the so-called “string of pearls” strategy. The PLA navy is expanding and modernizing at a rapid pace. The new aircraft carrier, the Shandong, armed with J-15 aircraft is operational. Construction of the third carrier, the Type 003, is underway. An amphibious assault ship, the Type 075 Hainan, capable of carrying 30 helicopters and a large number of troops, is also operational. These could pose serious threats to Indian interests in the IOR.

India cannot and should not try to match China weapon for weapon. It must be innovative in acquiring new counter force weapon systems capable of countering these threats effectively in an economical manner. These should preferably be force multiplier weapon systems enhancing operational efficiency of the restructured Theatre Commands. One such weapon that can be developed is the medium range (1500–1700 kms) BrahMos or equivalent cruise Missile in the short term, together with other systems.



The ship launched cruise missile of this range will be capable of engaging Chinese aircraft carriers at standoff ranges (turn-around range of the J15 is approximately 1500 kms), as also strategic assets on land. This will enable effective domination of:

- The Arabian Sea, including the Gulf of Oman up to the mouth of the Persian Gulf, including the ports of Karachi, Gwadar, Chahbahar and others on the Makaran Coast.
- The Bay of Bengal, including ports in other countries being developed by China.
- A large portion of the Indian Ocean Region and important sea lanes including the Malacca and Sunda Straits, and beyond the Maldives up to north of the Chagos Archipelago.

## Requirement of Missiles

As already discussed, the optimum depth of operations to cover enhanced area of influence/domination will be obtained by deploying missiles of up to a range of 1500 kms and above on aircraft, warships, and land-based assets, networked in a seamless ISR grid. These will be able to engage military targets within the area of responsibility of China's Western Theatre Command, in the Pearl River Delta as also the IOR.

Without getting into any numbers game, but based on operational imperatives, the requirement will be of a few hundred missiles of the following categories/class:

- Subsonic Cruise Missiles of ranges up to 1000 kms.
- Supersonic Cruise Missiles (BrahMos Class) of ranges up to 800 kms, 1500 kms, 2000 kms going upto 4000 kms (hypersonic beyond 2000 kms).
- Quasi-Ballistic Missiles of the Pralay Class.
- Agni Prime for ranges between 1500–2000 kms.

Currently, the 280-km BrahMos is the mainstay of our non-contact missile capability. The range was restricted to 280 kms owing to MTCR restrictions. Post India joining the MTCR, our efforts should be to increase the range of the ground launched BrahMos to 800 kms and the sea and air launched BrahMos to 1500 kms. It is learnt that an inter-government agreement with Russia has been signed to support enhancement of BrahMos ranges over the next two to five years.

India cannot restrict itself to these ranges alone, and its efforts must include developing cruise missiles capable of being launched from multiple platforms for ranges beyond 1500 kms, including from aircraft launched from aircraft carriers. It is imperative for India to develop capability to engage targets in the Pearl River Delta region as also the South China Sea. This would enable India to achieve credible deterrence capability, thereby deterring China from undertaking escalation by engaging important military and economic hubs in India's depth areas.

Given the rapidly deteriorating security environment and China's increasing strategic assertions, the timing for induction is crucial and a concerted effort needs to be made to ensure a reasonably credible missile force is deployable in next two to three years. Our focus should be on the indigenous production of the BrahMos class of supersonic (up to 2000 kms) and hypersonic missiles beyond 2000 kms up to 4000 kms.

## Desired Missile Capabilities

Some basic capabilities of missiles for conventional warfare are:

- Precision strike capability with nil/minimum collateral damage.
- Ranges – as already specified above.
- Adequate damage/destruction potential at long ranges.
- Minimum probability of being intercepted: cruise missiles are more difficult to detect and intercept as compared to ballistic/quasi-ballistic missiles.
- Cost must not be prohibitive, to enable the desired numbers to be procured by the armed forces.

Production processes need to be streamlined and fast tracked for developing an adequate credible minimum force in a specified time. This is an extremely important factor and must be in consonance with operational requirements. Indigenous production capability of the operationally required numbers is essential.

## Command and Control

### Nuclear and Conventional Missile Mix?

So far India has made a clear distinction between ballistic missiles used for nuclear warheads and cruise missiles such as BrahMos for battlefield employment. With the proposed expansion of a conventional missile arsenal that includes missiles such as **Pralay, Nirbhay, Prahar BM 04 and Agni** series

with conventional warheads, a crucial issue will be their deployment. Should these missiles be mixed with the existing strategic assets to achieve strategic ambiguity that China achieves by choosing to mix the two? How will this impact both thresholds and escalation dynamics? Or will these be held separately as missile units, with command being exercised by field or theatre commanders?

This is an important issue that requires careful consideration. Targeting an opponent's major critical infrastructure and industrial/important military targets in depth is perceived as strategic targeting, which carries an inherent risk of escalation. Probability of a similar response by conventional missiles is not a given, implying thereby that the response can be both conventional and/or strategic (nuclear), based on the perception of opponent's thresholds.

It is important to underscore that attacking nonmilitary or crucial infrastructure, including that which supports the operational effort, requires strategic level planning beyond the remit of theatre commanders or even the COSC. This will require political oversight. This is particularly so in the case of Pakistan, which by posturing a shallow threshold can be expected to start nuclear sabre-rattling in a game of brinkmanship.

This essentially implies that there must be a connect between our conventional missile forces and the strategic forces. Taking a worst-case scenario, if the adversary, reacting to our conventional missile strike, were to launch conventional counter force strikes or degrade our critical infrastructure, we may have to exercise the option that suits us best, which could well be in the nuclear domain.

The next issue is communication infrastructure and integration into existing C4ISR. The important issue is that both conventional and missile forces must have a common information and surveillance grid providing the composite picture.

In the present scenario, there are two options for the Command and Control:

- Under the Strategic Forces Command (SFC).
- An independent Tri-Service organisation.

**Under Command/Part of SFC** -The SFC is a specialised organisation with classified operating procedures which are very different from the conventional BrahMos missile units. The related equipment is completely different and the command channel is also unique, being under the command of the Political Council of the Nuclear Command Authority. The proposed missile force for

operational employment, even if targeting is cleared at the political level, will be under the command of theatre commanders. The two organisations, i.e. the SFC and the proposed missile force, will be totally different in terms of roles, types of targets, equipment, launch procedures, systems and operational command and control. Putting the two together in its formative period is not desirable.

**Independent Tri-Service Organisation** - This could be based on the lines of the SFC. The commander and the deputy commander could be from separate services (Army or Air Force) on a rotational system. It must comprise the land, air and where required sea vectors, functioning under the Theatre Commander. A Naval officer is not being recommended as one of the rotational Force Commanders, as most sea vectors (ship-based weapons) would be under the Maritime Command as their targets would primarily be enemy ships, aircraft carriers and selected ground-based targets. However, a command link with the missile force headquarters is imperative for dealing with subsequent escalatory consequences. The Force could be subdivided into units and sub-units which could be theatre based in keeping with operational requirements. However, target selection must be coordinated at the highest level of the NCA/COSC/Theatre, as required.

## Nomenclature

News articles refer to the proposed new organisation as the Rocket Force. It is essential to understand the difference between a rocket and a missile. Very simply, a rocket is an unguided projectile while a missile is a guided rocket. A missile has a guidance system after launch. Its trajectory and point of impact can be changed in mid-flight. With a seeker, it is capable of precision strike even at a changed point of impact. A rocket on the other hand is a fire and forget projectile, whose range and point of impact is based on the available propellant and angle of launch.

The recommended nomenclature of this Force should therefore be **"The Missile Strike Force"**.

## Conclusion and Critical Issues

The Missile Force is designed for war fighting and not purely deterrence. At political and highest military level this difference needs to be both understood and factored. It is in this backdrop our bid to develop a credible MSF needs to address the following aspects in a time bound:

- a. The availability of numbers and varying categories of missiles must be essential to cater for a two-front threat.
- b. Indigenous production capacity through the development of technology, transfer of technology, or purchase, must match operational requirements, with a surge capability to enhance production substantially in times of conflict.
- c. Seeing the rapid pace of Chinese military modernisation, the production time for the 1500 kms BrahMos must be condensed to two years, and of the hypersonic systems to a maximum of five years.
- d. Critical components must be indigenous. For the BrahMos, the ramjet, seeker and the booster, which are presently imported, must be made in India with indigenous technology. This would also lower the cost considerably.
- e. DRDO must also focus on early operationalisation of a scram jet for a hypersonic class of missiles for ranges beyond 2000 kms.
- f. Nirbhay, the only subsonic missile, is still in the trial stages. Early, time bound operationalisation is essential. Its engine, which is presently imported, must be indigenised. Similarly, both the technical parameters and rate of production need to be addressed before sufficient numbers can be inducted into service.

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