
CENTRE FOR ADVANCED STRATEGIC STUDIES



PROCEEDINGS OF SEMINAR

ON

INDIAN OCEAN - THE CHALLENGES AHEAD

6TH - 7TH MARCH, 1998

C O N T E N T S

Item	Page
Introduction	1
Proceedings of the Seminar	8
Chairman's Opening : J.G. Nadkarni Remarks	9
Session I : A Historical Perspective	14
Chairman : J.G. Nadkarni	
Main Speaker : M.P. Awati	14
Session II : Maritime Activity in the Indian Ocean	26
Chairman : J.G. Nadkarni	
Main Speaker : M.P. Pinto	26
Session III : Indian Ocean Rim Initiative	35
Chairman : J.G.Nadkarni	
Main Speaker : Laxmi Puri	35
: P.V. Rao	41
Session IV : The Economic Dimension	62
Chairman : A. Tandon	
Main Speaker : Aditi Pant	62

Item		Page
Session V	: Strategic Importance and Challenges Ahead	70
Chairman	: A. Tandon	71
Main Speaker	: Arun Prakash	
Session VI	: Indian Ocean - The Security Environment	82
Main Speaker	: A. Narasimha Rao	82
Closing Remarks	:	91
Summary of Discussions	:	92
List of Participants	:	97

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SEMINAR

INDIAN OCEAN : THE CHALLENGES AHEAD

6th-7th March, 1998

(Venue : Auditorium, National Film Archives, India)

BACKGROUND PAPER

Introduction

The Indian Ocean, the third largest in the world has an area of 73.6 mn sq km. The Indian Ocean Rim (IOR) has over 47 countries with nearly two billion or one third of world population. It is in the centre of three continents, Africa, Asia and Australasia. The IOR countries belong to different continents and have vast differences with regard to their size, population, levels of development, domestic economies, structures of production and degrees of openness as also political systems.

The Indian sub continent dominates the Indian Ocean. India is at the heart of the Indian Ocean region and constitutes the junction between the eastern and western rim. Prior to the colonial era, there was much maritime trade, India's share being 23 pc. of the world trade. Religion and culture spread from India to a number of these countries. After independence India limited its security and strategic vision to the land borders on the northern and western perimeters and looked to the west for its trade. The Indian Ocean, comparatively is a recent concern.

India's Maritime Interests

India's maritime interests include a coastline of 8000 km. extending deep into the Indian Ocean, augmented by about 1400 km of island and rock territories in the Arabian Sea and Bay of Bengal, the

latter comprising 723 islands and rocks of the Andaman and Nicobar islands. Virtually, all of India's foreign trade, some 97 pc.in volume, 20 percent of GNP in 1994-95 is transported over the sea. In addition, 80 pc of India's demand for oil is met from the sea, 46 pc aboard ships and 34 pc extracted from offshore areas. With economic growth and increase in trade, there will be greater dependence on import of oil from the Persian Gulf. This will further increase the importance of India's Sea lanes of communication in the Indian Ocean as well as responsibilities of the Navy. In addition prospective exploitation of polymetallic nodules from the seabed could meet India's demand for precious metals, particularly nickel, cobalt, copper etc., currently being imported.

The Indian Maritime Zone Act of 1976 vests in the Union all rights to all lands, minerals and other things of value underlying in the ocean within territorial waters (12 nautical miles nm) contiguous zone (24 nm). Continental shelf and Exclusive Economic Zone (EEZ-200 nm). This has increased India's responsibility from 83,200 sq.km. to some 2.2-2.8 million sq.km. area. India signed the Law of Sea Convention in 1982 and ratified the UNCLOS III in 1995, one of the 116 countries to do so. This has a legal provision for the extension of the continental shelf to 350 nm. by the year 2004, if primary exploration of the extended area is completed. This provision will provide additional area of 1.5 million sq.km.

India is the first developing country which in 1987 was accorded the status of a "pioneer investor". This provides it an area of 1,50,000 sq.km. in the Central Indian Ocean for deep seabed mining. In March, 1996, it was elected as a member of the Council of the International Seabed Authority under the "Investment Category".

India has 11 major ports, 18 intermediate ports and over 180 minor ports along its coastline. Its merchant marine has some 400 ships, about 6 million GRT, less than 1.5 pc of world tonnage. Only 36 pc of its foreign trade is shipped in Indian bottoms. Its annual fish catch was 2.7 mt. in 1994-95 as against 4 mt sustainable.

India has signed bilateral and trilateral agreements with its five neighbours - Indonesia, Maldives, Myanmar, Sri Lanka and Thailand,

demarcating the tri-junction points and delimiting the related boundaries in the Andaman Sea. The agreements that still remain are the determination of the Myanmar - Bangladesh - India trijunction point due to differences over median line and conflicting claims to the New Moore/South Talpatty Island and oil rich delta of the Ganges and Brahmaputra rivers. India's maritime boundary with Pakistan is yet to be demarcated due to the problem of determining the median line and besides, the claim over the Sir Creek area - a marshy oil rich part of Sind-Gujarat coast is yet to be settled.

Pollution Control Responsibility

Pollution control was the responsibility of the State governments. The Ministry of Petroleum and Natural Gas was responsible for pollution upto 500 meters from oil platform and structures, and Ministry of Surface Transport for pollution from land based sources with jurisdiction upto 5 km in the sea. Since 1993, as a result of Maersk Navigator tragedy, when vast oil slick spread from the entrance to Strait of Malacca to within 20nm of Indian Nicobar islands, the Indian Coast Guard has been made directly responsible for pollution control.

The Department of Ocean Development was created in 1981 for sustainable development of the Indian Ocean. It was placed directly under the prime Minister. It formulated the Ocean Policy Statement in 1982 involving marine sciences, marine living and non living resources, marine environment, coastal zone management, ocean observation and information services, marine research and manpower development. Implementation has lagged behind.

Since 1981, India launched 17 scientific expeditions to the Antarctica area. The "Dakshin Gangotri" was established in 1983. Five years later a permanent station "Maitri" was established. In 1996 April, it ratified the protocol on Environmental Protection to the Antarctica Treaty.

Foreign Trade Environment

New regionalism is interfacing the global trading arrangement. The World Trade Organization (WTO) recognises regional trading

bloes as institutions facilitating global trade. We now have the European Union (EU), a common market of 15 countries with preferential/free trading arrangements amongst themselves, the North American Free Trade Area (NAFTA), the Association of South East Asian Nations (ASEAN) restructuring tariffs on intra-regional trade to less than 5 percent by 2003, Asia Pacific Economic Cooperation (APEC). Besides these mega trade blocks there are economic giants, Japan and China.

Human rights, child labour, non proliferation, Missile Technology Control Regime (MTCR), Fissile Material Production Control - these issues are being manipulated as instruments to deny transfer of technology to underdeveloped/developing countries, to freeze their technology upgrading capability and to hinder their export performance. The US, and the G-7 countries at times arbitrarily lay down export quotas for countries and in the same breath drum support for pushing their exports on grounds of liberalisation and globalisation. The World Bank and IMF too are used at times to hinder sustainable economic development in the developing countries. These tactics have made the recovery of the economy of the sick Asian Tigers - Thailand, Indonesia, South Korea extremely difficult, very likely plunging them into vicious economic recession, and throwing their economies out of gear.

IOR Response to Trade Blocks

Pik Botha, Foreign Minister of South Africa mooted the initiative for the formation of a regional bloc in the Indian Ocean in 1993. President Nelson Mandela proposed in 1995 the forming of a trade alliance to eventually shape into a trading bloc among IOR countries. The Indian Ocean Rim Association for Regional Cooperation (IOR-ARC), a South-South Cooperative initiative, paralleling SAARC was established on 6 Mar. 97. It has membership of 14 countries, namely India, Indonesia, Australia, Singapore, South Africa, Kenya, Mauritius, Oman, Malaysia, Madagascar, Mozambique, Sri Lanka, Tanzania and Yemen. The IOR has over 47 countries.

India prefers a gradual phased approach to IOR-ARC membership, limiting it so that it is operationally manageable and economically viable, to be expanded only after it is well established.

South Africa, Mauritius and Australia favoured membership to be given quickly to a large number making it a bigger trading bloc. Membership issue is being examined by a Committee.

Considering the prevailing multi faceted economic diversity and interests among members, economic cooperation is preferred to economic integration for the IOR-ARC countries.

IOR Assets and Implications

About 75 pc of world's oil reserve is located in the region, 66 pc in the Gulf region. The Oceans are the main outlets for this oil. Western Europe depends upon this region for 70 pc. of its oil requirements and Japan, 100 pc. The US and also China's dependence on this oil is gradually increasing. This being a vital energy source, the US is determined to exercise control over the Gulf region and also on the sea lanes of communications and the choke points.

South Africa has 80 pc. of the worlds gold supply and bulk of copper. Malaysia has 56 pc of world's tin supply and 77 percent of rubber supply.

The sea lanes of the Indian Ocean are extremely busy. Over one billion US dollar trade passes daily through the ocean. Most of the traffic is direct trade between Europe and East/South East Asia.

There are 30 straits and channels in the Indian Ocean, important ones being the Suez Canal, around the Cape of Good Hope, Malacca Strait linking Pacific and Indian Ocean, Strait of Hormuz and the sea lane south of Sri Lanka. Disruption in any segment would be disastrous to the economies of nearly all countries.

The IOR assets attract powerful external actors. Japan's interest is to ensure unhindered access to the West Asian oil and secure sea lanes of communication. The US is determined to keep intact its control over the Gulf oil and sea lanes of communication and choke points . It has warned that the US military will not accept any restriction on its freedom of movement in the Asia-Pacific region. Its nuclear tipped naval base in Diego Garcia played a vital role during

the Gulf War and continues to do so even now when despite protests in the Arab World and by Russia and France and in US itself, it is contemplating air strikes against Iraq to compel it to open Presidential palaces and other suspected areas for inspection by UN team to ensure that weapons of mass destruction are not stored/manufactured. The US Central Command and the US Fifth Fleet dominate the Arabian Sea and the Indian Ocean and exercise jurisdiction over 19 countries, from Pakistan to Kenya. The US is exhorting the sick Asian tigers not to compromise on their military preparedness on account of their economic woes. Some East Asian and South East Asian countries, buoyed by their economic performance resorted to arms build up. Apprehensive of Chinese intentions, and also to prevent intra-regional disputes from surfacing, some of these countries would welcome US presence in the vicinity.

China Factor

China has emerged as a super power and claimed many islands including the Paracels, Spratlys and Senkuku Island. It is assertive and takes recourse to even gunboat diplomacy at an opportune time. It is slowly integrating the economies of the neighbouring countries and has established strong economic linkages. It gets much help from the overseas Chinese. It gave one billion dollar recently to Thailand to overcome the economic crisis.

China has helped upgrade Myanmar's Navy and built a sophisticated naval base in the Bay of Bengal at the Hanggyi Islands. It has upgraded the existing bases at Akyab near the Bangladesh border, at Mergui near the Thailand border and at the Great Coco Islands which are near the Andaman and Nicobar Islands. It has established its presence in the Indian Ocean. The Chinese submarines are reported to be visiting the Bay of Bengal from time to time.

Indian Security in the Indian Ocean

The Indian security set up in the Indian Ocean has been found wanting. In March 1993, Pakistani ISI assisted by some fundamentalist elements smuggled explosives by sea and triggered serial explosions in Mumbai. On 17 Dec 95, an AN-26 aircraft flew into India from Karachi, refuelled at Varanasi, airdropped about 500 AK-47s and

thousands of rounds of ammunition over Purulia in West Bengal and then flew to Thailand. Five days later, it was intercepted just when it was about to leave Indian airspace over Gujarat. It had refuelled at Chennai. On 5 Nov. 95 four unidentified helicopters piloted by unknown foreigners intruded into India's air space and landed at Chenyakan, one of the islands in the Lakshadweep archipelago. On 11 Feb. 98, a gang of international gun runners were caught in Andaman Islands while trying to land a consignment of 145 Weapons including rifles and machine guns along with 4000 rounds of ammunition. On 14 Feb. 98, Coubatore saw a series of bomb blasts. Today we have a situation where land borders, sea coasts and now island territories have become porous and vulnerable to infiltration of weapons and terrorists alike.

IOR Environment : Implications for India

India's strategic location, size, available mineral, agricultural, human and technological resources dictate that it plays a befitting role in the IOR. India needs to strengthen its muscles on all these fronts and its security components. It's defence capability, which has suffered during the last decade has to be built up. It should be adequate to guard its territorial integrity, and underpin safeguarding and promoting national interests in the IOR. The Coast Guard, the Indian Navy and the merchant marine need to be strengthened on high priority.

The world trade and security environment and that obtaining in the IOR compels a collective response to be effective enough to produce desired results. The SAARC, its SAFTA and the IOR-ARC need to be functional and operational. India is at the core of SAARC and IOR-ARC. Comparatively, its economy overshadows that of other members. It should become the engine for economic development of the IOR. Much depends upon the quick resolution of long outstanding Indo-Pak problems. Weakness is universally despised and is exploited by others. Strength respects strength. For the IOR to be strong and to be heard with respect in the international fora, the member countries need to come together, plan together and work together in the spirit of South-South cooperation. Safety of sea lanes of communication, straits and choke points is essential to serve every one's interests. The IOR countries should try to ensure this.

PROCEEDINGS OF THE SEMINAR

Air Marshal (Retd) S. Kulkarni, Director, Centre for Advanced Strategic Studies (CASS) opened the Seminar and welcomed the distinguished guests. He welcomed all the participants of the Seminar.

The Seminar was chaired by Admiral (Retd) J.G. Nadkarni, former Chief of Naval Staff. Vice Admiral (Retd) M.P. Awati, former Vice Chief of Naval Staff spoke on the subject from a historical perspective in the first session. In the second session Shri M.P. Pinto, Director General of Shipping spoke on the "Maritime Activity in the Indian Ocean." In the third session Ms. Laxmi Puri, Joint Secretary in the Ministry of External Affairs and Prof P.V. Rao of the Centre for Area Studies, Osmania University comprehensively covered the "Indian Ocean Rim Initiative."

On the second day, i.e. 7th March, 1998, the Seminar was chaired by the Vice Admiral A. Tandon, Flag Officer Commanding in Chief, Western Naval Command, Dr. Aditi Pant of the National Chemical Laboratory, Pune, and a well known participant of India's South Antarctica Expedition covering the economic dimension spoke on "21st Century : Challenges in Biological Oceanography for India." in the fourth session. Vice Admiral Arun Prakash, Commandant, National Defence Academy, Khadakwasla, Pune spoke on "The Indian Ocean : Strategic Importance and Challenges Ahead." in the fifth session. He was followed by Prof. A. Narasimha Rao, former Professor Political Science, Osmania University and former President National Congress of Defence Studies in the last that is the sixth session. He covered the security environment in the Indian Ocean.

After presentation by the Main Speakers in each session, the Seminar was thrown open for general discussion, and again at the end of the Seminar. The discussions proved animated, educative, thought provoking and lively.

OPENING REMARKS BY THE CHAIRMAN

J.G. NADKARNI

Ladies & Gentlemen, I welcome you all to this very vitally important seminar on the Challenges Ahead in the Indian Ocean. When I was first approached to Chair this seminar, and I saw the subject, I was quite surprised because I had always thought that if there is one subject which is dead and finished, that is Indian Ocean. Because about 20 years, we had flogged the Indian Ocean and especially the subject of the Indian Ocean as a zone of peace. But the seminar today addresses quite different issues and those are indeed very live issues and very vital issues to India's economic well being, as well as security environment in the 21st Century.

From the large gathering here which is before me, especially consisting of large number of army and air force officers, obviously this is one subject which is of vital interest to everyone. I think just to put the entire future of the Indian Ocean in the correct perspective, let me quickly talk on what we are confronting in the next century.

First of all, the Indian Ocean itself. It is a conglomeration of diverse countries, each with a different community, different economic background and different per-capita income. The three major powers sit at the three major corners of this triangle of the Indian ocean. At the top is India, which has been for centuries the prime partner in this area of Indian ocean. On the East, it is Australia, a developed country and one which has considerable links with West, and on the Western corner is the newly independent from apartheid country of South Africa. And in between these countries sit about 42 different countries.

Indian Ocean. I do not want to go into the geography of it but you know it is a peculiar ocean which is close at the top and open below unlike the Atlantic and the Pacific Oceans. And sometimes even the definition of the Indian ocean is in doubt. For example do the countries of the Gulf, the countries of the Red Sea, do they form part of the Indian Ocean or they are out of it. As you can see in the Indian

Ocean Region (IOR), the Oman, if you do not call it a Gulf country, is a part of it but not other single gulf country is part of the IOR at present anyway. Similarly no country from the Red Sea, so possibly Red Sea does not qualify as part of the Indian Ocean.

That is one peculiarity about this part of the world. It has a large number of poor and developing countries possibly the largest in the world around and it is a littoral who have suddenly found themselves endowed with vast territories. It is as if a rich uncle has died and left a huge mansion to his nephew, to his poverty stricken nephew who does not have the wherewithal to look after the rich mansion. By giving a large number of these littoral countries by the United Nations Conference on the Law of the Sea which was signed in 1992, an exclusive economic zone of 200 nautical miles from their shore this rich uncle has bestowed on them tremendous territory which can be exploited for the well being. But these countries neither have the resources nor do they have the technical excellence required to exploit this particular part and given this huge area to them as exclusive economic zone.

India for example, has suddenly got itself a two and a quarter million square kilometer zone as exclusive economic zone which throws its own problems. There are the problems of security, there are the problems of exploitation, there are the problems of poaching and making sure that nobody enters this particular zone.

The United Nations Conference of Sea has got a very nice clause in it which most people are unaware of and that clause says that if the country which has an exclusive economic zone does not exploit the riches of that area, then anybody else is free to go and exploit it. You have one nice clause. There is a question whether you can exploit these things. The poor nations of this world can exploit these things in a collective way.

The other problem is of security in the area which I can call pollution, poaching, piracy. The three Ps. It is in fact a security problem because again to take pollution for example, it is indeed extreme luck that has prevented one of a major tanker disaster from

occurring on the shores of one of these countries in the Indian Ocean. Because if a Toly Tanjon or Texan Wider type of ship had broken somewhere around the coast of Africa or India, I think whatever little wealth that these countries could gather from the seas would have been finished in no time at all. And as you can see, nearly seventy per cent of the world's oil travels around the coast of Africa or via the southern tip of Sri Lanka to East and an accident is just waiting to happen and what do these countries do when such an accident happens?

Third problem is regarding piracy. For years we have been saying that the two major powers or the two super powers, United States and the Soviet Union should get out of the Indian Ocean. Well one of them has finally left by default, which leaves only one super power in the area. When we were asked the question what happens to the pollution of this area, we have very confidently said at that time that everything will be done by the countries of the Indian ocean. Now again it is somewhat lucky that piracy which is in great spate in the China seas and in the Malakka straits or East of Malakka straits has not so far occurred in the Indian Ocean. But what if pirates tomorrow start boarding super tankers somewhere off the Sakotra or somewhere near the Oman coast and take over. Which country is going to prevent piracy in the Indian ocean?

And of course the third point is regarding poaching. As far as we know, the gulf of Thailand or the gulf of Siam as it was called once, has been fished out and the pirates poaching have been caught off the coast of Gujarat indicate that they come all the way from Taiwan, South Korea and Thailand, put up at the Gujarat Coast for three months and go back again. And the question again arises, who is going to stop the poachers if they do poach on a large scale in the Indian ocean.

All these problems indicate that we have to do something collectively as far as security of the Indian ocean is concerned and the IOR is one way of doing something about the security of this region and this is one issue which I hope will be addressed by all the speakers today.

Coming now to the Indian ocean initiative. This is again an initiative which is very young and started only a few years ago consisting of 14 countries. A large number of countries, as you can see, are not yet part of this initiative. Why they are not part of this initiative. Different people feel there are different excuses for it. For example, two of the most populous countries, Pakistan and Bangla Desh are not part of this initiative.

India has given the excuse that we would like the initiative to be confined to a small number of countries to start off with and then expand thereafter like the European Union did initially to start of it. There were only six to seven. And now of course they have enlarged by admitting a large number of countries to make it something like 14 countries. And India was to go about this in that particular way. But not excluding such large countries as Pakistan with its population and Bangla Desh, two of the major countries. I think that will create problems in the future.

Second thing is we have to really think whether this particular grouping, has it got a future or is it going to be one of these very non active groupings like the SAARC, which has no future at all. It is difficult to say at this stage, because even groupings like ASEAN, the European Union or all of them took at least 10 to 15 years before they could show results and it is not going to be active if the results are not being seen in the next few years.

Similarly, although we have been saying that there used to be considerable amount of trade in the Indian ocean region, the fact remains that at present intra-Indian ocean rim countries trade is less than 20% at present of every country's total trade. So has trade any scope of increasing or are we just having an Indian Ocean Rim initiative to spite or because you were not admitted into the APEC or we do not form part of any other group remains to be seen. I think this question also, I am sure, will be addressed by some distinguished speakers who are going to speak today on this particular subject.

I just highlighted some of the issues because we have fortunately for us a number of very distinguished and authoritative speakers on the subjects who will speak to you on them.

We have Admiral Avati and we have Mr.Pinto, the Director General Shipping and both of them are intimately connected with the affairs of the Indian Ocean and Mr.Pinto especially because one of the first major achievements of the Indian Ocean Rim countries which is the formulation of the Port State Control was attended and Mr.Pinto was India's representative there.

Admiral Avati, really requires no introduction to all the people who are concerned with the maritime welfare of India. Admiral Avati had a most distinguished career in the Indian Navy. He is indeed an authority on maritime history of India. He is the founder member of the Maritime Historical Society of India and due to his efforts, we have founded a Maritime Museum, which was first at the middle-ground in Bombay, but it is now located in the Prince of Wales Museum in Bombay. He has lectured and written extensively on maritime history of India. Not only does he speak or write about it, but he has done lot of research. He told me that recently he has gone round the coasts of India in search of our old ship-building traditions stretching back to more than two to three thousand years. I think we cannot have found a better speaker to kick off the Seminar on the Indian Ocean. He will be speaking to you about The Maritime History of India.

SESSION I

THE INDIAN OCEAN -
CHALLENGES AHEAD A HISTORICAL
PERSPECTIVE

Chairman : J G Nadkarni
Main Speaker : M P Awati

PAPER PRESENTED BY VICE ADMIRAL (RETD) M.P. AWATI

Mr Chairman, members of this distinguished audience, both ladies and gentlemen, I am not sure whether I should ascribe a certain prescience to the Centre for Advanced Strategic studies in the dates which it has chosen for this seminar, March 6th and 7th. They have nothing to do with the Ides, in my mind ! Five centuries ago, events to come, stamped these dates firmly on history which was about to unfold in our ocean, and which forever changed our lives in a manner which none could have foreseen at the time.

On November 22 1497 Vasco passed the Cape with the wind astern. It took him three months to reach Mozambique. On March 6, 1498 Wednesday, Vasco-da-Gama, in his flagship the SAO GABRIEL, received good news. Further up the coast at Melinde, he was told, he could find pilots who would guide him across the north Indian Ocean to the west coast of India. Here too he met the first Arab and Gujarati muslim merchants who dominated the trade of the ocean. Vasco restrained himself from doing anything which might antagonise them. He must bide his time until he had been shown the way to his destination, India. He sailed north on March 11, reaching Melinde on March 29 in the teeth of adverse winds and currents. Here he came up with a friendly Arab principality. After some delay due to negotiations, a pilot was arranged who undertook to guide the Portuguese squadron of four ships to Calicut. The pilot was Ahmed bin Majid, a Gujarati Mu-Alim or Master Navigator, according to some historians, an Arab according to others, and arguably the most famous pilot and authority on ocean navigation, well versed in the heaven finding art, of his time.

The Portuguese explorer was on the threshold of making history as he sailed out of Melinde in April 1498 on a west north westerly course pursued by the Monsoon winds which had already set in. The weather Gods too, it appeared, were aiding him, at last after the vicissitudes of the past several months. da Gama sighted India on Friday May 18. He dropped anchor a few miles north of Calicut on Sunday, May 20, 1498. He could scarcely have realised that he was the harbinger of a new and tumultuous era in the long history of the India Ocean.

What kind of people were these Portuguese who had endured almost superhuman hardships and persisted so long and so valiantly and with so much loyalty to their king and to their faith in undertaking voyage to find a sea route to India ? Small and impoverished Portugal, tucked away in the south western corner of Europe along the wild and stormy Biscayene coast could barely muster a million people. Yet it became the foremost explorer nation of the Middle Ages and its seamen left a stamp on the history of maritime India and of the Indian Ocean. It would be useful to hear on authoritative voice on this extraordinary people with so little going for them except their faith, a determined king and an affinity for the sea, born out of necessity. I quote from The 'Story of Maps' by Lloyd Brown. " Several factors combined to make Portugal the greatest maritime and colonising power in Europe during the period of discoveries, 1415-1499. Its people comprised a mixture of Moors and Mazarabs in the south, Galicians in the north, Jews and foreign Crusaders everywhere. The Portuguese had fallen heir to the best and the worst qualities of mankind ; the most highly developed culture was combined with the most primitive barbarity. The result was a people of unusual courage, ingenuity and greed. They had inherited the best in science from the Arabs, and had acquired by purchase, the navigational skill developed in Italy. Situated on the southwesternmost tip of Europe, with a long coastline and fine harbours, Portugal was an ideal training ground for mariners who could sail 'outside'. And in the fifteenth century the ability of Portuguese seamen was a matter of stark necessity as well as a technical accomplishment. Intercourse by land between Portugal and other European countries was effectively blocked by Aragon and Castile. Portuguese goods, therefore, were moved by sea to England, Flanders and the Hanse towns in northern Europe. Any new markets would have to face the ocean. Moreover, the crusading spirit was still

strong in Portugal. 'To make war upon Islam seemed to the Portuguese their natural destiny and their duty as Christians'. The order of Christ founded by Diniz, on the dissolution of the Templars, was both wealthy and powerful, and under the direction of prince Henry the Navigator, the vast resources of that order were consecrated to the maritime expansion of Christianity"

Such, then, were the people of a European nation who arrived in the Indian Ocean five hundred years ago to begin a new and an entirely alien chapter in its history. They could not have been more different from the peoples who inhabited the littoral and had traded here since time immemorial. India was at the hub of this maritime trading activity which had carried Indians to all the littorals of the ocean and beyond in Indian ships. In this trade Indian goods played a central role. In ancient and manufactured, her exquisitely fine cotton cloth based on the huge cotton crops of the interior and the unmatched craft of her weavers, her silks, precious and semiprecious stones, ivory and rare woods, incense, spices, her highly gifted stone masons were all of them much in demand in countries bordering the ocean and further afield in the east in what came to be known to historians as Greater India, and west in the Mediterranean where there was trade to do, first with Greece and then with Rome. It was a lucrative trade for both the merchant and the prince. The trade gave India her status as a maritime nation, a trading power. It enriched her. The entrepreneurship of the merchant class and the political acumen of the littoral kings and princes were admired. Anyone and everyone who was interested in peaceful trading and who paid his dues was welcome. It was a policy of live and let live. The great emporia, the entrepots of the west coast, Bhrigukacch or Barygaza to the Greeks and the Romans which became Bharuch in later times, Khambat or Cambay, Sopara, Dabhol, Muziris near today's Cochin, were all flourishing ocean ports on the west coast with every imaginable Indian Ocean and Mediterranean type rubbing shoulders with his Indian counterpart and many in residence to take advantage of discounted prices during slack trading in the Monsoon. It was a truly cosmopolitan scene, the Jew and the Arab, the Greek, Persian and Roman doing business in India. It must have been a vibrant community along the littoral, in the counting houses and the warehouses, with its marchant guilds inherited from the 'Srenis' of the Buddhist past. Islam

and Christianity had arrived from West Asia. They come here in peace, to trade and to proselytise. The fundamentalisms were still in the distant future. Indian presence in the Indian Ocean encouraged tolerance and brotherhood of man, certainly of the trading man !

The evidence of this immense maritime trading tradition had to await historians, archaeologists and investigators of the future. India has had a poor historical tradition. What there is was mostly oral. Thus, for example, the Indian Ocean had to wait for the Periplus of the Erythrean Sea penned by a succession of anonymous Greek navigators in the early centuries of the Christian Era, to describe its rhumbs, routes and approaches to ports to the navigator. No directions seems to have come out of India. The Buddhist Jatakas do mention ships, voyages and merchants and far off lands, but they are stories and legends, hearsays and cannot substitute for authentic, verifiable history. They do, however, give a whiff of the hustle and bustle of Maritime India along both the coasts and on the ocean. The picture that emerges, therefore ; is of a vigorous maritime people, engaged in seaborne trade. The picture changes somewhat with the arrival of the Arab, his Dhow and his advances in the science of ocean navigation and the haven finding art. But the scene remains peaceful. There is no demand for any exclusivity from any of the participants in the trade. Nowhere is there any mention nor any evidence of any military activity on the seas. It is very much a free for all. All you have to do to stay in business is to pay your dues to the established authority on shore. There are no ships of war devoted specifically to fighting at sea. The great trade seems not to need any protection. There was, of course, piracy. but it could not have been of a dimension which called for a special force for its suppression. I presume the trade took the acts of piracy, possibly sporadic, in its stride. Thus no littoral power maintained a navy. Notwithstanding Kautilya's Arthashastra, its pronouncements on an Admiralty, there is small evidence of any Indian naval power until the Cholas come on the scene on the east coast in the tenth century of the Christian Era. Indian maritime trading tradition does not seem to go along with a parallel naval tradition. This is in marked contrast to the naval tradition which became part of the Phoenician, Greek and Roman trading activities in the Mediterranean. The war Biremes and Triremes of the Mediterranean sea powers were the precursors of the maritime military heritage

which was to blossom on the Atlantic coasts a millenium and a later. In the Indian ocean, if one excepts the Chola naval tradition there was apparently never any need for an exclusively maritime, let alone a blue water one, to protect the valuable trade against an enemy. There was no enemy until the arrival of Europeans with their highly seaworthy ships mounting guns and an exclusivist doctrine. In the Atlantic the argument was for freedom of the high seas, *Mare Liberum*. In the Indian ocean these same Europeans would enforce '*Mare Clausum*, a closed sea with their superior maritime technology. It is the same today, the difference is only a degree resulting from higher technology. The USA has one norm for itself and its allies and quite another for those who would thwart its hegemony. The Vasco Era seems never to have ended in this ocean. Fifty years after India, the prime successor to the Indian ocean maritime regimes post world war, achieved political independence. The Indian elite and the ruling class has failed to learn the lessons from history, about the importance of sea power to a nation which aspires to be counted in the counsels of the world. More than three hundred years ago the Maratha statesman Ramchandra Amatya had put the whole concept succinctly when he said, 'The sea is an independent department of the state. One who has a strong navy rules the sea. One who rules the sea rules on land'.

By the time the Europeans appeared on the scene it was too late for the threatened Indian littoral kingdoms and principalities to catch up on war fighting capabilities at sea. Shipbuilding techniques and stitched hulls had not changed in centuries. It was not possible to build such flimsy hulls. We seemed to be happy to continue with outdated technology at sea. Not that the Zamorins of Calicut and other littoral rulers had not been warned of the shape of things to come several decades before the arrival of the Europeans in Indian ocean. When Vasco da Gama's fleet first arrived in Calicut, crew members were told by the locals that some eighty years before some visitors who resembled the Portuguese, had visited their city annually for more than a generation. They wore armour and carried great four masted vessels which had instruments and charts for navigation and carried brass fire tubes with which to destroy an enemy. At the time the Calicuttians could hardly have guessed that these sailors of old in their sturdy junks, armour and pow

shipboard ordnance were none other than the Chinese of Admiral Chong Ho. These visits had started suddenly in 1405 and had ended just as abruptly, some twenty five years later. Seventh and the last fleet, in 1431, went once more to the 'barbarians' to read them the Imperial Edict to submit to and kowtow before the Ming Emperor in Peiking. Cheng Ho died in Calicut.

Thus were the Chinese at a threshold which might have led them around Africa to the Atlantic, several decades before the Portuguese came the other way. They certainly had the capability. Perhaps the political will was absent. One does not know. For some, as yet, unexplained reason there were no Chinese expeditions after 1433. The Portuguese during these years took over the responsibilities of exploration.

The Chinese have a great sense of history and a greater one of their civilisational superiority, their continuity in this as the Middle Kingdom, between the hirsute barbarians of the west and those in their immediate vicinity in peripheral east and southeast Asia, whom the Chinese consider their legitimate vassals. It should not come as a surprise to anyone, certainly not in this perceptive audience, if a powerful Chinese fleet, perhaps already in the making, were to enter the Indian Ocean in the early years of the new century, to promote and enforce legitimate Chinese national interests in this ocean. Perhaps they are awaiting the year 2005, the six hundredth anniversary of sixty two vessels with 28,000 men which had sailed as far as Calicut. This fleet and the six which followed it were commanded to clear the seas of pirates and those who might contest Chinese supremacy upon the seas, to make legitimate trade possible. The Chinese fishing nets which are so ubiquitous all along the backwaters of Kerala are a legacy of those long ago visits. What will the Chinese leave behind this time? We will have to wait and see. I might let my imagination go a bit and predict that the name on the flagship of this Chinese Indian Ocean fleet could be CHENG HO.

In this review I am concerned with three or four factors which have shaped the history of the people of the Indian Ocean Rim countries. The geography of the ocean is, surely, a prime factor. The natural and human resources of the region have been an important

factor in shaping events, as indeed have the social and civilisational factors. It is to be remembered that three of the principal religions of the world have their origins here, Vedic Hinduism, Buddhism and Islam.

These religions and the social systems have made a decisive impact on history. The enormous and varied resources of the region have been the cause of conflicts in the past. Today, much of the oil resources of the world are located around the ocean's periphery. Its sea lanes carry vast oil cargo, annually, to the industrialised West and to Japan and to the fast growing economies of East Asia. No great wonder then that the ocean is under the surveillance of extra regional powers, as indeed it has been since the arrival here of the Europeans five hundred years ago. None of the Great Powers can allow the oil traffic to be interrupted or interdicted. One could say that the politics of oil impinges on the politics of all the Indian Ocean countries in some way. Until very recently this was the arena where the rivalry between the two super powers was fought out to the bitter end. India would not take sides. But that did not stop her being branded pro Soviet by the USA during the cold War! She did not have the power nor the influence to do anything about such unwarranted accusation. So it stuck.

The generally accepted geographical limits of the Indian Ocean are well known to this audience. They are in any case relatively straight forward as far as the western and the northern limits are concerned. The Bay of Bengal too is safely within its limits. I must, however, mention two relatively recent modifications to the limits tabled by Australia and India before the International Hydrographic Organisation. An official chart drawn by the Royal Australian Navy's Hydrographic Office in 1980, shows a Southern Ocean girdling the world around Antarctica. The argument obviously is that this southern body of water is separate and distinct from the hitherto recognised limits of the Indian Ocean. In the words of the eminent Australian historian of maritime India, Dr. M.N. Pearson, "this revives the old Arabic 'Uquiyanus', the world girdling southern ocean". In this new Australian concept, the Indian Ocean's southern limits, from west to east are a line from the northern extremity of South Georgia to Marion Island, to the northern point of Iles Crozet and thence to Cape

Leeuwin in Western Australia. Two years earlier in 1978, our own National Atlas Organisation drew its concept of the Indian Ocean. In the west the limits of the southern Indian Ocean take departure from the Cape of Good Hope. It goes all the way to the Antarctica. In the north it takes in the Red Sea and the Persian Gulf. In the east it firmly excludes Java and the South China sea. My own inclination, for what it is worth, is to include Java and the Sunda Seas, the southern stretch of Irian Jaya within the limits of the Indian Ocean. Surely Thailand, Cambodia and Indonesia are very much a part of the Indian Ocean cultural continuum. I do not say this with any jingoistic inclination, only in pursuance of historical evidence.

The geography of the Indian Ocean ought to have brought the countries on its rim closer to each other, to have united them. The reality is quite the opposite. What geography should have united, religion and culture divided. India had the credentials to have been the magnet for unity to which the countries of the littoral, at least in the east, which had a virtual common market with India, and much else in common in ancient times, in civilisational terms could have been attracted. Unfortunately India remained introspective, inward looking and politically divided during those crucial centuries when unity based on culture and trade could have been forged. The virtual common market which had existed over a very wide stretch of the western and eastern Indian Ocean between Aden and Acheh was left unexploited for politics alliances.

Material prosperity on the back of rapid economic growth in recent years, in the countries of Southeast Asia has led to a unity on outlook among these countries, the ASEAN alliance. Except the Phillipines these countries are decidedly in the Indian Ocean. India has been granted an associate status in this economically progressive grouping of Indian and Pacific Oceans rim countries. The much wider and ambitious Asia and Pacific Economic community, APEC, mooted by ASEAN is an indication that the now prosperous southeastern corner of the Indian Ocean, looks towards the economic power houses of Japan, South Korea and now China, to advance its economic and in due course its strategic interests. The Pacific coasts of Canada and the USA and the Southern continent have jumped on to the bandwagon. It will be the largest trading alliance of countries in the coming

century if it survives in its present form. Recently there have been some hiccups which will probably pass in three or four years. The core land mass of the Indian Ocean, the Indian subcontinent, has been left in the lurch, which may turn out to be a blessing in disguise in the short run. India, though, will have to get its acts together very quickly, if the Indian Ocean community fears, India has to stop wallowing in the past and push irrelevant political creeds behind her. Indulging in obscurantist pastimes is a luxury we cannot afford if we are to move with the times. Fractious and corrupt policy, absence of a strategic outlook, an unsound labour policy, the absence of a credible population policy which will not allow economic gains to be mopped up by ever increasing numbers are a few of the stark problems which we seem to have inherited from our prolonged subservience to European rule and colonialism. We seem to be unable to tackle them and break loose from the shackles of history. We would rather spend our time on trivialities.

If there is one lesson the history of the Indian Ocean which is relevant for India in today's circumstances it is that 'It is TRADE which enriches nations'. The Portuguese author of *Suma Orientale* Pires, put it very aptly when he wrote "For it is trade in general which ennobled kingdoms, made cities and citizens great and decided peace and war". Today's maritime scene in India is not encouraging certainly as far as trade, especially intra ocean trade, is concerned. There is little cooperation among Indian Ocean nations. The Indian mercantile marine is struggling to reach ten million tons net; the Indian shipbuilding industry is struggling to remain in business after the head start given to it long before Japan and Korea were even heard of. Our ports are among the most inefficient in Asia. Poor management and a pampered dock labour force afflicts them. The road and the rail infrastructure which serves them is outdated by several decades. The Indian Navy seems to lack a doctrine simply because politically we are a sea-unfriendly or ignorant nation. The navy has had no new surface induction in ten years. Not surprisingly, the defence forces are disinclined to look beyond Pakistan. Two Great Powers want to keep India in check by boosting Pakistan's war fighting capability on land and at sea. This may be irritating to us but there are at least two instances from our pre modern history that tell you about them. Shivaji was one of those rare kings of premodern India who understood

the importance of the sea to his swarajya. The sea carried trade and enriched his fledgling kingdom. It would also be a strategic fall back position in case of a severe setback to him on land. He had practised this fall back strategy during his expedition to Hosdurg near today's Mangalore. Shivaji admired the English in Bombay. He admired them for their courage to which he had twice been witness in his two raids on Surat. The English forces had held their ground even as the Mogul troops surrendered. He admired their skills at sea, in their well founded and well armed ships. He wished to purchase these technologies. He let them trade on his Coast and in return he requested that he be supplied some guns and that his shipwrights and gunsmiths be trained in the techniques. The English promised but never delivered. Instead they aided the Siddi of Janjira, the arch enemy of the Marathas at sea. Edwardes' comments in his volume 'Rise of Bombay' are revealing in the context of the contest between the English and the Marathas for supremacy on the west coast, a century later. He writes, "While the Angrias and the Marathas were at their zenith of power the secret of our power lay in the fact of our unity, of our being a united community (doing the bidding of the Directors in London) the keynote of the Company's policy was the necessity for holding aloof from the hostilities until they should be prepared to stand alone, to temporise, in fact, until the blighting effect of the past years had been eradicated..... but having decided which of their enemies were likely to prove the most troublesome, the representative of the company endeavoured to, as far as possible, keep on good terms with them and whenever it became necessary to side with one party or the other to give such assistance to the weaker as to prevent their being too speedily overwhelmed." It was a shrewd and clever policy which is reflected today in the policy of at least one Great Power vis-a-vis India and Pakistan. During the regime of the third Peshwa, Nanasahab, the English took full advantage of a raging dispute between Tulaji Angre, the sarkhel and his Prime Minister in Poona. The English, who had resented Angre's enforcement of the Dastak system for allowing passage of ships over waters controlled by the Maratha sarkhel since the great Kanhoji's days, were successful in persuading the Peshwa that his admiral was a pirate and that his policy of enforcing a restrictive policy was responsible for loss of revenue to the Peshwa. The latter allied with the principal enemy of the Maratha state to destroy his own admiral at Gheria in 1756.

Maratha supremacy at sea along the western littoral, so painstakingly built up by the great Kangoji Angre, with his son Tulaji at Gheria. A bare two centuries earlier in a similar internecine conflict, the Zamorin of Calicut had destroyed his admiral Kunjali IV with the help of his one time arch enemy, the Portuguese ! One wonders at the repeated follies of our rulers who think nothing of allying themselves with proven enemies against their own for some small, immediate gain. These instances from our maritime history should bring home to us the inconstant and utterly selfish nature of Indian rulers who have, very rare exceptions, subordinated national interests to their own. Please remember, ladies and gentlemen, that history casts long shadows.

Colonialism has left a mark on the history of the Indian Ocean. For better or for worse. Colonialism is not an invention of the contemporary nation state and it has not been restricted to powerful and dynamic countries of the west. We were among the first colonisers of Southeast Asia. For nearly fifteen hundred years Indians were what today would be called colonialists. With one notable exception, the modus operandi of history's leading colonial powers has been :

- (a) A resort to military force to gain control over the territory sought or coveted,
- (b) Establishment of a system of political control, usually through a pro-consul or viceroy,
- (c) Exploitation of resources and subjugation of the people, and finally,
- (d) Suppression of local culture and indigenous folkways

The exception to this, according to Professor Joel Larus, was the Indian colonisation of the lands bordering the eastern Indian Ocean and the southwest Pacific, lands which eventually came to be known as Greater India. The Hindu colonisation did not come in the wake of military action, neither was political subjugation nor economic exploitation on the agenda of the colonisers. Local culture was not swamped, nor was local religion suppressed in favour of the religion of the colonisers. Most historians of maritime India are unanimous in their view that the expansion of India into lands to the east was

exceptionally peaceful. Cultural syncretism was encouraged, religious tolerance fostered and social equality made a keystone in the interaction between the locals and the colonisers. Professor Larus concludes, "Indians who located themselves abroad conducted their trading relations with an unusually high degree of fairness".

Within India those who came here to trade and who eventually settled here enjoyed the patronage of the littoral kings and princes for the reasons I have already argued before you. It must surely have been a most interesting milieu. I can recall a little flavour of that milieu from my very first experience of Cochin, almost fifty years ago as a young and impressionable naval officer. The Jews were still there in large numbers, both black and white, the Ashkenaz and the Sephardzim. There were Arabs and Iranians, Armenians and, of course, the English and the Scots who were the backbone of the time, still exclusively white. They must have then represented the rear guard of those once flourishing cosmopolitan port communities of India. Bombay or now Mumbai was then the greatest port of India, as it still is. It owes its greatness to a farseeing Englishman who as the President of the Surat factory of the Honourable East India Company moved his headquarters to Bombay Island in 1672 for economic, political as well as strategic reasons. It was a master stroke. It was to gain for the English mastery of the Indian seas and with it of western India, a hundred and fifty years later. Eventually it led to the subjugation of India itself by a trading company! The coast, for the first time in Indian history, became the bridgehead for the conquest of the interior. Thank you.

SESSION II

MARITIME ACTIVITY IN THE INDIAN OCEAN

Chairman : J G Nadkarni

Main Speaker : M P Pinto

PAPER PRESENTED BY SHRI M.P. PINTO

Any attempt to cover a subject like maritime activity in the Indian Ocean must necessarily be tempered by the vastness of the subject and the consequent difficulty of focusing on any specific area of activity on which one can concentrate. Theoretically speaking, maritime activity covers not merely sailing and navigation but also shore-based and ship-related activities like stevedoring, freight forwarding, chandlery and a host of other activities. For the purpose of this talk, however, I propose to concentrate on the more limited areas of navigation and the problems and challenges that will undoubtedly be thrown up by the increased use of the Indian Ocean as an area of enhanced economic activity and trade related development. It must be remembered that much of this activity will depend for its growth and development on the carriage of goods by sea.

The first forays by Indian ships into the high seas were directed more towards their neighbours than towards destinations further away. The early Chola initiatives into seafaring targetted areas in the Indian Ocean region where trade and commerce as well as cultural ties were of prime importance. As time went by, the whole country became the centre of a world economy organized around the Indian Ocean. India in fact occupied a pivotal position as the link joining the Eastern and Western stretches of the economic zone that was formed around the Indian Ocean. Giorgio Borsa describes how several flourishing port cities on both the coasts of India served the needs of this Indian Ocean centred world economy with Surat on the West

Coast forming its hub as a major transshipment port famous for its skills in "navigation, trade, industry and credit".

It was the European invasion of India in the sixteenth and seventeenth centuries that shattered the insulation of this flourishing Indian Ocean economy forcing its assimilation in the larger Euro centred world economy. This early globalisation of the Indian economy did bring prosperity to all people, especially to the merchants of Surat, but the conflict among the European powers for domination of this area finally resulted in the victory of the British and with this came the decline of both Indian shipping and the Indian Ocean centred world economy. It is not part of my brief here to dwell on the different measures that the Imperial Power took to stifle Indian initiative in shipping and the development of close economic ties with countries of the Indian Ocean. Suffice it to say that by the end of the nineteenth century India had been removed from the ranks of countries that counted in shipping, ship-building and seafaring above the rank of rating. Thus, it was that when, after the first world war in 1919, the first Indian ship set sail set on an international voyage of importance and significance, its destination was not a country in the Indian Ocean, but the capital of the colonial power, London. In a daring assertion of defiance, the SS "Loyalty" set sail for London with its own flag bearing a traditional Indian symbol. The world economy centred around the Indian Ocean had really and truly been dismantled.

Nearly 80 years have elapsed since the intrepid pioneers of modern Indian shipping made their historic voyage to the destination that was then considered to be the centre of both world commerce and imperial power. Now into the 50th year of Indian independence, a new and dynamic movement away from the traditional centres of world trade and commerce is being orchestrated by India. We have seen the initiative taken to establish a new trade and developmental grouping that will have for its centre and focus the countries of the Indian Ocean Rim. At long last, tired of paying mere lip service to the concept of South-South trade, and eager to get on with the business of developing commercial ties between natural allies at comparable levels of development, a group of countries in the Indian Ocean Rim is getting ready to put in place a new trade related endeavour.

I notice that the economic dimension of this new grouping will be explored in some detail tomorrow and, I will look at another aspect of this new grouping that demands our attention. Trade among members of this new grouping must inevitably increase substantially—some might even say, exponentially. The greater part of this increased trade must equally inevitably be carried by sea. So in the next years, if things go as planned, we are likely to see much more activity in the Indian Ocean than in the past. What effect will this new development have and what are its implications for us ?

The most immediate effect of this increased maritime activity is likely to be an increased level of pollution at sea. To some extent, this is an inevitable concomitant of development and until recently we would have been prepared to accept this as its down-side. This is no longer the case. Maritime pollution has assumed such alarming proportions that the world community has got together to put a stop to what they see as the wanton despoiling of the earth's natural resources in the name of development. "Cleaner ships for cleaner oceans" has become a watchword and a slogan for the nations of the world. To achieve this end, the IMO called a conference of maritime nations especially to address the vexed question of pollution at sea. Months and years of hard bargaining and negotiation produced the International Convention for the Prevention of Pollution from ships 1973 and its related Protocol of 1978. Today these are known the world over as MARPOL 73/78.

The MARPOL Convention covers a wide range of measures needed to combat pollution. It is divided into 5 Annexes each dealing with a particular aspect of pollution. Annex I deals with pollution by Oil. Annex II deals with Pollution by noxious liquid substances carried in bulk. Annex III deals with by harmful substances carried by sea in packaged forms. Annex IV deals with Pollution by sewage from ships and Annex V with Pollution from garbage from ships. In September 1997, the IMO agreed to add a sixth Annex to the Convention. This latest addition covers air pollution caused by marine diesel engines using oil with high sulphur content.

Let us look at each of these separately and see what effect they have on the increased activity that we foresee in the Indian Ocean. To

begin with, we must remember that, while India has ratified Annexes I and II, she has yet to ratify Annexes, III, IV and V. Annex I requires each ship to install equipment needed to process oily water mixtures with oil content to the level of 15.PPM before they are discharged into the sea. Any residue that cannot be so treated must be kept in a retaining tank. This residue has to be discharged into a reception facility at port. Ports must, therefore, have reception facilities capable of receiving this waste and disposing of it suitably. Each ship is also required to maintain an oil record book which shows whether the vessel is in fact following regulations pertaining to discharge.

You must remember that Indian ports currently handle about 98 million tonnes of petroleum products per annum. In addition, about 60 percent of the world tanker traffic for the carriage of oil passes through the Indian Ocean region. These are amazingly large figures which are expected to become even larger over the years with the development of the Indian Ocean region. It is estimated that India itself will import about 95 million tonnes of crude by 2002 up from its present level of 30 million tonnes. Yet there is scarcely an Indian port that has adequate reception facilities. The result is that harmful waste is routinely dumped into the ocean raising pollution in the sea to unacceptably high levels. Unless we can provide appropriate reception facilities, it will be impossible to demand compliance with the provisions of MARPOL from ship.

The documentary evidence provided by the record books is a very important tool in the fight against pollution. Yet, unless we have a sufficient number of trained inspectors to examine these books, it will be virtually impossible to ensure that waste has been adequately treated. Today, India finds herself desperately short of trained Surveyors for this task. If we cannot ensure adequate supervision there is every likelihood that ships will take their responsibilities in this respect very lightly. With the Indian Ocean becoming an increasingly important destination for world trade. this is a risk that we cannot afford.

Three steps can be taken to meet this problem. The first is to see if terminal managers and pilots can be asked to check the record books while bringing ships into berth. The second is to tighten port

state control mechanisms. The third is to introduce a measure of regional cooperation in the use of satellites for monitoring operational pollution in the Indian Ocean. All three have been successfully tried in other countries so there is really no reason why they cannot be done here.

Annex II details the additional requirement on ship equipment and structure needed to prevent pollution from the carriage of noxious liquid substances in bulk. These requirements, pertaining to hull and equipment, are laid down in great detail in the annex and are certified as having been complied with by the International Pollution Prevention Certificate (IPPC) for the carriage of noxious liquid substances and by the certificate of fitness that each ship must carry. Each ship must also maintain a cargo record book which will indicate whether it is following the prescribed procedures laid down in the Procedures and Arrangement Manual of the ship. Here again, the major impediment to full implementation of the annex is the paucity of staff to inspect the record books and the dearth of suitable reception facilities to accept residues from ships. The solutions proposed are the same as in the case of Annex I.

Annex III which came into force on 1st July, 1992 mandates the kind of packaging and containers that must be used in the transportation of chemicals by sea. The idea is to ensure that in case of spillage there is no danger to marine aquatic life. As I said earlier, India has not ratified this Annex but this in many ways is a disadvantage. Indian shipowners carrying such cargo to countries which have ratified it must comply with its provisions or face the consequences. Yet foreign shipowners who bring such cargo to our shores are not placed under a similar obligation because we have not ratified the Convention and, therefore, cannot insist on full compliance with it. To facilitate Indian export of such cargo, we have authorised the Indian Institute of Packaging at Mumbai, Chennai, Calcutta and Delhi to certify packaging to the standards required by the Convention.

Since the required number of countries have not yet ratified it, Annex IV has not yet come into force. Even without this however, most Western countries have started implementing it in an attempt to keep their waters sewage free. To comply with this annex, ships must have a sewage treatment plant or a sewage holding tank. Most ships

built in the last 20 years or so do have one or the other but, here again, the problem is the lack of reception facilities in ports. It is impossible to over-emphasise the importance of this facility in the context of the challenge of keeping our waters pollution free even as maritime activity in the Indian Ocean increases. The polluting effects of the unbridled release of untreated sewage in our waters can readily be appreciated and the more maritime activity increases the more we will be faced with this problems.

Annex V came into force on 31st December, 1998 but has not yet been ratified by us. It mandates disposal of garbage through incineration or through port based reception facilities. Garbage is cleared at Indian ports but the emphasis should now be on ensuring that the contractors hired for this purpose actually perform their task adequately, that ports pay adequate attention to the problem and do not allow their environs to be used as dumping grounds.

Finally, in September last year the world maritime community alarmed at the depletion of the ozone layer, finalised a new annex to address the question of aerial pollution from ships. Obviously, it has yet to come into force but, as and when it does, it will put an increased burden on shipping companies and hence, by implication, on exporters.

The above discussion points to the clear need for putting in place adequate reception facilities in all major ports in India and for establishing a suitable inspection mechanism that will ensure adherence to mandated rules and regulations. While highlighting the inadequacy of the reception facilities in some ports, the Baltic and International Maritime Council (BIMCO) noted as follows in a paper to the IMO:-

"Provision of port reception facilities for oily, chemical and solid wastes from visiting ships, remains contentious, blending environmental and economic issues and involving governments, port authorities and the shipping industry. It is a fact that, causing undue delays, inconvenience or operating with cost beyond a reasonable level".

For those concerned with protection of the environment in the context of the increased maritime activity in the Indian ocean region,

inadequate facilities in ports, high or unreasonable charges for these facilities or inconsistencies between the posted services and those available when a ship reaches its port, remain areas of grave concern. India cannot afford to subject her environment to the dangers of unregulated disposal of waste. Clearly, our ports must put a suitable mechanism in place immediately.

The question of ensuring compliance with mandated regulations through inspection is an important facet of Port State Control. So far Port State Control inspections in this area have tended to be haphazard and ad-hoc with each country imposing its own standards on foreign ships. The absence of a uniform system, in which objective criteria will be laid down so that ships know what they have to comply with, has greatly affected shipping in the area. While some countries have been strict in the implementation of IMO Conventions and Protocols through Port State Control, others have been somewhat lax. This results in a situation in which some ports are the terror and scourge of rust-buckets and ships of shame while others provide safe havens for them. Unless a uniform regime that upholds internationally accepted standards without fear or favour is put in place, it is going to be extremely difficult to address this question.

Over the years, countries in different parts of the world have joined together to adopt a regional approach to Port State Control. The first of such groupings comprising countries of Europe is known as the Paris MoU. Subsequently, other regional groupings in the Asia Pacific (known as Tokyo MoU), the Caribbean, Latin America and the Mediterranean MoU have come into being. For some time we have been keenly aware of the need for a similar regional approach in the Indian ocean region. Without this, any concerted effort to combat pollution, protect the environment and ensure the safety of life at sea becomes infructuous. Last year, India Australia and South Africa together took the initiative to set up a regional MoU for Port State Control among countries of the Indian Ocean rim. The first preparatory meeting was held in Mumbai in October 1997. As many as 21 countries from the region participated enthusiastically. This was preceded by an Indian expert engaged by the IMO. After a week of long deliberations, the Mumbai meeting prepared a draft MoU which was taken back by each participant to secure the approval of his

country. The next meeting is scheduled to be held in South Africa in June 1998 at which time, the final MoU is expected to gain approval.

The importance of this initiative cannot be over-emphasised. Among the many advantages that a regional approach to Port State Control commands are the following:-

- I) More effective sharing of the information
- II) Extended control of the ships in regional waters
- III) Harmonised system of surveys and inspections
- IV) Better cost/benefit returns
- V) Unfair competition between ports in the region avoided
- VI) Special characteristics of the region taken into account
- VII) Global cooperation would become easier with interregional co-operation through limited number of regional secretariat
- VIII) Deterrent for substandard ships to operate elsewhere in the world will be increased.

The establishment of the various regional Port State Control regimes, essential as it is, is only a beginning. The problems already identified within the European MoU, which after all is composed of quite homogeneous maritime administrations, will be accentuated in other regions. Some of the problems to be encountered are related to the peculiarities of the regions and their different stages of development. These would naturally dictate a different pattern of control. The methodology of inspection, targets to be achieved and the varying levels of training and experience among the control officers would clearly make a uniform approach rather difficult. This lack of uniformity could lead to abuse of the powers inherent in the Port State Control system. It is, therefore, imperative to continue to work towards harmonisation of basic procedures and qualification\experience of control officers. The IMO Sub-Committee on flag State Implementation (FSI) has agreed on a global criticism as to their quality. It has also

been agreed that the FSI Sub-Committee should develop a Code of Conduct for PSC Officers. The world-wide application would ensure uniformity of standards. Exchange of information between the regions would increase effectiveness of control and the regional reports would provide IMO with value statistical data.

It is impossible to over-estimate the importance of the regional initiative that we have taken for the establishment of an MoU for Port State Control. The move indicates, as few other things do, the commitment of this region to the goal of a cleaner and safer Indian Ocean. It is a vital part of the total maritime scene in the Indian Ocean.

Finally, there is one maritime activity that could well be thrown up by an resurgent Indian Ocean Rim economic region and that is the area of ship repair. We have noted that more than 60% of the world tanker traffic passes through the Indian Ocean. India is ideally located to cater to the repair of both Indian and foreign ships passing through this region. With our comparatively smaller labour costs and reasonable levels of skill, it should be possible to establish a viable ship repair industry. If we can do this, we will capture an important area of maritime activity whose importance in the Indian Ocean can only continue to increase. The greater the movement of ships in this area, the greater will be the need for modern, state-of-the-art repair facilities. Instead of going to Singapore, Colombo or Dubai, shipping in this region could well have recourse to facilities at Indian ports. For this, we must establish world class facilities which will be comparable both in terms of costs and time with the best in the world. A strong ship repair base in this region will not only lead to greater conformity with international standards but will also lead to development of ancillary industries in the area. The economic potential of this must not be overlooked.

Maritime activity in the Indian Ocean is bound to increase with increased economic activity in the area. This represents both an opportunity and a challenge. The opportunity to increase prosperity through increased trade and commerce in the region must not be missed. The challenge of preserving and protecting our environment and the ocean, that is so much a part of our heritage, is enormous. Further generations will judge us by how well we utilised our opportunity and on how effectively we coped with the challenge.

SESSION III

INDIAN OCEAN RIM INITIATIVE

Chairman : J G Nadkarni
Main Speaker : Laxmi Puri
P V Rao

PAPER PRESENTED BY MS. LAXMI PURI, MEA

It is a privilege and a pleasure to participate in this seminar on "Indian Ocean Rim : the Challenges Ahead". It is a good opportunity for Ministry of External Affairs to look up from the treadmill of day to day policy making and implementation at the larger setting and the strategic perspectives that must at all times be kept in focus. I convey the best wishes of the Foreign Secretary who could not be here to inaugurate the seminar due to unavoidable reasons.

The theme that I would like to address is the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC) - the challenges ahead for this fledgling ocean based grouping, since the Ministry of External Affairs has been involved in putting together and advancing this initiative. The basic challenge with regard to IOR-ARC for Indian diplomacy has been the idea itself. It has literally been a feat of association to put together this association. When in 1992-93 the idea was being discussed in a preliminary manner among the cognoscenti, questions were raised whether this was not "a pie in the sky" or shall I say only "a wave in the ocean". Given the fate of previous such experiments in establishing inter governmental organisations or initiatives, those involved had to reassure themselves and others that this time the initiative is for real.

We have had to reckon with some inherent problems on account of the (a) vast expanse of the rim and the region, (b) diversity of countries, (c) the fact that not all are naturally contiguous one to the other, (d) different levels of development including many low income or least developed countries, (e) the logistics of geo-economics being

difficult to put in place, (f) the ocean being a unifier but also bringing out competing interests of both regional and extra regional countries and (g) the difficulties of rolling back the vestiges of colonial and cold war era.

Against these challenges the IOR-ARC set itself the objectives of (i) recapturing the feeling and sense of a vibrant littoral community of states which existed before European colonialism and later the cold war, (ii) going back to the future of IOR-ARC becoming a powerful hub of economic activity with the major stimuli coming from within the region; this notwithstanding the entrenched patterns of dependency IOR-ARC states have vis-a-vis the extra regional metropolitan economies. (iii) regaining the initiative in globalisation through the establishment of a mega economic imperatives. (iv) to move from the periphery of the global economy to its center in two ways (a) internal dynamism of IOR-ARC economies to be buttressed by regional growth multiplier effect (b) become more competitive through exploiting the synergies and complementarities of IOR-ARC in terms of the resources, assets and needs-extant and potential; (v) IOR-ARC was also meant to provide a mega form for regional cooperation so that IOR-ARC countries do not miss out on the benefits of the all pervasive regionalisation of the world economy and the proliferation of trade blocs including in the Indian Ocean Region.

Let me briefly identify the circumstances which made IOR-ARC possible and which in our view gives it a better chance of success compared to previous efforts.

- i) In the last 20 years there has been a massive revival in some regional economies, in their global competitiveness and in the growth in intra trade and economic interaction. Thus between 1988 and 1995, global trade of Indian Ocean Rim countries doubled to become \$ 1 trillion, 68% of which was accounted for by M-14 countries. Similarly, intra trade among M-14 countries has been steadily increasing in the 1990s by about 30% per annum and presently stands at \$ 100 billion.
- ii) There has been some natural erosion of North South dependency reviving an interest in regional cooperation and the logic of geo-

economics. Thus as IOR-ARC countries embraced progressively outward looking economic policies in their search for trade and investment driven growth, they saw merit in cultivating the IOR-ARC option as a means of getting new economic space.

- iii) Political will was deployed towards promoting regionwide economic interaction and countries positioned themselves to make the best of the opportunities provided. This was manifested in the nodal points in the Rim - the triad of Australia, India, South Africa - but also South East Asia, Gulf, East Africa and island States. Mauritius a dynamic Indian Ocean State from Africa took the M-7 initiative 1995 and evoked a positive response from others. Australia also launched its look west policy which targeted the Indian Ocean States as well as India. South Africa saw IOR-ARC as a means of mainstreaming and establishing an Asian dimension to its role as a 'regional driver' in Africa. These countries then added another 7 countries to form M-14. An Indian Ocean Rim Association for Regional Cooperation was launched in March, 1997 and the initiative was seen to have achieved a critical mass.
- iv) The military and political dimensions of security for both regional and extra regional powers receded in the post cold war era and they became a means to the achievement of vital economic goals associated with the Indian Ocean. The strategic importance of the Indian Ocean got accentuated. Hence the greater importance attached by IOR-ARC countries to intra regional cooperation as a stepping stone to establishing a greater regional say in Ocean governance which till recently has been led by extra regional powers.

Challenges faced by IOR-ARC

- i) The first challenge that the IOR-ARC has faced is one of self-definition. The geographical scope of IOR-ARC has been discussed right from the inception of this grouping and whilst there is agreement that the universalist approach be followed in terms of eventual participation of all eligible Rim countries, there is agreement that the membership expansion would be

evolutionary. The definition of the Rim has only just begun along with other membership related criteria including other forms of association. Meeting of the working group on membership issue was held in November, 1997 in Mauritius and has made certain recommendations in this regard keeping in view the balance between the legitimate interest of the countries of the region and the need to keep the grouping manageable and effective. If too expansive a criteria is established, we could be looking at an organisation with nearly 60 members which as our South African friends pointed out, would make it a 'mini United Nations'. On the other hand it was important that all the sub regions of the Rim proper be adequately represented in the grouping.

- ii) As regards the scope of cooperation there has been much discussion on whether it should be limited to economic cooperation or move on to encompass security issues as an integral part or even as a separate undertaking a la APEC and ARF. Similarly, there has also been consideration of whether or not other issues such as marine affairs, environment, communications and the three Ps (pollution, poaching and piracy) should not also be included in IOR-ARC's scope of activities. It is recognised that these activities are necessary to be co-opted into IOR-ARC work programme if it is truly to justify its ocean based synergy. However for the present it has been decided that we will focus on some key areas of economic cooperation - trade promotion, facilitation and liberalisation, investment promotion, technology transfer, human resource development and tourism. Hence we have opted for an incremental rather than a once for all approach.
- iii) Another dilemma relates to whether IOR-ARC should confine itself to broader regional cooperation or attempt deeper integration. For example, whilst the IOR-ARC is not a PTA per se, member countries are free to enter into preferential trading arrangements among themselves. Also whilst economic relations among member countries are to be intensified, 'open regionalism' is to be given importance.

- iv) There are a number of sub regional and regional groupings and free trade arrangements in the Indian Ocean Region which are themselves in the process of consolidation and therefore to some extent constraints the capacity and willingness of IOR-ARC member state to make significant commitments to this new grouping. However, this can be a positive factor and these groupings can act as building lots for the larger Indian Ocean community.
- v) A number of inter governmental and non governmental fora of cooperation exist dealing with various aspects of India Ocean cooperation for example IOTO, IOMAC, etc. IOR-ARC will have to spell out what form of association it will have with these organisations and how the work programme can draw upon what is being done elsewhere. This is an issue which is being addressed through a system of observership or dialogue partnership that IOR-ARC may have.
- vi) There is an overweaning interest of extra regional powers - France, US, UK, Japan, Russia, China and whilst this could be accommodated through the various forms of association being evolved, it has to be ensured that the community building effort is not derailed.
- vii) The competing interests and priorities of IOR-ARC members have to be managed in a way that substantive cooperation in IOR-ARC does not suffer and faith is kept in its value. We are therefore focussing on implementing the practical work programme with the involvement of business and the academic community who are providing the knowledge base and economic drive for the enterprise.

Indian Interest

Centrality of India to the Indian Ocean and of the Indian Ocean to India's economic and strategic interests has already been brought out by other speakers and the paper circulated by the CASS. For India, IOR-ARC is an attempt at self-realisation in the regional and global

context. Some key determinance of our IOR-ARC orientation include our extended neighborhood and look east policy, our affirmation of an Afro Asian destiny, possibilities of rising above the limitations of our purely South Asian moorings and to cope with the challenges posed by other mega groupings of which we are not members such as NAFTA, APFC and the expanding EU. It represents new economic space for an outward looking India with trade, investment, HRD, S&T cooperation as well as tourism becomes "growth activities". We also have an important asset in the India Ocean Rim in the form of the Indian diaspora the bulk of whom live in this region. Others too seek us as a key partner for cooperation in the IOR-ARC in terms of a large and growing market, our economic liberalisation programme, our technical and scientific manpower and our strategic placement and reach.

It is therefore in India's interest to move IOR-ARC towards stronger cooperation and deeper integration including through devices such as the PTA. We want to see substantive progress in the implementation of our work programme so that IOR-ARC is not rendered just a political club but one which serves the vital economic interests of India and other member states and eventually covers the totality of Indian Ocean cooperation including maritime resources governance and sustainable utilisation and security. These are early days for our diplomacy in IOR-ARC but crucial days because if we don't move forward steadily enough we will be overtaken by the tide of other supra regional, sub-regional and global developments.

THE INDIAN OCEAN RIM INITIATIVE: PROBLEMS AND PERSPECTIVES

PAPER PRESENTED BY PROFESSOR P.V. RAO

The two significant developments that shaped the world in recent years have brought in structural changes in the global political and economic system. These two developments, end of cold war and globalisation- compelled the nations to radically redefine their political and economic policy regimes. The incidence of the twin events either by coincidence or through a logical correlation exerted states across the world to move hastily to catch up with the rapid pace of the new global phenomenon. The Indian Ocean, Region (IOR), vastly populated and heterogeneously spread around the coastal waters of the ocean, could hardly remain unaffected by the shape of the above events. The withdrawal of the Soviet navy from the IOR, the emergence of new independent republics in Central Asia cosequent upon the collapse of the Soviet system, the gulf war, the end of the apartheid regime in South Africa are some of the major events which invariably forced the IOR states to reorient their foreign and security policies. But above all, is the political and military supremacy of the United States and her overall presence in the IOR that is at the core of the new strategic and security perspectives of the states in the IOR.

In economic terms, globalisation is another equally significant development that has forced a radical reshaping of the economic regimes of the developed world. The protracted Uruguay Round Multilateral Trade Negotiations ended in empowering the GATT regime with greater scope and mandate to regulate the world trade and economic policies, to be monitored by its successor agency the World Trade Organisation (WTO). Through the expansive logic of adding trade and services to the world economic regulatory mechanism, the developed world has succeeded in endowing universality to the philosophy of market economy. Yet" despite progressive attempts at formal liberalisation on a global basis through the Kennedy, Tokyo, and Uruguay round, the world trade grew progressively more regionalised across the 1980s and early 1990s within Europe, North America, and East Asia."¹

The WTO regime carries far more implications for the IOR which represents three-fourths of world's developing societies. These third world countries which once defied the bipolar divide by espousing an alternative model of peace (non-alignment) and economic system (NIEO), today have little choice but lend themselves to the forces of global economic integration. Market reforms are undertaken to replace post-colonial ideologies of socialist transformation to mixed economy. Commanding heights of the economy which were so jealously guarded once are subordinated to private and foreign market forces. Protectionism and import-substitution, meant to encourage the native entrepreneurs are replaced by open economies and trade liberalisation. Hence, under the impact of globalisation, the IOR countries today are engaged in forging new forms of economic linkages and groups.

Globalisation and the New Regionalism

What the world is witnessing today is the parallel process of global integration of capital, production, services, trade and technology and a simultaneous regionalisation of economies. While "there is no necessary conflict in principle,....there is the possibility of regionalism undermining the steady progress toward global free trade...."² The New Regionalism transcends the conventional definition of regional boundaries and encourages transregional economic trade blocs and linkages. Reflecting the political/ideological divide of the cold war period, a 'region' was understood as a homogenous geo-political entity which also served as the framework for regional economic cooperation. EEC, NAFTA and ASEAN were not just economic entities but they carried heavier political overtones. The Treaty of Rome (1957) which created the EEC had the political objective of regaining Europe's identity in the superpower dominated world power structure. ASEAN was a shadow of the defunct SEATO and it took more than a decade to put economic teeth into organisation.

On the contrary, what is underway today is the emergence of transregional groupings primarily for economic purposes. Earlier the political element was at the core of regional formations. The Asia Pacific Economic Cooperation (APEC) is the best example of the new phenomenon of economic regionalism. Very soon the NAFTA and the EU are likely to join the process. Chile, Venezuela and Columbia as

also Singapore and South Korea are considered as NAFTA's prospective members. Similarly, the EU has been expanded to the north with the admission of Austria, Finland and Sweden in 1995 and its further expansion to include the East European countries does not appear to be far away.

The kind of the economic arrangements that characterise the New Regionalism, apart from being transregional in their scope, are also outward-looking. Instead of the inward-looking regional economic blocs of the past which were protectionist and restrictive in membership, current efforts are to create bodies like the APEC and NAFTA which allow easier exchange of capital and commodities, create market-friendly regimes and be open ended in membership.

First, the regionalism of the 1960s represented an extension of import-substitution-industrialisation strategy from the national to the regional level and was therefore inward-looking. The current regionalism is by contrast taking place in an environment of outward-looking policies. Second, in the 1960s developing countries pursued RI (regional integration) exclusively with other developing countries. Today, these countries especially in Latin America have their eyes on integration with large, developed countries.³

Within the IOR important, rather historic, political and economic developments, complemented the wave of New Regionalism. India's adoption of liberal economic reforms in 1990-91 and the change of regime in South Africa were two most important events which served as catalysts in IORs globalising process. Australia's "Look West" policy of more recent origin which emphasised closer economic links with countries to the west of her shores, added momentum to the phenomenon of new regionalism in the IOR. Two multilateral initiatives were undertaken in the IOR to promote intra-regional cooperation between the rim countries in the spirit of new regionalism. First, the Mauritius Initiative, also called the M-7 as the original members who proposed the idea of a rim plan numbered seven. More will be known about this plan in the ensuing sections.

The second initiative to forge the IOR countries into a wider multilateral economic forum was mooted mainly by Australia. The

then Australian foreign minister, Gareth Evans, strongly canvassed for this 'forum' to be participated by non-officials from the region, businessmen, academia and bureaucrats as observers. This track two dialogue was held at Perth attended by participants from 23 IOR countries. While the track one dialogue, the M-7, was official in nature and met in March 1995, the Perth Meeting or the IFIOR (International Forum on the Indian Ocean region) was held in June 1995. That the two conclaves on Indian Ocean regional cooperation gathered within a negligible gap of three months conveys more about their timing and hence a debatable point.

The Rim Initiative :

The idea of biringing together the IOR countries into a new form of economic framework was first publicly stated by Mauritius. This small Indian Ocean (IO) island initially favoured the approach of "moving through sub-regions rather than getting stuck because all the elements are not there for forward movement in the whole of the Indian Ocean region,"⁴ as explained by her foreign minister in August 1992. The precise nature of the proposed framework, however, was not spelt out. About a year and half later, the Mauritian prime minister, elaborating the rim idea, called for the creation of an Indian Ocean rim trading bloc" at the level of economic cooperation and integration between Asian and African countries, as also Australia". Citing the impending change of government in South Africa and the Indian Economic reforms as the positive developments which created new opportunities for both intra-regional international trade, he reasoned that his country could be an important business bridge between India and Africa if the Indian Ocean Rim concept materialises.⁵

That the idea of rim plan for the IO coming from Mauritius needs to be viewed in the context of the island's geopolitical proximity to India. Her foreign policies were not much at variance with those of India. During the cold war she was a non-aligned country with pro-Soviet leanings and received India's full support on the Diego Garcia issue. Her pro-Indian orientation survived the end of cold war going by the island's recent support to India's stand on the NPT. Throughout the early nineties several Mauritian dignitaries including the president

of the republic visited India and reiterated the latter's crucial importance to the rim idea. Mauritius, as the former French president Mitterand had complimented, is a model of development with democracy which other African states should emulate. A middle-ranking country with around 1.2 million population, she is ambitious to acquire an NIC status (the first African Tiger!). She has to this end created port facilities, an offshore business centre and very attractive tax concessions to invite foreign capital, manpower and technology. Here major focus is on India who could, given her transition to market economy, play a key role in the island's drive to emulate the East Asian tigers. Moreover, the role of the Indian diaspora in Maauritius which constitutes about 70% of the island's population is an important element in the Mauritian initiative on the rim trade bloc.

Synchronising with the Mauritian call for the rim trade bloc, South Africa too, as the apartheid regime was preparing to transfer power to the balck majority, started exploring opportunities for closer political and economic links with the IO countries. Official and non-official exchange of delegations took place between South Africa and India from early nineties. According to a South African source the "idea of an Indian Ocean rim trade bloc was first mooted by South Africa and India more than a year ago," in 1992. The chief of the South African trade and Investment visited India in May 1993 and called for an Indian Ocean rim bloc to be developed both by his country and India. Hardly a month later a FIEO (Federation of Indian Exports Organisation) delegation reciprocated the South African visit and supported the idea of a rim trade bloc consisting of India, South Africa, Sri Lanka, Maldives, Sychelles, Madagascar, Comorons, and the Re Union islands. South Africa's well developed ports were viewed as offering an attractive transit point to India's exports to the hinterland countries of Africa as also of South America.

Diplomatic relations between India and South Africa were established in November 1993 when South African foreign minister Pik Botha visited New Delhi. The visiting foreign minister greeted the new official relationship with the call for an economic grouping of IO countries covering East African and Gulf countries and India and Pakistan. Such a grouping would initially take up environment, marine affairs and similar issues and later move to trade. Botha expected

India's cooperation in holding the first congress of IO grouping in the following year, 1994, when his country goes to elections. No mention about Australia was made. Pik Botha's rim idea was reinforced by President Nelson Mandela when he visited India as her chief guest at the republic day ceremony. The "unique and special relationship" between India and South Africa, Mandela said, "is, above all, premised on building of future that will benefit our people and the nations of the Indian Ocean Rim. "6

By early 1995, following the active exploration of the rim idea, in March 1995, at Port Louis, the Indian Ocean Rim Initiative (IORI) was launched by seven littorals of the IO: Australia, India, Kenya, Mauritius, Oman, Singapore and South Africa. The participating countries declared that the IORI "in the spirit of open regionalism seeks to build and expand understanding, mutually beneficial cooperation through a consensus-based, evolutionary and non-intrusive approach." The means to promote such cooperation would be through a regional forum, tripartite in nature, by bringing together representatives of government, business and academia. The IORI laid down its main objectives as follows.

- Promote the welfare of the peoples of the participating countries through carefully designed programmes to improve their standards of living and quality of life.
- Promote the sustained growth and balanced development of the region and of the member states.
- Formulate and implement programs for economic cooperation, including inter alia, expansion of trade, tourism, direct investment, scientific and technological exchanges and human resource development.
- Reduce impediments and lower barriers towards free and enhanced flow of goods, services, investment and technology within the region.
- Encourage close interaction of trade and industry, academic institutions, scholars and the peoples of the member countries in international fora on global economic issues, and

- Promote cooperation in development of human resources, through closer linkages among training institutions, universities, and other specialised institutions.

The IORI is just an intergovernmental agency in which decisions should be reached by consensus. It is conceived neither as a closed trade bloc nor as a preferential trading area (PTA) nor as a free trade zone (FTZ). Similarly its scope of activity is also not very exhaustive. The areas of cooperation are mainly related to trade promotion and facilitation.

The IORI meeting at Mauritius also set up a working group which was entrusted with the task of drafting a charter and preparing an action plan for implementing the above objectives. Acting rapidly, the working group succeeded in obtaining consensus on two crucial issues: enlarging the membership and a draft charter. Seven more members were added to the IORI by 1996, viz; Indonesia; Madagascar; Malaysia, Sri Lanka, Tanzania, and Yemen. In March 1997, at Port Louis, the foreign ministers of fourteen members adopted the IORI charter. The charter formalised the name of the rim group as Indian Ocean Rim Association for Regional Cooperation (IOR-ARC)

The charter of the IOR-ARC declares in its Fundamental Principles that it "seeks to build and expand understanding and mutually beneficial cooperation through a consensus-based, evolutionary and non-intrusive approach"; that decisions will be taken "on the basis of consensus"; The charter reiterates in its objectives broadly those which were outlined at the first meeting of the original seven in March 1995. The major objectives as declared by the charter may, nevertheless, be highlighted as follows:

- "...to formulate and implement projects for economic cooperation relating to trade facilitation, promotion and liberalisation; promotion of foreign investment, scientific and technological exchanges, and tourism...."
- "Towards promoting liberalisation, to remove impediments to, and lower barriers towards, freer and enhanced flow of goods, services, investment and technology within the region."

- "To explore all possibilities and avenues for trade liberalisation with a view to augmenting and diversifying trade flows among Member States."
- "To encourage close interaction of trade and industry, academic institutions, scholars and the peoples of the Member States..."

The IOR-ARC charter establishes an institutional mechanism which consists of a Council of Ministers, meeting once in two years, to formulate policies, and a Committee of Senior Officials of all members to review the implementation of the decisions by the former. Two regular agencies, the Indian Ocean Rim Business Forum (IORBF) and the Indian Ocean Rim Academic Group (IORAG) are appointed to develop, monitor and coordinate the Work Port Louis, also identified ten major projects such as: cooperation in standards and accreditation: investment facilitation and promotion; human resource development corporation: and technology advancement in the Indian Ocean region.⁸

India And The IOR-ARC

India's participation in the Indian Ocean's latest broad-based association representing all the flocks of the region's coast can be justified on almost every conceivable ground, historical, cultural, political, economic, scientific and technological. The pivotal role that she assumed in the post-colonial age in the IOR, either in the non-aligned movement or in the north-south dialogue or in the disarmament crusade or in the region's peace zone movement overly qualify her active involvement once again in the region's affairs, albeit in a changed global political and economic climate. In fact, given the shift in world power structure from military to economic strength and the shift of global attention towards the Indian Ocean, it is natural and imperative for a country of India's size and potential to respond actively to the rapidly altering scenario.

There is no wonder, therefore, that India played a lead role in the evolution of the IOR-ARC, in the selection of its venue, nature of issues for deliberation and the scope of membership. Reminiscent of her role in the promotion of the Afro-Asian solidarity India, as

explained by V.K.Grover, head of the Indian delegation at Mauritius, "perceives an Indian Ocean Rim Initiative (IORI) from the depths of the Afro-Asian consciousness which Mahatma Gandhi and Jawaharlal Nehru imbued in us, as well as from shared experience." The Afro-Asian rationale, however does not exclude Australia as Nehru, in defining Asia liked Australia "to come nearer to Asia. There they are."⁹ But, the objective factors which helped build the Afro-Asian consciousness-anti-colonialism, anti-imperialism, anti-militarism and self-reliance- have long disappeared. With the dismal records of the NIEO, non-alignment and IOZP, it could be an illusion to look for shared values in the Afro-Asian world of today which can steer common ventures like the IOR-ARC. As a matter of fact it is being doubted if South Africa would take serious interest in the new association.

Should it, therefore, concentrate on relations with the North, which it needs so badly, or on its brothers in the South? Those who press for the primacy of the South are accused of being impractical idealists. Pro-Northerners are dubbed 'Eurocentric,' which is a highly derogatory term in today's South Africa.¹⁰

The dilemmas of defining its priorities by the post-apartheid regime, of choosing between the north or south, concentrating on the immediate African neighbourhood or the broader IOR, led South Africa to take "low key position in the IOR-ARC, not having taken a strong stand on any particular issue."¹¹ Next to India and South Africa, Australia is another key partner in littoral, under her "Look West" policy. But such assertion is not at the cost of her Pacific orientation and commitments. She is as closely identified with the western, especially the American, global and regional security perspectives as ever. The annual publication of Australia's Defence Department, Strategic Review(1993) proclaimed: "Australia's policies in the 90s are increasingly shaped by the need for engagement with Asia across the whole sphere of national activity, while continuing to sustain our strategic relationship with the US and ties to Europe." India's growing naval capabilities in the IO, her acquisition of a nuclear submarine and aircraft carrier were viewed with serious concern in Australia. The former Australian foreign minister Gareth Evans, visiting India in 1994 to canvass his case for an Indian Ocean

Forum, struck a reassuring nod on India's role in the region. An India Festival was organised in Australia in 1994 and her government brought out an official publication on economic opportunities in India titled, *India's Economy At The Midnight Hour*.

However, the IO members are not very confident of Australia's effective contribution or involvement in the region's economic cooperation. In fact, Evan's plea to the ASEAN in 1995 seeking its invitation to Australia to participate in the Asia-Europe Economic Meeting was coolly received by many Asian countries, provoking the Malaysian foreign minister to comment: "If I look at a map, I will immediately say that Australia is not a part of Asia,"¹² Australia's major interest is in the APEC and her interest in the IOR, at the moment, as the Australian scholar Kenneth Macpherson observed, is "fragile."¹³

Australia and India also held divergent views on the scope of membership and the nature of issues to be covered by the rim associations. India preferred a smaller body as opposed to a larger association of the rim countries. South Africa was also in favour of a larger participation. While Australia conceived the IO regional cooperation in terms of open regionalism, India was opposed of it. India also strongly opposed, along with South Africa, the inclusion of security matters within the framework of the regional forums. These divergent approaches were reflected in the M-7 and IFIOR associations.

The IOR-ARC: Economic Possibilities

Indian Ocean is an elusive system which defies a precise description either as region or a security system or an economic area. It is a region of huge natural resources but the very same remain underutilised and also serve as the source of conflict, global and local. Industrially, the growth rate in the IOR is uneven. Manufacturing sector is small, and many countries are increasingly diversifying towards it. India's manufacturing base is extremely wide and varied. Malaysia, Singapore, Indonesia and South Africa among the rim members have achieved substantial growth in the manufacturing sector. Trade between the IOR countries is largely bilateral. Intra-

regional trade, however, is growing gradually. The fourteen countries of the IOR-ARC account for 65% of the IO region's trade and they maintained a growth rate of more than 26% which shows that these countries are emerging the most dynamic segment of the IOR in the 1990s.¹⁴

However, to what extent the IOR-ARC will be able to meet its objectives of trade promotion and trade liberalisation leading to the economic growth of the region is determined by a multitude of internal and external factors. Such factors include the pace of market reforms in the member countries, their macroeconomic stability, domestic political order, the level of their economic relationship with the non-IOR countries, and global economic trends which include tariff and non-tariff barriers.



NOTES

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3. *Ibid*; p.159
4. *The Hindu*, August 8, 1992
5. *Economic Times*, January 26, 1994
6. *The Hindu*, January 27, 1995.
7. Joint Statement: Indian Ocean Rim Initiative International Meeting of Experts, Mauritius, March 29-31, 1995

8. For a verbatim reproduction of the IOR-ARC charter see, special issue on "INDIAN OCEAN RIM", World Focus, No.208 April 1997
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Table-1

**BASIC INDICATORS OF SELECTED INDIAN OCEAN
COUNTRIES**

Country	Population	Area	GNP Percapita	
	(Millions)	Thousands of sq.km)	(Dollars 1994)	(Average annual growth rate (%) 1994-95)
Australia	17.8	7.713	18.000	1.2
Bangladesh	117.9	144	220	2.0
India	913.6	3.288	320	2.9
Indonesia	190.4	1.905	880	6.0
Iran		1.648	-	-
Kenya	26.0	580	250	0.0
Malaysia	19.6	330	3.480	5.6
Mauritius	1.1	2	3.150	5.8
Oman	2.1	212	5.140	0.5
Pakistan	126.3	796	430	1.3
Singapore	2.9	1	22.500	6.1
Saudi Arabia	17.8	2.150	7.050	-1.2
South Africa	40.50	1.221	3.040	-1.3
Sri Lanka	17.9	66	640	2.9
Tanzania	28.0	945	140	0.8
Thailand	58.0	513	410	8.6
UAE	2.4	84		0.4

Source: World Development Report 1996 (Iraq not entered)

Table - 2

**GROWTH OF THE ECONOMY:
SELECTED INDIAN OCEAN COUNTRIES**
(Average Annual Growth Rate (%) 1990-94)

Country	GDP	Agriculture	Industry	Services	Gross domestic investment
Australia	3.4	-0.1	-0.2	2.8	0.9
Bangladesh	4.2	1.9	7.1	5.0	4.7
India	3.8	2.9	3.2	4.6	1.2
Indonesia	7.6	3.0	9.8	7.6	7.5
Iran	5.2	5.8	4.5	5.4	-7.8
Kenya	0.9	-1.5	0.9	2.0	-2.2
Malaysia	8.4	2.5	9.8	9.1	14.9
Mauritius	5.3	-2.1	6.0	6.4	5.5
Oman	6.7	2.1	6.2	11.4	—
Pakistan	4.6	2.7	6.3	4.7	4.7
Singapore	8.3	-1.3	8.7	8.1	6.1
Saudi Arabia	1.9	—	—	—	—
South Africa	-0.1	-2.3	1.2	0.6	2.4
Sri Lanka	5.4	2.0	7.5	5.8	10.8
Tanzania	3.1	5.8	9.7	-3.1	—
Thailand	8.2	3.1	10.9	7.4	9.3
UAE	—	9.3	-1.8	—	—

Source : World Development Report 1996 (Iraq not entered)

TABLE 3

ECONOMIC STATUS OF 12 FOR COUNTRIES

Countries	Population	Quality of Life	Income Level	Inflation	Openness	Indebtedness	Savings Ratio	Investment Ratio	Export Ratio	Import Ratio
Australia	Low	High	High	Med.	Med.	Low	Med.	Med.	Low	LowMed.
India	High	Med.	Low	Med.	Low	Moderate	Med.	Med.	High	Low
Indonesia	High	High	Med.	Med.	High	Moderate	High	High	High	Low
Iran	Med.	Med.	Med.	High	High	Below Avg.	High	High	High	Low
Iraq	Low	Med.	Low	-	-	-	-	-	-	-
Kenya	Low	Low	Low	Med.	High	Severe	Low	Low	Med.	Med.
Malaysia	Low	High	Med.	Low	High	Below Avg.	High	High	High	Med.
Mauritius	Low	High	Med.	Med.	High	Below Avg.	Med.	High	Med.	Med.
Oman	Low	High	Med.	Low	High	Low	-	-	Med.	Nil
Singapore	Low	High	High	Low	V. High	Low	V. High	V. High	High	High
South Africa	Med.	Med.	Med.	High	Med.	-	Med.	Low	Low	Neg.
Sri Lanka	Med.	High	Low	High	High	Below Avg.	Low	Med.	High	High

Source : World Development Report 1994 and Trends In Developing Countries, 1994

TABLE 4
INCIDENCE OF BILATERAL TRADE BETWEEN IOR
COUNTRIES, 1990-92.

Sr. No.	IOG Country	Trade with Other IOG Countries (No.)	Importing Countries (No.)	Export Destinations (No.)
1.	Australia	35	27	34
South East Asian :				
2.	Brunei	5	5	4
3.	Indonesia	30	25	27
4.	Malaysia	33	27	30
5.	Myanmar	11	6	11
6.	Philippines	24	24	21
7.	Singapore	34	31	34
8.	Thailand	36	30	36
SAARC :				
9.	Bangladesh	26	21	23
10.	Bhutan (included with India)			
11.	India	38	31	36
12.	Maldives (not separately reported)			
13.	Nepal	13	12	6
14.	Pakistan	36	31	33
15.	Sri Lanka	26	24	22

Sr. No.	IOG Country	Trade with Other IOG Countries (No.)	Importing Countries (No.)	Export Destinations (No.)
West Asian :				
16.	Afghanistan	11	10	10
17.	Bahrain	18	12	17
18.	Egypt	28	25	23
19.	Iran	15	14	14
20.	Iraq	16	15	11
21.	Kuwait	17	13	16
22.	Oman	22	18	15
23.	Qatar	20	20	17
24.	Saudi Arabia	26	26	21
25.	U.A.E.	21	15	21
26.	Yemen (unified)	15	15	1
North & East African :				
27.	Burundi		5	2
28.	Bjibouti (not separately given)	10	10	3
29.	Ethiopia	32	23	31
30.	Kenya	20	17	8
31.	Madagascar	6	2	4
32.	Malawi	12	12	10
33.	Mozambique	6	5	3
34.	Rwanda	7	7	5
35.	Somalia	15	15	6
36.	Sudan	14	14	14

Sr. No.	IOG Country	Trade with Other IOG Countries (No.)	Importing Countries (No.)	Export Destinations (No.)
37.	Tanzania	8	8	5
38.	Uganda	12	11	12
39.	Zambia	27	15	27
40.	Zimbabwe			
South African Customs Union :				
41.	Botswana (in SACU)			
42.	Lesotho (in SACU)			
43.	South Africa	21	21	18
44.	Swaziland (in SACU)			
IO Islands				
45.	Comoros	6	6	0
46.	Mauritius	25	21	14
47.	Seychelles	12	12	1

Notes

- a Numbers of countries with recored imports of exports of over US\$ 1 million with the country in any year between 1990 and 1992
- b Where imports in any year during 1990 to 1992 were more that US\$ 1 million
- c Where exports in any year during 1990 to 1992 were more that US\$ 1 million
- d Includes Botswana Lesotho and Swaziland

Source : IFIOR Working Paper No. 2

TABLE 5

TRADE COMPLEMENTARITIES AMONG IOR COUNTRIES

COMMODITIES	EXPORTERS	IMPORTERS
Meat, fresh, chilled, fozen	India, Indonesia, Australia,	Iran, Malaysia, Iraq, Oman
Butter Oman, Iraq	Australia	Iran, Singopore, Malaysia,
Fish, Fresh, Chilled, Forzen	Singapore, India, Oman	Malaysia, Australia, South Africa
Rice	India, Indonesia	Iran, Indonesia, Sri Lanka, Mauritius
Fresh Vegetable	Indonesia, India, Singapore	Singapore, Malaysia, Iraq, Australia, Indonesia, Sri Lanka
Fresh Fruits	India, Australia, Malaysia	Singapore, Australia, Oman Sri Lanka
Spice	Malaysia, Sri Lanka, Iran	Australia, Indonesia, Oman
Natural Rubber	Malaysia, Indonesia, Sri Lanka	Singapore, Iran, India, Iraq, Kenya
Wood Shaped, Sleepers	Malaysia	Iran, South Africa, Iraq
Cotton	India	Indonesia, Malaysia, Iraq, South Africa

COMMODITIES	EXPORTERS	IMPORTERS
Synthetic Fibre	India, Indonesia, Malaysia	Indonesia, Iran Australia, South Africa, Malaysia, India, Kenya
Wool	Australia, Iran, Iraq	India, Malaysia, Iran
Iron Cre	India, Australia	Indonesia, Malaysia, Iran, Kenya
Crude Vegetable Materials	India, Singapore, Kenya, Australia, Iran	Australia, Malaysia, Indonesia, South Africa
Petroleum Products	Singapore, Australia, India, Malaysia, Iran	India, Malaysia, Australia Indonesia
Medical, Pharmaceutical products Countries	India, Australia, Singapore	Indonesia, Iraq, Singapore Malaysia, Rest of IOR
Leather	India, Indonesia, Sri Lanka	Australia, Iran, Singapore Indonesia, South Africa, Iraq, Iran
Rubber Tyres and Tubes	India, Indonesia, Sri Lanka	Australia, Iran, Singapore South Africa, Iraq, Oman
Wood Manufactures	Indonesia, Malaysia, India, South Africa, Sri Lanka, Singapore	Australia, Singapore, Iraq Iran

COMMODITIES	EXPORTERS	IMPORTERS
Paper & Paperboard	Indonesia, Australia, Malaysia	South Africa, Iran, Iraq, India
Glass & Glassware	Australia, Indonesia, Malaysia	Iran, Singapore, India
Pearls, Precious & Semi-precious Stones	India, South Africa, Australia, Sri Lanka	India, Sri Lanka
Pig Iron	South Africa, Malaysia, India, Indonesia, Iran	Indonesia, Malaysia, Iran
Iron & Steel (Primary Forms)	South Africa, India, Indonesia	Iran, Indonesia, Malaysia Kenya, Iraq
Iron & Steel Castings	India	South Africa, Iran, Iraq

Source : Indian Ocean Rim Countries : Scope for Cooperation. Confederation of Indian Industry 1995.

SESSION IV

21ST CENTURY : CHALLENGES IN BIOLOGICAL
OCEANOGRAPHY FOR INDIA

Chairman : A. Tandon
Main Speaker : Aditi Pant

PAPER PRESENTED BY DR. ADITI PANT

When one thinks of Biological Oceanography the first picture that comes to mind is of fish and fisheries. So the first challenge that I would like to pose is the challenge to fisheries in this country. In 1996-97 Marine Fishery landing in India was 2.4 million tonnes, a figure of about 0.15 million tonnes greater than that in 1995-96. The components of this catch can roughly be divided into two groups, the pelagic (52% of the total) and the demersal (48% of the total).

Pelagic fish (Figure 1a) live in schools or shoals in the water column and are fished with purse-seine nets thrown around the school from the fishing vessel or trawler. Oilsardines, ribbon fish, mackerel, pomfrets are all harvested from the sea in this fashion. Demersal fish, on the other hand, are primarily bottom-dwelling. Prawns for example are caught in bottom-trawl nets dragged along the bottom of the sea. Obviously trawl operations are limited to shallow seas. Shrimps, prawn, squid and cuttlefish form 86% of our fish export market. The actual harvesting of these species is about 300,000 tonnes (figures are for 1993-94 from the CMFRI * Bulletin) but it forms a whopping 350 thousand million rupees in terms of foreign exchange.

A thousand million rupees is a lot of rupees and any businessman looking at these figures is bound to ask : Am I getting the maximum ? Talking about maximization implies the question . How much is there ? Statisticians have methods to determine the answer. From data on "How much have I actually got in hand ?" they can estimate the potential that it may be possible to get from a given area or region.

Our total fish catch inclusive of both marine and freshwater fisheries was about 4 million tonnes in 1993 (CMFRI bulletin). Using trawling efficiency, area covered and other parameters statisticians project a figure for potential catch at about 8 million tonnes. Surely the great challenge in the early 21st century must be to actualize this potential.

At present with a coastline of 8000 km and a continental shelf of some 500,000 sq km we operate only 46,000 mechanized and 30,000 non-mechanized craft with roughly 238,000 out-rigger boats. Our fishing community is also quite small - 2 million full-timers, one and a half million part-timers and about 2 million occasional fishermen. If we look at the decade-wise fish catch there has been a steady increase upto 1990-91 (Table 1). From the 1990 figure of 2.3 million tonnes the 1996-97 marine fish landing data (CMFRI Bulletin) shows an increase upto only 2.5 million tonnes. This really means that there is a plateauing of the marine catch reaching the markets of India over this decade and a half. The reasons for this are not difficult to find. In the first place the area of fishing operations has not increased. Traditional fishing grounds are being over-exploited thus decreasing the catch per unit effort. This results in decreased catch per boat which in turn encourages the fisherman to decrease the mesh size of his nets in an effort to "make up" the catch. If next years breeding populations are caught when too young, the population cannot be expected to sustain itself and the net result is an unsustainable fishery. So one approach towards actualizing our fishery potential is to explore new fishing grounds. Another is to improve fish-finding techniques so that the unit effort reduces in terms of man-hours or diesel consumed.

In order to explore new fishing grounds remote sensing is an ideal tool because a picture received from a satellite covers an extensive area at a given time. One type of signal received from the satellite may be interpreted in terms of sea surface temperature. This is a useful indicator of fish distributions because in general, colder waters are associated with concentrations of fish populations. Sea surface temperatures in Indian tropical waters range from 24 to 30 C but deeper waters are colder. They are also richer in nutrients such as nitrates and phosphates. Thus any gadget even which pumps deep cold water to the surface results in increase in photosynthesis. The plants that photosynthesize in the open ocean are unicellular,

chlorophyll-containing phytoplankton (phyto = plant ; planktos = those that wander). Increased photosynthesis leads to increased biomass of algae which is eaten by zooplankton (zoo = animal) and these are consumed by fish. Thus either temperature or colour scanning by satellite can map those areas where temperatures are low or where chlorophyll is concentrated. A close match is observed between measured zooplankton densities and fish landing data in the Arabian Sea. Measuring zooplankton densities takes time however, and similar information may be obtained from satellites through colour sensing in a far more useful time frame - for example, today's colour map of the Arabian Sea available as a colour picture today. Of course, the matter is not as straightforward as procuring a satellite picture, humic acids from terrestrial sources may obscure chlorophyll signals, or the species of fish in a chlorophyll-rich zone may not be economically important or the phenomenon itself may be ephemeral in nature and have died away before either the fish or the fish-finding fleet can take advantage of the information. Present experience from our fishing states suggests however that the real obstacle is the slowness with which information is disseminated through the networks to the fisherfolk. Most do not have satcom or telefaxes, indeed most mechanized craft do not have any communication system at all, not even hand-held walkie-talkies. So unless the information dissemination network is optimized satellite imagery will be of limited use.

Although we spend considerable effort in fishing our waters we have not done much to locate breeding grounds of economically important fish. There are at least two possible regions where breeding grounds may be located. The main flow of currents along the west coast of India during the southwest monsoon is to the south. Since eggs and larval stages of fish are planktonic they can be carried to the Indian coast from Africa by the monsoon currents. Conversely during the northeast monsoon a northward flow along the west coast of India suggests equally possible sites either in the Bay of Bengal or in the Gulf of Mannar. It is certainly true that the fishing season begins off Kerala and gradually moves north along the coast. It has also been demonstrated that monsoon upwelling of cold bottom water establishes itself at about 10 degrees north off Kerala in June-July and moves northwards before petering out by late August. It is a tricky business to identify fish breeding grounds. In the first place fish start their lives

as eggs, develop into nauplii and larvae and only gradually do they become identifiable as the fish we eat. In their planktonic avatars they form a part of the "biomass" collected in very small-mesh nets from the deck of small or big research vessels by earnest and very well-trained planktonologists. Their species identification and quantification therefore is trained-manpower-intensive. However there is one parameter that does not change irrespective of morphology or size of a growing fish. That parameter is its DNA, and today's techniques allow DNA to be fingerprinted. Since each species has a unique fingerprint, analysis of "total biomass" samples of zooplankton is less manpower-intensive. Although DNA analysis is expensive the answers are unambiguous and the technique therefore is an important tool in ecological analysis. I consider this to be the second great challenge of the next decade: the localization of breeding grounds of economically important marine fish harvested in this country with a view to their conservation.

The third challenge of the next century is aquaculture. Aquaculture production in freshwater systems in India has shown a steady increase over the years (Table 2) but in spite of this the gap between actual and potential production from the inland freshwater reservoirs is quite large (Table 3). A problem with both freshwater and marine farming is that agriculturists over-stock and over-feed the fingerlings to maximize short-term profits. Over-feeding will almost invariably lead to anoxic conditions and precipitation of salts resulting in contamination of soil and, eventually, water aquifers. Sustainable aquaculture is possible only when need and greed are properly balanced. One option that no-one has yet explored is the creation of fish farms in the ocean itself. The science fiction writer Arthur C Clarke once wrote on the use of dolphins to shepherd fish in open range ocean cultures - a truly romantic picture of fish farming! A more practical alternative may be to grow fish in limited areas in the ocean using retaining nets. Another kind of aquaculture that has never been seriously considered is that of algae.

Marine algae have been shown to produce several compounds with biological activity. As seen in Table 4 activities range from spasmolytic to 100% anti-fertility. These organisms are not found in abundant enough concentrations in nature along our coast to allow

industrial extraction of the active compound, but aquaculture can ensure a steady supply of raw material. The fourth challenge for the next millenium therefore is the tissue culture of these plants. Needless to say, once the molecule of activity has been characterized it may also be possible to synthesize it chemically.

The 5th great challenge facing environmental scientists today is pollution. A coastal monitoring and pollution survey programme from Matla in Orissa to Okha in Gujrat has shown (Table 5) that polluted hot-spots are widely distributed along our 8000 km coastline. In most cases polluting materials are nitrates, phosphates and *E. coli* from domestic sewage. Increase in pathogenecity is conveyed back to local population which eat fish, crabs and prawns fished in these waters. Heavy metal pollution by elements such as zinc, aluminium, mercury and arsenic is also a component of the pollution problem which needs urgent attention. Developing technologies to correct environmental pollution is only one aspect of the challenge facing us in keeping the planet habitable. A far more challenging part of the problem is educating people into an awareness that we hold our planet in trust and we may not use it without due consideration and respect for future generations.

The challenges that face us in the study of the ocean, development of technology for using the ocean and development of technology for safegaurding the ocean are enormous. Satellite based information systems for monitoring are already in place, others like aquaculture for food or pharmaceuticals are likely to be developed in the next 10 to 15 years. The last 100 years has been the century of mathematics, physics and chemistry. The trends show very clearly that the next 100 years belong to biology and the oceans are an integral part of this intellectional - and technological - adventure.

TABLE 1

Decade-wise Fish Production (in million tonnes)

Year	Marine	Inland	Total
1950-51	0.53	0.22	0.75
1960-61	0.88	0.28	1.16
1970-71	1.09	0.67	1.76
1980-81	1.56	0.89	2.45
1990-91	2.30	1.54	3.84

TABLE 2,

Aquaculture production in India

Year	Production
84	0.51 million tonnes
85	0.64 million tonnes
86	0.69 million tonnes
87	0.79 million tonnes
88	0.89 million tonnes
89	1.00 million tonnes
90	1.01 million tonnes
91	1.22 million tonnes
92	1.37 million tonnes
93	1.44 million tonnes

TABLE 3

Present and Potential Production from freshwater reservoirs of India

Size	Present	Potential
Small	74,129	148,556
Medium	6,488	39,565
Large	13,033	57,013

TABLE 4
Algae which produce bioactive products

Stoechospermum	spasmolytic
Hypnea cervicornis	diuretic/CNS
Caulerpa peltata	hypotensive
C. cetularoides	CNS stimulant
C. taxifolia	antimicrobial
Spatoglossum	hypotensive/antifertility
Acanthophora spicifera	antifertility
Ulva fasciata	CNS stimulant
Chondria armata	hypotensive
Chadpsora pinnulata	toxic
Sargassum tenerium	CNS depressant
Enteromorpha flexuosa	diuretic
Gracillaria corticata	antiviral
Padina gymnospora	toxic

TABLE 5

Pollution hotspots on the Indian coast

Gujrat

Veraval creek
 Porbander creek
 Tapi estuary

Maharashtra

Bassin creek
 Verspva creek
 Mahim creek
 Thana creek

Kerala

Beypore
 Kochi harbour

Tamil Nadu

Arumuganeri
 Mandapam
 Chennai harbour
 Cooum river

Andhra Pradesh

Gauthami Godavari
 Kakinada Bay
 Vishakhapatnam harbour

Orissa

Dharma

West Bengal

Hoogly estuary

SESSION V

THE INDIAN OCEAN - STRATEGIC IMPORTANCE AND
CHALLENGES AHEAD

Chairman : A. Tandon
Main Speaker : Arun Prakash

PAPER PRESENTED BY VICE ADMIRAL ARUN PRAKASH

It is difficult to overstate the importance of the role played by the oceans in the developmental process and in the accumulation of wealth by nation states. As a general rule, most civilizations emerged and developed close to the shores of seas and oceans. Countries whose populations were associated with the sea for their livelihood, became economically stronger than those with restricted or no access to salt water.

When man ceased to look-upon the seas as a barrier, and learned to use them as highways, he made a giant stride for civilization. The waterways of the world provided a new mobility - to man himself, and later to the products of his toil and skill, and always to his ideas.

The use of the great waterways brought into contact, the civilizations of Asia, Europe and Africa. While this confluence of cultures provided a stimulus to the spread of knowledge and exchange of ideas, the appearance of trade on the high seas also gave rise to conflict between rival traders, and trading nations. With time, as trade and commerce by sea came to represent wealth and prosperity for nations, this conflict began to assume serious proportions world wide.

The Indian Ocean too, has seen much conflict of this nature over the centuries, but for reasons which belong to history, the people of the littoral countries largely remained passive witnesses while nations from beyond this region manipulated their destinies.

Adm Mahan's comments on Robert Clive's victory at the Battle of Plassey in 1757 which laid the foundation of the British empire in India, provide us a pointer in this context. He says, "..... the foundation thus laid, could never have been kept or built upon, had the English nation not controlled the sea. The conditions in India were such that a few Europeans headed by men of nerve and shrewdness, dividing that they may conquer were able to hold their own against overwhelming odds."

This statement contains seminal wisdom which could, with some modification, have relevance for countries of this region even today. Conditions remain volatile in many parts, potential for conflict exists, and above all stability is threatened by external and internal pressures. Let us therefore, undertake a survey of the strategic dimension to obtain a perspective of issues.

THE STRATEGIC DIMENSION

The global strategic and geo-political environment has undergone a tremendous change over the past decade or so. Those of us who grew up in the midst of cold war polemics between the Soviet and Western dogma, found the sudden silence that came with its end somewhat uncanny. There was a brief period, while the Western World gloated over its bloodless victory, when many believed that Utopia was here, at last, and that there would actually be a "peace dividend" for everyone to share.

The peace dividend proved to be a total illusion, and this victory too, like many such victories in history, created more problems and dilemmas than it had resolved. While global disarmament has been making sporadic and hesitating progress, those who visualized military powers "beating their swords into ploughshares" were disappointed. On the other hand, under pressure to justify their existence and down size, in a favourable situation of assymetry, Western military establishments began to conjure up devils where none had existed before.

Therefore, although the emerging global strategic order has seen a substantial de-escalation of military confrontations of the type the

world had become accustomed to, it is now obvious that conflicts of other types are going to replace them. Let us therefore examine some of the likely sources of conflict in the IOR as part of the strategic survey.

Economic Compulsions

Re-alignment of alliances in recent years have served to confirm, if confirmation was indeed necessary, that in international relations, neither friends nor enemies are forever. It is only national interests which are permanent and enduring. In the affluent and consumerist societies of the West, as well as in countries like Japan and the Newly Industrialized Economies (NIEs), "national interest" are very often synonymous with "economic objectives". This becomes evident from the frequent display of expediency, when lofty ideals and principles are sacrificed at the altar of economic interest.

The basic international economic concerns in the Indian Ocean are three-fold. Firstly to ensure uninterrupted flow of oil from the Persian Gulf. Secondly to maintain access to sources of cheap raw materials. And thirdly to retain a measure of control over the vast markets of the East. The US, Japan, and Western Europe, as the biggest players on the global economic scene have the greatest stakes here. Enough cognizance is often not taken of the fact that India's economic lifeline too runs through the Indian Ocean. Over 95% of our trade is seaborne, 500 merchantman flying the Indian red ensign ply the seas, and the annual cargo handling capability of our ports is approaching 400 million tonnes.

During the Cold War era of East-West nuclear stand off, traditional geo-political and economic concerns faded into the background. Now, given a reduction of tensions, even the so called "lesser missions" like sea lane protection deserve a closer look. Are disruptions of the sea lanes of communication (SLOCs) reason enough to go to war? Certainly nations might go to war if access to key markets is disrupted. The threat of Iraqi dominance of oil supplies may partly be an explanation of the 1991 Gulf War.

Undersea Resources

Let us cast a glance at another facet of the Indian Ocean which presents the prospect of wealth and prosperity, yet contains the seeds of potential conflict. I refer to the undersea resources of the region.

The average depth of the Indian Ocean is a little less than 4 km. That is the distance which tantalizingly separates us from a veritable treasure house of mineral wealth awaiting exploitation on the ocean bed in the form of polymetallic nodules. At this moment, not many nations have either the capability or the inclinations to undertake such a venture. However, circumstances will compel mankind to look to the oceans sooner than expected. With the highest levels of demographic pressures, the Indian Ocean region would probably feel this compulsion earlier than elsewhere.

Although termed the "common heritage of mankind", when the time comes for exploitation of these seabed resources, it is the strong and technologically advanced nations who will reap the benefits, not those who own or need them. There is a clear divide on this issue between the industrialised nations who have the wherewithal to extract these minerals, and the underdeveloped countries who have only hopes and expectations.

History shows that not many serious disputes between nations have been settled amicably. A few have been resolved by various methods of coercion, and most by actual resort to arms. Therefore, the regions below the sea contain great potential for conflict in the future.

India has a mineral rich EEZ extending over 2.2 million sq km, and her "pioneer" status gives her exploration rights over an additional 150,000 sq km of ocean bed. The successful exploitation of these riches could lift India from her economic backwardness and accelerate her growth tremendously. In addition, the continental shelf in the Bay of Bengal, and the Arabian Sea is estimated to have reserves of about a billion tonnes of hydrocarbons. Of over 500 oil bearing structures, about 150 have been drilled with an investment of over US Dollars 2 billion. The present yield of about 30 million tonnes of crude oil meets 40% of the country's demand. Our EEZ is also said to contain an

estimated potential yield of 40 million tonnes of fish. Of this, we are able to harvest less than 10%, and the rest die of old age or are poached by foreign trawlers.

It is therefore, evident that India has an enormous stake in her undersea resources, which constitute a strategic asset. Equally, this asset can become a heavy liability if the environment turns hostile.

The Nuclear Dimension

Several states in the IOR are in the pursuit of military nuclear programmes of varying scopes and dimensions at different stages of development. The dismantling of Iraq's nuclear facilities under IAEA supervision leaves only Israel with a deployed nuclear capability in the Middle East. Iran is pursuing a nuclear programme whose outlines remain somewhat hazy at the moment.

Pakistan and India are the two regional states with nuclear weapon programmes at a fairly advanced stage. Both have, however, retained the thin veil of ambiguity, in order to gain strategic advantage as well as avoid international opprobrium that would follow an admission of weapon capability. Both countries, presumably have delivery system operational, and since neither are party to any control regime or treaty, it is essential for them to engage in a dialogue and maintain a degree of transparency in order to avoid triggering a nuclear exchange.

The disintegration of the Soviet Union has raised the question of control over strategic and tactical nuclear weapons deployed in four of her erstwhile republics. There is also concern about the transfer of fissionable material as well as nuclear scientists to other countries.

Conventional Arms Transfers

The nuclear weapons dimension must be viewed in tandem with the substantial increase in conventional arms transfers to countries of this region.

The Gulf War provided a rare opportunity for western arms manufacturers to test their products under actual combat conditions. Although, subsequent analysis has shown that many of the claims made by the Coalition forces with regard to damage inflicted on Iraqi assets were grossly exaggerated, it did not stop the suppliers from claiming that their products were "combat proven". Post-war, almost every major manufacturer has concluded a substantive arms deal in the Gulf region and weapon transfers worth 19 billion dollars are reported to have taken place. China has created a set of "weapon client" states extending from Saudi Arabia, Iran and Pakistan to Bangladesh, Myanmar and Thailand. In turn, China herself has been a major importer of Russian arms in recent times.

In our close vicinity, the Brown amendment has restored to Pakistan, the arms that Senator Pressler had tried his best to prevent them from receiving. In addition, a cash strapped Pakistan has been making selective arms purchases, from wherever possible, mainly to make up for attrition and wastage but also for modernization, Iran's missile and submarine acquisition programs too have caused a certain amount of anxiety in the neighbourhood.

This major induction of arms in the IOR littoral, in recent times, has certainly increased the volatility of the environment and heightened the potential for conflict.

Ethnic Tensions and Cross Border Terrorism

Many problems arising out of a colonial legacy, and having their roots in ethnic and border issues continue to plague countries in the IOR. The internal conflict and turmoil of one country spilling over into its neighbourhood can give rise to insurgency, refugee problems and other complications. Tensions arising out of conflict over market access, trade restrictions and resource scarcity can also lead to breakdown of sub-regional security.

Then there is the emergence of religious revivalism, and ethnic sub-nationalism which tend to form an explosive compound when mixed with politics. Often funded and supported by external agencies,

such movements submerge progressive values in a tide of fanaticism. So far, no country, (India included), has been able to resist the temptation to obtain mileage out of a neighbour's problems. Therefore, the tensions and conflict potential of this issue will continue to prevail till countries decide to show some forbearance and statesmanship.

THE CHALLENGES AHEAD

There is no altruism in international relations, and diplomacy is cynically conducted on two different planes, often with objectives which may be mutually contradictory. This is so because other than national interests, everything else is negotiable. Against the backdrop of such a fluid international environment, let us examine the challenges that may confront us, both in the context of major powers as well as the smaller regional players.

The USA

The USA now considers itself a Pacific country, and the extent of its economic interaction and dependence on this region is more than on Europe or any other region. Underpinning all its policies, is the ever present and overriding need of the USA to have unfettered access to markets of this region to keep her economic engine ticking smoothly.

The need to keep Indian Ocean SLOCs open at all times has both economic and military dimensions for the US. It benefits economically from the free flow of trade, particularly its own imports and exports, as well as sale of shipping services by its merchant marine. In case of war, she needs to keep the SLOCs open to project military power.

Of the four US armed forces the Navy-Marine Corps combination has come out the best from the down sizing exercise that has been in progress. This is mainly because of some adroit footwork by the Pentagon. The US Maritime Strategy of the 1980s was designed and articulated to meet the Soviet challenges through global deep sea operations on a Mahanian scale. A major shift in focus was brought

about in 1992 by the USN in order to retain its relevance in the post-Soviet era, and to garner added budget dollars. The new strategy, designated "From the Sea", recognised that since there was no worthwhile opposition on the open seas, the Navy/marine Corps combination (including nuclear attack submarines) would best be deployed offshore in support of land battles and operations in third world littoral states.

However, two years later, a revised strategic concept entitled "Forward From the Sea", was promulgated, whose origin lay in fresh guidelines issued by the US Administration. In essence, the strategy now shifts focus to the perceived threat from "aggression by regional powers", and extends the operational domain of naval forces, from littoral areas, well into the hinterland of target countries. Since about 70% of land area lies within 200 miles of sea shore, the US Navy's operations will now in effect cover not just the ocean areas but also a major portion of the earth's surface. The term "regional aggressors" could be used to encompass any third world country whose policies are inconvenient to the USA.

In this context, it is illuminating to read William Cohen's vision of America's strength. He states, "Our strategy is to keep forces without any peer. We don't want to engage in a fair fight ... if we do fight, we win on our terms".

Therefore while we repond appropriately to their overtures for co-operative relationships, it would be well to remember that should a serious clash of national interest ever arise between India and the US, we could get a blinding exposure to the country's coercive power through her navy.

Russia

The end of the Cold War, the disintegration of the Soviet Union and the consequent and political confusion has led to a retreat by the successor state of Russia from the IOR. It is apparent that Russia is today, no longer capable of acting in its own national interest, due to internal political and economic problems. The independence of Ukraine with its major shipyards and naval bases has particularly debilitated the Russian Navy.

However, the erstwhile Defence Minister Pavel Grachev is reported to have stated that regardless of cuts elsewhere, the Russian Navy would be maintained at an adequate level, and that the future of the armed forces lay in a nuclear submarine fleet. It is perhaps in consonance with this view, that the keel of the advanced Akula class SSN the "SEVERODVINSK" was laid in end 1995.

The Soviet Navy's ambitious aircraft carrier programme now lies in ruins, and the future of the surface fleet is a big question mark, although a nuclear powered battle-cruiser was commissioned in 1995. Pre-occupied as she is, with her internal problems, we can expect Russia to play only a marginal role in the IOR, in the near future.

China

As far as China is concerned, she has given adequate notice of her intention to assert her power in pursuance of her interests in the oceans. The recent demonstration of ballistic missile fire power in the Taiwan Strait and the shadowing of a US Naval carrier group by a Chinese nuclear attack submarine, in the Yellow Sea, were the clearest indications so far, of her capabilities and intent.

In the past decade, China has upgraded its surface and submarine fleets, and its naval air force, and created a marine Corps. Chinese naval units now conduct blue water exercises and make long distance port calls. Of the 90 odd submarines, in China's fleet six are nuclear powered, including one SSBN, and three are brand new Kilos. China has of late also been showing great deal of interest in acquiring Russian surface combatants including an aircraft carrier.

The view has emerged in China that a strong and modernized navy can not only protect China's flourishing coastal economy, and growing offshore interests, but also serve as the principal instrument for realizing her aspirations to become an independent international power. Her maritime ambitions, of course, encompass the control of offshore oil structures in the South China Sea and the eventual assimilation of Taiwan.

There is a view that the Chinese naval developemts need not overly concern us, as their impact would be felt mainly in the South

China Sea and Pacific regions. However, when viewed in the context of China's growing political and military co-operation with Myanmar, which includes strategic communication and port-access, there does emerge a long term, and somewhat sinister strategy for a presence in the Indian Ocean. We need to take adequate cognizance of this.

Pakistan

Pessimistic observers of the political scene are convinced that the day Pakistan drops its hostile stance towards India, it will lose its "raison d'être" and collapse as a nation. Therefore, the constant reality of Pakistan's belligerence and hostility is something that we have to learn to live with, for a long time to come.

Pakistan, having eliminated the perceived nuclear asymmetry with respect to India, and having received reassurance that she is dealing with quinessential "soft state", now seems to have no qualms about waging a full fledged proxy war against India. Her grand strategy appears to envisage not just the separation of Kashmir from India, but the general Balkanization of this country by aiding and abetting anti-national elements wherever possible. It is quite likely that security planners in Pakistan imagine they are actually emulating India's strategy in 1971. Noteworthy in this scheme is the use made of India's extensive Western seaboard for the infiltration of men and material for subversive activities.

For some years now, the Pakistan Navy has been undertaking a modest but steady modernisation and expansion plan. With a force mix of missile armed surface ships, submarines and reconnaissance aircraft, the navy is essentially meant to provide a maritime deterrence and sea denial capability. Whether this navy is disproportionately large for Pakistan's defence needs, and 700 km long coastline is a rhetorical question.

More to the point, is the fact that Pakistan is developing Gwadar and Pasni ports on the Makran Coast, which will provide an ideal location for her naval forces to interdict India's oil supply lines from the Persian Gulf. Also vulnerable to attack by Pak naval forces is India's vital offshores oil production complex off Bombay.

China is seen by some as the ultimate security threat which must invite India's long term focus. However, Pakistan presents a clear and present danger which we would ignore at our peril.

Conclusion

Having conducted a survey of our current ocean environment, let me conclude my talk with a brief discussion on the options and choices.

Adm Mahan has enunciated six conditions which have a direct bearing on the sea power of a nation, and India fully satisfies five of them. It is in the sixth one, namely, "Character of the Government", where it is obvious that shortcomings have prevented India from attaining her rightful stature as a substantive sea power.

Whether it is our numerous ports and island territories, or merchant shipping and foreign trade, our seabed resources or security of SLOCs, every geo-political and economic pointer indicates that India should maintain a strong maritime force to safeguard her long term national interest, which lie increasingly in the oceans.

Of the three armed forces, it is only the Navy that has a legitimate global reach, and that is the reason why all major powers, make use of their navies as instruments of state and foreign policy. Only in India is there, indifference or lack of understanding by our policy makers, of this dimension of the navy. It is interesting to note in this context that when Adm "Jackie" Fisher imposed drastic cuts on the Royal Navy's warship strength in 1905, it was the Foreign Office which protested most bitterly that they would now receive insufficient support in the execution of Britain's overseas policies.

The problem however, goes a little deeper than it would appear. A navy's size and shape should emerge from the roles and missions allotted to it in execution of a written or unwritten Maritime Doctrine. Such a Doctrine would emerge logically from a National Security Policy or Strategy, codified at an appropriate political level. Regrettably, such is the intellectual vacuum and lack of application to national security issues, that no higher direction of this nature has ever been available. Our naval force levels are still notionally based on a note issued by the Emergency Committee of the Cabinet in 1964.

George Tanham, a RAND Corporation research scholar, earned a certain amount of notoriety in this country, a few years ago for his monograph entitled "Indian Strategic Thought". Commenting upon the complete absence of strategic thinking or planning in India, Tanham expressed the view that the Indian armed forces were perhaps unique in that they first acquired weapon systems and then thought of how to deploy them. He adds, "...the military play only a minimal role in decision making on matters of security. If allowed, many well educated and thoughtful military officers could contribute to formulation of national strategy and defence plans."

At the threshold of the new millenium, the Indian Navy would no doubt, be engaged in an exercise to evolve a force architecture to meet the challenges of the 21st century in the Indian Ocean. Planners are likely to find themselves at a crossroad, with two distinct models to choose from. They could choose to develop the navy into a balanced blue water force which includes submarines and aircraft carrying ships, and can undertake sea control, sea denial and a host of other roles across the spectrum of conflict. Or they could emulate Pakistan and restrict the navy to a submarine based sea denial force meant only to raise the ante for hostile foreign intervention or threat.

It really does not matter which model we decide to follow. The answers regarding force architecture should however come from a structured in-service study, followed by extensive discussion at the level of Senior Commanders and Principal Staff Officers, and not from magazine pages and newspaper columns.

In the regional context, however, we would do well to recall a brief phase in the late 1980s when a sudden spurt of naval hardware acquisition by the Indian Navy, set alarm bells ringing in the Asia Pacific region and put INS Godavari on the cover of Time magazine under the caption "Super India"

The moral of that episode is that regional powers like India must ensure that there is never any dissonance between foreign policy objectives and national security needs.

SESSION VI

INDIAN OCEAN - THE SECURITY ENVIRONMENT

Chairman : A. Tandon
Main Speaker : A. Narasimha Rao

PAPER PRESENTED BY PROFESSOR A.NARASIMHA RAO

Let me begin in early 70s. Early 70s, the reason being nothing has changed as far as India's security environment is concerned, irrespective of the fall of Soviet Union. This is one of the theories which I love to build up. There was a conference in Helsinki where most of the countries decided that they should freeze the military situation in Europe and they called it by name detente. So immediately. Nixon announced that detente in Europe would be extended at the global level. Immediately the Soviet President announced, No! detente would not be extended to Indian Ocean. This is the quote. He said detente is not applicable to the Indian Ocean for the simple reason that Europe has risen to a level where ideology cannot be intruded into the system of governance of Western Europe. Therefore Afro Asian countries are available for such a intrusion. We would not like to loose the opportunity of still struggling and aiding and abetting the liberation movements. Liberation movements not from colonialism. Liberation movements from neo-colonialism. They said to Afro Asian countries detente is not applicable. Of course they pursued this, whether it was arms selling or it was front organisations. America and the Western Europe had to take this into cognisance and then had to increase their presence in the Indian Ocean.

Surprisingly, China was brought into the picture. Consistently, right from 1950, irrespective of cold war, irrespective of the fact that China had tremendous animosity to United States of America, China was the country which was constantly supporting American presence in the Indian Ocean. For China it did not matter whether it was ideologically feasible, whether United States of America was supporting

Taiwan and Formosa. Such a country should not be in the Indian ocean, did not conform, was not considered by China. China wanted this.

Some of us thought during those times that this is nothing but a strategy to wait till it replaces the United States. Therefore some of the strategic thinkers were warning countries like India to be careful of China, because this goes against the grain of the ideological battle which China was waging with United States of America at that time and at a time when the United States was involved in the Vietnam war.

Even then equally surprisingly Singapore supported China that America must be present in Indian ocean. Who were the people who wanted America to go within Indian ocean? All those countries which were incapable of making them to go. Then during that period between 60s and 70s, a movement was started that there should be a littoral unity so that Indian Ocean countries can together form some kind of a unified group. They decided that if they unite and if they co-operate they would be able to fight off the stance of the Western countries which were intruding into the Indian Ocean region.

But not one of the littoral countries was interested in the unity of the littoral countries. There were at least six or seven countries which compromised with one or the other Super Power, whether it was Kenya or Pakistan or whether it was India. All the littoral countries were compromising.

It was nothing but rhetorics. West knew it and then what happened. When once the European security was guaranteed by the freezing of the frontiers in 1972, because 30 to 40 per cent of the entire industrial growth in the Western Europe was consisting of the military industries what would happen to them if suddenly there is a freeze. So they required vulnerable available countries which had their own problems and most of the littoral countries had problems of their own and equally surprisingly most of the littoral countries were discussing with each other but not with outside powers. India discusses with Pakistan, Tanzania discusses with Uganda, Indonesia discusses with Timor. The Arabs were discussing with everybody, left, right and centre.

Now where was this drama of the unity of the littoral countries trying to fight out the Western countries domination? Then 30 to 40 per cent of the military industries and not all of them were dual technologies, what will the European countries do, particularly France, England, Italy, Netherlands thrown in just as a French partner. Where do they export the arms? Because the conventional arms treaty was already discussed in Europe. There was a nuclear freeze and Soviet Union and America had already come to an agreement over the heads of Europe. The SALT was over. SALT once had something to do with the international naval projections. There was a movement, if you look at the graphs of the arms movement in the world. After 1972 there was a spurt in the movement of arms from Europe to the South zone countries and West Asian countries. And arms do not move by air or by mules. They move by ships. And because arms also were volatile and because they were also targets, the insurance premium was increased by the Lloyds.

What is the data on the ship movements of Russia, China ? We know French movement is there. American ships move. Then Russian ships come. Chinese move. This is a kind of newspaper talk which we can indulge in. There was no record available of the kind of the movement on data of the Chinese and Russians and American ships, where they were going and how they were going and what they were doing. We required the data only for ten years. May be Director General of Shipping could have it, if he had the information. But Lloyds can give. Lloyds refuses to give because Lloyds gives only on the basis of an insurance premium.

These countries decided to purchase the arms. if you want to purchase the arms you require a quarrel, you require a conflict. It was also during this time something else happened. Suddenly our friends, Arab countries decided to hike the oil prices. This is in 1970s between 1970 and 1975. When once the price was hiked, there was a tremendous build up of international finance insistence exploding into the liquidity of the international finance which resulted in debt, misery and poverty of the third world countries.

Where did that money go. A new phrase was coined in the world called Petro Dollars. That money did not come here. The money

went to the Western Europe. They were investing in Casinos or they were trying to purchase Harrods so that their sons can fall in love with the princes. The entire movement was not to the fellow third world countries where there was supposed to be a unity of the so called littoral, but to the place where the money went in. The West knew it and I was surprised to learn that a part of this Petro Dollars went into the research and development of alternate fuel systems in America and West. Arabs gave money for research and development into alternate fuel systems which ultimately is going to deprive them of that money. They are very highly and remarkably intelligent people, but then this is what happened. There was a question of how will this oil go and from where is Israel getting this oil.

Out of the three oceans in the world, the Pacific, Atlantic and Indian ocean, the Indian ocean is the most nuclearised ocean today. Atlantic and the Pacific are not that nuclearised. Pakistan is a nuclear country, according to us we are a nuclear country, according to them, South Africa is a nuclear country, they say that it is dismantling it. If any nuclear country says it has dismantled, please do not believe because Margaret Thatcher was on record saying if the Jeni comes out of the bottle you cannot put it back. It is out of question. If you treat Port Ilot as a jet extension of Israel, then it is just extension to the Arabian sea, which again gets extension into Indian Ocean. China is very much in Indian ocean. America is there, France is there, Britain is there as an adjunct. There are eight nuclearised powers in the Indian ocean. There is no other ocean which has presence of so many nuclear powers.

Is this environment being considered at all. If you look into the parliamentary debates on the defence, there will be hardly six or seven fellows normally. I mean six is a very high number. Then the normal response would be, the morale of the armed forces is very high, irrespective of the context. This is the normal reply given by the Defence Minister usually, if the Defence Minister knows defence or alternatively we will take every inch of the territory occupied by the Chinese not knowing what Mahavir Tyagi once said. How many miles make an inch.

But then this is the classical drama, about army. Forget navy. Navy they do not know. Navy, it is out of question because what is

surface, what is submersible, what is a submarine, what is afloat, they do not know. General Sundarji said unless the budget in the Navy is increased, the policy makers cannot understand the security environment in which we are living. He spoke as a man who is thinking. He wanted not just increase in the budget, he also suggested that should India ever go nuclear Navy is a better choice to be given the opportunity of having a nuclear war head.

Four months back, Raja Ramanna announced that what we exploded or in the official language what we imploded, was a bomb. Before his announcement every second day some article used to come on India's nuclear options, should we exercise this option, should Pakistan exercise this option, should emergency arise we will exercise an option. Each prime minister used one phrase this side, another that side not communicating anything.

After Raja Ramanna's announcement, all serious articles on nuclear matters have ceased because now you do not know how to react. Because now you have to build a doctrine because requirement of a doctrine assumes whether it is hostile to Pakistan, whether it is retaliation on the Chinese or non weaponised deterrence, what is the minimum deterrent capability. Is Sunderji right when he says minimum deterrent is enough, if we first try it on London or Pakistan. Now they come into relief now.

What will happen if FLBs are going to be used? This is where we will go back to 1972 when Indian Ocean was declared a non-detentezone. This is what happened. The Soviet Union was far superior in fixed land based ballistic missiles. They were superior in 3:1 ratio. In the strategic bombers America was far superior almost to the ratio of 5:1. In submarine launched ballistic missiles, America was superior in the ratio of 5:3. because the fixed land based ballistic missiles can be easily targeted, thanks to the orbiting satellites, both geo stationary and the other. Soviet Union felt, if you link it up it would be advantageous. It suddenly thought about the Navy. Gorshkov came into the picture as the fixed land based became easy target. Till 1968 U2 flights were just free over the Soviet Union at 40,000 feet height. They did not have an anti air missiles at that time. So what happened. The Soviet navy began to expand at what we call at war footing, at a

crash speed. Now that means there was more activity partly because of the Deigo-Gartia partly because of the South China sea and partly because Atlantic was not allowed.

They tinkered in 1962 and you know what happend. They put a tactical missile in Havana thereby making a short range missile into a strategic missile, because it was a forbidden distance between Havana and the US. America had to rely on the navy. They called it a quarantine because if they were to declare, they did declare in the middle east but they did not declare it in Cuba. The alert No.4 of the strategic air command in middle east they declared, but not in Cuba, because they quarantined it by ships and ships were supposed to be boarded. Soviet Union were supposed to be withdrawing back, if any missile were to be found.

It was during this time something else happened since all of you know the contoures of the Middle East. This Middle East is again funny, depends upon the context in which they are talking. The Arab countries start Middle East depending upon the other context. They are West Asia, depending upon the context they are a part of the European Union, because they are a part of the community to which they were supposed to have joined, when Europeans did not want them.

Liberia, Panama and Malta, these countries do not come under any law of the sea, any law. What they do, they purchase second hand ships sometimes third hand. Some ships with the bottom, some ships without. They take any cargo, anybody as cheap labour and they are not insured. But the oil that goes from the Mediterranean ports of the Arab countries if they go all the way to the European ports or to America and then come back to Israel because Israel oil resources are not enough to maintain even one hundredth of the machinery of their wealth, the roads, the aircrafts, the regular running of their machinery. They know oiling of their requirements.

So normally whether it is Japanese or a Greek or Netherlands, the American tankers do not go by that way. So what they do, the oil is filled up in Iraq or in Jordan or in Saudi Arabia on a particular flag.

It could be a flag of Iraq, it could be a flag of somebody. It goes right up to Gibraltar. The same ship, the same oil. They change the flag, changed to either that of the United States or Netherlands, because Netherlands was the only country which was freed from the impact of the oil crisis. Then the same ship comes back unloads the oil at Hypha seas. Arabs are helping Israel to fight them.

This is the moral of the story. Because in 1967, we discovered they run faster on their return journey because what is happening is this is the law. This is the kind of environment and duplicity and intrigue, that is taking place around you and to add to this now if all those resources and raw materials of the world which are being depleted, day in and day out and if you are going to increasingly depend on the sea either for food or for mineral, every resource, every scientific and engineering discipline is going to be applied for the exploitation of this.

And who has the technology. Well it is the West. So by constantly bashing the United States of America, you will only make it an enemy. So why not have a co-operative engagement. You see actually what happens is cooperating. Cooperation does not mean ganging up. By ganging up we do not achieve anything.

I will tell you why. Recently there were two instances. One instance is too recent. Therefore you must have known that where your Sagar Kanya was involved. I believe some Americans boarded it. Were allowed to board and then go away. Afterwards someone said after the purchasing of the weapon only you think of the policy. Similarly after the whole thing was over, they were questioned. Forget this.

The same thing happened in 1991. There is a Scripts Institute of Oceanography in California. It is partly funded by the Pentagon and the military department. Actually it is very difficult to know which is funded by Pentagon and which is not. Sometimes even Pentagon does not know. I mean they have put their fingers in every pie. Sometimes it becomes difficult. They have collaborated with the Government of India, with the DRDO and NIO along with Sagar Kanya to help in trying to find out the temperature profiles in the Indian Ocean and

then our scientists and our people were a part of the collaboration. Officially the collaboration agreement was signed. After the whole experiment was over, they did not give the results to us. I do not blame them. I mean if you are an idiot why should not he exploit you. That is a different issue altogether. But then what happened. When we went through the whole drama again, we discovered that the Law Ministry which was supposed to vet the agreement between NIO, DRDO and the Scripps Institute of Oceanography. We did not say that we should share the material. The information gathered should be shared because it was assumed.

Time Magazine or Vishwa Hindu Parishad shows Sitaram Kesari photograph. They will say how handsome. What they do and how they say is independent of the fact. How do you fall for it?

With this kind of enormous interest to substitute the kind of a raw material shortage and getting it into the ocean in the kind of submersive and exploitive technology what role can you play in Indian Ocean? What is the role left? How much of the military component is going to be in this? For this we go back to history briefly.

Much before Soviet Union became communist, it was the so called imperialist powers which were trying to grab the wealth of the other countries. France Vs. England, actually France and England are classical examples. They used to fight in every continent, including India. They fought in America, they fought in India, they fought in Europe. They fought all over.

Once Soviet Union came, they thought there would be a historic collision between competing maritime doctrines of Soviet ideology versus the Western Ideology. So either way, the competition was in the ocean. The Soviet Union has collapsed. Now again it will be between the capitalist countries against whoever has got the technology to exploit it. So now what is happening? They say two businessmen vie with each other for becoming more and more rich. But they are united as far as the consumer is concerned, because he is interested in the money in your pocket.

In 1982 Peter Drucker, the management guru said, the raw material prices have fallen down. It is becoming easier for the West to purchase the raw materials after decolonisation than before. Who are responsible? Tragically people thought that the collapse of Soviet Union means collapse of socialism. As an ideology it does not die. Facilitators, were exchanged for IMF loan, for exchange for a technology transfer that you do not require or for exchange of the kind of the weapons that the Western things are manufacturing.

As far as Indian Ocean is concerned, I have one more example. Three years back there was a conference of Western European countries at a place called Glen Eagles in Scotland. They thought now there is peace dividend. Suddenly somebody found out like Russia found out that dismantling a weapons system which they have, is costlier because there are experts, only who can do the job, and they are very expensive. You know ship breaking. Anybody cannot break a ship, just as much as anybody cannot split an atom.

So what happened was that they found out that because it is costlier to dismantle a weapon, why not give it, why not distribute it. So the conflict zones have returned into the world. The same thing happened in Glen Eagles. All the Western European countries suddenly decided that the purpose of the peace dividend is lost because we are going to spend more money on dismantling a weapon than making of a weapon. If we cannot do it, why not earn the money?

Lastly there is Japan, Japan's self-defence forces. Their budget is 38 billion dollars. I do not believe in self-defence force. 38 billion dollars, even if you accept that they are paid very much, the cost of weapon system which they buy also is very much, with 38 billion dollars, what are they doing ? But then the amount of Japanese dependence which my predecessor brought about, 60% of the raw material of South East Asian countries go to Japan, 100% of the oil. Now they want to be careful about it. Do you want that country to be peaceful?

Can all the third world countries and the littoral take on the kind of might in the science and technology that is going to be used in the oceans tomorrow? Can they unitedly which of course is out of

question. Can they take on this third largest maritime traffic, they say 35000 ships per annum which move ? Which country in this littoral can do it?

Yesterday someone said that France applied for membership of the IOR. My information is Mauritius asked France to apply for membership. That gives you the range of the people. Mauritius is the third largest foreign direct investor in India, where is that money from Mauritius. This is part of the environment, which has to be faced.

**CLOSING REMARKS BY CHAIRMAN
J. G. NADKARNI**

On behalf of the Governing Council and all members of the Centre for Advanced Strategic Studies (CASS) I take this opportunity to convey our gratitude and sincere thanks to all our distinguished speakers, Vice Admiral MP Awati, Shri MP Pinto, Ms. laxmi Puri, Prof. PV Rao, Dr. Ms. Aditi Pant, Vice Admiral Arun Prakash and Prof. A. Narasimha Rao my special thanks to Vice Admiral A. Tandaon for chairing the sessions on 7th March, 1998.

I would also like to convey our sincere thanks to the Ministry of External Affairs for supporting this seminar, and last, but not the least to all of you who have willingly participated in this seminar for the last two days, made worthwhile for all of us to be here. Our thanks are also due to Shri Suresh Chhabria the Director, National Film Archives of India and his deputy Shri Shashidharan and his staff for making their auditorium and infrastructure facilities available for this seminar.

SUMMARY OF DISCUSSIONS

The Indian Ocean, the third largest in the world is bound to witness a tremendous growth in maritime traffic resulting from increased trade and commerce in the 21st century. It is endowed with rich natural resources. It provides an important outlet to the huge oil reserves in the Middle East and its sea lanes are very busy. The Suez Canal, the Cape route, Malacca Straits, Hormuz and the sea lane South of Sri Lanka are the main straits and choke points. Disruption in any segment of the Indian Ocean Sea Lanes of Communications (SLOCs) would prove disastrous to the economies of nearly all countries. Maritime security compels serious attention. These factors invest the region with great strategic importance, which pose many challenges to the Indian Ocean littoral countries. India occupies a central position in this scheme of things. Lately it seems to be waking up to its responsibilities in the IOR and assessing the challenges that lie ahead: The seminar therefore is very timely. It evoked a very enthusiastic and animated response. The main speakers, being experts in their field brought in a wealth of information to the discerning seminar participants, who asked pertinent and searching questions and made relevant comments. At the end a general consensus emerged on the following lines :-

- Prior to the European invasion, India occupied a pivotal position as the link joining the eastern and western stretches of the economic zone that was formed around the Indian Ocean. Several flourishing port cities on both the coasts of India served the needs of this Indian Ocean centred world economy.
- In spite of the flourishing trade and maritime activity shipbuilding in India remained confined to old technologies over many centuries. No effort was made either to improve this technology or build a military marine to make India a sea power.
- With the British in power came the decline of both Indian shipping and the Indian Ocean centred world economy.
- Maritime activity in the Indian Ocean is bound to increase with increased economic activity in this area. This represents both an opportunity and a challenge. The opportunity to increase

prosperity through increased trade and commerce e.g. establishing a viable ship repair industry, must not be missed. The challenge of preserving and protecting our environment and the ocean, that is so much a part of our heritage, is enormous.

- Politics of oil impinges on the politics of all Indian Ocean countries in some way.
- Security against pollution, poaching and piracy poses a serious problem in the IOR.
- Increased level of pollution is an inevitable concomitant of development. Maritime pollution has assumed such alarming proportions that the world community has got together to put a stop to the wanton despoiling of the earth's natural resources in the name of development.
- MARPOL 73/78 Convention covers a wide range of measures needed to combat pollution. Its five annexures and Sixth in making deal with pollution by oil, by noxious liquid substances carried in bulk, by harmful substances carried by sea in packaged forms, by sewage from ships, from garbage from ship and air pollution caused by marine diesel engines using oil with high sulphur content. India has ratified Annexures I and II and is yet to ratify Annexures III, IV and V. It is in India's interest to ratify these soon and position the reception facilities and qualified inspectors and supervisors at the ports. In the absence of these, pollution of the Ocean, including the territorial waters goes on unabated.
- It is essential to tighten port state control mechanisms, and introduce a measure of regional cooperation in the use of satellites for monitoring operational pollution in the Indian Ocean.
- A number of countries have joined together to adopt a regional approach to Port State Control. There is an urgent need for a similar regional approach in the Indian Ocean region. Without this, any concerted effort to combat pollution, protect the environment and ensure the safety of life at sea becomes

infructuous. An initiative in this direction has been taken. It is expected that the basic procedures, currently obtaining, will be harmonised to bring about uniformity.

- It is in India's interest to move IOR-ARC towards stronger cooperation and deeper integration including through preferential trading arrangements (PTA).
- Earlier, the political element was at the core of regional formations. Now trans-regional groupings primarily for economic purposes are emerging.
- Given the shift in world power structure from military to economic strength and the shift of global attention towards the Indian Ocean, it is natural and imperative for a country of India's size and potential and its strategic location to respond actively to the rapidly altering scenario. That explains India's lead role in the evolution of IOR-ARC.
- In the IORI, the key actors should be South Africa, India and Australia. The objective factors which helped build Afro-Asian consciousness and anti-colonialism have long disappeared. With the dismal records of the NIEO, non-alignment and IOZP, there is a doubt if South Africa would take serious interest in the IOR-ARC.
- Australia's policies in the 90s are increasingly shaped by the need for engagement with Asia while continuing to sustain strategic relationship with the US and ties to Europe. The 10 members are not very confident of Australia's effective contribution or involvement in the region's economic cooperation. As opposed to the views of South Africa and India, Australia is keen on inclusion of security matters within the framework of the regional forum.
- IOR is endowed with vast natural resources that remain under-utilised, which serves as a source of conflict, global and local.
- A veritable treasure house of mineral wealth awaits exploitation on the ocean bed in the form of polymetallic nodules. Only a few

developed nations have the where-withall to exploit these. This treasure house has a great potential for conflict in the future.

- Against a potential fish catch of 8 mn tonnes, the total annual fish catch inclusive of both marine and freshwater fisheries is about 4mn tonnes. The challenge in the early 21st century is to actualize the potential.
- Traditional fishing grounds are being over exploited resulting in the plateauing of the annual fish catch. Hence the need to explore new fishing grounds and to improve fish finding techniques. Remote sensing, an ideal tool for exploring new fishing grounds should be resorted to.
- Fish location information dissemination network needs to be optimised to make proper use of satellite imagery findings.
- Localization of breeding grounds of economically important marine fish harvested in India with a view to their conservation calls for serious attention and immediate action.
- Aquaculture needs to be improved to bridge the gap between actual and potential production.
- Marine pollution poses a serious problem. Polluted hotspots, in all our coastal provinces dot the 8000 km coastline. These have endangered marine life and the livelihood of a very large number of fishermen. The problems need to be addressed without any further delay.
- The USA wants unfettered access to markets of the IO region as also the SLOCs open at all times to keep her economic engine ticking smoothly.
- The USA has promulgated the concept of "Forward From the Sea." It focuses on the perceived threat from "aggression by regional powers" and extends the operational domain of naval forces from littoral areas well into the hinterland of target countries. It is interesting to note William Cohen's concept of US

strategy. He states, "Our strategy is to keep forces without any peer. We don't want to engage in a fair fight ... if we do fight, we win on our terms."

- Afflicted by financial and economic crisis, Russia can be expected to play only a marginal role in IOR in the near future.
- India needs to take serious cognizance of Chinese naval build up, its communication and port access and presence in the Indian Ocean.
- The Chinese armed fleet under Admiral Chang Ho had visited Calicut from 1405 to 1431, perhaps to clear the seas of pirates and leave a signal of their supremacy. The Chinese have again started making forays in the Indian Ocean, and establishing bases which they can use.
- Pakistan is developing Gwadar and Pasni ports on the Makran coast which will provide an ideal location for her naval forces to interdict India's oil supply lines from the Persian Gulf. India's offshore oil production complex of Mumbai is also vulnerable to attack by Pakistan naval forces.
- India should maintain a strong maritime force to safeguard her long term national interests, which lie increasingly in the oceans.
- The Indian Navy seems to lack a doctrine simply because politically we are a sea-unfriendly or ignorant nation.
- Even after half a century of independence India does not have a defence doctrine. This needs to be formulated as a matter of urgency and the defence forces architecture is worked out and implemented to meet the challenges of the 21st century.
- India needs to ensure ruling out of any dissonance between foreign policy objectives and national security needs.

CENTRE FOR ADVANCED STRATEGIC STUDIES

SEMINAR "INDIAN OCEAN : THE CHALLENGES AHEAD" (6TH & 7TH MARCH, 1998)

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