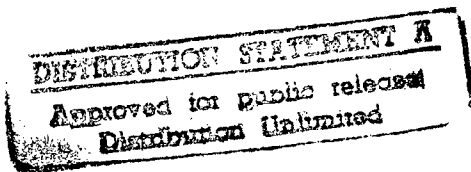


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AIR WAR COLLEGE

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THE INDIAN NAVY:
A MILITARY POWER AT A POLITICAL CROSSROADS



by

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A Research Report Submitted To the Faculty

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Chapter 1

Introduction

The Indian Navy stands at an important juncture in its history. Long considered a “blue water” navy, many of its major vessels are nearing the end of their useful service lives, and will soon require replacement. Unfortunately, the country has chosen to devote the majority of its fiscal resources toward other pursuits, primarily business-related ones. Tenuous military procurement relationships with both the east and the west, coupled with an indigenous shipbuilding program which is struggling to achieve an acceptable level of productivity, portend for a future that is unclear at best. Nevertheless, India is expected to enter the 21st Century with a smaller, but still formidable, regional naval presence. This paper will review the growth of the Indian Navy over its relatively short history, examine in detail its current tasking, organization and capabilities, and venture an estimation of what the immediate future may hold for this proud, but aging force.

Naval Heritage

Prior to examining the Indian Navy in detail, it is important to establish a historical framework upon which the current capabilities are built. Although India’s maritime history is not often well-remembered, sea-faring traditions date back to Vedic times, from 2000 to 500 B.C., when the ancestors of modern India recognized their unique geographic

position, and exploited the surrounding sea, using it as an “avenue” of trade to both the east and the west (incidentally, the Indian Ocean is the only body of water its size that draws its name from a country).

At the height of its early maritime activity, India’s culture and religion “traveled” peacefully with its trade and influence. From the coming of the Moghuls in the 1500s, and on up through the more modern colonial period of the 1900s, India largely relinquished its maritime heritage and supremacy to the European powers, instead focusing its fears of (and defense against) aggression by the peoples of the Asian land mass to the north. Even after independence from colonial rule was achieved in 1947, Indian involvement in wars with Pakistan in 1948 and 1965, as well as with China in 1962, kept national attention focused on the security of the country’s land frontiers to the north. Although an Indian Navy emerged following the period of colonial rule, and contributed to the 1965 victory over Pakistan, it was not until 1971 that the “watershed event” for the modern Indian Navy occurred.¹

In mid-December 1971, a United States naval task force, led by the nuclear-powered aircraft carrier USS Enterprise, entered the Bay of Bengal, ostensibly to evacuate Americans from war-torn East Pakistan. The carrier’s deployment, at the height of the third Indo-Pakistani War, also coincided with the presence of several (additional) Soviet warships in the Indian Ocean. Although the initial State Department public release declared the intent of the mission to be “a show of force by the United States for the benefit of both India and the Soviet Union,” President Nixon later clarified the event to be a gesture of support for Pakistan and China in light of the increased Soviet naval presence, in addition to the more obvious evacuation efforts. Both India and the Soviet

Union lashed out at the American presence, the Soviets labeling it "gunboat diplomacy and gross blackmail against India."²

For the second time in a decade, India had been embarrassed by a major world power. In 1962, they had been defeated quickly and handily at the hands of the Chinese Army, prompting an "obsessive" build-up of their land forces. Now, despite the absence of direct conflict, a major naval power had sailed into "their" contiguous international waters with relative impunity, causing them to recognize that even had they wanted to resist such an "incursion," they were relatively powerless (militarily) to do so. Consequently, since 1971, the Indians have sought to improve and modernize their Navy, much as they did with their army starting in 1962.

Despite competing national interests over the last 25 years, which have limited the funds available, both to the defense forces in general and the Navy in particular, the Indian Navy has been transformed from a small, "brown water" coastal defense force into formidable, comparatively-modern "blue water" fleet. Unlike the Indian Navy of 1971, the modern-day force is capable of projecting Indian military force throughout the Indian Ocean and South Asia, while protecting the country's national security interests.³

Notes

¹ Vice Admiral S. P. Govil, PVSM, AVSM (Retd), "Why the Navy? Its Roles and Responsibilities," *Indian Defense Review* 8, no. 3 (July 1993): 64.

² Marcus B. Zinger, "The Development of Indian Naval Strategy Since 1971," *Contemporary South Asia* 2, no. 3 (July 1993): 339.

³ *Ibid.*, 340.

Chapter 2

Naval Roles and Missions

Since 1971, India has sought to ensure its maritime safety and security by achieving and maintaining a “powerful, well-balanced, multi-purpose ‘blue water’ fleet.” This fact is reflected in a mural on the outer walls of the Indian Navy’s dockyard in Bombay, which depicts a naval force composed of surface ships, submarines, and aircraft, and bears the caption: “Three-Dimensional Navy.” This Navy is charged with a number of imperatives. In general, it must protect the nation’s almost 8,000 km of coastline, more than 300 island possessions, two million square kilometers of Exclusive Economic Zone (EEZ), and important sea lanes of communication, or SLOC’s, which account for 97% of the country’s external trade.¹ Each of these taskings warrants discussion in additional detail.

The Indian coastline is not only home to the numerous seaports through which the country’s life blood passes, but the western coast (in particular) contains vast oil fields, which account for about two-thirds of India’s domestic oil production. The Indian island territories are of both strategic and economic importance to the country; their location is near vital major sea lanes (read trade routes), and they provide an advanced site from which the country can project its military power (if required) well beyond the shores of the Indian sub-continent. Also, the coral reefs adjacent to the Indian island chains contain

fertile fishing grounds, which satisfy domestic food needs, while serving as a valuable source of foreign income. Both the oilfields and the fishing grounds lie well inside India's EEZ, as do other rich mineral deposits.²

Also, the importance of maintaining free access along the SLOC's cannot be overstated. Although the dominant naval power in the region, the Indian Navy maintains that its role is not to dominate the Indian Ocean. Nevertheless, India feels a responsibility for ensuring free and unencumbered passage for ships of all nations throughout the world's third largest ocean, from the west coast of Africa to the Straits of Mallaca. The Indian Ocean represents one-fifth of the world's water mass, is bounded on its littoral shores by 47 countries, and serves as the transport route for 65 percent of the world's oil supply.³ By protecting the Indian Ocean's SLOC's, India can not only further its own national strategic national interests (i.e., free trade in support of a growing market economy), but can also help guarantee similar benefits for its littoral neighbors.⁴

In addition to providing a "persuasive deterrent" to superpower intervention in the Indian Ocean, India sees its Navy as a means of countering other specific, formidable threats to maritime security in the region. These include Pakistani attacks on Indian oil platforms in the Arabian Sea, the growing influence of China in the South Asia region, including the establishment of a surveillance station in the Bay of Bengal (located on the islands of Myanmar) and an expanding naval presence in the Indian Ocean, and attempted aggression in or against friendly littoral nations, which could threaten Indian influence in the region. Two examples of the latter, in which India played a suppression role, were an attempted coup in the Maldives in 1988, and a similar occurrence in nearby Sri Lanka. The Indian Navy has also played an important role in the ecological well-being of the

region, such as efforts to quickly contain a 40,000-ton oil spill in the Andaman Sea in 1989 which, without the quick intervention of Indian naval and Coast Guard units, could have destroyed wildlife as far away as Malaysia, Thailand and Indonesia.⁵

Only recently has the Indian Navy shown signs of relaxing its isolationist philosophy in certain areas. India and the United States have conducted two major, joint naval exercises in the 1990's, and a third one is scheduled for 1996. These are apparently the first significant joint naval exercises that India has ever engaged in with a major navy, and have helped open the door for similar exercises with other countries. Ironically, despite the strong Soviet influence evident in Indian Navy hardware, the two countries have apparently never engaged in a major naval exercise. A senior representative of the Indian Navy summarized this change in philosophy: "the situation with the United States has changed; we are no longer at arm's length, are trying to understand each other, and will be together in certain fights in the future."

Notes

¹ Edmond Dantes, "Naval Build-up to Continue Unabated," *Asian Defense Journal*, March 1992, 52.

² Rupak Chattopadhyay, "Indian Maritime Security: Case for a Blue Water Fleet," *Indian Defense Review* 9, no. 3 (July, 1994): 79.

³ Hormuz P. Mama, "India's Naval Future: Fewer Ships, But Better," *International Defense Review* 26, no. 2 (February 1993): 163.

⁴ Prasad.

⁵ Chattopadhyay, 79-80.

Chapter 3

Naval Organization

The Indian Navy, under the command of the Chief of Naval Staff (CNS), located in New Delhi, is the world's seventh largest navy.¹ It consists of two fleets, the Eastern Fleet, homeported primarily in Visakhapatnam, on the Bay of Bengal, and the Western Fleet, homeported primarily in Bombay, on the Arabian Sea.² The Eastern Fleet tends to be composed primarily of older, former eastern block vessels, while the Western Fleet tends to be mostly newer, more capable ships, acquired primarily from western nations. In addition, to simplifying maintenance requirements by grouping like-class ships geographically, this postures the Indian Navy's most formidable weapons platforms closest to its most likely threat, Pakistan.³

Regionally, there are three principal commands, each also commanded by a flag officer. These are the Eastern, Southern, and Western Naval Commands, located in Visakhapatnam, Cochin (on the southwestern coast), and Bombay. In addition to the principal commands, flag officers direct three large sub-commands: Naval Aviation and Goa Area (in Goa, on the western coast between Bombay and Cochin), Submarines (in Visakhapatnam), and the "Fortress" in the Andaman and Nicobar Islands (Port Blair), located in the southeastern Bay of Bengal.⁴

Notes

¹ Dantes, 52.

² Captain Richard Sharpe, OBE, RN, ed., *Jane's Fighting Ships, 1995-96* (Alexandria, VA: Jane's Information Group, Inc, 1995), 286.

³ Antony Preston, "India's Naval Expansion," *Asian Defence Journal*, September 1992, 72.

⁴ Sharpe, 286.

Chapter 4

Naval Facilities

Each of the areas which is home to a principal command is also the location of a variety of naval and naval support facilities. On the east coast of India, the Visakhapatnam area includes a submarine base and the Navy's submarine school, several naval air facilities (including one well to the south, in Madras), the Navy's new recruit training facility, and a major dockyard (which was built with Soviet support, and is still being expanded). Other facilities in the region include the submarine VLF broadcast transmission facility, at Vijayaraghavapuram, and shipyard facilities further to the north in the Calcutta area, where frigates, corvettes, amphibious ships, and auxiliaries are constructed.¹

On India's west coast, the Cochin area is home to a naval air station, a ship repair yard, and the naval training command's professional schools. Further to the north, Goa is the site of the Indian Naval Academy (which may eventually be moved), various naval air facilities, as well as a shipyard which constructs some of the Navy's smaller vessels, including patrol and landing craft. Nearby Karwar has been selected as the site for a new naval base, which has been delayed, like many other projects, due to funding constraints. When complete, it will include "alongside berthing" for an aircraft carrier, and a new naval air station. In the north, Bombay's naval facilities include a barracks and main

dockyard with one aircraft carrier dock, submarine pens, the Navy's supply school, and a shipyard, where submarines, destroyers, frigates, and corvettes are constructed.²

Aside from those facilities located on the mainland of the Indian sub-continent, the Indian Navy maintains a distinct presence in each of its major island territories. At Lakshadweep, in the Laccadive Islands (about two hundred miles off of the southwest coast), there is a patrol craft base. Six to seven hundred miles to the southeast of Visakhapatnam, the Andaman and Nicobar Islands have their own respective limited support facilities, including a floating dock.³ Port Blair, in the northernmost of the two island chains, the Andaman's, is home to a naval air station.⁴

Notes

¹ Ibid.

² Ibid.

³ Ibid.

⁴ The International Institute for Strategic Studies, *The Military Balance, 1995-1996* (London: Brassey's (UK) Ltd., 1995), 158.

Chapter 5

Naval Forces

Like most modern military arms, the Indian Navy's most important asset is its people. The Indian Navy numbers some 55,000 and is a professional, well-trained, all-volunteer force. Of the 55,000 officers and enlisted personnel, some 5,000 are members of the naval air arm, and another 1,000 are members of the relatively new Marine commando force, which was formed in 1986. The Indian Navy's amphibious mission is primarily in support of the Army (vice the Marines).¹

In fulfilling its roles and missions, the Indian Navy employs a variety of capable ships and aircraft acquired from both the east and the west, as well as an increasing number of indigenously-built platforms. Because the naval portion of the defense budget has been in decline, fleet operational readiness has suffered. The latest edition of *Jane's Fighting Ships* reports that only about half of the country's aging fleet is "fully operational," with the remainder of the Indian Navy's ships considered only "seaworthy."²

In addition to the varying "lineage" of the Navy's vessels, most can be considered "technological melting pots" in and of themselves, owing to the diverse producers of their various weapons and support systems. Some vessels contain integrated systems from as many as eight different nations. The design source nation breakdown among Indian Navy

ships' systems as of 1993 was as follows: Russia-41, Great Britain-35, India-27 (minimum), Germany and Holland - six each, and Sweden, Canada, France, Italy, and the United States—three each. To the credit of the Indian naval engineers, and not without the expenditure of significant time and expense, they have managed to satisfactorily resolve most compatibility problems among the various systems, and are able to send formidable warfighting platforms to sea with some regularity.³

Aircraft Carriers

The backbone of India's Navy is its carrier force, which consists of the INS Vikrant and the INS Viraat. The Vikrant (ex-Glory), with a range of 12,000 miles, was acquired from the United Kingdom in 1957, and the Viraat (ex-Hermes), with a more-restricted range of 6,500 miles, followed in 1986. Both carriers routinely embark six Sea Harrier Vertical/Short Takeoff and Landing (V/STOL) fighters and approximately eight Sea King Anti-Submarine Warfare (ASW) helicopters. In a wartime scenario, the carriers can embark 22 and 18 combat aircraft, respectively. Both carriers are ideally suited for two missions: supporting amphibious operations and conducting ASW.

Despite their age and range considerations, either carrier can effectively project naval and air power anywhere in the South Asia region. In that only the United States, Britain, France, Australia, and Russia possess one or more aircraft carriers, these two Indian ships may be viewed by other nations, especially their Indian Ocean neighbors, as much diplomatic tools as military ones.⁴ Since Vikrant is expected to reach the end of its service life prior to the turn of the century, and Viraat is some 40 years old, India is reportedly pursuing procurement of at least one additional carrier of similar size.⁵

According to a senior representative of the Indian Navy, "the Indian Navy would like to have a total of two to four carriers; the question is just mastering the resources."

Submarines

The Indian Navy has a highly formidable submarine force, consisting of 18 diesel-powered submarines, most of which are of Soviet origin. The most modern ships of the force are the four Shishumar (209) Class submarines, early-1980s vintage, German-designed ships, the first two of which were built in West Germany, with the latter two being built in Bombay. The primary advantages inherent in this class of ship are its long range, and higher speed. Also impressive are the Navy's eight, late-1980s vintage, quiet, Soviet-built Kilo Class submarines, perhaps the first class of submarines from any nation to possess a limited surface-to-air missile capability. Finally, there are six, 1970s vintage, Soviet-built Foxtrot Class submarines, one of which is already being used as a "spare parts bin" for the other ships of the class, and all of which are due to be retired shortly.⁶ While all of the Navy's classes of submarines are ASW-capable, and carry both torpedoes and/or mines, all lack an anti-shipping missile capability, equivalent to that enjoyed by the Pakistani Navy.⁷

Although the Indian Navy continues to show an interest in the development of a nuclear propulsion capability within its submarine force, and leased two Soviet Charlie Class SSGNs from 1988 to 1991, realization of an indigenously built, nuclear-powered attack submarine appears to be years away.⁸ Nonetheless, the importance of the submarine to India's future naval strategy was underscored in a statement by the Navy's former commander, Admiral S. N. Kohli, who stated, "India cannot be content to have the

nuclear submarines of other countries prowling around the Indian Ocean and not be able to deter them in any way. The presence of an Indian attack submarine would make them think twice before undertaking such a deployment.”⁹ The strong emphasis on submarine warfare is also logical given the fact that the acoustic conditions in the Indian Ocean (varying and unpredictable thermal gradients and layers of varying salinity) favor submarine concealment.¹⁰

Major Surface Combatants

In addition to its two carriers, the Indian Navy possesses 23 operational major surface combatants, five of which are destroyers, and the balance frigates.¹¹ The most powerful escorts are the modern, Soviet-built, Rajput (Kashin II) Class destroyers, which have a formidable surface-to-surface, surface-to-air, and ASW capability.¹² The most capable of the smaller frigates are the three, indigenously-built Godavari Class ships, which represent half of the total planned class; this is one of the classes which exploits a mix of technologies from various countries, and completion of the three follow-on vessels has been delayed by Russian equipment supply problems. Fielding the same basic warfighting capabilities of the Rajput Class, one advantage of the Godavari Class is its ability to carry two ASW helicopters, vice the standard one. Combining the best of both classes in a larger, more capable vessel is another indigenously-built class of ship, the Delhi Class destroyer, which has not yet become operational due to a breakdown in the central control of Russian export equipment. The ship is being fitted with a combination of Russian and Indian weapons, though delays in obtaining the Russian systems may drive the Indians to seek technological relief from the west in outfitting future ships of the

class.¹³ Other classes of principal surface combatants include the Soviet-built Petya II Class frigate, the British-designed, Indian-built Nilgiri (Leander) Class frigate, and the modern, Indian-built Khukri Class corvette; all of these classes of ships have primarily an ASW role.¹⁴

Smaller Combatants

Because of the very long coastline and island territories which it is responsible for patrolling, the Indian Navy has wisely built a capable contingent of 41 patrol and coastal combatants, primarily small corvettes (17), but also including missile craft (6) and inshore (11) and offshore (7) patrol craft.¹⁵ Most of the smaller vessels are less than 20 years old and most of the larger vessels are less than 10 years old. The majority of the larger vessels are of Soviet design and manufacture, while the smaller vessels are indigenously built; the Sukanya Class offshore patrol ships represent an exception, having been designed and built (initially) in South Korea. Almost all of the larger vessels have at least a limited surface-to-surface and surface-to-air missile capability.

Amphibious Warfare Ships

The Indian Navy's amphibious arm (excluding the aforementioned role of the carriers) is only nine ships strong, namely one indigenously-built Magar Class LST (another ship of this class is planned) and eight Polish-built Polnochny Class LSMs. Both vessels have a range of over 2500 miles, and can carry several hundred troops. While the Magar is less than ten years old and generally-reliable, some of the older, Polnochny Class vessels are almost 20 years old, and the entire class is under operational restrictions due to the lack of spare parts.¹⁶ While the Navy's amphibious capability has

significantly-improved since 1971, having effectively supported the nation's regional peacekeeping interventions in the 1980's, given the material condition of many of its ships, its long-term reliability is questionable, as is its force projection effectiveness over great distances.¹⁷

Auxiliary and Support Vessels

Of the 43 remaining ships in the Indian Navy, almost half (20) are Mine Countermeasures ships, mostly of Soviet origin, and are believed to be more than capable of keeping the waters surrounding India's major ports accessible in time of conflict. Of the remaining vessels, there are only two large tankers, five small tankers, and one ex-Soviet submarine tender; the balance of the vessels is tugs and oceanographic research ships.¹⁸ It is this distinct shortage of replenishment vessels which has caused many to question the true extent of India's long-range power projection aspirations with a critical eye.¹⁹

Naval Aircraft

The naval air arm includes 68 combat aircraft and 75 armed helicopters.²⁰ In addition to the carrier-borne Sea Harrier aircraft and Sea King helicopters, the shipborne naval air order of battle also includes several other highly-capable rotary-wing aircraft, including the Soviet-built Kamov KA-27 "Helix 'A'" ASW helicopter, which may also eventually carry anti-shipping missiles. The Indian Navy also includes a substantial land-based maritime aircraft contingent, including the Soviet-built Ilyushin IL-38 "May" ASW maritime patrol aircraft (3800+ nautical mile range) and the Tupelov TU-142M "Bear 'F'" long-range (6700+ nautical mile range) surveillance and ASW aircraft. Both

aircraft carry extensive weapons and sensor suites. The Navy also has a Maritime strike squadron of 12 SEPECAT/HAL Jaguar International fighter/bombers, capable of employing anti-ship missiles, and is considering another Russian fighter, the SU-27 "Flanker," for future purchase if the budget permits.²¹

Notes

- ¹ Sharpe, 286.
- ² Ibid.
- ³ James C. Bussert, "India's Navy Blends Eastern and Western Ships, Systems," *Signal* 48, no. 12 (December, 1993): 41-42.
- ⁴ Zinger, 341-343.
- ⁵ Mama, 161-162.
- ⁶ Sharpe, 287-288.
- ⁷ Mama, 162.
- ⁸ Sharpe, 287.
- ⁹ Zinger, 342.
- ¹⁰ Mama, 162.
- ¹¹ The International Institute for Strategic Studies, 158.
- ¹² Preston, 69.
- ¹³ Sharpe, 291-293.
- ¹⁴ The International Institute for Strategic Studies, 158.
- ¹⁵ Ibid.
- ¹⁶ Sharpe, 299.
- ¹⁷ Mama, 162.
- ¹⁸ The International Institute for Strategic Studies, 158-159.
- ¹⁹ Chattopadhyay, 81.
- ²⁰ The International Institute for Strategic Studies, 159.
- ²¹ Sharpe, 295.

Chapter 6

India's Naval Future

Over the past 25 years, India has frequently demonstrated the commitment to exercising unsurpassed naval leadership within the Indian Ocean and South Asia regions. However, how well this record and vision will translate to future success remains to be foreseen. Two significant areas warrant special attention, with the common potential stumbling block being budget constraints.

Readiness

The operational readiness of the fleet is reported to be as low as 50 percent. Various factors play into this problem. There are aging ships, previously purchased from countries such as the Soviet Union, for which repair parts are not readily available. Those parts which are available, especially in the case of the Russian suppliers, are generally provided on a "cash and carry" basis, due to severe economic problems in Russia. The competing interests, not only within India as a whole, but also within the Indian Navy, mean that not all material problems can be promptly resolved.

Contributing to this problem is the difficulty of system compatibility between parts produced in different countries. In other words, although a similar component may be available more cheaply, or on credit, from another supplier, it may ultimately be more

expensive, both in time and money, to purchase that part, and then have to “re-engineer” it to make it compatible with the existing system. On a larger scale, this compatibility problem also exists on newer, indigenously-built ships, where the procurement of suitable sensors or weapons systems from various suppliers is only half the battle—making them work together effectively as a system of systems is often even more costly than buying them all from a common source.¹

Procurement is not the only material readiness problem the Indian Navy faces. Both the quality, and in some cases, the integrity, of workmanship have come into question. The Indian shipbuilders have proven a lack of technical expertise in accomplishing difficult tasks, such as the welding of the high-tensile steel in submarine hulls, or the potential manufacture of glass-reinforced plastic (GRP) for minesweeper hulls. Also, there have been accusations that former dockyard officers of middle rank, who started small civilian companies to do naval contract work, supplied substandard materials with the intent of winning follow-on contracts.²

A secondary aim of India’s indigenous shipbuilding program has been to boost the country’s economy through exports. The cost overruns and suspect products for which problems such as these bode are not likely to foster confidence among, or sales to, interested countries. Also, much as material readiness has directly affected operational readiness, it is conceivable that fiscal limitations could also start to directly affect training readiness; upon reflection, it is inevitable that training readiness has already been indirectly affected by the inability of many crews to get underway and gain valuable at-sea operating proficiency, for which there is no true substitute in the shore training environment.

At the “macro” level, the question of readiness can be extended to the discussion of whether or not a service’s assets, given that they can get underway on-demand, and are trained proficiently to accomplish their mission, are really “ready” if they are limited by such factors as endurance and capacity. As previously discussed, the Indian Navy probably lacks the auxiliary support assets to effectively and continuously engage in a prolonged conflict distant to its continental shores. Depending on the location and the nature of the conflict, amphibious lift could also prove to be constraining.

Modernization

The importance of India’s aircraft carriers as both political and military instruments has been highlighted, as has been the fact that both are growing “weary.” This is perhaps the best example of the imperative to modernize which the Indian Navy faces. At the systems-level, the most glaring need of the Indian Navy is to upgrade its surface-to-surface missile capability, both with respect to range and survivability, in order to meet the current threat presented by other powers in the region.³

In 1992, Chief of Naval Staff L. Ramdas mandated a re-balancing of India’s naval forces from two-thirds small and medium-sized ships, to 60 percent larger, sea control ships/40 percent small combatants, thereby precipitating the country’s ambitious, indigenous shipbuilding program.⁴ The long-term commitment to an indigenous shipbuilding program was reiterated more recently by a senior representative of the Indian Navy, who acknowledged that although it may be cheaper to purchase ships abroad, “India must be willing to pay the price to stand on its ‘own two feet.’”

It is becoming apparent, however, for the reasons discussed in the previous section, that indigenous production will probably not meet all of India's near term ship-replacement needs, especially in the areas of modern, missile-armed vessels and a replacement or additional aircraft carrier. It is vital that this be recognized, and key decisions be addressed regarding the direction of the Navy's modernization program. Specifically, if India is not willing to settle for "less" in both quantity and quality from a sub-optimal indigenous shipbuilding program, then perhaps the government should be willing to spend the money to meet the military shortfall elsewhere. If the future decision to import ships is made, India must then make some hard political choices regarding its future alliances, and whether its commitments should be toward the east or the west.

One commitment that seems, at least "on the surface" (no pun intended), to have remained reasonably firm throughout the past decade is India's desire to someday indigenously produce a nuclear-powered attack submarine. The cognizant program, alluded to earlier in the force capabilities section, is best known as the Advanced Technology Vessel (ATV) program. The model for the ATV is the Russian Charlie Class SSGN, two of which the Indians operated for three years. The 2500-ton Indian vessel will be a Russian-designed ship with an Indian pressurized-water reactor (PWR). There is thought to be a land-based prototype of the PWR already in existence. According to speculation in open sources, laydown is anticipated in 1997 in Visakhapatnam, with the Russians providing technical assistance during the building process.⁵ The ATV is expected to be outfitted with the Indian Sargarika cruise missile, also currently under development. Currently, the ATV Program is thought to have priority over the procurement of an additional (or replacement) aircraft carrier.⁶

When questioned about the prognosis for the ATV program, and specifically, when India could be expected to have an operational, nuclear-powered submarine, a senior representative of the Indian Navy responded that he was "not authorized to comment on the subject." This fuels speculation by other sources that a nuclear-powered submarine is not in India's immediate naval future.

Notes

¹ Mama, 163.

² Preston, 68-72.

³ Chattopadhyay, 82.

⁴ Dantes, 52.

⁵ "Advanced Technology Vessel Programme," *Asian Defence Journal*, March 1992, 91-93.

⁶ Sharpe, 287.

Chapter 7

Summary

This paper has reviewed the history of the Indian Navy, detailed its current roles and capabilities, and examined its future course. For it to remain a credible force, maximum readiness and an aggressive modernization program must become top priorities of not only this proud, professional force, but more importantly, the Indian government. The bottom line is simple: "everything has its price." At a time when the Indian defense budget as a whole is dwindling in favor of other national interests, and the Navy has the smallest portion of the three major services to begin with, a significant financial commitment is required to effect the required improvements. This paper has detailed some of the key decisions which Indian politicians must realistically (and quickly) face if the "ship is to remain on course." The outcome of those decisions will significantly impact the future of a service, if not ultimately, the destiny of an aspiring nation and its sea-faring people.

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