SPEECH OF SHRI PRANAB MUKHERJEE, FORMER PRESIDENT OF INDIA ON THE OCCASION OF VICE ADMIRAL KK NAYYAR INAUGURAL MEMORIAL LECTURE

I am happy and honoured to be delivering the Inaugural **"Vice Admiral KK Nayyar Memorial Lecture".** It is indeed heartening that I am addressing you at the 'National Maritime Foundation', which I had the honour of formally inaugurating 15 years ago on 15th Feb, 2005 as the then Defence Minister of the country.

Distinguished Guests, Ladies & Gentlemen,

2. I am conscious of the fact that our gathering today is underpinned by two very different emotions. On the one hand, we express our solidarity in collectively honouring the memory of a great intellectual strategist, the late Vice Admiral Kewal Krishan Nayyar, *Param Vishisht Seva Medal*, *Ati Vishisht Seva Medal*. He was an inspiring leader, a visionary and a maritime strategist par excellence. He sowed the seeds and nurtured strategic thinking in not one, but several national

institutions of India, all of which, today, enjoy global renown for the quality of their intellectual output. We miss him in our midst and our hearts go out to the bereaved members of his immediate and extended family.

3. On the other hand, we are also here to celebrate the founding of the late admiral's ever enduring legacy— **the National Maritime Foundation**. Over the last decade and a half, this is an institution that has manifestly come of age and has garnered for itself and for India, respect and admiration across the globe. I would like to congratulate the past and present leadership of the National Maritime Foundation, whose research-output has consistently been of the highest quality and whose contribution to the development of strategies that will ensure the preservation, pursuit, promotion and protection of India's maritime interests has been truly commendable.

4. Vice Admiral Nayyar was commissioned into the Indian Navy on the first day of January 1951. After three-and-a-half decades of sustained service of a distinguished order, and having had the rare distinction

of commanding both, the Eastern and the Western Fleets of the Indian Navy, the late admiral retired in 1986 as the Vice Chief of the Naval Staff. He continued to contribute to the maritime development of our country as a member of the National Security Advisory Board, and, the Committee on Defence Expenditure. As the Chairman of the panel set up by the 11th Committee on Defence Expenditure, he steered the recommendations that laid down the defence expenditure for the period 2000-2005.

5. Despite his preoccupation with a number of issues of strategic importance, Admiral Nayyar always kept a "seaman's eye" on maritime matters.He recognised the very substantial value-addition that think-tanks could have in terms of identifying and debating issues in a manner that would meaningfully contribute to the formulation and execution of national maritime policy for the furtherance of India's national interests. Accordingly, he conceptualised the idea of a maritime think-tank that would transcend purely naval matters and, instead, concentrate upon the larger maritime domain, within which India would need to increasingly

demonstrate competence, adroitness, acumen and dexterity. As the Defence Minister (*Raksha Mantri)*, I and my government fully endorsed and supported Admiral Nayyar's vision.

6. It was only fitting that he would go on to become the founding Chairman of the National Maritime Foundation. Over the initial years of the growth of the Foundation, he diligently tended to its structural and functional wellbeing and its intellectual growth, thereby ensuring firm base upon which the organisation now stands. The Foundation today remains his lasting legacy.

7. An avid reader and writer, he authored a number of books, including the epic, *"Amar Jawan — A Book of Remembrance"*, which was published in 1997, in the 50th year of India's Independence, and which lists the names of every single Indian soldier, sailor and airman who, since 1947, has laid down his life in the defence of India. This book offers an eloquent testimony of the passion to serve, devotion to duty, and the high ideals, which Admiral Nayyar epitomised. Another notable book of his was *"National Security – Military Aspects"*,

which was published in 2003 and retains contemporary relevance.

8. His passion for matters maritime was infectious and he was very successful in leading India back to the reaffirmation of its maritime heritage after a substantial period of, what analysts call, sea-blindness. I am very happy to see that the National Maritime Foundation has very ably built upon the legacy that he has left behind.

9. Indeed, India's connection with the oceans predates the birth of many great civilisations, the world over. The earliest portrayal of an Indian ship is found on an Indus Valley seal from about 3000 BCE. Similarly, the world's oldest tidal-dock, which was built around 2300 BCE, in the heyday of the Harappan civilisation, is at Lothal, near the port of Mangrol in the present-day Indian state of Gujarat.

10. Today we find the evidence of several important Harappan estuarine-ports to have been incontrovertibly established. Contemporary archaeological finds give a strong maritime aspect to the Indus civilization and

demonstrate a brisk sea-borne trade between the Indus people and the Sumerians as early as the late third and early second millennium BCE. Likewise, recent archaeological excavations at Pattanam (a hinterland port and a multicultural settlement in the Ernakulam district of the southern Indian state of present-day Kerala) provide strong evidence that Kerala engaged in sea-trade with ports in West Asia and Eastern Europe from the second millennium BCE onwards.

11. Historical records clearly show that Chandragupta Maurya, during his rule between 322 and 297 BCE, established a *Nav Parishad*, — which is similar to an Admiralty Division — under a Superintendent of Ships, as part of his War Office. Its charter included responsibility for navigation upon the seas, oceans, lakes and rivers. Likewise, coins of the Trojans (98-117 CE) and Hadrians (117-138 CE) found on the eastern coast of India, near the Union Territory of Puducherry show that India enjoyed maritime relations with Greece, even in the closing centuries of the first millennium BCE.

12. The eastern coastal kingdoms of India were even more strongly maritime in their strategic outlook and culture — none more so than ancient Odisha, better known as Kalinga. It remained, for millennia, an outstanding manifestation of quintessentially ‘Indian’ maritime endeavour. Its long coastline was studded with a number of excellent ports and port-towns which are not only referred to in texts but are also well-corroborated by archaeological excavations and explorations. The ancient Kalinga port of *Tamralipti*, which is now called *Tamluk* and is in the present-day Indian state of West Bengal, is perhaps the foremost example of these advanced ports.

13. From these several ports of the Kalinga, ships regularly coasted to Myanmar, and, using the Nicobar Islands as replenishment-stations, undertook open ocean voyages across the Bay of Bengal to ports in Indochina (present-day Thailand, Cambodia, and Vietnam), peninsular Malaysia, the Indonesian archipelago, and beyond, all the way to China. Ships

from Kalinga sailed southward, too, with their cargoes of fine cloth, silk and copper, to distant Sri Lanka, the eastern coast of Africa and ports about the Arabian Sea. The *Yukti Kalpataru*, which dates to the First Century CE, is possibly the first formal technocratic exposition on the techniques of shipbuilding.

14. Oceanic maritime trade of this volume could not have been conducted without appropriate navigational skills and modern navigation owes much to medieval Indian astronomers such as *Aryabhatta* (476-550 CE) and *Varahamihira* (505-587 CE), who not only accurately mapped the positions of celestial bodies but also developed methods of computing a ship's position from the stars. Indian navigational instruments, such as the *Matsya Yantra* and the *Vruttashanga-Bhaga*, went on to become the marine compass and sextant of European seafarers, several centuries later. Likewise, it was Indian technology built *Nearchus*'s Fleet, which carried Alexander and his troops back to Greece.

15. The monsoon winds were well known, recorded and regularly used for sea voyages on both seaboards of India. 'Transhipment' as well as the 'multimodal transportation' of goods, of which much is spoken in our contemporary times, are Indian maritime features of very considerable antiquity. The *Chola* dynasty, which remained ascendant in South India for some 400 years between the 9th and 13th Centuries CE, was an established maritime power of significant proportions and greatly impacted the fortunes of Southeast Asia. The *Cholas* established an almost complete monopoly over trade on eastern seaboard raising the *Chola* Empire to the status of a subcontinental power that sent embassies all the way to *Song* China via the maritime route. The *Pandyan* Empire, like that of the Cholas whom they displaced, demonstrated considerable maritime prowess in maintaining trade links on both seaboards. However, their defeat by the armies of the Delhi Sultanate effectively ended the *Pandyan* Empire.

16. Thus, when the Portuguese, seeking to wrest control of the East Asian and Indian spice-trade from

Venice, came to India (in 1498 CE), Indian ability to strategize and execute mid-ocean military-maritime operations in support of trade had been allowed to languish for some 150 years. Although inadequately studied, the naval Battle of Diu in 1509, in which an international fleet (comprising over a hundred ships of the Zamorin (Samuthiri) of Calicut and the Egyptian Mamluks, under the command of Kunjali Marakkar, with cannon and seamen supplied by the Doge of Venice) lost to less than a score of Portuguese ships, was one that was of seminal importance to India. With this battle, India immediately lost control over its littoral, and in short order, allowed European powers to move into the hinterland from a by-now uncontested littoral. This in turn, which, in turn, led to the loss of India's very independence for 300 long years.

17. I am very pleased to see that the National Maritime Foundation seeks to ensure that these harsh lessons of history are not lost upon the sovereign, democratic, secular, socialist republic that is contemporary India. The Portuguese were followed by the Dutch, the British

and the French, and we were finally colonised by the British.

Distinguished Guests, Ladies & Gentlemen,

18. Even in subjugation, which had resulted primarily due to our maritime weaknesses, Indian skill and enterprise could not remain suppressed for long. In fact, during the British period, India's shipbuilding industry grew from strength to strength. The British discovered an ideal combination of Malabar Teak wood — which was abundant along the western coast of India — and the highly skilled shipbuilders of India, such as the Wadia brothers. This combination resulted in the construction of about 115 warships and 144 merchant ships at the Bombay Docks, from around 1753. The contemporary Naval Dockyard at Mumbai stands on the very site that was once the Bombay Docks.

19. Several well-known ships of the world were constructed at these docks, such the HMS *Minden*, aboard which Francis Scott Key composed the Star-Spangled Banner, the national anthem of the USA. Another famous ship is the HMS *Cornwallis*. The treaty

of Nanking, which ceded Hong Kong to the British, was signed on board this ship. The oldest warship afloat in the world, HMS *Trincomalee*, presently berthed in Hartlepool, the United Kingdom, was also constructed in Bombay Docks in 1817. This ship, which is over 200 years old, bears eloquent testimony to the quality of construction and expertise of Indian shipbuilders employed in the Bombay Docks.

20. Having said that, It is clear that India did not just miss the Industrial Revolution, but was intentionally kept away from it by the British. Thus, when the transition from sail ship to steam ship took place and wood was replaced by steel, the Bombay Docks were left behind in the global list of well-known docks. It took India a long time to revive its shipbuilding capabilities, and it is a matter of very great satisfaction and pride that from a "Buyer's Navy", we have once again become a "Builder's Navy". The path has been an arduous one, and we have had to face many challenges. Yet, such is the Indian genius that we have and will always overcome all hurdles, trials and tribulations.

21. Today, we have a shipbuilding industry around eight public sector shipyards and some 22 private-sector ones. This is an impressive improvement, but reflects only a good beginning. Industry 4.0 and its constituent disruptive technologies are upon us and we must be able to leverage these to modernise our existing shipbuilding capacity as also to generate new greenfield shipbuilding yards.

22. I would like to make a specific mention of warship building, which is firmly anchored in self-reliance and indigenisation. Unafraid of ploughing a lonely furrow, the Indian Navy has been an excellent example of increasingly-comprehensive indigenisation. The results are impressive across a range of naval capabilities, inductions and acquisitions. The fact that the Indian Navy's 'Directorate-General of Naval Design' (DGND) has generated as many as 19 different warship-designs, leading to the construction of a staggering 122 surface and sub-surface combat-platforms (i.e., 'warships' and 'submarines') in Indian shipbuilding yards is, by any standard, a track-record to be proud of.

23. Even more impressive have been the Navy's successes by way of the indigenous development, production and deployment of a whole slew of systems and subsystems that go into the 'float', 'move', 'fight' and 'survive' capabilities of modern naval combatants. Amongst others, these incorporate surface and subsurface propulsion systems, power-generation systems, and, state-of-the-art weapon-sensor suites — all of which, taken in aggregate, have made the Navy's ships, submarines and aircraft, both admired and respected.

24. Predictably, the Navy's indigenisation endeavour has yielded incrementally richer dividends, to the great benefit of industry as well as the nation. Thus, the patrol vessels of the 1960s led to the *Nilgiri*/*Himgiri* Class frigates of the 1970s. Russian missile-capability was fully integrated into the indigenous frigates of the Godavari Class in the 1980s and was enhanced in the follow-on frigates of the Brahmaputra Class.

25. As the 20th Century drew to a close, the Navy pushed out tangible manifestations of its latest design efforts in the form of the state-of-the-art destroyers of

the *Delhi* Class. In more contemporary times, the ASW Corvettes of the *Kamorta* Class, the stretched Naval Offshore Patrol Vessels of the *Sumitra* Class, the formidable guided-missile destroyers of the *Kolkata* Class and the *Visakhapatnam* Class, the country's indigenously built nuclear-propelled submarines, and, the indigenous aircraft carrier, the *Vikrant*, all point to the meteoric growth of indigenous design and construction-capacity and capability.

26. As things currently stand, Indian shipyards have over 40 indigenously-designed warships in various stages of construction. In my own tenures of public service, as the Finance Minister, the *Raksha Mantri*, and, later, as the President of India, I have been struck by the burning desire of every Indian associated with warship production to progressively increase the indigenous content so that future warships are fully and wholly made in India. Today due to the diligence of leaders like Admiral Nayyar, we are acquiring a strong and favourable reputation in the field of warship-building

and associated weapons, sensors and other ancillary equipment.

27. India is committed to transitioning from a traditional 'Brown' economy to a 'Blue Economy' — one that encompasses almost the entire economy of the country and is founded upon **three guiding *sutras***. The **first *sutra*** is the acknowledgment that the oceans are the font of all life on earth. It is critical to remember that ocean currents and gradients are the single most influential element that affects and regulates our climate and environment.

28. The oceans are rich in oil and mineral resources, supply us with oxygen, absorb carbon dioxide and are a virtual heat-sink. They are rich in biodiversity, and have emerged as the global economic highways for transit of trade and energy. On a global basis, about 80% of the world's population lives within 200 nm of the coast and 90% of the entire world's commerce transits upon the sea. Although all human beings naturally live on land, their sustenance is crucially linked and dependent upon

water — oceans, riverine or inland. Thus, these waters have a profound influence upon our collective socio-economic, environmentally sustainable future.

29. The scale of economic activity generated through the medium of water, such as shipping, shipbuilding and repairs, marine construction, associated infrastructure and communications, mining, fishing, etc., are enormous and can make or break the fortunes of nations. India's fortune, too, is a derivative of the country's ability to harmonise its economy with the maritime domain.

30. The **second *sutra*** is the realisation that we can no longer afford any further environmental degradation of destruction of the biodiversity of the planet. Mankind has been unwise and imprudent in the manner in which it has wantonly exploited and destroyed resources that the land had to offer. With depletion of resources on land, humans turned to the bounty of the seas but the old habits of uncaring exploitation on land have persisted on the oceans as well. Far too many of us

continue to labour under the misperception that the oceans have an unending resource base and are an infinite heat sink. The reality is that, over the past few decades, we are witnessing a depletion of resources at a frighteningly rapid rate and our oceans are getting unsustainably heated.

31. Overfishing as well as illegal, unreported, and unregulated fishing, are examples that stares us in the face and present clear threats to the food security of all nations big and small. Likewise, pollution of the oceans and the associated contamination of the maritime environment has severely and adversely impacted marine biodiversity. Several studies have indicated that 80% of pollutants in the seas emanate from land and we have probably already reached a stage where we have more microplastics in the oceans that fish. We need to address these issues.

32. Indeed, this is precisely where think-tanks such as the National Maritime Foundation can and must undertake a significant outreach to educate the public

and advocate public policies that will enable us to collectively stem and then reverse the tide.

33. The **third *sutra*** is a commitment that emanates out of the first that is that all resources of the Earth must be harvested solely in a sustainable manner. This is entirely in line with the United Nations' 17 'Sustainable Development Goals'. As a responsible nation and a strong supporter of UN led initiatives, India has dedicated itself to the attainment of all 17 SDGs. 'Goal 14' — to conserve and sustainably use the oceans, seas and marine resources — is of particular relevance to the National Maritime Foundation and all those concerned with the maritime domain.

Distinguished Guests, Ladies and gentlemen,

34. It is imperative that we remain outward leaning and regionally sensitive. We must seek and find common regional solutions to common regional challenges within the predominantly — but not exclusively — 'maritime' domain within which we are currently focussing much of

our grand strategy. This domain defines our proximate strategic-geography, which we refer to as the Indo-Pacific. We dare to dream big and the spatial limits of our concept of the Indo-Pacific stretch from the shore of East Africa to the shores of the Americas. For us, the Indo-Pacific is a geography rather than being, in and of itself, a strategy. It is a space characterised by inclusiveness, cooperation and transparency (i.e., openness of intent and action).

35. At the conceptual level, the concept of 'SAGAR' (Security and Growth for All in the Region) reaffirms our strong desire to strengthen mutually-beneficial maritime cooperation right across this broad swath of land and sea. Perhaps the foremost collaborative and cooperative objective is the preservation of the maritime commons through the strengthening of a rules-based order that is founded upon consensually-determined international norms, holistic security and regional prosperity. In seeking to attain this objective, need to focus continuously upon the manner in which regional structures are fleshed out

at the political level as well as the executive level. We need to decipher the degree to which functional cooperation is nurtured, not only among the countries of the region, but also between regional maritime powers and extra-regional ones.

36. We need to embark upon a process of pan-regional capacity-building and capability-enhancement. This will, advance regional cooperation in terms of maritime safety and security. Our regional maritime initiatives must address at least seven focal-areas.

- The first is holistic maritime security which may be described as freedom from threats arising in the sea, or from the sea, or through the sea.
- The second is the need to preserve the ecology.
- The third refers to the sustainable harvesting of marine resources.
- The fourth is, as I have already mentioned, capacity-building, capability-enhancement, and resource sharing.

- The fifth is risk-reduction and the cooperative management of natural as well as manmade disasters.
- The sixth focus area is academic cooperation with particular attention being paid to science and technology.
- The seventh pillar is maritime trade, connectivity and transportation, upon which the economic wellbeing of each nation-state within the region so heavily depends. With regard to this seventh pillar, India is blessed with an especially favourable maritime geography, with natural and unhindered access to the seas.

37. The Indian peninsula protrudes seaward for a thousand kilometres and positions the country right at the intersection of the several International Shipping Lanes that crisscross the Indian ocean. This blessing of geography ought not to be spurned. Studying India's 7516-kilometre long coastline are our 12 major ports and over 200 minor and intermediate ones. 95% of our trade by volume and 77% by value flows upon the seas. The ambitious

SAGARMALA Project, seeks to capitalise port-led development and includes connectivity of the ports and hinterland through coastal shipping, inland waterways, and, road and rail networks.

38. The 14,500 km of inland waterways with which India is endowed can be a game-changer for not just India, but for our immediate neighbourhood as well. In this endeavour, it is critical for us to ensure synergy and complementarity between SAGAR as a concept and SAGARMALA as a mega-project. Our efforts in other sub-regional maritime and hinterland cooperative constructs such as BIMSTEC are being appreciated and the projects undertaken within the aegis of such constructs are producing benefits that apply to all participating nations.

39. Let me end by exhorting the National Maritime Foundation to continue its efforts and its endeavours to kindle maritime thinking in India. If we are to have another *tsunami*, let it be one of maritime intellectual effervescence and let it be unleashed by the energy that has been imparted to this very process by the late Admiral Nayyar, whom

we honour today. Upon the broad and supple shoulders of the young research-scholars of the NMF I, therefore, place the responsibility and task of creating and sustaining this process of maritime rejuvenation. Take your case to the public and to the government, bombard them with new and bold suggestions and ideas on how to maximise conservation while optimising the harvesting of the resources that the oceans have to offer. Remember the ideals and passion of National Interest. Take Admiral Nayyar's love for the maritime domain forth and make it your passion. This is your task. I wish you God Speed.

Thank You

Jai Hind