

Manohar Parrikar

Memorial Lecture



**First Manohar Parrikar
Memorial Lecture
2019**

on

**India's Defence
Perspective - 2030**



All rights reserved ©2019. Printed in India. No part of this book may be used or reproduced in any manner whatsoever without written permission except in the case of brief quotations or citation.

Publisher

Forum for Integrated National Security

4, Second Floor, Belle View

Lakhamsi Nappu Road, Dadar (E),

Mumbai, Maharashtra 400014

Web: finsindia.org

Email: info@finsindia.org

ISBN: 978-81-931960-1-4

Contents

General Bipin Rawat (Chief of Defence Staff of India)	2
Dr G. Satheesh Reddy (Chairperson, DRDO)	25
Prof Suhas Pednekar (Vice Chancellor, Mumbai University)	33
Lt Gen (Dr) DB Shekatkar (Retd) (President, FINS)	38
Adv Bal Desai (Secretary-General, FINS)	42



The following address was delivered by
**General Bipin Rawat, PVSM, UYSM, AVSM, YSM, SM,
VSM, ADC**
(Chief of Defence Staff of India)
on First Shri Manohar Parrikar Memorial Lecture on
December 14, 2019, in Mumbai.

Let me begin by saying that it is indeed a great pleasure to be here – at this event organised by the Forum for Integrated National Security – in my view, one of our most incisive and thoughtful Think Tanks – known for its rigorous and hard-nosed analysis of our security challenges as also for spreading awareness about National Security, amongst our common citizenry. The larger purpose, of course, is to create a polity that is alive to the nuances of national security and wise to the uses of military power – a key ingredient in our aspirational urge to become a Leading Power. My compliments for the wonderful work that FINS is doing and thank you very much, General Shekatkar for the invite.

I am even more privileged and honoured to be delivering the First Memorial Lecture in honour of the Late Shri Manohar Parrikar, former Chief Minister of Goa as also our Raksha Mantri, with whom I was fortunate to work closely. Mr Parrikar, or the '*Honourable RM*' as we addressed him, was a man of many attributes – political savvy was of course key – that explains his very successful career in politics; but there were other qualities that I would like to recall: outstanding qualities of head and heart, a very curious mind, a military – scientific temper,

persistence, doggedness, great clarity of thought and above all a person of ENORMOUS SIMPLICITY and PRAGMATISM. A voracious reader, he would often quote from classics like ‘Victory On The Potomac’ (a book by a Pentagon insider, detailing the grim battles before the Goldwater – Nichols Act got promulgated in the USA) and Robert Greene’s ‘33 Strategies of War’ – any concept that he propounded in the military domain, was after careful and in-depth study of global developments and experiences. Above all, it was he who envisioned this uniquely, Indian Defence Ecosystem that we are in the midst of creating – a happy amalgam of the strengths of the DRDO, the Private Sector, MSMEs, Startups and DPSUs; these hubs of defence excellence which lie at the intersect of engineering, science, innovation and enterprise, A great proponent of indigenisation, he was the author of the IDDM – the Indigenously Designed, Developed and Manufactured Model – that is today, propelling so many of our procurement schemes.

A Strong, Professional and Technologically Enabled Military, albeit one cast entirely in the Indian mould, was something that

he dreamt of and toiled greatly to achieve – often through 16-18-hour workdays.

It is entirely appropriate, therefore, that the subject for this evening's talk is 'India's Defence Perspective – 2030'. The trajectory of India's Defence paradigm over the next decade will be shaped significantly by the vision of Shri Manohar Parrikar. So even as we salute this great Son of India, allow me to present a Perspective for Indian Defence in the stated time frame – 2030.

Such a perspective must be predicated on an incisive survey of the threats and opportunities that line India's Security Path, the many strategic uncertainties that we will need to grapple with, an examination of the Strategic Context so to speak: that will be my first port of call.

I shall then try and explore with you the Challenges that lie before Defence; all that we will need to do over the next decade (we are in fact, already doing much of this): in terms of doctrinal thought, structural reorganisation, optimisation, the creation of a sound defence eco-system, technological leadership, international engagements, etc., in order that we create the

strategic-military capability that we need, to face the challenges over the next decade.

And finally, I shall outline a few reasons as to why I am rather bullish and optimistic about deliverance on our envisioned goals and objectives.

May I also add, that in the allotted time, it is not possible to do full justice to the topic – to deal with a subject as deep and broad as defence and that too in a distant timeline – I shall therefore only highlight some key issues and put across some random thoughts, for your consideration.

Strategic Context

The principal challenge before Indian Defence is to secure our aspirational climb towards a five trillion-dollar economy, as also the creation of an inclusive and equitable socio-economic order at home. We must make sure that our economic flight is calibrated with the span of our strategic stride; we must temper our military ambitions with the size of our economic/budgetary cloth. It needs great strategic dexterity, but may I assure you that we are actively engaged with the endeavour. Maintenance of strategic balance across domains – diplomacy, deterrence and warfighting

through the convergence of cross-governmental capacities, is one of our key priorities. It would also seem to me that the structure of the world order is undergoing a profound transformation – change is upon us like never before. Amongst the many trends that are sweeping the global landscape, let me pick on just a few of relevance, to the subject at hand. One is the finesse with which some of the old empires like Russia, Iran and Turkey are skilfully leveraging hard power to reclaim lost geostrategic space. We are doing likewise – meshing hard power into our statecraft with care and resolve to fortify our national security posture, as you would have seen in our recent responses to the provocations of our western neighbour. We shall continue to act and not react. Two, what determines the power and international standing today, is no longer the same – technology, connectivity and trade are at the heart of new contestations. Diplomacy and hard security are fusing like never before, necessitating a whole of government response to emerging challenges. Three, and most significantly, I wish to draw the attention of this gathering to some of the sweeping changes that are possibly occurring across the strategic – military landscape with major implications for the global security calculus. How we approach these challenges and fashion our responses will be critical. Over the last couple of years, we

have seen some pointed evidence to suggest that the metrics of deterrence and warfighting have indeed moved on. Some thought leaders opine that the space for all-out conflict is narrowing and that we have entered an era of ‘non-war wars’ and ‘durable disorder’ – whereby the world may not collapse in anarchy but will simmer in perpetual conflict. In terms of ideational thought Sun Tzu, the fox they suggest – is steadily elbowing out Clausewitz, the lion. In the worldview of Clausewitz, cunning ruses are the weapons of the weak; for Sun Tzu they are legitimate weapons of choice. For Clausewitz, the big battlefield victories, big bang technologies and consequently billion-dollar budgets were everything; Sun Tzu posits that there are smarter ways to secure competitive advantage.

The concept of, utilitarian leveraging of force also needs to be revisited in obtaining strategic context. Force has numerous stabilizing uses – hard and soft, in equal measure: it helps keep the peace, it gives the practice of diplomacy a robust veneer, it deters, it is a useful tool for politico-military signalling, it is a critical component for the protection/alteration of geostrategic spaces, a means of buying influence and influencing behaviour, a conduit for the delivery of humanitarian aid and when employed

sagaciously and resolutely, a decisive arbiter in conflict. When wrapped in imaginative statecraft, its leverage as a metric in the resolute pursuit of national interest across the utility spectrum cannot be overemphasised. Strategic/foreign policy objectives, today, are being achieved through the smart leveraging of military pressure points, often, without a shot being fired. Force is being used increasingly to facilitate political settlements rather than fashion outright victory. We are examining as to how we in the Indian context, could leverage force more productively in this critical arena – what some observers call, ‘grey zone warfare’ and are chalking out an appropriate response strategy, duly resourced. Such an endeavour may I add, is without prejudice to our larger project of conventional preparedness.

Reinvigoration: Strategic Culture / Outlook

India is a country with a rich, homegrown and well-honed strategic culture embellished in our ancient texts: the Arthashastra and the Yudhakandam (Manual of War) which pronounce with great wisdom and strategic savvy on various aspects of our statecraft. Here are a few examples. “The radicalism of the Arthashastra,” in the words of Max Weber, “makes Machiavelli’s, ‘the Prince’ look harmless” Its emphasis

on playing the military hardball with skill will certainly give Kissinger's realism a run for its money. Kautilya, Ladies and Gentlemen, reminds us with profound wisdom that without अर्थ (economic well-being) and सुरक्षा (security) there can be no dharma (righteousness). The well-known dictum of साम (conciliation), दाम (incentives), दंड (punishment) and भेद (sowing discord in enemy ranks) in the strategic policy sense, urges us to pursue national interest with a single-mindedness of purpose and resolve, through means fair or foul. Our think tanks / military institutions must undertake a comprehensive, in-depth study of these texts, contextualise them to the needs of modern statecraft and propagate the consequential knowledge through structured programmes – the same will help us to transit from the relative placidity of the past to greater sophistication and robustness in our strategic outlook. Much of this is already happening – if we could do more, it will be of great help in addressing the security challenges of the future.

Doctrinal Calibration

We are also recasting our strategic aspirations and defence outlook in a more real, pragmatic, and earthy frame through

some creative doctrinal calibration, enabled by a two-stage exercise as under: -

National Security Strategy (NSS): A whole of government exercise by the DPC, through an integrated examination of the strategic context, threats, opportunities and the state of the economy is underway with a view to arriving at plausible scenarios and specific commitments. It will identify a tiered, prioritised, matrix of national security challenges and risks that we must gear up for, based on likelihood and impact through a range of possibilities: Grey Zone Conflict, Out of Area Contingencies, Punitive and Asymmetric Deterrence of our Competitors and Adversaries, Long Term Balancing and the skilful leveraging of Emerging Domains (Space, EW, Cyber and AI) Strategic Defence Review (SDR). Given the ordering of risks / threats, identified capability deficits and budgetary resources made available, it may be wise to carry out a follow-up Strategic Defence Review (SDR) that could examine the various force structuring options, before spelling out the specific combat capacities that it will resource. For those threats that cannot be addressed with combat forces, non-kinetic, risk mitigation options need to be developed with equal clarity. HQIDS may

thereafter carry out further fine-tuning to produce two Integrated Perspective Plans for the Near (5 Years) and Long Term (10 Years) time horizons – a precise delivery schedule of combat capacities duly budgeted, to replace the LTIPP – which in the absence of firm budgetary commitment is of diminishing utility.

Unified Approach to Warfighting

Integration: The efficient defence is a function of (amongst other factors) the right allocations for defence, financial rigour (best bang for the rupee) and a unified approach to warfighting. We are making a persuasive case for enhanced allocations for defence. The Indian Army, for one, has done a great deal by way of bringing in financial rigour and initiating structural optimisation – General Shekatkar showed us the way; we followed suit. Through the mechanism of IBGs, we are transiting to lean, mean, agile and task-oriented structures. The prospective appointment of CDS will help infuse energy and life into a unified approach to warfighting. There is a dire need concurrently, for all stakeholders in National Security to align their thinking with modern sensibilities and subsume institutional interests in deference to the larger national purpose.

The necessity of constant evolution in the Higher Defence Organisation (HDO) to keep pace with the challenges of modern warfighting cannot be overemphasised. The essential wisdom of unification lies in integrating the military with the apex decision-making mechanisms of national security as also amongst themselves, thus addressing both – the strategic challenges of defence policymaking and the tactical needs of modern warfighting. One must not be pursued at the cost of the other – both are equally critical.

Jointness. Concurrently, through the metric of jointmanship, there is much that we can do in the field to optimise capacities and costs. The Honourable PM has exhorted the armed forces to prepare for range and mobility to attend to our responsibilities that now extend beyond the borders and coastlines for the protection of our critical interests and Indian citizens across the world. The obvious military inference is for us to develop calibrated OOAC (Out of Area Contingencies) capabilities which must of necessity be integrated structurally and in terms of the unity of command. It is also for consideration that lack of jointness in the field has led to duplication/ multiplication of assets in aviation, surveillance and communications with

naturally large burdens on the exchequer. In an age where network centricity and domain convergence are the building blocks for operational optimisation, our focus on silo-based, single service driven, vertical expansion, consequent to which communication/surveillance networks of the three services cannot even talk to each other, is just one example of the grim challenges that lie before us. Wisdom demands that we integrate military capacities in the field structurally and with urgency because competence and delivery in dated structures are simply not possible. I am sanguine that the appointment of the CDS will trigger such reform.

Threat vis-à-vis Capability-based Restructuring

In terms of ‘first principles’ in capability building, we may consider the need to swivel from a purely threat-based approach to one driven by capabilities or at least a happy mix of the two approaches. The key flaw of a threat-based approach is that the scenarios on which force development plans are built are too narrow to capture the full range of likely future military engagements; the approach is often so heavily oriented towards known threats that it fails to adequately address the many strategic uncertainties (clashing visions, new faultlines,

geopolitical flux, terror hotspots, vicissitudes in the global commons, etc.) that lie in a nation's path. A capability-based approach advocates a broader range of plausible scenarios for force developers to work on. It is also somewhat of a misnomer to believe that capability-based planning is devoid of any threat assessment whatsoever – it does on the other hand address strategic uncertainties with greater vigour, predicated on flexibility, adaptiveness and robustness of capability to meet diverse threats and scenarios. A capability-based approach also takes into account the 'known' and 'developable' capabilities of 'likely competitors' in the near to long term periods as against their 'known or assessed intent', alone. It also assesses our current capability, identifies desired future capability (in the light of possible developable capabilities of competitors) and most valuable – delineates 'capability deficits' for planned, scientific address. This is a concept that we must engage with greater diligence.

Key Metrics – Combat

ISR / Space: In the changing character of war, ISR and precision seem to be challenging fire and manoeuvre as operational attributes. Consequently, we are investing greatly in ISR

capacities and platforms; the newly formed Defence Space Agency is also addressing a host of challenges from military-grade resolution for surveillance and targeting to revisit times, speedier downloading, electronic spoofing, etc.

Missilery: Missiles are one option to reinforce capacities in non-contact, long-range deterrence. We are, however, aggregating capabilities in terms of tandem and armed UAV systems, loiter munitions as also missiles with improved guidance and tracker technologies.

Techno – Centric Combat: A major weakness in recent times has been the sub-optimal leveraging of techno-centric combat through tools like Electronic Warfare (EW). Our exploitation of the EM Spectrum has not kept abreast with the pace of technological change and the scale of leveraging. We are addressing the infirmity with speed and resolve.

International Engagements: In its international engagements, the Indian state is gradually overcoming its ambiguity to power politics and has begun to skillfully integrate the instrument of force into its statecraft. While delivering the Keynote Address at

the Shangrila Dialogue on 01 June 18, the Honourable PM, Shri Narendra Modi laid out the postulates for our global engagement in terms of a catchy fiver – the five Ss of – Samman (respect for all), Samvad (through dialogue), Shanti & Sahyog (in the spirit of peace and co-operation) and Samridhi (for our collective prosperity). The five levers must also be sheathed in the frame of a wider vision for defence and security. Our defence diplomacy, therefore, is working resolutely to complement our foreign policy initiatives. The respect, even admiration, that the Indian Armed Forces command amongst militaries worldwide, for their professionalism and domain expertise is being leveraged purposefully. Military officers from friendly foreign countries often make the point that they prefer to come to Indian military training institutions because of the quality of our curriculum and the depth of our training protocols. So great is the yearning for vacancies in Indian military training institutions that some countries have instituted a special entrance test for aspirants wishing to do courses in our institutions. Given the salience of militaries in the power structures in our neighbourhood, we need to energise military to military contacts significantly ; we are leveraging our network of DAs (31 officers in 44 countries) as also the Foreign Services Attaches (FSAs – 113 from 70

countries based in Delhi) to give a boost to defence trade, equipment cooperation, invigoration of military partnerships, enhancing peace and security through friendly exchanges, and in setting doctrinal/operational agendas through various forums like the RUSI, Shangrila Dialogue, Raisina Dialogue, et al – leveraging the softer attributes of the military will not only strengthen deterrence but also enhance our strategic footprint/orbit of influence.

Strategic Communications / Information

Influence Operations

A nation's defence strategy must be bolstered by appropriate messaging in terms of 'strategic communications' and resolute action by way of 'information operations / manoeuvre': -

Strategic communications refer to the informational narrative that embellishes military operations, thus closing the gap between own actions and the messaging – it requires all media and communications to be co-ordinated and synchronised so that you send out a coherent message sans any contradictions which may violate the stated narrative. In today's information age, mere

action is not good enough – we must develop compelling counter-narratives to challenge and undermine the adversary’s pitch. A great deal of work is being done in this domain.

Information manoeuvre is the integration of modern informational capabilities such as cyber and digital media with other traditional forms of military activity to control the information sphere, enhance influence as also tackle the new WMD – words of mass disinformation: sophistry, fake news and post-truth in the digital age. The salience of the informational realm in modern military combat is exemplified by this nugget from Mosul: the turning point in the defeat of the Daesh was the conjoint ability of the Local Resistance and the West in mastering information warfare techniques to neutralise the Daesh’s mechanisms of social and informational control – the seminal contribution of Resistance experiments like Radio AI – Ghad and the targeting by \$30 million F16s and hundred – thousand dollar missile systems not of Daesh tanks, trucks or mujahideen, but \$50 Daesh media kiosks which controlled the informational narrative in Mosul. In the midst of our own right sizing/optimisation initiatives, therefore, we are laying great stress on information manoeuvre – we are creating specialists that

are adept at using non-lethal means and unorthodoxy in the field, to attain ascendancy over adversary informational activity and to modify adversary behaviour.

The Defence Manufacturing Eco – System

A number of initiatives have been taken to pump-prime the Defence Manufacturing Eco-System. The proposed Defence Corridors in Tamil Nadu and UP will help converge the procurement needs of the Defence services and the self-sufficiency objectives of development and employment generation while giving a boost to defence exports. These corridors will infuse cutting edge technologies and domain expertise in order that they service our defence needs in the manner of the Silicon Valley which is powering Artificial Intelligence (AI) initiatives in defence in the USA. We are also tapping into the energy and enterprise of MSMEs, R & D Labs, Academia and Military Start-Ups like General Aeronautics (co-founded by Mr K Harinarayana- the architect of India's LCA) which is making a big push in drone technology. The Make Initiative which seeks to galvanise the indigenous defence manufacturing eco-system is doing some outstanding work in this regard.

Technology Infusion

Technological change in the military realm is so rapid that necessity is no longer the mother of invention. Technology embrace in the military realm, however, has many facets. There are the big-ticket technologies, viz, those related to the next generation fighter, carrier aviation, hypersonic weapons, et al., – challenges that are being addressed through numerous DRDO projects. These obtain a slew of technologies of the low hanging variety, however, as also those with game-changing potential which we need to pursue with equal resolve. Such technology infusion is critical to the strengthening of our combat muscle and could be enabled as under: -

Low Hanging Technology. There is considerable scope for leveraging low hanging technology for speedy induction into formations, through the Army Design Bureau. The simplified procedural regime that the ‘Make Initiative’ offers will help to facilitate the same. The Defence Services, in turn, will hand-hold these ventures if they are to acquire energy and momentum. Defence expertise in the public and private sectors will also need to converge.

Leap Frogging – Technologies of the Future. Concurrently, we will need to embrace the elements of the fourth industrial revolution (materials, technologies and chips) which will drive combat at hyper speeds and fundamentally alter the nature of combat. It is not without reason that China has resolved to be the leader in AI by 2035 – the effort being spearheaded by initiatives like a bot robocop. The American Robotics Design Company, Boston Dynamics, after developing robots that can open doors and backflip is now focussed on mounting guns on them and making them sneak about the battlefield. The US Army has also managed to develop reconnaissance robots with remote intervention capacities – shooting from safe distances. We have embarked on a similar drive. AI solutions to linguistic challenges are being leveraged for instant translation of Mandarin intercepts. Software assisted analysis of social, electronic, print and digital media will be used to arrive at intelligent assessments of adversary intent; AI tools will also be leveraged to develop adversary intent assessment compendiums with wider applicability and greater sophistication across the combat spectrum. We are also pursuing AI projects in fire control, predictive maintenance and health diagnostics.

Military Innovation

We live in an age of disruptions: the practice of disruptive leadership, as also technological, organizational and thought disruptions. The modern adage by way of response is that if ‘you don’t innovate you will evaporate’. We are determined to foster the spirit of innovation and improvisation to stay ahead in the strategic competition. Military innovation is about staying ahead of events, revisiting organizational ethos, thinking challenges and competition through differentiated thinking in tactics, strategy, organization structures, technology adaption, etc. Modern militaries emphasise the need to develop military innovation as a discipline. Israel today is a technological superpower, particularly in the military domain, on account of its culture of innovation – its weapons are far more sophisticated, often a generation ahead of those used by its adversaries its technological advantage has profound implications on the modern battlefield. We are, therefore encouraging and fostering the spirit of innovation with great vigour. One such innovation in bullet-proofing has manifested in an IPR for the Indian Army – a significant achievement by all accounts.

Conclusion

As India transitions from a 'balancing to a 'leading' power, the national security mind-space seems to be ready, more than ever before, for change and some decisive forward movement. In recent times, we have proved to ourselves that for far too long, we were perhaps punching below our weight. The responses to Uri and Pulwama were significantly more robust as against our inaction after 26/11. Having questioned many of our tardy assumptions of the past and substituted the same with purposeful action, I am sanguine that we are well poised now, to chart a new trajectory in national security. We are resolved to make India so strong that our people prosper, and India rises to its place and promise in the world.

Jai Hind!



Following address was delivered by
Dr G Satheesh Reddy
(Chairman DRDO)
on First Shri Manohar Parrikar Memorial Lecture on
December 14, 2019, in Mumbai.

It is a great honour for me to be here on this occasion of First Manohar Parrikar Memorial Lecture. I have great respect for Shri Manohar Parrikar. I did not know him personally before the year 2015. In June 2015, I joined as scientific adviser to the Raksha Mantri and met him for the first time. I was supposed to give him the joining report, and I was forcing my entry into his room where he was busy in some meeting with somebody. I almost gate-crashed into his office and said ‘Sir, I have to give this joining report to you now.’ He questioned ‘why now only?’ I said because this is an auspicious *muhurta* time. He said ‘you are a scientist and you're talking about auspicious time! I am accepting this report because I respect you.’

Then I started seeing him more often and the type of personality he was—a rare person whom I have seen in my life. As I was going through the simplicity, sincerity, and honesty, he had in his life.

These are scarce qualities we can see in any person. We all try and tend to be simple. We all try to be simple and down-to-earth. But what I have seen in him; it was in his blood. He never tried to be simple; he was simple! That is what I have seen in his life.

One day morning he invited me to his house for a meeting. When I went there, it was breakfast time. He asked me to join him for breakfast. It was a dining table for about ten people. All his boys, many who were working with him as an additional private secretary, all of them 7-8 people in shorts and t-shirts were sitting along with India's Defence Minister. All were seated and having breakfast happily without any inhibition as if he was one of their colleagues or a friend. I was surprised. Initially, I was not able to decide whether to sit or stand there with him.

Similarly, I went with him to a marriage; there is a queue of about 50 people, and he is standing behind all these people and going along. Again, India's Raksha Mantri! The same day we got down from the plane. An official car came for him. He said no, let me go on a regular bus. He got into a public vehicle and travelled. There are many such incidents where he compromised his comfort for integrity, honesty, and simplicity.

I cannot forget one incident specifically which I must mention. My mother had a paralytic stroke. She was in bed. At the same time, coincidentally, the party decided that every minister has to stay for a day in one district or a Parliamentary constituency. Incidentally, he was given my district. So, he came there and

asked me about my mother's health. He said 'Satheesh your mother is unwell, let me see her'. He said that he would spend around 15 minutes. I also organised a breakfast meeting with prominent people of the town on the occasion. He spent two hours talking to all the guests. That is the type of personality we see in him.

Similarly, his functioning in MoD, he used to read every file, every line and mark in his beautiful handwriting, mentioning everything very clearly. As a result, everyone who was preparing a briefing or file for Raksha Mantri was meticulous.

For long-term planning and strategy of the country, he has worked upon many policies and many procedures. He brought in a lot of improvements in defence procurement-related plans. Indigenously Designed Developed and Manufactured (IDDM) systems policy; a topmost priority; came in effect during his period.

Similarly, he paid great attention to the entire procurement process to optimise time at each step. Himself being a meteorologist when I initiated Strategic Material Policy for the country; he took great interest in it. He held meetings with various scientists of the country. He also gave his viewpoint on

the policy framework. He was instrumental in shaping the policy. He was unequivocal that India needs this policy. At the end of the material policy, he said 'If a country aims for self-reliance and prosperity; materials are the most critical components. If you are not self-reliant in the areas of materials, you will not become self-reliant in any of the technologies.' That's the fundamental principle behind the strategic material policy.

The second area of his interest was manufacturing capabilities and innovative manufacturing technologies. Unless a country got all manufacturing capabilities, particularly innovative manufacturing capabilities, you would not be able to produce quality systems needed for strategic needs. Second, the nation will not be able to deliver defence systems at a lower cost and in desired quantity without innovative manufacturing capabilities. A lower price with the best quality will ensure a competitive edge against existing defence equipment in the global market.

His vision was clear that India must achieve total self-reliance in areas of our strength in a brief period. He also envisioned for systems in which we do not have strong capabilities. He was clear that the nation should buy systems for the immediate needs of the forces without any hesitation. But some quantity should be

earmarked for indigenously developed systems. So that nation also produces those systems competitively in due course of time.

He was keen on developing futuristic systems for the country. He invested his energy in policy and mechanism for such futuristic systems. He showed keen interest in cybersecurity. He has been insisting upon and looking at various data analytics. He was personally looking at multiple data systems, cyberspace modules, defensive systems development and needed capabilities. He was focused on such projects and took numerous reviews on futuristic technologies.

He was also insisting upon if the country has to develop the futuristic systems; it is the academic institutes which have to have a significant role as R&D organisation take basic research and applied research towards translational research and develop systems upon it with industrial collaboration. That is how the industry base grows strong by producing these items from fundamental research at a lower cost with sustained quality. Such a process leads to capability development and towards the stronger state.

That is why he was trying to build synergy between academic institute, R&D organisations and industry. He had numerous

sector meets. The very first time I saw him was in the industry meeting in Hyderabad, trying to talk to various industries, trying to understand their problem. He used to say that he was an industrialist before coming to politics and knew the challenges. He was keen on resolving these challenges to improve ease of doing business in strategic field. He aimed for industry friendly governance by bringing in industry-friendly policies to boost advanced manufacturing. For him growth of Indian strategic industry signified economic prosperity for the society, employment opportunities for the youth and strategic self-reliance for the republic.

He was working with a vision that the country should become self-reliant in a short period. The state should have maximum indigenously manufactured systems in the armed forces. That is the need of the hour even today. If as a country, we need to be prosperous, stronger, we have to develop homegrown technologies in the country. We do not get ultramodern systems from anywhere. So, you need to build state-of-the-art systems. That means you need to have a clear-cut roadmap for the next 5 to 10 years. Identify futuristic technologies which are going to come up in 40-50 years; work with academic institutes, research

and development organisations for basic research applied research and in some other cases on translate research, come out with a state of the art product. That's how our Armed Forces will be equipped with the best defence systems in the future.

I don't think the industry will sustain itself by manufacturing capability just by supplying to its armed forces. You need to find a market for your product all over the world. The industry will need to export their products for long term sustainability.

That is the way nation will become stronger, local industry will become active. I think this is what was there in Shri Manohar Parrikar's mind that is what he was trying to lay down and he tried to implement that in his short tenure.

I am blessed for being invited on this occasion and preside over the function. I thank FINS for giving me this opportunity. Again, I pay my homage to Shri Manohar Parrikar – A great man whom I had interactions, whom I can never forget in my life!



Following address was delivered by

Prof Suhas Pednekar

(VC, Mumbai University)

on First Shri Manohar Parrikar Memorial Lecture on
December 14, 2019, in Mumbai.

Good evening!

I was fortunate to meet Shri Manohar Parrikar couple of times. Dr G Satheesh Reddy very rightly said that he was an excellent example of simplicity and simplicity is the ultimate sophistication.

What this country needs today, in fact, in every sector, is the highest degree of quality governance. Manohar Parrikar set an example for all of us that such governance comes through dynamic leadership dynamic - leadership with knowledge, leadership with character, leadership with simplicity. He was a splendid example of honesty and simplicity. On one occasion I saw him, when he was Chief Minister of Goa, standing in a queue to board the plane in economy class. So much to learn from such personality. I appreciate FINS for organising the first Manohar Parrikar memorial lecture.

We are very fortunate that the first lecture is organised on the campus of the University of Mumbai. The Chief of Army Staff is visiting Mumbai University for the first time. Pleased to brief him that this is one of the mother universities of the country, established way back in 1857. So we have completed 163 years. It's a long journey. It is the only university in the country which

has produced five Bharat Ratna apart from many Padma awardees.

Today we all are living in what is called a disruptive era. The era of industry 4.0 is upon us. The pace of change is bringing several challenges before us as a nation along with problems of terrorism, climate change, religious fundamentalism, and economic pressure. Things are getting increasingly complicated.

Under such a situation, the education sector is going to play a key role. However, the requirements from every stakeholder are so much that even the education sector is facing several challenges to meet the need of society. With all these contemporary challenges, we realise that the Indian education system needs drastic reforms now. National education policy is almost getting ready to solve these challenges. We need to contribute not only to prepare our students for future challenges but also to ensure that generation will contribute to the development of this nation.

The University of Mumbai is one of the largest universities in the country. Currently, we have about 9 lakh students with 800+ colleges. Even the geographical vastness is right from Mumbai up to Goa border in the south and Gujarat border in the north. Such a vast geographical stretch! We are the only university in

the world with 720 km long coastline under its jurisdiction. Despite this natural resource, we have not introduced relevant curricula or degree programs or not conducting research related to oceanography or related fields.

The University of Mumbai has taken up this as a mission to introduce several activities related to the underwater domain, maritime domain. Last year we launched the master's program in Data Sciences as we are talking about Artificial Intelligence, Data Analytics, Machine Learning and 3D printing etc. We have made the beginning. From the coming academic year, we are introducing the master's program in Defence Strategies and Studies. Next week, we are organising one round table conference and brainstorming session only to bring of awareness about the plastic pollution in oceans. It has become a severe problem. We are hosting this roundtable with The Energy & Resource Institute (TERI) and United Nations Environment Programme. So, University of Mumbai has realised that we need to contribute to national security, national development, and environment. It becomes our duty now as an institution to prepare our youth, not for the comfortable predictability of

yesterday but the realities of today and all challenges of tomorrow.

Finally, I can say that it is easy to give an example but challenging to become an example. And there are very few people like Shri Manohar Parrikar who have illustrated with their actions how to become an example. We remember him for his simplicity, honesty, and humility.

It is a pleasure and honour that General Bipin Rawat (the Chief of the army staff) is here in the University campus for the first Manohar Parrikar Memorial Lecture. I welcome you on this occasion of first Manohar Parrikar memorial lecture organised by FINS in the campus of the University of Mumbai.

Thank you very much!



Following address was delivered by
Lt Gen Dr DB Shekatkar, PVSM, AVSM, VSM
(President FINS)
on First Shri Manohar Parrikar Memorial Lecture on
December 14, 2019, in Mumbai.

Good evening ladies and gentlemen. It is an honour to welcome you all for the first Manohar Parrikar Memorial Lecture. It is great to have General Bipin Rawat (the chief of the Indian Army) and Dr G Satheesh Reddy (Chairman of DRDO) on this occasion. Both have seen Shri Manohar Parrikar very closely in strategic decision making.

Friends, when we say national security, it is no longer confined to border security. National security has much larger connotations with comprehensive references, context, and connections as we see it every day in events around and how the idea of bleed India works. In 2007, it will not be healthy for the republic to leave problems of national security to defence forces alone. Citizens also have equal responsibility for national security and national development. The journey of FINS started with this concept in mind.

It is now 13 years since we started as a small group of people discussing national security issues and national interests at large.

While mooted various national security dimensions, FINS started critical policy initiatives on Nuclear Security, Maritime Security, Self-Reliance in Defence Manufacturing. FINS initiatives influenced policymakers, political leaders to rethink

with an unbiased perspective on grave national security concerns, leading to a strategic shift in dealing with those issues.

Today, the concept of psychological security is even more important. As tactics fear psychosis is being conducted throughout the world on ground and through the virtual world. The role of aware citizens is far more critical today.

Data security is another big problem. Prime Minister Modi stated at the ‘Howdy, Modi!’ event that ‘data is not just the new oil, but data is also the new gold. Industry 4.0’s whole focus is data.’

As a result, any data breach will be a national security issue. Furthermore, wrong data fed into the system can be disastrous. Wrong data can be used to influence mindsets negatively. Eventually, leading to flawed decision-making in the democratic process.

Then there is maritime security. Much more going on below the sea than what we see on the surface of the sea. It is going to create new challenges as some countries have started acquiring and controlling the land or the sea hoping to reach to the bottom of the sea to explore the possibility for further national growth.

FINS also made a beginning in the field of nuclear doctrine. It was on this campus of Mumbai University we had the honour of bringing top nuclear scientist of the country together. We discussed threadbare on the issues of concern. We discussed ways to protect India from upcoming challenges in the domain of nuclear security. Members of Parliament used FINS booklet for discussion on nuclear issues in the Parliament. We thought that is how we can contribute.

Manohar Parrikar Memorial Lecture is one more step we are taking today in our effort to contribute towards the nation. Surely Manohar Parrikar Memorial Lecture will inspire young people in the audience. We are fortunate that General Bipin Rawat (the chief of the Army staff) is with us to deliver the first political Memorial lecture.

On behalf of FINS, I welcome you all on this occasion!



Following address was delivered by
Adv Bal Desai
(Secretary-General FINS)
on First Shri Manohar Parrikar Memorial Lecture on
December 14, 2019, in Mumbai.

General Bipin Rawat (Chief of Army Staff), Dr G Satheesh Reddy (Chairman DRDO), Prof Suhas Pednekar (Vice-Chancellor Mumbai University) Lt Gen DB Shekatkar (President FINS) and all dignitaries and guests present in the auditorium.

It is an honour for us to initiate the Manohar Parrikar Memorial Lecture. We are glad that Gen Bipin Rawat (the Chief of the Army Staff) is delivering the first lecture. We are honoured that Dr G Satheesh Reddy is presiding over the function. We are grateful to Prof Suhas Pednekar for his valuable participation in the lecture.

Many of us present here knew Shri Manohar Parrikar personally as a witty and humble personality. As an astute administrator, Shri Manohar Parrikar left his indelible influence on every task he performed; I will call it a 'Parrikar Touch'. Politics of Goa, as a chief minister of Goa or his defining role as a Raksha Mantri of India, he will be remembered in the history as a trailblazing politician who redefined rules in these domains.

As a Raksha Mantri, he pioneered various defence initiatives with one simple vision of making India a self-reliant superpower. We cannot forget such pioneering personalities for the welfare of the nation. His life story will be stimulating for nation-building. With his story, we can impress upon coming generations that honest and simple people can also take part in politics. His integrity, commitment towards nation and people, and humility will be inspiring for young people to serve the nation with vigour. It is with this intention that Forum has started this initiative. It is the need of the hour. FINS will organise Manohar Parrikar Memorial lecture every year

Despite a busy schedule, all the dignitaries present on the stage joined us purely because of their affection for Shri Manohar Parrikar. The chief of Army Staff inaugurating the maiden lecture is really special. Dr Reddy was in Moscow. He got back to Delhi in the morning, and now he is here with us! That is because of his affection for Manohar Parrikar. I am thankful to Vice-Chancellor for being with us today as December is a very busy period for the University.

I express my sincere gratitude to our dignitaries on the dais for valuable time and making first one Manohar Parrikar Memorial lecture a grand success.

We are thankful to the University administration for their vital support. I am grateful to everyone for the success of the lecture.

Manohar Parrikar had great affection for Konkani language. It would be a perfect tribute to Shri Manohar Parrikar to conclude this lecture with a Konkani phrase - “Dev bare karu” (Thank you).

Thank you very much!



ISBN: 978-81-931960-1-4



₹100