Tides of Time

(HISTORY OF MUMBAI PORT)

PORT of BOMBAY

M. V. KAMATH

Tides of Time, *a volume of the history of the Mumbai port traces the growth and development of the port city from a tiny fishing village to an island city and eventually blossoming into a premier centre of trade and commerce. The development of the port played a tremendous role in the progress of the city and surrounding areas. Soon ship building activities flourished and the ships built by the master builders- the Wadias, sailed the world over.*

Port development, had its own shares of ups and downs. Wars, famines, plague, recession, strikes and a major explosion in the dock, were some of the setbacks. The port survived them all emerging like a phoenix and rising to great heights and prosperity through a process of evolution and modernisation.

The book places emphasis on unionisation of dock labour at the height of the nationalist movement, which gathered strength and finally brought about cordiality in management-labour relations.

The book traces the milestones in port development and provides deep and fascinating insights-hitherto unknown, into its long history.

Front Cover
Prongs Light House
at the entrance of Mumbai Harbour
Erected : Oct 1874
1st Class dioptric of 3,30,000 candle power
Visible : 17 miles
Height : 146 feet

Back Cover
Container Terminal at Indira Dock 1999

TIDES OF TIME

HISTORY OF MUMBAI PORT

The Port of Bombay, (circa 1730 A.D.*)*
(Reproduced by permission of the Secretary of State for India from the original picture in the India Office.)

TIDES OF TIME

History of Mumbai Port

M. V. KAMATH

Mumbai Port Trust

TIDES OF TIME
History of Mumbai Port

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Dedicated to

Employees of Mumbai Port Trust

Gerald Aungier the man who literally made Bombay in the last quarter of the seventeenth century would have applauded. And so would have Col J A Ballard who presided over the meeting of the Board of Trustees on July 3, 1873.

राजनाथ सिंह

RAJNATH SINGH

जल, भूतल परिवहन मंत्री
भारत सरकार
नई दिल्ली
MINISTER OF SURFACE TRANSPORT
GOVERNMENT OF INDIA
NEW DELHI-110001

Foreword

I am happy to learn that Mumbai Port is publishing a book on the history of the Port written by Shri M. V. Kamath, well known journalist and author.

Mumbai Port has been a premier port of the country and a key link in the chain of international transportation. It is justifiably proud of its glorious past spread over many decades. The story of the growth of this majestic port is a saga of foresight and determination to meet the requirements of the country and the trade in the pre and post independence eras and its continued efforts to keep abreast with the sea-changes in the maritime trends.

The Country is proud of the splendid contributions Mumbai Port has made to the nation's economy, trade, industry and commerce and above all, to the national life. Apart from its traditional role as a Major Port in trade and industry, Mumbai Port is poised to launch an ambitious programme starting with upgradation of facilities, modernisation of equipments and expansion of its activities through private sector participation with a view to achieving high levels of productivity and service. The challenge before the Port is to adapt itself to changing circumstances, face competition and emerge stronger than before.

I am sure the book on the history of the Port written by Shri M. V. Kamath will be of immense value as a source of inspiration and reference in the years to come.

My good wishes for the success of this endeavour.

(RAJNATH SINGH)

NEW DELHI
DATED: 1st JUNE, 2000.

आर. वासुदेवन
सचिव

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Foreword

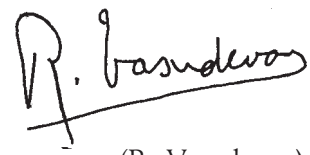
The Port of Mumbai, being the principal gateway of India, has played a pioneering role in the economic development of our country. With the constitution of the Mumbai Port Trust in 1873, the growth of this port was phenomenal. The history of Mumbai Port can be said to mirror the history of trade, commerce and economic development of the western region. Mumbai Port has faced and overcome numerous challenges while at the same time maintaining its position as a premier port of the country. Gifted with a natural deep-water harbour, the Port was developed by the creative wisdom and enterprising spirit of men with vision. Mumbai Port, having adapted itself to the changing patterns of maritime trade, is poised to play a significant role in commercial relations of our country with the rest of the world.

Given its excellent location and strong growth track record that dates back to 1873, the Mumbai Port Trust will continue to be a key player in catalyzing the growth of the country in general and the western region in particular. The Port Trust's past success has been successfully associated with the willingness to see the positive side of change and therefore puts the Port Trust and its workforce on a firm footing for facing the challenges of the next millennium. The Mumbai Port Trust, as an operator of port terminal services and a player with whom ship and cargo owners interface, needs to gear itself to play the role expected of it according to the acceptance criteria of the customers by continuing to place emphasis on the development of a culture that is consistently customer-oriented and not change-resistant. As much as modern equipment and systems are key to the sustenance of the high quality service provided by the Port Trust, it is crucial that there be equal progress in the areas of knowledge and skill development amongst the Port Trust's workforce. Mumbai Port Trust should focus in terms of

its investment plans in areas of physical assets, human resources, and support systems to enable it to position the facilities it runs as one that measures up to international standards and thus inspires confidence among the world's shipping services.

The Port has ambitious plans to replace the existing submarine pipelines by new higher capacity pipelines at the cost of Rs. 286.6 crores. In addition, the Port has planned for handling bulk liquid chemicals and specialized grades of POL at Pir Pau. These schemes are expected to result in capacity addition of 14.5 to 18.5 million ton per annum. The Port has also decided to optimize the existing facilities through private sector participation in the development of container terminals, licensing of 2 dry docks and development of berths No. 10/11, 12, 16 and 17 as general cargo terminal at Indira Dock. These schemes and projects will enable the Port to keep pace with the demands of trade and commerce by taking advantage of its strengths and planning for development, oriented towards the new opportunities.

I am happy to note that it has been decided to document the Port's glorious history for the future generations. I compliment Shri M. V. Kamath, the author and Mumbai Port Trust for this effort and wish them all success. By publishing this book Mumbai Port reflects on its glorious past while at the same time looking ahead to its future vision.



June 1, 2000 (R. Vasudevan)

मुंबई पोर्ट ट्रस्ट
MUMBAI PORT TRUST

अध्यक्ष
CHAIRMAN

पोर्ट भवन,
PORT HOUSE
शूरजी वल्लभदास मार्ग,
SHOORJI VALLABHDAS MARG,
मुंबई - 400 001
MUMBAI - 400 001.

दिनांक :
DATE : 12th June, 2000

Foreword

I am happy to note that a book was commissioned to chronicle the history and development of the Port of Mumbai.

Mumbai Port with its strategic location has been an important part of not only the history of India but of the world. Its natural and safe harbour has been the haven for sailing vessels over the centuries. The setting up of the Mumbai Port Trust in 1873, brought about development of the port in the form of berths within enclosed docks, sheds, warehouses with road and rail link leading to spurt in traffic. This proved to be an important milestone in the history of Port. Since then the port has passed through the vicissitudes of time, reaching glorious heights in its chequered existence over centuries.

As the premier port of the country, Mumbai Port has played a stellar role in the economic growth of the nation in general and the city of Mumbai in particular. A cluster of seven islands was metamorphosed into a great city and the financial capital of India. The port has been a great catalyst in the development of Mumbai.

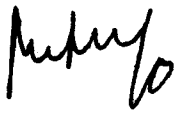
The Port has kept pace with the changing times and adapted itself to the ever changing maritime trends, providing facilities required to meet the growing trade demands. From being a general cargo port, it turned itself to a modern port handling various types of cargo – break bulk, bulk and containers, becoming the country's first container port. However, due to inherent constraints like limited draft, closed dock system with lock gates, its growth has been somewhat stymied. But the port continues to strive to upgrade, modernise and improve. It is the foresight of the planners and unstinted efforts of the employees that has kept the Port ahead and that needs to be acknowledged.

With liberalisation and globalisation, maritime trade is poised for rapid changes and Mumbai Port is gearing itself to meet the future challenges. Competition demands change of goals from being facility provider in a protective environment to being a proactive agency in competitive

environment, attracting ships and cargo by providing quality service and customer satisfaction. With finalisation of its Strategic Plan for the future, the port's responsive labour and management would surely address the various issues with alacrity and open approach. Ambitious plans to enhance its capacities by addition of berths, upgradation and modernisation and through private sector participation will take the port forward. With its past performance as the inspiration and a commitment to excel, I am sure the port will successfully tide over the present setback and reach greater heights and continue to be an important partner in country's economic progress.

I do believe that the book will go a long way in highlighting and preserving the valuable contribution of the port in the economic, commercial and industrial progress of the nation.

I wish to place on record my sincere appreciation of the efforts made by the author, Shri M.V. Kamath, in his painstaking research and inimitable presentation.



12th June, 2000

A. K. MAGO

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Bombay on the Malabar Coast (1754). Courtesy: The United States and India

CHAPTER I

The Silent Islands Rise From Slumber

If Augustus found Rome a city of bricks, and transferred it into a city of marble, the English found Bombay a village of fisher-folk and turned it into a centre of trade and commerce, eventually raising it to the proud position of Urbs Prima in Indis.

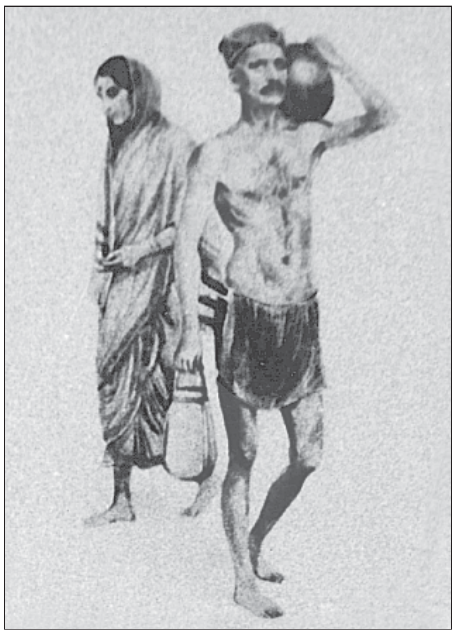
Long long ago — every story must have a beginning — when the world was being formed there was a lot of volcanic activity around where Bombay is today. Seven little islands, sprang up at latitude 18° and 55° N and longitude 72° and 52° E. There they lay in the tropical sun as vegetation grew and waves thudded on their wet beaches all the year around, bothered neither by man nor beast. The islands were separated by the mainland by the arm of the Arabian Sea and that, no doubt, kept most creatures away for centuries.

Koli Couple: The Kolis are the original inhabitants of the islands of Bombay.

Courtesy: Bombay City Corner

There was nothing particularly distinguished about these seven islands. One could pass from one to the other during low tide if one didn't mind the slush. But at first there was nobody living there to even try.

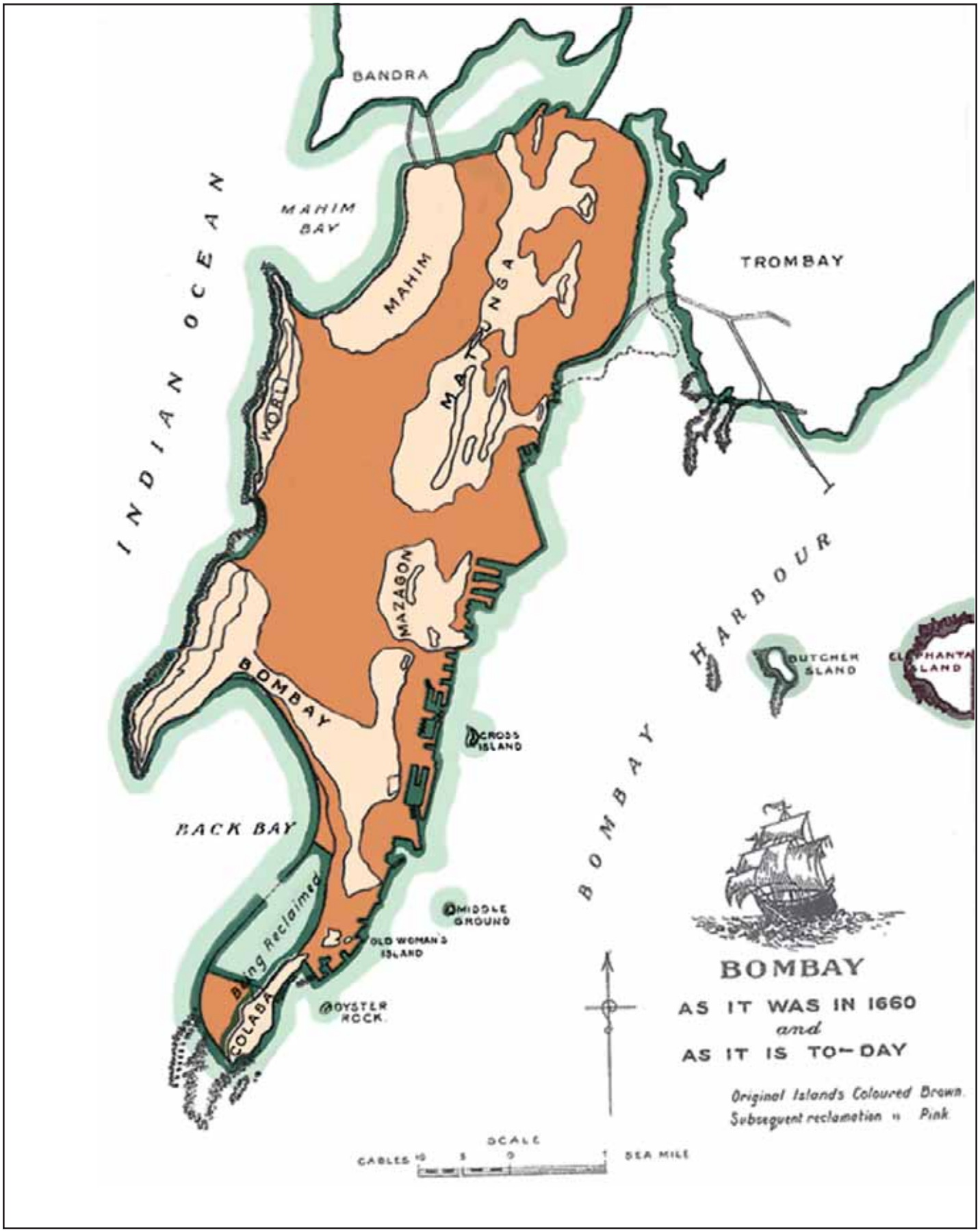
In A.D. 150, Ptolemy the Greek, called this silent group of islands *Heptanesia.* Later, of course the British identified them by name as Colaba, Bombay, Mazagaon, Worli, Mahim, Matunga and Bandra. Bombay was H shaped. The parallel sides were covered with ridges, at the highest point in the lateral intercepted by ridges, we now recognise as Malabar Hill, rising to 180 feet. Volcanic in origin, the islands inevitably had hills many of which were to be levelled to the ground for filling up the marshlands that lay in between them. The work of filling the land was under the direction of the British. So, if God made the islands, the British made Bombay.



Bhandari Couple: Like the Kolis, the Bhandaries too are among Bombay's oldest inhabitants.

Courtesy: Bombay City Corner

The earliest to settle on these islands were the Kolis, hardy fisher-folk who went out in their wooden boats to reap the harvest of the sea. No one bothered them and the island slumbered undisturbed on the bosom of the Indian Ocean. While the fame of neighbouring ports Broach, Sopara, Chaul, Janjira, Kalyan,


BANDRA
INDIAN OCEAN
MAHIM BAY
MAHIM
MATUNGA
WORLI
TROMBAY
MAZAGON
HARBOUR
BOMBAY
BUTCHER ISLAND
ELEPHANTA ISLAND
CROSS ISLAND
BACK BAY
Reclaimed
MIDDLE GROUND
OLD WOMAN'S ISLAND
COLABA
OYSTER ROCK
BOMBAY
AS IT WAS IN 1660
and
AS IT IS TO-DAY
Original Islands Coloured Brown.
Subsequent reclamation " Pink
SCALE
CABLES 10 5 0 1 SEA MILE

Thana spread throughout the East and attracted merchant adventurers from near and far, our seven islands were largely – and happily – ignored.

Haven For Traders

Even as early as the eighth century B.C. there was a lively trade between the great ports of the Western metropolises like Babylon and Konkan coast in gold and precious stones, sandalwood and peacocks. We learn from the *Periplus of the Erythrean Sea* that the main ports on the west coast were Sopara, Thana and Kalyan, so near to the seven islands and yet so far away. Sopara has been identified as the ancient Ophir of which John Mansfield wrote:

> Quinquireme of Nineveh from distant Ophir
> Rowing home to haven in sunny Palestine
> With a cargo of ivory
> And apes and peacocks
> Sandalwood, cedarwood and sweet white wine

There was more to the trade, of course, than a cargo of ivory and spices. Even in those dim ages the art of spinning and weaving cotton was extensively practised in western India and the fine fabrics were highly priced by the wealthy classes of Babylonia and ancient Egypt. But the ancient galleys skirted the seven islands that lay unconnected with the mainland. They had little or nothing to offer except perhaps shelter in a storm and of that there is reasonable evidence. Excavations in Bombay along the coast have brought to light coins and other relics which prove that in the early years of the Christian era the inhabitants of the islands had dealings with the mainland ports of Thana and Kalyan. Words and names current in the Koli dialect indicate that indeed in the seventh century the inhabitants of *Heptanesia* were in close touch with neighbouring civilizations.

Mumbadevi Tank and Temple. They have a hoary history (1737). Courtesy: Bombay City Corner

The seven islands by themselves may not have had much to offer, but by the tenth century the western coast from Cambay to Chaul was thickly dotted with villages and largely cultivated for rice and other crops; coconuts and mangoes also grew in abundance.

During the Silahara dominion of North Konkan which lasted from the beginning of the ninth century to the middle of the thirteenth, population along the coast grew by leaps and bounds. It is claimed that Chaul alone at one time housed as many as ten thousand Persian and Arab settlers. The seven islands would have had their attention surely.

The earliest settlers in these islands were the Kolis — the aborigines of western India littoral — who penetrated into the northern

Konkan in some pre-historic time long before the Christian era. Exactly when they arrived in these islands and in what numbers can only be surmised. The islands gave them security and freedom to carry on their livelihood, which was mostly fishing and occasionally hunting. One guess is that they might have come to the island from Gujarat and might have absorbed the original Stone Age man. What is known is that their patron goddess was Mumba. (The goddess Mommai is still worshipped as a village deity in Kathiawar from where the immigrants to the islands brought her). One likely construction of the word "Mumbai" is that it comes from Mumba Aai – Mumba meaning mother, the consort of Shiva.

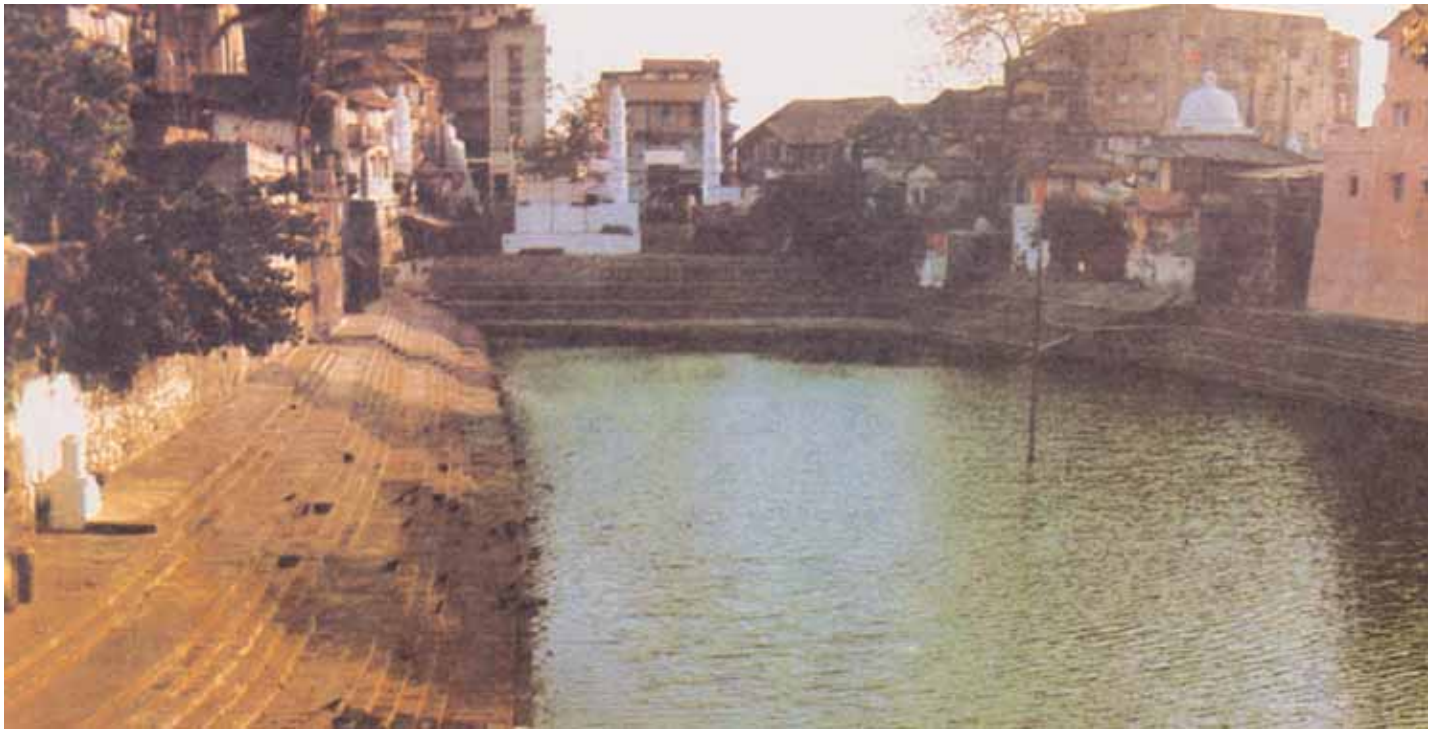
Significantly, during the rule of the Silahara monarchs, the seven islands began to attract attention as a place of pilgrimage. The Silaharas are given the credit for building a temple at Walkeshwar on Malabar Hill. Shrigundi, the lucky stone and the pond at Walkeshwar are justly famous. However their origin is lost in antiquity. *Valuka Ishwara* (Walkeshwar) means lord of the sand. Why lord of the sand?

The history of the seven islands before the advent of the English is usually divided into three periods, the Hindu period which was substantially long, the Muslim period comparatively shorter and the Portuguese period. The Hindu period begins roughly with the Satavahanas and ended in 220 A.D. and gave way to the Kshatrapa rulers who were in power till 300 A.D. The history of the seven islands during the fourth and fifth century has not been chronicled. During the latter part of the fifth century and well into the sixth, the local rulers were the scions of the Mauryan family. Then came the Chalukyas of Badami who, it is claimed, captured the Mauryan capital of Puri which has been identified as Elephanta Island.

In A.D. 757 the Rashtrakutas put an end to the supremacy of the Chalukya. They, in turn, gave way to the Bilasharas who ruled for about four and half centuries (A.D. 810-1260) — a very long period indeed.

It is towards the end of the 13th century that the seven islands come significantly alive. One of the rulers, Bimbadeva or Bima made Mahim (or Mahikavati), his capital. He is credited with building a palace and cultivating fruit and coconut orchards. A temple to the family goddess, was also raised. Then came the downfall of this dynasty with the Muslim invasion from Gujarat in 1348 A.D. It was to be the end of the Hindu rule in the seven islands.

The Muslim dominion over the seven islands was to last for not more than two centuries. Mahim was reduced to a military outpost of the Gujar sultans. According to Mr M D David *(History of Bombay)* who quotes accounts of Friar Jordanue and Oderia (who lived in Thana from 1321 to 1324) the Muslims persecuted the Hindus and destroyed their temples "probably



Banganga at Walkeshwar. Its origin is lost in antiquity.

Courtesy: Himalaya Publishing House

the temples of Mumbadevi and Mahalakshmi". No other significant event has been recorded. The "only significant event" as Dr David puts it, "before the close of the 14th century was the birth of Sheikh Ali Paru, a saint, who died around 1431 A.D. and in whose memory a mosque was erected at Mahim".

Bimbadeva had started the process of colonisation and development of the islands. His followers had spread over the neighbouring islands, had traded, thrived and multiplied. The Muslim rule temporarily halted the process. Under Malik Ush-Shark an attempt had been made to survey the islands and the cultivable land; efforts had also been made to settle Muslims wherever possible. From the time of Sultan Ahmad (1412-1441) to that of Bahadur Shah (1527-1536) the seven islands remained under the control of the Gujarat rulers. But a new enemy now appeared on the horizon. The Portuguese had arrived. And a new era was to open for the islands.

The New Masters

The Portuguese sea captain Vasco da Gama first arrived close to Calicut (Kozhikode) on 20 May 1498 seeking Christians and spices in that order. Other dominant European powers had come to India but mostly for trade. For the Portuguese however, Christianity came first and trade a distant next.

The Portuguese paid their first visit to the seven islands on their way from Dabhol to Diu on 20 January 1500. Their intentions then were strictly honourable; they wanted to secure provisions for their fleet. But they also wanted to know the layout of the land. They returned in 1517 during the viceroyalty of Dom Soares de Albergaria, entered Mahim, captured a merchant ship lying there and took it to Chaul. Between 1521 and 1524 the Portuguese were constantly on the prowl around Mahim looking for Muslim ships to loot. At one point of time Malik Ayez, the Admiral of Bergha is reported to have routed the Portuguese, sinking one of their largest ships and killing nearly 20,000 men.

Vasco da Gama was the first Portuguese sea captain to land in India.

Courtesy: The Times of India

The figure may be exaggerated but the victory sounds impressive. But to no effect. When Lopo Vaz de Sampaie returned, he left behind his commander Heitor Da Silvera and 300 men. Heitor apparently liked the islands — especially the meat and the rice so much that he called them *Ilha de Boa Vida* — Island of Good Life. In 1531, the Portuguese were pretty much in command of the islands and by 1534, the then Muslim ruler Bahadur Shah was forced to come to terms with the foreigners. By the treaty of Bassein signed on board the *San Mateos,* the city of Bassein, its territories, islands and seas including the seven islands were turned over to the Portuguese who were to remain in the islands until 1661.

The new masters of the island went about their work with quiet efficiency. They divided the land into manors or fiefs which were then parcelled out to the various religious orders or allotted at a nominal rental to those citizens they considered deserving, meaning those who were willing to give military assistance to them in case of need. In 1538 Garcia

Mahim Port: From here the Portuguese kept looking round for Muslim ships to loot!

Courtesy: Municipal Corporation of Greater Bombay

St Michael's Church is one of the oldest in Mahim, Bombay (1534).

Courtesy: Municipal Corporation of Greater Bombay

de Orta, the well-known physician and botanist of his times held the island of Bombay on payment of an annual quitrent equivalent to about 85 pounds sterling. From his memoirs we gather that the trade of the islands during his time was negligible and was confined to the sale of dried fish, salt and coconuts to the neighbouring coastal towns. The population was considerably sparse; if the sole "industry" was fishing, who would have wanted to come and live in the island. According to the early records of the East India Company, at the time prior to the transfer of the islands to the British, the population exceeded 10,000, of whom only a handful were Portuguese of pure blood.

It could be that most people who otherwise might have wished to come to the islands were also scared of the proselytising activities of the Portuguese. The keynote of the Portuguese policy in western India in those early years was spelled out by Vasco da Gama himself in plain language. It was *Vienoe buscar Christaos e capeciara* (We come to seek Christians and spices). According to W R S Sharpe, deputy chairman of the Bombay Port Trust who compiled one of the earliest histories of Bombay "the history of the Portuguese occupation is largely bound up with the foundation and aggrandisement of their religious orders". Towards the close of the 16th century, the bulk of the landed property in and around Bombay had passed into the hands of the Catholic Church; the Jesuits owned practically all the northern parts of the island including Mahim, Worli, Sion, Sewri, Byculla and Parel.

Writes Sharpe: "The zeal of proselytism eclipsing all other considerations and cruelties perpetrated in the name of religion, embittered the inhabitants and gave rise to savage feuds and reprisals which gradually undermined the supremacy of the Portuguese government. In such an atmosphere it was impossible for trade to flourish". Precisely. Nor would it have been possible to build a great city or even a meaningful waterfront. Such were the depreciations of the missionaries that even the Archbishop of Goa was moved to write in a despatch to the King of Portugal that "among the enemies of Portugal from within, none probably do greater harm to the State of India than the Jesuits". Two years later, the Viceroy of Goa bitterely complained that the Jesuits had usurped from the state the royal jurisdiction and revenues and openly intrigued against the government.

Never mind if the "State of India" was no more than a few hundred acres. The point was that the Portuguese had a foothold in India, the land of spices. And spices were in great demand in Europe for the preservation of meat during the summer months. Pepper, especially was a much-coveted commodity. Besides there were textiles which were quite fashionable in Europe. Trade in India was lucrative and the possibilities of earning profits seemed infinite. Even as late as 1750 India's share of world manufacturing output was 24.5, while that of the United Kingdom was 1.9, of the Hapsburg Empire was 2.9, of France 4.0, Russia 5.0, the United States 0.1. In 1801 even exports of cotton goods from India were to the tune of

1,634,257 pounds sterling while imports of the same from England were to the tune of 16,191 pounds sterling. India, then was the country, to trade with.

All The Queen's Men

The Portuguese had, in a sense, set up shop in India but the dissensions among them set other European nations thinking why they should not get into the act as well. In 1579, one Thomas Stephens, credited to be the first Englishman to settle in India, arrived in Goa and entered the service of the Portuguese government. From Goa he wrote back to his father, a London merchant, about the conditions then prevalent thereabouts concerning marketable merchandise. Stephens senior held private talks with other merchants in London about trade prospects with India. A memorial was presented to the Lords in Council, asking permission to trade with ports bordering on the Indian Ocean and the China Seas and preferring a request for the Queen's license "for three ships and three pinnaces to be equipped and protected in this trade". Permission came through. On April 10, 1591, an expedition of three ships, the ***"Penelope", "Merchant Royal"*** and ***"Edward Bonaventure"*** sailed from Plymouth for India by the Cape route under the command of Captain George Raymond. The expedition, however, met with no success and after heavy disasters at sea, only a few survivors managed to struggle back to Plymouth.

At the beginning of the 17th century there were no accurate sea charts available for navigators. In fact it is doubtful whether there were any charts at all. The earliest surviving chart to show India's coasts is the Chinese "cartogram" preserved in the *Wu-pei-chib.* This book relating to the art of war was found by George Phillips at Amoy in the 19th century. He wrote: "At the end of this work there is a set of maps said to be a copy of those used by Cheng Ho when he went on his expedition in 1416. Although these charts are stated to date from that time, there are to be found in them every place mentioned by Marco Polo on his voyage from China to Ormus and I am inclined to think that charts, or charts of this nature, were in existence in Marco Polo's day".

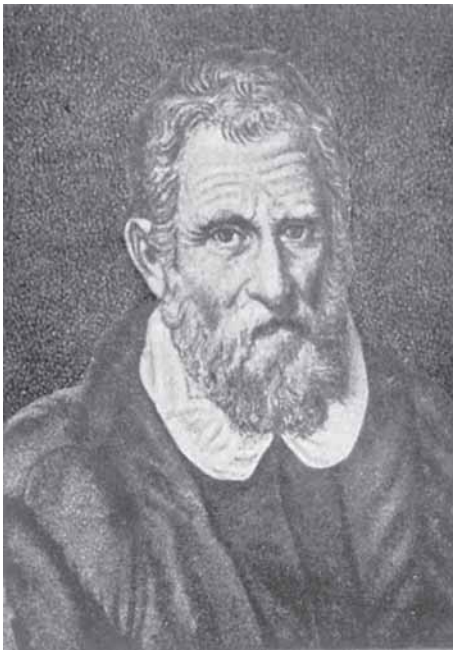
Mapping The Seas

But did Indian seafarers have their own charts? They must have as several Indian ships used to sail from the Eastern seaboard to South East Asia, especially to Java and Bali and Cambodia. And from the Western seaboard to Iran and the Saudi coast and also all the way down to the east coast of Africa.

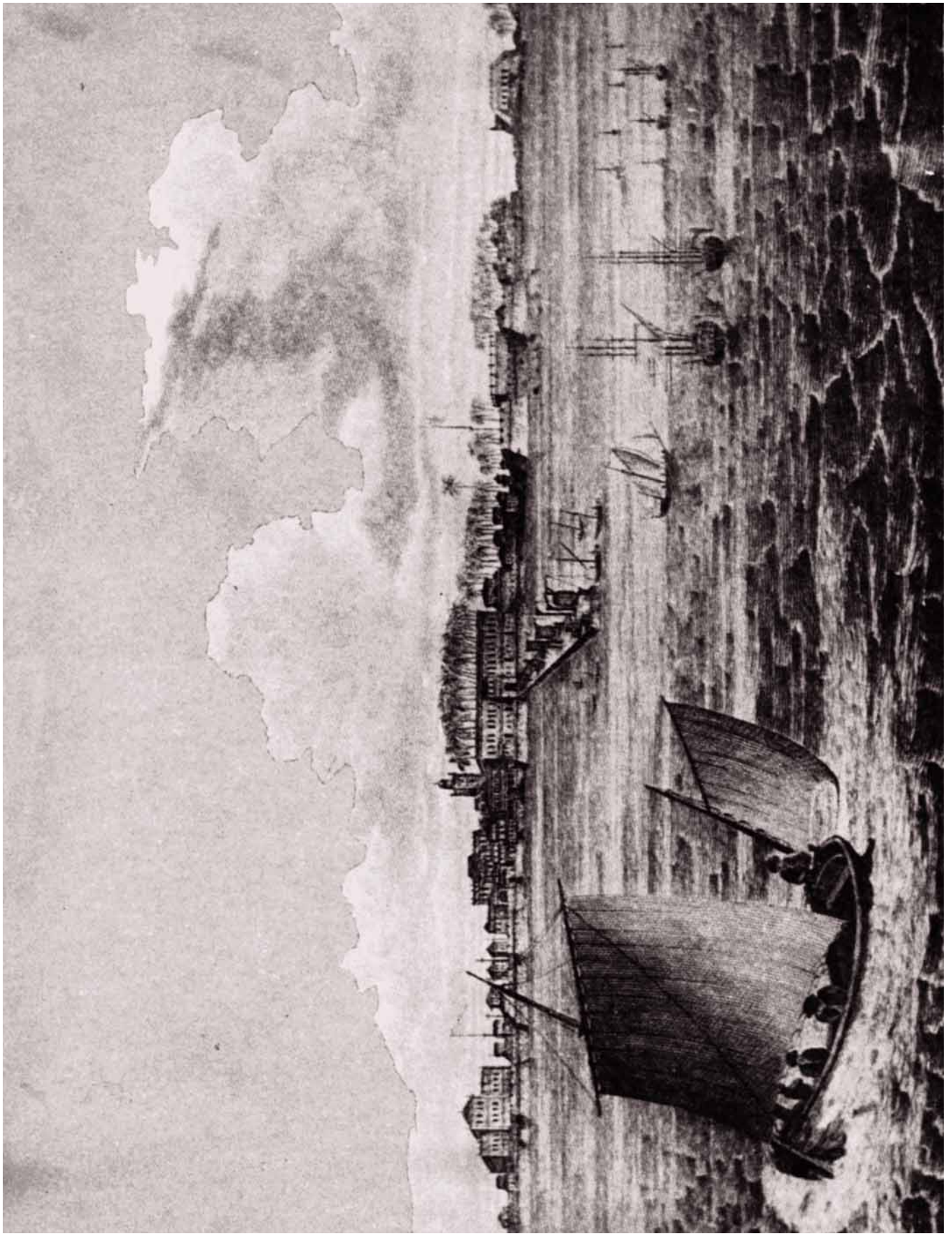
It is important to remember that the arts of navigation and ship-building had developed in India and the Orient long before they did in the West. India's strong, teak-hulled ships were much superior to the ships of the western nations in sea-worthiness. Representations of ocean-going ships and shipwrecks found at Sanchi, Kanheri and even in the temple of Borobunder in Java bear witness to the extensive oceanic commerce of India in the early centuries of the Christian era. A treatise on ship-building called *Yukitkalpataru* dating back to the period of the Ajanta murals describes in detail not only the length, breadth, depth and weight of ten varieties of riverine vessels and 15 varieties of ocean-going vessels, but also the different kinds of wood suitable for ships of different types. Marco Polo (A.D. 1292) mentions Indian ships so large as to require a crew of 300 men, and others manned by crews of 200 and 150 men. Indian vessels reigned supreme in the Indian Ocean till the advent of the Portuguese ships equipped with cannon. Till the rise of the Arab empire in the seventh century A.D. India was the "mistress of the East seas and her maritime commerce and colonisation extended from the eastern shores of Africa and Madagascar to the furthest reach of Malaysia, the eastern archipelago right up to southern China and even Japan".

Indeed, an exciting discovery was made in recent years of a *pothi* (a little book written in the Cutchi dialect) of Gujarat in the form of a seafarer's manual. It was written in 1664 (the date given on the last page of the manuscript says; *1710 Falgun and 13* ie thirteenth day of the bright half of Phalgun or February) equivalent of the Christian era 1664. It is considered a true copy of the earlier manuscript, but this *pothi* carried only five maps with several pages missing. One can surmise that if one such *pothi* could be found, there must have been several such with navigators of earlier periods.

According to Prof Arunachalam of Bombay University, *pothis* such as the one discovered are "simple in style and highly utilitarian in perspective,



Marco Polo, the great traveller.



View of Bombay Harbour (1773).

Courtesy: Bombay City Corner

with limited information base that is of direct relevance and use to men on board-crude attempts in an evolutionary phase of map-making, but all the same maps".

Could such a *pothi* have come into the hands of the English captains? When Alexander Burnes travelled up the Indus River in the 1830s, he was impressed with the skills of the Cutchi sailors. He wrote: "Amongst the timid navigators of the East, the mariner of Cutch is truly adventurous; he voyages to Arabia, the Red Sea and the coast of Zanquebar in Africa, bravely stretching out on the ocean after quitting his native shore. The *moallim* or pilot determines his position by an altitude at noon or by the stars at night, with a crude quadrant. Coarse charts depict to him the bearings of his destination and by long-tried seamanship, he weathers in an undecked boat with a huge lanteen sail, the dangers and tornadoes of the Indian Ocean".

A chart of the Red Sea which Burnes brought back to England with him is at the Naval Geographic Society, London. Burnes labelled it as "a native Indian chart of the coast of Arabia and the Red Sea drawn by an inhabitant of Cutch and used by pilots at the present time in that navigation. Given to me by a pilot, Cutch, June 1835".

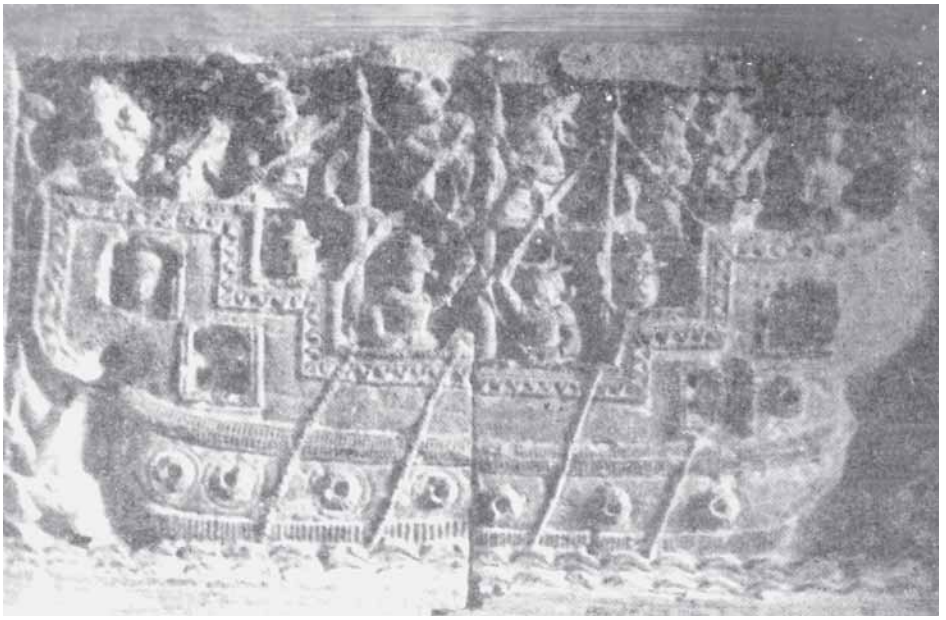
If Burnes could get a chart, it is not hard to imagine that the early English sea captains may similarly have had other Indian charts at their disposal in the earlier years of their trips to the East. Once the English touched base in Surat, it should have been the easiest task to get such charts from Indian shipowners.

It is known that when the English expedition set sail to East Indies, from Socotra, the ships separated, Captain Keeling in the *Dragon* (600 tons) proceeding to Sumatra and the *Hector* (300 tons) under Captain Hawkins, shaping her course to Surat. It was Hawkins who journeyed in 1609 from Surat to Agra with a letter from King James of Great Britain requesting permission for the East India Company to establish a trading factory in Surat. Hawkins did not get the *firman* and had to return to Britain. But the Company was determined to get a foothold in the Indian trade and fitted out four ships, the *Dragon, Osiander, James and Solomon* under the command of Captain Thomas Best. These arrived at Swally on 5 September 1612 and soon engaged a Portuguese fleet, consisting of four galleons and twenty more smaller vessels in a sea battle in which the British emerged victorious.

It is claimed, it was this victory, which so impressed Emperor Jehangir that he granted a *firman* to the British, promising them protection from Portuguese aggression. The British not long after got permission to establish other factories at Ahmedabad, Cambay and Gogo.

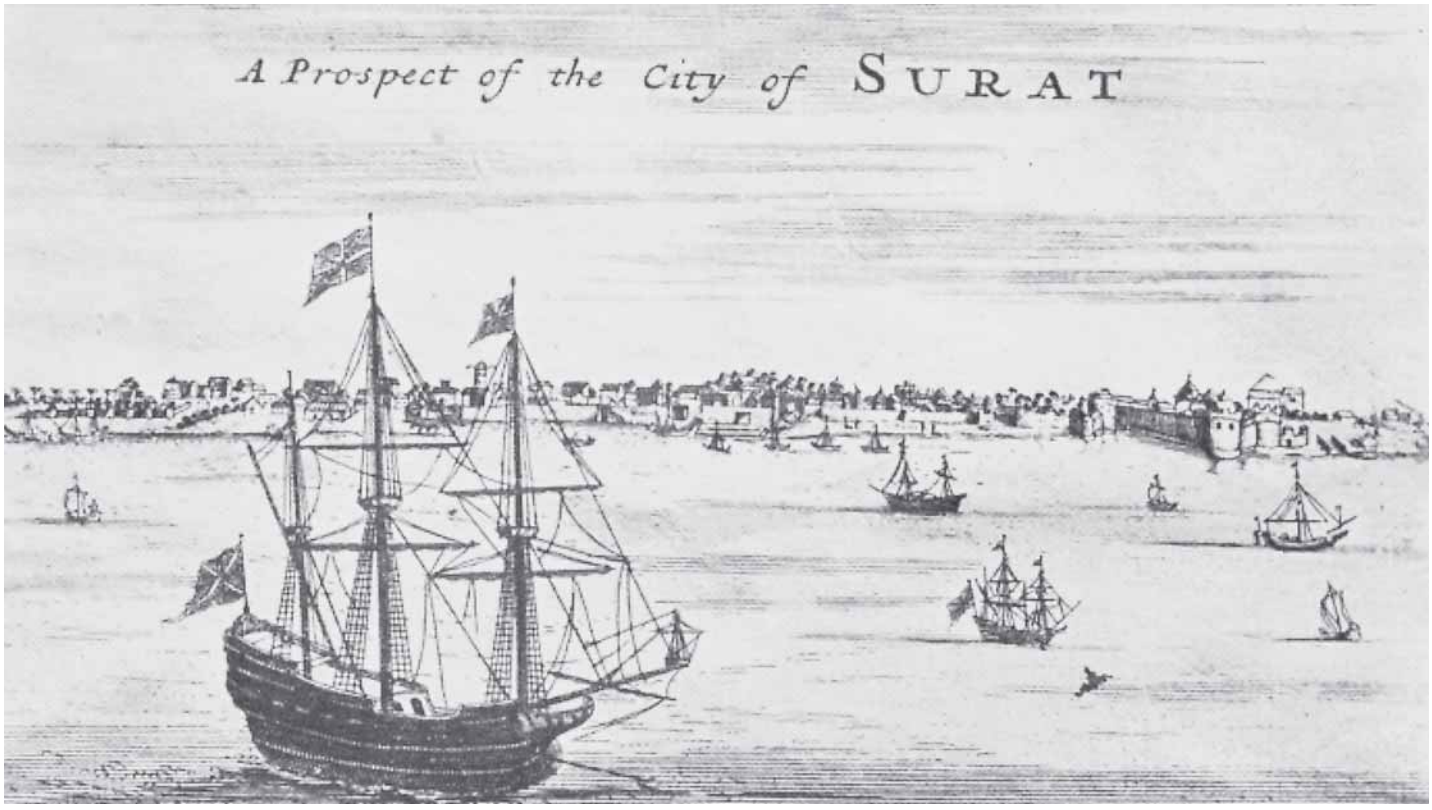
English Attempt To Establish Roots

We do not know at what point in time the British began to cast covetous glances at the Bombay Islands. It is, however known that the English attempts to secure Bombay began as early as 1636. According to one source (Foster) the man who recommended that the British take over Bombay may have been a certain Jeronimo de Paiva, a converted Portuguese Jesuit whom Rostell had taken to England in his ship *William* in 1625. However, nothing practical had come out of it. Records state that even the English referred to Bombay as a "hole" in October, November and December 1625, into which Portuguese ships ran for shelter when attacked. At the same time the British could appreciate the value of this "hole" as suitable for a naval base. They were smart enough to understand that possession of Bombay meant that the British could control the Portuguese and the Dutch further south. Importantly, Bombay was way down south of Surat and not under the effective control of the Moghul emperor. Bombay could be fortified, without giving unnecessary offence to the Delhi authority.



A Portuguese Warship in Terracotta at the brick temple Naldanga, Jessore, Bangladesh.

Courtesy: Naval Dockyard, Bombay, for the Indian Navy



Surat in 1710.

In October 1526, a joint Anglo-Dutch fleet sailed to Bombay from Surat and besieged it for 3 days. The Castle and the Great House were taken and burnt but no effort was made to retain and divide the land between the English and the Dutch. The action was inexplicable considering the arson in which the British indulged. James Slate the master of the *Blessing*, wrote to the company that what passed for the township of Bombay yielded no benefit to the English or the Dutch and there was nothing left in it that was worth carrying except fish and rice which were consumed by the soldiers. He further considered that Bombay was neither a good place to winter in nor a good place for occupation. Surat was a safer and more secure port.

But the company's chief executive in Surat (president) Mr Kerridge differed from Slate. He was clearly in favour of acquiring Bombay and wrote to the company in November 1626 about the pleasant air, fruitful soil and excellent harbour. At the same time he pointed out how difficult it would be to secure it from the hands of the Portuguese. He followed this letter with one more, written on 4 January 1628, praising the suitability of Bombay for a take-over. A small delegation of Englishmen visited Bombay in 1635 when Anglo-Portuguese relations were better and the burning of the castle nine years earlier was all but forgotten. They must have been introduced to toddy and arrack neither of which they were enthusiastic about, judging from their recorded comments. In 1640 Bombay is again mentioned in the correspondence between Surat and London as the best place along the coast of India. The Surat Council built its ships in the neighbouring Bassein creek and its recommendation to the company was that both Bombay and Bassein be bought from the Portuguese. This recommendation was made in 1632.

In 1654, the Court of Directors of the East India Company drew attention of the Lord Protector, Oliver Cromwell to the advantages that Bombay provided as a place of settlement for the British. Cromwell was well aware of the necessity of acquiring a port on the west coast of India for the security of the English traders. It was suggested to Cromwell that there was a fair chance of acquiring a port by treaty with the Portuguese who had enough ports to spare and that Bombay and Bassein would be the most convenient places for the purpose. There is no mention of any *Indian* authority. The Portuguese were interlopers and brigands and the British were proposing to do business with these brigands rather than negotiate with any authority howsoever remote. In the 17th century, power was all.

The concern of the Court of Directors for the acquisition of the stronghold on the west coast is also shown in their letter to President Wyche of 9 April 1658. In that letter the court authorised Surat to obtain Danda, Rajapore, Bassein, Bombay or Kharepatan (this last is another name for Vijaydurg) or any other salubrious place on the Malabar coast, having a good inlet into the country trade and other conveniences and accommodation as are necessary for a settlement provided they do not cost more than 4,000 to 6,000 pounds sterling. If, however, the place satisfied all requirements the Court was willing to spend as much as 8,000 pounds sterling.

In 1660 the Court of Directors continued to press their desire, suggesting that if Surat could not get Bombay, it could acquire Danda, Rajapore or Kharepatan. At this point fate took a hand.

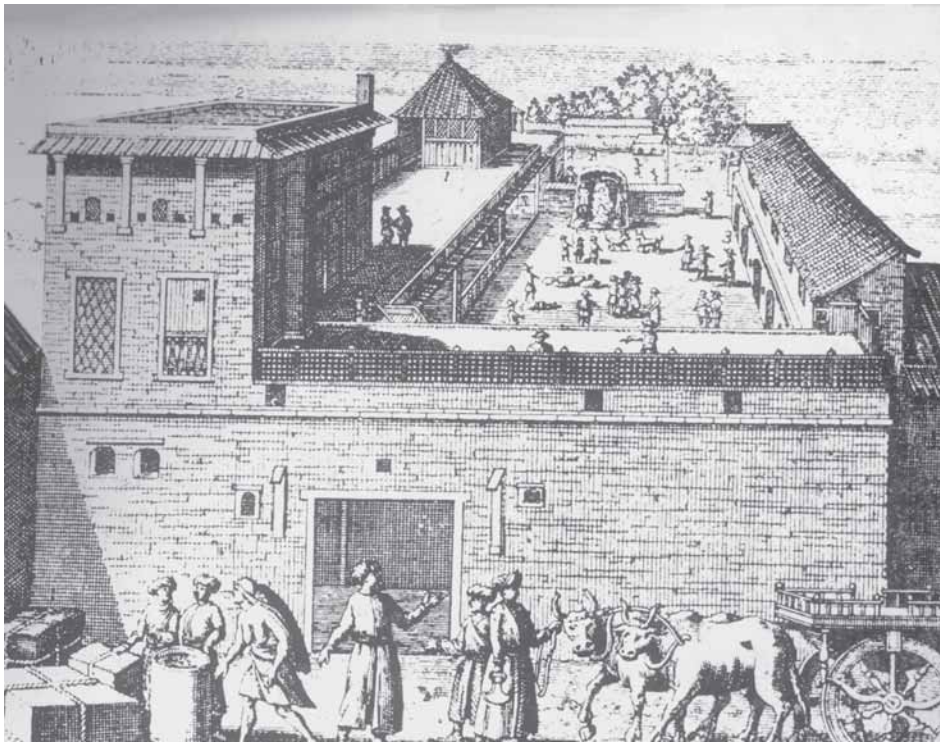
Charles II of Great Britain and Catherine Braganza of Portuguese by whose marriage Bombay passed from the Portuguese to the British Crown (1661).

Courtesy: Bombay City Corner

The Great Alliance

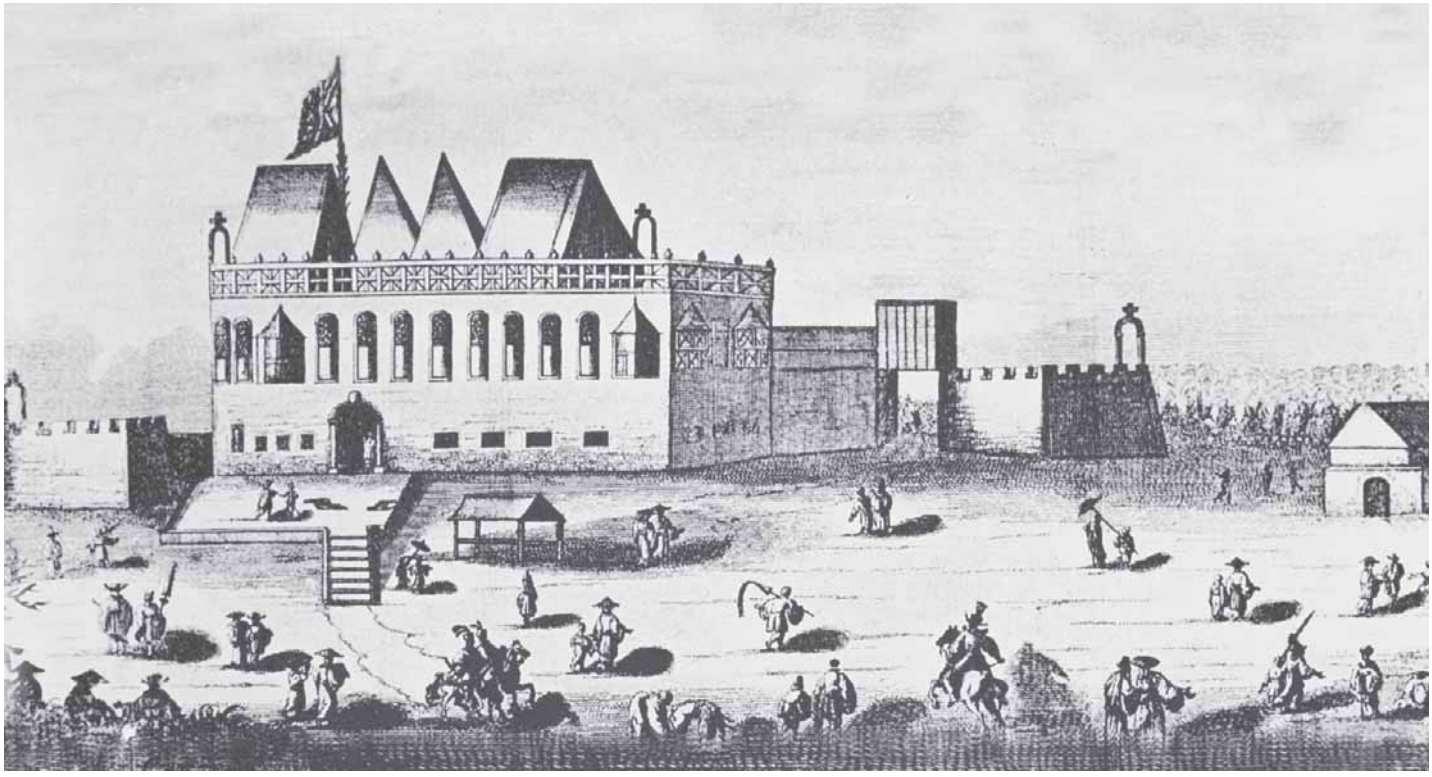
The Portuguese ambassador at the Court of St James, Francisco de Mello proposed a marriage alliance between King Charles II of England and Catherine, the sister of King Alphonso VI of Portugal. He also offered to cede Tangiers and Bombay and give a dowry of 2 million Cruzados. The deed must have seemed profitable and it went through. The marriage treaty was concluded on 23 June 1661 and the actual marriage between King Charles II and the Infanta was on 31 March 1662. Not romance, but political interests of the two parties formed the basis of the marriage treaty.

It was a "long and intricate document", consisting of 20 Articles and a Secret Article. The treaty permitted Infanta Catherine to practice the Roman Catholic religion freely. She would get a yearly allowance of 30,000 pounds sterling along with a palace and a household. In the death of her husband she was free to go to any country, but would get her annual allowance. The Portuguese would present the English with the ports of Tangiers and Bombay, but Tangiers was to be



An English factory at Surat in the seventeenth century. Here goods were purchased and stored until a ship came to take them away and leave British goods in exchange.

Courtesy: British Library



The English Fort in Bombay. It must have been an impressive structure in its heyday. Courtesy: Bombay City Corner

handed over before the marriage. The residents of both the places were to be allowed the free exercise of the Roman Catholic religion and the English were to treat the subjects of the Portuguese King as their own, help, assist and protect them in their trade and navigation. Importantly, the English merchants were to enjoy the same privileges as the Portuguese at Goa, Cochin, Diu, Bahaide Todas, Las Santos, Penambuco, Rio de Janeiro and in the territories of the King of Portugal in the West Indies. The English were to get other lucrative concessions besides. But in consideration of all these, the King of England had to look after the interests of the Portuguese seriously and to defend them by land and sea, by sending at the English king's expense, two regiments of Horse of 500 men each and two regiments of food of 1,000 each, all armed and equipped.... It must be said to England's credit that at least in regard to Goa, the British allowed Portugal freedom to do as it liked and since they could not do anything when India finally took over, did what came naturally, abused India in the UN Security Council.

In the Secret Article, the English King promised help to Portugal against the Dutch and the Spanish.

It was a political treaty. If Portugal got promise of protection from the English, the English got a substantial dowry and a foothold in Europe as well. What is more the English could compete with the Dutch who had become a fast-growing menace to them in the East Indian trade. In the bargain they got Bombay as well. Article 11 of the treaty says..... "the King of Portugal, with the assent and advice of his Council, gives, transfers and by these presents grants and confirms unto the King of Britain, his heirs and successors for ever, the Port and the island of Bombay in the East Indies with all the rights and profits, territories and appurtenances whatsoever thereunto belonging, and together with all income and revenue, as also the direct and absolute Dominion and Sovereignty of the said Port and Island of Bombay and premises, with all their royalty, freely fully, entirely and absolutely".

"He also covenants and grants that quiet peaceable possession of the same shall, with all convenient speed, be freely and effectually given to the King of Great Britain (or to the persons whom the said King of Britain shall depute for this purpose) for his own use. In pursuance of their cession the inhabitants of the said island (as subjects of the King of Great Britain, and under his Command Crown, Jurisdiction and Government) shall remain therein and enjoy the free excercise of the Roman Catholic religion in the same manner as they do now....."

The Court of Directors of the East India Company was nowhere in the picture. Portugal wanted British help against the Dutch and was prepared to pay a price. Britain wanted a base

in Indian waters and Bombay seemed the most suitable. In the King's commission to Sir Abraham Shipman it was clearly stated that the main purpose of acquiring Bombay was to gain for the English subjects freer and better trade in the East Indies. What is shocking is that it became a matter between Britain and Portugal. No Indian ruler was taken into consideration.

Sir Abraham Shipman was appointed the Governor of the island of Bombay and commander-in-chief of the British forces stationed there. These included four companies each with four privates each, two drummers, and seven subordinate officers. A small detail of artillery was attached to each company and a surgeon and a chaplain for the whole garrison. James Ley, the third Earl of Marlbrough was appointed commander of the fleet of the Royal Navy which conveyed Sir Abraham and his men to Bombay. The fleet consisted of five Men-of-War, the ***Dunkirk,*** the ***Mary Rose***, the ***Leopard*** (a frigate of 44 guns), the ***Covertine*** (of 40 guns, captured from the Dutch in 1651) and the ***Cheanut*** (a 12-gun pinnace).

The English fleet arrived in Bombay on 18 September 1662 and when Marlbrough landed he was in for disappointment. He had envisaged, according to the description given to him, of an island with towns and castles, none of which he could see. Later, Gerald Aungier was to write to Surat of his disappointment: "the greatest disappointment is that the place doth not answer our King's expectation by four fifths of what was represented to him...."

But the major problem facing Marlbrough was refusal of the Portuguese Viceroy to surrender Bombay to him. The Viceroy, de Mello de Castro did not like the English in the first place. He liked the English officers even less. Then there was pressure from the English landlords of Bombay and that of the entrenched Jesuits as well, not to let the English in. So the Portuguese indulged in delaying tactics. All sorts of excuses were cooked up. A British historian had alleged that the Jesuits of Bandra had bribed de Mello Castro with 40,000 Xeraphins to withold Bombay from the English. How were the British, in the circumstances, to take possession of the island? It appears that at this juncture a Brahmin from Bombay told the English that Hindus, disgusted with the tryanny of the Portuguese, would revolt, if the English would attack from outside.

That never came to pass.

The English ships sailed down south towards Karwar. There the English soldiers waited, getting drunk most of the time having little or nothing to do. The climate did not suit them and of the 450 men who had embarked in England, 300 died.

Later Sir Abraham Shipman himself was to die. News reached London and the English strongly remonstrated with the Portuguese King who felt compelled to issue immediate orders to his viceroy to obey him.

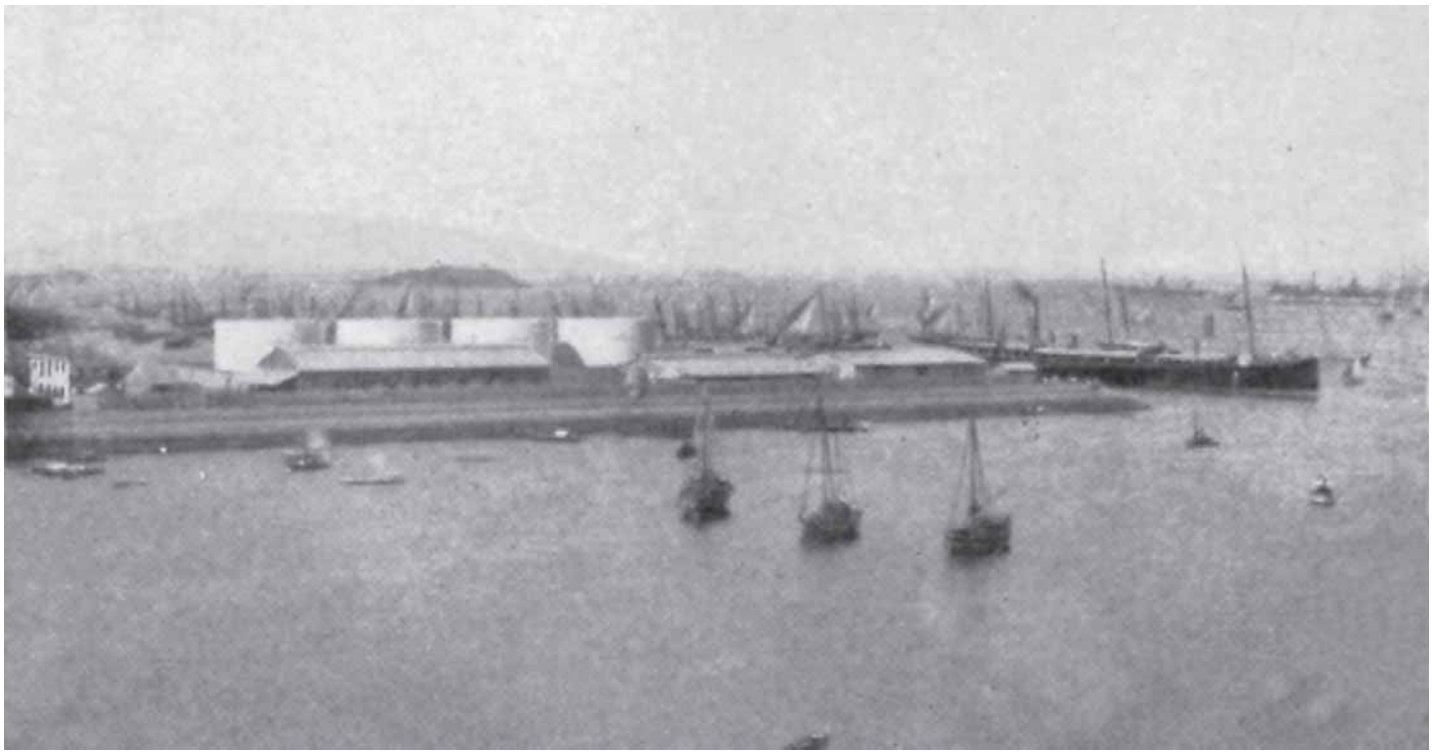
Meanwhile, Humphrey Cooke had succeeded Shipman and it was Cooke, finally who took possession of Bombay on 14 January 1665, at a ceremony in the house of the lady Donna Ignez de Miranda. According to a description of the event:

> *"He (Cooke) personally took possession and delivery of the said port and island of Bombaim going therein, taking earth and stones in his hands, entering and passing into the forts thereof, and putting the rest on the walls thereof and going also in the said island, taking the earth and stones thereof in his hands and doing the things required by law..".*

It is interesting to remember that the Portuguese Viceroy, de Mello de Castro, made one final but futile attempt to retain Bombay in the Portuguese hands, knowing its value. He proposed to his king that Portugal buy back Bombay from the British for a sum of 120,000 pounds sterling, but by the time the suggestion reached Lisbon, it was too late. Fate had destined that Bombay should fall into the hands of the British and remain with them till 1947.

Frere Estate, 1896. Bombay at the time of its transfer to the British Crown was no more than a village where people lived in reed houses and thatched roofs. The Bombay islands in the 16th century consisted mainly of small fishing villages; their chief products were coconuts, rice and fish.

Bombay on the Malabar Coast (1754). Courtesy: The United States and India



Mody Bay, 1896. Now the site of Ballard Estate

CHAPTER II

Under the Wings of the East India Company (1668-1858)

Gerald Aungier was the one who literally started the growth of Bombay, by planning the town, the fortifications, its trade, agriculture and land revenue system. Besides, he organised the different communities, encouraged settlers and outlined the course of Bombay's relations with its neighbours. He was a pioneer in all that he did.

The first governor appointed by the English king was Sir Abraham Shipman. But he died before he could take over. The man who actually took possession of the island was Humphrey Cooke who was secretary to Shipman and had been nominated to succeed him in the event of his death.

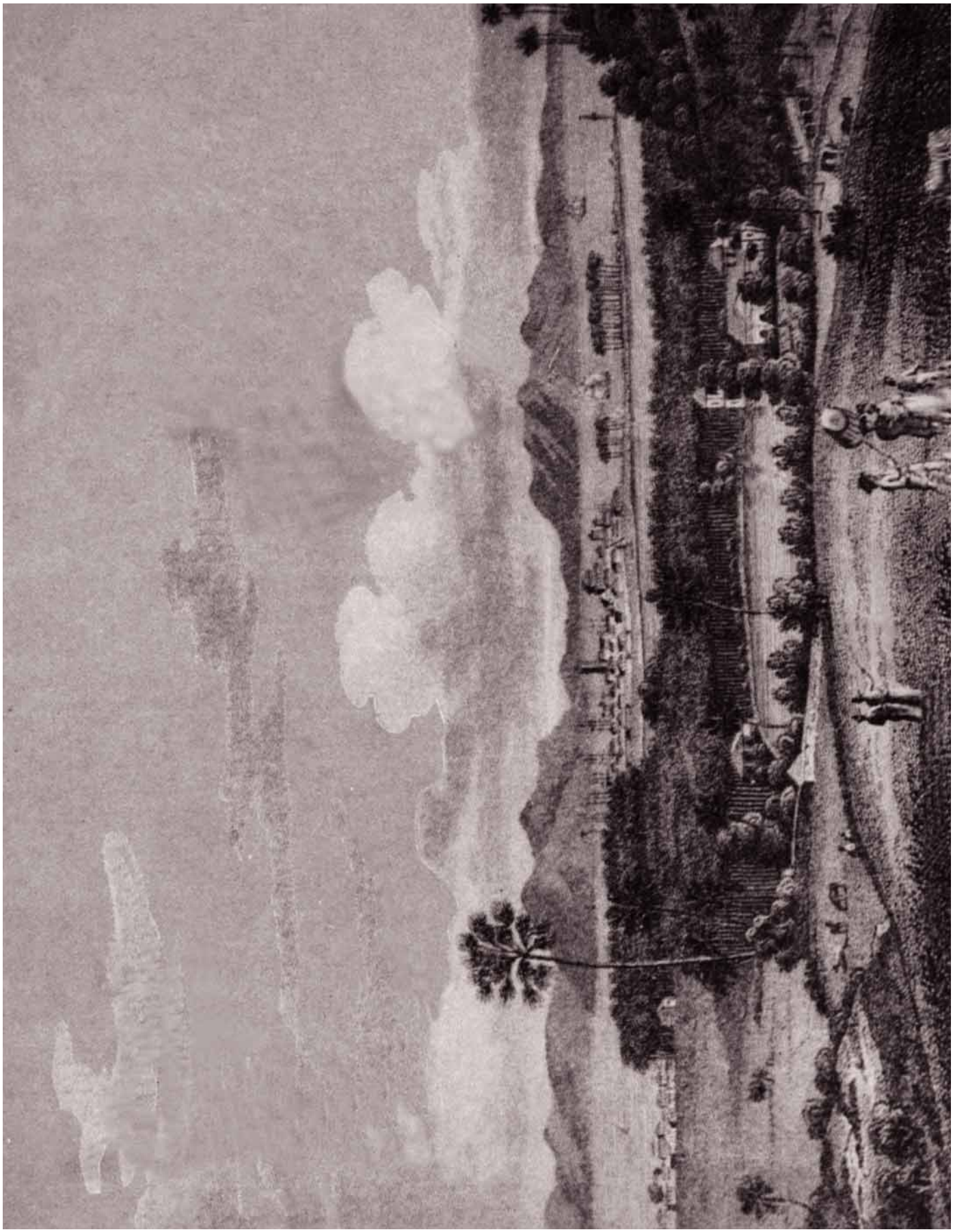
Little is known about Cooke. The Portuguese Viceroy spoke disparagingly of him as a grocer in Lisbon. When he took over Bombay, he had under him 1 ensign, 4 sergeants, 6 corporals, 4 drummers and 97 privates, a provost-marshall, a surgeon and his mate, two gunners, a gunner's mate, a gunsmith and a store-keeper. Cooke found Bombay a pretty dreary place — no more than a fishing village. There was neither a great merchant prince nor any inhabitant of any eminence. In order to make it a place of importance he suggested to the English monarch that Bombay should be made a place of trade and that all the company's ships should be ordered to load and unload there. He also suggested — which was a brave thing to do-that the factory at Surat should be transferred to Bombay which would encourage many to come and settle on the island. It could be that he felt bored, but if he had a vision, it was prophetic. He can well be described as the founder of Bombay.

First he began to invite Indian merchants to come and settle under the protection of the English garrison with commendable success, enough to rouse the jealousy of his English colleagues at Surat. He followed the policy of religious tolerance, appointed a Justice of Peace, built a prison, set up two custom houses, and built a fort around the old square house, which had served the Portuguese as a place of retreat. But he could not get along with his British colleagues who nursed bitter resentment against him. He came to be declared as a *persona non grata* and had to leave Bombay. In October 1668 it was reported from Allepo that he had died by a fall from his horse.

He was succeeded by two men, Gervase Lucas (5 November 1666 to 21 May 1667) and Henry Gary (22 May 1667 to 23 September 1668). Gary was an ambitious man who tried to get himself confirmed as the Governor of Bombay, but now fate again intervened.

Map of Bombay showing islands as they existed (1670).

Courtesy: Bombay City Corner



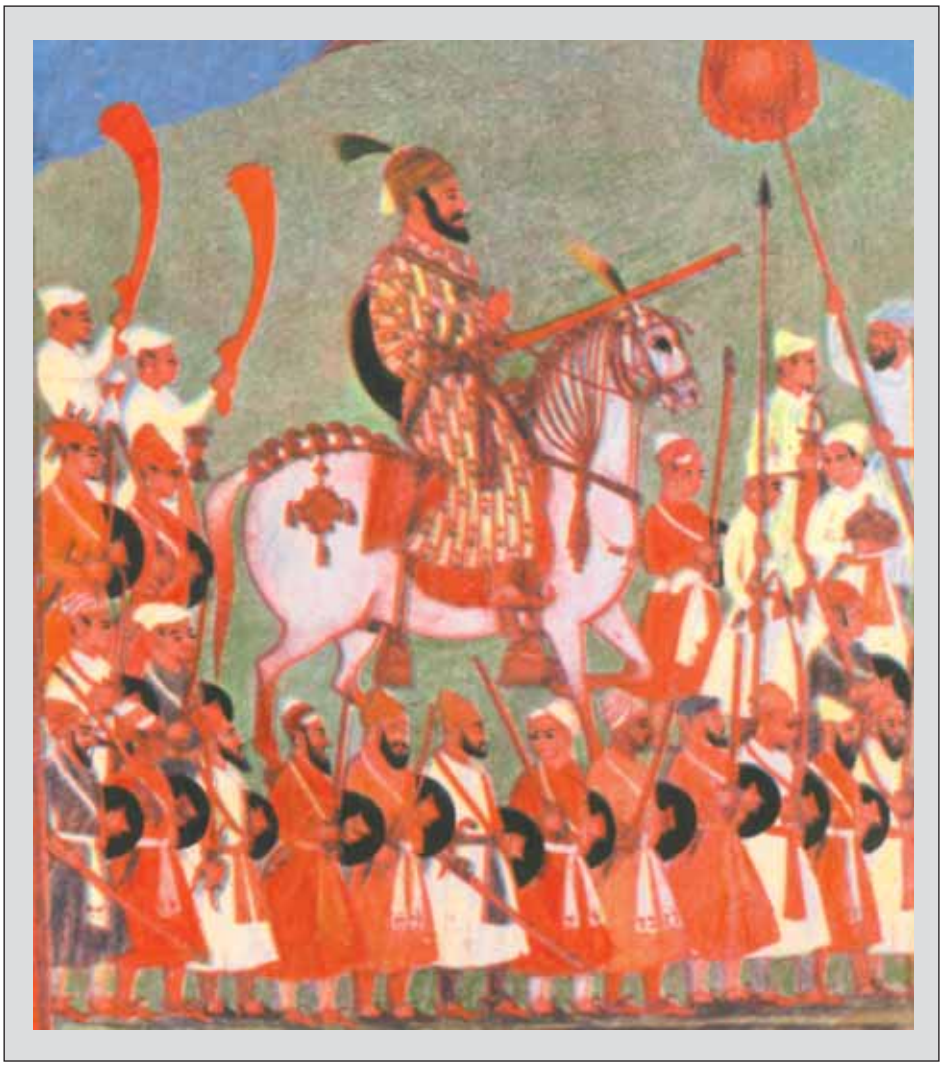
View of Bombay from Malabar Hill with island of Karanja and Mainland at a distance. (late Eighteenth Century).

Courtesy: Bombay City Corner

There had been trouble between Gary and the English authorities in Surat and the King was tired of the violent disputes between them. He had ceased to attach any value to this bit of real estate several thousand miles away from London. Besides, he was in need of money which the East India Company was willing to give him. The Company loaned him 60,000 pounds sterling at 6% interest and the King transferred all his rights in the island of Bombay and declared the company to be "true and absolute Lords and Protectors of the Port and the island" subject to the payment of an annual rental of a paltry 10 pounds. Gary was out.

The Company asked the Surat Council and its president Sir George Oxinden to take over Bombay. Sir George became the Company's first governor of Bombay, with his headquarters at Surat.

Born in 1620, the third son of Sir James Oxinden, young George came to India as a boy, like so many others were later to do, to seek his fortune. In due course he rose to be the first president of the Surat factory. He was knighted in 1661, having proved his worth as an administrator and a soldier. When he took over Bombay he found the people there "poor, wretched and needy". The island had neither trade nor commerce; all that was available was a little rice, coconuts and fish. Oxinden stayed in Bombay for about three weeks and then left for Surat He died on 14 July 1669, when he was just about 50 years old.



A painting of Shivaji by Mir Mohammad, a painter of Shivaji's Time.

Courtesy: From the original in Paris Museum

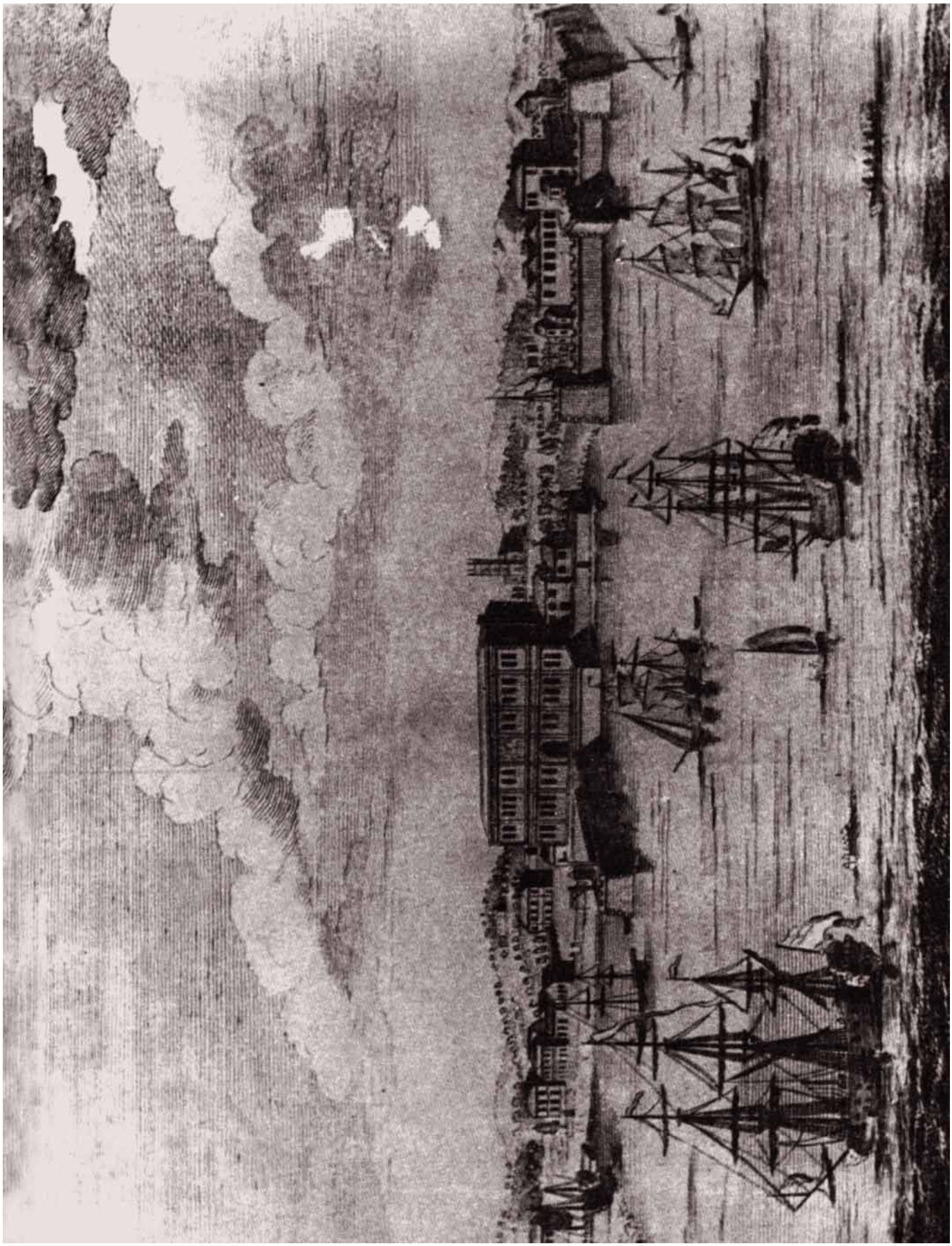
The man to succeed him was Gerald Aungier, the seniormost in the Surat Council, and the man who literally made Bombay. His predecessor Henry Gary had written to Lord Arlington about him saying: "In the midst of these distractions, Providence so ordained it as to bring hither the present Governor and President, Mr Gerald Aungier, who by his wise and prudential counsels hath afforded great hopes that he will yet be a repairer of the breaches and restorer of paths to dwell in; whom both the Company and all this island are happy in....."

The Saviour Arrives

During the first century of the British rule in Bombay, Gerald Aungier was certainly destined to be the most outstanding Governor of the city. James Douglas, author of *Bombay and Western India* wrote: "Aungier without title and distinction of any kind, seems to us to have been the greatest of them all".

"He saved Surat and Bombay not only from capture and disgrace, but from utter destruction. Without Aungier we are safe in saying that Bombay would have been lost to the English nation. It would have fallen a prey to the Sidi or Shivaji, or the Dutch, or some other nation European or Asiatic; and for the fact that it did not do so, we have to thank Aungier".

British historians have a way of dismissing the Sidis or Shivaji as pirates or as an outsider. It has never occurred to them how Englishmen would have felt had the galleons of Sidi appeared at one of the English ports on the English sea coast. It



View of Bombay belonging to East India Company (early Nineteenth Century).

Courtesy: Bombay City Corner

is quite possible that even without Aungier or any other Britisher, Indians would have developed Bombay in due course. They were master ship-builders and could have well developed Bombay harbour. But that is one of the ifs of history. This point has to be raised in order to counter the kind of comments British historians have been accustomed to make regarding their Indian detractors.

But for all that Aungier was a good administrator. There was hardly any aspect of the life of Bombay that escaped his eye, writes M D David, the historian of Bombay. He planned the town, the fortifications, its trade, agriculture, land revenue system, its civil, military and judicial administration. He organised the different communities, encouraged settlers, maintained religious discipline and outlined the course of Bombay's relations with its neighbours. He was a pioneer in all that he did.

What was Bombay like when Aungier took over its administration?

The administration had been feudal under the Portuguese. Leases were granted in perpetuity at a quit rent — one fourth of the produce — with the reservation that the landlord should perform military service when called upon. Coconut palms grew for miles on end, interspersed with jackfruit and mango trees. Paddy was also grown on low grounds. The rest of the island was swampy, covered occasionally by the sea in the lower portions or barren and uncultivated on the higher ridges such as Malabar Hill, Worli and Chinchpookly Hills.

The cultivated land was settled by over a hundred proprietors. They were either Portuguese or Indo-Portuguese who were very poor. The population was estimated at 10,000 — consisting a fair-sized town. Fryer calls them "fugitives and vagabonds" and another as "outcasts". Most of them were fishermen. The bulk of the population clustered round Fort, Mahim and Mazagaon.

One of the first things Aungier did after coming to Bombay was to adopt the laws laid down by the Company. He then proceeded to strengthen the fort and the English garrison. He had to return to Surat but when he left, it was as if a new era in the life of Bombay had begun, it being "in such peaceable and hopeful posture".

He was rather apprehensive of the Bhandari community, as they belonged to Shivaji's country and felt that should Shivaji invade the country as if Bombay was a foreign territory, "they would be snakes in our bosoms". But in 1673 Aungier changed his opinion about the Bhandaris and lauded their "loyalty".

Aungier shuttled between Surat and Bombay as and when he felt that his presence was needed in either place. The problem in Bombay was one concerning "titles to the best estates" and collection of revenue. To settle the latter Aungier called a Citizens Convention at Bombay Castle on 1 October 1673. The people were represented by many prominent citizens, most of them Portuguese, who included an Attorney General, a Procurator and the Lord of the Manor of Mazagaon, Alvaro Perez de Tavaro.

An agreement consisting of 14 Articles was passed and ratified by the Governor-in-Council. It was ratified by the people later at a public assembly held on 16 July 1674.

At the time of the cession, Colaba island was not part of the British domain but it was subsequently bought out from its owners, in 1674. All that existed on the Colaba island was a grove of coconut trees and some shanties. (Colaba was also known in Arabic as Koolaba meaning a strip of land running out to the sea). The population consisted of fishermen. The word "Apollo" as

Fishermen on fishing launch

in Apollo Bunder is derived from *palwa*, a kind of boat frequenting the locality. Malabar Hill was Crown land but was not worth Rs 100 a year at the time of the Aungier Convention. Before the advent of the English, Bombay's trade, consisted only of coconut and "cairo" (coir), but after 1668 it increased steadily and rapidly. To the Court of Directors Aungier wrote: "Now the country merchants derive a great trade with Surat, Broach, Cambaya (Cambay) and Gogo and also to Dabull, Kelsey, Rajapore and Goa, to Mocha, Persia, Scindia (Sind) Bussora (Basra), in salt, coconuts, coir, betelnut, rice, elephant's teeth (from Mozambique), broadcloth, lead, sword blades and other European goods. Last year we disposed in Bombay 600 pieces of broadcloth, 300 maunds lead, all the perpetuances and all the sword blades".

It is of interest to record Aungier's description of such facilities as existed in Bombay for shipping in his time.

"The great bay or port", he wrote, "is certainly the fairest, largest and the securest in all these parts of India, where a hundred sail of tall ships may ride all the year safe with good anchorage. In the small bay to the north of the Castle, ships of 400 tons have been haled ashore to repair, there being 15 feet of water at the springs; in the lesser bay to the northward of the Fort, ships of 300 tons may be haled ashore; also at a place called Drumgo there is an excellent bay where 50 sail of 200 tons each may winter and repair safely. For small frigates, gorals and other vessels there are very many places".

If trade flourished, it was for sound reasons. One of the first things that Aungier did for the encouragement of trade was to exempt all goods imported or exported from the customs duties for five years. Aungier was aware of such practices in European ports. As the historian Douglas was to later note: "Casting his intellectual bread on the waters it returns again and again after many days". Aungier needed an engineer and found one in a German, Colonel Bake, who had come to India by way of Persia. He was appointed Chief Engineer in 1671. He wanted the fishing industry to be better managed and asked the Company to send some British fisher-folk with their families to Bombay to organise a company of the same. The population of the township was steadily increasing and it needed husbandmen, gardeners, weavers of both silk and cotton, carpenters, smiths and gunsmiths, locksmiths, armours, bakers, cooks, shoemakers tailors, dyers, barbers, butchers and harberdashers to name only a few professionals. Aungier tried to get them. The measure he adopted was to give them protection for five years from the liability to be arrested or sued in Bombay for previous debts contracted elsewhere! This privilege was to be extended in November 1677 so as to exempt all inhabitants of Bombay from liability to be sued by foreigners on bonds or other obligations except with the previous consent of the deputy governor and Council.

Fixed weights and measures were introduced, quality of provisions was ensured and all gold and silver plates had to be of a specialised degree of fineness. Aungier had described "the city which, by God's assistance, is intended to be build" through an administration that was characterised by justice, tolerance, freedom of trade and encouragement of indigenous industries. So anxious was he to get the best of families to settle in Bombay that he went out of his way to sanction all manner of perks to one Nima Parekh, a *baniya* from Diu.

As the historian David has recorded: "He (Parekh) was given a grant to build a house; he was allowed religious freedom, his family was to be free from watch and ward duty, in case of legal suit he could not be arrested without due notice. He was given the liberty to trade in his own ships. He could sell goods brought by him on the island, and if they were not sold within 12 months he could send them to other ports custom free. In case a person was indebted to him and another, his case was to be preferred. In case of war or danger his goods and family were made safe in the castle. He and his family had free egress and regress from the fort and his people were to be treated with respect and allowed the use of coaches and palanquins by the Governor and Deputy Governor. He and his assignees had freedom to buy and sell coconuts, betelnuts or any other commodity not rented out. Bombay agreed to most of his conditions except for his request to have 10 maunds of tobacco customs free, on the ground that it caused loss to the company".

Aungier was a contemporary of Shivaji with whom he established cordial relations. The zenith of his success was when Shivaji signed a treaty with the English at the time of his coronation in 1674. Aungier called Shivaji a friend but "a selfish one" but he saw to it that the latter was not provoked to any hostility.

Some of the measures that Aungier took were truly amazing. He established the mint in 1672 and issued tin and copper coins. He brought a physician from London, Dr Thomas Wilson in 1676 and planned a hospital, the first of its kind in Bombay, if not in India. In 1673 he granted a site on Malabar Hill to the Parsi settlers from Gujarat who were soon to build a Tower of Silence there. It was Aungier's great work, in the words of Douglas, the historian, "to weld into one homogenous mass the discordant materials of Asiatic nationalities, to solve the problem that had never been solved before, as to how a great multitude of men of diverse religions and races should live together in peace and harmony, free from discord within and suggestions from without".

Those Challenging Years

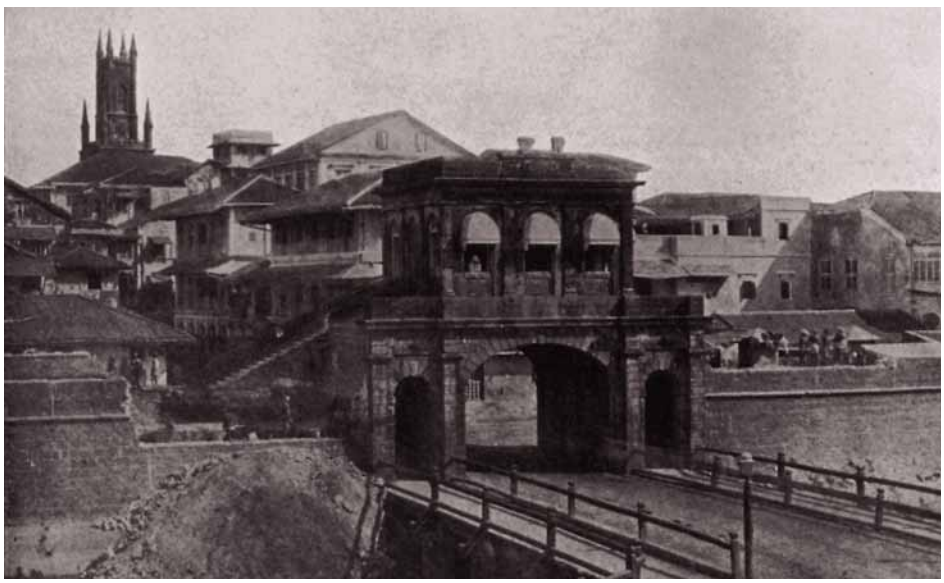
It was not all plain sailing during his years as Governor of Bombay. At the time of handing over charge to his Deputy Governor, he wrote, "During my stay here I have found odd neighbours to deal with; the jealous and envious Portuguese have endeavoured all that lay in their power to obstruct our settlement; the Governor of Surat hath not been wanting also to use his policy to undermine us and Sidi Sambal with his fleet hath been no small impediment. The Dutch with their powerful fleet designed to have swallowed us up; but blessed be God

who hath preserved us and rendered all their evil designs advantageous".

But life in Bombay was hard. One English historian has written: "the truth seems to be that in 1672 Bombay was unfit for habitation. It was the grave of the Englishman and decimated the colony; that is, it did not take one-tenth, it left one-tenth". In 1655 Ovington was to write: "We arrived in Bombay before the beginning of the rains and buried of the twenty-four passengers whom we brought with us ashore, twenty before the rains here ended, and of our own ship's company, above fifteen". The climate, the food and the insanitary conditions did not spare Aungier either. He suffered from illness that sapped his energy. He suffered from dysentry and great pains in his knees. He lost the use of his limbs and was confined to bed for three months. He had gone to Surat to recuperate, but it was in vain. The last letter signed by him was dated 20th May 1677. He died in the early hours of the morning between 4 and 5 am on 30 June. "It had pleased the Almighty to take out this life unto himself our late President Gerald Aungier to our great sorrows, and of all in these parts that knew him, his wisdom, eminent perfections and care of your affairs will better command his worth that we can tell how to describe him, he was sickly at least for three years, troubled with several distempers of body which he endured with great patience and discretion to the last".

He was presumably buried in the English cemetry at Surat on Monday 2 July, 1677. No details are available. There is no tomb with the epitaph to mark his grave though a large structure without any distinguishing mark is thought to be it.

Between 1677 when Aungier died and 1708, several political events took place in Bombay that were to prove almost disastrous. There was a succession of governors, none of them measuring up to Aungier. They included Thomas Holt, John Child, Bartholomew Harris, John Gayer and Nicholas Waite. John Child, the most powerful of them all, was a dismal failure. Writes David: "The fortunes of Bombay were at their lowest ebb between 1690 and 1708 because of inefficiency in administration, damage caused by the Sidi War, impediments created by the interlopers and pestilence". Three politically important events occurred, the occupation of the islands of Khanderi and Underi by the Marathas and the Sidis in 1679, the Sidi invasion of Bombay in 1689-90 and the establishment of the new Company in 1698. Each of these events adversely affected the progress of Bombay. Things were beginning to look up only after 1708 following the amalgamation of the two companies.



Church Gate. The main and fashionable gate was situated near the present Flora Fountain (1670).

Courtesy: Glimpses of India

Khanderi is a small island about 11 nautical miles south of Colaba point and about one and a half miles away from the neighbouring island of Underi. It commanded the entrance of the Bombay harbour from the south. The English had thought that it belonged to them as an appendage of Bombay but had not occupied it, unaware of its importance. The Marathas quietly and without prior notice occupied these islands placed so strategically. Khanderi was especially important because of its size and placement and British efforts to reduce it proved ineffective. They were to remain helpless for several years before successful negotiations removed the Maratha and the Sidi threat. Then came the rebellion of Captain Richard Keigwin, Commandant of the Company's forces on the island. Keigwin and his men were incensed by the parsimony of the Surat Council. They took a decision to rebel on 27 December 1683. One of the officers, Ensign Thorburne, addressing his men said: "Gentlemen and fellow soldiers, we have for a long time suffered under the oppressions of the East India Company and being no longer able to endure it are resolved to fly out to His Majesty of England for succour.....". A Proclamation for the Liberty, Felicity and Tranquility of the Inhabitants and Indwellers of Bombay was proclaimed with

Sir Josiah Child, Bt., a director of the East India Company in London from 1677 till his death in 1699 and twice its Governor.

Courtesy: British Library

great solemnity. The Company's servants who refused to obey the new regime were arrested. Keigwin and his Council governed Bombay from 27 December 1683 to 19 November 1684 but during that time he succeeded in pulling up Sidi Kasim who had made a nuisance of himself to the English much to the relief of Bombay's citizens. Keigwin also managed the economy well. Only trade was affected.

Keigwin was subsequently persuaded to give up his rebellion and pardoned. Later he entered the naval service under the British Admiralty from May 1689 until he died gallantly in action on 21 June 1690.

The Sidis never quite forgave the English. In 1689 Sidi Yakoob Khan landed at Sewri with a force of 20,000 men and occupied Mahim, Mazagaon and Sion and beseiged the Governor and his garrison in the town and castle. The Governor was forced to send a delegation to Aurangzeb which appeared before the Emperor with their hands tied behind their backs, to pray for pardon, which Aurangzeb "mercifully" granted on condition that the English paid an indemnity of Rs 1,50,000 and John Child, the man behind of the Sidi invasion, be banished immediately. It was a blow to the English prestige. After the indemnity was paid Aurangzeb ordered the Sidi to withdraw from Bombay Island and the English were allowed to enjoy their trading privileges.

When John Child left he was known to have amassed a fortune of 1,00,000 pounds which was a large sum even for those times, showing the amount of wealth Company servants could amass in those wild days.

Foreign Aggression

Throughout the years following the English take-over of Bombay from the Portuguese till the middle of the eighteenth century, the English had to encounter trouble from the Sidis, the Dutch, the Arabs and the Portuguese. The Portuguese had no business to cause trouble, but they did. In January 1677 Bombay wrote to the Company: "The Portuguese, not withstanding His Majesties letter to their Viceroy proceeded in their unjust exactions of Customs at Tannah and Carinjah which causes a notable obstruction in the Trade of this Place..... Our aforesaid neighbours are so jealous of the flourishing of this island that they by all means endeavour to prevent it, forbidding even all manner of provisions to be exported to their country's hither..... yet their malice therein is notoriously apparent, we await the happy hours wherein we shall receive your directions to right ourselves of the many abuses and indignities put upon us by inconsiderable a people as they are".

The Portuguese obviously did not like the development and prosperity of Bombay and the Viceroy of Goa (1671-72) wrote that the English were making Bombay a large and an opulent city and those of open conscience went there deserting the Portuguese. The Viceroy said that many Brahmins left Portuguese territory and came to Bombay as they were frightened of the *padres* who upon the death of any person, forced the orphans to become Christians.

The Portuguese frequently picked quarrels with the English and this was to go on till the English finally established themselves in the hinterland as well.

The Dutch relations with Bombay were occasional and did not affect Bombay's growth much, though when the Dutch Commodore Rickloff Van Goen came from Ceylon to the Malabar coast with 22 ships and 1,000 regular troops on board with the object of attacking Bombay,

Aurangzeb: Last of the Great Moghuls whose order to the Sidi to withdraw from Bombay Island was a relief to the British.

Courtesy: Maharashtra Pathya Pustak

Kanhoji Angre

Courtesy: Himalaya Publishing House

there was panic in the township. But Aungier had prepared his defence well and Van Goen, conceding that discretion was better part of valour, departed. This was in February 1673. Fourteen years later the Dutch were again to cause concern when their fleet appeared off the Thana coast. But they were soon to sail away.

The French on the other hand really did not bother Bombay though their fleet appeared off the coast a couple of times. In 1675, several French ships entered the harbour to hibernate during the monsoon. It is said that their presence for four months made provisions dear, in Bombay. But the captains were told not to allow more than 20 to come ashore at any one time.

Quelling Pirate Menace

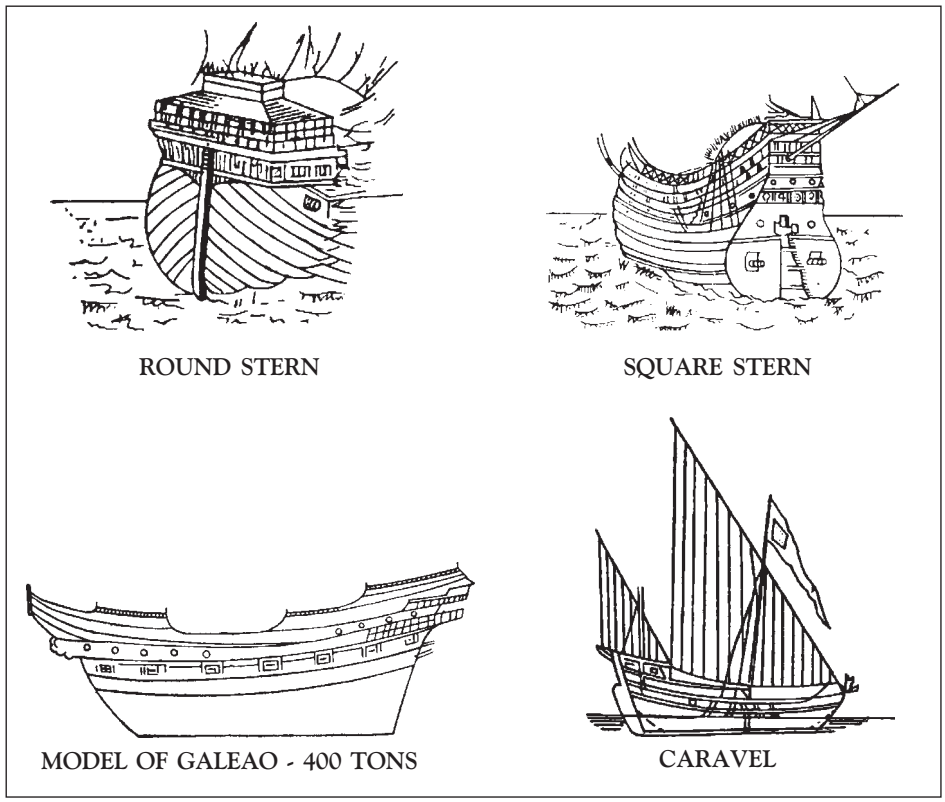
A greater menace were the pirates from Malabar. These pirates scoured the coast in squadrons of 20 ships, each at a distance of 5 miles apart, so that once a merchant craft came in sight, they could close in on her. Escape in such a situation was impossible. Their activities on shore were more devastating as they plundered and burned hamlets and killed the inhabitants or carried them off as slaves.

Aungier had a way of handling these marauders. He had built a line of "Martello towers" to alert English authorities of the presence of the pirate ships. He had also built light frigates in the neighbouring creeks and acquired grabs from Surat with 2 to 6 small guns. These helped to keep Malabar pirates at bay. Private seamen were encouraged to go out in search of pirates and the Company lent them frigates. Booty captured from the Arab boats was divided fairly between the English authorities and the seamen.

The west coast was troubled by yet another group of pirates, the Arabs. In 1687 several Bombay merchants sustained losses thanks to the depradations of three Arab pirate vessels. It was not until 1757 when the British stormed the stronghold of the Angres that all piracy could be put down.

The Mahratta fleet built on orders of Shivaji had attained a formidable strength by 1698 when Kanhoji Angre was appointed its Commander. He had no love for the English whom he evidently considered as interlopers. In 1707 he attacked the frigate **Bombay** and blew it up after a brief engagement. In 1710 he seized Kennery and two years later captured the Governor of Bombay's armed yacht, together with the **Anne** from Karwar. In this engagement the Factor of Karwar, Chown, was killed and his wife taken prisoner and kept at Kennery from where, after three months, she was released after payment of a ransom of Rs. 30,000 raised by the "gentlemen of the Island"

For a time a peace of sort prevailed between Angre and the British. But the latter, under Charles Boone decided to attack Angre's headquarters at Gheria, about 150



Sketches show how a Portuguese ship looked: square stern, round stern and how a Galeao and Caravel looked.

Courtesy: State Board for Literature and Culture, Bombay

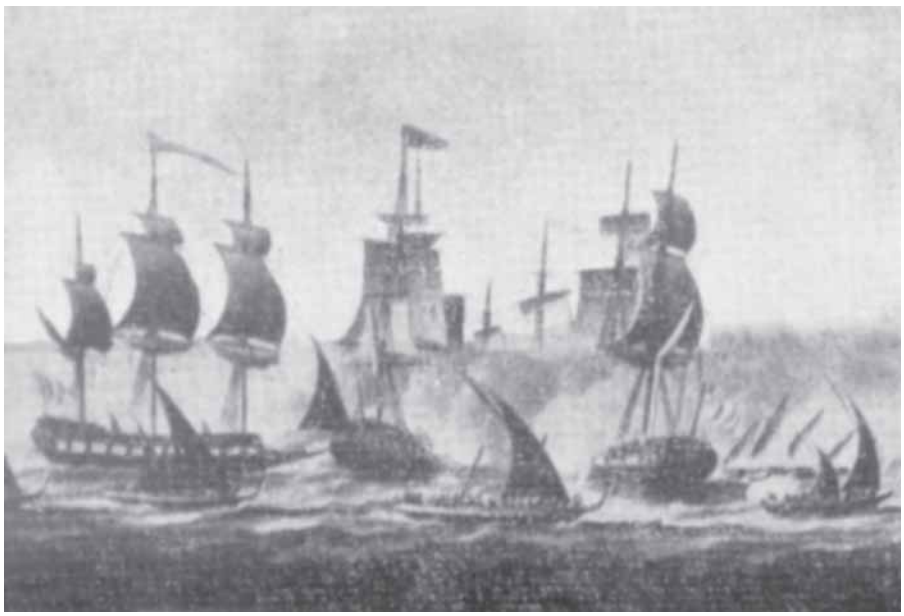
Robert Clive, the Baron of Plassey. 'Brilliant in sudden danger & adversity, profuse, moody, recklessly generous, unable to endure himself or subsist in idleness...'

Courtesy: British Library

miles south of Bombay. The expedition carried out in 1717 was a failure. The British forces were beaten off. Boone made one more effort to beat Angre and called for volunteers. promising them heavy payment. Forty men came forth. But when Boone tried to capture Kennery, he failed again, we are told as much "by the strong tide running, as by the Mahrattas". After that Angre decided to blockade Bombay island.

Boone made yet another attempt to capture Gheriah but found the fort impregnable. Similarly, an attack on Alibagh, immediately south of Kennery was "badly mismanaged". Angre's strongholds came to be regarded as impregnable and, writes E.L. Everatt *(Port of Bombay, Oct. 1933)* "all that could be done was restrict his power at sea, if possible". It took another 35 years before Gheriah was destroyed. Angre died in 1728 — leaving five sons and his possessions were soon in confusion. The British succeeded in playing one son against another, even though they lost Elephanta and Karanja Islands in the harbour.

Of all their detractors, the English were most concerned with the Angres. In the closing years of the 17th century Kanhoji Angre made his appearance on the Konkan coast and for 50 years he and his sons were the terrors of the seas between Goa and Bombay. Their forces consisted of fast, light-draft sailing vessels of from 100 to 400 tons, mounting from ten to thirty guns each and supplemented by roving galleys of forty or fifty oars. Any unescorted ship was their prey and they fell upon it with fury. Various punitive expeditions mounted by the English were of no avail and in 1733 we find the Council recording that "the Angres are becoming too formidable to be kept in awe with the small sea force we have at present in our service". In 1756 a strong expedition under Vice-Admiral Watson and Commodore William James with a military force under Robert Clive (the same Robert Clive who was later to lay the foundation of the British empire in India) invaded Gheriah, the principal stronghold of Toolajee Angre, some 170 miles south of Bombay. He destroyed the Angre fleet as well as their citadel which had thirtherto been regarded as impregnable. Toolajee and his entire force were taken prisoners after which Angres disappeared from the scene for ever.



Maratha Grabs and Gallivats attacking an English Ship.

The low built Maratha *galbats* having two masts and two lateen sails are seen going from left to right towards the English ship. Their wind-filled sails also indicate the direction in which they are sailing. Their masts are raking forward. They are not being propelled by oars. All are flying a flag from a staff in the stem. Some of them have long narrow ensigns fluttering from the main or the mizzen-mast. The low built vessels are crowded with men ready to board the enemy ship. In the right hand corner three or four two-masted vessels are seen moving in the direction of the English ship. These two-masted ships with lateen sails, and having a low build, fit in with the description of the '*gallibats*' (*galbats*) given by Robert Orme. They can, therefore, be taken as the *galbats* of the Marathas. They are not leading the attack but are surrounding the English ship for due action.

Courtesy: State Board for Literature and Culture, Bombay

And finally there were the "interlopers" who were a nuisance on their own account. "Interloping as a business began in the early part of the 17th century. Certain adventurers who were not part of the East India Company, but who had managed to acquire a ship, crew and money had come to be bothersome. They were known as interlopers because they were legally unauthorised, since, according to Royal Charters, only the East India Company had the right to trade with the East. But these were adventurers, not different from pirates and most of them were Europeans and had their headquarters in Madagascar. Many of them had the support of the mercantile community in London; the Company's servant sometimes connived with them as also some princes. Their activities continued till the beginning of the 18th century and finally tapered off.

Emergence of a new force

Till what came to be known as the Bombay Presidency was firmly established and enlarged, the English had no territorial possession beyond the limits of Bombay island. In 1669 Aungier reported that there was an extraordinary need of all things necessary for the defence and security of Bombay. "Native" forces had to be raised because English soldiers frequently fell ill and died, and were not easily replaced. In August 1675, for instance, there was a "pestilence" which killed 40 English soldiers and an officer, Captain Langford. The Company wanted to know the reason for the high mortality rate among the soldiers. In 1691 another pestilence took the lives of so many English soldiers that only 35 were left alive. In the circumstances, the Bombay Army did not play any vital role in the founding of the Indian Army, but the Bombay Marine by all

Tipu Sultan — The Tiger of Mysore. He was a terror to the British.

accounts is the precursor of the Indian Navy. After 1686 (the transfer of the Company's headquarters from Surat to Bombay was effected in 1687) the Company's sea forces were officially known as the Bombay Marine. On 1 May 1830 it was renamed the Indian Navy by a government order.

From the very beginning, the English had felt the need for a marine force for the defence of Bombay. In 1665 the island's marine force had been negligible. In 1671-72 the Bombay Marine had two frigates, the **Revenge** and the **Hunter** of 22 guns and 14 respectively. Later the other two vessels, the ketch **Phoenix** and the **Malabar Boaster** were obtained from Surat. To this fleet was added a vessel captured from the Dutch. In 1679 because of the Company's instructions to keep expenses down, the small Bombay fleet was further reduced. The fleet was to gather strength in the 18th century. In 1679 the Bombay Marine consisted of one 44-gun ship, four 28-gun ships, four 18-gun ships, six bomb-ketches and 20 large gallivats. There were about 100 officers and nearly 2,000 Marines.

In March 1748 there was a mutiny on board the ship *Bombay*. The crew, entirely British, confined the officers on board, took possession of the magazine and threatened the captain's life unless he gave an undertaking to repatriate them home at the earliest opportunity. The ring leaders were tried by court martial and sentenced. The services of the Bombay Marine were utilised for the consolidation of the British power in India. Thus, in 1778 with the help of the Bombay Marine, the British annexed several places of strategic and commercial importance in India. Broach was attacked on 18 November 1772 and the Nawab was subjugated. The islands of Salsette, Elephanta, Karanja and the port of Bassein were all taken possession of by agreement, coercion or force. In 1768, four years earlier, the Bombay Marine had been called in to support the operations of the Malabar coast against Hyder Ali whose fleet of two ships, two grabs and ten gallivats were no match to the British fleet and surrendered.

In 1780 there was a bitter struggle between the British and Hyder Ali's naval forces. Even after Hyder Ali's death, the Bombay Marine was engaged in battling the forces of Hyder Ali's son, Tipu Sultan. It participated in the blockade of Mangalore.

John Child (1681-1690) was followed as Governor by Bathlomew Harris (4 Feb 1690-10 May 1694), Sir John Gayer (17 May 1694-Nov 1708), Sir Nicholas Waite (Nov 1704-Sep 1708) William Aislabie (Sep 1708-1715). Now comes on the scene Charles Boone.

Jamsetjee Bomanjee Wadia, the Fifth Master builder.

Courtesy: Himalaya Publishing House

It is said that Bombay's commercial prosperity began to revive with the arrival of Charles Boone in 1715. The developments initiated by Aungier were energetically pushed through by Boone. The accommodations for goods and shipping was improved. Trade and commerce began to thrive. And much of this was made possible by a remarkable Parsi family of shipbuilders, the Wadias whose progenitor, Lowji Nusserwanji Wadia had emigrated to Bombay from Surat in 1735. Their story reads like a fairy tale.

Surat had become a centre for ship-building since ancient times. The Mughal emperors had all their vessels built there. Facilities for docking were available at Swally (Sumari) some 12 miles away from Surat. According to the *Bombay Gazetteer*:

> *The yards were places of graving docks, hollowed out on the banks of the river. While the ship was building, these slips were close to the river by an earthern dam. When the work of the building was completed, the dam was taken away and the water coming in floated off the ship.*

The technique was somehow primitive, but it served the ship-builders nicely. The English were aware of the facilities available in Surat and had many of their ships careened and repaired there.

The shipbuilders at Surat were mainly Parsis. Very little is known of the earliest pioneers. There is reference to one Khurshed to whom the construction of a vessel was entrusted on behalf of the Bombay Government in 1672. The Parsis must have brought their knowledge of ship-building from Iran. But even before their arrival Indians were building huge ships. In the 14th century, according to an account by Friar Odoric, an Indian ship was traversing the Indian Ocean with a

full complement of 700 men. In the 11th century ships were being built all down the West coast of India, notably at Agashi which had a large dockyard and at Chaul, Dabhol, Diu, Daman and Bassein. Ships built at Surat and Dabhol were frequently 1,200 tons burthen. The biggest English ships of that age (1611-12) were from 300 to 350 tons.

Ships built at Surat were known for their durability and strength; they were built of teakwood which was considered superior to any other wood available elsewhere and vastly superior to the oak used to build British ships. The teak used by the Wadias was obtained from the littoral forests which extended from slightly north of Bombay to Travancore. The Malabar teak was considered superior even to Burmese teak.

Indian ships, under the circumstances, were very much in demand to such an extent that British shipbuilders felt that their industry was in grave danger. In London there was a growing clamour against the purchase of Indian ships. John Hillman, a British shipbuilder stated that the trade depended on the East Indies trade and it would be killed, if ships continued to be built in India. He said: "An Indian built teak ship after she has performed six voyages is equal to one of ours after she has performed three." Another shipbuilder James Hughes pointed out that employment in the Thames was falling off as ships were built in India because Indian ships were of superior kind".

Discussion and debate raged fast and furious in London among the merchant class. One merchant, Allen Gillmore, has been quoted as saying that the freight on Indian-built ships was lower than by any other one and if Indian-built ships were to be excluded from English ports the position of the merchant exporters would be infinitely worse. James

Lord Cornwallis

Walker another merchant, similarly defended the use of Indian ships on the grounds that they lasted longer and their workmanship was of a very superior order. Despite such tributes to Indian ships, the British Parliament enacted a law that only English crews should be employed on Indian ships and that the captains should also be English.

The frigate **Cornwallis** built for the Company in 1800 in the Surat shipyard by Jamsetjee Bomanjee was found to be so beautifully constructed and of such strength that the British Admiralty purchased it. But that was not the first instance of such government purchase. The ***Swallow***, launched in Bombay on April 2, 1777 was first purchased by the Bombay Government and after a most exciting career was taken up by the Royal Navy and named **Silly** sloop-of-war. Similarly, the **Born** built in 1790 was renamed **Hindostan**. The **Bombay** built in 1793 and the **Kaikuaroo** in 1799 were also purchased by the Royal Navy in 1808 and 1805 respectively and renamed **HMS Ceylon** and **HMS Camel.**

The point was that Indian-built ships were infinitely superior to British-built ones and not only were they splendidly constructed but they lasted twice as long and cost considerably less. A ship built in India cost about 14 pounds to 15 pounds a ton whereas a ship built in Britian would cost 17 to 17-6 pounds.

The British Government asked the Company to have a 74-gun ship built in India, as also a frigate. The first frigate to be built under the scheme was named the ***Pitt*** and launched in 1805. *The Asiatic Annual Register* of 1805 recorded the event:

> *A bountiful frigate, the* ***Pitt,*** *the first ever built in India for His Majesty's Service, has been launched from the dockyard. Between 11 and 12 o'clock, the appointed signals being given, she moved majestically on the water amid acclamations of a great concourse of spectators and under a salute from the saluting battery. From the stillness of the night and the ships being finally illuminated the whole effect was uncommonly grand.*

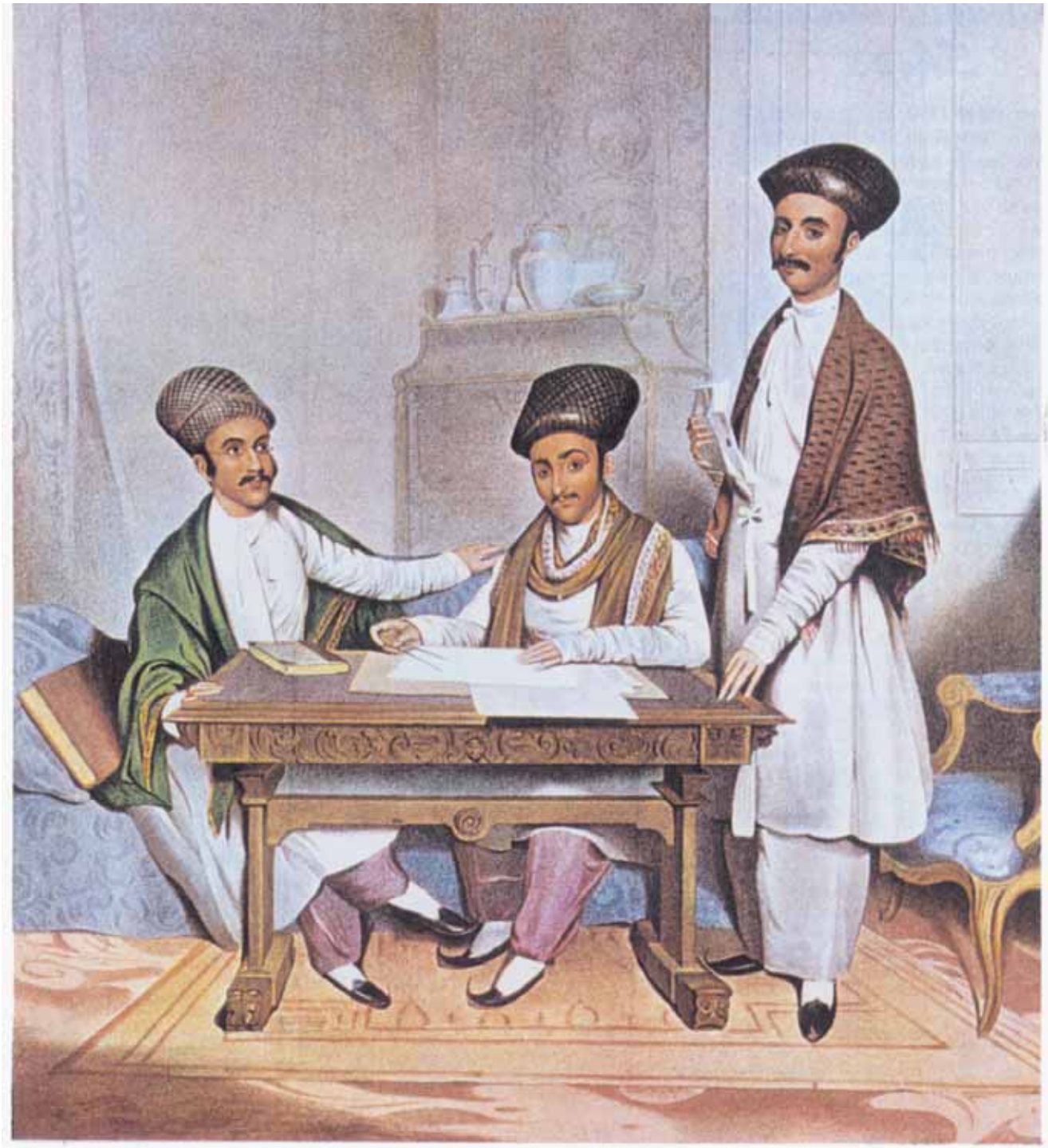
The second frigate to be built for the Royal Navy was ***Salsette*** which was launched on March 24, 1807. She was of 887 tons and carried 36 guns. When Captain W. Henderson who was one of the officers on the ***Salsette*** when she was frozen in the Baltic in 1809-10, came out to Bombay, he presented on 15 June 1819 a clock to builder Jamsetjee for having being the man for saving his life with those of others on the ***Salsette*** which due to her strong build was the only ship which survived the ordeal. In acknowledging the present, Jamsetjee wrote: "If my acquaintance with the English language had been much more extensive and perfect than it is, I should still have been unable to convey to you the pride and gratification I feel at so disinterested and generous a testimony to the utility of my humble endeavours in the particular case you have alluded to".

A stained glass window from Lowji Castle, showing the Wadia family crest and the motto. Courtesy: J.B.H. Wadia.

Anchored in the roadsteads off the British Navy's dockyard at Portsmouth, a battered, ancient hulk swings with the tide. Compared with Nelson's flagship, *HMS Victory,* gleaming with spit and polish and fresh paint in her dry-dock close by, she seems a pathetic sight, with her masts cut short and her gun-ports battened down. Yet the history of Her Majesty's Training Ship *Foudroyant,* formerly named the *Trincomalee,* is just as remarkable in its own way as that of its more famous sister-ship of the line — not because of the men who sailed in her but for those who built her.

Victory and *Foudroyant* are the last survivors of the days when Britain's Navy really did rule the seas, but *Foudroyant* has the distinction of being the oldest vessel in the world that is still afloat and in active service, which these days means serving as a training ship for youngsters who come aboard for a few days to learn what it was like to live and work in an old man-o'-war. One reason why she has stayed afloat for well over a century and a half is that unlike the *Victory* — made from the 'hearts of oak' that English seamen were so proud of — the *Foudroyant* is built of Malabar teak, cut from the forests of Western India. *Foudroyant,* in fact, is not a British ship at all but an Indian one, built for the Royal Navy in a Bombay shipyard in 1817.

The shipwrights who designed and constructed the *Foudroyant* — along with fifteen other fine sailing ships for the Royal Navy and a great many more for the Indian Navy — were all members of one extraordinary family who for nearly two hundred years dominated the dockyards of Bombay, and helped



The fifth generation of Wadia shipwrights. Jehangir Nowroji (centre) flanked by his cousin Hirjibhoy Merwanji (left) and a friend. These three Parsis were sent to England in 1838 to study the latest techniques in ship building.

Bombay to grow,but it was really the Parsi shipbuilders who opened up Bombay, transforming it into the most modern sea-port in Asia. This meant that Bombay was primed and ready for the huge explosion in business that followed the lifting of the East India Company's trading monopoly in 1813, and which soon turned Bombay into the first city of India. So it would be no exaggeration to say that the Wadia master-builders were the real creators of modern Bombay.

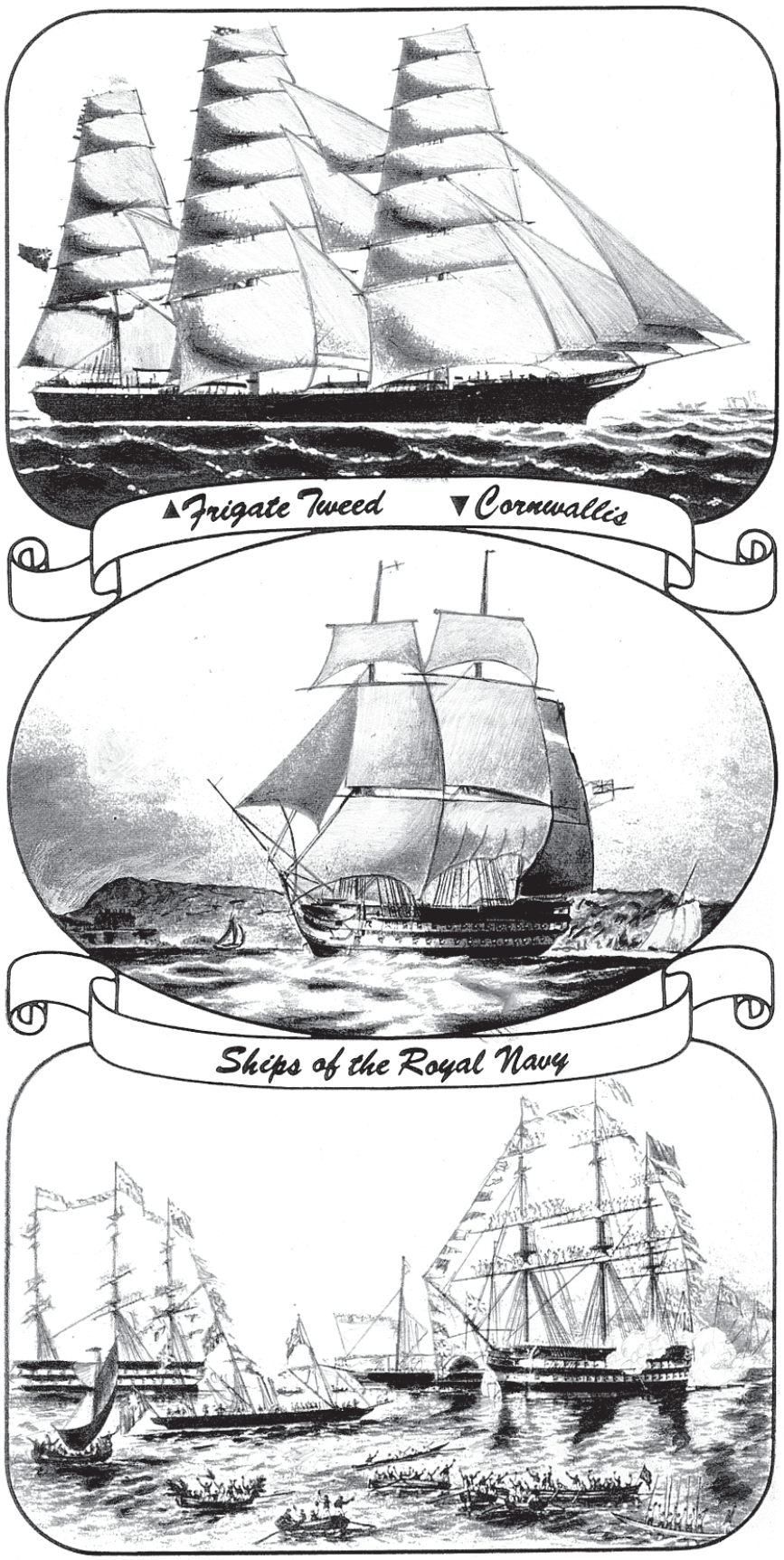
Courtesy: Bombay Brochure, Published in 1992 (Asiatic Society of Bombay)

Famous Wadia Ships

Launched in 1800, the 74-gun *HMS Cornwallis* was the first Bombay ship of the line to be brought off the Indian Navy by the British Navy. She was still in fighting trim 26 years later when she fired the opening broadside of the brief Anglo-American war. Perhaps it was irritation at the slowness with which the British gave his ships the recognition they deserved that caused its builder, Jamsetji Bomanji Wadia, to carve a hidden inscription on the *Cornwallis* that read: "This ship was built by a damned black fellow AD 1800." More than 50 years after being launched, the *Cornwallis* was refitted with a steam-driven propellor and took part in the Baltic Campaign against Russia. Ten years later she took up a permanent mooring as an extension of the jetty at Sheerness in England. When she was finally broken up in 1957 she was found to be as seaworthy as she had been on the day of her launching.

The first ship to be commissioned directly and built for the Royal Navy was the *Minden,* which has a curious footnote in US history as the vessel on board which the American national anthem, *The Star Spangled Banner,* was apparently composed while she was shelling the town of Charleston, West Virginia! A more famous Wadia fighting vessel was *HMS Asia,* flagship of the British naval fleet at the sea-battle of Navarino in 1827.

Two Wadia ships hold records that remain unbeaten to this day: the grain-clipper *Tweed,* launched originally as the *Punjab,* once made the London to Melbourne passage in 83 days; and Her Majesty's Training Ship *Foudroyant,* formerly the *Trincomalee,* was launched in 1817 but is still serving as a training vessel in Portsmouth harbour — the oldest vessel, still afloat and in active service, in the world.

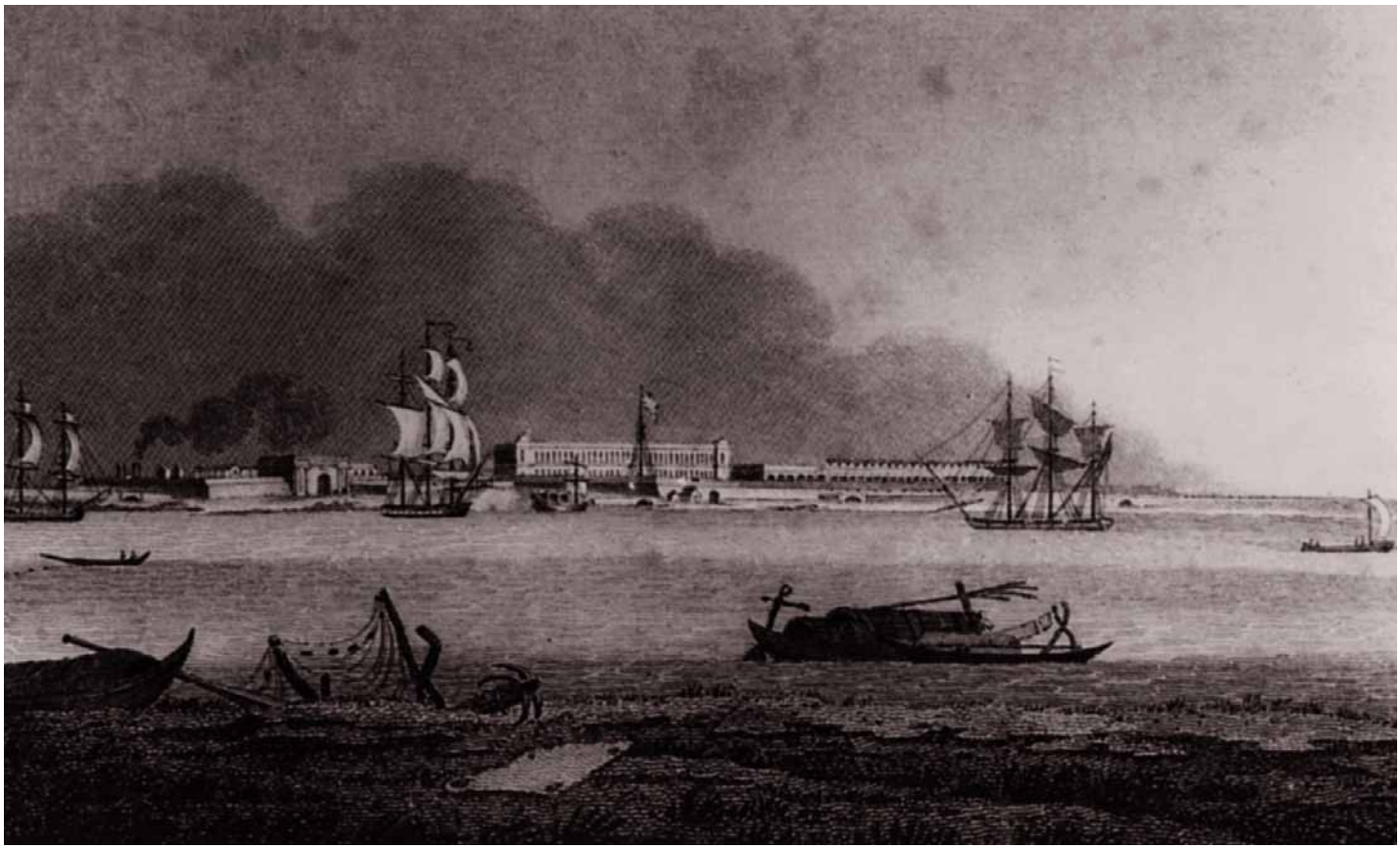


Photos courtesy: India Office Library, London; Dr Bhau Doji Lad Museum and the Parsi Panchayat Library.

Nine members of the Wadia family became master-builders at the Bombay Dockyards, supervising between them the building of 335 ships.

Reproduced from the Taj Magazine, The Taj Group of Hotels

Courtesy: Bombay Brochure, Published in 1992 (Asiatic Society of Bombay)



Bombay Harbour — in the 18th/19th century, from an engraving.

Despite the fact that Indians were superior shipbuilders, the British still could not resist being racist. The expression "Black Fellow" while referring to an Indian was in common use by some Europeans. It was greatly resented by Jamsetjee, the master builder who had his revenge. When he built the beautiful ship ***Cornwallis*** he carved on its Kelson the words: "This ship was built by a Black Fellow AD 1800". Nobody noticed them till many years later when the ship returned to Bombay docks and Jamsetjee himself pointed them out to his friends, much to their amusement.

The Great Master Builders

The first master-builder on record is Lowjee whose name appears in the Surat Diary No. 620 under date 29th July 1735. Lowjee left Surat to come to Bombay, accompanied by twelve carpenters. Lowjee was born in 1710; he joined the Surat Dockyard in 1723. Little is known of his early life, until 1740 when he supervised the building of a new grab, the **Restoration** to the full satisfaction of the English. From that time onwards Lowjee occupied the position of head shipbuilder or, as was better known, the Master Builder. Such was the respect in which he was held that the Court of Directors sent him a Silver Rule and a set of Instruments as a token of their regard for him. The Rule bore the inscription: Presented by the United East India Company to Lowjee Bomanjee their master builder at Bombay, as a memorial for his long and faithful service". Lowjee's father was Nusserwanjee and not Bomanjee; it was an error that his family was to notice. Lowjee died on 3 July 1774. The Bombay Council recorded this in a letter to the court on 10 November. The letter said: "Lowjee Warria, many years master builder here, died in the month of July last in a very advanced age. He has been succeeded in the post of Master builder by his eldest son, Maneckjee Lowjee, his other son Bomanjee has succeeded his brother as First Foreman in the Marine Yard; both of whom are in every way qualified in the stations to which they have been promoted".

The Lowjee family continued to build ships of all kinds and the workmen in the Bombay Dockyard were fully occupied either with building work or with repair of old ships. The English Admiral in Bombay in a letter to the Court dated 25 April 1781, wrote; "The two Parsi ship-builders Maneckjee and Bomanjee and their sons Framjee and Jamsetjee have been of the greatest utility,

in repairing the several ships of the Squadron..... As it is, I cannot too much praise their indefatigable zeal and attention....". About the durability of the ships built in Bombay Abraham Parsons wrote: "Ships built at Bombay are not only as strong, but as handsome and are well-furnished as ships built in any part of Europe.... as a proof of which I am informed that the ship called the *Bombay,* grab of 24 guns (the second in size belong ing to the Company's marine) has been built more than sixty years ago and is now a good and strong ship".

Maneckjee and Bomanjee continued to come for high praise from the British authorities in Bombay. Sir Edward Hughes presented gold medals to them on 10 March 1783. A recommendation was made to the court of directors that a grant be made to the Lowjees "as long as they shall continue in the Company's services as Master Builders a portion of the Company's Batty annually that after defraying the expense of cultivation will produce to them forty *morahs* for the support of their numerous family.....". That was the first Inam Grant to an individual on the island.

Bomanjee Lowjee died on 20 April 1790 and Maneckjee Lowjee on 8 April 1792. They were succeeded by their sons Jamsetjee Bomanjee and Framjee Maneckjee.

The **Cornwallis** built by these two master builders was the flagship of Sir George Burlton in the action with the American sloop **Hornet**. On 28 April 1815 the **Hornet** sighted the **Cornwallis** off the coast of America and realised it was in danger, such was the fear that the Indian-built ship caused among the American sailors.

According to the statement of Captain Riddle of the ***Hornet,*** in order to escape, the sloop jettisoned practically everything that can be thrown away, including the sheet anchor, other anchor and the guns, so that a lighter ship could sail faster!

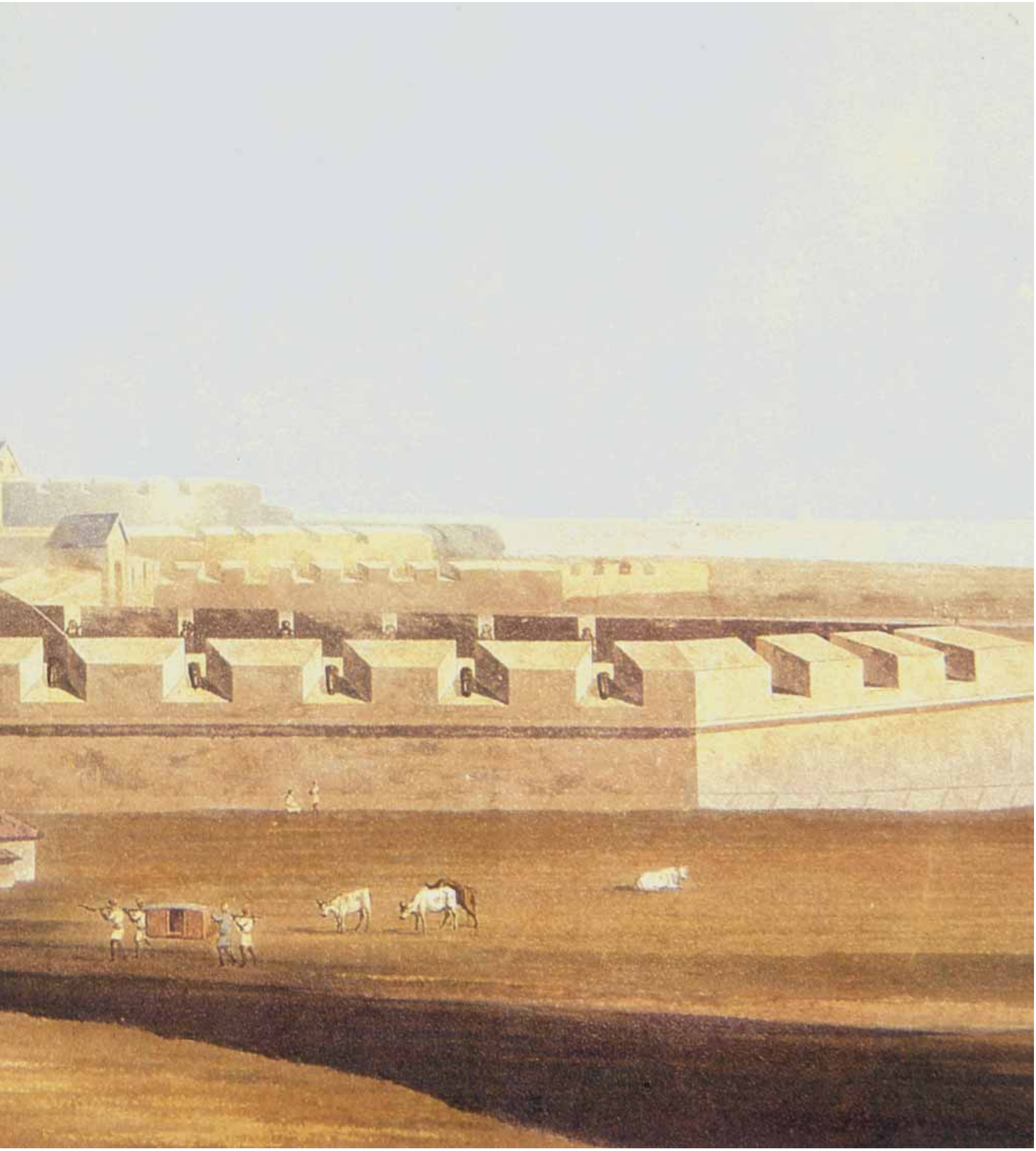
The Lowjees built ship after ship — their names are legion! — that were to be seen in many parts of the world. In his *Bombay Dockyard and the Wadia Master Builders* Ruttonjee Adeshir Wadia notes that "under the expert hand of Jamsetjee Bomanjee the reputation of the Bombay Dockyard for building fine ships attained its zenith". Jamsetjee Bomanjee (1756-1821) died on 31 August 1821.

Nowrojee Jamsetjee in turn became the fourth master builder in the Lowjee family. Born on 11 September 1774, he entered the dockyard service in 1790 when he was hardly sixteen and took over as master builder on the death of his father. The first large ship built by Nowrojee was the ***Asia*** of 2,239 tons and pierced for 86 guns. This ship was the flagship of Admiral Codrington at the Battle of Navarino. This was followed by other ships like the **Elphinstone** of 387 tons and 18 guns, the **Caledonia** and the **Bombay.** The first steamship was built in Bombay in 1829 during Nowrojee's term of office. She was named the **Hugh Lindsey** and was of 411 tons burthen. Nowrojee retired in May 1843 and died on November 1860 at the ripe old age of 86. After his retirement there was an all-round decline in shipbuilding in Bombay. He had his successors — but times were a-changing. The era of sailing ships had come to an end. Nowrojee was succeeded by Cursetjee Rustomjee, the seventh and the last of the master builders. For India they were sad times. Slowly and imperceptibly Britain, in the grip of the industrial revolution, had overtaken India. Life in Bombay was never to be the same again.

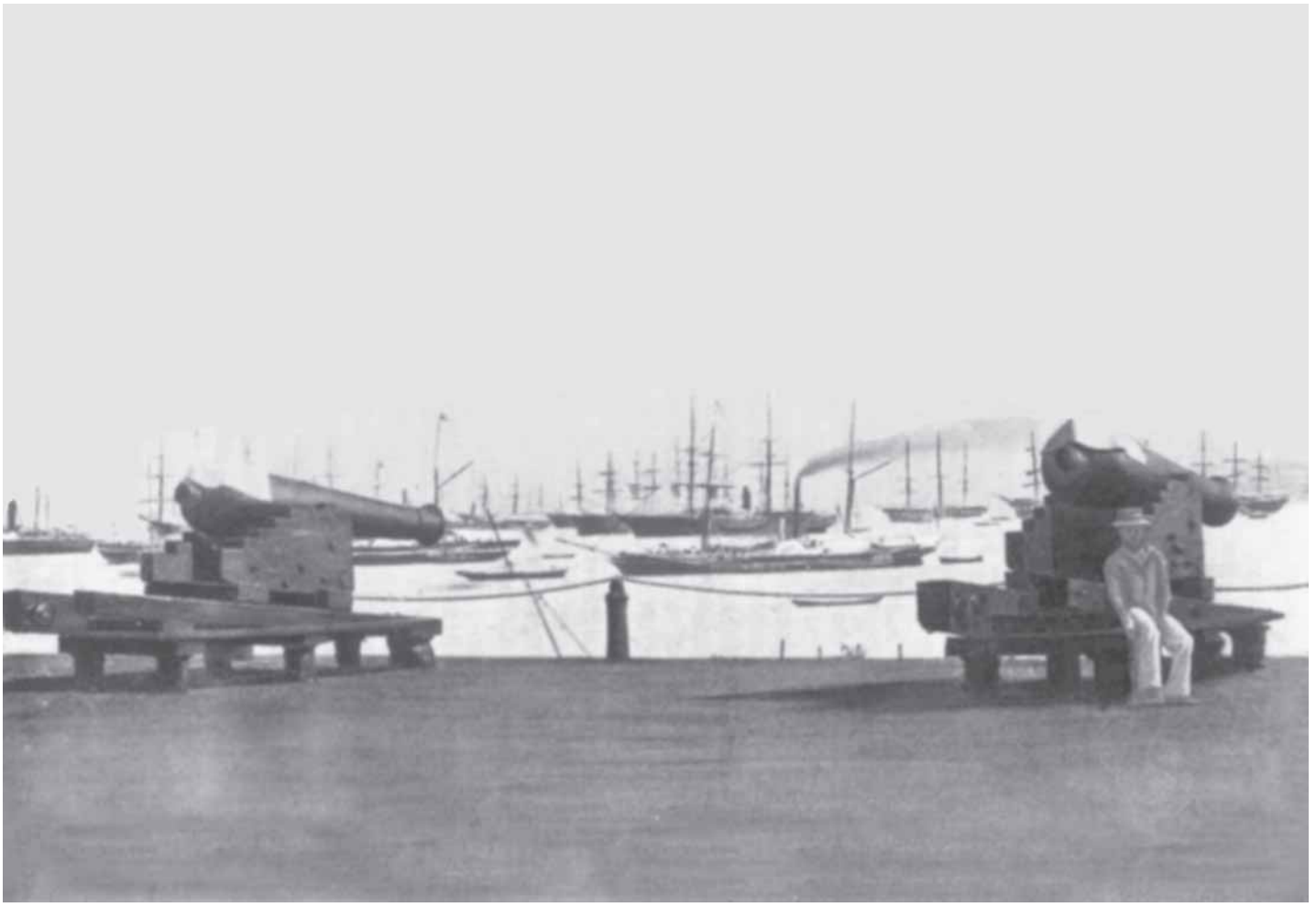
Another view of Bombay harbour around 1780.

Courtesy: Bombay City Corner

North West view of the Fort of Bombay. The sea is on three sides of it and on the fourth is an esplanade.



Courtesy: Drawing by Viscount Valentia (1811)



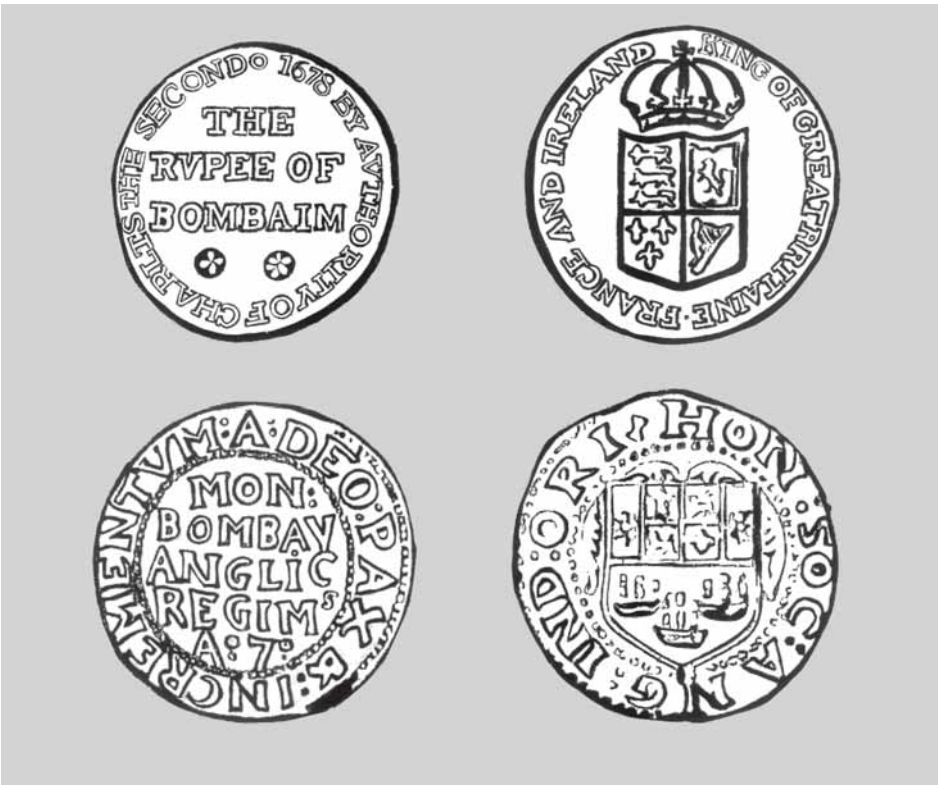
Bombay Harbour (1860), before the construction of the Wet Docks.

CHAPTER III

Evolution In Shipyards & Ship-building

The British systematically sought to destroy India's industrial base. The root cause of social transformation in India and the United Kingdom lay in the staggering increase in the latter in productivity emanating from the Industrial Revolution. In the end even shipbuilding in India was brought to a halt by British imperial interests.

One does not build ships without docks and the English felt the need for them as early as 1686. A plan for building a dry dock had been mooted but work was not taken in hand till 1748. Ships were regularly touching Bombay harbour and trade was growing. The value of export trade which consisted mainly of cotton goods, pepper, silk and precious stones had risen from 493,000 pounds in 1708 to an average of 758,000 pounds in the bare space of twenty years. Manchester in Britain had yet to make its mark in the textile field and India was where textile production excelled. The process of destroying textile production had not yet begun. The per capita level of industrialisation in India in 1750 was 7 when it was 10 in the United Kingdom and 8 for Europe as a whole. In 1830 it was still 6 in India while it was 25 in the United Kingdom. By 1880 the level was to be reduced to 2 in India while it rose to 87 in the United Kingdom. Similarly, the relative share of world manufacturing output for India in 1750 was 24.5 to United Kingdom's 1.9. By 1880 India's share had been reduced to 2.8 while United Kingdom's share rose to 22.9.



First Rupee Coin in Bombay (1678). Courtesy: Municipal Corporation of Greater Bombay

In his book *The Rise and Fall of Empires* Paul Kennedy has noted that the root cause of social transformation in India and the United Kingdom lay in the staggering increase in the latter in productivity emanating from the Industrial Revolution. Between 1750 and the 1930s the mechanisation of spinning had increased productivity in that sector alone by a factor of 300 to 400.

According to Kennedy:

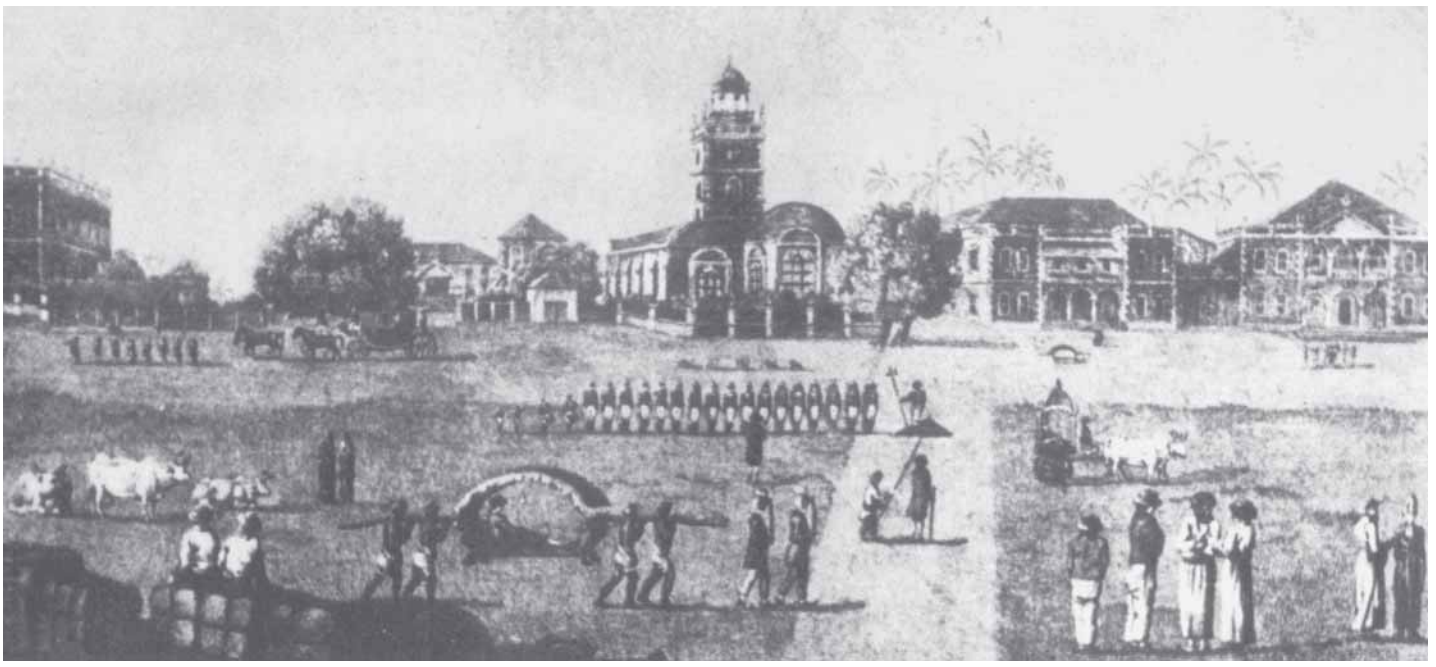
The story of India and China was a different one. Not only did the shares of total world manufacturing shrink relatively, simply because the West's output was rising so swiftly, but in some cases their economies declined absolutely, that is, they deindustrialised because of the penetration of their traditional markets by the far cheaper and better products of the Lancashire textile factories. After 1813 (when the East India Company's trade monopoly ended) imports of cotton fabrics in India rose spectacularly from 1 million yards (1814) to 51 million yards (1830) to 995 million yards (1870), driving out many of the traditional domestic producers in the process.

In 1801 India *exported* cotton goods valued at 1,630,467 pounds and hardly imported any similar cloth. By 1840 India was *importing* cotton goods from the United Kingdom worth 847,530 pounds. Indian economy was on the decline, thanks to the predatory plans of Britain. Ship movement, in the circumstances was regular. The directors of the East India Company had in the early years of the 18th century ordered that Bombay should be the first port of call in India and that meant that Bombay had to be ready not only to receive ships but to service them. Thus it came about that Bombay had its first dry dock by the middle of the 18th century, in 1748. Constructed on the site of the present Government Dockyard it was 209 ft long, 47 ft wide with a depth of 15ft. Given the nature of booming trade, the dock was an instant success so much so that within a space of 15 years after the completion of that dock, two more were laid down and completed.

Interestingly, the question of a wet dock does not appear to have been seriously considered in the early stages. The idea was taken up as late as 1875. Till then, the bulk of shipping used to load and unload in the stream though there were a few open wharves or "bunders" alongside which light-draft vessels could lie. According to a history of the Bombay Port published in 1973, "the reference in the seventeenth and eighteenth century records to docks extensions had more connections with fortifications than with true facilities" as for instance, when it was stated in 1746 that "the Dock Pier Head was enlarged so as to mount nine guns in the face toward the road and two more for flanking the face of the Royal Bastion". Again, in 1775 the shipping facilities were described as "two marine gates with a commodious wharf and cranes built out from each gate, beside a landing place for passengers only".

The construction of the first dry-dock in 1748-50 was a notable event. The following appears in the Bombay government records of 3rd January 1749:

Considering a dry dock at this place capable of receiving a ship of 50 guns would be extremely useful for cleaning and repairing ships belonging to the Hon. Company or private traders and thereby bring



Bombay Green: The West Side (1750). Courtesy: Municipal Corporation of Greater Bombay

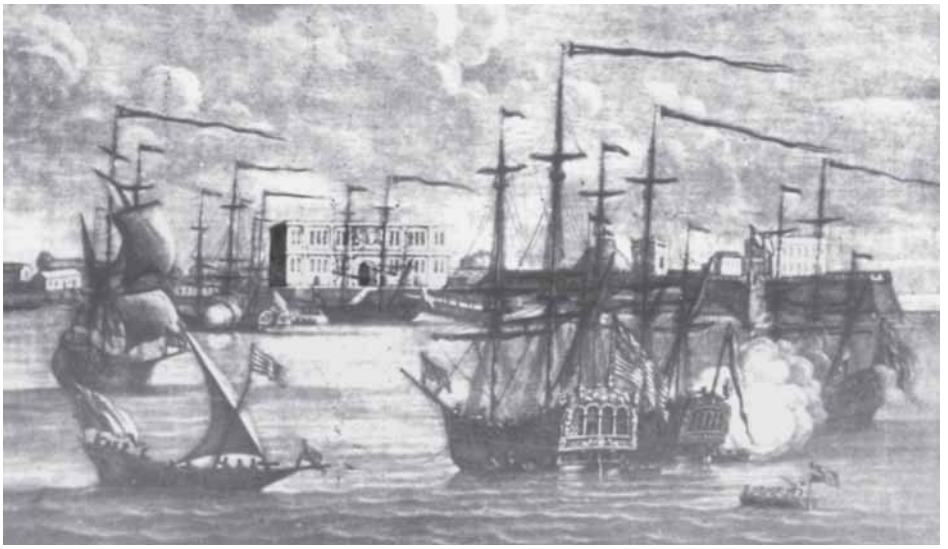
many advantages to the Island particularly in respect of trade and most branches of the revenues, the charges of which by computation would not exceed five thousand and which will be soon reimbursed by collecting a duty not yet agreed upon all ships that make use of it: all of which the Board being very sensible and likewise well assured that there are many private persons who would gladly take it upon themselves for the advantages, it is agreed that the same be undertaken on the Hon. Company's account borrowing money of the Bank for the amount for which a distinct head is to be kept in the books. Directed, therefore, that such timber and plank as may be wanted for the gates of the Dock be indented from Tellicherry.

The Dock was completed by July 1750 when the Bombay Council fixed rates for docking etc:

The Dry Dock ordered to be set about at this presidency being finished, the rates to be paid for all ships and vessels that go into it are now settled viz Rs 150 for the first spring and Rs 100 for every spring they remain in it afterwards.

The second dock was completed in 1762 and it is stated that this work was carried out somewhat hurriedly. Its dimensions were 183 ft long, 51 ft broad and 20 ft deep. The third dock was completed around 1765 and it is referred to by James Campbell and S M Edwards in their works.

The first dock had been built apparently under the supervision of the Master builder Lowjee Nusserwanjee who, by then, had come to settle down in Bombay. It is possible that Lowjee's help was sought in regard to the construction of the other docks. By then His Majesty's government, having seen the workmanship of Indian ships was considering the feasibility of having frigates built in Bombay as also ships of the line. The Bombay Council reported back that the idea was feasible and that the estimate cost of a 74-gun ship would be Rs 3,06,900 and that of a frigate Rs 1,70,000.



Bombay Harbour (1780). Courtesy: Bombay City Corner

The question of constructing new docks was constantly under consideration of the Bombay Council. There was a suggestion that the new dock may be constructed at Butcher Island, but the idea was given up. At this stage it is of interest to note the views of Admiral Sir Edward Hughes on the importance of Bombay. In a letter dated 27 January 1784 to the Court, he wrote of the importance not only of making Bombay impregnable to any attacks of any enemy, whether European or native, but also to carry on offensive war if need be.

He wrote:

To prove the necessity of the first, I beg to observe to you, gentlemen, that if the defence of the Company's possessions in the East Indies depends in a very great degree if not entirely in the time of war, on the superiority or exertions of his Majesty's Squadron, destined and employed for that purpose as was the case in the last was the former war with France, then the safety of Bombay is of utmost importance to the safety of the whole, for at no other port or place in our possession could the ships of the squadron, be properly refitted much less repaired. At Bombay, as the only place of refit, are deposited all the masts and other stores for the ships and it not only furnishes a great number of expert native artificers, but its Docks are of the utmost consequence. In short, without Bombay or some other as convenient harbour in our possession, no squadron or force could be kept in this country.....

The matter of constructing another Dock was pursued by Admiral Sir Edward Pellew and the task was entrusted to Capt. L Crozier. But he and his team had to face all manner of problems. They were mainly four: want of trained workmen, interruption from springs which had to be constantly attended to, extension of a bed of rock collapsing because of water oozing from crevices.

Hughes Dry Dock: As Bombay grew in trade and commerce, the need for docks came to be acutely felt. Hughes Dry Dock followed a pattern laid by Duncan Dock (1914).

However, the Upper or Building Section of the new dock was reported ready on 28 November 1807 and plans were readied for laying the keel of a warship of 74 guns. The dock was named after the then Governor as Duncan Dock. The upper Duncan Dock was 286 ft in length 63 ft in breadth and 23 ft in depth. Yet another Dock, the lower Duncan Dock was completed in 1810 under Captain Cowper at the cost of Rs 3,64,052. According to the *Bombay Gazetteer*, the entrance to the lower Duncan Dock was widened and the culverts and the sluices were made and a groove cut in the Dock walls at an estimated cost of Rs 73,400. Later, in 1843-44 the Upper Duncan Dock was also widened at a cost of nearly a lakh of rupees. All the works were completed in July 1847.

Forty years later, the need for enlargement of the Docks appeared necessary According to S M Edwards' *Gazetteer of the City of Bombay,* in 1890, the increased accommodation for extension of the Duncan Dry Dock at the cost of more than four and a half lakh rupees, the construction of a wet basin at a cost of Rs 14 lakhs, a dry dock for torpedo boats and hydraulic warping-capstans, were carried out. The wet Basin which lay between the old custom bunder and the Government Dry Docks was triangular in shape and had a water area of 5 acres and could accommodate 8 vessels of the Royal Indian Marines. It was 26 ft in depth and had a wharfage of 16,000 ft while at the entrance which was 60 ft in width it was furnished with a hauling caisson constructed on the then latest principles. According to Ruttonjee Ardeshir Wadia, the improvement of the Duncan Docks resulted in increasing their lengths by 60 ft, their width by 48 ft and depth by 7 ft, the entire work taking two and a half years with the labour of a thousand men.

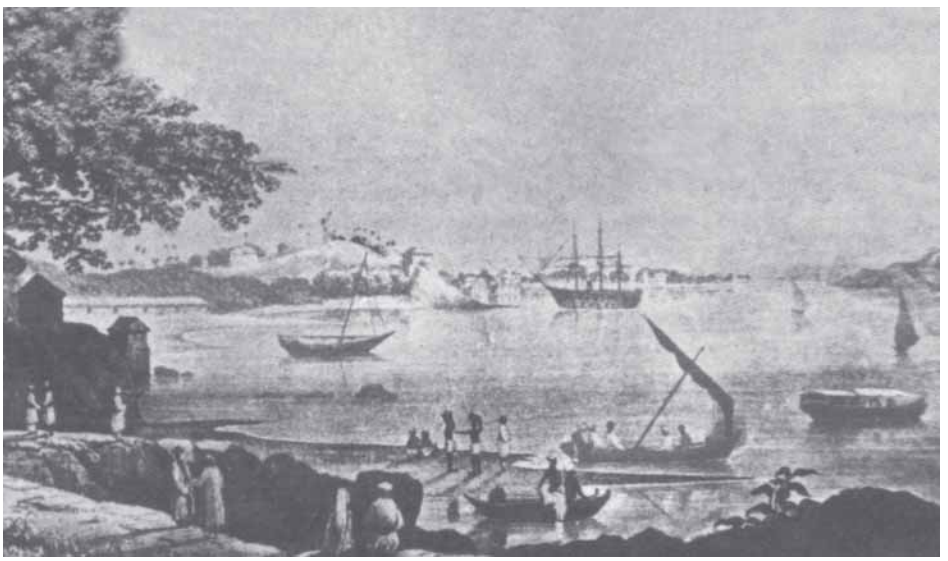
In Gerald Aungier's report on Bombay of 1673, reference is made to the anchorage at Mazagaon where "ships of 200 tons may be hauled ashore". In 1769 almost a hundred years later it was decided to build a new dock at Mazagaon for the use of ships not exceeding 300 tons burthen.

In a letter dated 25 April 1771, the Court wrote to the Bombay Council approving the making of a dock with store houses at Mazagaon "as also of the duty you intend to levy for such private vessels as shall be repaired in it" and hoping that the expense of executing that work will not exceed the estimated sum of Rs 10,025. According to R A Wadia, there is evidence of the existence of docks at Mazagaon from the very early days and the Old Moghul Dock owned by the Sheikh of Maculla who was also a Nawab of Hyderabad, Deccan, appears to have been of some antiquity. The Sheikh in 1835 was known as H H Awad bin Omner Sultan Nawab Jung Shamsheral Mulk Bahadur and is shown in the title deeds of the Dock when hired by the P&O S.N. Co as belonging to the family of Mirza Ally Mahomed Khan Shoostry.

The Docks were used extensively by the large fleet of dhows trading to the Persian Gulf, Red Sea, Zanzibar etc. When later the dock was taken over by the P&O Company, the practice persisted and the dock was frequently hired by dhows for graving purposes. Evidence of a primitive pumping arrangement, consisting of hollow wooden trunks fitted with buckets and worked by hand came to light when the pump incorporated in the upper section of the Old Dock was opened. As originally built, the old Moghul Dock, appears to have been 160 ft in length and 45 ft wide and is believed to have been built in about 1835.

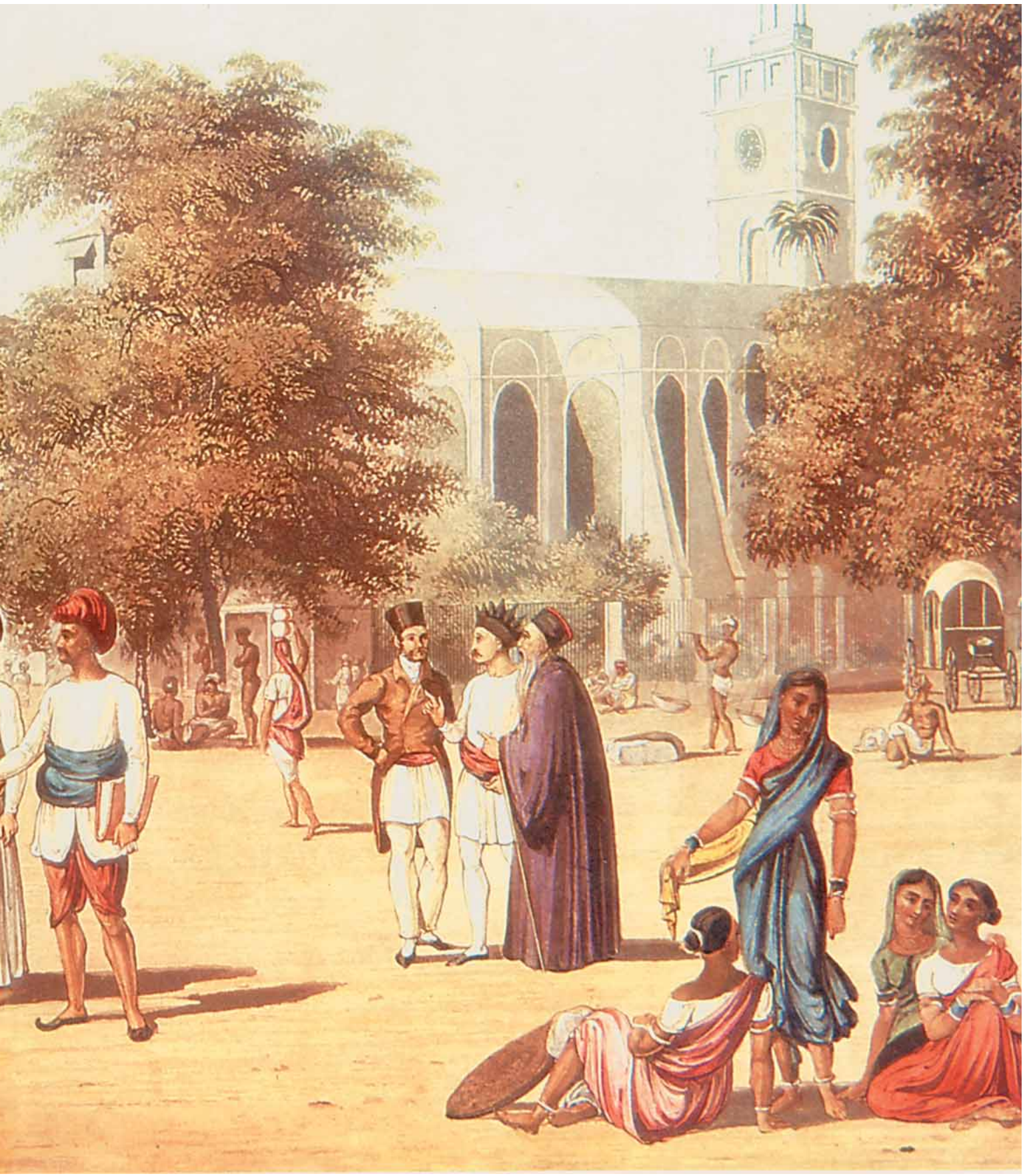
The Mazagaon Dock itself was 154 ft in length, 35 ft wide with 7 ft of water on the sill at ordinary spring tides. The entrance was from Mazagaon creek, later known as Kasara Basin.

Although there are no official records to show when and to what extent the Mazagaon Dock was used for shipbuilding, an old Gujarati work *Mumbaino Bahar* by Ratanji Framji Vacha, published in 1874



Mazagaon Bunder (1772). Courtesy: Municipal Corporation of Greater Bombay

Bombay Green. Vast piles of cotton bales landed at the Custom House from Surat, Baroche, Cambay and other parts of Guzerat, Kattyawar and Cutch.



Courtesy: Drawing by Capt. Grindlay (1826)

states that from 1801 onwards Rustomjee Maneckjee, grandson of Lowjee was placed in charge of this yard as a builder until his death on 14 August 1812.

Rustomjee Maneckjee had two sons who were also in shipbuilding and it appears that while the master builder and his first assistant were working in the Bombay Dockyard, the second assistant builder was placed in charge of the Mazagaon Yard. This is corroborated by Capt Headlam in his manuscript in which he states:

> *A Parsi Master Builder was attached from the Bombay Dockyard in 1801; this was the only master builder ever appointed. It was customary afterwards thus to appoint an officer of the Bombay Marine in charge of this Mazagaon Dockyard. After 1839 the Dock fell into misuse but in 1860 it was secured from Government for a very low sum by the P&O Company with permission to reclaim the foreshore.*

According to *Parsi Prakash,* the Moghul Dock was taken over by a well-known merchant Mahammad Rahim Sirazi in July 1843 who placed it in charge of Dhunjibhai Rustomjee Wadia. On 1 January 1847, according to the same authority. P&O took up this Dock also on lease and Dhunjibhai continued to be its Master Builder till his death on 4 July 1854.

Between 31 May 1828 and 19 March 1859, as many as twelve ships were built at Mazagaon Dock. **Hormusjee Bomanjee** was launched on 31 May 1828. A year later came the turn of the brig **Tigris.** In 1828 **Charles Malcolm,** a ship, was launched. That makes two ships in one year, something of a record. A ship **Jamsetjee Jeejeebhoy** and a steamer **Indus** was launched in 1833, six months of each other. The ship **Mary Gordoh** was launched six years later on 13 July 1839. It took five more years to launch the frigate **Queen Victoria** and another four years later the steamer **Jamsetjee Jeejeebhoy** (12 November 1848). Then, at intervals of three years Mazagaon launched the steamer **Lowjee Family** and the **Mt Stewart Elphinstone** and finally came the steamer **Secundershah** (19 March 1859).

On a plan dated 1824, the Mazagaon Dockyard is shown as a triangular plot about 300' by 350' jutting out into the Mazagaon Creek with the dry dock at the northern tip. The Dockyard, though small, was seemingly well-equipped as the plan shows it to have a mast house, store rooms and office, a fire engine house and dwellings for the carpenters.

The old Moghul Dock was rented by the P&O Company in 1854 to provide for their new mail service from Suez to Bombay. But this dock proved to be too small for their needs and it was extended seawards making it 395' in length, 56' in width and 15' 6" in depth at the sill at ordinary spring tides. To enable this work to be carried out, 1684 square yards of foreshore were leased from the government in 1863. A Cornish boiler was installed to provide steam for the side lever pumps. Workshops were also erected. The dock served the requirements of the P&O Company for some years but the arrangements were evidently not satisfactory, for in 1859 they set about making arrangements to acquire their own premises.

According to Ruttonjee Wadia the Richie Dry Dock in the North Yard was completed on the eastern reclamation in 1865 being 393' long 62'.2" wide and 18' deep at the sill and 66' wide at the gates. But apparently the Ritchie Dock proved to be too small for the rapidly growing fleet of the P&O steamers, both in size and numbers. It was lengthened in 1870 and again in 1811 and yet again in 1889 by which time the length had been extended to 495'.

The P&O Company vacated the South yard in 1870 when it was taken over by the British India Steamship Navigation Co who at that time had only a corrugated iron shed on the Colaba Beach and who used to careen their vessels on the Karanja or Corun Beaches. The South Yard and with it the Moghul Dock were eventually

Ballard Estate, with the P&O and BISN Co's offices in the foreground.

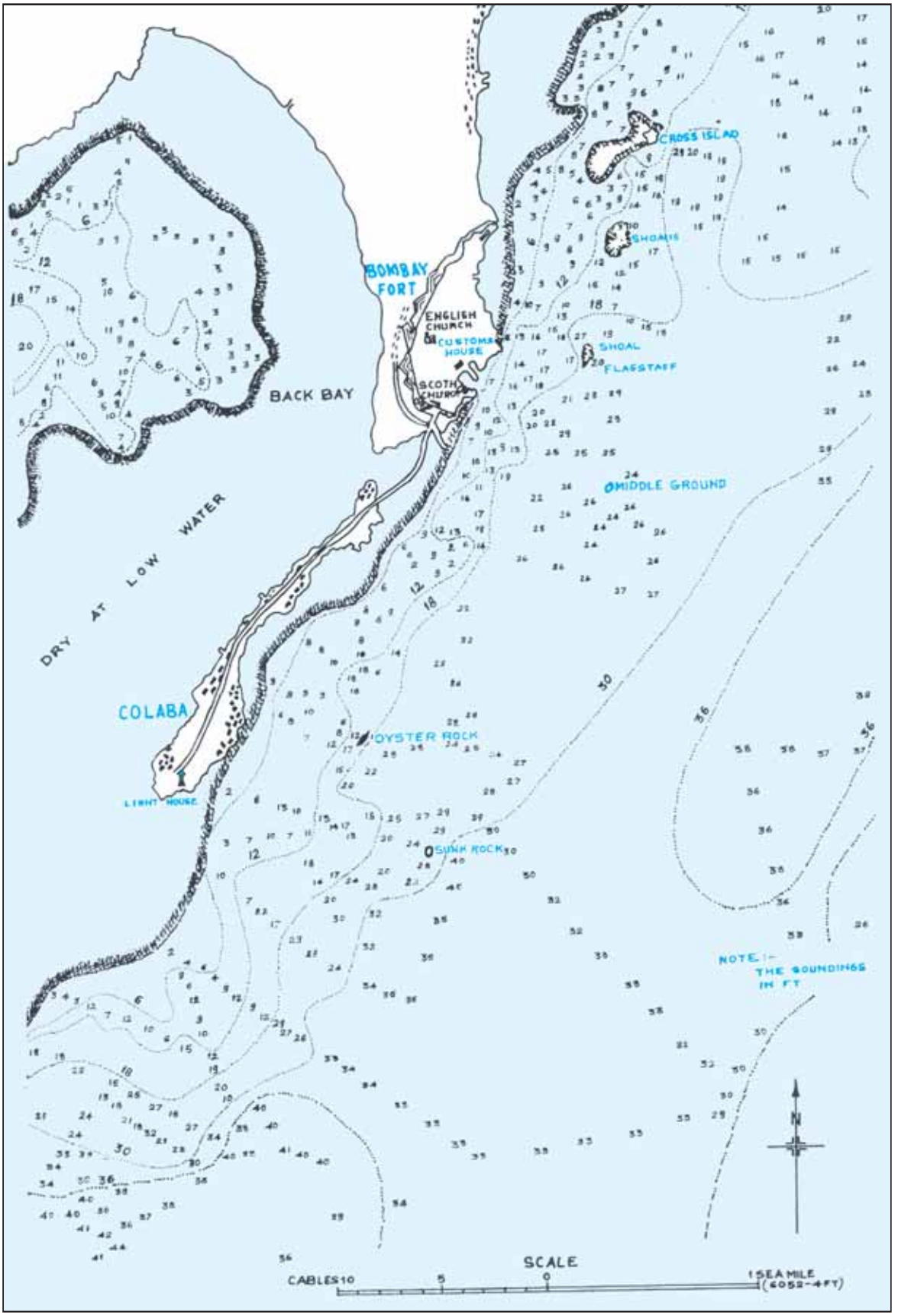


Chart of Bombay Harbour (1829). Courtesy: History of the Naval Dockyard, Bombay

Aerial view of South Bombay showing Colaba and City (1925).

acquired by the BISN Co by purchase from Awad bin Oomer Sultan Nawab Jung in 1900 for a sum of Rs 11 lakh.

P&O — The Best Initials in the Maritime World

The P&O has a history of close association with India and Bombay particularly, that goes back to the mid-nineteenth century. Indeed, the P&O is as old as the sea-going steamships. The consensus is that the shipping company was given birth to in 1837.

That was a most interesting time. By then Britain was in the throes of the Industrial Revolution and the estuaries of the Thames, the Clyde, the Mersey and the Avon were throbbing with shipbuilding activities. It was the time of intense competition between rival ship-builders, engine-makers, captains, ports and routes, a time when "records were only made to be broken".

Even before the P&O came into existence, a few steamships were already functioning. Some of them had sometimes gone to sea. But all, for some thirty years, carried a full suit of sails which were used to save on fuel and also to keep the ship under way when the engines broke down, as they often did.

The American ship **Savannah** is believed to be the first steamship to cross the Atlantic in 1819. But she was built as a sailing ship and had only a small auxiliary engine with detachable paddle wheels which could be taken off and stowed on decks. In fact, it is said, the engine functioned just for about eight hours of the 21-day crossing. A much longer voyage was made by the steamship **Enterprise** from London to Calcutta in 1821. It was a 11,000 mile journey made in 103 days, but the engine was put to use only on 64 of the days.

Several people it is claimed were involved in the birth of the P&O, but two men are regarded as the founders; Brodie Mcghie Willcox and Arthur Anderson. Their first ship and for quite a long time their only one, was a small American schooner which had gone ashore near Dover and which they had bought and later salvaged and put to work. Then came the **William Fawcett.** The intention of the ship owners was to run a service between Britain, Portugal and Spain. The original name of the Company was the Peninsular Steam Navigation Company. When it was decided to extend the sailing up to Suez, the words "And Oriental" were added. The Peninsular and Oriental Steam Navigation Company sounded rather long and cumbersome which led the company being known by its initials; P&O. Those initials were to be among the best known in the maritime world.

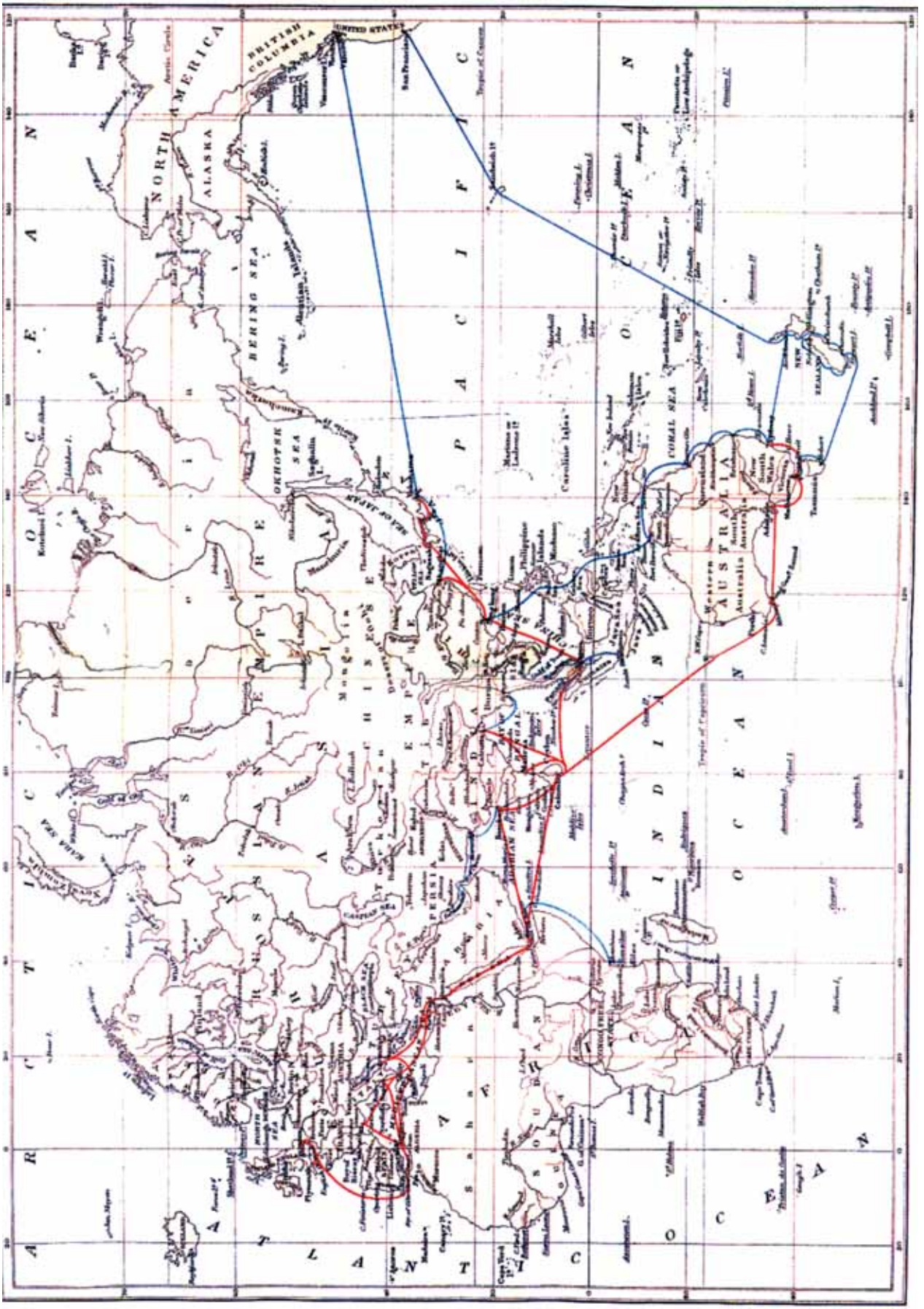
P&O went in for steamships but they were expensive to build and difficult to run because they needed coal, so much so that the First lord of the British Navy gave it as the Navy's considered opinion that the employment of steamships should be discouraged because "steam is calculated to strike a fatal blow at the supremacy of the Empire".

So it was the Merchant Navy, not the Royal Navy, that did the pioneering in steam — like design-ing, improving and experimenting with steam engines. By 1837 Willcox and Anderson were nearer their dream of regular service. At first their wish was to go no further than Gibraltar. They might have had in mind extending their service through the Mediterranean to Malta, Alexandria in Egypt, Corfu and Constantinople in Turkey, but they could not have dreamt that they might go to India and beyond or that their humble company might become an essential part of the British Empire's power.

The importance of Alexandria was not the mail and trade with Egypt. It was the next staging post for the mail to India which went across the Isthumus of Suez and was later picked up by ships waiting at the other end in the Red Sea. The Suez Canal was yet to be dug and made operative. That lay in the years ahead. The plan was to take the mail from London upto the Suez, then unload it and then put it on the backs of camels and donkeys which crossed the 150 miles of desert to reach the Red Sea.

In 1829 the East India Company had built itself a steamer in Bombay called the **Hugh Lindsey** (named after the Chairman of the East India Company) which sailed on her maiden voyage to Suez on 20 March 1830. It was a triumph of Indian shipbuilding. The longest leg of the Bombay-Suez run was from Bombay to Aden, 1,710 miles. The ship was built with a coal capacity for 5 and a half days. It is said that she left Bombay with even her passenger cabins and saloon so full of coal that her decks were almost awash. She did make it to Aden, using sail whenever she could. She had to spend six days trying to get coal from the Sultan, then sailed to Mocha and Jedda and finally reached Suez after just over a month — 33 days to be exact and the mails despatched by her reached England in 59 days establishing a record. Her second voyage from Bombay to Suez was accomplished in 28 days. A passage in *The Story of the P&O* mentions: "With one or two other experimental ships she carried on running from Bombay to Suez for many more years but never made more than one round voyage every year — no more than sailing ships had been doing for centuries".

MAP SHOWING LINES OF COMMUNICATION CARRIED ON BY THE STEAMERS OF THE PENINSULAR & ORIENTAL STEAM NAVIGATION COMPANY



Map shows the route taken by British ships from England, through the Mediterranean Sea, the Red Sea and the Arabian Sea to Bombay.

Courtesy: Himalaya Publishing House

The downplaying of this achievement may be because of reasons that are obscure and probably political. The East India Company refused to give up its monopoly of that route, the shortest to England. But the East India Company did not mind P&O running a ship from Suez to Ceylon (Sri Lanka) and then up the other side of India to Madras (Chennai) and Calcutta.

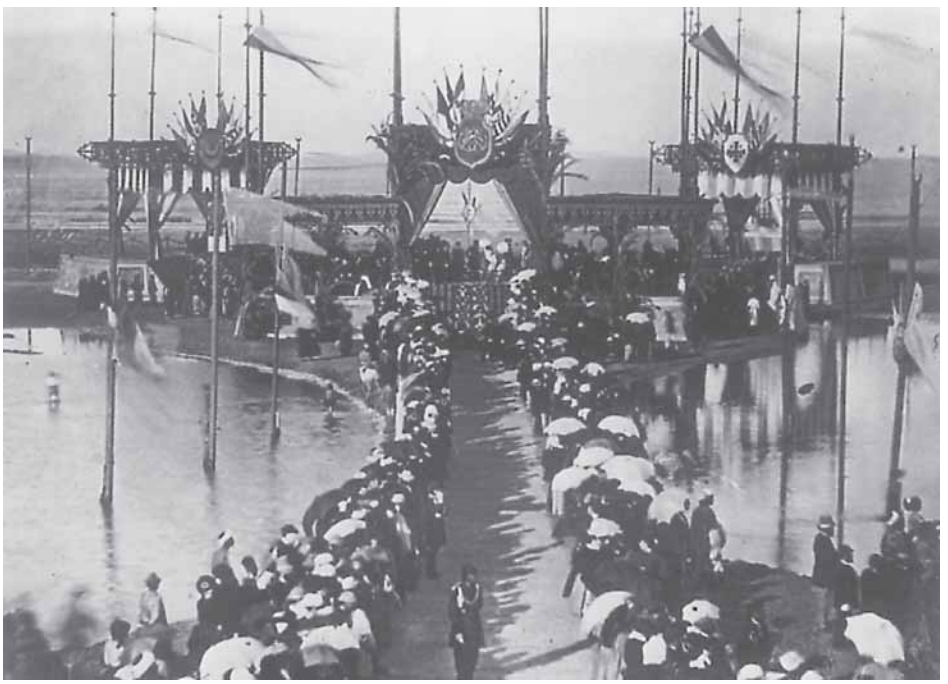
In 1838 regular monthly communication between Bombay and England by the overland route via the Suez and Alexandria was established, the duration of the voyage being from 43 days to 46 days. By 1843 Bombay had been brought within 30 days of London. After all business was business. It must be remembered that in 1814 the imports of manufactured cloth from Britain amounted to 817,000 yards; by 1832 the figure had risen to over 51 million yards. By 1835 when the last trace of the Company's commercial power had vanished, Bombay's foreign trade excluding treasure was valued at Rs 700 lakh; 25 years later it had risen to nearly four times this figure. For Britain, this route from Alexandria to Suez and thence to Bombay was extremely important. It was making a great living out of destroying India's hand-loom industry and work culture.

In due course Britain was to destroy India's and Bombay's ship-building as well. Britain wanted no competition from the builders in Bombay's docks. So British ships were brought to Bombay and these were P&O ships. The docks in Bombay which once built some of the finest ships in the world were thereafter going to be used to service or repair British ships. P&O became synonymous with shipping. Its ships brought British soldiers and civilians to India to rule the country. A new British aristocracy was on the make. There were first class and second class travellers and rare was the ship that did not have as passengers two or three Generals and a posse of senior civil servants each of whom had his own circle of sycophants. Whatever else the P&O ships gave, they gave one word to the English language; POSH.

The Story of the P&O has this explanation to give: "The course on the outward voyage down the Red Sea and across the Indian Ocean was east or south east, and on the voyage back to Britain, it was the opposite. Both ways, the cabins on the more northerly side were consequently cooler and the people aware of their own importance demanded cabins on the port side outward bound and the starboard side going home; Port Out, Starboard Home". In other words they wanted to travel POSH. Then came India's First War of Liberation in 1857. India lost that war and Britain became the Imperial Power. Till then it was the East India Company that was doing all the fighting and the trading. The year 1857 ended it all. On 2 August 1858 the "Act for the better Government of India" was ratified by the British Parliament and the Honourable Company made its exit from the stage of history and Bombay, till then under the rule of the Company Board, became part of the British Empire.

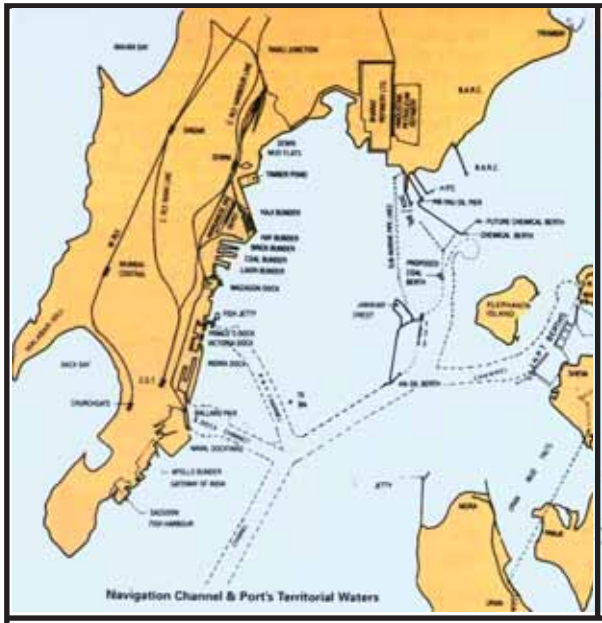
The White Gold Boom

Bombay had many advantages over other ports on India's West Coast. It was in many ways truly the Gateway to India. Karachi may have been closer to Aden but Bombay gave the easiest entry to all of India. And it was closest to the cotton-growing hinterland. Cotton indeed had much to do with Bombay's growth and the improvement of its port. What really started off the Bombay port with a bang was the sudden spurt in the cotton trade with China in 1770. About this time China was devastated by a famine. Thereupon



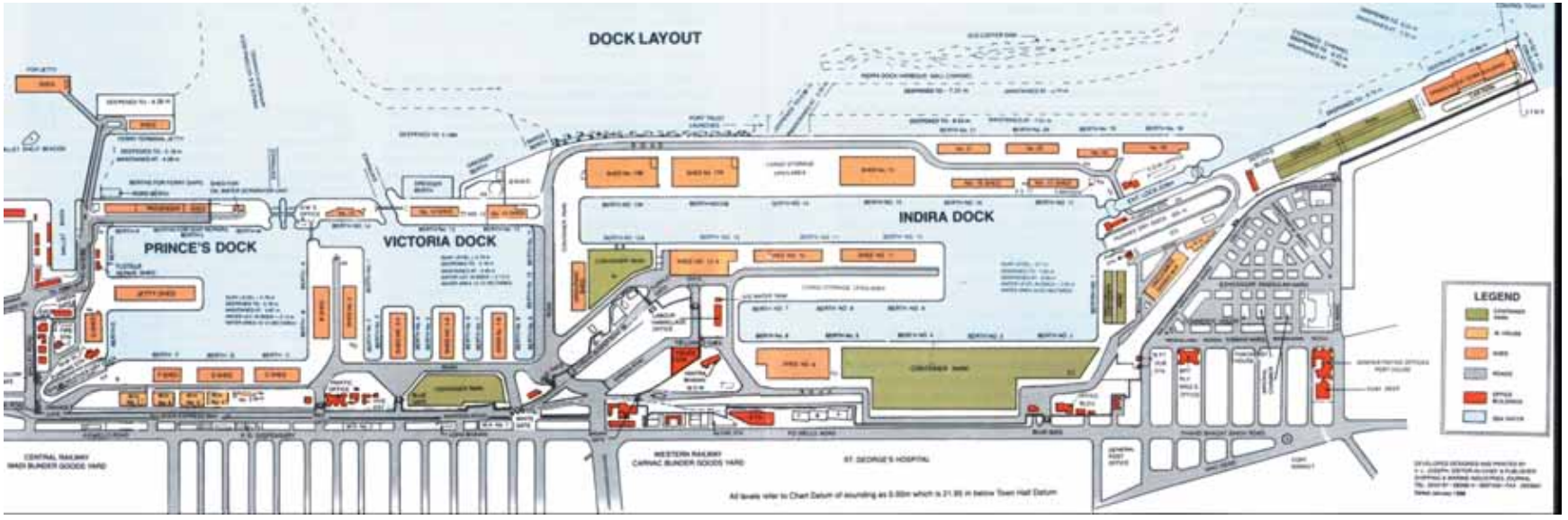
Opening of the Suez Canal by Empress Eugenie of France on 17 November 1869. P&O's Delta *carried Government representatives half way through the new waterway, but British reaction continued to be lukewarm.*

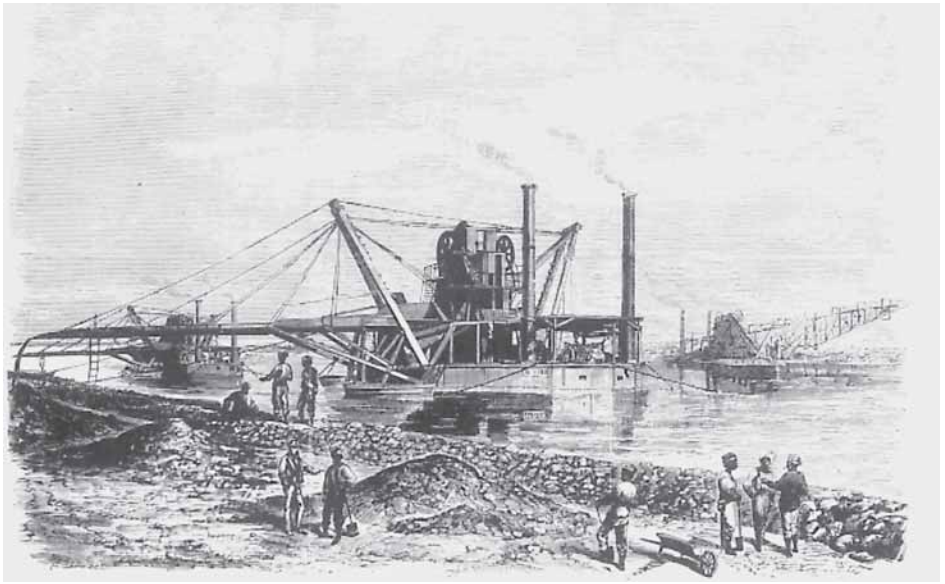
Courtesy: Story of the P&O



MUMBAI PORT DOCKS & HARBOUR

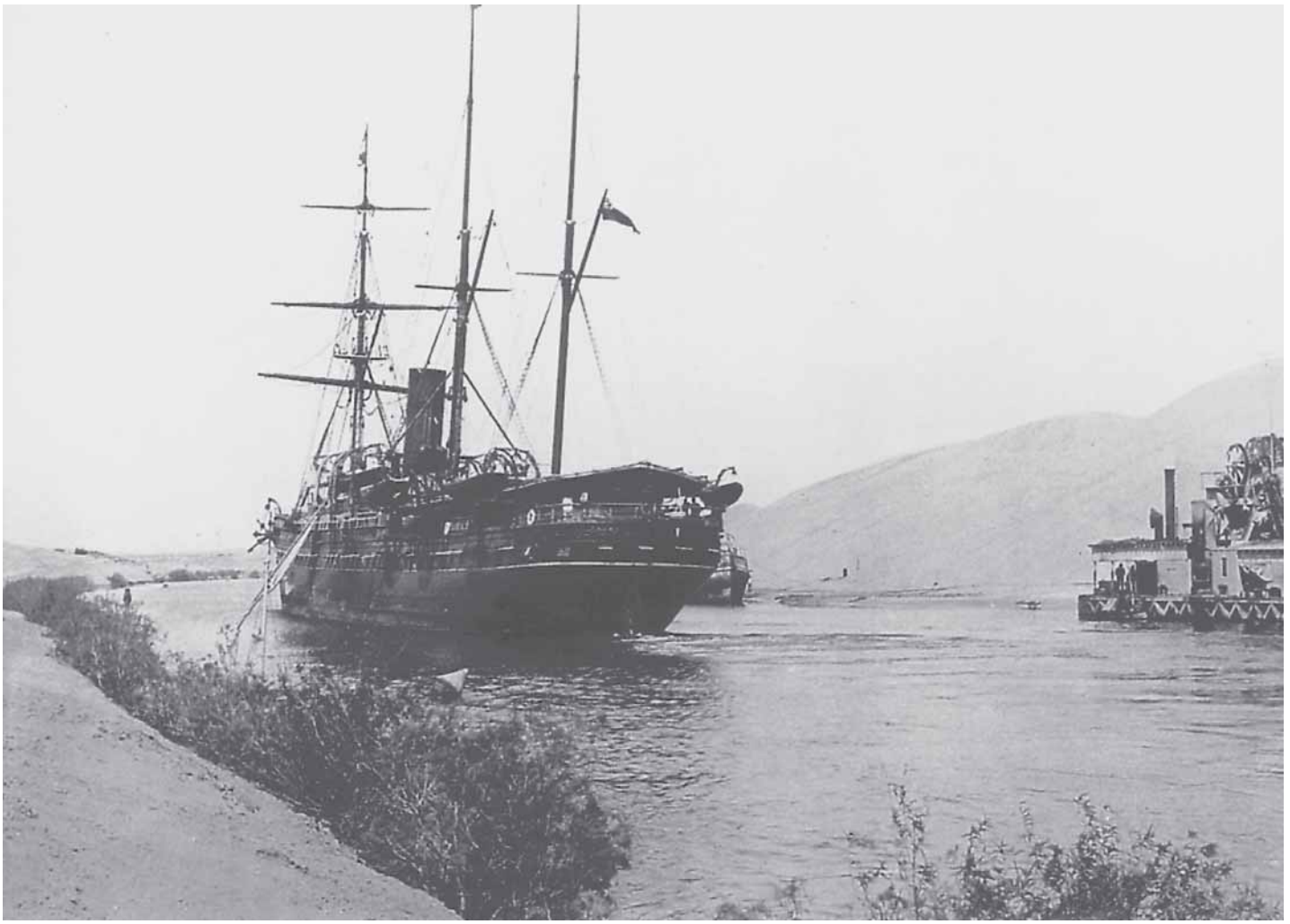
Layout as on Today (2000)





Dredgers and elevators at work digging the Suez Canal. Machinery was introduced when the Egyptian authorities imposed a reduction on the number of manual labourers permitted to work on the project.

Ferdinand de Lesseps and his Suez Canal. P&O (and British opinion) generally, doubted whether the project would be a success.



P&O had to build new ships suitable for the changed trading conditions brought about by the Suez Canal. One of the first, the 3,900-ton Peshawur, *was completed in 1871. Here she passes one of the ubiquitous dredgers.*

Courtesy: Story of the P&O

the Chinese government decreed that a greater proportion of the land should be used for the cultivation of grain. Cotton production fell and suddenly Indian cotton came to be in great demand and this was exported from Bombay. The Chinese demand for cotton continued to increase for about 30 years after which it began to fall steadily. There was also interruption in the movement of cotton because of the Maratha Wars. Moreover, the East India Company's interference in what was earlier an open trade led to the price of cotton being doubled. As a result China switched back to growing its own cotton.

If the trade in cotton fell, trade between England and Bombay was to rise by leaps and bounds. Bombay Port, under the circumstances was never in disuse. The only trouble was that its management was divided among several departments and officers of the government. Some attention needed to be paid to handle overlapping of duties and responsibilities and coordination of administration.

The Opium Merchants

To the P&O, as much as to the East India Company, Bombay port had an importance that was immeasurable. P&O had a small contract which was almost a monopoly. But it needed further use for its growing fleet and it decided to bring steam to the trade with China which was mainly a matter of buying silk from China and selling it opium. The silk trade was most ancient and was formerly carried through the overland route. P&O turned it into a practically oversea one. The opium trade, however, was a comparatively new one and was immoral by any reckoning, considering that its success depended upon making the Chinese a race of drug addicts. But the British could not care less. Opium was grown in India, but there was what *The Story of the P&O* called a "bottomless market" for it in China. Says the story: "The stuff came to P&O warehouses packed in crates which were then delivered to China. Of course, P&O knew perfectly well what was inside them but they would have said that that was no concern of theirs. The trade was not illegal and nobody then or nobody that mattered — had thought of it as immoral or seriously worried about its effect on the Chinese".

Exactly how much of opium went through the Bombay port was not known. What is known, however is that several Bombay merchants made their fortunes from opium. That is a part of maritime history that India cannot be proud of. If Hindus were to profit from British trading methods in Calcutta the Parsis were not far behind. "The Parsis", wrote William Milburn in 1813, "rank next to the Europeans. They are active, industrious, clever and possess considerable local knowledge. Many of them are opulent and each of the European houses of agency has one of the principal Parsi merchants concerned with it in most of their foreign speculation. They have become the brokers and the banias (traders) of the Europeans. The factors belonging to these different houses resident in China, Bengal etc are generally Parsis and the correspondence is carried out in the country language, so that the British merchant knows no more than they communicate to him".

P&O served its country as few other shipping companies before did. Says *The Story of the P&O:* "Just by existing it had done a patriotic duty nobody else could have done. Without its great reserve of reliable steamships and its special knowledge, could the Crimean War have ever been or, a few years later, the Indian mutiny, defeated?".

The fact is that the P&O acted as a ferry boat service bringing not only mail but soldiers and still later holiday visitors from England to Bombay. Bombay port, in the circumstances, had to be constantly upgraded. Much of it was facilitated

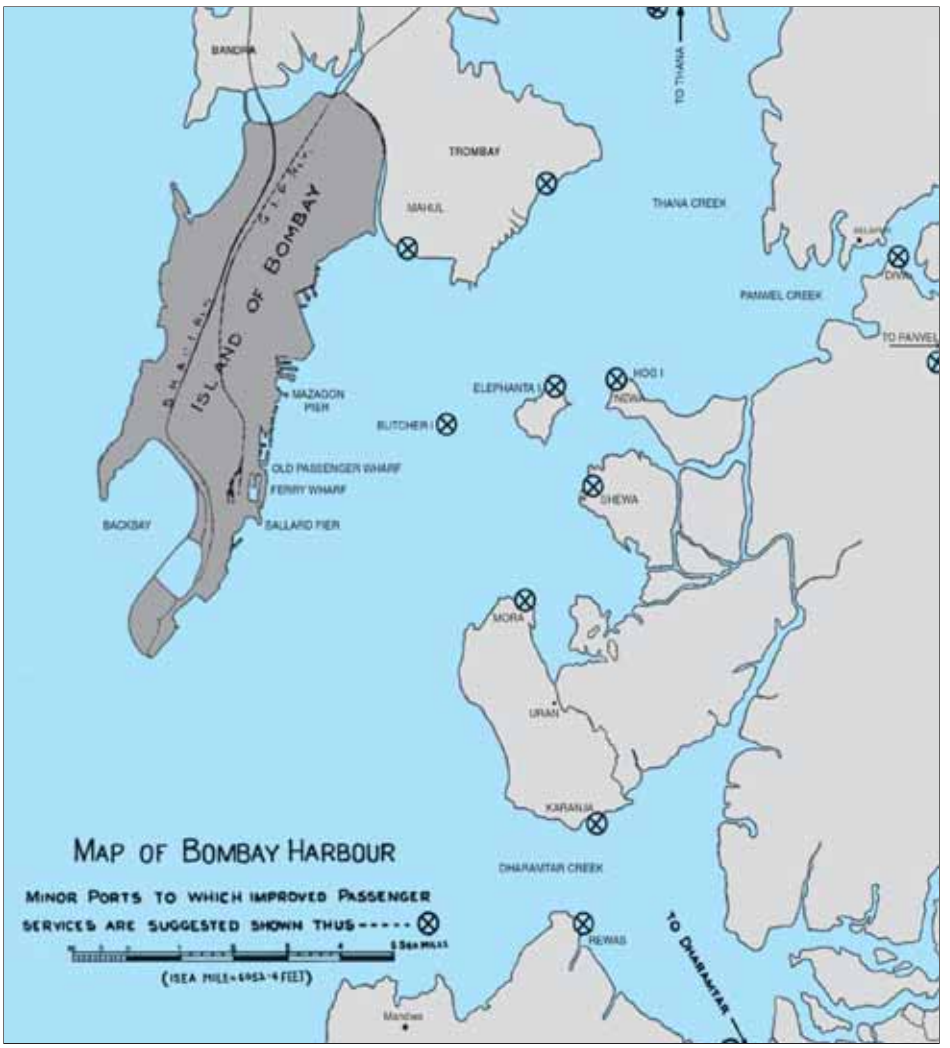
Grain was stored for delivery at Ryan Grain Market.

by the building of the Suez Canal, work on which was started by the French engineer Ferdinand de Lesseps in 1859 to be completed in ten years time in 1869. Though the British were at first very sceptical about the Canal — Lord Palmerston had said that a canal was "a physical impossibility" and believed that the proposal to build the canal "was merely a device for French interference in the East", once the Canal became a reality they had no hesitation in making use of it.

According to *The Story of the P&O* "The British Empire seemed to be eternal and the stream of passengers from Britain to India and back seemed also likely to last forever. The ships grew in size, in numbers, in speed and in comfort, all with triple expansion engines and screw propellers, all passing through the canal and gradually reducing the journey from London to Bombay to 15 days".

The opening of the Suez Canal was the beginning of the end of sailing ships. The new ships changed completely in outward appearance. Engines and propellers were becoming safe so that auxiliary sails and their riggings could be abandoned; and with them the last vestiges of sailing ship design, the bowsprits, figureheads and graceful clipper stems began to disappear in the 1870s. Bombay Port necessarily had to adjust to these changes.

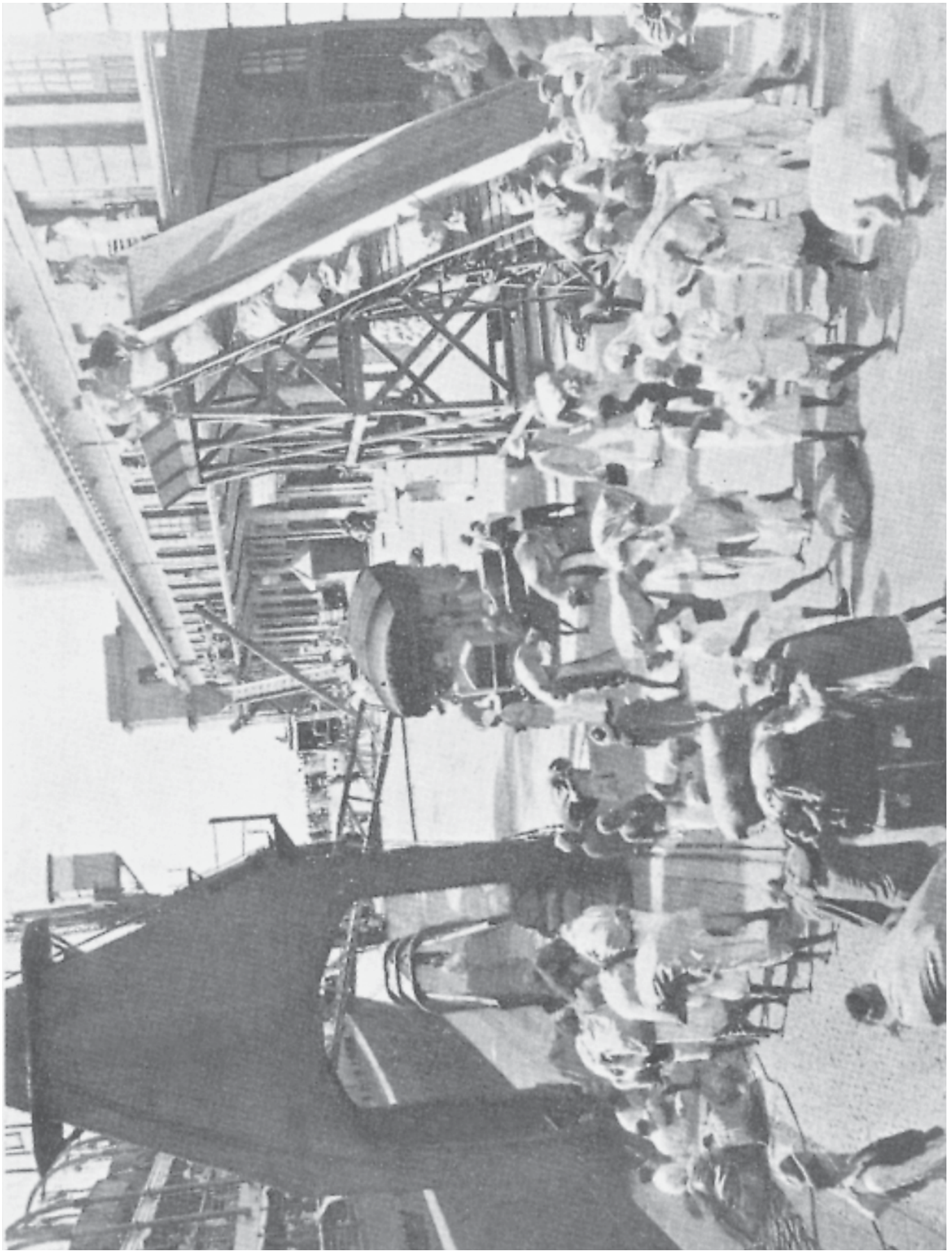
The opening of the Suez Canal was not necessarily a blessing for the P&O. Till then it had a contract to carry the mail from Britain to Suez. But from Suez to Bombay the carrying of mail was the privilege of the East India Company. Although by 1844, the P&O had their services running from Ceylon, Madras, Calcutta and thereafter by 1 January 1845, had the services extended to Singapore and Hong Kong, it was still denied the right to provide



service to Bombay — better and cheaper than that of the East India Company — by vested interests. The P&O obtained the Suez-Bombay contract only in 1854 and received an annual payment for it of 24,700 pounds against the 105,000 pounds it had cost Britain for the much less efficient E.I.C. Service.

The opening of the Suez Canal, in fact, brought the P&O face to face with stark ruin. The British Post Office was firmly opposed to the use of the Canal for the carriage of mail and the overland route was becoming ruinous, financially-speaking. The P&O was in a real predicament. The opposition of the post office was on political grounds and the P&O suffered in consequence, but an agreement was finally arrived at whereby the post office permitted the mail to be carried through the Canal but at reduced payment of 22,000 pounds a year.

About 1872 — by then India was firmly under the rule of the British — the Post Master General of India wished to establish a system of Parcel Post in India and between Bombay and England. The first despatch of the Parcel Post was made in February 1873 and the number of parcels carried rapidly increased from 11,000 in that year to 73,000 ten years later. In 1884 the whole work which was being carried out by the P&O was taken over by the Post Office, the company



Landing the English mail at Ballard Pier.

continuing to act as carriers. The commissioning of the Suez Canal, with a depth of 25 ft (7.6 meters) reduced the duration of the voyage period from London to Bombay to 25 days, which was later reduced to even less than three weeks with the induction of faster vessels. The P&O company's shipping service which started in 1855 with a fortnightly mail service connecting Bombay with the United Kingdom to begin with, was later increased to a weekly service. As a result there was a remarkable upward swing in the trade of Bombay Port. In 1854-1855, two years before the mutiny (or India's First War of Independence) the trade of the Port was valued at Rs 16 crore. By 1866-67, ten years after the country came entirely under the British, the trade had increased to Rs 47 crores. The yearly average for the succeeding five years increased to 51 crores; during the next 20 years, namely 1876-77 to 1895-96 the total annual value of imports and exports, including the coastal trade, steadily increased from Rs 61 crores to Rs 105 crores. The demand for Indian goods from distant markets coupled with the impact of the improved internal communications brought about a rise under every head of imports and exports.

One must, of course, also take into account, the construction of railways and the telegraph lines for the spurt in trade. Both the ordering of goods and their fast carriage contributed to the increase in business. The establishment of peace in a land torn earlier by wars brought prosperity to the land. The 1860s were one of the most formative periods in Indian history. In that decade the Indian economy took a significant leap forward under the impulse of quickened world communications and new methods of agricultural and industrial production. It was a period of high trade in which progress seemed assured with everything working automatically for the best of all possible worlds. In his book *The Bombay Chamber Story — 150 years,* Rusi J Daruwala notes that this philosophy was most strongly reflected in the business communities of Bombay and Calcutta.

Bombay had very good reasons to be happy. The outbreak of the American Civil War in 1861 had cut off Lancashire from its accustomed source of supply of raw cotton and made it almost wholly dependent on India, ie the then Bombay presidency. The price of cotton soared. Surat cotton which had been selling in Liverpool at 3d to 5d per lb fetched as much as 24d to 29d. Surat and Dollera descriptions which were sold on Bombay Green at Rs 120 to Rs 180 a candy rose to Rs 600 to Rs 700. The recorded exports of cotton in 1864-65 were 19 lakh bales valued at Rs 5 crore in 1861 when the US Civil War broke out. Bombay was getting fabulously rich. It is said that the estimated wealth of Bombay grew by as much as 75 million pounds.

Excess of Exports

There was excess of exports over imports. But the large excess of exports was balanced by an enormous influx of treasure. During the four years of the American Civil War it is estimated that nearly Rs 31 crore gold and nearly Rs 52 crore worth of silver were imported. The influx of gold was so large that Walter Cassels of Peel Cassels & Co, one of the leading merchants of the day, addressed a series of letters to the Bombay Chamber of Commerce and the Governor urging the expediency of instituting a gold currency in the country. Cassels wrote: "Notwithstanding such large importations, the demand for money has so far exceeded production that serious embarrassment has ensured and business has almost come to a stand from the scarcity of the circulating medium. As fast as rupees have been coined they have been taken into the interior and have there speedily disappeared from circulation either in the Indian substitute for the stocking-foot or in the smelting pot for conversion into bangles. (In parts of the Deccan the ryots were reported to have put silver tyres on their cart wheels). The position of Calcutta and Madras is very little better than our own".

Enough Prosperity

That was sure enough prosperity. We get a better picture from the address of the Finance Member of the Government of India to the old Indian legislative Council on February 18, 1860 in support of his fiscal proposals for the ensuing year. The Finance Member, James Wilson said that almost everything India produced was in constant and boundless demand in Europe and "almost every article of importance required in Europe is to be found increasing in India, so varied are her products. In this fact there is great security for the future. Let cultivation be extended over so much, there is no fear of want of market".

In his *Migration of British Capital (1927)* Leyland R Jenks says that "from 1857 to 1865 the major movements of the British capital was towards India and into India's public works and nascent industries. Railways were especially favoured and Jenks records that on January 1, 1868 there were 49,690 share and debenture holders, practically all residents of Great Britain who held on an average 1,500 pounds each of Indian guaranteed railway stock. In the twenty years to 1878 there was a

London loan from India every year except during the 1862-65 cotton boom". Jenks estimates that "something like 150 million pounds of British capital was invested in India between 1854-1869 and that British investment continued to move into India at the rate of 5 million pounds a year throughout the 1870s. According to him by 1870 about 75 million pounds had gone into the Indian Railways and a further 20 million pounds had been ventured upon private account in tea plantations, jute mills, banks (both by means of shares and deposits) and shipping and mercantile establishments".

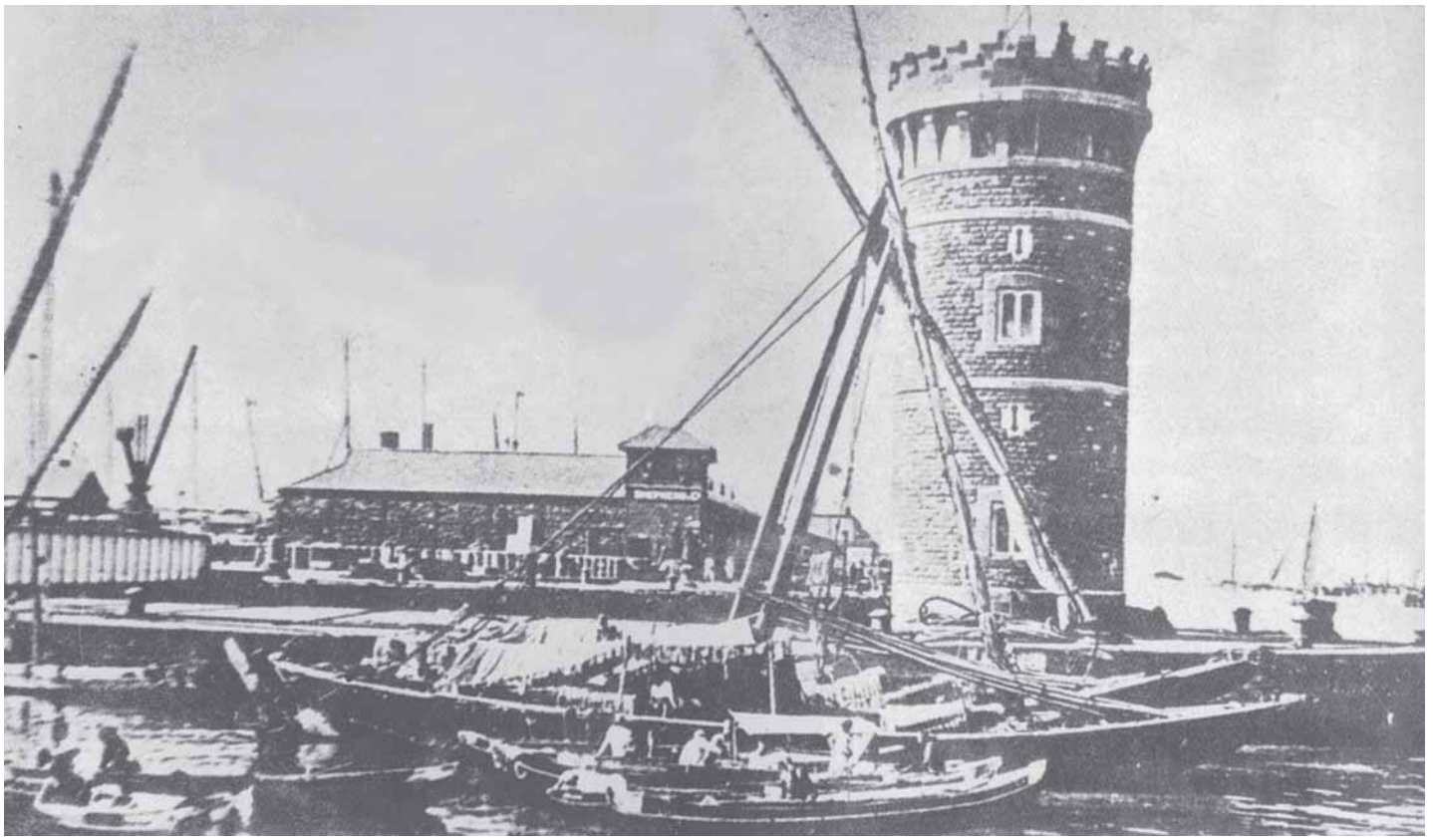
As was mentioned earlier there was one problem facing the business community concerning Bombay Port. Its management was in considerable disarray. The public duties relating to the Bombay Harbour and Pilotage were divided among several departments and offices of the government. Thus the Public Works And Marine Departments, the office of the superintendent of the Marine, the master attendant, the Commissioner of Customs and the Chief Magistrate all played a part in the control of the Port and its shipping, the official most directly concerned being the Master attendant who collected the port dues leviable under Act XXXI of 1857.

Originally, the Master Attendant was the official of the Government Dockyard, under the immediate control of the Commander-in-chief of the Navy and his duties involved "a mixture of the duties of a Dockyard and of mercantile shipping interests". In 1858, a Special Committee headed by the Naval chief recommended that as with the "enormous increase in trade", it was hardly possible for one person to do justice to both duties, the Master Attendant should be relieved of his duties relating to Merchant Shipping, these duties being assigned to a Harbour Master.

In 1860, the needs of the Bombay Port Trust were summarised as:

- Enlarged custom house premises
- Extended wharfage and quay accommodation with covered sheds
- Warehouses on a large scale
- Improved description of lighters
- Improved system of lighting cargo and
- Ship repairing docks

How was the Government to attend to all these needs? The Bombay Chamber of Commerce suggested to the Government the setting up of a Harbour Board. The Chamber pointed out while prior to 1855 the expenses of the Port were charged against the Imperial Revenue, it had been



Entrance gate and Central Tower at Prince's Dock (1880).

New Customs House and Port office (1930).

enacted by Act XXII of 1855 that the entire expenses of the Master Attendant's Department should be charged to Shipping and mercantile interests. The Chamber further observed that the shipowners and merchants had a right to expect that no portion of the charges collected from them should be used for any purpose other than provision of service to them. However, as long as the Master Attendant's Department was constituted under the Navy, it was not possible to distinguish the expenditure properly chargeable to the mercantile interests from that chargeable to the Navy. The Chamber, therefore suggested that the Master Attendant should be an executive officer responsible only to the Government and a Harbour Board.

By its resolution dated 28 June 1859, the Bombay Government decided to relieve the Master Attendant of his duties relating to the Government Dockyard. He was placed under the control of the Commissioner of Customs in all matters relating to collection of Port dues and revenue matters while he continued to be under the Naval Commander-in-chief in regard to nautical and marine questions connected with the Port. The Government further ruled that "when the matter for decision partakes both of the revenue and marine character, the Commissioner of Customs and the Commander-in-chief will decide in consultation and concert with one another". The Master Attendant was accordingly placed in charge only of the Pilot Establishment, collection of shipping dues and the lighting and conservancy of the harbours.

Need for improved lighting points

Lack of proper guidance to shipping entering harbour had been a matter of complaint for a long time. There is no record of the Portuguese having created any distinctive guiding points and for about a century after the advent of the English, the only landmarks for shipping for finding the entrance of the harbour were a few tombs at Colaba and a house on Mazagaon Hill known as Mark House which was kept regularly white-washed so as to be visible to shipping, surely an odd way to act as a guide to incoming ships. A lighthouse was erected on Old Woman's Island (Colaba) on a natural mound, probably on the ruins of an old Portuguese watch-tower, in 1768-71. The lighting apparatus was improved in 1799 and again in 1844. The Colaba Lighthouse, as it later came to be known, was the first major lighthouse to be known in British India and the only one of its kind till 1844 when the Madras lighthouse was completed. In 1842, the outer floating lighthouse *Colaba* specially built to mark the fairway to the entrance of the harbour was placed in position and in the next year the *Shannon* which was originally built as a war brig in 1844, and converted into a light vessel took up station as

HARBOUR LIGHTS

PRONGS LIGHTHOUSE

Situated near the centre of the Prongs Reefs. The Light House, 146 feet in height, painted with red, white and black bands, was erected in October 1874. The light is a 1st Class Dioptric of 330,000 candle power showing a white flash every 10 seconds and visible in clear weather 17 miles.

The Light House is in wireless telephonic communication with Kennery Island Lighthouse, S.P.V. "Lady Wilson" and the Port Signal Station.

DOLPHIN ROCK LIGHTHOUSE

Built in 1856 on a rock off the Colaba foreshore. The Lighthouse, 58 feet in height, is a grey masonry tower with white dome, and exhibits a White-Green Occulting light every 4 seconds; visibility 7 miles. The focal plane is 35 feet above H.W.

The light is unattended and operates by means of dissolved acetylene gas.

SUNK ROCK LIGHTHOUSE

Built in 1884 on the northward of two reefs extending for 4 cables N.N.E. & S.S.W. and 1¼ cables from the Colaba foreshore. The Lighthouse is 94 feet in height, painted with black and white horizontal bands with white top, and exhibits a White-Red Occulting light every 5 seconds; visibility 13 miles. The focal plane is 64 feet above H.W.

The light is unattended and operates by means of dissolved acetylene gas.

NORTH CHANNEL, BEACON LIGHT

Stands on the northern edge of Cross Island Reef, 5 cables E x S from the entrance to Prince's & Victoria Docks. The Beacon is a solid structure painted black and red, surmounted by an unattended "Aga" light, showing a white flash every 10 seconds at a height of 21 feet above H.W.O.S.

KENNERY LIGHTHOUSE

Situated on the Island of Kundari, 2½ miles from the coast and 12 miles south of Bombay Island and marks the boundary of the Port Limit to the South. The Lighthouse tower rises from the centre of the main building some 50 feet above ground level; the elevation of the focal plane being 154 feet above H.W.O.S.

Installed by Messrs. Barbier, Benard & Turenne, is a Dioptric 1st Order petroleum vapour light, of 720,000 candle power, exhibiting white with a red sector between 336° through North to 001° from seaward giving a double flash every 10 seconds, and visible 18 miles.

URAN BEACON LIGHT

A solid masonry structure painted red, which guards the foul ground in its vicinity. Exhibits 29 feet above H.W.O.S. an unattended "Aga" Light showing a white flash every 7 seconds and visible 8 miles.

KARANJA BEACON

Guards the foul ground to the N.W. of Karanja Shoal, painted red and surmounted by an unattended light showing a white fixed light, 33 feet above H.W.O.S., and visible 6 miles.

TUCKER BEACON LIGHT

Situated at the North end of the Harbour 1¼ miles East of entrance to Alexandra Dock, consists of a solid masonry structure 32 feet high, painted with black and red bands, surmounted by a steel lattice structure supporting an unattended "Aga" light 48 feet above H.W.O.S. exhibiting a red double flash with white sector every 6 seconds. Visible 12 miles.

BOMBAY FLOATING LIGHT

Built by Messrs Barbier, Benard and Turenne at Nantes, France in 1929. Length o.a. 70'-0"; Breadth 27'-0"; Depth 13'-6"; Draft 7'-6" Height from water to focal plane of light 32'-0" Light equipment consists of a White light of 1,560 candle-power giving a triple flash, plus 1 sec. flash, plus 25 secs. dark, plus 1 sec. flash, plus 17 secs. dark, to operate uninterruptedly for 12 months. Visibility 15 miles in clear weather. Fitted with Sun valve which extinguishes the light during daylight and causes it to reappear when daylight fails.

Thomas Ormiston was originally in the employment of Messrs. Nicol & Co., Managers of the Elphinstone Land and Press Company. He was appointed Chief Engineer of the Bombay Port Trust in June 1873. After his retirement in 1882 he became Dean of the Faculty of Engineering in the Bombay University. In 1888, a statue was erected in the Bombay University gardens in honour of Ormiston "who, when Chief Engineer to the Bombay Port Trust, planned and constructed the Prince's Dock, the Prongs Lighthouse, the Sunk Rock Lighthouse, and other works in the City and harbour, to the lasting benefit of the people" (Gazetteer of Bombay City and Island, Vol. III).

the Inner Light Vessel near the Sunk Rock. (Incidentally a Lighthouse was subsequently constructed on Sunk Rock in 1844, to replace the *Shannon*. In 1852, a Beacon was constructed on Kennery Island; this was demolished almost immediately afterwards, as, due to its similarity to the Colaba lighthouse, or from inadequate publicity given to its construction, it was reported to have caused the wreck of two vessels. In 1856, a lighthouse, or more correctly a beacon, was constructed on the Dolphin Rock.

But these did not lesson the frequency of shipwrecks. Better lighting was clearly called for and public demand became more persistent. At this point the government decided to consult the Elder Brethren of Trinity House, London. Obviously under their suggestion the Harbour and Pilotage Board decided to construct a lighthouse on Kennery Island.

Messrs Swan, Musgrave and Ellison, whose design for the lighthouse was adjudged to be the best, were entrusted with the work of its construction. Work commenced on 27 October 1866 and the chief cornerstone was laid on 19 January 1867 by Sir Bartle Frere, the then Governor of Bombay at an impressive ceremony on Kennery Island. (It is this governor after whom Frere Road is named). The lighthouse apparatus was obtained from Messrs Wilkins & Co, London. The entire work took six and a half months and the lamp was lit on 1 June 1867, on schedule by Capt J W Young, the Naval Chief. The building of the lighthouse cost Rs 1.22 lakhs.

The BPT's magazine *The Port of Bombay* (Vol 2 No. 8) gives an account on the Kennery Lighthouse site:

> *Situated on the Island of Kundari, two and a half miles from the coast and 12 miles south of Bombay Island and marks the boundary of the Port limit to the south. The lighthouse tower rises from the centre of the main building some 50 feet above ground level; the elevation of the focal plane being 154 feet above HWOS. Installed by Messers Barbier, Benard & Turenne, is a Dioptic 1st Order petroleum vapour light of 720,000 candle power, exhibiting white with a red sector between 336 degrees through North to 001 degree from seaward giving a double flash every 10 second and visible 18 miles.*

All roads in Bombay lead to Flora Fountain. It has been so for the last three hundred years and more and has remained a crucial spot in the city's communication system.

Until the mid-nineteenth century, the centre of the commercial complex, the houses of European and Indian merchants and the government offices including the Governor's residence had been ensconced within a strong fort wall which even today is called the Fort area.

At the Church gate (so called after St. Thomas Church) there was a network of fortifications "a wilderness of embattled walls, sally ports and moats with two great gates strangling the traffic." The main arteries, Rampart Row, Church gate Street and Hornby Road converged at Church gate. The road near the Church gate was described as being "macadamised with offal and dead dogs."

The Church gate provided an exit to the vast espanade which was as smooth as a bowling green.

Sir Bartle Frere

Courtesy: Himalaya Publishing House

It was soon found that the lighthouse at Colaba Point was just not adequate and needed to be replaced. The proposal to build a new lighthouse in substitution originated in 1860 with Captain Barker, I.N., Master Attendant and the Conservator of the Port. A long controversy ensued as to its exact site. As usual the matter was referred to the Elder Brethren of Trinity House who recommended the present site, about one and a quarter mile from the nearest land and open to the full force of the wind and rough seas experienced during the south west monsoon.

Work commenced on the site in November 1868 in clearing away loose stones from the site of the dam and excavating it down to L.W. Spring Tides. Over this area Portland cement concrete 2 ft thick was laid on which as a foundation the first tier of blocks was set and the hearting filled in by the beginning of May 1869. The arrival of the monsoon stopped further work.

More work was undertaken during the second season (9 August 1869 — May 1870) when construction was brought up to four feet above high water Spring Tides. There were delays in construction but by May 1872 the tower had been raised to 87 ft. It took six seasons to complete all the work, including the landing stair, the lantern and the pedestal and the signal gallery. We get some idea of the magnitude of the work when we realise the tower is about 42 ft in diameter at the base and 16 ft at the top, the total height of the masonry of the tower being 127 ft 5 in. It is said that the outlines and the dimensions, the lighthouse is similar to the one erected on Skerrymore Rocks, one of Scotland's most famous lighthouses. The stone used to build the lighthouse was obtained from the quarries at Dongri and Sewri.

An idea of how a lighthouse is operated is provided by this account:

> *The internal accommodation is divided into 9 storeys, each 12 ft high, apportioned as follows: underneath the first storey, which is the sleeping quarter for the Light Lascars, is a fresh water tank built in the masonry, with a capacity of 1,500 gallons; an oil room which contains three tanks with an aggregate capacity of 615 gallons which is equal to five months consumption comprises the second storey, the third storey is a storeroom which contains large cupboards for stores and one-ton crane, the jib of which projects as a needle through an opening in the wall when required for use; the cook room which is fitted with a dresser, shelves, sink and oil stove and a small sweet water cistern makes up the fourth storey while the fifth storey is a living room and men's room. Bedrooms for the lighthouse keepers are housed in the sixth and seventh storey and the watchroom on the eighth storey also contains cupboards for stores, spare gear and Wireless Telephone apparatus. The ninth and last storey contains the lighting apparatus and has two doors opening out to the outer gallery.*

The staff consisted of twelve including a principal lightkeeper, an assistant lightkeeper and 8 light lascars and a cook. The principal lightkeeper and the assistant lighthouse keeper kept day and night watch alternately and one of them was always present when lighting up and also made occasional visits to the Lantern during the night.

In 1912 the lighting apparatus was replaced by a Dioptic 1st Order Light fitted with an 85 m/m Chance Incandescent vapour burner, the illuminent being kerosene oil. A decade later this lighting apparatus was again replaced by an improved type of burner, viz an 85 m/m Chance Autoform Incandescent petroleum vapour burner and the revolving apparatus of the lamp was replaced by a mercury float pedestal. The light emitted was a white single flash every 10 seconds, visible 17 miles in clear weather, the candle power being 330,000.

And this was the famous Prongs Lighthouse.

Other lighthouses mentioned in *The Port of Bombay* (July-September 1938) are the Sunk Rock Lighthouse built in 1884 on the northward of the two reefs extending for 4 cables NNE and SSW and one and one fourth cables from the Colaba foreshore. The lighthouse is 94 ft in height painted with black and white horizontal bands with white top and exhibits a white-red occulting light every 5 seconds. Visibility is 13 miles. The focal plane is 64 ft above HW. The light is unattended and operates by means of a dissolved acetylene gas.

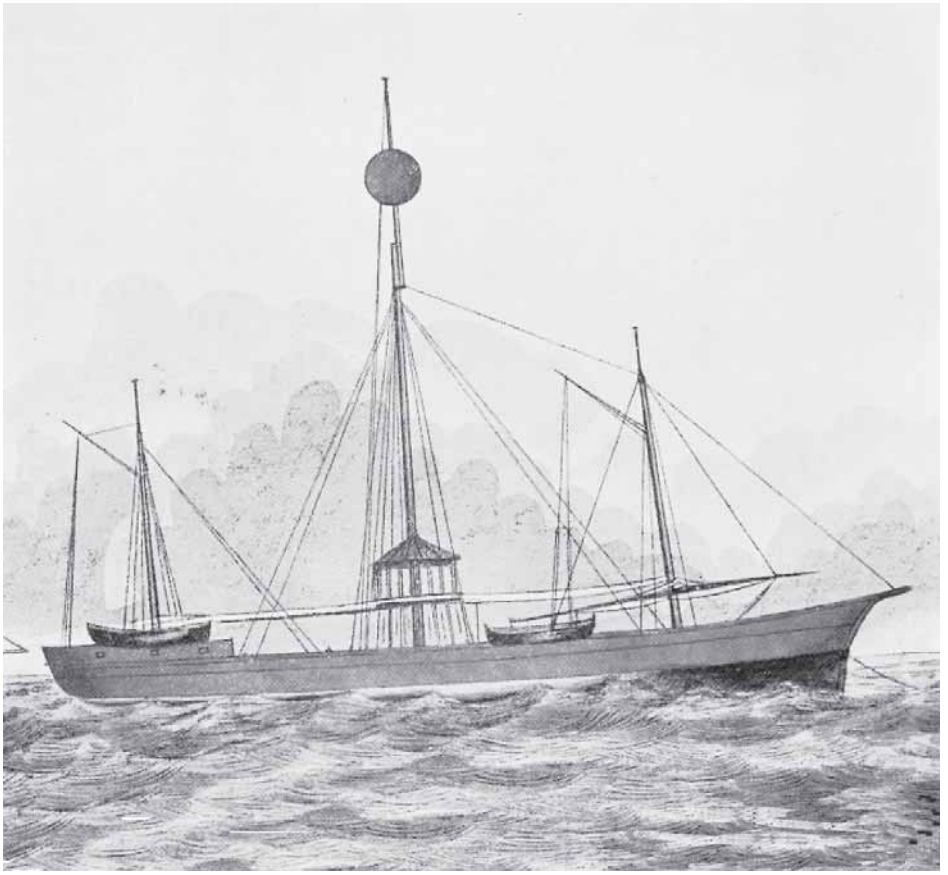
Another lighthouse, the Dolphin Lighthouse on a rock off the Colaba foreshore, built in 1856 at the height of 58 ft, is a grey masonry tower with a white dome, and exhibits a white-green occulting light every 4 seconds. Visibility 7 miles. The focal plane is 35 ft above HW. The light is unattended and operates by means of a dissolved acetylene gas.

Several Beacon Lights include, the North Channel Beacon Light which stands on the northern edge of Cross Island Reef, 5 cables E x S from the entrance to Prince's and Victoria Docks. The beacon is a solid structure painted black and red, surmounted by an unattended "Aga" light, showing a white flash every 10 seconds at a height of 21 ft above H.W.O.S.

Situated north end of the harbour, one and three fourths miles east of the entrance to Alexandra Dock, lies the Tucker Beacon Light, a solid masonry structure, 32 ft, painted in black and red bands, surmounted by a steel lattice structure supporting an unattended "Aga" light 48 ft above H.W.O.S., exhibiting a red double flash with a white sector every 6 seconds. Visibility is 12 miles.

A solid masonry structure, painted red which guards the foul ground in its vicinity is the Uran Beacon Light. It exhibits 29 ft above H.W.O.S. an unattended "Aga" light showing a white flash every 7 seconds and is visible from 8 miles. And lastly, the Karanja Beacon which guards the foul ground to the NW of Karanja shoal is also painted red and surmounted by an unattended light, showing a white fixed light 33 ft above H.W.O.S. and visible 6 miles.

And finally we have the lightships.



Old Outer Floating Light Vessel (1872-1929).

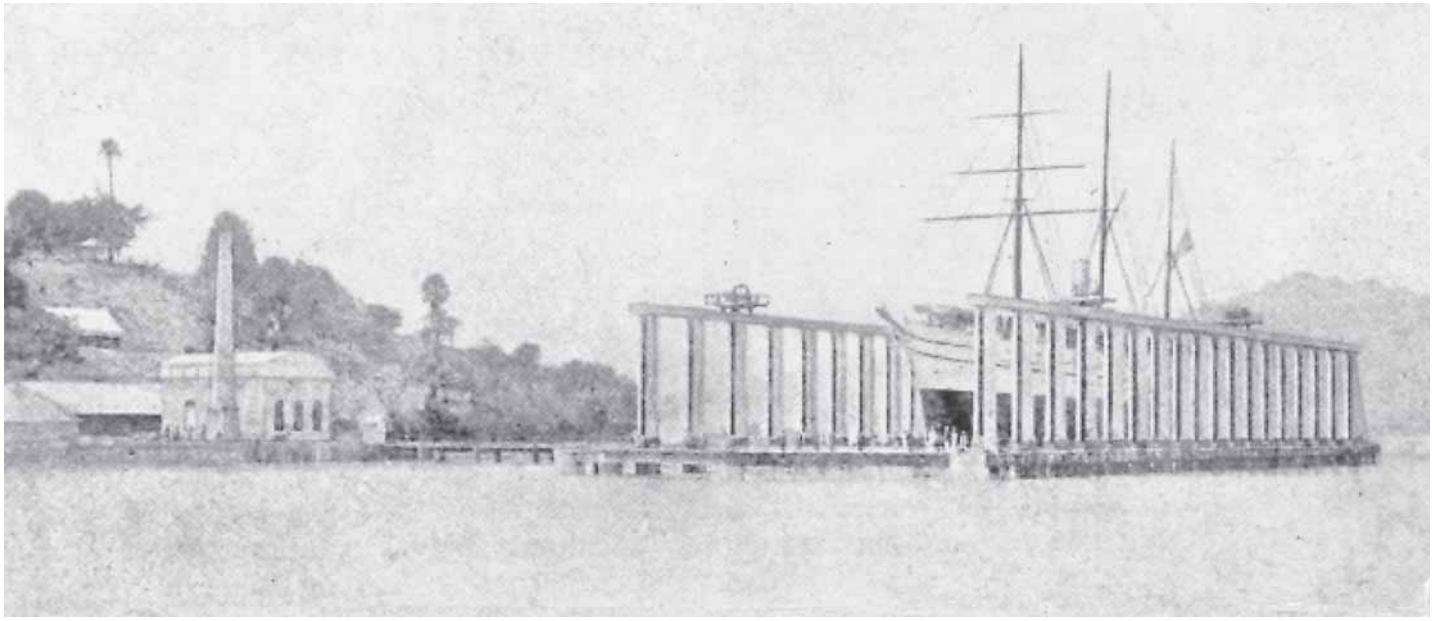
A Lightship is a stationary vessel that is placed on the station and flashes a light throughout the night. The first light is the *Colaba* set on station in 1842. She was an attended vessel built entirely of wood, having a large lantern built around a mast which was hoisted at night and lowered on deck in the daytime for filling and trimming. The light displayed was a white light which was visible 10 miles to 12 miles from a ship's deck in clear weather. A blue light was burnt every hour during the night and a torch at half hour. During the day a red ball was shown from the masthead and on a sail being signalled, a red flag was hoisted. In 1866 frequent complaints of the *Colaba's* unfitness to keep her station owing to advanced age having been made, the Harbour Board addressed the Trinity Board as usual to obtain an estimate for building an iron vessel of about 1180 to 2000 tons.

The Trinity Board, however, recommended a wooden vessel and so it was decided to have *Colaba* repaired and freshly fitted out. This done, the lightship was taken back to its original site on 1 May 1868 but it did not last long. On 15 June 1868 it was run into, dismasted and her lantern and mast knocked overboard by the Transport **Humber**. Once again it was repaired and returned to its station. But it dawned on the authorities that a lightship was necessary. This led to the building of a light vessel **Bombay** which was launched in 1872. It was built in Bombay Dockyard by Khan Bahadur J Dhunjeebhuoy Wadia at the cost of 12,000 pounds. Composed entirely of teak and copper fastenings and fitted with a 20-second red revolving Catoptric light she remained in commission until 1929.

This was replaced by light vessel *Bombay Floating Light* built by Messrs Anciens Chantiers Dubigeon, Nantes, and which was shipped to Bombay in sections and re-erected in the Port Trust Workshops where the lighting apparatus was also fitted. Painted red with her name in large white letters along both sides she was moored at the western boundary of the Port Limits in 40 ft LWOST.

By the 1930s wireless had become operative. An undated history of the Bombay Port Trust published in the early 30s thus states:

> *Vessels fitted with wireless may take advantage of the Direction Finding Station at Juhu Island in Lat 19.04' 55N, Long 72 degrees 49' 54" E (call sign V.W.B) which works*



The Hydraulic Lift — Hog Island. This Hydraulic lift was — at the time of construction — one of the most interesting specimens of engineering skill. On Sept. 16th, 1862, Government opened the Hydraulic Lift on Hog Island. The immense machine was looked upon as the most gigantic affair of its kind which had ever been erected and even at the present day there are not to be found such powerful lifts.

on a 600 metre wave length. A bearing from this station taken in conjunction with a sounding will give a position of a sufficient accuracy to enable the navigator to shape his course to pick up the visual landmarks. A project is under consideration to substitute for this station an unattended wireless beacon on Kennery Island.

From the ten fathom line incoming vessels should shape a course for the Light Vessel, after passing which they should steer to pass between the South Entrance Buoy and the Prongs Reef Buoy. Any ship making the port a dangerous course is warned by the Prongs and Kennery Lighthouse keepers by signals in the day time and rockets at night.

Immediately inside the South Entrance and Prongs Reef Buoys, the Pilot Vessel will be found on her cruising ground S.E. of the Prongs Lighthouse and about two miles southwest of Sunk Rock Lighthouse. The latter is an unattended lighthouse built on a patch of rock 2 miles E N E of Prongs Lighthouse, awash at low tide and with deep water close in to the eastward. It is 94 ft high and shows a red light with white sectors, occulting every 5 seconds, the white light visible 14 miles shown over the highway and the red sector visible 7 miles at either side....

Tidal Model of the Harbour

In order to assist the Trustees, in considering the many intricate problems arising out of the new projects and development schemes connected with their dock and harbour works, the Chief Engineer of the Port Trust (Mr J McClure, M.Inst. C.E) designed and constructed what is believed to be the largest working harbour model in 1921. It was modelled in concrete on a horizontal scale of 10 inches to the sea mile, with a vertical scale of $\frac{1}{8}$th inch to 1 foot for depths — a faithful reproduction in miniature of the natural formation of the Harbour and the tributary creeks and rivers, with electric tidal propagating machinery which produced a regular rotation of graduated springs and neap tides as they occurred in nature, the period of each tide being 62 seconds.

A series of exhausting experiments subsequently proved that the model gave results which agreed almost exactly with the current observations made in connection with the harbour surveys. The purpose of the model was to provide a means of enabling the harbour engineers to protect with reasonable certainty, the effect on the existing docks, channels, currents and depths of any new marine scheme projected or in progress and also to ascertain the permanence of dredged channels and assist in the solution of the innumerable dredging and estuarial problems which arose constantly and which often followed on some apparently harmless interference with natural regime. It was a work of considerable scientific and engineering talent.

Water Supply

Apart from constructing the Kennery Lighthouse which was its main achievement, the Harbour and Pilotage Board also extended the Mazagaon Pier and carried out improvements at the Apollo Pier by segregating the cotton traffic and constructing a footpath for pedestrians. The Board also took over the task of supplying water to ships in the harbour. Prior to 1866, merchant shipping obtained its water supply from the Elphinstone Land Press Company which had secured from the Bombay Municipality a contract for supplying water to ships from the Vihar Lake, which had been exclusively earmarked for the purpose. The charges were moderate; Rs 3 per ton, though shipping companies considered them high. Many of them were used to obtain impure water from wells in town from Dubashes at cheaper rate. In 1866, on a suggestion from the Municipal Commissioner, the Harbour and Pilotage Board purchased the Elphinstone Company's equipment and barges and undertook the supply of water to the ships in harbour. The supply commenced at the reduced rate of Re 1 per ton as an experimental measure, on 4 April 1867. The Board should have known better. It promptly incurred a loss whereupon the rate was raised to Rs 2 per ton.

The problem was always lack of funds. During the nine years of its existence the total receipts of the Board for the period ending 1871-72 amounted to Rs 36.5 lakhs, while the expenditure was Rs 38 lakh. Of the amount of Rs 8.5 lakhs expended on harbour improvements, nearly Rs 2 lakhs were taken up by the construction and operation of the Kennery lighthouse. The Government, it turned out, was most reluctant to shell out more money to the Board and probably improvement in Port facilities would have been a long time in coming had not external circumstances impelled the government to create a properly constituted and suitably financed Port Trust.

Kennery Island and Lighthouse now known as Kanhoji Angre Dweep

A special gateway, made of plaster of Paris was erected to welcome King George V and his wife (1911). The present gateway stands in its place.

Courtesy: Himalaya Publishing House

CHAPTER IV

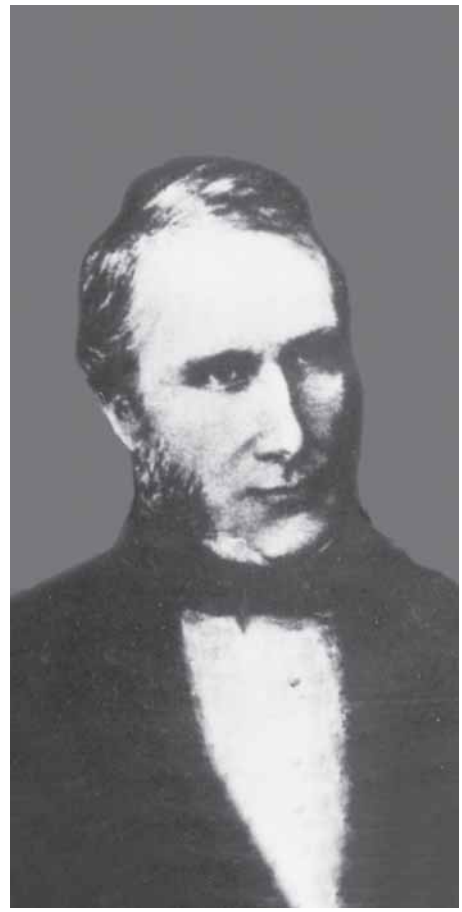
Bombay — The New Gateway To India

The growth of Bombay Port from 1885 onwards to 1945 saw many ups and downs. It took upward of half a century for the port to outgrow its primitive state and blossom into the premier port in the country. Wars, a devastating famine in Bombay's hinterland, a plague and a general recession had their toll. But Bombay port survived all those natural and man-made — including a major explosion in the docks — calamities to emerge unscathed and rise to greater prosperity, becoming, in course of time, to be the port of call for several shipping lines in tune with increasing trade and commerce.

There was money in Bombay and yet, at the same time there was no money! The paradox is explained by two factors; the end of the American Civil War in 1865 which caused the collapse of the Indian cotton prices from 20d per lb to 10d and the insolvency of many businessmen. But before the end came the profits from the war (computed at about 81 million pounds during the five years 1861-1865) had given Bombay the requisite capital for advancing the island's foreshore below the low-water mark. Many private companies had sprung up when money was in abundance to carry out reclamations on the foreshore and the landing and shipping facilities thus created naturally became their monopoly. The principal company holding the monopoly was the afore-mentioned Elphinstone Land and Press Company, named, incidentally, after the then Governor of Bombay, Lord Elphinstone.

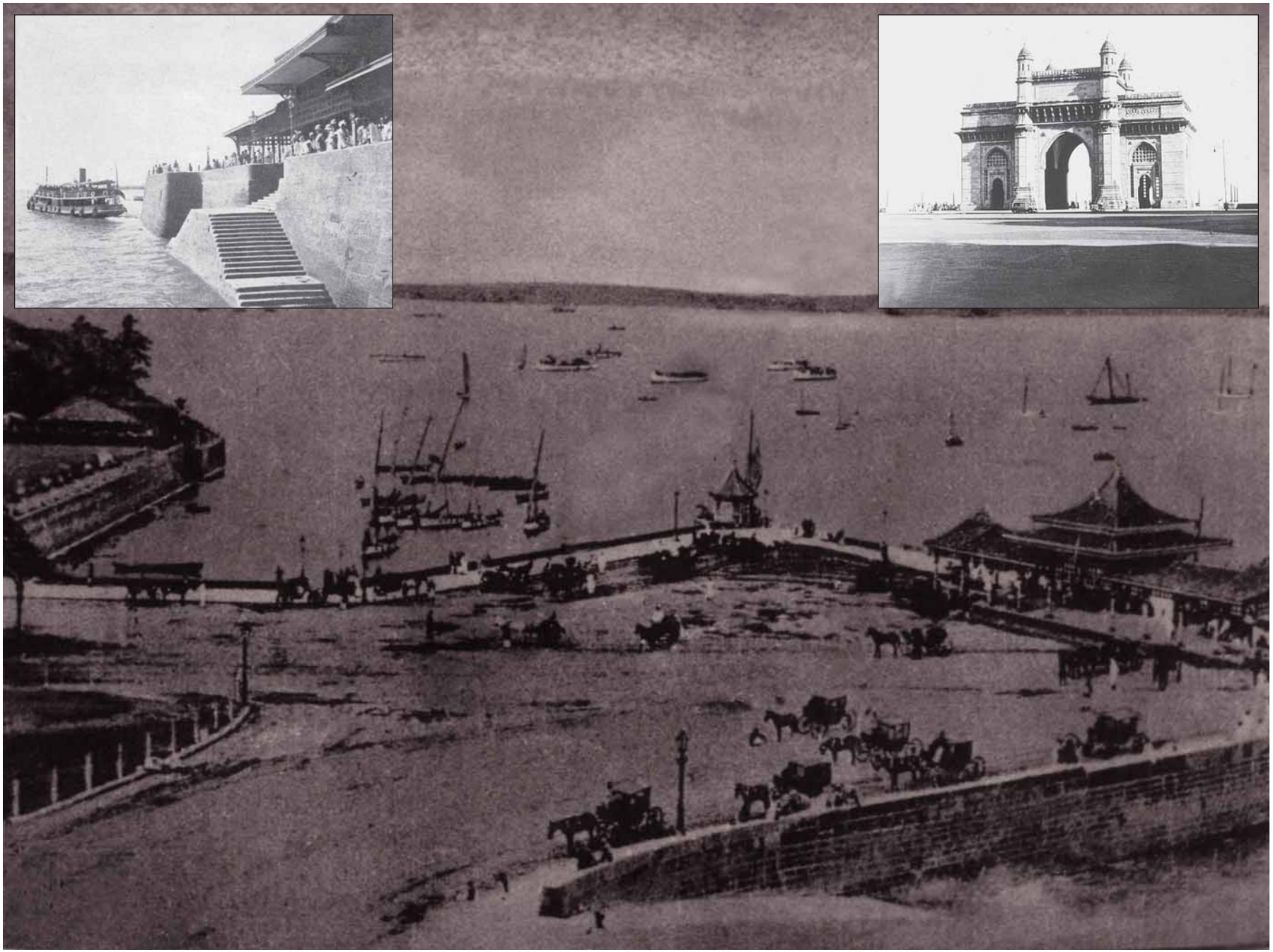
This Company contracted with the Government to provide one lakh acres of land for the terminus of the GIP Railway, receiving in return from the government the right to reclaim the area of 250 acres from the sea, fronting the properties previously acquired by the Company. This enabled the company to secure a monopoly of the Harbour frontage opposite the point where the trade was centered and, owing to the proximity of the railway terminus, the company was in a position to subject large portion of the trade of the port to wharfage and other dues. However, with the end of the American Civil War, the company found its fortunes at a low ebb and it was then decided by the British Secretary of State for India to acquire the Company's foreshore properties which were eventually taken over by the government on 30 April 1870 for Rs 186 lakhs.

Prior to 1870 all the government wharves were used practically free of charge, the only rate levied being on goods not removed in the prescribed time. They were really demurrage charges. In October 1870, in the furtherance of the proposal for the formation of a Board of Trustees, and in order to provide funds for the payment of interest on the debt created by the purchase of the Elphinstone property, the Bombay



Mountstuart Elphinstone, Governor of Bombay (1819-27) who was held in great regard, and respected for being a far-sighted ruler, and predicted with considerable accuracy the end of British rule.

Courtesy: British Library



Apollo Bunder as it looked (1905) before the Gateway of India was built. Note the horse-drawn carriages.
Top Left: Old pavilion at Apollo Bunder where passengers landed.
Top Right: New Gateway of India

Courtesy: Bombay City Corner

Legislative Council passed an Act authorising the levy of wharfage and other fees for landing and shipping goods at the government *bunders*, wharves and landing places. These charges became leviable with effect from March 1, 1871. From May 1 1870 for about three years, the property was managed by the government on behalf of the proposed Trust, during which it incurred a deficit of Rs six lakhs which was charged to the capital debt of the new Board on its formation in 1873.

The truth of the matter was that Bombay was making rapid progress in every possible direction. There was need for fresh thinking on the subject of Bombay as a port. For example railway communication with the interior had been opened up in 1853; the first cotton mill had commenced working in 1854 and six more mills were to be set up during the following five years. Steam coastal ferry services had been inaugurated in 1866 and the opening of the Suez Canal to traffic in 1869 had revolutionised the maritime trade in Bombay and largely converted her into the Imperial Port of India. In fact, Bombay had indeed become the Gateway to India.

Move for an Imperial Port

While all these changes were going on, conditions in and around the city's port were almost at a primitive state. Like Alice the city had just "growed"; time had come to do something about it. In fact, as early as 1860 ***The Times of India*** had sounded the tocsin. In an acid comment it wrote: "The want of wharfage and pier accommodation thrusts itself so prominently before us that the apathy of our merchants thereon is past belief. Every man who reclaims a foot of land or gives a new foot of pier room to Bombay deserves to be looked upon as a public benefactor". Several things conspired for the government finally to take some meaningful action. First, there was a genuine demand for better port facilities including wharfage and pier accommodation. Second, valuable foreshore land was available, thanks to the enterprise of the Elphinstone Land and Press Company. Third, here was a company which, in reclaiming land, had expended practically all its paid up capital and was desperately looking for funds to complete the projects it had signed up for.

Now all that the government needed to do was to buy up the company and own the land thus far reclaimed and thereafter proceed with planned construction schemes. And that, in the end, was how matters proceeded. The government purchased the Company's rights at the par value of the paid-up capital which was Rs 186 lakhs. (Actually Rs 1,85,91,597). Payment was made in 4 per cent stock of the government of India issued at 93 per cent.

Spurred by a concerned and enlightened public, the government of the day passed what came to be known as the Bombay Port Trust Act, 1873 which was published in 20 June 1873 almost four years after the scheme had been sanctioned by the Secretary of the State. The Act provided for the creation of a Corporation under the name and style of the Trustees of the Port of Bombay, consisting of a Chairman and not less than nine or more than 12 persons, of whom not less than one third or more than one half were to be government servants, and all of whom were to be appointed by the government. The Bunder Fees Act of 1870 was repealed and the newly-set up board was given powers to levy dues at the rates previously sanctioned by the Government on all goods passed over their wharves, while the control of pilots, conservancy and lighting of the harbour was taken away from the Harbour and Pilotage Board and vested in the new Trust.

All this was revolutionary. The properties vested in the Board included the Elphinstone Estate, the Mody Bay Reclamation, the Apollo Pier, the Tank Bunder Estate, Timber Ponds, the Customs bonded warehouses, the Kassara Bunder, the saw mills property, and the whole of the property of the Harbour and the Pilotage Board comprising chiefly of the lighthouses at Kennery Island, Dolphin Rock and Colaba, the Mazagaon Pier, the Signal Stations, the lights ships, pilot schooners and other craft. That was a lot of property.

That was just the beginning. A few days later orders were issued abolishing the Harbour and Pilotage Board authorising the Trustees to receive port dues and pilotage and other fees leviable from vessels using the port. The total debt of the Port Trust, even before it had started to function, was Rs 220 lakhs, including Rs 6 lakhs (as mentioned earlier) representing the loss of the years from 1870 to 1873. Of the total sum, Rs 212 lakhs bore interest payable to government at 4 per cent for the first ten years and 4 and a half per cent thereafter while Rs 8 lakhs bore no interest but were repayable to the government. No capital charge was made on account of the properties transferred from the Harbour and Pilotage Board.

We do not know how precisely members of the Board of Trustees who took office on 26 June 1873 were selected. One can understand that the names of the European members automatically suggested themselves though, no doubt, there must have been some jockeying going on to get selected. It is more than probable that the Bombay Chamber of Commerce was very

much in the picture. It was the Bombay Chamber which originated the idea of a Port Trust and pressed hard to have it accepted by the government. In the circumstances it may not be too farfetched to presume that in the naming of the first Trustees, the Chamber had some say. At any rate, the first Board of Trustees, which took office on 26 June 1873 consisted of the following persons:

1. Col J A Ballard C.B.R.E. Mint Master (chairman)
2. The Hon'ble Mr E W Ravennacroft, C.S.
3. Lt Col H F Hancock R.E.
4. The Hon'ble Mr Narayan Wasoodew
5. W G Hall, Esq
6. Capt G F Henry
7. The Hon'ble Mr I K Bythell
8. F R S Wyllie, Esq
9. Kessowji Naik, Esq
10. H P Le Mesurier Esq

(Till 1880, the Chairman was a part-time officer. The first full-time Chairman appointed in April 1880 was Col J F Cox, R.E.). While Col Ballard, the very first Chairman is the one after whom Ballard Estate is named.

General Ballard after whom Ballard Estate is named. He presided over the meeting of the first Board of Trustees.

The first meeting of the Board of Trustees was held on 3 July 1873 in the newly-built Durbar Room of the Townhall. Significantly, the current Board of Trustees observed the 125th anniversary of that first meeting in the same Durbar Hall on the same date in 1997. For the current Board it was an occasion to remember.

The first board had only two Indian members, the Hon'ble Mr Narayan Wasoodew and Mr Kessowji Naik drawn from the elite society of Bombay. The rest were Britishers associated with the administration of the city. But that was of not any particular help. During the first six years of its existence the new Board was unable to raise enough revenues from its vast properties sufficient to meet its capital debt charges. True the Board had purchased the strategic properties of the Elphinstone Land and Press Company, but the Trust had to face the competition of other private wharf owners such as Messrs D Sassoon & Company who had built a small dock at Colaba, Messrs Colaba and Company, the Mazagaon Land Company and the Frere Land Company.

Competition was severe resulting in wharfage rates being kept down. It no doubt helped owners of boats and ships, but it didn't help the Trust which kept suffering losses, that it could barely sustain. In trading circles, too, there was much confusion. One portion of cotton trade was centered in Mazagaon while another in Colaba, leading to much inconvenience. Besides the trust was burdened with the cost of reclaiming the land required for the Great Indian Peninsular Railway Terminus which was still a building. The Bombay Chamber of Commerce was against the use of surplus dock dues being used for any other purpose than dock and harbour improvements and was protesting vigorously with the Trust, much to its chagrin.

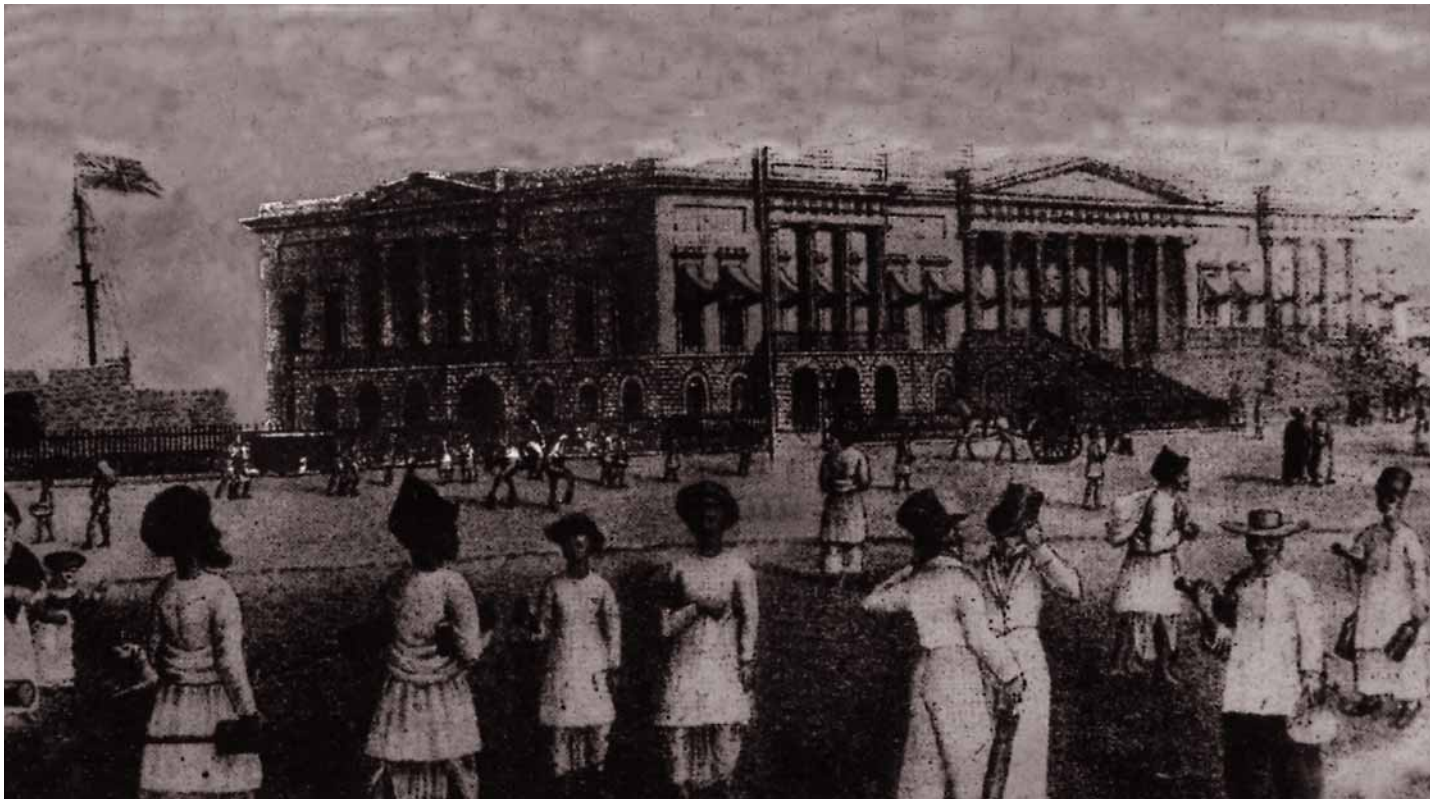
There was one silver lining. The famine years of 1878-79 and 1877-78 showed a surplus on account of the large-scale import of grain but that was of little moment. The period from June 1873 to 31 March 1879 taken as a whole showed an aggregate net deficit of Rs 2,36,914. To obviate these difficulties the government purchased in 1870-80, on behalf of the Trust the private foreshore owner's rights at a total cost of Rs 75.4 lakhs. At the same time the Trust was reconstituted by the Bombay Port Trust Act, 1879 which came into force from 1 November 1879. By this Act the Bombay Chamber of Commerce was given the privilege of electing five Trustees, the remaining seven Trustees and the Chairman being nominated by the Government. It was, however, provided that not less than three Trustees should be Indian resident in the City of Bombay. This Act, though from time to time amended, still retains its basic pattern in substantial measure.

The Chamber, interested as it was in trade and commerce and the smooth flow of business had an understandable stake in how the Trustees handled the affairs of the Port. It was particularly anxious to see that no burdens were placed on the Port Trust and through it on the trade and commerce of western India. When the government of India guaranteed a loan required for the Kidderpore Docks Scheme in Calcutta but sought to attach unreasonable conditions to a similar guarantee for a loan of Rs 98 lakhs required for dock extension in Bombay, the Chamber intervened successfully to get the government to advance the funds required on capital account. Again, when the municipality raised a claim for an increased contribution to municipal rates from the Port Trust, the Chamber addressed the government and secured a reduction in the amount claimed. As a *quid pro* the Chamber pressed for — and obtained — a yearly reduction in port dues.

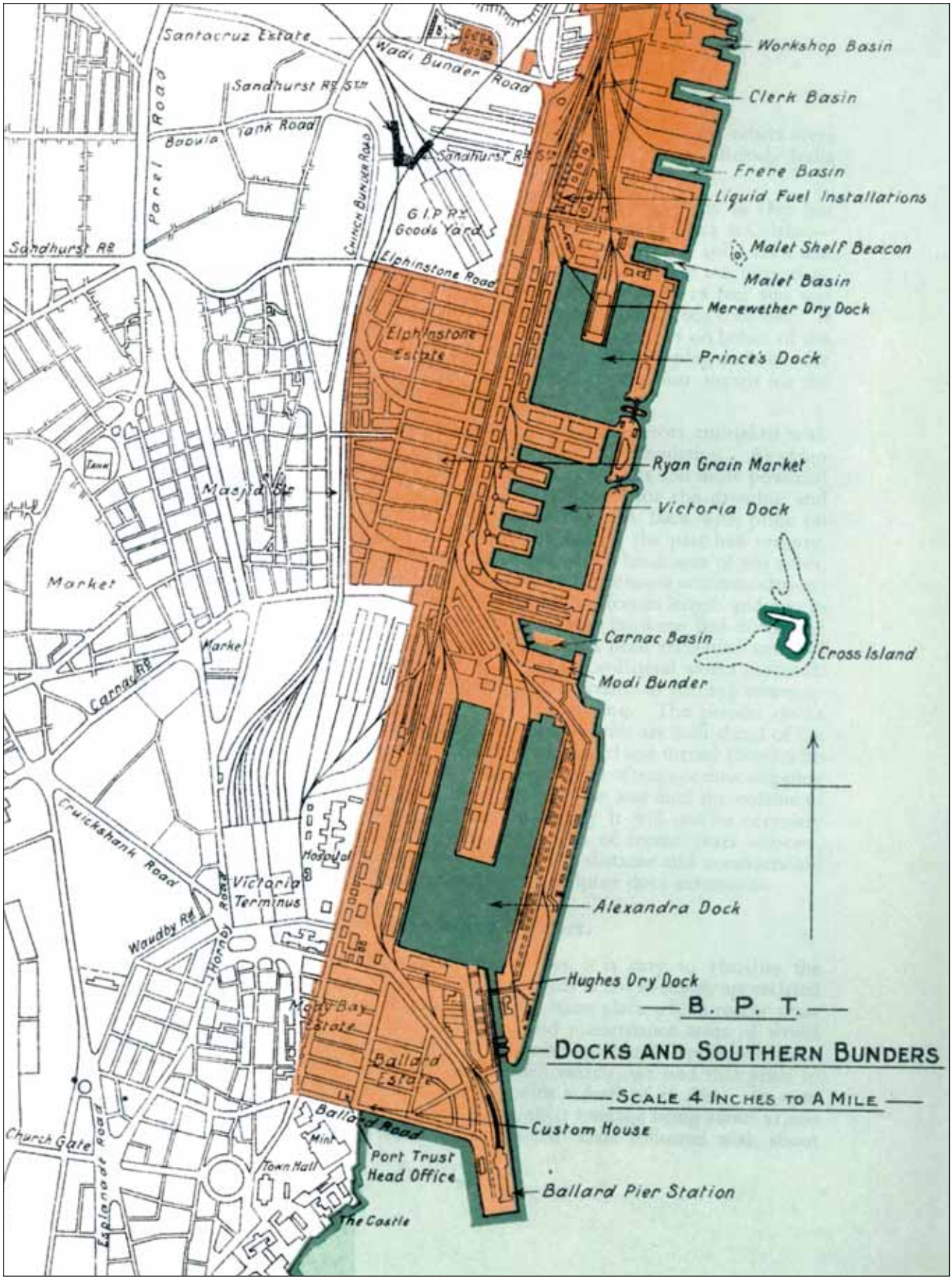
First Wet Dock

The first task which faced the Bombay Port Trust after its constitution was the construction of works designed to meet the constantly expanding trade of the port and, as S D Chittar noted in his earlier study of the port, for the next forty years, that is upto the outbreak of World War 1 in 1914, the energies of the Board were mainly directed to the twin objects of providing modern wet dock accommodation for trade and shipping and the development of the Port Trust's estates as a means of building up its financial resources.

A hundred and fifty years ago Bombay possessed no wet docks and writers of that period who eulogised the then existing facilities for shipping



The Town Hall as it looked in 1873 when the meeting of the trustees of the Bombay Port met in its gracious durbar hall. Courtesy: Bombay City Corner



Mereweather Dry Dock (1891), Prince's Dock (1880), Victoria Dock (1888), Alexandra Dock (1914) and Hughes Dry Dock (1914)

David Sassoon (1792-1864)
David Sassoon landed in Bombay in 1832 with a borrowed capital of Rs 1000. He slowly began to buy wharves and godowns along the sea front. These soon proved to be his greatest asset as international trade increased and demand for dock space escalated.

as "the most noble and permanent and useful works of the British in India" were referring to the government dry docks, five in number and constructed at intervals between 1748 and 1811, the largest having a capacity of 286 feet by 63 feet, with a depth of 23 feet. There was also a small dry dock at Mazagaon and two others were constructed there on behalf of the Peninsular & Oriental (P&O) and British India Steam Navigation Companies between 1845 and 1867.

The need for wet dock accommodation was voiced as early as 1610 but it was not until 1875 that Bombay's first wet dock — the Sassoon Dock at Colaba — was opened to traffic. This was a small dock excavated out of solid rock and constructed by private enterprise. Judged by today's standards it was Lilliputian. It had a waste area of hardly three and a half acres, an effective depth of about 10 feet and was designed to accommodate a maximum of five ships of about 1,000 tons net. It was purchased by government with other foreshore properties on behalf of the Port Trust in 1879 and was for some time used as a trooping dock. Later, because of its size, it fell into disuse except for the accommodation of the fishing boats and country craft. The slow pace of Port development will be understood if one realised that for a long time there was not adequate infrastructure to facilitate trade. There were hardly any roads connecting Bombay with the hinterland except those which were built for military purposes. Goods were carried in bullock carts over narrow unmetalled roads which were hard to traverse during monsoon time. The seven islands of Bombay were separated from each other by creeks which needed to be filled. They were not always navigable, especially during the monsoon and carrying goods from outside for export through the port of Bombay was a problem. The cost of transportation was high. The only goods needed abroad had to be of a special character that only India could supply — apart from cotton. This is where the services of Sir Bartle Frere (after whom Frere Road was named) were particularly appreciated. He was, in a special sense, a Bombay man. Originally a writer in the Bombay Civil Service, he had done excellent work as Chief Commissioner of Sind and on the Viceroy's Executive Council before being made the Governor of Bombay. His tenure of office corresponded with the five most eventful years in the commercial life of Bombay. All credit to him. Bombay grew as a livable city. This was recognised by the Bombay Chamber of Commerce which presented him with an address on the occasion of his retirement in 1867. The address reviewed the progress made in cotton cultivation but also in harbour development and railway communication.

Sir David Sassoon indulged in opium trade and made his fortune from it. A library now stands in his house close to Elphinstone College. Picture shows the gateway to the Sassoon Dock. Grass grew in front of it before the city developed.

As Bombay's trade began to increase it was getting to be increasingly necessary to set up wet docks. The Sassoon dock had been preceded by a proposal in December 1854 for the reclamation of land from the sea between Carnac Bunder and Mody Bay. In March 1855 the Bombay Government had before it another proposal for the construction of a wet dock, prepared by its own Chief Engineer, Maj Gen Waddington. As happens in such cases, a Dock Committee was set up to judge the merits of both schemes.

The truth was that the government was suffering from lack of adequate funds and besides it was not sure of attracting private investors were it to float loans. However, the report of the Dock Committee was very encouraging. The report, submitted within seven months in October 1855 was considered to be "a very full and satisfactory one". The Committee had before its proposal for five different projects but of them all, it favoured the one submitted by the government's own chief engineer, Maj Gen Waddington. According to the Committee, the Waddington proposal seemed to combine both the provision for ample docking space and a safe entrance into the harbour at reasonable cost. The dock was to be situated close to the then existing large warehouses and commercial houses and the cost was estimated at £ 150,000.

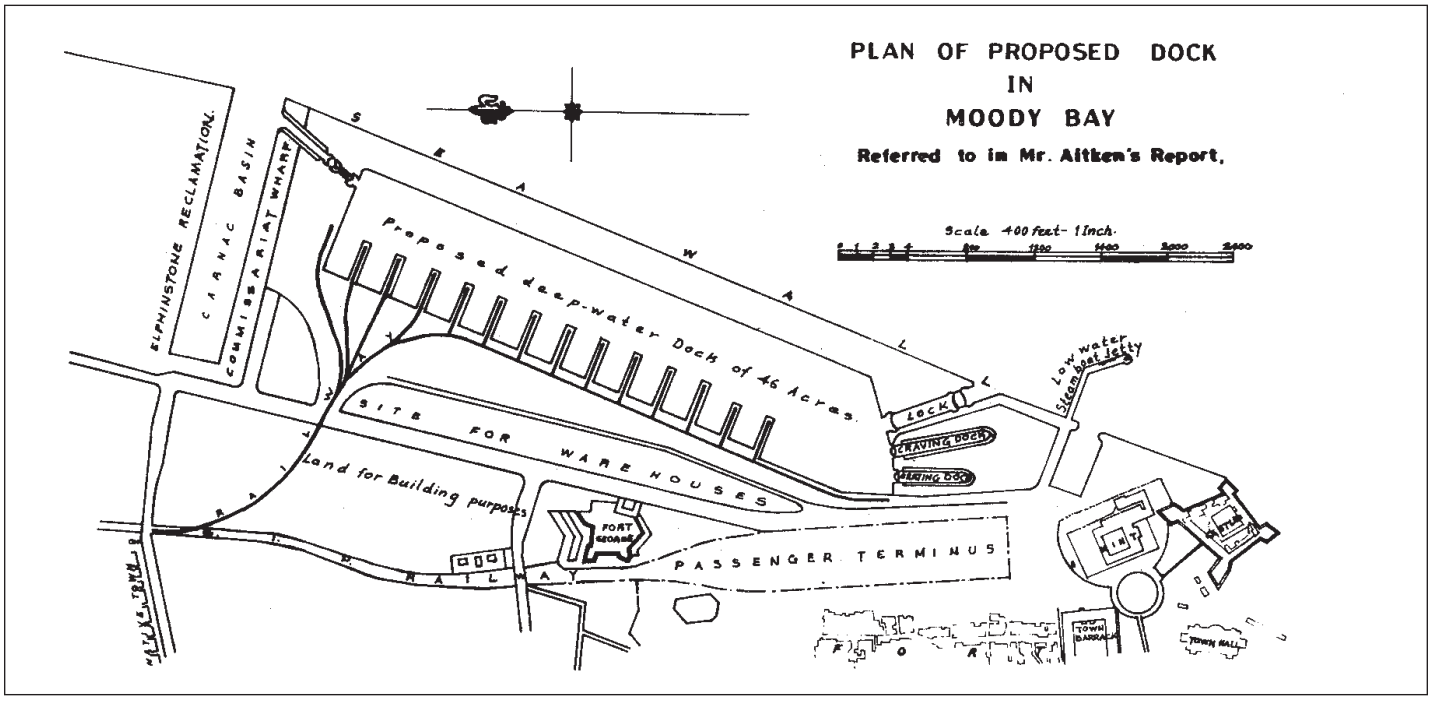
But the government had its doubts. Secretary A Malet did not think the site chosen was suitable and the Committee was requested to suggest an alternate location.

There the matter rested for a few months. Meanwhile Arthur Malet (after whom a *bunder* is named) had prepared a major scheme of land reclamation and dock construction which was to be later revised by Captain Delisle (after whom a road is named) and was to be known as the Waddington-Delisle Scheme. Even this scheme came under scrutiny by another engineer Captain Weymess, the Bombay Dockyard engineer and came to be referred to as the Waddington-Weymess Scheme. Both the schemes were submitted to intense scrutiny both in Bombay and in London.

In London the schemes were examined by Robert Stephenson, an engineer who was considered an authority on the subject who suggested certain changes in the Weymess Scheme but modestly noted that where details were concerned, he was not competent to comment upon them since he was not aware of Bombay port's specific requirements. However he added:

> *Commercial prosperity would be promoted; an important extension of the city of Bombay would be made for building and commercial purposes, the condition of the harbour in connection with that part of the city along which the project extends would be greatly improved; and that no prejudicial influence would be thereby exerted by the diversion of the currents or by the formation of shoals or sandbanks.*

Furthermore, he called for much more precise information regarding construction costs, direction of the

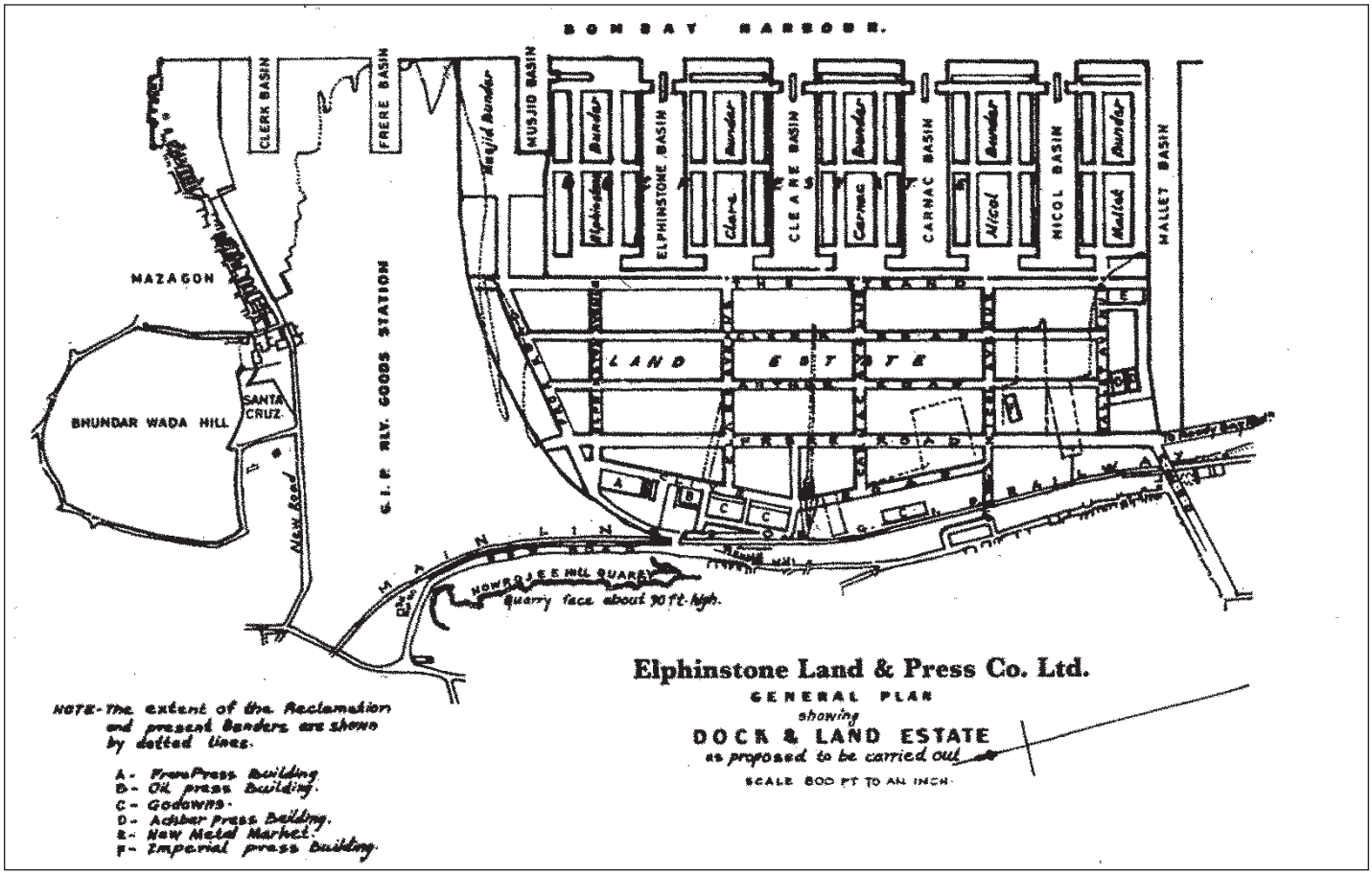


Plan of Russell Aitken's proposed Dock in Mody Bay (1865). Courtesy: Oxford University Press

entrance of the wet docks and the necessity of the dock gates pointing seawards. His recommendation was that a competent British engineer be sent out to Bombay to make "every necessary inquiry" before work on the wet docks was undertaken. The Bombay Government readily accepted Stephenson's recommendations. Captain Delisle was ordered to provide more information. His final plans were submitted to government in May 1859. The costs of the proposed wet docks were estimated at £ 2,14,71,417.

But still the government was slow to move. The Governor, Sir George Clerk (1860-62) had his own ideas. Some ridiculous reasons were put forth for shelving the project over which so much time and energy had been expended. The fear was that the large amount of stagnant water which the wet docks entailed, would be conducive to the spread of diseases — and considering the state of sanitation then prevailing in Bombay it wasn't an irrational excuse. But what is amusing is the other excuse trotted out that the wet docks would enable large ships to berth in Bombay which, in turn, would mean the influx of large numbers of European sailors in Bombay harbour who could pose a threat to the town's law and order situation!

Mercantile interests were also not in agreement on the need for wet docks. Messers Forbes & Co, agents for the Apollo Pier Company in a memorandum submitted to the government in 1860 signed by both European and Indian merchants upheld the idea of constructing additional wet and dry docks. But other leading merchants like Messers Ritchie Stewart & Co, Messers Nicoll & Co and R Strong strongly believed that wet docks in Bombay were "unnecessary and in some respects objectionable". Their argument was that if landing piers which were accessible at all times were provided with better cargo boats, nothing more was needed. Matters were further complicated by the fact that the Elphinstone Land and Press Company which had already begun its reclamation work had not made any provision for wet docks. The ELPC believed that if wet docks were constructed at the initiative of rival mercantile houses, they would provide alternate arrangements for storing and docking at the cost of its own bunders!

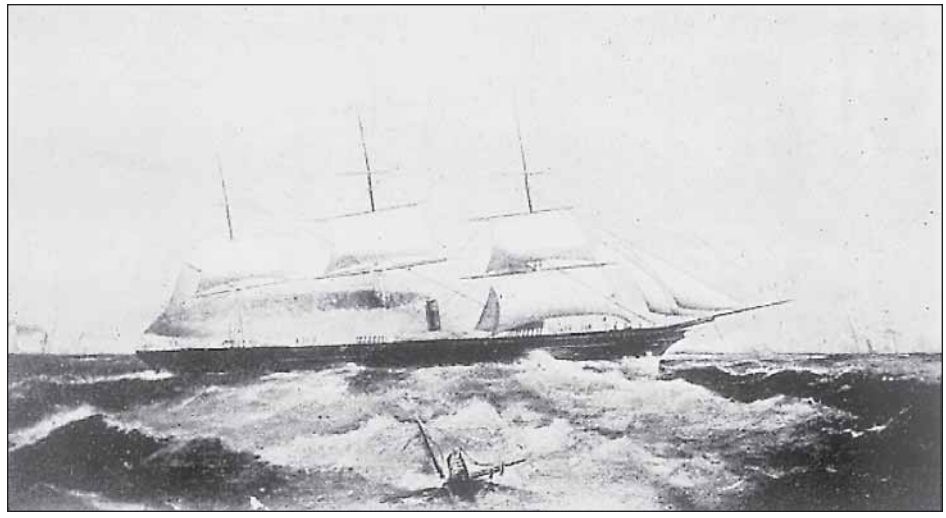


Thomas Ormiston's Plan of the Elphinstone Land and Press Company's proposed Dock and Land Estate. (1870). This plan was revised in 1875 for construction of Prince's Dock.

The Bombay Government's own position on the subject continued to vacillate. The prevailing consensus in 1865 was that the whole of Bombay harbour was "to all intents and purposes a big wet dock" that made an artificial wet dock unnecessary. Land in Mody Bay was both valuable and limited and government was of the opinion that the large water area required for the docks could not be spared.

To add to the merriment, other forces came into operation, like the Engineer of the Bombay Municipality, Russel Aitken and the Municipal Commissioner himself, Arthur Crawford. Both Crawford and Aitken wanted wet docks as part of their grand plan for the civic expansion of Bombay City. Aitken proposed a plan to construct wet docks in the **Mody Bay reclamation** area. The docks were to extend over 46 acres and be located closest both the deepest water in the harbour as well as to the warehouses situated in the Fort and the 'Indian' town. In her book *Imperial Designs and Indian Realities,* Mariam Dossal writes: "Aitken's proposal was a clear alternative to the Bunder Boat Basins, which the Bombay Government had been earlier ready to construct. Aitken argued that reliance on *bunder* boats and barges for bringing the cargo into port or carrying it out to sea was a 'primitive mode' of conducting Bombay's trade. The construction of wet docks would give an impetus to trade in Bombay as it had done in numerous English towns. The most appropriate site for them was the Mody Bay reclamation area".

Aitken had his facts ready. He provided statistics of the trade of Bombay port to substantiate his argument. His arguments were unassailable. But the construction and management of wet docks was a major enterprise which would need a Harbour and Dock Trust. Neither the government's Marine nor Revenue Departments nor private companies, Aitken maintained, could undertake the work satisfactorily. He cited the example of Dock or River Trusts in England, adding that the Trust in Bombay would be composed of merchants whose ships used the docks, as well as representatives of both government and the Municipality.



The "United Kingdom" was built in 1857 and was the first vessel of the Anchor Line to make a voyage to India. She was typical of the ships employed in the early history of the Anchor Line Indian Service.

At this point others jumped into the fray. A report in the *Bombay Builder (January 1867)* came out strongly against the wet docks. The report said that for the "mere filling and emptying" of vessels, docks were of little use. Ships, even when they were in the docks, often loaded and unloaded from 'lighters', or small harbour boats. The setting up of dock companies would only be justified if they performed multifarious tasks as did dock companies in England. The services provided there — like loading and unloading of freight, cranage, warehousing, consigning, customs-clearing, insurance, outward clearing, registering etc — directly promoted mercantile interests and benefitted trade. Merchants were thereby relieved of the risk, labour and loss of time involved had they to undertake this work themselves.

Then there was the question of finances. The report pointed out that the wet docks would make considerable demands on the merchants in monetary terms. The 46 acres or 2,22,640 square yards of land valued at Rs. 100 per sq yd would require £ 2,250,000 as capital for direct purchase and when the costs of actual constructions were included the expenditure on the project would come to a whopping £ 3,000,000. The interest required to be paid on such a vast amount of capital would have to be borne by the trade of Bombay. The report said that the number of those which would use the docks annually would be around 800 to 900 and they would have to bear the costs which would be exhorbitant. The point was made that "until the trade of Bombay is more than double what it is at present, we must be prepared to pay at least three times as heavy dock dues as are levied in any dock in England". A frightening thought!

The Government Boat Basin scheme was, on the other hand, considered a better commercial proposition. It would provide the merchants with 1,00,000 sq yds more than the docks scheme and more than three miles of "excellent

wharfage" of sufficient depth of water for small steamers and lighters of 120 tonne capacity to lie alongside the wharves at all times of the tide. No additional dues needed to be levied nor was there any need to enact special legislation for the purpose. Bombay, said *Bombay Builder* majestically, was not yet "ripe for such a large scheme of docks (nor) that out trade could bear such a burden on it yet".

But the idea of wet docks would not die so easily. The pros and cons were debated with vigour. The Bombay Chamber of Commerce called for a special meeting to discuss the matter in detail. The government itself set up a special committee to study the proposal and on it were represented not only Col Delisle, Russel Aitken, the Commissioner of Customs, and a representative of the Harbour Board, but also European and Indian shipping and commercial interests. Were the Committee to decide in favour of the Aitken Scheme, said the government, it was amenable to putting it into action after the site and agency were decided upon.

The government changed its stance every now and then depending on the state of its finances and the views of its senior administrators. Thus, in May 1865, before the onset of the economic depression Bartle Frere informed the Home Department back in London of the great need for better docks at Bombay. The existing docks, he wrote, were "too small and obsolete". Large ships were at a disadvantage and suffered considerable delay and expenses to the point when captains and agents often let the ships return "foul, lose time and consequently money on their way and the port gets in bad favour with the ship owner".

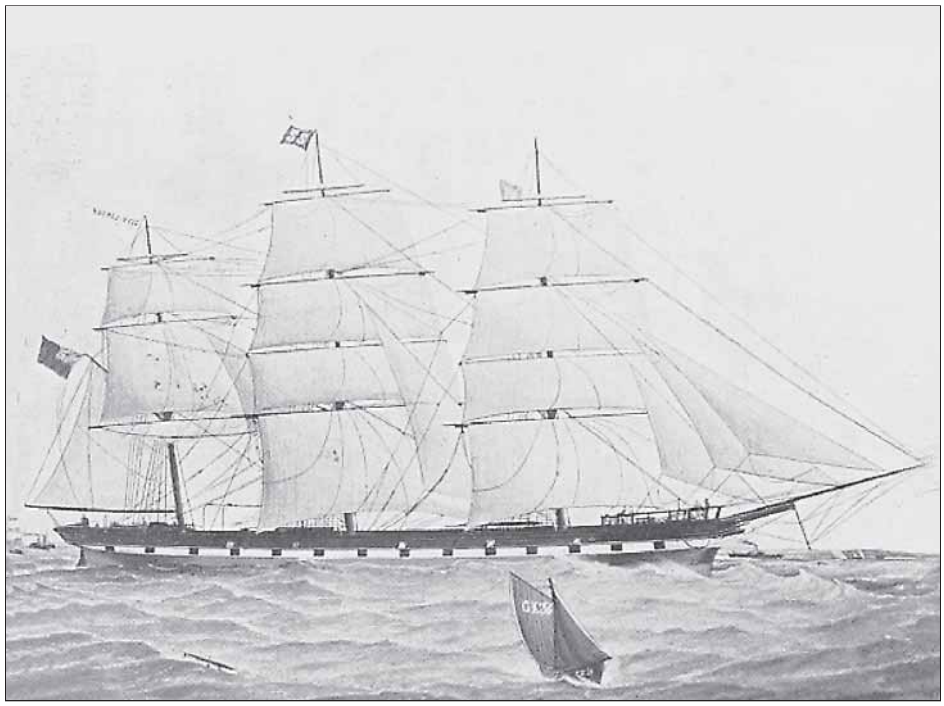
The Government of India recognized the need for wet docks but the question of raising funds remained a disincentive. Col R Strachey, Secretary to the Government of India estimated the total value of exports and imports of merchandise at Bombay for the year 1866-67 at little less than £ 70 million and total tonnage over 1,00,000 and gross Customs revenue at £ 800,000. On this basis he calculated that if the docks cost £ 2 or 3 million, interest charges at 5 per cent would amount to £ 100,000 to £ 150,000 annually after the entire capital had been spent and if no returns had begun to come in. The most optimistic position would be that the docks would be put to early use, the charge for interest would then be no more than £ 50,000 annually and the deficit could be covered by a light general impost on commerce.

So yet another committee was appointed to examine the wet docks proposal which rejected the Scheme by a ruling of six to five, holding that a deep water tidal basin would serve Bombay's commercial needs just as well. In other words, short-term considerations carried the day.

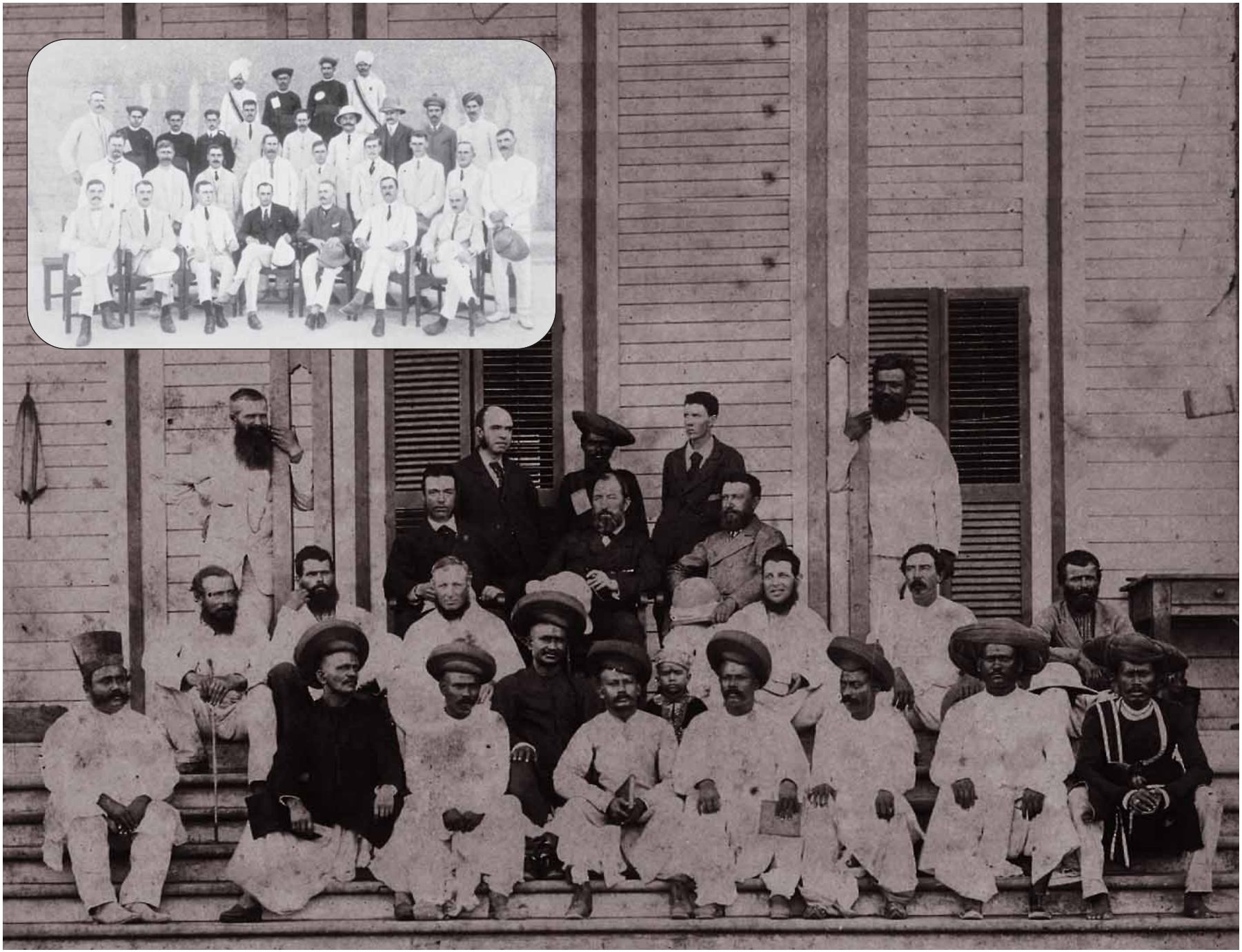
But then mercantile interests in England woke up to the situation and regretted the Special Committee's decision. The Secretary of State ordered that at least wharf accommodation in Bombay be improved and additional tidal and boat basins provided. Seven years later, in 1875 to be precise the construction of wet docks could no longer be delayed. The Scheme received the sanction of the India Office and the Government of India was authorised to make a loan of Rs 75 lakhs to the newly constituted Bombay Port Trust. The work was entrusted to Thomas Ormiston, its Chief Engineer.

Thus it came about that the second dock — the first being the private Sassoon Dock, — came to be commissioned.

Properties of the Elphinstone Estate, Mody Bay Reclamation, Apollo Bay Reclamation, Tank Bunder Estate, the Customs bonded warehouses and the whole property of the Harbour and Pilotage Board along with others passed into the hands of the Port Trust.



"City of London" 1868.



The men who ran the Prince's Dock (1876) T. Armiston is to be seen seated in the middle in second row from top. Only the names (no initials) are available of the rest. Top: Staff of Engineers and Contractors. who constructed Alexandra Dock (1914).

The second dock to be opened — The Prince's Dock — was constructed during the years 1875-1880 at a cost of Rs 67 lakh, exclusive of seven and a half per cent for engineering supervision. It was financed by a government loan, had a water area of 12.15 hectares and was served by an entrance of 20.1 metres width. It was capable of accommodating vessels of 6.4 metre draft.

The dock was constructed within a murrum and puddled clay cofferdam, the rubble masonry being quarried from Elephanta. What is inexplicable is that the granite was brought all the way from South Wales and it is not at all clear in what way this granite was superior to what was available in India. The sand, however, was dredged from Panvel River. A dry dock, called the Merewether Dry Dock (there is, incidentally a Merewether Road in the Fort area) admeasuring 160 metres in length and 20 metres in width, was later added as a part of the Prince's Dock and commissioned for use in 1891.

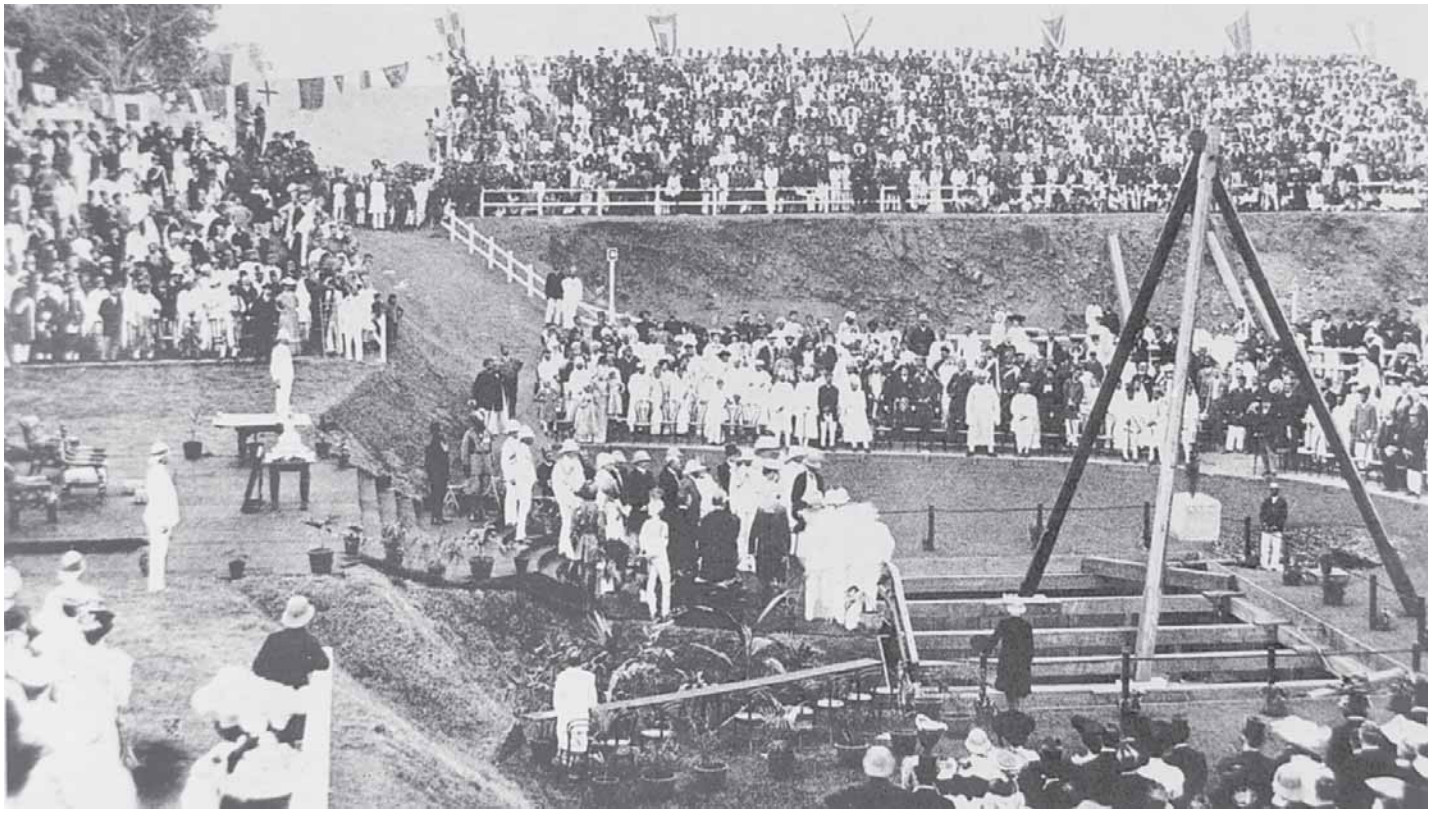
What is interesting is that the excavation for the construction of the Prince's Dock revealed a submerged petrified forest; some 380 trees were counted, most of which was overlain by a thick stratum of clay. This lends support to the theory that the Bombay Harbour was once a thickly wooded valley which submerged below the sea due to the tilting of the land mass. No information is available as to when this could have happened in the long history of India.

It is however, something to ponder over that the seven islands of Bombay, not to speak of the seas around them were once deeply wooded.

The Prince's Dock was opened to traffic for the first time on January 1, 1880 but, according to an earlier historian "several unfortunate accidents occurred to the steamers taking part in the procession which so prejudiced the public mind that the dock was practically boycotted for a fortnight". Unfortunately these "unfortunate accidents" have not been detailed and readers are largely left to the comforts of their imagination. But the BPT authorities quickly enlisted the services of Messrs Graham & Co and they were kind enough to send an Anchor Line ship *Italia* into the dock on January 13, followed shortly by other ships belonging both to Anchor Line and Hall Lines to break the voodoo.

The Port Trust was able to convince the users of the great advantages afforded by the Dock and therefore to patronise it. Nevertheless the P&O and BI ships still kept away from the dock for some more time. The Port Trust was so grateful to Messrs Graham & Co for

Foundation Stone Ceremony Alexandra Dock, Novermber 13, 1905.



Foundation stone for Alexandra Dock being laid. Note the large number of Britishers present on the occasion. Courtesy: Bombay City Corner

their cooperation that they were allocated two wharves on the west side of the dock and also granted free entrance to their ships for a certain period and an "exceptionally reduced rate thereafter"*.

Consequent upon the acquisition of the foreshore properties and the opening of the Prince's Dock, the financial difficulties of the Port Trust disappeared and a succession of surpluses enabled it to appropriate large sums from revenue to meet capital expenditure, despite handsome reductions in the charges to the trade. Trade was doing very well and business was prospering to a remarkable degree. So rapid was the growth of Port's trade that within hardly 18 months of the Port's opening, the Prince's Dock was found inadequate to meet the needs of shipping. It was therefore decided to construct yet another dock adjacent to the Prince's Dock on the south side. It was decided to name it after the reigning queen, Victoria. The construction of the Victoria Dock was commenced in January 1885. The ceremony of admitting water into the dock was performed by Lord Reay, the Governor of Bombay, on 21 January 1888. The Lord's name, it would be remembered was subsequently perpetuated by naming a road after him. The Dock itself was opened to traffic on March 12, 1888.

It had a water area of 10.12 hectares and capacity to accommodate vessels of 7.3 metres draft. The Prince's and the Victoria Docks, which are connected by a communication passage so as to form an integrated dock system, have a single pair of mitre gates each and are semi-tidal. The Dock absorbed the old Masjid Bunder and Nicol Bunders, and the material excavated in its construction was mainly utilised for forming large jetties in Mody Bay, an excellent example of using what would otherwise have been considered wastage to constructive purpose. And yet the business and trade curve kept rising steadily and at the turn of the century the need for even more and better port facilities came to be keenly felt.

The times were such that there was excitement in the air. The Suez Canal had been deepened to 9 metres (30 ft) and not only was the draft of the vessels increasing but they were

* *The historian of the Bombay Chamber of Commerce writes: "At the opening ceremony some vessels taking part in the procession collided and suffered minor damage. This also alarmed the marine underwriters that for a fortnight the new dock was entirely boycotted as too dangerous for shipping. Vested interests were quick to take advantage of the situation and piece-good merchants and others refused to take delivery of goods landed at the docks. The port trustees could only induce one of the big shipping lines to send their ships to the new dock by exempting them from dock dues and after the Governor of Bombay had given his personal guarantee against damage or detention to cargo...."*

also been built longer. In forty years of peace trade and commerce were increasing by leaps and bounds. It was the heyday of British expansionism all over the world and yet one more dock seemed necessary to handle incoming ships. Architects once again poured over their drawing boards and plans for the construction of "New Docks", later to be named the Alexandra Dock (and still later, in 1972, to be re-named as Indira Dock) were drawn up. The work was entrusted to the Port Trust Consultants, Messrs Sir J Wolfe Barry and A J Barry and approved by the trustees on June 1, 1905, thus allowing a contract time of 7 years. A bonus of Rs 2 lakhs was promised for completion of the work on time. If the work was completed a year ahead of its schedule a bonus of Rs 4 lahks was assured. In 1905 it was decided to increase the width of the dock from 27 metres (90 ft) to 30 metres (100 ft).

Dewatering of the working area of the dock began in 1907 after considerable trouble, the original pumping equipment having to be augmented with a fresh consignment of pumps from England. Such was India's dependency on England for all engineering efforts. The labour force on the construction numbered over 8,000 men during the time of maximum progress and the labour force had literally to be imported from outside, which was no easy job. Indeed because of the difficulties involved in getting suitable labour, progress suffered in the concluding stages of work and the contract time was extended by a year.

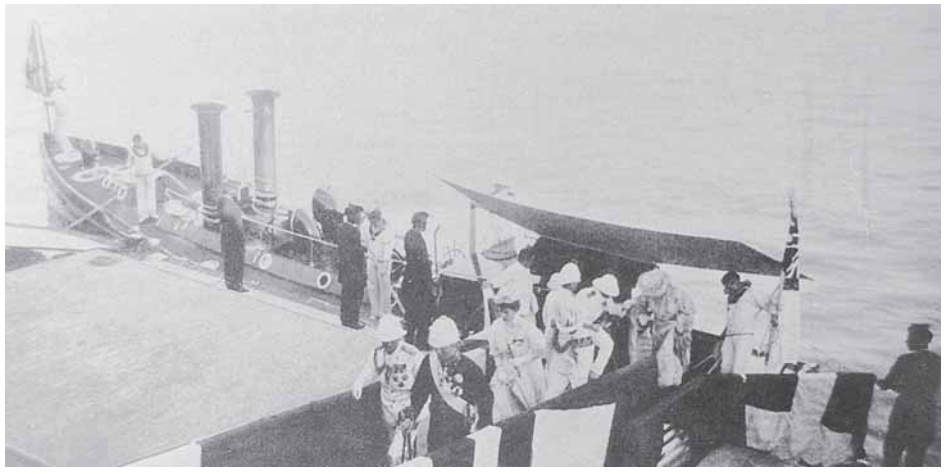
The foundation stone was laid in November 1905 by the then Prince of Wales. The Chairman of the Trust was the Hon Mr W C Hughes and the Trustees were N J Gamadia, F Ritchie, H E E Proctor, Currimbhoy Ibrahim, Capt Hewett, R N, the Hon. Mr C H Armstrong, J S Brown, F W Hickel, W D Sheppard, P R Cadell, and R G Monteath. Addressing the august gathering of Bombay celebrities, His Majesty (then Prince of Wales) said:

> The times were such that there was excitement in the air. The Suez Canal had been deepened to 9 metres (30 ft) and not only was the draft of the vessels increasing but they were also being built longer.

The Princess of Wales and I are much pleased to be present here to lay the foundation stone of this new Dock, which I understand is to be one of the largest in the world, and we heartily wish all success to the great enterprise with which we are now associated. It is a further development of the scheme so wisely initiated by Sir Seymour Fitzgerald and Lord Mayo in the constitution of Port Trust, more than 36 years ago.

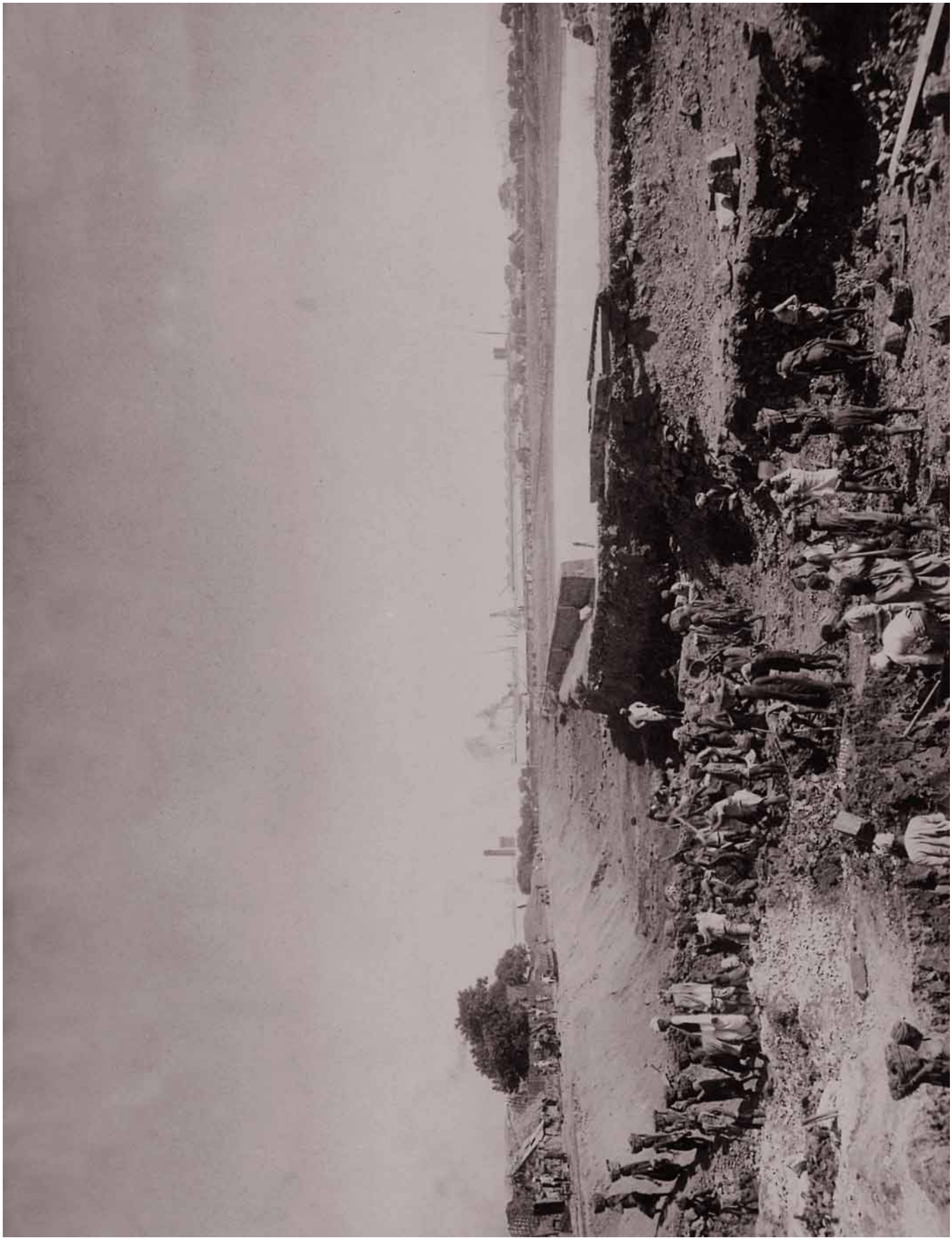
There is to us an additional satisfaction in performing this ceremony, when we remember that the King-Emperor, on the occasion of his visit to Bombay in 1875, laid the foundation stone of your first great Dock which has since been known as the Prince's Dock. I congratulate the city of Bombay upon the most unprecedented increase in her seaborne trade since that time.

As a sailor I am especially interested to hear that this new dock is designed to meet not only the requirement of the Mercantile Marine, but also the Royal Navy; and will be able to accommodate the largest of our battleships. You, Mr Chairman, and your co-Trustees, are to be complimented on your far-seeing policy. For, profiting by past experiences, you have determined that the work which we now inaugurate shall not be calculated for present demands alone, but be sufficient to meet all possible needs and development of commerce for many years to come. The fact that the suggestion of the Board of Admiralty to increase the width of the entrance of the new Wet and Dry Docks from 90 to 100 ft was readily complied with is, indeed, a proof that a spirit of patriotism inspires the administration of the Trust.



Royal visitors Prince of Wales and King George V Emperor of India alighting from a boat at Apollo Bunder; they were received by Viceroy Lord Curzon 9th November 1905.

Courtesy: Bombay City Corner



Construction of east arm of the Alexandra Dock (3 Nov. 1905) from reclaimed land.

Alexandra Dock — Aerial View looking South to Colaba Point.

I am glad to know that your resources are such that there is no anticipation of this enlargement of the Port facilities increasing the charges levied upon trade.

The decision that the name of this extension to the Prince's and Victoria Docks shall be 'Alexandra Dock' will, I am sure, be most gratifying to my dear mother. I thank you sincerely for the cordial reception you have given to the Princess and myself and for the beautiful and artistic casket containing the addresses which we shall greatly value as the specimen of the work of the School of Art and your City.

There was nothing particularly "patriotic" in the decision of the Board of Trustee to agree to the suggestion of the Board of Admiralty to increase the width of the entrance of the new Docks to allow British warships to enter. The "suggestion" was more of an order, politely worded. What the British were doing was merely protecting their imperial interests and the BPT Trustees were only meekly obeying orders from London. If the trade and international shipping were helped in the process, that was purely incidental.

In 1911 the Trustees decided to construct a communicating passage between Alexandra and Victoria Docks through Carnac Basin and plans and estimates were submitted to the Government. A start was also made on the construction, but was abandoned before much of the work could be done. Alexandra Dock was eventually completed in 1914 and was opened by the Viceroy on 21 March of the same year. Sarajevo and the First World War was yet in the womb of time.

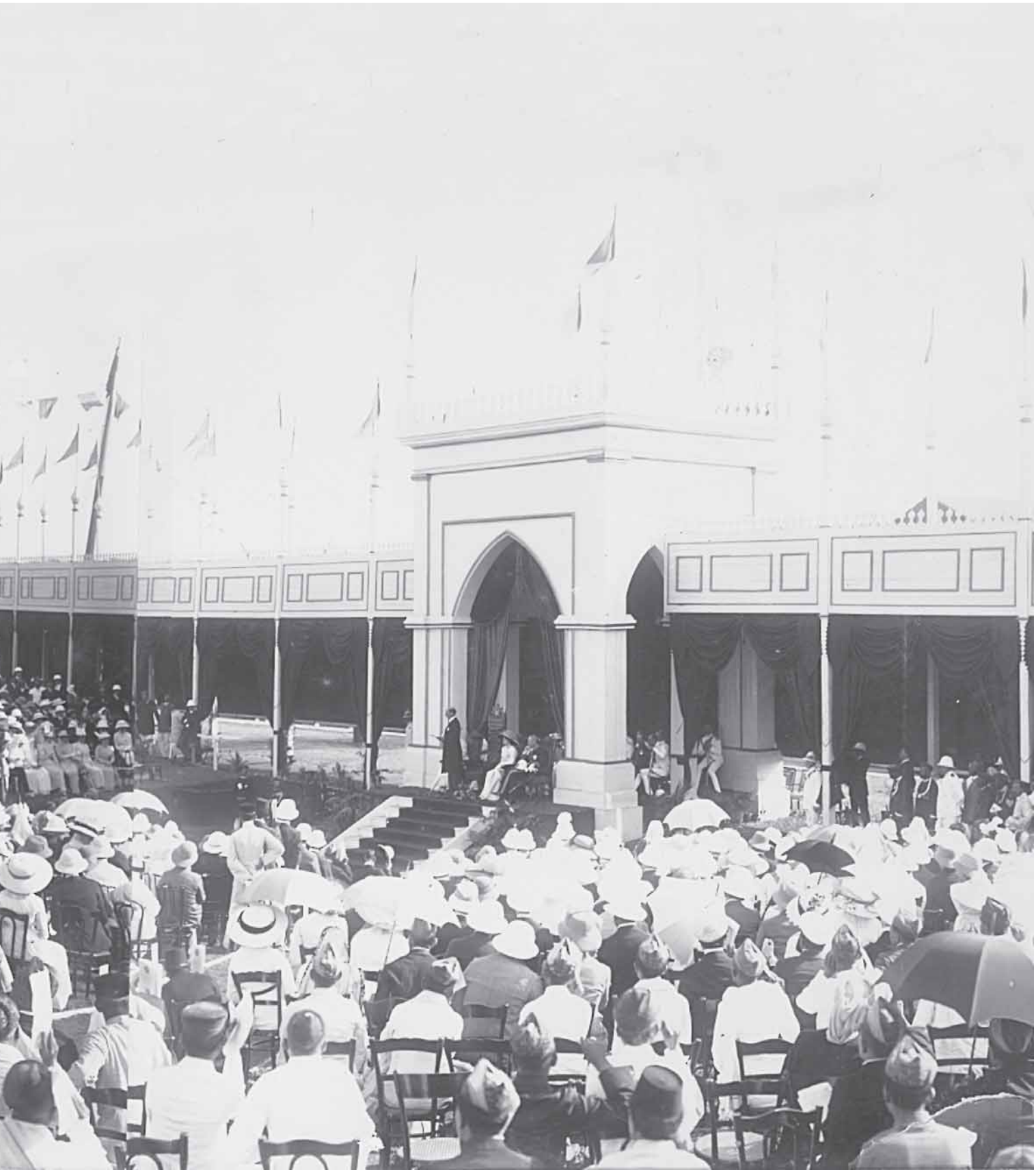
What was to have been completed in seven years took nine years and the cost escalated to Rs 9 crore, or almost three times the original estimate. The dock had a water area of 20 hectares, 17 berths in the wet basin and 6 berths along the harbour wall; including 3 ferry wharf berths. It was equipped with an entrance lock admeasuring 228 metres in length and 30 metres in width and the Dock was designed to accommodate vessels drawing upto 9.14 metres of water in the Wet Basin. A second dry dock, called the Hughes Dry Dock, admeasuring 304.80 metres in length and 30 metres in width and divisible into two compartments, was also constructed as part of Alexandra Dock, running parallel to the entrance lock. The Ballard Pier, constructed at the same time as part of the Alexandra Dock, was a southward extension of the west arm of the entrance lock and provided a 243.84 metre long berth for accommodating large passenger vessels, drawing upto 10.36 metres of water. The first ship, incidentally, to enter Alexandra Dock was the *S S Lhasa* of 2,185 GRT.

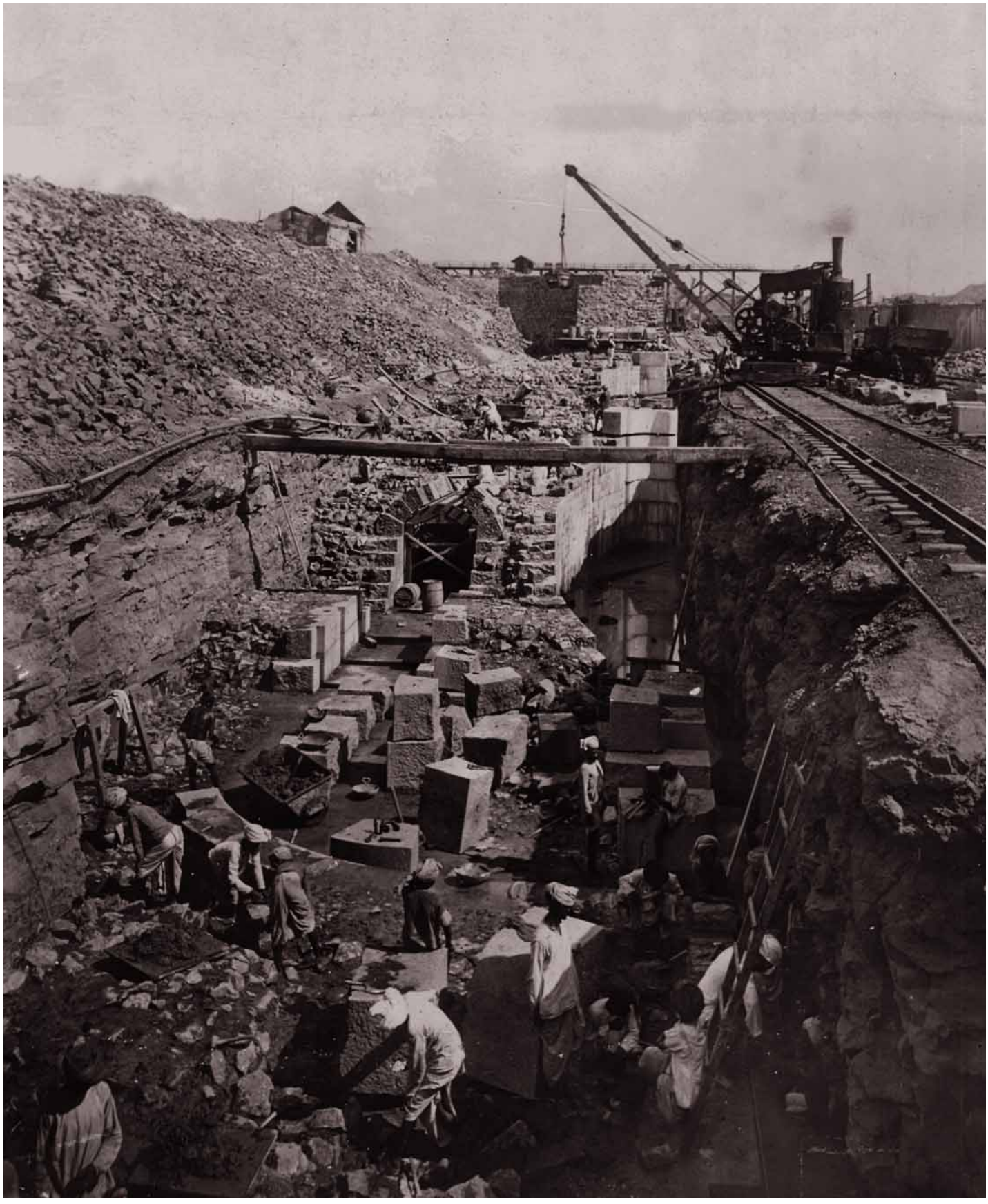
The bronze equestrian figure of Albert Edward, the Prince of Wales, by Sir Joseph Edgar Boehm, R. A. was recently relocated to an oval garden directly at the entrance to the Jijamata Bhonsle Udyan, Bombay.

British Royalty was always closely associated with Bombay. It was Edward, Prince of Wales, son of Queen Victoria who was to rule India from 1910 onwards; it was he who had come to lay the foundation stone of the Prince's Dock way back in 1875. It was this Prince's statue, known as **Kala Ghoda**, that once adorned the traffic island in front of the Sassoon Library and was removed in the fifties as a result of popular agitation. But when he came to Bombay in November 1875 he was presented with an address by Bombay's city Fathers. The Address said:

Bombay may lay claim to the distinction of being a royal city; for this island first became an appendage of the Crown of England, through forming part of the dowry of Charles

The Alexandra Dock (named after Queen Alexandra) was formally opened in 1914 before a distinguished audience many of whom were British (note the sun hats worn by them and the umbrellas carried by the ladies). Picture shows the then Viceroy, Lord Hardinge reading the address.





Construction work seemed to be never ending in the first quarter of the 20th century. Picture shows Hughes Dry Dock under construction (19 April 1910).

the Second's Portuguese bride; and during the two centuries that have elapsed since then, Bombay had every reason to be grateful for this fortunate change in her destiny. From a barren rock whose only wealth consisted of coconuts and dried fish, whose scanty population of 10,000 souls paid a total revenue to the State of not more than 60,000 pounds a year, whose trade was of less value than that of Thana and Bassein, and whose climate was so deadly to Europeans that two monsoons were said to be the age of a man, she has blossomed into a fair and wholesome city, with a population which makes her rank next to London among the cities of the British Empire, with a municipal revenue amounting to 30,000 pounds a year, and with a foreign commerce worth forty five millions and yielding in customs duties to the Imperial treasury three million a year.

That was no exaggeration. Bombay was thriving — and so was its port. The year 1891 was a bumper year for the city — the cotton crop was till then the second largest ever known and exports were very much above average. Shipments of wheat were the largest ever made and those of seeds, groundnut and other produce were also heavy, so that total exports for the year reached Rs 41 crore while the tonnage cleared from the port was nearly 50 per cent over that of the two previous years.

Tragedy Strikes

But tragedy was to strike Bombay — and through its port. It was the appearance of bubonic plague which was first noticed in August 1896 and was to prove disastrous to trade and to the fortunes of the Port Trust. Very little was then known about the nature and cause of the disease which was probably brought to Bombay by rats on grain ships from Hong Kong. The plague spread quick and fast causing citizens to flee the city in terror. This exodus, along with the quarantine notified by both Indian and foreign ports against imports from Bombay threatened the already semi-paralysed trade and manufacture of the city with extinction.

The Bombay Chamber of Commerce understandably was among the first to move in the matter, leading a delegation to the Governor of Bombay, Lord Sandhurst, to seek ample allocation of funds for medical and sanitation purposes. One of the Chamber's representatives in Bombay Municipal Corporation, P D Saville, visited the worst parts of the city and watched some 3,000 men at work, lime-washing houses and burning rubbish, labouring at the risk of their lives to fight the dreaded disease. The Government appointed a plague committee in March 1897 but its efforts were sadly obstructed by the crowded population of the city, the poverty and habits of the people, their objection to hospitals and to segregation and observation camps. The wholesale flight of mill workers led to open bidding for labour at street corners. But not even daily payment of wages, free rations and sleeping accommodation could tempt the workers to remain at their posts. In one week alone, 10,000 persons fled the island of Bombay and it is estimated that at one time, the normal population of about 9,000,000 was reduced by more than half.

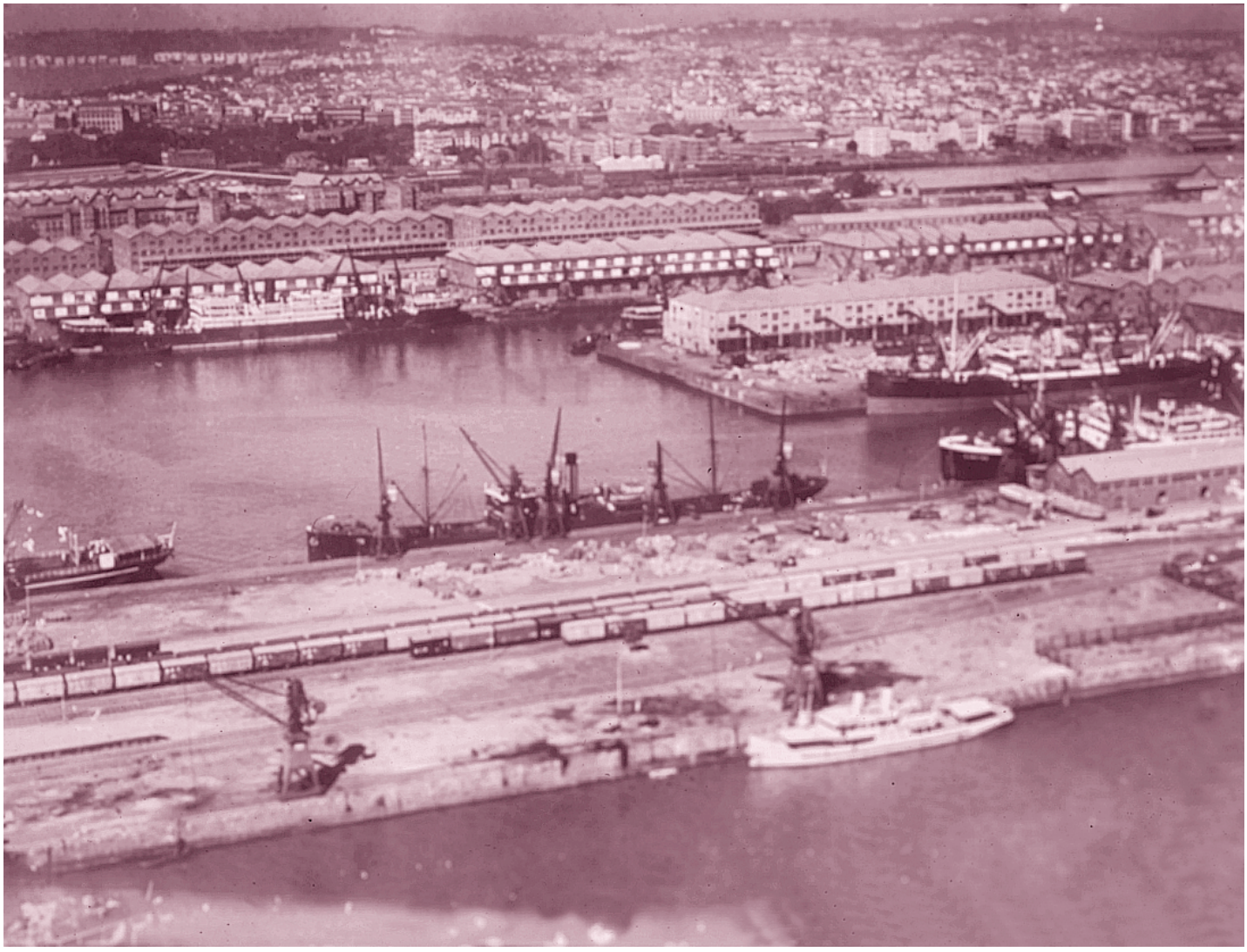
> "The Princess of Wales and I are much pleased to be present here to lay the foundation stone of this new Dock, which I understand is to be one of the largest in the world, and we heartily wish all success to the great enterprise with which we are now associated."

The exodus of people, of course, also affected the working of the port. In February 1898 efforts began to be made to persuade people to be inoculated with the newly-discovered Professor Haffkine serum. The government wanted it to be purely on a voluntary basis but later Lord Sydenham was to declare himself in favour of inoculation as the only efficacious remedy against plague.

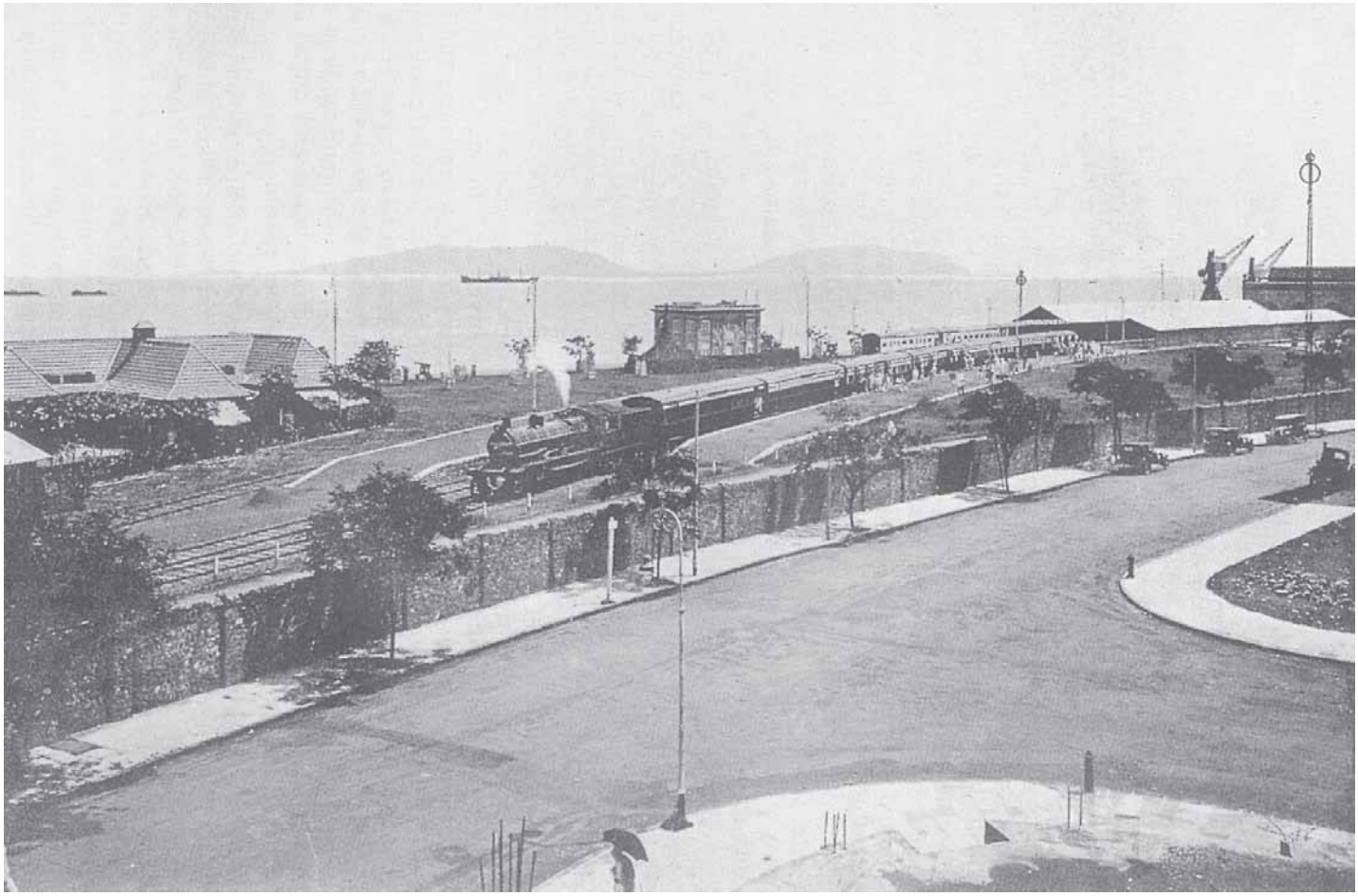
The plague was still on when another tragedy struck the state. This was the failure of the monsoon in 1899 resulting in one of the worst famines India had ever known, far worse than the grave one of 1896-97. According to the Bombay Chamber of Commerce, the effects on business were more serious than those resulting from the plague. In some districts that usually drew their supplies from Bombay, the drought was absolutely devastating. Cattle died in large numbers "to which there was no parallel in existing records". According to one authority, the mortality of cattle in the Bombay Presidency would be under-estimated at 1,800,000. The famous Gujarat breed of cows almost disappeared. The effects of the famine with which the century closed were calamitous for Bombay's trade. Imports and exports alike showed a great falling off and the purchasing power of the people was reduced to a minimum. Exports of wheat disappeared entirely. In 1899-1900 arrivals of cotton and exports alike declined by almost 5 per cent.

As always happens, Bombay recovered from the effects of both the plague and the drought. Business picked up and the Port activities increased. It was then realised that arrangements for connecting the goods yards of the main railways with the dock sidings were extremely defective. The goods yard of the Great Indian Peninsular (GIP) Railways at Wadi Bunder, immediately contiguous to the docks was aligned at right angles to the lines of sidings serving the dock berths, while the Bombay Baroda & Central India (BB&CI) Railway's goods terminus could connect with the dock berths only by running over a portion of the GIP Railway. A scheme for the construction of a Port Railway had been mooted as early as in 1894 but the GIP Railway was opposed to the idea. It was only after a Commission appointed by the Government to look into the matter established the necessity of a Port Railway that it was finally taken up. According to the Port historian, Shantaram Chittar, this was how the problem was solved:

> *As originally proposed, the new line was to be in two sections; viz, the GIP Railway Harbour Branch line extending from Kurla to the proposed new goods depot of the Port Trust at Mazagaon, with a chord connection to the BB&CI Railway, and the Port Trust Railway extending from the Prince's and Victoria Docks to a goods depot to be constructed at Mazagaon, a distance of about 4.8 kilometers (3 miles). Subsequently it was decided to extend the Port Trust Railway upto Wadala where a capacious marshalling yard was provided. Though small in size, with a route mileage of 7 miles (11.3 kilometers), the Port Trust Railway handles the major portion of Bombay's rail-borne traffic. It has also contributed materially to the development of the Trustees' landed estates to the north of the docks by attracting numerous*



Aerial view of Alexandra (Indira) Dock and city



To accommodate incoming passengers from Europe, railway tracks were laid right up to Ballard Pier. Passengers could disembark from ships and get into the train waiting right outside the Pier. The passengers bound for places north – mostly Britishers, were thus pampered.

industries. The Port Trust Railway was commissioned with effect from 1st January 1915.

Then came the construction of Ballard Pier.

The Ballard Pier was originally a small pier behind the present Ballard Pier, with an approach jetty at right angles to the pier running eastwards from a point south of the present Nicol Road. Subsequently it formed part of the Ballard Bunder, opposite the present Custom House, which was absorbed in the Indian Naval Dockyard in the 1950s.

The Ballard Pier that was to be the arrival and take-off point for countless ships was originally intended for the greater convenience in landing passengers. The new Ballard Pier was built by extending the old one by 825 feet seaward to form the southern boundary of the area reclaimed by the material excavated in the construction of the Alexandra Dock and named the Ballard Estate.

For years Ballard Pier was to be the centre of business activity, not just in Bombay but all of India. Approximately 22 acres in extent it was laid out as a first class business centre and with its forty three blocks of handsome office buildings, all designed in keeping, and broad, well-kept thoroughfare, it could claim to be one of the finest business estates in all of Asia at that time. Here were located the Customs House — one of the most striking of Bombay's public buildings of that period — the spacious offices of Messrs Mackinnon Mackensie & Co, Agents then of the P&O and the British India Steamship Navigation Companies, the offices of the Lloyd Triestino, Burmah Shell and many others. The Grand Hotel to this day occupies a large corner site and next to the Custom House is the Port Trust War Memorial.

For years Ballard Pier was literally the Gateway to India to all travellers who came by ship. The transoceanic passenger traffic of the port was mostly dealt with here. The berth was dredged to 32 ft at low water and could accommodate the largest vessel visiting the port. Immediately fronting the berth was a handsome two-storeyed building divided internally into a Central reception Hall, a Customs Examina-

As with passengers, so with mail which was unloaded straight from the holds of a ship into a waiting mail train at Ballard Pier station.

tion Hall and a Railway Concourse which linked the main building with the adjoining railway station. The upper floor was occupied by the foreign mail sorting office of the Postal Department, a restaurant and retiring rooms for passengers.

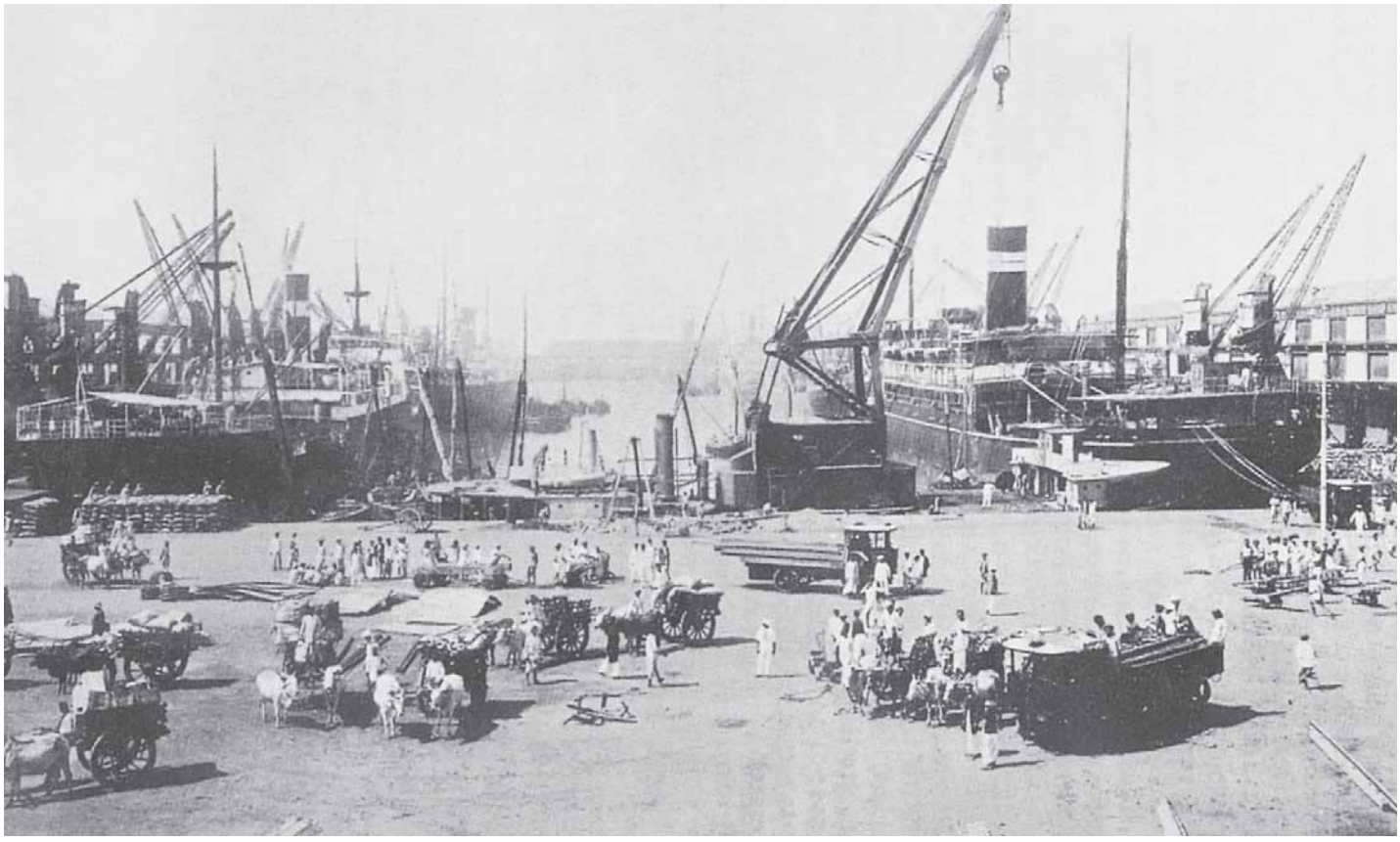
The arrangements at Ballard Pier for the arrival and departure of passengers were designed to provide the maximum of convenience and minimum of delay in clearance and despatch of baggage. The incoming passenger, within an hour of the ship making fast alongside the pier, would find his luggage neatly piled on the benches in the Examination Hall under the serial numbers previously allotted on board. Examination was expeditiously carried out by the large staff of Customs examiners deputed for this purpose; the declaration forms filled in on board the day prior to arrival were kept ready tabulated at the Customs counter and after payment of any duty which may have been liable, the form was counter-signed and returned to its owner and his baggage was then initialled and passed out by the Customs Officer in charge. In case of passenger outward bound, the vessel was usually berthed at the Pier the night before sailing and heavy advance luggage was loaded before the passenger embarked.

The railway station adjoining the Pier had four covered platforms whence, on mail days, special through trains left for and arrived from Calcutta, Delhi, Peshawar and most of the principal centres of India. Booking and Information Offices were situated in the Central Hall. The regular services on the arrival and departure days of the English Mail consisted of the GIP Railway Company's Imperial Indian Mail and the BB&CI Railway's Frontier Mail. These trains-deluxe ran between Bombay and Peshawar (via Baroda and Delhi), respectively. Peshawar was important as the British had troops in and around the city.

It was another world.

By 1950 the Pier had become redundant. With independence, the to and fro movements of the British troops had become a thing of the past. People no longer travelled by sea. Ballard Pier had lost its relevance, though it is all there, should a stray ship like **Queen Elizabeth II** happen to drop anchor.

The revenue history of the Port Trust during its first forty years is a tale of steady progress except for the hiccups during 1897-98 because of the famine and outbreak of plague. The initial financial difficulties of the Board disappeared with the

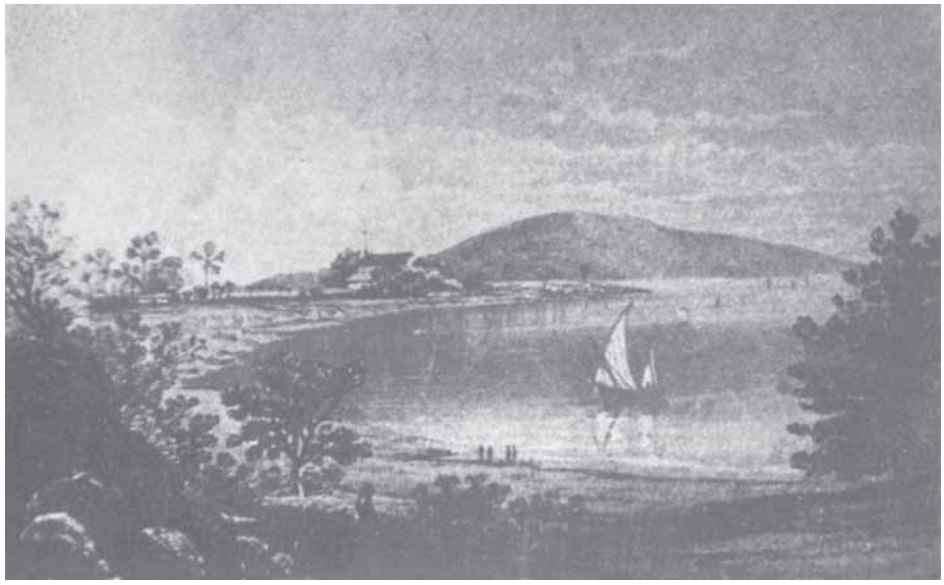


Shipping at the West and Jetty Wharves, Alexandra Dock, with the Port Trust 60-ton floating crane at work (1925).

Cargo from coastal towns all down the West Coast were down-loaded at Mallet Bunder and taken away in bullock carts (1920).

acquisition of the rights of private foreshore owners in 1879-80 and the opening of the Prince's Dock on 1 January 1880. In the history of the Bombay Port Trust the name of Elphinstone Land and Press Company will never be forgotten. It was a power by itself. By 1871, the Elphinstone Land Estate comprised more than a hundred building plots, nine miles of road and ten miles of drain. Its dock estate alone comprised seventy one acres of wharf and sites for sheds and godowns and ten acres of metalled wharf. It also possessed six acres of shed and two miles of permanent wharf walls, forming two basins and a landing place. By 1871 the whole area reclaimed and renovated under the Elphinstone scheme amounted to 384 acres which included 276 acres of land, 65 acres of basin and 45 acres of old *bunders.* These had to be purchased.

After 1880 the Port Trust had a succession of surpluses only interrupted by a slight set-back in 1889-90 on account of the considerable increase in debt charges consequent on the completion of the Victoria Dock, and the aforementioned problems created by the famine. But from 1898 the port made an unbroken series of surpluses and substantial reserves were built up despite reduction in charges to shipping and trade wherever such reduction was called for. A Sinking Fund was also created for the repayment of the loans taken for the Port's development and expansion. And the financial prosperity of the Board was materially assisted by the steadily increasing receipts from the landed estates.

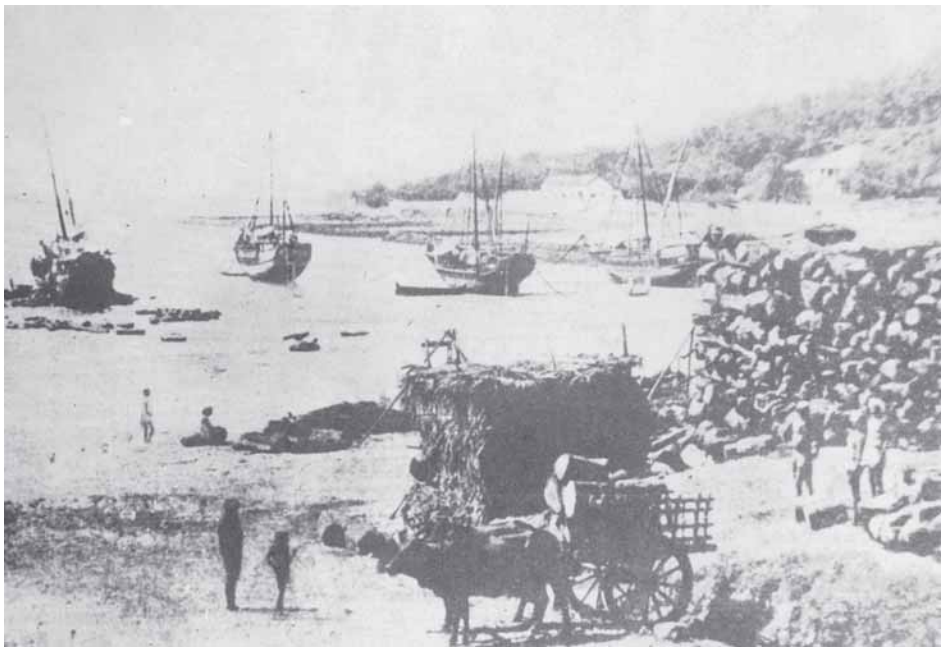


Sewri Bunder (1772).

According to an earlier history of the Port, the traffic handled at the Bombay Port also showed a steady progress from 1900-01 to 1913-14, the total imports and exports increasing from 3.50 million tons in 1900-01 to 5.10 million tons in 1913-14.

The increase was more remarkable under exports which by 1913-14 stood at twice the figure at the turn of the century. Imports, however fluctuated around 2.6 million tons. The total value of imports and exports increased from Rs 53 crores in 1900-01 to Rs. 95 crores by 1909-10 and to Rs 132 crores by 1913-14.

Mention has been made of *bunders* which have a history of their own. In mid-nineteenth century the many bays of Bombay Island served as harbours and docks for both country boats and European sailing boats and steamships. Among the most frequented and important for trade were the town Customs House Bunder where, in the late 1840s docked as many as 114 country boats



Lakdi Bunder, Girgaon Chowpaty (1864) Courtesy: Municipal Corporation of Greater Bombay

Aerial view of Prince's & Victoria Dock with Camac Bunder in Foreground June 1938.

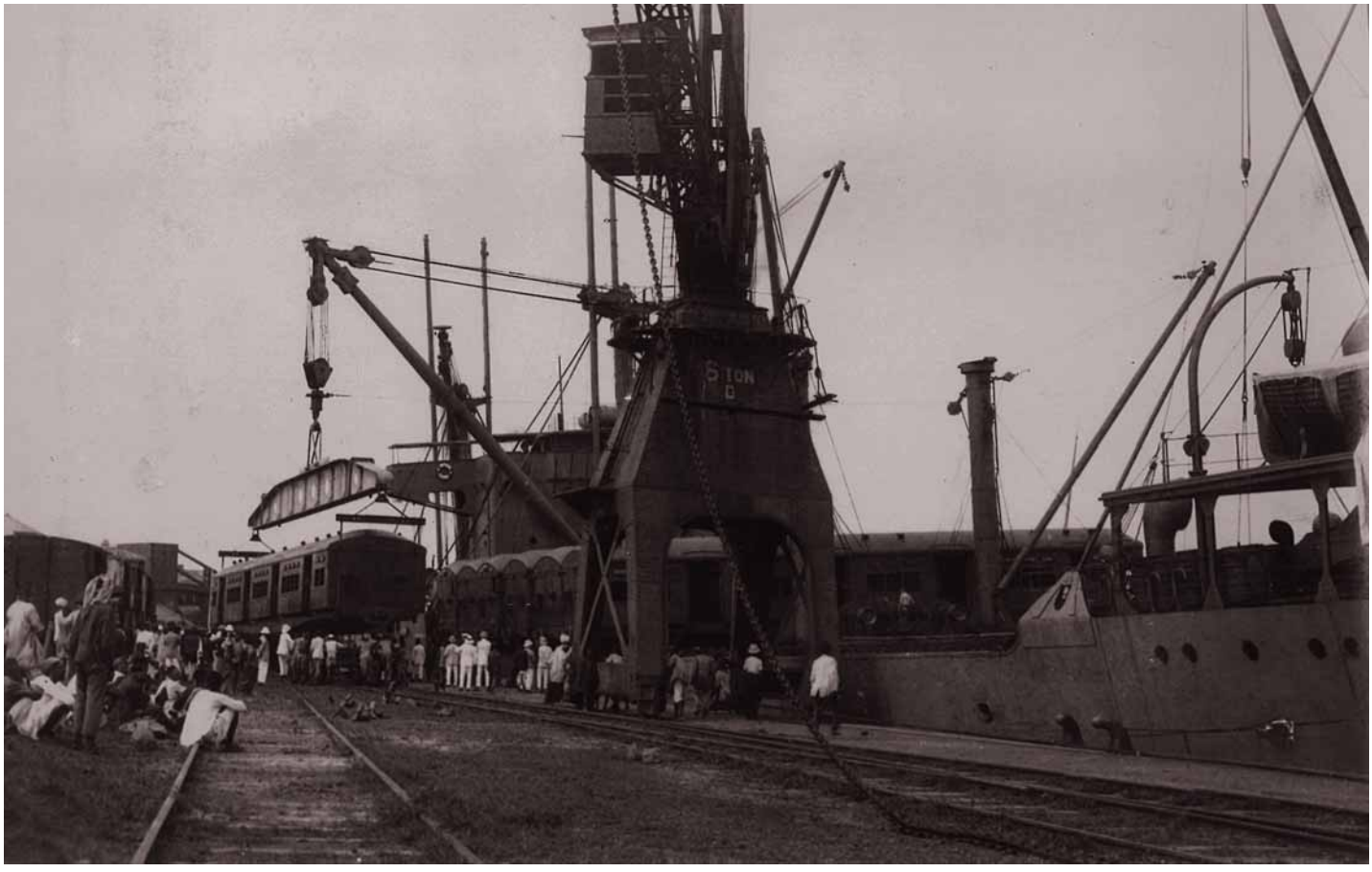
and 30 European ships. Another 215 country ships and eight steamers docked at Bori Bunder, 100 country boats at Apollo Bunder and 110 country boats at Masjid Bunder. More than 20 *bunders*, were listed as being in use for Bombay's trade in the mid-nineteenth century.

Inevitably there was a considerable amount of smuggling which posed an administrative headache to the government. While many persons were known to be involved in smuggling, there was one notorious gang known as the **Bunder Gang** which alone deprived the government of an estimated 20 lakh rupees annually!

Part of the reason for widespread smuggling were the complicated and time-consuming Customs procedures to which merchants were subjected. It was easier to get needed goods landed surreptitiously at the numerous and unguarded bays which indented Bombay Island. One item of particular use was tobacco which was smuggled into Bombay from nearby ports. Then there was *chunam* and other articles of everyday use like firewood which were smuggled in at the Back Bay. And often — such is human nature which has evidently never changed! — Customs officers were in league with smugglers making it all the more difficult for the government to take action.

And who were the people who needed goods from outside? The Bombay Municipal Corporation's list — the one made by 1849-50 — included the following: butchers, carpenters, cloth traders, coach and *palki* manufacturers, coppersmiths, dyers, European shop owners, firewood sellers, goldsmiths, grain traders, ironsmiths, liquor sellers, milkmen, pawnbrokers, shoemakers, tailors, tobacco and *ganja* sellers and weavers. One would presume that ganja sellers in particular needed smuggled *ganja* from outside!

As the years passed, considerable improvement in *bunders* were effected in order to make them more serviceable to trade and shipping. Like most other foreshore properties on the Port Trust Estate, these *bunders* were "pushed into the sea" by reclamation. Their original position was west of Frere Road and, in 1875, at the constitution of the Trust, there were important port facilities for the landing and shipment of Bombay merchandise. The extent of these *bunders,* however, had to be curtailed



Time was when India did not build its own railway coaches which has to be imported from Britain. Picture shows these coaches being unloaded at Alexandra Docks.

considerably to make room for the new docks that succeeded them. Prince's Dock to the north and Alexandra Dock to the south absorbed large sections of the two original bunder properties; and Clare Bunder warehouse on Clive Road marked the first important wharf godown accommodation provided for the trade of Bombay.

Bunders are made for country craft and, according to one estimate, provide an aggregate quayage of 41,000 lineal feet and are equipped with cranes, sheds and other facilities for loading, unloading and storing cargo. The bunder traffic is an important item in the trade of the port.

The Great Depression

The interregnum between the two World Wars (1919-1939) did not witness any significant port development. It may be attributed to the Great Depression of 1929 that started in the United States and had repercussions all over the world. Unemployment stalked the land. Conditions in India were well described by the historian of the Bombay Chamber of Commerce:

> *When the first world war ended commerce and industry had a severe struggle to regain their lost freedom of action. The Chamber pressed for the removal of all except absolutely necessary forms of control and for the efficient working of such as were necessary. After the armistice the merchant in India was faced by peculiar difficulties. The prices of all manufactured articles fell heavily, demand for them was nominal and the condition of the distributing markets was depressed and at times, panicky. On the other side of the picture, the expected eager demand for India's raw materials did not at once make its appearance. The depression in India was aggravated by scarcity of foodstuffs and amounting in some districts to famine.*

There was also problem with labour. Towards the end of the war the labour supply began to give increasing cause for anxiety. At times there was a serious shortage of labour and much of it was of a purely casual character. All this was not without its repercussions on the fortunes of Bombay Port.

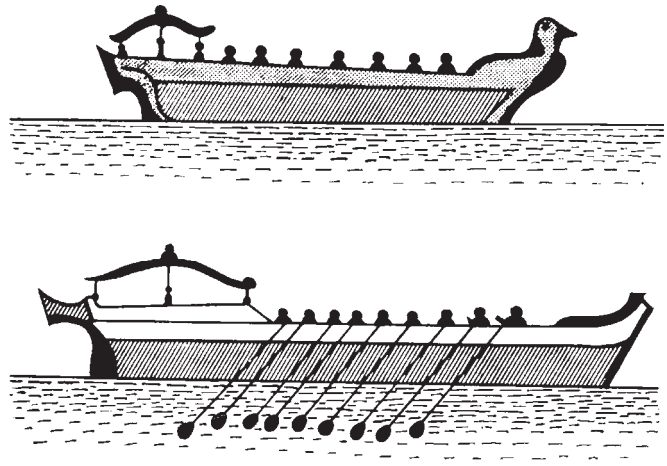
At the same time an industrial depression set in from 1937, with over-production in sugar, a crisis in cement and stagnation in textiles. The limit of growth through import — suscitation in consumer goods industries had also been reached. The traffic of Bombay Port from 1915-16 to 1941-42 shows many ups and downs. During World War I the traffic declined sharply, despite an increase in the exports during the last two years of the war. From 5.02 million tons in 1913-14 the total traffic plummeted to 4.01 million tons in 1915-16 and stood at 4.15 million tons in 1918-19. Though the declining trend persisted for a short while even after the termination of the War in November 1918, the traffic picked up rapidly and the figure for 1919-20 rose to 6.25 million tons, registering a substantial increase over the pre-war level. The increased volume was maintained till 1929-30 when it reached 6.69 million tons.

Country Crafts

A wide variety of country craft make use of the bunders, like the *Battela,* the *Macchva* or *Machava,* the *Sabuk* and the *Toni.* Each has a history of its own.

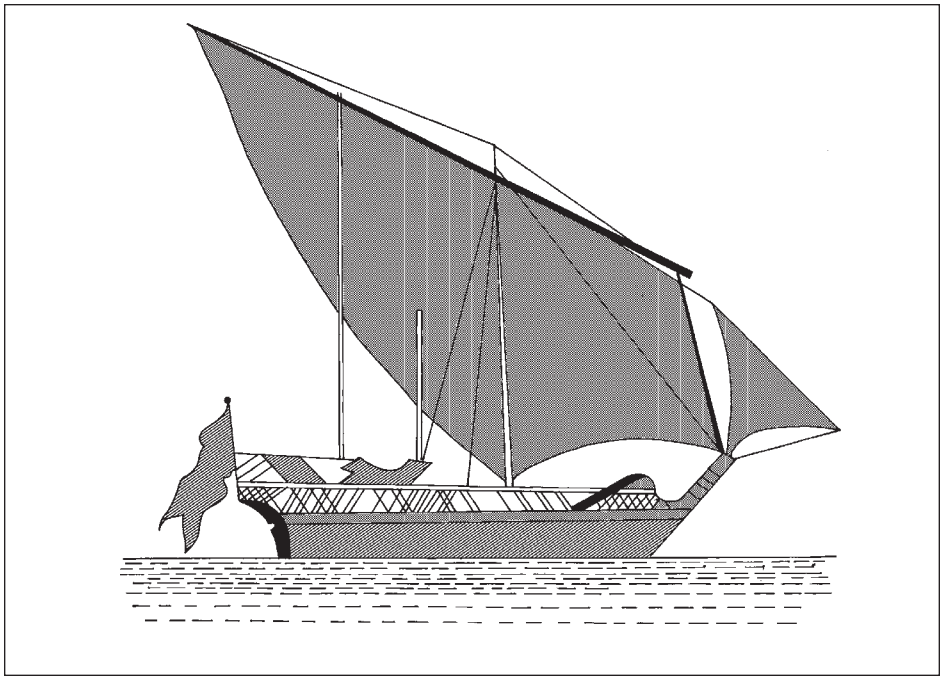
The word *Battela* comes from the Portuguese *Batel* or boat. It is also similar to the French *Bateau* or the Celtic *bat*. It has been said that the Indian *Battela* bears the same shape as the vessel in which Vasco da Gama came to India.

Battelas are two-masted ships with high perched boltsprits, perfectly open, with high bows surmounted by a circular stem head ornament and square sterns. They have no proper decked poops or forecastles, but the



The smallest of the Maratha period seems to have changed its function according to its size. The smallest machavas *was employed for fishing and was known as* Kola *or* Koli machava. *The biggest one with guns on board could be turned into a warship. In 1739, the* machavas *described to have six guns and powder in its stock. It could carry 50 men. With the passage of time, the* machava *fell into misuse as a fighting vessel. Its tonnage varied from 10 to 12* khandis *(2½ to 3 tons).*

Courtesy: State Board for Literature and Culture
Government of Maharashtra, Sachivalaya, Mumbai



This is a merchant battela *with 30 crew. For storing the cargo more than half the* battela *has roofing. It has a high deck with a flag fluttering from its backside. No guns are seen in the drawing. The* battela *carries a large lateen sail and a jib-sail supported by a boom. The nationality of the* battela *is not known.*

side planking is carried up about two feet higher than in amidships both forward and aft, leaving a space amidships which is filled up with a matting bulwark.

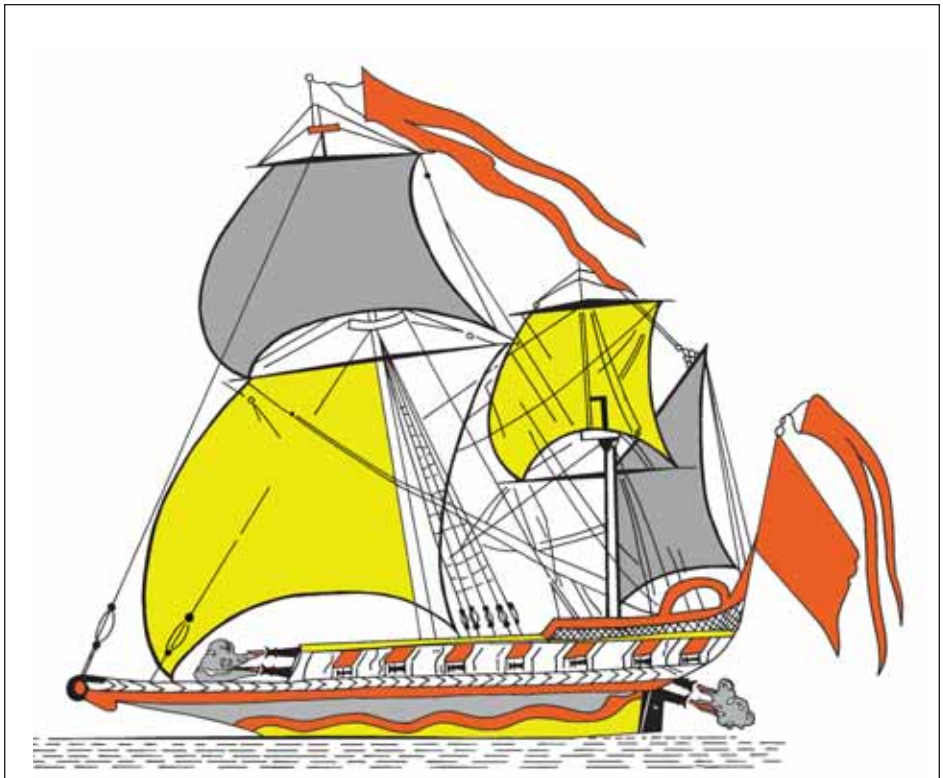
According to Low *(Indian Navy Vol I)*, in build the *Battela* is a very roughly constructed vessel, the ribs being practically undressed logs of jungle wood to which the side planking is fastened by iron nails and bolts, the inner ends of which are turned back to form a rivet fastening.

Forward and aft the vessel is built up about 2 ft higher than amidships. There is a covering board around the top of the side planking in the centre of the vessel and at a distance of every three feet along it, upright wooden stanchions are fitted, and to these a matting bulward is secured by lashings and the whole made water-tight by means of mud plastering on the inner side. The actual shape of the vessel as seen from the outside is thus completely hidden and only on close inspection will the bulk of the boat be properly distinguished.

Says Low: "Athwartship beams, forwards, amidships and aft give the necessary stiffening to the vessel. There are no properly decked portions. Forward and aft there are two spaces over the inner bottom of the vessel which are covered with loose planking forming two platforms. Under the former, firewood is kept and cooking done on top of it, while the after one forms a living and sleeping place for the crew. Bamboos and mats laid flat across the gunwale form a covering to the after platform".

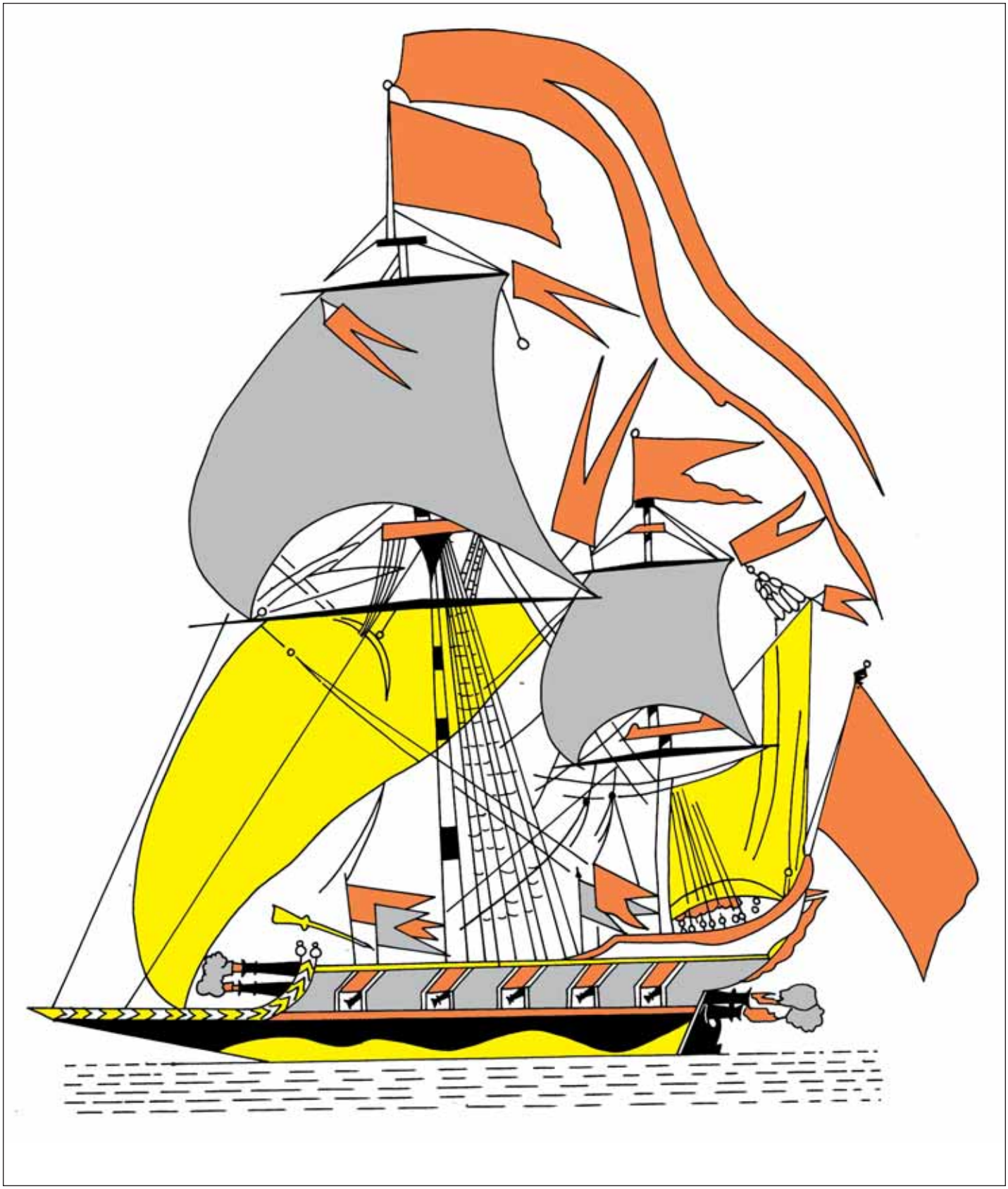
The *Battela* usually has two masts but occasionally it can have three, a small one being then stepped right aft. They rake forward slightly.

The yards are of the usual length and type except that they are usually single spars. The main yard is hoisted



This ship belonged to Manaji Angre, the Maratha Warrior. The Gurab is a two-masted vessel of low build; the seven broadside guns and those on the prow and stern, two each, are done in black. All sails are square. The cordage has pulleys for easy working.

Courtesy: State Board for Literature and Culture
Government of Maharashtra, Sachivalaya, Mumbai



The gurab *is well-equipped with cordage pulley and square sails. The masts are perpendicular to the hull and have two pieces. The fore-mast has a graceful ensign flowing from its top, so favourite with the Marathas.*

Courtesy: State Board for Literature and Culture Government of Maharashtra, Sachivalaya, Mumbai

by a double purchase, the lower block of which is secured by a coir rope strop to the foot of the mizzen mast. The mizzen yard is also hoisted by double purchase, the lower block of which is secured right aft.

Low provides a vivid description of the *Battela.* As regards its sails, he writes, "One large lateen shaped sail is carried on the main, a smaller on the mizzen and also a jib. The tack of the mainsail is brought down to the weather side of the stem head and the sheet to a rope strop shaft on the main mast. The mizzen tack comes down to a strop at the foot of the main mast and the sheet to the steerman's position aft. The tack of the jib is rove through a hole in the outer end of the boltsprit and the halyard taken to the main mast head.

No stay is fitted for the sail to hoist it. Battela's sails are generally baggy-looking and do not usually set as well as the majority of the sails of native vessels. They are unique in one particular, numbers of them having adopted roof points as used in European sails for reducing canvas in heavy weather".

Battelas have comparatively small crews. A vessel of 50 tons could have a crew of seven men who are paid by the trip, with the Tindal getting double shares.

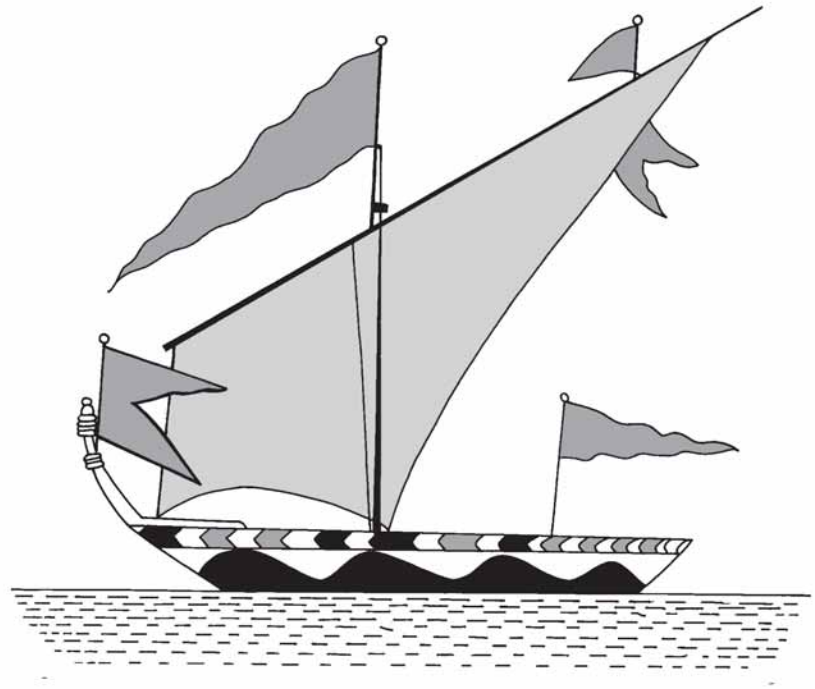
They range in size upto 100 tons and are built chiefly at Bassein, Dipla, Billimoria, Bulsar and Surat and are essentially fine weather vessels.

The *Machava* takes its name from the Sanskrit *Matsya Vaha* (fish carrier) and it is a harbour craft resembling a small Prow in appearance but without her exaggerated beam aft and having a high low, generally surmounted by an ornamental stem piece and rounded stern.

There are several varieties of vessels all collectively known as *machavas.* There are fishing *machavas* engaged only in fishing, cargo *machavas* which are chiefly employed in bringing sand and ballast, hay etc. and there are *machwas* which act as passenger boats ferrying passengers from Dharamtar and Panvel. They are all one-masted vessels much alike in build and rig, only differing in slight details suggested by the particular work they are engaged in.

The Port of Bombay, the journal of the Bombay Port Trust describes a *machava* as:

> *"The hulls are constructed of jungle wood planking, fastened by bolts to upright ribs of the same material, the whole being properly smoothed and planed and the planking caulked with raw cotton in the usual way. The top of the ribs and the side planking is properly levelled off and finished in a wide covering board, in every few feet of which holes are made to receive wooden uprights. These wooden stanchions support a plank bulwark which is lashed to round the vessel, being highest at the stern and tapering to a point forward. When loaded the cargo-carrying* Machava *frequently has her gunwale proper completely sub-merged, the water being kept*



The phatemar *was built at Bombay, Thana and the Ratnagiri ports. It was manned by Hindu, Muslim and Christian seamen.*
The peculiarity of the phatemar was the forward inclination of its masts, and the greater length of the after-mast compared to that of other vessels. In the larger phatemars *foreign influence was seen in their square-stern, short raised poops, bolt-secured hull, and the plain-oil treatment given to them. The genuine native type was to be found in the smaller* phatemar *with round stern and the palm-thatched cabin.*
The phatemar *did not have the fine finish of the Arab ships. No carving adorned its poop. Neither was its hull painted with gaudy colours. Usually, a coating of dull red was applied above the water-line with a black gunwale, and sometimes a white ribbon fore and aft made its appearance. Occasionally some crude ornamental painting like the stars was attempted.*

Courtesy: State Board for Literature and Culture Government of Maharashtra Sachivalaya, Mumbai

out of her by this bulwark which is caulked and made sufficiently water-tight for the short and generally smooth water voyage across the harbour which these vessels make. The stem is straight, extending with an outward slant of considerable angle from the keel. The boughs are high and the stem head has an ornamental post with a slot and sheave for carrying the cable. This ornament is absent in the fishing machava.

The stern is round and low, but not as full in Prows. The rudder is either lashed or secured with iron gudgeons to the rudder post and is exposed and a tiller ships in the rudder head or sometimes over it. The fishing machwa *has the wooden bulwark, but it is not so high, neither does it extend so forward, but merely acts as a weather board and it is not caulked or water-tight.*

Machavas have no properly decked or planked portions of the inside of the boat, but at short intervals have substantial athwartship beams, which, while strengthening the hull, enable the crew to get down quickly. In fishing Machavas there is protection except that afforded by the sail which when lowered is used as a covering, the boat when at the fishing grounds usually lying to the stakes with her mast down.

A *Machava* has only one mast stepped in the centre of the boat and lashed to the athwartship central beam. Fishing *machavas* unstep the mast when lying out at the fishing grounds in order to relieve the strain on the gear when riding in a seaway. The mast is lowered and its upper end rests in a special wooden clutch fitted aft to receive it. The *machava* also has one large lanteen shaped sail with a very high peak. The sails of *Machava* are, as a rule, the best fitted of all native craft and set splendidly. They have rather large crews, 12 men to a boat of 15 to 20 tons. *Machavas* are built at various ports on the West coast, notably at Bassein, Uran, Bhandar etc. They are a common sight in Bombay harbour and are mostly manned by Kolis.

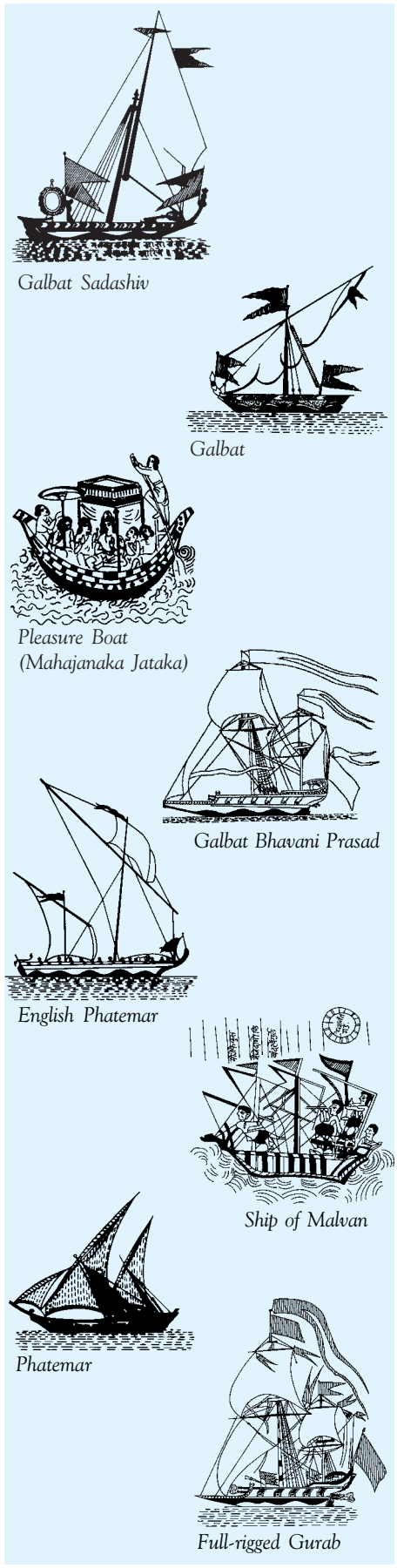
The *Sabuk* is a passenger boat and the name is derived from "sabak" meaning "fast", in opposition to "Baghla", the trading vessel which is derived from "Baghal" meaning "slow".

Sabuks are two-masted decked vessels from the Arabian Coast, Red Sea ports and East Coast of Africa. A good description of this vessel is seen in *Port of Bombay*, October 1936:

Sabuks are the roughest kind of native craft that visit the port and cannot be compared either in finish or style with the Indian built Kotias *or* Baghlas *of the Persian Gulf. The timbers or frames of the vessel are of practically undressed legs of some kind of jungle wood, to which the teak planking is fastened by iron nails, the inner nails of which are turned back to form a kind of rivet fastening. The seams are caulked with raw cotton. The hull is built with a slight sheer, nearly straight amidships, but rising sharply forward and aft.*

The stern is curved and the stem head is finished off without any ornament, differing in this particular from other large native craft, and this is the chief distinguishing mark of the Sabuk.

The stern is perfectly flat and the stern post is set with a slight outward angle from the keel, giving but little overhang. There is no counter, rudder trunk or quarter projections, and the rudder which is fastened to the rudder post by iron pintles and gudgeons is quite exposed. An iron tiller ships over the rudder head and is brought in over the stern, where the tiller ships ropes are led direct to a



winch and the vessel is steered by the wheel. A compass is carried in an ordinary binnacle in front of the wheel.

Sabuks are decked with poops and bulwarks. The decks are very roughly laid and fitted and around, the whole a poor copy of the *Kotias* and *Baghlas* after which they appear to be modelled. They have the long triangular hatch opening and large purchase block fitted into the main deck at the front of the poop but no capstan.

Sabuks have two masts, both nearly upright, the main stepped in the centre of the keel and the mizzen on the main deck aft. The lashings for securing the main mast, the stays and riggings, are the same as described for *Baghlas.* The yards are the same as for the *Kotias* and *Baghlas.* The sails too are the same as in *Baghlas.* The tack of the mainsail is brought down to a spar rigged over the bow as in *Kotias,* but also occasionally to the stem head and the sheet to a position on the main deck in front of the main purchase block. An important departure is that one boat, the *mashua,* is carried on the main deck. All *Sabuks* have their bottoms coated with a preparation of grease and chunam and they generally clean in Bombay with masts down at a suitable *bunder.*

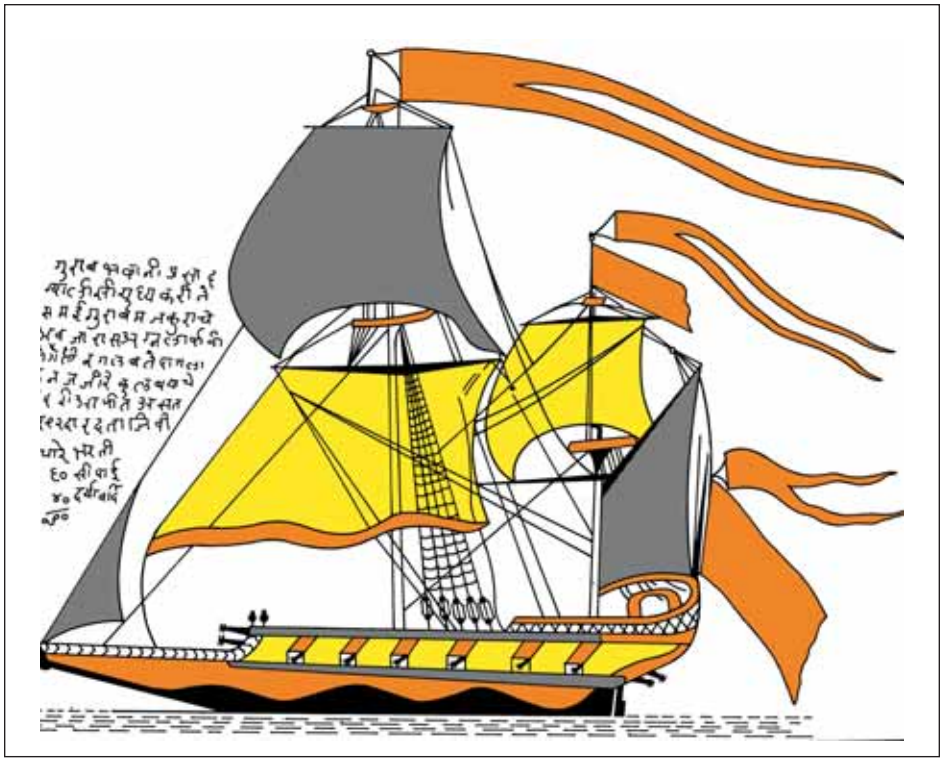
The buoyance of the twenties, however, as has been noted, was succeeded by the contractions of the world trade as a result of the Great Depression that had an adverse effect on the traffic of Bombay Port. From 6.69 million tons in 1929-30, the volume of trade (both imports and exports) dropped to 4.69 million tons in 1932-33 and it fluctuated around the level of approximately 5.4 million tons till 1939-40; the decline in exports was more severe than in imports.

With the onset of the World War II there was a slight drop in traffic from 5.4 million tons in 1939-40 to 5.1 million tons in 1940-41 but with the gradual gearing up of the war efforts, and the revival of industrial activity to meet the needs of war, the traffic handled at the Bombay Port returned to the earlier levels of over 6 million tons, from 1941 onwards. But there was another reason for this to happen. With the entry of Japan into the war and the occupation of Burma, the Bay of Bengal was virtually closed to shipping, with the result that the country's seaborne trade had to be diverted to the West coast ports of Cochin, Bombay and Karachi. What was Calcutta's loss turned out partly to be Bombay's gain.

But these West coast ports were not equipped to handle all additional traffic that came their way and this was to lead to acute congestion at these ports, causing delays to shipping that were serious enough to be noted. A joint Anglo-American Shipping and Ports Mission visited the Indian ports in November 1942 and it recommended various steps to provide lighterage and lighter facilities as also new port equipment like cranes, better water facilities and improved oil discharge arrangements to relieve the traffic congestion at Bombay and Cochin.

Certain improvements were also carried out at Bombay Port in 1943-44 as recommended by the Anglo-American mission, namely increasing the length of the quay at the Bay, Haji, Clarke, and Malet Bunders by 524 metres for the discharge of lighters. More would have been done but for a tragedy of major proportions; the explosions in an ammunition ship berthed at No 1 Victoria Dock on 14 April 1944.

There was something inevitable about that explosion. Too much of war material was being shipped to India and with the eastern seaports turned inoperative, the burden of unloading the war material fell largely



Gurab Bhavaniprasad

Courtesy: State Board for Literature and Culture
Government of Maharashtra Sachivalaya, Mumbai

The Great Explosion

View of Munitions ship which exploded blowing itself out of the water.

on Cochin and Bombay. Mangalore, then, was still a minor port of no consequence and Goa was under the Portuguese. It was consequentially Bombay, then, that became the port of choice for unloading cargo of all sorts intended for the prosecution of the war and ships headed for Bombay and something disastrous was bound to happen.

The Great Explosion

It happened on that fateful day.

The S S Fort Stikine had slipped out of Birkenhead on the morning of 24 February 1944, a cold, foggy day. She sailed in company with twenty other ships. Its destiny was to be decided seven weeks later in Bombay but when it left Birkenhead its destination was a secret known only to the Ministry of War Transport and a few port officials, considering that she was being loaded with crates boldly stencilled "Karachi" or "Bombay".

As this vessel pushed through the grey Atlantic waters, Captain Alexander James Naismith pondered the risks that lay ahead. His ship was a sound one. A single — screw, coalburning vessel of 7,142 tons gross and 4,261 tons net, the *Fort Stikine* had been built of steel under two years at Prince Dry Dock in Canada and handed over by the United States Government to Britain under Lend Lease.

She was one of the twenty six identical cargo ships built under Lend Lease funds in Canada to a standard design and all given the prefix *Fort.* The *Stikine* part of the name was borrowed from the Stikine River in British Columbia.

Interestingly, the *Fort Stikine* was Capt Naismith's first command and she had no other master. In convoy

she was placed in an outside lane because she was carrying a dangerous glamourous cargo and it had been decided that should anything happen to her, she would not menace the safety of other ships. And what was the cargo? In the hold below her five battened hatches, twelve crated *Spitfires* for the Royal Air Force lay side by side with ammunition and explosives, all destined for Karachi. Around and below the cargo for Karachi lay 1,395 tons of explosives, including shells, torpedoes, mines, signal rockets, magnesium flares and incendiary bombs, all of which would remain on board until the ship reached Bombay.

In the Number two hold, the area between the decks was loaded so as to leave a separate central compartment, a box-within-a box that rose like a wide left-shaft between the lower and upper hatches. On the wings of the twin decks on three sides of this central compartment lay 238 tons of highly sensitive category "A" explosives. A steel tank, 5 feet by 4 feet was lashed to the bulk-head on the fourth side of this upper half of Number two hold.

Now let John Ennis who wrote the definitive history of the Great Explosion in his book **Bombay Explosion** take over:

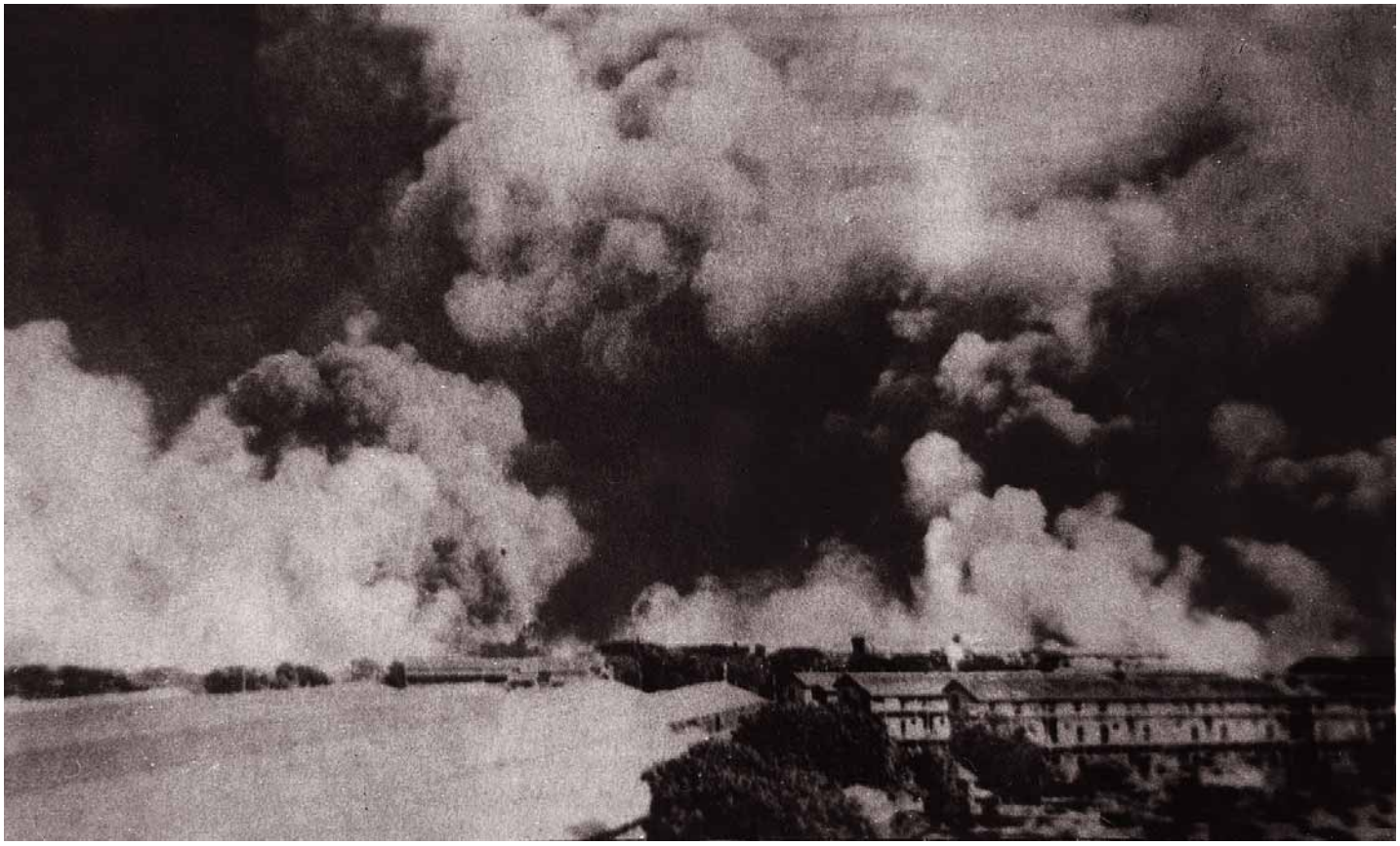
Stacked inside the tank were thirty one wooden crates. Each crate contained four bars of gold measuring approximately 15 inches by 3 inches and 1 and a half inches thick. Each bar weighed 28 lbs and the whole consignment, addressed to a bank in Bombay, was valued at nearly one million pound sterling.

For some time the Bank of England had been buying gold from South Africa at 17s a fine ounce, including the cost of shipping and insurance. The Bank was now reselling the South African gold to India at 320s a fine ounce with the idea of helping to cancel out the ill-effects on the British war economy of a high rate of exchange in India. The gold in the Fort Stikine was an installment in this financial juggling.

The presence of those gold bars was a constant source of comment on board the ship. The crew would often joke about how they would some day break open the crates and smuggle the gold ashore at the first port of call and get rich. But of the ship's main cargo, not a word was be mentioned.

The *Fort Stikine* was soon to meet with adventure. As the convoy was reaching the Straits of Gibraltar it came under attack from German bombers only to meet with rapid fire from the well-armed ships. The danger, of being bombed was real, but soon the raiders turned away, after losing five aircraft. In due course,

So terrifying was the explosion in the docks that there was a mad rush to escape from the fire on April 14, 1944. Courtesy: Bombay City Corner



Holocaust: The smouldering flames let loose a steady torrent of smoke which soon engulfed the skies (April 14, 1944).

Courtesy: Bombay City Corner

despite some alarms and excursions, the *Fort Stikine* sailed into the Suez Canal and anchored at Port Taufiq where she bunkered with coal from barges anchored alongside. Refuelled the ship steamed on alone for Aden where she got her compasses corrected. After staying in Aden for a few hours to top up with coal, the *Fort Stikine* left for India alongside the *S S City of Exeter*. Soon the two ships were to part, the *City of Exeter* aiming for Bombay while the *Fort Stikine* hedged across the Arabian Sea for Karachi.

Around 3 o'clock in the afternoon of March 30 the *Fort Stikine* arrived in Karachi and the crew was allowed to go ashore. For the officers there was no rest. They had to supervise the off-loading of the cargo working 12-hour shifts with only 6 hours off. On the day she arrived, a stevedore firm Brigstocks, Eduljee & Co began unloading. First they swung the crated gliders from the decks. Then they took off the hatch covers to bring up the green boxes containing the dismantled Spitfires. By now the holds looked "cavernously empty" — with some 286,000 cubic space to be filled up. And this was quickly filled up. The stevedore filled this void with 8,700 bales of raw cotton, hundreds of drums of lubricating oil, pieces of timber, scrap iron, sulphur, even fish manure, rice and resin — a wholly dangerous mixture.

Realising what was going on Captain Naismith reportedly protested to the shippers, but this was war-time and wasteage of cargo space was frowned upon. Capt Naismith was politely told that he ought to take a full load which he most unwillingly did. He was to pay for his folly.

Capt Naismith was fully aware of the dangers inherent in carrying that odd mix of cargo. He was however, very likely not aware of the regulations of the Board of Underwriters of New York which laid down that cotton and dynamite, powder and other explosives "should never be stowed in the same hatch" but must be stowed in "properly constructed magazine erected in opposite end of the ship". As regards cotton and resin it had been laid down that "these two commodities should be carried in separate holds whenever it is practicable to carry out such stowage".

According to John Ennis, "none of these pieces of valuable advice, however were available to the deck officers of the *Fort Stikine* on that day in Karachi". Yet, most people around the docks at Karachi knew that cotton could be tricky cargo. In the previous six months there had been six fires in ships loaded with Karachi cotton, the last only a few weeks earlier in the *S S Therese Moller.*

Cotton in 1944 was a priority cargo in Karachi. As Ennis puts it, "a cargo of cotton was to the war effort". So the cotton was taken aboard. And on April 9 the *Fort Stikine* left for Bombay.

Ennis has furnished details of the cargo and how it was stowed:

In Number one hold, starting from the bottom there were 9,000 bags of sulphur weighing 325 tons and 1,428 bales of cotton, weighing 268 tons. On top of the sulphur lay bags of fish manure and on top of the cotton there were 13,163 pieces of timber. In the 'tween decks there were 15 tons of category "C" ammunition (comparatively safe), other stores for the fighting services, dried fish and lubricating oil. More dried fish and drums of lubricating oil rested on the lower hatchway.

On the bottom of Number two hold, there were 187 tons of category "C" ammunition, stepped down from the height of eight feet at the after end of the hold to finish a little way short of the centre. This ammunition was covered with thin strips of wood or "dunnage" and 4,100 bales of cotton weighing 769 tons were stored on the top so that they formed a level surface of cotton above the stepped boxes of ammunition. Lying on the cotton were 11,537 pieces of timber in a layer two feet deep. On the timber lay scrap iron, 42 old dynamos and cases of wireless sets. The whole cargo in this lower hold reached up to six feet below the level of the 'tween decks, where lay 168 tons of dangerously sensitive "A" category ammunition, 1,089 small drums of oil.

The whole number three hold was filled with drums of lubricating oil, 3,435 of them, weighing 563 tons. On the 'tween decks there were 58 tons of category "A" explosives and 20 tons of RAF stores, including highly inflammable aircraft dope. Resting on the lower hatchway were 214 large drums of oil.

In the number four hold, the lower part contained 523 tons of explosives and ammunition of categories "A", "B" and "C" and 2,164 bales of cotton weighing 405 tons. More ammunition was stored on the 'tween decks. On the lower hatchway there was a mixed commercial cargo including 127 bales of dried fruit.

Bags of rice and bags of seed lay at the bottom of the number five hold. On the top of them were 1,045 bales of cotton weighing 196 tons and on top of the cotton 12,306 pieces of timber and quantities of dried fruit and resin. On the lower hatchway there were 6,220 small drums of oil.

Explosives, Cotton, Resin, Timber, Oil. Only a mad captain would have carried all these in the holds of his ship at the same time. But the excuse again was that it was wartime. And during wartime anything goes. As it turned out, everything went.

In the early hours of April 12 the *Fort Stikine* reached Bombay and anchored in the roadstead in the sheltered, islet — studded water between Bombay Island and the Indian mainland. Soon after a pilot and Examination Service Officer (ESO) of the Port of Bombay, Mr A Kanwar boarded and was informed by the captain that the ship carried explosives.

The ESO duly informed, the *Fort Stikine* began to glide into the unsuspecting docks. According to the international code, a ship carrying dangerous cargo should fly a red flag when coming into the port as a warning. But again, the excuse was that this was wartime and no saboteur should ever know which ship was carrying what. So no red flag flew at the truck of the *Fort Stikine*. There was no indication to dock workers or to other ships in the harbour that there was anything unusual in her cargo alongside at number one berth in Victoria Dock.

In normal times a ship carrying explosives was not allowed into the docks under one half of the by-laws of the Bombay Port Trust, but Rule 88 of the Defence of India Rules suspended this by-law during the war in cases of grave emergency. In any event it was considered dangerous, if not time-consuming, to unload explosives on lighters. Also, a certificate of "grave emergency" had been granted

Port fire party (1942)

Taken from Sandhurst Road Station, this picture gives a good idea of how widespread the fire was (April 14, 1994).

Courtesy: Bombay City Corner

to the *Fort Stikine* on behalf of the embarkation Commandant.

The job of unloading was entrusted to the leadership of Shapoorji Cowasjee Desai, a working foreman stevedore. But he was not told about the explosives aboard at first. He learnt of it later.

The men under Desai at first, unloaded the drums of the lubricating oil on the quay. It was found that some of it were leaking though not badly. But when all the drums were removed it was found that the tarpaulin under them was quite wet with oil — a dangerous signal.

The next thing that the men unloaded was the fish manure. This was done. Then arose the question of unloading the explosives. But before that a good part of the dynamos, wireless sets, timber and scrap iron had been removed. By 14 April the stevedores had taken out all the scrap iron with the exception of one huge piece weighing three tons. It lay pressing down on some timber which in turn was pressing down on the bales of cotton below.

As the hands of the Office Tower moved to half past twelve, the tired, sweating stevedores came up from the folds. The civilian watchman maintained vigil. But obviously neither bothered to look into the *Fort Stikine's* Number two hold at any time during the refreshment hour.

Fort Stikine was not the only ship in Victoria Dock. Ten other ships were also berthed in the Dock. In addition there were a grab dredger, a suction dredger, a water boat and a tug. Across the stretch of quay from the *Fort Stikine's* berth was Prince's Dock, where a further nine ships lay.

Then it happened.

Three hundred and ninety yards away from *Fort Stikine* with a clear stretch of water between, was berthed a sister ship, the *S S Fort Crevier.*

The chief officer of this ship, Mr Urzuriaga was standing on its deck when he saw what appeared to be a wisp of smoke spiralling from one of the ventillators of Number two hold.

He brought his telescope to see whether he was merely imagining or whether smoke was indeed coming out. It was.

According to reports a few others also noticed the smoke but nobody apparently understood its significance. No alarm was raised. By then the stevedores had got back to their work in Number two hold, when one of them noticed the smoke which was billowing. He raised an alarm.

After that what followed was bedlam. People in authority were summoned like the fire brigade officers, Lt E Condlifie of the Royal Indian Navy Salvage Department, officers of the Ordinance Corps and Capt D G Haffenden, a Field

Security Officer. Talks went on but there was no action. In June 1942, a sub-rule had been added to the Defense of India Regulations that said:

> *If any vessel in any port in British India is on fire or has suffered damage by fire or otherwise, any person authorised by the Central Government in this behalf, if he considers that such vessel constitutes a danger to other vessels or to the efficient working of the port, may give directions to the owner or master of such vessel requiring him to scuttle or beach the vessel in such position as may be specified in the directions.*

The two persons authorised to give these directions in Bombay were Commodore, Royal Indian Navy and the Naval Officer in Charge, Bombay. Neither could be contacted. Among those present at the dock there was no unanimity of opinion as to what should be done.

By then it was 3.30 p m. Time was running out for the *Fort Stikine.* Some thirty two hoses had snaked across the deck of the ship and had poured more than 900 tons of water into the lower part of the Number two hold. But such was the heat that had been generated in the holds that the water as it hit the deck, boiled. But the firemen — all Indians — stayed on their jobs, ignoring the scalding water, four inches deep, that baubled over their feet.

Sadly, nobody realised the danger that was about to gulf them all. Work in the docks went about as usual. No alarm was sounded to clear the docks of everybody except the fire-fighters. No sirens broke the silence of the noon-time. Some people around stopped for a while to watch the fire-fighting as if it were just another *tamasha.* Inside the ship the brave firemen were at work desperately trying to bring the fire under control.

It was becoming more and more impossible. Quick to catch fire was the dunnage — thin stripes of wood used as packaging around the cases of ammunition. At quarter to four, some of the explosives caught fire. Thick black smoke began to belch from the Number two hold. For full five minutes the flames rose and fell.

Then, at ten minutes to four, a great tongue of flame shot up from the hold reaching up above the height of the ship's mast. Confusion reigned as men jumped into the sea, some breaking their legs in the process. Captain Naismith gave the order; "Abandon ship!".

Alone on board the ship, Captain Naismith, sought to make a tour of the ship to see that all the men had left. Having performed his duty, as captain should, the Captain himself walked down to the quayside.

At this point, the ship exploded. With a great detonation, she flung

The BPT railway suffered severe damage, as did the GIP. In the background is the Prince's Dock building, the Ghadial Ghodi (April 1944).

Courtesy: Bombay City Corner

Every year tribute is paid to the officers and men of the Bombay Fire Services who lost their lives fighting the dock explosion on April 14, 1944. This day is now observed as Fire Services Day. The picture shows floral tributes being paid using a Simon Snorkel at the memorial constructed outside the fire brigade headquarters at Byculla.

Courtesy: Bombay City Corner

out huge fragments of hot metal that cut down anybody in their path. As Ennis described:

> *Flaming drums of oil spun through the air, trailing flames and sparks like gigantic fireworks. Blazing cotton bales spurted up and fell over the ships and warehouses, bringing fire and destruction wherever they fell. The blast created a tidal wave at the* Fort Stikine's *stern, the 3,935 ton 400 ft long* ***Jalpadma****, and lifted her stern sixty feet high into the air. It turned at the right angles and dropped her stern on the roof, fifty feet high, of Number two shed. She lay there, grotesquely high and dry, her plates crumpled, with only the bows resting on the bows on the water...*
>
> *Buildings shook and swayed; partitions in the offices crashed down. Splinters of glass flew and shattered windows... Pieces of metal, white-hot, fell haphazard in the town, some as much as a mile from the ship... A thousand miles away from Bombay, at Simla... the metereological station's seismograph gave an imperceptible shudder...*

Some people waiting along the streets were cut into pieces and their bodies were mangled. Of the twenty four ships in the two docks, eleven were on fire and four were sunk or sinking. Other were aground or listing. Sheds, warehouses and deck offices on all sides were on fire and full of holes. Tall cranes lay tilted at crazy angles. Heavy steel railway wagons were bent out of shape. The clock in the dockside tower stopped, its hands stilled by the explosion. They stood at six minutes past four. They were to stay there like that for many months to come.

Good samaritans — and there were many of them — went into action, dragging the wounded to J J Hospital which, according to reports looked like a slaughter house. There was blood everywhere. The port itself had become a mass of twisted metal. The long shed was totally wrecked and was on fire. Three bridges were forced to open at an angle of about 45 degrees and could not be opened. There were incredible reports of heroism on the part of many,

including lascars. There was nobody alive anywhere near the *Fort Stikine.*

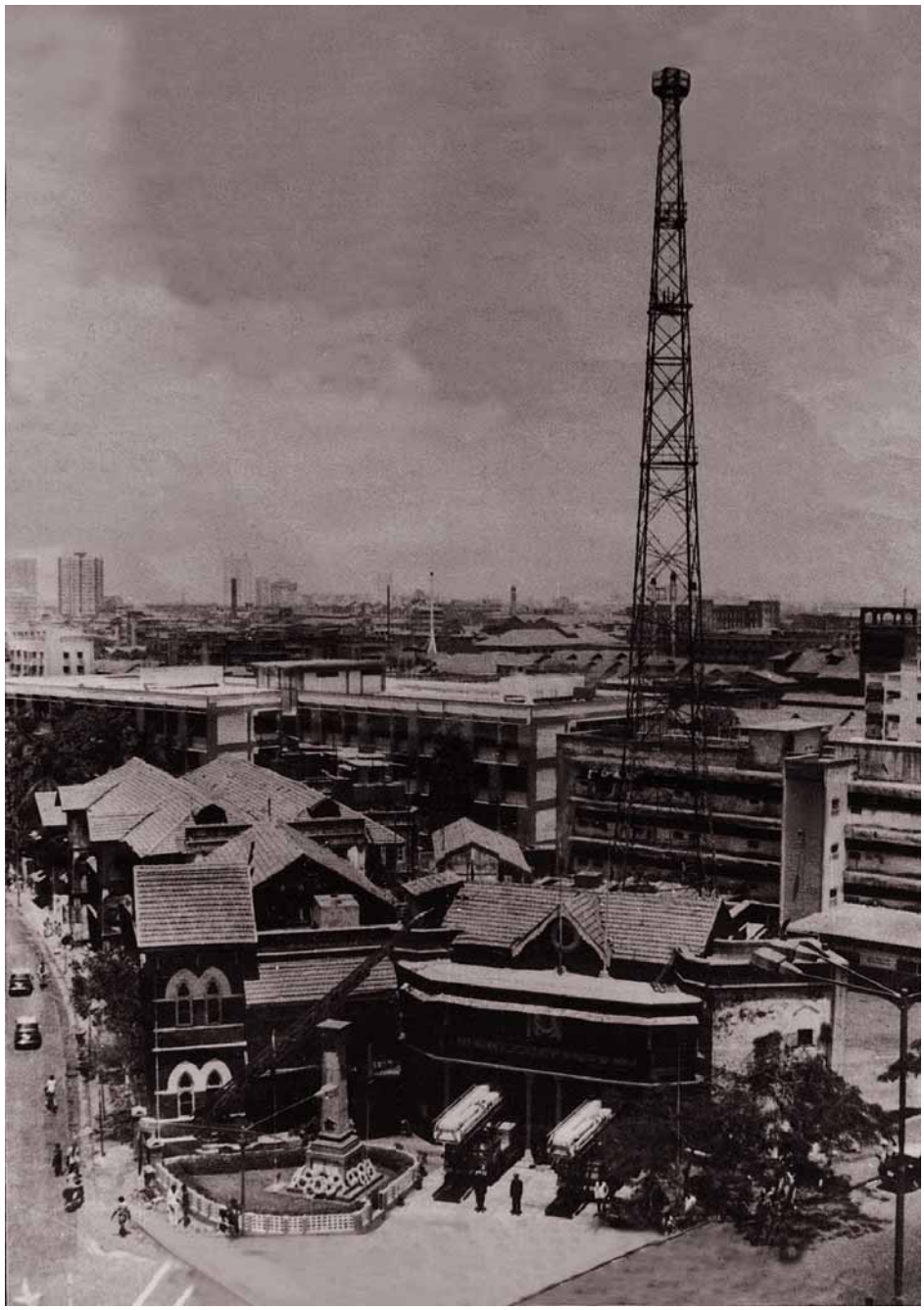
But this was just the beginning. Thirty four minutes after the first explosion there was a second and more powerful one. Number four hold contained 784 tons of explosives, among them many incendiary bombs. This was more than twice the amount that had blown up in the number two hold. The blast from the second explosion was, in the circumstances, far more shattering and drove upwards to a height of 3,000 ft!. As it reached the top of its trajectory, the mass of metal, wood, blazing cotton bales, flaring oil drums and incendiary bombs fountained upwards and fell over an area more than a mile across.

It was hell let loose.

It was incredible.

Far away, at Girgaon Road, a retired Parsi civil engineer, Burjorji Cooverji Motivala, afraid that the balcony of his apartment might have been hit by the blast went to check and sure enough there was a lump of metal lying in the corner of the balcony surrounded by a heap of fallen masonry and woodwork. He tried to pick up the lump which weighed 28 lbs. It had a number stamped on it and the mark of the Bank of England. It was a gold bar from the welded steel trunk in the *Fort Stikine* and worth Rs 90,000 at the then prevailing price. Mr Motivala took his treasure to the police who told him he would receive an award. The reward came in due course, all of Rs 999. Mr Motivala gave it to the Relief Fund.

Several officers tried to get into the Victoria Dock. They failed. The Prince's and the Victoria Docks had become impenetrable. Debris lay everywhere, not to speak of dead bodies. One hundred and fifty six officers and firemen had joined in the battle against the fire in the *Fort Stikine.* Of them 65 were killed and 80 injured. Only eleven escaped unhurt. Among those killed were Harold Palmer, the Fire Brigade's Assistant Commanding Officer and Robert Andrews and Arthur Reynolds, the Port Trust's own fire officers, both of whom had an intimate knowledge of the layout of the docks and railways and Martinez, the acting Deputy Manager of the Prince's and Victoria Docks and Scully, Superintendent of the Salvage Corps. In all explosions took a toll of 231 lives, apart from injuring about 476 others. The Bombay Fire Brigade distinguished itself for extraordinary heroism, beyond the call of duty.



The old headquarters of the famous Bombay Fire Brigade at Byculla. The Brigade distinguished itself during the explosion.

Courtesy: Bombay City Corner

What the staffers of the Fire Brigade, the Bombay Police the Bombay Port Trust and the Naval Command went through on that harrowing day and subsequently would be known only by God. Many firemen, cut off from headquarters and surrounded by flames, never even in their wildest nightmares could have imagined, stopped waiting for orders and carried on on their own initiative. Fire fighters belonging to different organisations, fully cooperated with each other, setting aside rules and regulations that would have been operative in peace time.

Volunteer organisations sprung up from nowhere. Twenty members of the Akali Dal, wearing the organisation's badge on their arms, turned up at six o'clock on the morning of the 15 April and went to the western limit of the fire and moved anything inflammable they could find at great personal risk. Some of them patrolled the streets to prevent looting. Later in the evening they cooked *roti* and *dal* and served it to all comers, in particular to about sixty hungry policemen and firemen. Men from the U S armed force, British tommies and Indian soldiers worked side by side.

A party of Indian Sappers, led by Jamadar Krishna Bhagat, walked through the worst of the fires to blow up a burning warehouse. Five women of the American Red Cross — Helen Maddock of Akron, Ohio, Rachel Nommenson of Shawno, Wisconsin, Blanche Jones of Salt Lake City, Utah, Virginia Harris of Arlington, Virginia and Mary Huffman of Milwaukee, Wisconsin drove in among burning godowns to set up a canteen and stayed on while the fires raged all round them until every man had been served with a drink. A Bombay businessman, Ali Mohammed Mecklai went round the city collecting much needed drugs from chemists' shops and other supplies. Many gave the drugs at cost; quite a few donated the drugs free. Mecklai spent seven hours on his self-imposed mission. There were many who worked round the clock, especially in the J J and St George Hospitals.

Subsequently military authorities took charge of the Prince's and the Victoria Docks, cleared the debris and reconstructed sheds and other facilities for temporary use and the port limped back to near-normal functioning in a remarkably short period. The Vice-president of the Bombay Chamber of Commerce, W I A Radcliffe commented on the rapid restoration work in the course of the annual general meeting of the Chamber:

> *You will remember that it is no exaggeration to say that there were large parts of the ship on Frere Road and that most of the godown space in Bombay was a blazing inferno, yet, in spite of all this, the job was done and, I, repeat, that the highest credit is due to those concerned.*
>
> *Some people may not realise the Herculean task that has been*

Sir Benegal Rama Rau a former Chairman of the Bombay Port Trust who was later to become governor of the Reserve Bank of India.

accomplished. From the immediate vicinity of the Victoria Dock, where the explosions were recorded on the seismograph more than 1000 miles away took place, more than a million tons of rubble had to be removed. To carry out this task hundreds of soldiers and labourers worked in blazing heat and often upto their necks in filth and slime and it is authoritatively stated that the rebuilding of the quay wall was a piece of work which for economy of time and labour and utilisation of materials on the site, was a world record.

Six miles of new railway track now gives access to the Dock, more than 20 acres of devastated land has been newly paved. Over 1,000,000 sq ft of shedding has been built or reconstructed; cranes have been put under order, new fire-fighting appliances have been installed and oil pipelines have been laid.

It is almost incredible that this has been done within the space of one year.

The chairman of the Port Trust in 1944 was Sir Rama Rau, GIE, I C S and he himself was quick to summon a meeting of the Trustees to give them as he said, "an account of the disasterous fire". The meeting was to be summoned on 20 April 1944.

The chairman gave a brief account of the procedures introduced during the ongoing war of unloading the high explosives in the docks. He said that according to the BPT by-law No 104, explosives and inflammable substances with certain specified explosives were not to be admitted into the docks, or alongside the Harbour Wall and any vessel having such cargo on board had to discharge it before entering into the dock area on or before coming alongside the Harbour Wall. High explosives were always unloaded in the stream and taken to Haji Bunder. In November 1939 the Govt of India by their Defence Co-ordination Department notification had abrogated this bye-law. In view of this serious damage that may be caused in the event of an accident, the Port Trust solicitor was consulted in regard to the question of the Trustees liability and the means by which they could protect themselves. However, an indeminity was granted by the government after due consideration.

After giving details of what had been agreed upon with the military and naval experts the chairman observed that the terrible explosions would doubtless be the subject of urgency.

Interestingly, the first report of the Commission of Inquiry appeared *in extenso* in the *Free Press Journal* of 12 September 1944, copies of which were furnished to the Trustees, at their meeting held on 19 September 1944.

A memorial to the Fire Service personnel who were killed in the explosions has been subsequently erected in the Prince's and Victoria Docks, near the site of the explosions. The memorial was unveiled by the then Chief Minister of Maharashtra State, Mr V P Naik, on 14 April, 1971 when the Bombay Port Trust Fire Service completed 25 years of its existence.

There were claims for damages. By February 1945, ten months after the disaster, 3,083 people had registered claims for damage by fire or blast to their property, 679 had claimed under marine policies. About 11,735 had put in claims for uninsured properties and 466 uninsured people had made claims for compensation for personal injuries.

The Government paid out Rs 85 million against claims for damage by fire or blast, Rs 15 million under marine policies, Rs 35 million for uninsured properties, Rs 1.3 million for personal injuries and a further Rs 450, 000 on miscellaneous policies.

A Commission of Inquiry was set up under Sir Leonard Stone, O.B.E., Chief Justice of the High Court, of Judicature of Bombay. It listed the primary causes of the disaster. They were five:

(a) The existence of the state of war, resulting in the practice of bringing into docks the ships laden with explosive and ammunition.

(b) The stowage of the S S *Fort Stikine* at Karachi in which a way that cotton was stowed above and below explosives and ammunition.

(c) Accidental ignition of the cotton in the Number Two hold.

(d) Failure at the outset of the fire by those present in authority to appreciate the gravity of the situation and during the course of the fire, failure by those present in authority to take energetic steps either to extinguish the fire or to take alternative action to avert the disaster and

(e) the absense at the fire of a centralised executive control with power to issue paramount orders and co-ordinate the various authorities and services concerned.

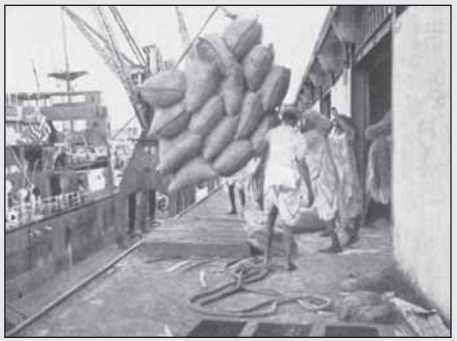
Opening of the Electric Railway

The biggest event in the late 1920s was the opening of the first electric railway in India on the Great Indian Peninsular (GIP) Railway line from the Harbour to Kurla. Called the Harbour Branch, it was inaugurated by H E the Rt Hon. Sir Leslie Orme Wilson, Governor of Bombay, on 3 February 1925.

The GIP Railway (now known as the Central Railway) in common with other railway administrations in India who catered to the traffic needs of the country was faced in the late twenties with the problem of meeting not only

IMPORT

No. 1 — SUGAR (1939)



From ship to shed

Unloading one of the ship's holds

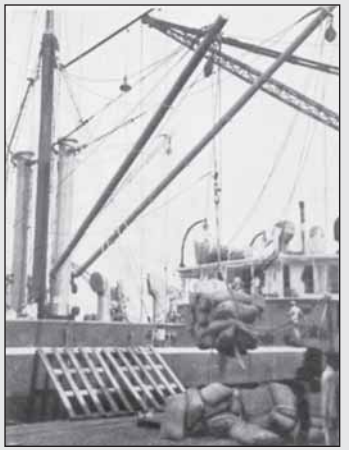
The dock cranes unloading direct from ship's hold on to balcony of shed

Unloading a Locomotive bt ship's Gear

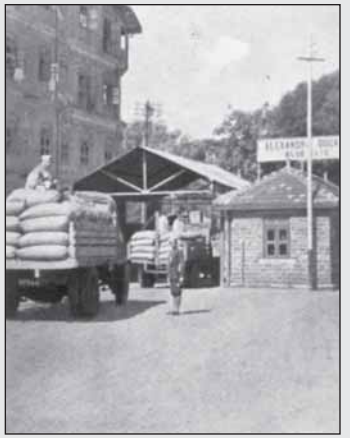
From shed to motor lorries via the chutes

From shed to railway wagons

A consignment brought to the warehouses in motor lorries



The ship's derrich unloading on to the dock wharf



Consignment leaving the docks for the market

Storage in a warehouse

the normal increase in traffic — substantial as it was — but also abnormal increase due to the intensive development schemes being carried out by the government of Bombay, the City Improvement Trust and the Bombay Port Trust.

The problem of increasing the capacity of the GIP suburban lines had begun to worry the authorities as far back as 1904 but nothing much was done. It was only in 1913 that things began to move when Mr Merz of Messers Merz & McLellan, Consulting Engineers, London, came to India to report on the advisibility or otherwise of electrifying sections of the GIP Railways.

Mr Merz's report was strongly in favour of electrification of the local lines, but before any progress could be made, the first world war intervened during which the inevitable shortage of funds prevented any except the most essential works being undertaken.

However, immediately, after the end of the war (1918), the GIP Railway administration again took up the question of improving their suburban services. Fresh estimates of traffic proposals, capital costs of electrification and savings in operating costs were prepared and finally the scheme for the electrification of the Harbour Branch Mahim Chord and the electrification of the Bombay-Thana Section were accepted by the Secretary of State in August 1922, while approval of the Scheme from Thane to Kalyan was received in June 1923.

The Harbour Branch Railway was originally projected by the Port Trustees and as first designed, was to feed the Bombay Docks from a junction with the GIP Railway just south of Sion Station. When, however, it was finally decided that the line should be built and worked by the GIP Railway, the junction with the main line was changed to Kurla, 9¼ miles from Victoria Terminus (now Chhatrapati Shivaji Terminus). The line, as proposed, was to leave Kurla and cut through the Sion Causeway, then pass the Sion Hill on the Harbour side and skirt the villages of Kolwada and Agarwada, thence keep to the east Gowari and run to Sewri village and Tank Bunder (later to be called Reay Road Station).

The biggest event in the late 1920s was the opening of the first electric railway in India on the Great Indian Peninsular (GIP) Railway line from the harbour to Kurla.

From Reay Road, as originally projected, the line was to pass through the district of Mazagaon across the old GIP Railway Wadi Bunder Stores Yard along past the Dock Warehouses to the then proposed Alexandra Dock. That last portion was never built.

Says an official report: "Meantime, owing to the development of the East Side of the island by the Port Trust and the various development schemes projected by the Improvements Trust in the areas served by the Harbour Branch, it became obvious that the only way to meet the transport needs of the population from those areas would be direct connection from Reay Road into Victoria Terminus. Work on this extension of the Harbour Branch Railway was commenced in 1912....

The extension as an engineering feat is of considerable interest. The line after leaving Reay Road station arises on an incline of 1 in 42 to cross Reay Road on a skew girder bridge. Thence it is carried on a series of masonry viaducts and supporting ground in Bhandarwada Hill, till it reaches the GIP Railway Wadi Bunder Goods Yard which it crosses on a steel viaduct, on which is also a high level station. (Sandhurst road High level). It will give some idea of the magnitude of this work when it is realised that this viaduct contains 2,788 tons of steel work. After crossing the GIP mainline the branch drops to the main line level and runs parallel to the main line till it reaches Victoria Terminus.

Late in the 1920s it was estimated that by 1931 or shortly afterwards, some 205,000 people will be housed on the Dadar-Matunga, Sion-Matunga and Sewri Wada Estate and Schemes which areas would then have to be catered to by the Harbour Branch of the GIP Railway. Considering the gradients that the trains had to negotiate it was clear that steam locomotives would have to be ruled out. Electrification of the railways was the only answer.

There were advantages in electric traction which officials described as follows:

1. The improvement of the passenger train service both as regards schedule speeds and frequency of trains.
2. A considerable increase in the carrying capacity of the line without costly addition to the permanent way.
3. An increase in the capacity of terminal stations.
4. A reduction in operation costs.
5. An increase in the carrying capacity of the line.
6. Improved punctuality.
7. The development of residential areas and,
8. Cleanliness in operation for the Bombay Port, of course, was a bonanza.

Support and Goodwill

It has been said — and very rightly — that no port enterprise can succeed without the continued support and goodwill of the shipping service which utilises its facilities. The port of Bombay certainly had both from The Peninsular and Oriental Steam Navigation Company. The thirties, forties and fifties were the high noon of such services. They were to become increasingly redundant as the entire world came to be knit together by air services. But those three decades were the heyday of the shipping lines as it was high noon for shipping in general. Once the aeroplane was pressed into international travel, the ship lost its pre-eminence. Travel time mattered more than travel comfort. A trip across the seas may have had romantic overtones but airflight brought people together quicker.

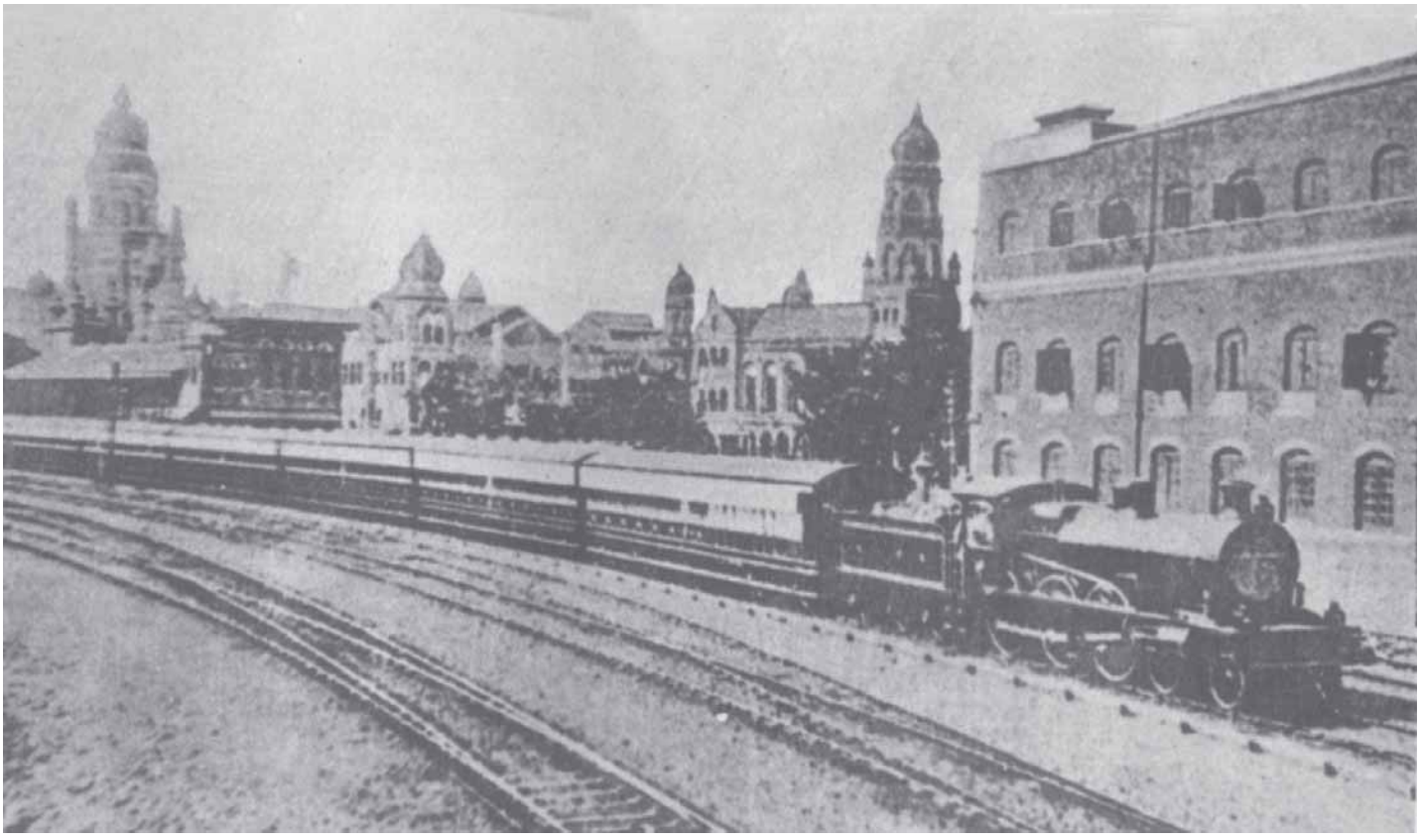
Closely associated with the Bombay Port were shipping lines like the Peninsular and Oriental Steam Navigation Company better known as the P&O, the British India Steam Navigation Company or the BSN, the Anchor Line, the Ellerman Lines and the Lloyd Triestino Company.

There were other lines, of course. In the early decade they included the Asiatic Steam Navigation Co Ltd, Bombay and Persia, S.N. Co, Borneo Line, City Line, Clan Line, Ellerman & Bucknall; American Service, Hall Line, Hansa Line, Holland British India Line, Maritime Italiana, Mogul Line, Nippon Yusen Kaisha, Persian Gulf S.N. Co, Roosevelt Steamship Company, Wilson Line, Asiatic S.N. Co, Bombay and Persia S.N. Co, Indian Cooperative Navigation & Trading Co, Jamnagar S.N. Co, Malabar S.N. Co and Scindia Steam and Navigation Co Ltd — quite a list. But first a short acquaintance with the major shipping lines.

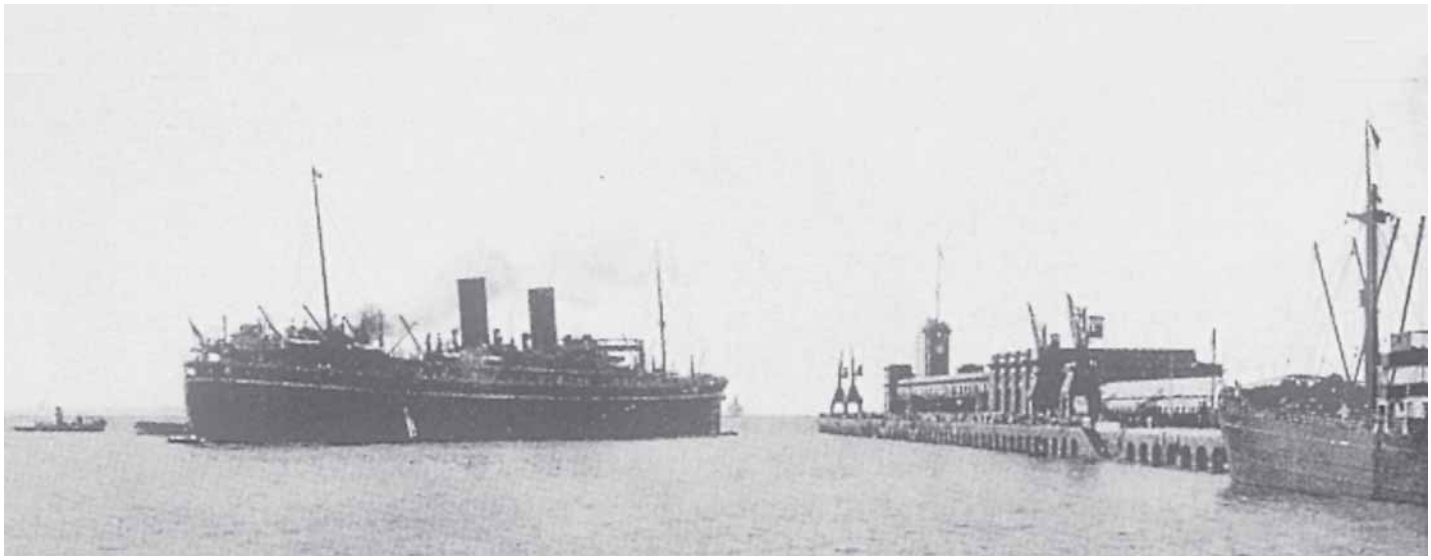
The Peninsular & Oriental Steam Navigation Company

This great organisation, the pioneer of the mail service to and from the East, had its origin in the old Peninsular Service which in the thirties of the nineteenth century carried on a regular trade between London, Operto, Lisbon and Gibraltar. Lisbon and Operto, it will be remembered were the two Portuguese ports that had extensive dealings with the East. Portuguese ships had been regularly touching Goa on India's west coast and carrying on extensive trade in Indian spices and textiles.

In 1857 the undertaking, having formed into the Peninsular Steam



GIP Railway — train coming out of the Victoria Terminus. Courtesy: Municipal Corporation of Greater Bombay



The R.M.S. "Mooltan", 20,000 tons, coming alongside the Ballard Pier.

Navigation Co secured from the British Government a contract for the conveyance of the mails between Falmouth and Gibraltar. Three years later it assumed the title by which it was later on to be known having in the interval extended its communications to Malta and Alexandria. In 1842 as British imperialism began to extend its tentacles to India it embarked on its first sail contract service to India and the first ship to carry mail from Southampton to the East was the 1,800 ton **Hindustan.** By 1844 the Company's mail services had been extended to Ceylon (presently Sri Lanka), Madras (Chennai) and Calcutta but it was not until 1854 that it secured the contract for the mails between Bombay and Suez. In 1857 the contract was further extended to connect a fortnightly service from Marseilles to Malta. Steam communication with Australia, by means of a branch line from Singapore, had been inaugurated by the Company in 1852.

Until the opening of the Suez Canal in 1870 the Suez route to India was designated "The Overland Route" and the P&O had, by degrees, built up an elaborate costly land transit organisation to deal with this vital overland link in its services. The opening of the Suez Canal rendered this organisation superflous from a trade standpoint and at the same time the invention and general adoption of the compound engine as the motive power for trans-oceanic liners necessitated the practical replacement of the Company's *entire* fleet. After all, the old ships were really sailing boats, depending entirely and later on largely, on wind and weather. As technology made progress, so did ship-building. A new age was in the process of being ushered in.

But the P&O's position was made exceptionally difficult by the obstinate refusal of the British Post Office authorities to allow the mails to be transported through the canal for political reasons. The BPO insisted on continuance of the costly system of land carriage between Alexandria and Suez. Not until 1888 by which time the canal had been in existence for eighteen years was the objection overcome.

Meanwhile, undaunted by difficulties the Company had begun the transformation of their fleet by the construction of the **Jubilee** ships — the **Arcadia, Britannia, Oceania** and **Victoria** of about 6,000 tons each.

The next half century registered continuous progress in design and dimensions, as can be expected, of small steamers. The **Victoria** was succeeded by the **Himalaya** class of 7,000 tons and still later by the five steamers of the **Persia** class of 8,000 tons.

Then followed the first "M" class, ten vessels averaging 10,500 tons each gross — they were to be the last of the pre-First World War fleet.

The *Naldera* and *Narkunda* of 16,000 tons, projected in 1913 but not put into commission till 1920 owing to the intervention of the war, marked a big stride in design and dimensions. In 1923 the **Mongolia** and **Maldavia** followed the **Mooltan** and **Maloja.** The two latter of 21,000 tons, were put on the Australian mail service.

The demands of the Empire were growing. P&O also put into operation four splended vessels of the *Rajputana* class (on one of which Mahatma Gandhi sailed to England to attend the Round Table Conference in London) of 16,000 tons for the Bombay Mail Service. In 1929 P&O

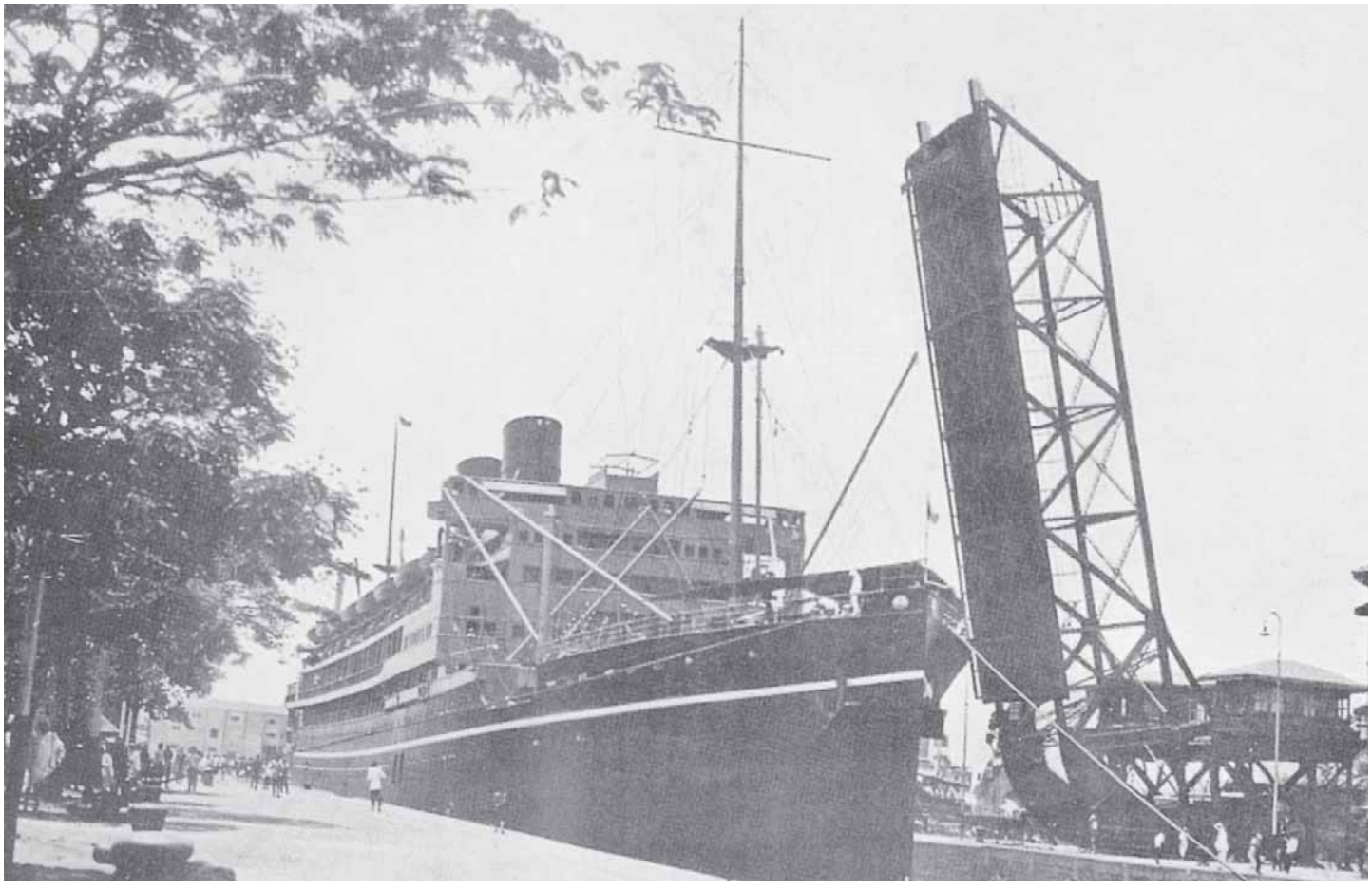
commissioned the 19,500 tons turbo-electric liner the **Viceroy of India,** to be placed on the Bombay-London run.

In 1914 the P&O and the British India Steam Navigation Companies amalgamated and since that date a large number of other important shipping concerns were either absorbed by or grouped in close association with these two parent Companies. Among them were the New Zealand Shipping Company, the Federal Steam Navigation Company, the Union Steamship Company of New Zealand, the Hain and Mercantile Steamship Companies, the Eastern and Australian Steam Navigation Co, the Khedival Mail Steamship and Graving Dock Company, James Nourse Ltd and the General Steam Navigation Co. Out of these alliances a traffic system was evolved which served every important seaport of the British Empire, which, some hold, could not have lasted without the constant and ready services of the P&O which ferried troops, civil servants, war material and a whole lot of other things between Britain and its sprawling empire, but more notably India.

The British India Steam Navigation Company (BISN) originally started operating in 1856 under the title of the Calcutta and Burma Steam Navigation Company with two small steamers, having secured the contract for a fortnightly mail service between Calcutta, Akyab, Rangoon and Moulmein.

The overland route from Calcutta to Rangoon was perilous and often passed through hostile territory; the sea route was safer — and cheaper. In 1862 the operations of the Company were enlarged to inaugurate a general system of steamship communication serving the whole of the Indian littoral, with extensions to the Persian Gulf on the one hand and Malacca and Singapore on the other. The contract entered into with the government of India provided, among other duties, for the carriage of troops and stores at a mileage rate and for the maintenance, in addition to the fortnightly Calcutta — Burma mail service, of monthly services to Chittagong and Akyab; to Singapore; from Rangoon to the Andaman Islands; from Madras to Rangoon, a fortnightly service between Bombay and Karachi; and a service every six weeks to the Persian Gulf.

Burma (now Myanmar), it will be



The R.M.S. "Viceroy of India", leaving Alexandra Dock.

remembered, was part of the great Indian Empire that included both Burma and Ceylon. It was important for the sovereign power to keep its lines with these two countries open. The BISN filled that role admirably.

At the end of 1863, when the Company's fleet comprised seventeen steamers in commission and four building, the widened sphere of operations led to the title of the undertaking being changed to the British India Steam Navigation Company. By 1864 the Persian Gulf Service had become monthly and fortnightly service was instituted between Bombay and Calcutta.

Progress And Prosperity

Shortly after the opening of the Suez Canal in 1869, at which juncture the Company possessed a fleet of twenty five steamers of which the largest was the **Dacca** of 18,000 tons gross, a regular service was started between London and the Red Sea ports and the Persian Gulf. The new line opened up trade centres on the Arabian and African coasts of the Red Sea previously almost unknown and placed these ports in direct communication with the Persian Gulf and East Africa.

In 1873, under a fresh ten-year contract with the government of India, nearly all the sailings doubled. Progress and prosperity demanded it and the compulsions of the imperialist policy made it inevitable. The Red Sea — Persian Gulf Line was converted into a fortnightly through service between London, Bombay and Karachi. In 1876, an important trunk line was inaugurated. At the turn of the century, the Company's fleet consisted of seventy four steamers aggregating 141,457 tons gross register. Thirty years later it could boast of a fleet of 127 vessels of an aggregate gross tonnage of 756,654 tons. Including cooperation, the fortunes of B.I. and P&O became still more friendly by the fusion of the two companies under the chairmanship of Lord Inchcape.

The Anchor Line: The Anchor Line which has been connected with Bombay since the quarter of the nineteenth century owes its origin about the middle of the 19th century to the enterprise of four brothers of the name of Henderson, natives of a village on the coast of Pifeshire in Britain, all of whom followed the sea and became masters of their own ships. They soon turned their practical experience to good account by establishing themselves into business in Glasgow as shipowners and marine engineers.

About 1854 they placed their two small sailing vessels on the Mediterranean trade route and shortly afterwards two steamers, each of 178 tons gross, were built for the same trade. Their house flag was a red anchor and hence the undertaking was designated the "Anchor Line". Their next enterprise was to purchase the auxiliary steamers **Tempest** of 855 tons and **John Bell** for service between Glasgow and Canada and in 1856 the Glasgow-New York service was instituted, their steamer the **United Kingdom** of 1,255 tons gross, built in 1857, being at the time one of the finest ships on the Atlantic run and ferried literally thousands of new immigrants to the United States. In 1864, their Mediterranean service was extended to Alexandria and, on the opening of the Suez Canal in 1869, the Anchor Line steamer **Dido** became the first British steamer to enter the Canal. In 1875 a Bombay service from Glasgow to Liverpool was instituted and in 1881 a direct line of steamers was started to Calcutta. The Anchor Line possessed some of the finest passenger and cargo ships that visited Bombay, among them being the **California** and **Tuscania** of 17,000 tons and the **Britannia** and **Assyria** of over 8,000 tons.

The City and Hall lines had a number of splendidly equipped passenger and cargo steamers ranging from 7,500 tons to 11,000 tons on the Liverpool — Bombay — Karachi service.

The **Ellerman Lines** represented several important amalgamated interests of which those more closely connected with Bombay were the **City Line** founded in Glasgow by Messrs George Smith & Sons in the late thirties of the 19th century and the **Hall Line** founded in 1864 which inaugurated a regular service between Liverpool and Bombay in 1876, the **City of Baltimore** being the first ship put on the run.

The Ellerman Lines Ltd was formed in 1901 and took over from the City Line and the Hall Lines of passengers and cargo steamers, trading between the United Kingdom and the Far East, the Ellerman and Papayanni Lines trading between Liverpool and Mediterranean ports; the Westcott and Laurance Line running from London and Antwerp to Mediterranean ports and the Coverly and Westray Line to Portugal. Under the same ownership was Ellerman and Bucknall Steamship Company trading with South Africa and Australia and maintaining, in conjunction with the Strick Line, a joint service to the Persian Gulf.

The City and the Hall Lines had a number of splendidly equipped passenger and cargo steamers ranging from 7,500 tons to 11,000 tons on the Liverpool — Bombay — Karachi service.

Maps shows the areas serviced by the various shipping companies that plied their boats from India to the Mediterranean ports and onwards to Britain.

Courtesy: Reader's Digest Great World Atlas

The Lloyd Triestino Company: From the earliest days the Adriatic has been active in the trade between Europe and the Orient and in the Middle Ages Venice was pre-eminently the port whence the merchandise of the East flowed into Europe, passing over land routes to the ports of the Levant and thence by sea to Venice. The Republic then was all-powerful in the Adriatic, overshadowing the adjacent port of Trieste, but with the decline of the Venetian power, culminating in its overthrow by Napoleon and absorption in the territories of the Hapsburgs, Trieste rapidly acquired a large share of Venice's commerce.

The early part of the nineteenth century saw the genesis of the company which later came to be known as Austrian Lloyd. Its activities were at first confined to marine insurance after the manner of the celebrated London undertaking whose name it adopted; then, with the purchase and building of sailing vessels, it embarked in trade, plying between Trieste and the Dalmatian ports, with an extension in a few years to the Levant and Alexandria. Later, with the opening of the Suez Canal, the Company sought a wider field in the Orient and its vessels began to appear in Bombay. Cargo boats in time were supplemented by passenger steamers and with the establishment of a regular fast service between Bombay and Trieste, the Line assumed an important position among the Companies engaged in the passenger traffic between Europe and India.

The First World War saw the cessation in the activities of the Austrian Lloyd Co, for Trieste with its Italian population and sympathies was an object of distrust to the Austrian Government as it was the goal of the Italians, with the result that the port was all but isolated, its shipping being sequestered along the

deep indentured coast of Dalmatia. This was in the end fortunate for the city as on the cessation of hostilities and acquisition of Trieste by Italy, its shipping and notably the fleet of the Austrian Lloyd Co — was almost intact, so that Italian banking interests were able to acquire possession and with the addition of the vessels then on the stocks and approaching completion, the Lloyd Triestino Company was formed to trade on the same routes as its predecessors.

The Lloyd Triestino ships started calling at Bombay regularly from 1920 onwards with a monthly passenger service which from time to time was extended in conjunction with the Company's sister concern, the Marittima Italiana Co of Genoa. At one point of time there were three passenger sailings each month between Bombay and Venice, Trieste, Genoa and Naples, as well as a regular cargo service.

Writes historian N G Jog in his book *Saga of Scindia:* "The cruel and calculated destruction of Indian shipping and shipbuilding — as of many industries — forms a sordid chapter of the 200-year old British connection with India". That was not always so. For almost a century, the East India Company actually encouraged the Indian shipping and shipbuilding. For over 150 years, the Lovji Wadia family of Bombay were its master builders. They built 355 ships for the Company, including war ships which distinguished themselves in Britain's naval battles with Napoleon.

Lord Wellesley who was the Governor General of India from 1798 to 1805 was a stout champion of Indian ships and Shipbuilders. He considered that it was in the interests of his own countrymen to patronise Indian ships which were durable — more durable than British — made ships — and economic. The East India Company's records mention a vessel built in Bhavnagar in 1750 — the **Daria Daulat** which was thoroughly sound even after 87 years of continuous service while the ships of the British Navy had to be renewed every 12 years.

Colonel A Walker calculated in 1811 that ships built in India were four times cheaper than those built in Britain. Indians were master ship-builders and they were so for a long time. The *Rajvalha* mentions that the ship in which Prince Vijaya sailed from Bengal to Lanka could accommodate 700 passengers. The *Shaka Jataka* mentions a ship 800 cubic long, 600 cubit wide and 20 fathoms deep with three masts. Marco Polo who visited India in the 13th century wrote that he saw ships that carried ten small boats on the side with falls and tackle to lower theme in water and haul them over the sides, with sixty cabins below the main deck for berthed passengers. They were mostly four masters and with as many as 14 water-tight compartments separated by stout bulk-heads.

Indeed, Friar Oderic saw in the 14th century a Rajput ship of over a thousand tons burden carrying 700 passengers. Another foreign traveller in the same century spoke of these vessels as "sailing like mountains, with the wings of the winds". When the Portuguese first brought a vessel of 1,500 tons to Indian waters, it was found to be much smaller than a Gogha vessel — the **Rehmy** — which they had to admit, was then the largest ship in the world.

According to *Ain-i-Akbari,* 40,000 vessels were engaged in commerce in the Indus river alone, in Akbar's time.

Such was India's shipbuilding and maritime prowess. This was to be progressively diminished as British hold in India strengthened.

Richard, Marquess Wellesley, Governor-General 1798-1805, the eldest brother of the Duke of Wellington, was known as 'The Glorious Little Man' to his close circle of subordinates. As imperious as Curzon, he extended British influence over two-thirds of India.

Courtesy: British Library

Ships built in India which sailed to London were noticed. Naturally. They were superbly built and were a sight to see. But the locals could not stand the sight. In the words of historian Taylor; "The arrival in the port of London of Indian produce in India-built ships created a sensation among the monopolists, which could never have exceeded if a hostile fleet had appeared in the Thames. The shipbuilders of the port of London, took the lead in raising the cry of alarm; they declared that their business was on the point of ruin and that the families of all the ship-wrights in England were certain to be reduced to starvation".

Such clamour influenced the British Government to enact in 1814 that "Indian sailors, even though they were the subjects of His Majesty of England, shall not be deemed to be "British mariners" and any ship, even though British, which had on board

three-fourths of its crew of the British mariners per 100 registered tons would be liable to forfeiture and that no ship was to enter the port of London whose master was not a British mariner". It carried a step further the war on Indian shipping. Britain wanted to destroy not only Indian shipbuilding but the maritime profession itself. Sir William Digby was to write in *Prosperous British India (1901):* "The ancient occupations of the people on sea and land have been destroyed. The ship's which now carry India's coastwise trade are steamers built in Britain, the officers are Britons, the profits derivable from trade go to Britain. We are literally draining India dry — "bleeding" was Lord Salisbury's term in 1876. It is more accurate than my own".

The following table tells its own tale :

	Vessels	Tons
In 1857 the situation in regard to Indo-British trade was as follows:		
Indian (entered and cleared)	34,286	1,219,958
British and British Indians	59,441	2,475,472
Forty two years later, in 1898-99 the figures are as follows:		
Indian (entered and cleared)	2,302	133,033
British and British Indians	6,219	7,685,009

Clearly, the British had got entrenched in trade and commerce to the detriment of Indian shipping. British shipping interests were powerful and were out to shatter Indian competition. Most of the 102 Indian navigation companies which were registered between 1860 and 1925 with a capital of over Rs 45 crores went into liquidation one after another. Even an Englishman like Sir Alfred Watson, editor of the Calcutta-based *The Statesman* had to admit that Indian company after company which endeavoured to develop a coastal service had been financially shattered by the heavy competition of British interests. Glaring light is thrown on the *modus operandi* of this competition by the fate that overtook the Tata Line, started by that great industrialist Jamshedji Nusserwanji Tata, in 1894 and the Swadeshi Shipping Company which was started by V O Chidambaram Pillai in 1906.

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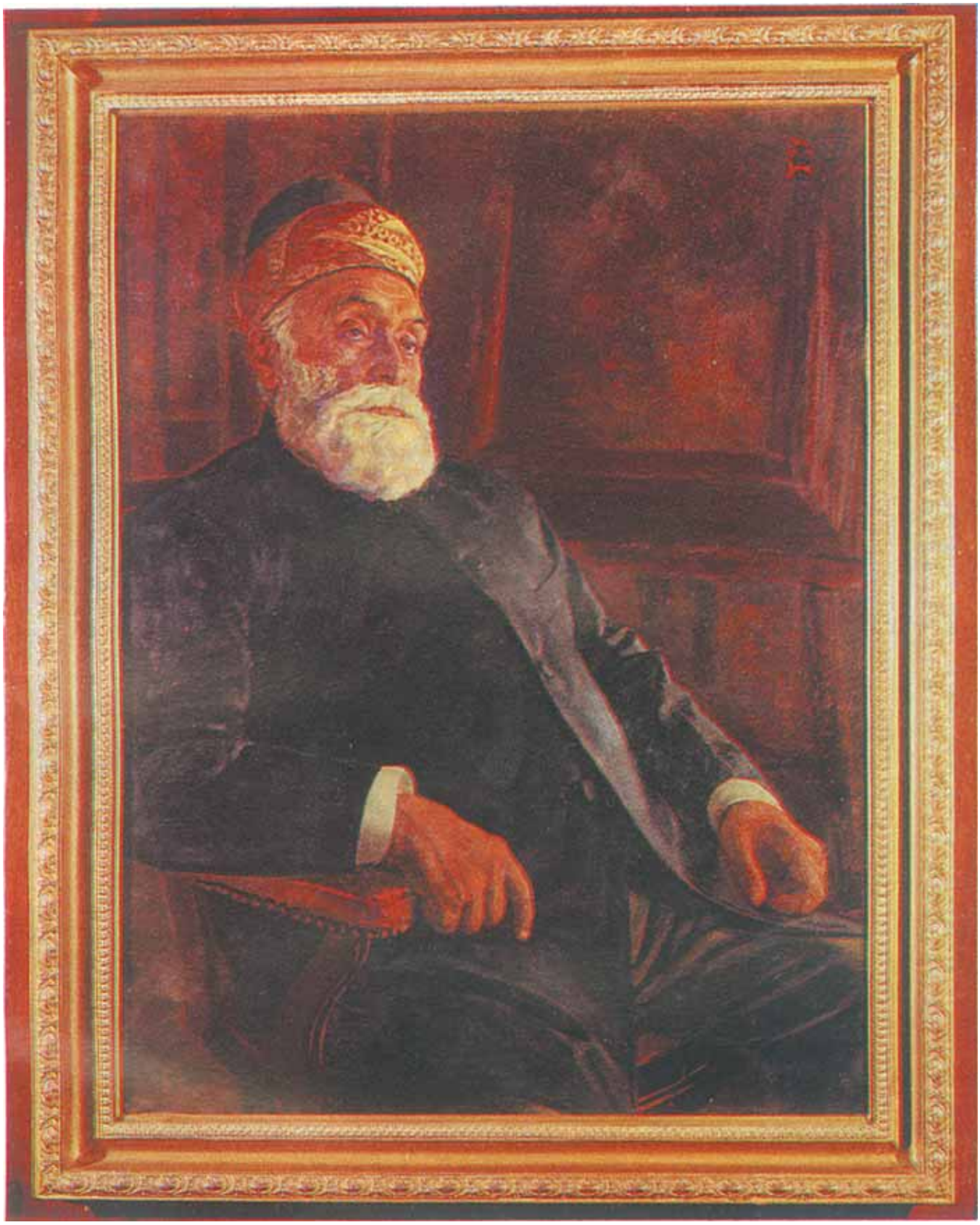
Writes Jog:

Tata enterprise was sparked by the heavy freight rates charged by the P&O for the carriage of cotton yarn which his spinning mills produced, to the Far East. His attempts to persuade the P&O to reduce them failed and it also came to his knowledge that secret rebates were being offered by the company to some Jewish firms which enabled them to undersell their product. "We carry raw cotton from Bombay to Japan" Sir Thomas Sutherland, then P&O's chairman said in 1904, "in order that Japan may cut the throat of Bombay. We carry cotton twist from Bombay to China in order that Bombay may cut the throat of Japan".

Tata first tried to fight the P&O's high rates with the cooperation of the two foreign lines. They, however, deserted him within a year and themselves formed a ring with P&O. When the rates were arbitrarily hitched up by 50 per cent by the ring, Tata decided to form a Line of his own to cater to Indian interests. He opened interests with Nippon Yusen Kaisha and an agreement was arrived at to float a new line — the Tata Line — on the basis of equal risk. Two steamers were purchased by the Tatas and were put in commission along with two N Y K ships. Each vessel was to run once a month carrying coal, glass and other exports from Japan to India returning thence laden with cotton goods and yarn. The freight charged by Tata Line was Rs 12 per ton of 40 cubit feet against the P&O rate of Rs 19. This was too much for P&O. It promptly started a rate war and lowered its charges to an unbelievable Rs 1.50 per ton and even offered to carry cotton free to Japan. P&O was determined not to allow Indian shipping to prosper and was willing to go to any extent to kill it.

The reduced charges were offered in the form of a deferred rebate and could only be obtained if the shipper signed a declaration that he had not, during that period, been interested in any shipment between Japan, China and Bombay made by any vessel belonging to the N Y K or Tata Line.

But that was not all. P&O started a campaign of maligning the seaworthiness of Tata ships which affected their insurance. Tata threatened to take P&O to court and the company had to apologise.



The great industrialist Jamshedji Nusserwanji Tata was as much interested in shipping as in steel but had to face strong opposition from British masters who forced him to close down the Tata Line.

Courtesy: Birla Matushri Sabhagar, Bombay

V O Chidambaram Pillai

But nevertheless it continued the rate war shamelessly. In desperation, Tata submitted a memorandum to the Secretary of State for India seeking some form of redress. The memorandum *inter alia* said:

> *With scores of liners, British and English and foreign plying in these waters which our petted and glorified Anglo-Indian company can afford, and perhaps find it good policy to tolerate, it is only jealous of a small enterprise like ours. While it can lovingly take foreigners and possible future enemies of England to its bosom, it discards the poor Indian for whose special benefit it professes to have come to India and from whose pocket it draws the greater part of its subsidy...*
>
> *This company to whose prosperity the tax-payer of India may lay some claim to have contributed has driven off all legitimate competition from time to time, either by reducing rates to so low a limit as to exhaust the resource of its rivals or, failing in that respect, taking such powerful rivals into partnership.*

To no avail. Tata was facing stern imperialism in ruthless action. White-hall wouldn't support Tata who was finally compelled to sell his line, when the P&O promptly raised its rate from Rs 1.50 per ton to Rs 16 per ton! It was a warning to other enterpreneurs.

What happened to Tata happened eleswhere to Chidambaram Pillai as well. Pillai launched his Swadeshi Shipping Company with great difficulty but when his ships began to ply BISN started a fierce rate war. Also the British Government forbade its servants to travel by the Swadeshi ships and openly extended favours to the B I. As if to clinch the issue Pillai was arrested and sentenced to a long term of imprisonment for taking part in a political meeting. In the words of C Rajgopalachari, "the company crashed on the rocks of politics, not on the rocks of business".

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It was against this background that the Scindia Steam Navigation Company was formed in 1919. Of the formation of this company its historian Jog records:

> *It cannot be said that the establishment of the Company was the outcome of conscious planning or concerted thought, let alone feasibility studies by experts which are the fashion nowadays. They would surely have disfavoured the formation of any shipping venture. Scindias owe their birth to a stroke of inspiration, a moment of illumination, almost to an accident of history. No shadow was allowed to fall between the thought and the action, between the idea and its implementation.*

The fact is, Indian nationalism was raring to express itself in various ways and British imperialism acted as a challenge. The efforts of men like Jamshedji Tata and Chidambaram Pillai had been relentlessly crushed by British shipping companies which had established monopoly in Indian shipping through Britain's political supremacy. But the British reckoned without the enduring courage of Narottam Morarjee. Narottam and Walchand Hirachand personified the spirit of economic nationalism. They had to wage a grim fight — and a prolonged one, too — against overwhelming odds, for the very survival of Scindias, but not of Scindia's alone. The very future of national shipping was at stake. They were the pioneers and the path-finders.

By happy coincidence as Jog noted, the first ship of the Scindias, the ***S S Loyalty*** sailed from Bombay to London on 5 April 1919, just a day before the nation-wide *hartal* called by Mahatma Gandhi, which ultimately led to the noncooperation movement. Discerning the uniqueness of the venture, Mahatma Gandhi took time off from his political pre-occupations to visit Narottam Morarjee to bestow on him his blessings.

But how did the ship come to the notice of Walchand in the first place? That itself is an interesting story. The ship was originally the property of the Maharaja of Gwalior.

During the First World War (1914-18) he had purchased it from

the Canadian Pacific Line and transformed it into a hospital ship and put it at the service of the Army at his own cost. When the war ended, the government of India allowed Scindia to dispose of the ship as he liked. He was prepared to sell it for Rs 25 lakhs (half of it as down payment) to the first bidder. Walchand heard of it from a British engineer by sheer chance when both were travelling by train from Delhi to Bombay. The date? February 16, 1919. Walchand was a man of action. When he landed at Victoria Terminus station he did not bother to go home first. He went to the dock, instead, had a good look at the ship on sale, decided it was a good buy and went straight to the office of Narottam Morarjee, then Bombay's leading textile magnate, who did not need such persuasion to run a shipping line. Soon Sir Lallubhai Samaldas and Khilachand Devchand also got into the act and by 27 March 1919 the Scindia Steam Navigation Company Ltd had been formed — in record time!

In 1881 an Indian law student, Mahatma Gandhi, had sailed from Bombay to Marseilles in P&O's Clyde. Fifty years later he repeated the journey aboard Rajputana (he is seen here with Captain H M Jack) on his way to the Round Table Conference. Within twenty years the Raj, which the P&O ship represented, was no more; nor were Rajputana, torpedoed in 1941, nor Gandhi himself.

What was a hospital ship was quickly transformed into a passenger ship and when it sailed to England it carried a complement of some of the greats like Chief Justice of Bombay and his wife, the Maharajah of Kashmir, the Maharajah of Kapurthala, the Takore sahibs of Limbdi and Bhavnagar, Sir Chunilal V Mehta, Mr M C Chagla, Mr Bhulabhai Desai, Sir Manilal Nanavati and many others. On the ship's return journey it had Dr Jivraj Mehta as her Medical officer.

Following the purchase of this first ship, Scindias bought two more ships and were able to lift a cargo of 180,000 tons in 1921-22, the bulk of it in sailings from Rangoon. The British now engaged in a rate war.

Only the first two Scindia ships had different names. The ships purchased or built after 1920 all had the pre-fix *Jala* and had names like **Jalveera, Jalavijaya, Jalaputra** and **Jalagopal.** Strangely enough two ships that were named otherwise — the **El Madina** and **El Hind** were lost, the former by enemy action off Calcutta in 1944 and the latter during the Bombay dock explosion, also in 1944.

The Scindia Steam Navigation Company went from strength to

strength and in 1969, the year of the Golden Jubilee it acquired the first bulk carrier of 53,346 dwt and named it **Narottam Morarjee** after the first founder and the first chairman of the Company. Its fortunes were later to fluctuate and the company itself wound up.

At the outbreak of the Second World War (1939-1945) the position of Indian shipping was as follows: In all Indian companies operated 53 ships of a total tonnage of 1,26,569 GRT. Of these Scindia Steam Navigation owned 23 ships (98,812 GRT), Bombay Steam Navigation 14 ships (12,464 GRT) and seven other shipping companies owning between one to three ships made the rest. On 15 August 1947, the day India became free, Indian shipowners had in all 59 ships, 48 of which were plying along the Indian coast (1,10,000 GRT) and 11 overseas (73,000 GRT).

With the coming of independence, the British monopoly had ceased. Indian shipping had come into its own.

Scindia Steam stood for Indian shipping rights, but alas, over the years its fortunes rose and fell. In pre-independence days it had fought the good fight even forcing Mahatma Gandhi editorially to comment in *Young India* (26 March 1931) that the policy of the British rulers was to see that the Indian shipping industry perished so that British shipping may flourish.

Such was the respect in which Scindia Steam was held that the National Maritime Day, celebrated each year on 5 April marked the day of April 5, 1919 when the first ship owned by the Scindia Steam Navigation Company Ltd, (SSNCL) the **S S Loyalty** sailed from Bombay to London on its maiden overseas voyage.

However, after the Gulf oil crisis in the late seventies and early eighties, SSNCL started making massive losses, never to recover again, as the age-old company could not keep pace with the changing world shipping market demands due to lack of a variety of vessels like containerised ones.

In late 1997 assets worth around Rs 300 crores owned by SSNCL were transferred to the Central Board of Direct Taxes (CBDT) to recover outstanding loans worth Rs 200 crores it owed to the Union Finance Ministry. The transfer of SSNCL's assets, mainly real estate was effected under the recovery provisions of the Union Government's Shipping Development Finance Corporation Act, under which loan after loan had been sanctioned to the SSNCL which, however, continued to sink deeper and deeper under the Government debt.

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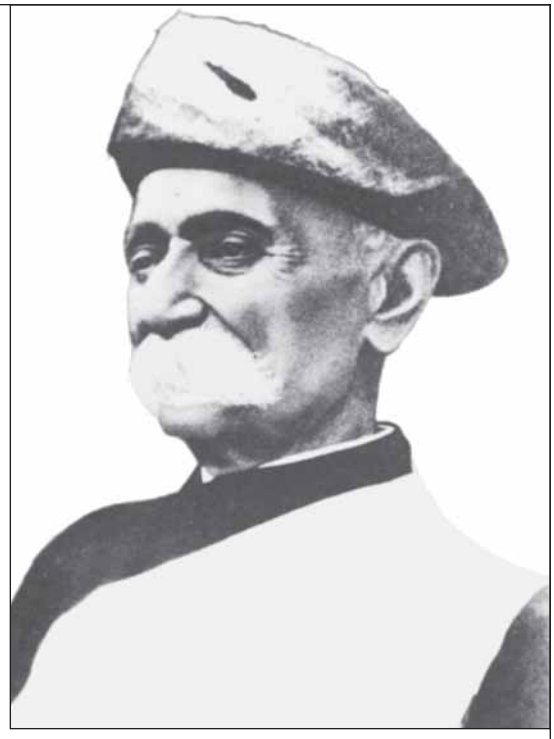
The transfer of the assets of SSNCL took place immediately after the company, which once could boast of owning a fleet of 55 ships was compelled to sell off its last ship, the **S S Jal Tapti** for about Rs 9 crore for the day-to-day survival of the company.

Now that the assets of SSNCL have been transferred to the CBDT they would be auctioned one after the another by the Income Tax Department and after all the outstanding loans, including interest on them, were paid to the Union Finance Ministry out of their auction proceeds, the expected surplus of about Rs 100 crore is expected to be given to the SSNCL's shareholders. According to a company official there will be no need to wind up the flag of Scindia Steam Navigation Company Ltd as any individual or company may be interested in reviving the country's first national shipping company.

Bombay was the port of call for several shipping lines as trade was brisk. The principle commodities of trade make for a long list and include; bricks, tiles, chunam and sand, China and fire clay, coal, cotton, firewood, glassware, grain (rice, wheat, cereals), hardware, iron and steel kerosene, liquid fuel, motor cars and lorries, machinery, boilers and railway parts, oilman-stores, oils, paper, piecegoods, petrol, sugar, tea, timber, twist and yarn, flour, groundnuts, hemp, hides and skins, manganese ore, myrabolans, oil cakes seeds, spices and wool.

Upto the thirties Bombay traded largely with the United Kingdom and British possessions (Aden and dependencies, Straits Settlements, Kenya) Canada, Australia, Netherlands, Czechoslovakia, Switzerland, Japan, China (exclusive of Hong Kong and Macao) Iraq, Persia, Java and some countries in Africa and the United States of America.

Walchand Hirachand



Lallubhai Samaldas

Narottam Morarjee

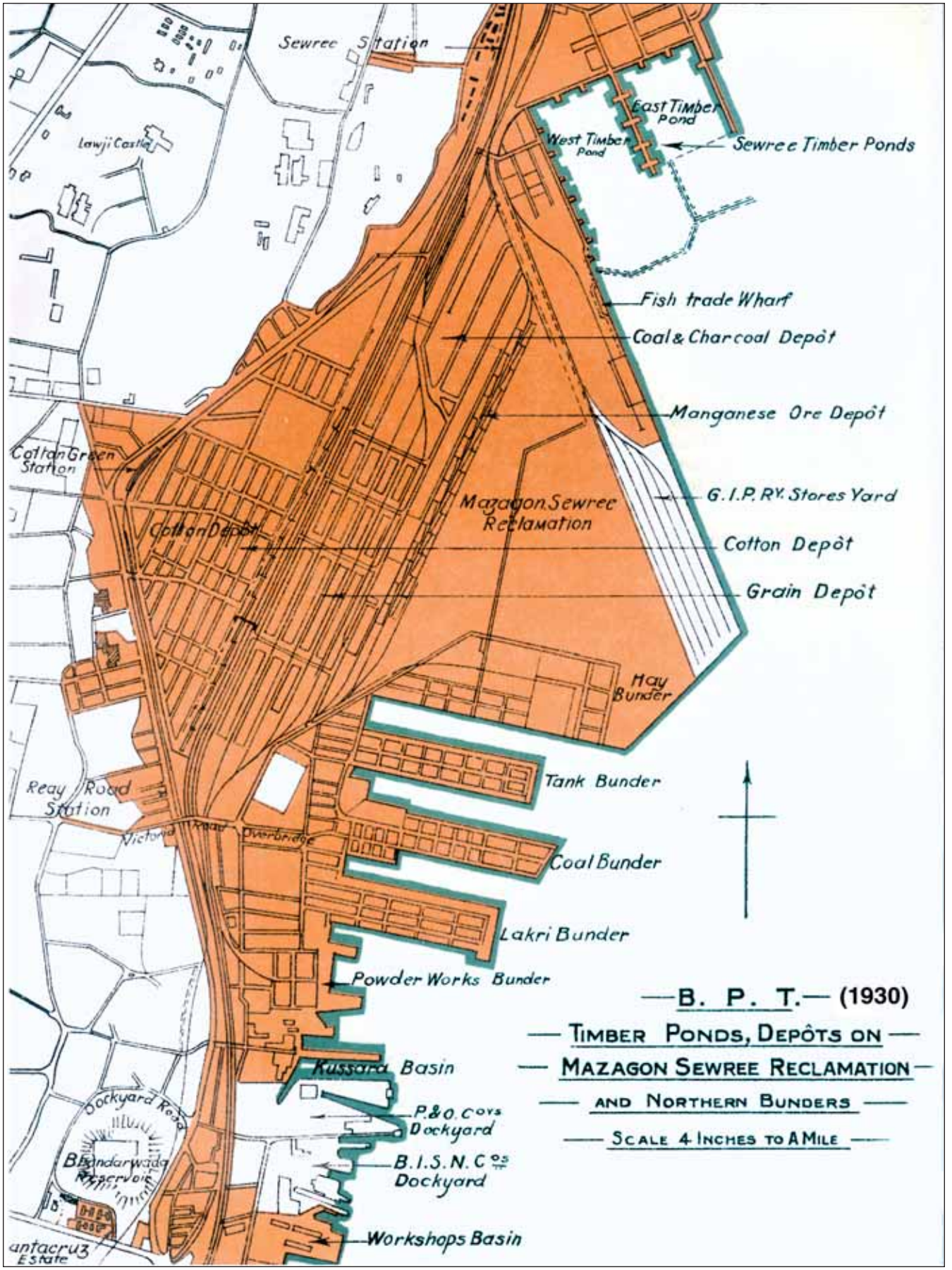
"THE MEN BEHIND THE SPIRIT OF ECONOMIC NATIONALISM"

Khilachand Devchand

Trade was carried by the following shipping lines:

Name of the Line	*Service*	*Port of Call*
Anchor Line Ltd	**Passenger & Cargo**	**Suez, Port Said, Gibraltar and Liverpool.**
Asiatic S N Co	**Cargo & Passenger**	**Sabang, Tegal, Samarang & Saurabaya.**
Bombay & Persia S N Co	**Passenger & Cargo**	**Red Sea Ports, Jeddah, Mauritius.**
British India S N Co	**Passenger & Cargo**	**Karachi, Pasni, Gwadar, Charbar, Muscat, Jask, Bunder Abas, Dubai, Bushire, Mahomerah, Basra, Mombasa, Zannibar, Dar-e-Salem, Mozambique, Lourenco Marques, Durban Suez, Port Said, London, Middlesborough, Antwerp.**
Borneo Line	**Cargo**	**Straits, Settlements, Burma.**
City Line	**Passenger & Cargo**	**Karachi, Port Said and New York, Marseilles, Manchester, Birkenhead, Liverpool, Glasgow (occasionally at Port Sudan).**
Clan Line	**Cargo only**	**Suez, Port Said, Birkenhead and Glasgow.**
Ellerman & Bucknall American Service	**Passenger & Cargo**	**American ports via Colombo, Madras, and Calcutta.**
Hall Line	**Passenger & Cargo**	**Suez, Port Said, Dunkirk, Manchester, Hull, Middlesborough, Glasgow.**
Hansa Line	**Cargo only**	**Port Said, Antwerp and Hamburg.**
Holland and British India Line	**Cargo only**	**Continental Ports,**
Lloyd Triestino & Maritime Italiana	**Passenger & Cargo**	**Aden, Suez, Port Said Venice, Trieste,** **Aden, Suez, Port Said, Naples & Genoa,** **Suez, Port Said, Piume, Trieste, Spelato and Marseilles.**
Mogul Line	**Cargo & Pilgrims**	**Red Sea ports.**
Nippon Yusen Kaisha	**Cargo & Passenger**	**Karachi, Colombo, Singapore, Hong Kong, Shanghai, Kobe, Osaka, Nagoya, Yokohama.**
Osaka, Shosen Kaisha	**Cargo & Passenger**	**Karachi, Colombo, Penang, Singapore, Moji, Hong Kong, Kobe, Osaka, Nagoya, Yokaisichi.**
P&O S N Co	**Passenger & Cargo**	**Aden, Suez, Port Said, Malta, Marseilles, Gibraltar, London.**
Persian Gulf	**Passenger & Cargo**	**Karachi, Jeddah.**
Roosevelt Steamship Co	**Cargo**	**American ports.**
Wilson Line	**Cargo only**	**Karachi, Persia, Port Said, Dunkirk, Antwerp, Hull, Middlesborough.**

In addition, the following shipping lines sailed between the ports of the then British Empire (that included Ceylon and Burma)		
Asiatic S N Co	**Cargo & Passenger**	**Tellicherry, Calicut, Cochin, Tuticorin, Colombo, Galle, Cocanada Puri and Calcutta.**
Bombay & Persia S N Co	**Cargo only**	**Calcutta & Rangoon.**
Bombay S N Co	**Passenger & Cargo**	**Panjim, Bhavnagar, Mahuwa, Jaffarabad, Verawa, Mangrol, Porbandar, Okha, Karachi, Marmahoa, Mangalore.**
British India S N Co	**Passenger & Cargo**	**Porbandar, Dwarka, Okha, Bedi Bunder, Cutch, Mandvi, Karachi, Tellicherry, Calicut, Cochin, Tuticorin, Colombo, Madras, Calcutta, Akyab, Bassein, Rangoon, Moulmein.**
Indian Corporative Navigation & Trading Co	**Passenger only**	**Ratnagiri, Vijaydurg, Deogad and Malvan.**
Jamnagar S N Co	**Cargo only**	**Jamnagar.**
Malabar S N Co	**Cargo only**	**Badagara, Ponani, Cochin, Allepey.**
Merchant S N Co	**Cargo only**	**Badagara, Calicut, Cochin, Allepey.**
New Bombay Steamships	**Cargo only**	**Karachi, Mangalore, Calicut, Cochin, Allepey.**
Persian Gulf S N Co	**Cargo only**	**Calcutta.**
Scindia S N Co	**Cargo only**	**Tellicherry, Bandagara, Calicut, Cochin, Colombo, Galle, Cocanada, Calcutta, Tuticorin, Colombo, Akyab, Bassein, Rangoon, Moulmein.**


Sewree Station
East Timber Pond
West Timber Pond
Sewree Timber Ponds
Lawji Castle
Fish trade Wharf
Coal & Charcoal Depôt
Manganese Ore Depôt
Cotton Green Station
G.I.P. Ry. Stores Yard
Mazagon Sewree Reclamation
Cotton Depôt
Cotton Depôt
Grain Depôt
Hay Bunder
Tank Bunder
Reay Road Station
Victoria Road Overbridge
Coal Bunder
Lakri Bunder
Powder Works Bunder
Kussara Basin
Dockyard Road
P.&O. Co's Dockyard
Bandarwada Reservoir
B.I.S.N. Co's Dockyard
Workshops Basin
antacruz Estate
B. P. T. (1930)
TIMBER PONDS, DEPÔTS ON
MAZAGON SEWREE RECLAMATION
AND NORTHERN BUNDERS
SCALE 4 INCHES TO A MILE

CHAPTER V

Carving A City From The Swamps

It has been a long journey from 1860 to 1990 for the Bombay Port as slowly but steadily it went on to reclaim land from the sea until today the Bombay Port Trust is the largest landowner in Mumbai. Simultaneously a great deal of modernisation also took place in the handling and transport of goods and presently Mumbai is racing ahead of other Indian ports in regard to container traffic.

What is often not realised is the simple fact that Bombay is largely a city of reclamations. Ever since the early years of the Portuguese occupation, when Simon Botelho advised the King of Portgual to encourage the development of the colony by the free gift of submerged land to those settlers willing to undertake its reclamation, Bombay has benefitted by public and private enterprise in this respect. The East India Company's officers wisely continued the policy of their predecessors and it was due to their energy and determination in constructing the Hornby Vellard — despite the reluctance of the Court of Directors to finance the undertaking — that large tracts of swamp land in the very centre of the island, previously inundated at high tide, were reclaimed and made available for building. But it was not, however, till the latter half of the nineteenth century that any real effort was made to reclaim and regulate the harbour foreshore.

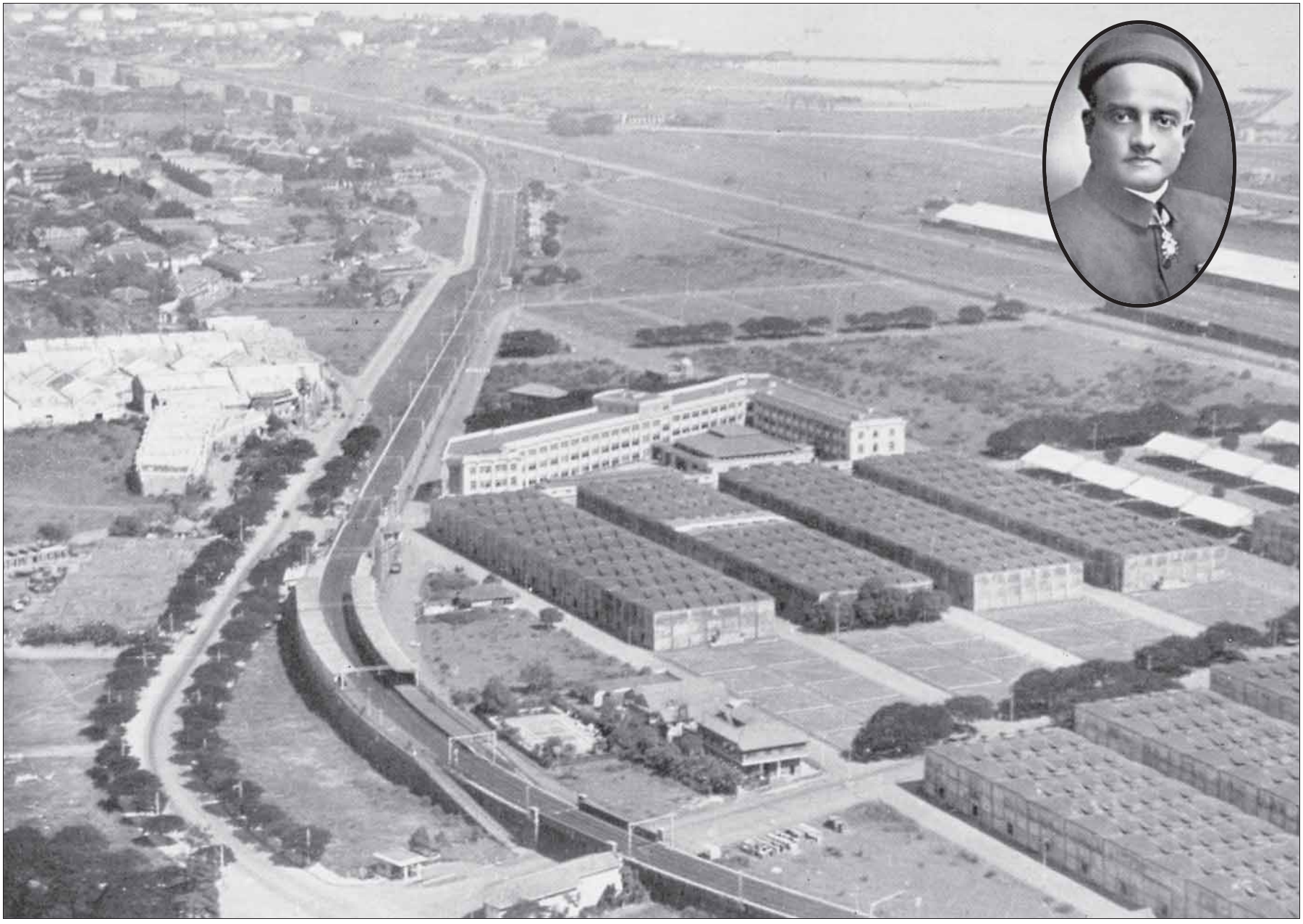
It would surely come as a surprise to many to realise that practically the whole of the Port Trust docks and estates are on the land reclaimed from the harbour. A considerable amount of this reclamation had been carried out by the Elphinstone Land Company and other smaller concerns — and to some extent by Government agency — prior to the constitution of the Port Trust in 1873. The whole area operated on by the Elphinstone Company was 386 acres but much of their gigantic scheme was still incomplete when their properties were acquired by the government on behalf of the Port Trust.

Once the Trust took over the task of reclamation it went about it somewhat slowly but for all that, systematically. During the first thirty years of its existence, the Trust reclaimed 167 acres of foreshore land from Sewri Bunder in the north to Apollo Reclamation and the Colaba bunders in the south. It was, however, in 1808 that the Trust embarked on the great Mazagaon-Sewri Reclamation Scheme which was completed four years later in 1912 and added a whopping 583 acres to the area of Bombay. It was by any reckoning a fabulous bit of work. Subsequent filling and reclamation work at Wadala, Tank Bunder and Colaba provided a further 310 acres, to bring the total area under the Port Trust to 1,880 acres or approximately one-eighth of Bombay City and Island by the time India became independent.

The possession of the large estates is a very material factor in the development and prosperity of the port. Not only did it enable the Trustees to meet the increasing needs of trade in the shape of storage depots and terminal railway facilities without having to acquire land at inflated prices, but the ground rents from the land estates form a permanent asset of great and increasing importance to the Trust. At the turn of the century the annual receipts from leaseholds and storage tenancies would have amounted to some Rs 15 lakhs. But twenty five years later the receipts had risen close to Rs 50 lakhs (excluding dock warehouse rents).

A Sound Network System

Prior to 1914 the docks were not served by railways. But as traffic between port and the interior developed, the two main lines, the Great Indian Peninsular (now known



(Inset): Sir Purshottadas Thakurdas, Senior Member of the Board of Trustees for so many years since 1914. He was for many years President of the East India Cotton Association and was Member of the Legislative Assembly.

N W CORNER OF COTTON DEPOT, SEWRI (1923).
Bombay Cotton Exchange in centre.
Oil installations at Sewri and Wadala and bunders seen in background.

Courtesy: East India Cotton Assoc, Ltd

as Central) and the Bombay, Baroda and Central India (presently known as Western) railways laid out capacious goods yards in close proximity to the Prince's and Victoria Docks with which they were connected by three sidings crossing Frere Road.

These sidings accommodated only a fraction of the import and export traffic — the bulk was conveyed from ship to rail and vice versa in bullock carts, a cumberous and expensive, not to say time-consuming way which continued until the completion and opening of the new port railway on January 1, 1915. In planning the railway lay-out, the designers had the advantage of ample unencumbered land, which enabled them to adopt the best alignments and the most modern principles of railway transportation without disturbing existing interests. In consequence the port is exceptionally well-equipped as regards terminal railway facilities.

Around 1930, the railway system, though only 7½ miles in actual length from Wadala junction to Ballard Pier, comprised over 110 miles of main lines and the sidings and they were divided into five sections:

(a) the receiving and despatching yard at Wadala where the link with the trunk railway was formed
(b) the bulk oil depots
(c) the Mazagaon-Sewri Reclamation with its depots for cotton, grain, manganese, coal and other trades
(d) the Prince's and the Victoria Docks and
(e) the Alexandra Dock and the Ballard Pier.

The Wadala Sorting Yard covered an area over a mile long, comprising two divisions one of which received the inward goods traffic from the trunk railways and sorted out the Wagons for despatch to various destinations on the Port Trust Railway, while the other received the outward wagons from all over the port area and made them up into trains for the main line railways.

There were over two hundred delivery points on the Port Trust Railway showing the elaborate care taken to adapt it to the varied requirements of the many trades it served. It is interesting to note that the wagon sorting at Wadala Yard was carried out by the Gravity Hump Method — trains on entering the yard were shunted up one side of a long, gradated embankment of "hump" at the top of which the wagons were released one by one and gravitated down the opposite slope, having diverted on the run into their proper sidings where they were made

Wadala marshalling yard with Antop Hill in the back ground (1930).

Site of Ballard Estate before reclamation the road seen is Nicol Road, now called as Ramjibhai Kamani Marg (1892).

up into rakes for despatch to destination!

The Bulk Oil Depot

The great bulk oil installations, some 83 acres in extent, were divided into three groups:

(a) The liquid Fuel and Lubricating Oil Depots at Malet Bunder immediately north of the docks
(b) The Kerosene Oil Installations at Sewri
(c) The Petrol Installations still further to the north on the Wadala Reclamation.

A cargo of cotton for export, Alexandra Dock (1920).

The total capacity of all the various oil depots in the thirties was about 45 million gallons. The installations which are all on land leased from the Port Trust were connected with the Port Trust Railway by private sidings at which bulk oil was filled into tank wagons for up-country distribution, with pipe line connections aggregating 20 miles in length to the several discharge berths on the Harbour Walls and at Pir Pau.

The former were equipped for discharge of bulk kerosene and liquid fuel while petrol and high grade kerosene were handled at the special oil berth at Pir Pau, on the island of Trombay at the north end of the Harbour. The Pir Pau oil pier was provided with 8-inch and one 10-inch discharge pipe (with a boasting pump about half a mile from the pier head) lending to the storage tanks at Sewri and Wadala, 5½ miles away.

Cotton Depot

In the thirties the most important of the several storage depots served

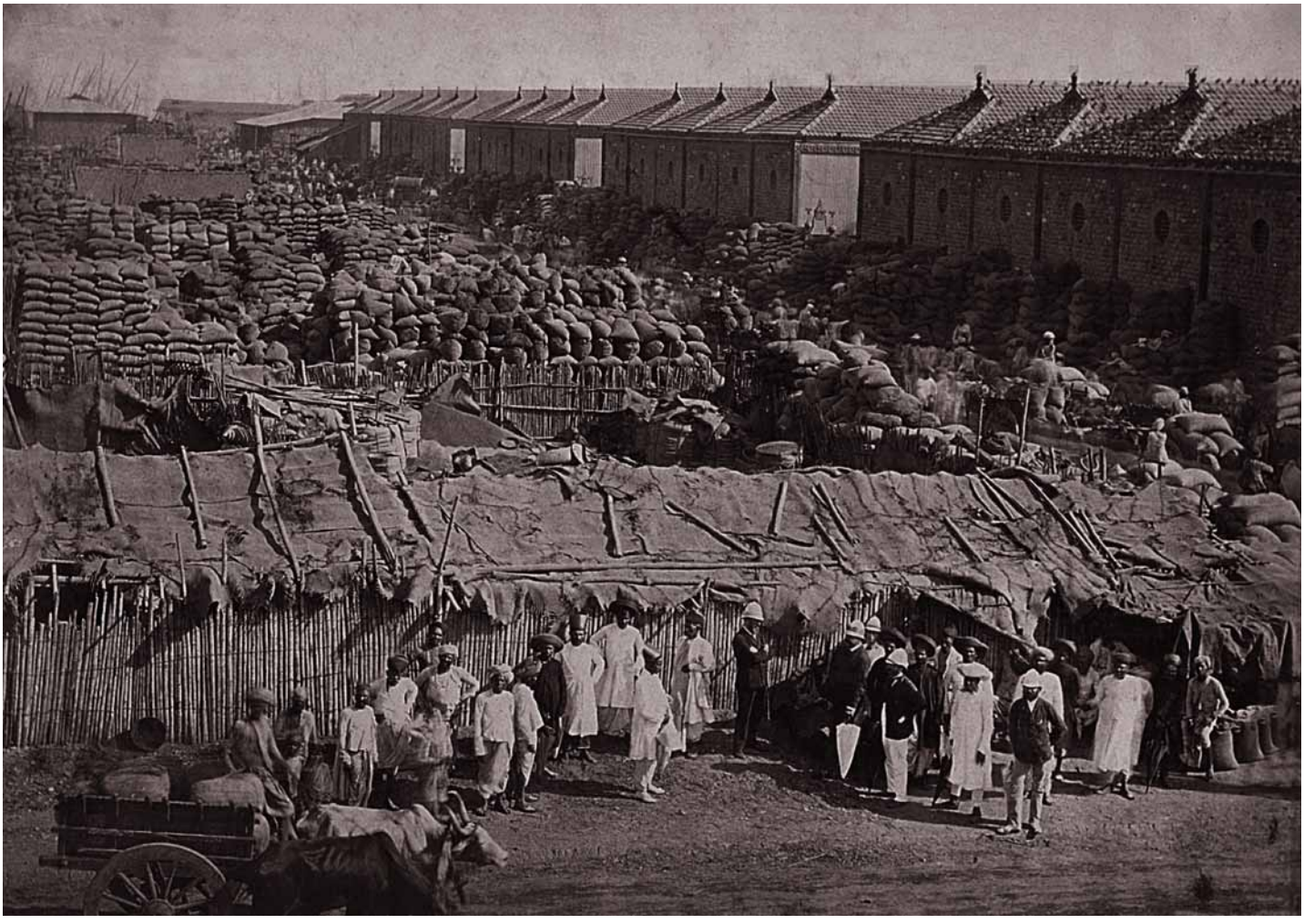
by the Port Trust Railway was the Cotton Depot, which is situated on the western portion of the Mazagaon-Sewri Reclamation. It was constructed by the Port Trust at the time at the cost of 1,000,000 pounds and was opened in 1923, when the old Colaba Cotton Green was closed down. Extending over an area of 127 acres, the depot then was the largest and the most uptodate of its kind in existence. It comprised 178 ferro-concrete godowns, each 104 feet by 40 feet providing accommodation for one million bales and 230 raised plinths (of which eleven had covered monsoon protection), accommodating a like number. On the east side of the depot were 20 receiving and despatching stations in echelon, each 250 ft long and a railway yard with 8 miles of track. All the godowns were equipped with Grinneil Sprinklers which operate automatically in case of fire and the depot, also had its own fire Brigade and Salvage Corps stations, dispensaries, restaurants etc.

Near the north entrance of Reay Road is the East Indian Cotton Association's magnificant Exchange, which was erected at a cost of some Rs 20 lakhs and opened in 1925. The building covers an area of over 12,000 square yards and was designed to combine the leading features of both the New York and Liverpool Exchanges. It contains a special hall for trading, 200 rooms for buyers and sellers, offices and sample rooms.

Bombay is one of the largest cotton markets in the world and in the thirties the turnover exceeded even that of Liverpool.

Grain Depot

To the east of the cotton depot, on the opposite side of the Port Trust Railway lay the Grains depot which — as regards lay-out and communications — for long has been regarded as a model of its kind. Over 60 acres in extent, it provided more than one million square feet of covered accommodation arranged in parallel rows of sheds 1,000 ft long by 110 ft wide. Between each row of sheds are feeder lines of which run echelon sidings — imports on one side and exports on the other,



Ryan Grain Market (December 1876).

Alexandra Dock entrance and the Hughes dry dock — Aerial view (1930).

one to each 250 ft bay of shedding, each side accommodating ten wagons. This enabled inward consignments from up-country or overseas to be unloaded into the sheds at the exact spot where they were required while outward consignments for shipment or up-country distribution could simultaneously be despatched from the other side of the shed or plinth. In addition to these rail facilities the depot was equipped with excellent roads, conveniently arranged to serve the individual sheds, water supply and electric lighting and power.

Originally designed and opened in 1914 for the reception, storage and shipment of grains and seeds — one of the most important items in Bombay's export trade — the depot was considerably extended in subsequent years to meet the increasing demand of other trades, requiring extensive storage accommodation combined with rail and road facilities. At one time an area of seven acres of covered and open accommodation was leased to General Motors, India for their Assembly Factory. Then there was the Manganese Ore Depot which covered an area approximately 150,000 sq yards, east of the Grain Depot which provided stacking accommodation for 300,000 tons of ore and was divided into 33 rail-served plots which were rented by the principal exporting companies.

Sea-borne coal was accommodated at Mazagaon, Frere and Haji Bunders and a storage space of 60,000 sq yards had been allotted, mostly for bunker coal. On the Mazagaon-Sewri Reclamation, north of the Grain Depot, an additional rail-served storage area of 46,000 sq yards has been reserved for rail-borne coal intended for local consumption. And then some 15,000 sq yards on Tank Bunder was reserved for charcoal which was imported into Bombay in large quantities both by sea and rail.

Besides there were other commodities for which space was necessary like bricks and tiles, building stone (Porbunder and Shahabad), hay and straw and iron. Bombay consumed such a variety of goods that had necessarily to be imported and for which storage space had to be allotted for easy access. That is where the vast land reclaimed from the seas over the decades helped the Bombay Port Trust.

The Ballard Estate

Adjoining the Alexandra Dock and the Mail Berth is the Ballard Estate which was created out of a spoil excavated in the process of constructing the Alexandra Dock. Approximately 22 acres in extent it was laid out as a first class business centre with 43 blocks of handsome office buildings of uniform height and well-kept thoroughfares. Here are located the Customs House and the Grand Hotel — the latter occupying a strategic corner site. Next to the Customs House is the Port Trust War Memorial. The Port Trust Administrative offices face the southwest corner of the estate and nearby are the premises belonging to the Royal Bombay Seamen's Society with the church of Saint Nicholas adjoining.

At one time an area of seven acres of covered and open accommodation was leased to General Motors for their Assembly Factory.

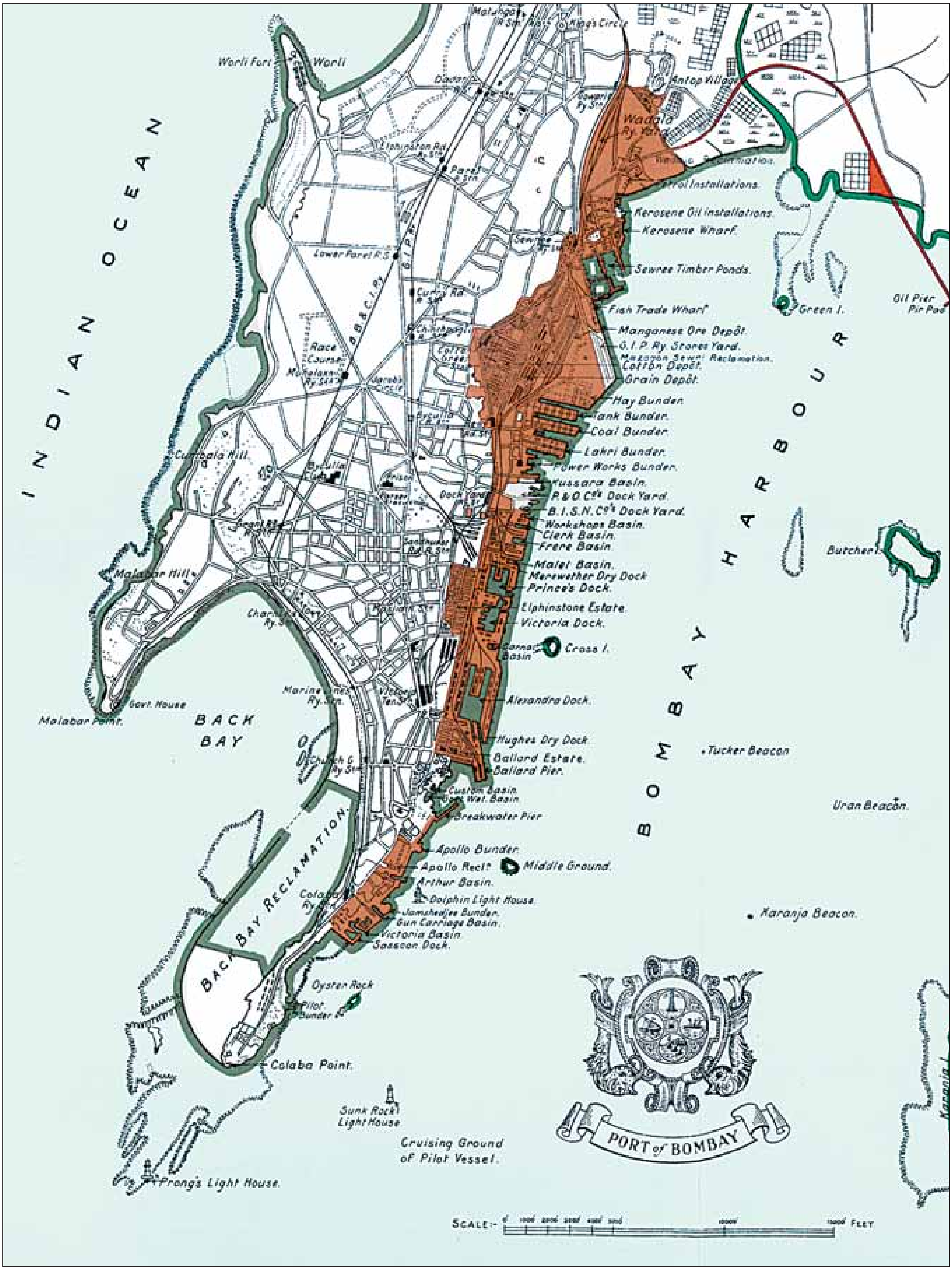
The Apollo Reclamation

The Apollo Reclamation includes the old Wellington Reclamation and the site of the former Cotton Green. It comprises an area of 43½ acres and in terms of real estate costs is probably one of the costliest areas in the city. It is a major residential district anyway. Among other noteworthy buildings, it contains the Gateway of India, The Royal Bombay Yacht Club (it is no more royal) and the famous Taj Mahal Hotel. At one time adjacent to the Taj was Green's Hotel which was also famous. Presently the municipal authorities have laid out a garden that fronts the Gateway with the statue of Chhatrapati Shivaji Maharaj on horseback.

Further to the south is the Sassoon Dock estates of 17½ acres which surrounds the oldest of Bombay's wet docks. At one time the extensive range of godowns within the dock area was used for the storage of cotton, but later they were converted into motor and machine shops. On the reclamation adjoining the old dock the Port Trustees were to erect three large blocks of flats for the accommodation of their staff and set apace a recreation ground for the use of the Indian Marine ratings.

The Elphinstone Mody Bay Estates

These form the landward boundary of the Docks and comprise an area of 175.75 acres. Here are located the dock warehouses, the Grain and Rice Markets, the Iron Market and extensive ranges of storage godowns, shops and residences. A feature of the Elphinstone Estate is the Ryan Grain Market, a group of three large blocks of warehouses constructed by the Port Trust and covering an area of 267,000 sq ft. An earlier history of the Bombay Port Trust noted that "although the Grain Depot of the Mazagaon — Sewri Reclamation is being increasingly occupied by the large hub of the local grain and seeds trade and for the greater part of the year its various descriptions, on the


INDIAN OCEAN
BOMBAY HARBOUR
BACK BAY
BACK BAY RECLAMATION
Worli Fort
Worli
King's Circle
Antop Village
Wadala Ry. Yard
Petrol Installations.
Kerosene Oil Installations.
Kerosene Wharf.
Sewree Timber Ponds.
Fish Trade Wharf.
Manganese Ore Depôt.
G.I.P. Ry. Stores Yard.
Mazagon Sewri Reclamation.
Cotton Depôt.
Grain Depôt.
Hay Bunder.
Tank Bunder.
Coal Bunder.
Lakri Bunder.
Power Works Bunder.
Kussara Basin.
P.&O. Cº Dock Yard.
B.I.S.N. Cº Dock Yard.
Workshops Basin.
Clerk Basin.
Frere Basin.
Malet Basin.
Merewether Dry Dock
Prince's Dock.
Elphinstone Estate.
Victoria Dock.
Cross I.
Alexandra Dock.
Hughes Dry Dock.
Ballard Estate.
Ballard Pier.
Custom Basin.
Breakwater Pier
Apollo Bunder.
Apollo Reclᵗ
Middle Ground.
Arthur Basin.
Dolphin Light House.
Jamshedjee Bunder.
Gun Carriage Basin.
Victoria Basin.
Sassoon Dock.
Oyster Rock
Colaba Point.
Sunk Rock Light House
Cruising Ground of Pilot Vessel.
Prong's Light House.
Green I.
Oil Pier
Butcher I.
Tucker Beacon
Uran Beacon.
Karanja Beacon.
Lower Parel R.S.
Elphinstone Rd. Ry. Stn.
Race Course
Cumbala Hill
Malabar Hill
Govt. House
Malabar Point.
Marine Lines Ry. Stn.
Dock Yard
PORT of BOMBAY
SCALE:- FEET

northern part of the estate are situated the liquid fuel installations with large areas reserved for the storage of iron, building stone and other commodities".

According to a brochure brought out by the Bombay Port Trust in November 1967, several estates make up the Bombay Port Trust landed estates which extend from *Pilot Bunder* in the south to Wadala in the north, a distance of about nine miles, and varying in width from a quarter of a mile to 1½ miles.

Covering an area of approximately 91,417 sq yards the *Pilot Bunder* was vested in the Port Trust by the Act of 1879 and is leased to the Sea Cadet Council for its headquarters and home for the Sea Cadet Corps.

The first wet dock, the *Sassoon Dock*, approximately 91,417 sq yards, was constructed in about 1870 by the Sassoon Dock Co for ordinary commercial purposes. The government acquired the entire estate of 17½ acres from the Company and by the Bombay Port Trust Act of 1879 vested in the Port Trust.

A part of the Estate was reclaimed thereafter. The Central Government have their Deep Sea Fishing Station, here including a quick Freezing Plant and a Cold Storage Depot and the Government of Maharashtra have their Fisheries Technological Laboratory.

Victoria Bunder: This bunder acquired by the government from the New Colaba Company and vested in the Port Trust Act of 1879 is approximately 2,375 sq yards. The area is used for residential purposes and shops.

The area approximately 6,977 sq yards comprising the *Arthur Bunder* which was also acquired by the government from the New Colaba Company and vested in the Port Trust by the Act of 1879 was subsequently filled in. The entire area was leased to the then Bombay Presidency Radio Club Ltd for recreational purposes.

An area of 43 acres the *Apollo Reclamation* approximately 202,623 sq yards was reclaimed by filling in five basins. It is a first class residential area commanding a magnificent view of the harbour. This area was vested in the Port Trust Act of 1879.

The *Wellington Reclamation* basin area approximately 22,878 sq yards was vested in the Port Trust Act of 1873. Here are located the offices of the Atomic Energy Department.

This vast estate the *Mody Bay and Mody Bay Imperial* formerly extended from Carnac Bunder to Ballard Pier is approximately 130,610 sq yards. A part of it, 263 acres, was vested in the Port Trust by the Act of 1873 and a part reclaimed in 1875-89 by soil excavated in the construction of Prince's and Alexandra Docks. This estate gave birth to the Alexandra Dock. The Mody Bay Imperial Estate which lies to the west of P D'Mello Road is so named because it was taken in exchange from the government for other land in the vicinity. It is mainly a residential and business area. The Port Trust administrative Offices along Ballard Road and the Port Trust Railway Office Building along Nicol Road are located on this estate.

The *Ballard Estate* site approximately 130,933 sq yards was formerly a basin adjacent to the Mody Bay Estate. Nearly 22 acres of land were reclaimed in 1913 with the spoil excavated in the process of constructing the Alexandra Dock.

The *Elphinstone Estate* which was partly vested in the Port Trust by the Act of 1873 and partly reclaimed thereafter, approximately 860,814 sq yards, formerly belonged to the Elphinstone Land Press Company Ltd. Much of the area to the east of P D'Mello Road was reclaimed by this Company. A small portion of the estate was acquired by the Port Trust from various parties and is mainly let for residential, godowns and miscellaneous trade purposes. The liquid fuel and lubricating oil depots are located along Malet Road. In the centre of the estate along the P D'Mello Road is the Ryan Grain Market which is a group of three large blocks of warehouses, for grains and seeds and with a storage capacity of 100,000 tons. The area to the west of the road and bounded by Vallabbhai Patel Bridge in the North and Carnac Bridge in the south has been covered by the Town Planning Scheme which provides for well-laid out plots and several amenities.

The buildings used as a home for Indian seamen (the land being leased by Port Trust at a nominal rent) stands in the heart of this area. They were erected by the government of Bombay with the aid of public contributions, as a memorial to the Indian sailors who gave their lives in World War I. On a plot near Carnac Bridge, is located the Carnac Receiving Station of Tatas. The south eastern part of the Estate is to be absorbed in the proposed expansion of Alexandra Dock. The Port Trust Workshops and Central stores are located at the Northeast end.

Cumbala Hill area (approximately 12,795 sq yds). This property was acquired by the government for the Port Trust for the construction of residential quarters for its chairman. The Port Trust Chairman's bungalow "North End" is located here. In addition, about 5,000 sq yds have been leased to the Reserve Bank of India for the adjoining residence of its Governor.

Santa Cruz Estate (approximately 22,133 sq yds); vested in the Port Trust by the Act of 1873, is occupied by the Port Trust Wadi Bunder Chawls for dock labourers.

Mazagaon Reclamation Estate (approximately 568,179 sq yds). About 12 acres (including Kassara

A view of Ballard Pier Mole Station (1930).

Bunder) were vested in the Port Trust by the Act of 1873. Powder Works Bunder was acquired by the Government of India from the Mazagaon Land Co and vested in the Port Trust by the Act of 1873. The rest of the estate was reclaimed in 1913. This area is mainly occupied by the scrap iron trade.

Mazagaon-Sewri Reclamation Estate (approximately 2,706,667 sq yds). Nearly 583 acres, formerly this estate was filled in by the material dredged from the harbour. The reclamation was completed in 1913. The foundation stone of the Reclamation wharf was laid by Sir George Sydenham Clark, Governor of Bengal on 23 December 1907. Prior to it a special meeting of the Board of Trustees was held under the chairmanship of Sir Walter Hughes. Among the members present were Vijubucandas Atmaram, Naoroji Jehangir Gamadia, H E E Proctor, Sir Currimbhoy Ibrahim, Capt G H Hewett, C H Armstrong, J S Brown, F W Bickel, W D Sheppard I C S, W C Symes, A S A Westropp I C S, and D Carmichael.

Following the meeting, the Board received the Governor at an amphitheatre prepared for the ceremony. Those invited were members of the Governor's Executive Council, Judges of the High Court, members of the Chambers of Commerce and the Municipal Corporation and "a number of European and Native merchants".

In his address, the Chairman, Sir Walter Hughes said that the rapid increase in trade of the Port had obliged the Trustees to undertake a series of very extensive works for its convenient accommodation. Of those, the most important, was the scheme of dock extension then in progress at Mody Bay which could provide 3 sq miles of quay, thereby more than doubling the accommodation then available for deep-drafted vessels. The chairman estimated the total cost of all the works at Rs 391 lakhs or 2,600,000 pounds sterling. The land required to enable all the changes envisaged was to be provided by the reclamation. Said the chairman:

"The Reclamation is to be formed by pumping mud from the bottom of the Harbour by powerful suction dredgers which are specially being built for the purpose and the whole area is to have a surfacing of good murram. It has been decided, after much consideration, to carry out the work departmentally.... The cost works out to a little under Rs 5.25 per square yard and the Trustees are fortunate in being able to provide for requirements in the matter of increased land space at so moderate a price.

Peace and Security are essential conditions for the prosperity of commerce and industry which have raised Bombay to its proud position among the great cities of the East. Nature has been bountiful in providing a magnificent area of sheltered water. The sea has brought the markets of the world within easy and certain reach of these waters.

The project has serious but altogether unavoidable disadvantage, namely, that the great trade centre which it will constitute is at a considerable distance from the mercantile offices in the Port...

It should be observed that the limits of the present reclamation have been fixed with regard to the immediate, or immediately prospective, requirements of Trade but there is almost unlimited room for further extension when required..."

In his address, the Governor reminded his listeners that "the rise of Bombay from an unseen village to a great commercial and industrial city occupies a very short space in the long vista of the history of India". He went on:

> *Only 200 years ago, Gunaji Angre had just occupied the Khandheri Island without the risk of being captured. Less than a hundred years ago, a lady wrote of the country within 20 miles of Bombay that "in the shops every artisan has his sword and spear beside him and the cultivators plough with arms in their hands". Peace and security are essential conditions of the prosperity of the commerce and industry which have raised Bombay to its proud position among the great cities of the East. Nature has been bountiful in providing a magnificent area of sheltered water. The sea has brought the markets of the world within easy and certain reach of these waters.*

Noting that all the circumstances were, therefore, favourable to the development of Bombay as the great western gateway of India, the Governor added that the sea-borne trade of India had increased from about 132 million pounds sterling in 1896-97 to 214 million pounds sterling in 1905-06, indicating a growing prosperity, though that prosperity had not reached all the masses. He continues:

> *The ideal of the future should be that every steamer capable of passing the Suez Canal should be able to enter and unload in the Port of Bombay at all tides.... The increase of 622 acres*

A view of approach trestle to Fourth Oil Berth at Jawahar Dweep with the island in the background.

which will result from this reclamation will, therefore be most valuable... The port Trust is building not for today only, but for the benefit of generations to come.... I am confident that the reclamation which we are here to inaugurate and the other great works will assure to Bombay a position among the great ports of the world....

In this area are located the following:

(1) Cotton depot constructed by the Port Trust in 1923 over an area of 127 acres comprising 178 ferro-concrete godowns equipped with sprinklers which operate automatically in case of fire. There are also 16 open sheds on plinths and 225 open plinths.

The depot has its own fire brigade and salvage corps, dispensaries etc. Near the North entrance is the East India Cotton Association's Exchange Building. Due to the slackness in the cotton trade, large areas of Jetha plinths have once been leased for the storage of food grains.

(2) Grain depot which extends over 80 acres provides more than 1 million square feet of covered accommodation. Between each row of sheds are feeder lines off which run echelon sidings primarily meant for the storage of grain and seeds.

(3) Coal depot extends over an area of about 92,000 sq yards set apart for the storage of coal and charcoal imported into Bombay for local consumption. There are adequate rail service facilities.

(4) Manganese Ore depot provides stacking accommodation for about 300,000 tons of ore. There are 34 rail-served plots covering an area of about 150,000 sq yds.

Tank Bunder Estate approximately 125,000 sq yds. About 174½ acres were vested in the Port Trust by the Act of 1873 and the rest reclaimed in 1891 by the material excavated in the process of the construction of the Merewether Dry Dock.

Frere Land Estate approximately 83,733 sq yds. Over 210 acres acquired by the government of India from Frere Land and Pier Company Ltd. and vested in the Port Trust by the Act of 1879.

Sewree Estate approximately 666,200 sq yds. Some $13^{1}/_{5}$ acres were vested in the Port Trust by the Act of 1873. Most of the area to the west of the Central Railway Lines was acquired by the government from various individual parties and vested in the Port Trust by the Act of 1879. A further area was acquired between 1873 and 1883. A part of the estate was reclaimed thereafter.

Kerosene Oil installations with the ancillary tin-making and filling sheds are located in the north of the estate.

Wadala Estate approximately 1,736,000 sq yds. Over 325 acres were reclaimed in 1913, much of it being mangrove, swampy and creek land purchased from the government.

The Port Trust Housing Colonies near Wadala Station and at Antop village, about 1,500 miles are also located in this Estate.

Mahim Bunder (approximately 202 sq yds; vested in the Port Trust by the Act of 1873, this area is leased to the Bombay Municipal Corporation for a Town Duty Office.

Titwala Estate (approximately 339,817 sq yds). This land was acquired by the Government for the Port Trust in 1918.

From this it should be clear that Bombay Port Trust surely is the largest landowner in Mumbai. The total area of the landed estate comes to approximately 7,725,574 sq yds.

Cargo Facilities

Handling of chemicals

Mumbai Port handles about 34 million tonnes of cargo including crude and other petroleum products. The port also handles various types of chemicals. There is separate jetty at Pir Pau for handling liquid chemicals and products. The MPT

(Mumbai Port Trust) recently constructed an additional jetty at Pir Pau, 2.5 kms into the sea where deep-drafted vessels upto 35 ft can be berthed. The new terminal has been designed to handle over 2 million metric tonnes of LPG LSRS, lubre oil and also liquid chemicals.

Besides large quantities of various kinds of chemicals, both liquid and dry, hazardous and non-hazardous, drugs and medicines, dyes and paints, etc are also imported and exported through Mumbai Port. Large quantities of such cargoes are being containerised. Large quantities create problems of safety. To facilitate safe handling of these cargoes it becomes necessary to keep some of them which are of hazardous nature, away from other cargoes. For that purpose, the Port Trust has created such facilities at Haji Bunder. Available here are about 18,000 sq metres of open area and 8,000 sq metres of covered storage area. Covered areas are divided into different compartments to store cargoes separately depending upon their type. The port has appointed a Special officer to supervise the handling of chemicals at Haji Bunder. The Officer is an expert at his job.

It is relevant to know that the Inter-Governmental Maritime Consultative Organisation (IMCO) has published a document called International Maritime Dangerous Goods Code (IMDGC) in which all chemicals have been classified in nine classes.

Class 1 is concerned with explosives which are handled under rules framed by the MRPT which are vested by the Chief Inspector of Explosives. The other classes are:

Class 2 gases compressed, liquified or dissolved under pressure.

Class 3 inflammable liquids.

Class 4 inflammable solids, substance liable to spontaneous combustion and emitting inflammable gases when wet.

Class 5 oxidising substance and organic peroxides.

Class 6 poisonous (toxic) and infectious substances.

Class 7 Radio active substances.

Class 8 Corrosives.

Class 9 Miscellaneous dangerous substances.

Based on the recommendations of the IMDG code, MBPT framed Hazardous Cargo Regulations in 1986 which were superceded six years later in 1992 and again upgraded as Transport, Handling and Storage of Dangerous Goods in the Port of Mumbai Regulations, 1994. All the bulk chemicals in this Port are handled according to the guidelines laid down by these Rules through the Docks or Haji Bunder which is a nominated Hazardous Goods Warehouse of MBPT.

To handle emergencies MBPT has a separate fire brigade unit where safety gears and equipment are available for the use of workers. First aid facilities are also kept ready as a standby at Haji Bunder.

The Port Trust is acutely aware that as the traffic of chemicals, both hazardous and non-hazardous increases, the Port inevitably will have to create more facilities in terms of infrastructure as well as appropriate staff.

DETAILS OF CHEMICALS HANDLED DURING 1994-95 AND 1995-96

C: Containerised Non-C : Non-containerised Tonnage in thousands VRL: (Value in Rupees lakhs)

Commodities	*1994-95*				*1995-96*			
	C	*Non-C*	*Total*	*VRL*	*C*	*Non-C*	*Total*	*VRL*
Imports:								
Chemicals N.O.S	395	51	446	204,419	379	48	427	262,964
Drugs & Medicines	16	3	19	6,940	5	–	5	6,782
Dyes & Colours	15	–	15	6,961	13	–	13	8,435
Total	426	54	480	218,320	397	48	445	278,181
Exports:								
Chemicals N.O.S.	140	10	150	65,531	164	10	174	91,880
Drugs & Medicines	49	6	55	69,030	51	2	53	91,486
Dyes & Colours	52	4	56	64,790	40	2	42	55,739
Total	241	20	261	199,351	255	14	269	239,105
Grand Total	667	74	741	417,671	652	62	714	517,286

The chart (p. 151) gives details of chemicals handled during 1994-95 and 1995-96. Commodities handled are mostly chemicals, drugs and medicine, dyes and colours. It will be seen that the value of drugs imported in both the years is higher than the value of drugs and chemicals exported.

In the pre-independence days the main exports from India were cotton, tea, pepper, spices, copra, ores etc while imports included all types of finished products such as textiles, good products, machinery and all manner of consumer goods. India was the market for foreign manufacture. For all practical purposes India used to import everything from pin to complicated machinery — all mostly from England. Huge warehouses were built for storage. In Bombay special sheds were built for storage of cotton brought from the interior. That is how the Cotton Depot Complex and the Manganese Ore Depot developed as also the Harbour Railway Line.

▲ *Buses for export at BPX, Indira Dock.*

◀ *ODC movement at Mumbai Port for transport to inland destinations.*

Over the years particularly after independence the situation naturally changed. With the introduction of Five-Year Plans and rapid industrial development, to keep in tune with the times, the trade pattern changed. Trade with all parts of the world, apart from the United Kingdom, began to increase. The competition of cargoes underwent transformation. Break-bulk cargoes of earlier years which could be handled easily by dock labour, underwent a change in packaging. With the increase in volume of cargo as well as ship size, new concepts of unitisation and pallitisation needed to be conceived. It became absolutely imperative to induct improved mechanical equipment such as forklifts, tractor-trailors, mobile cranes etc for the handling of cargo.

Then came the concept of containerisation. Now men and machines had to work together and the role of the labour itself was to change. But piece-rate/incentive schemes, datum lines and rates remained unchanged. But incentive payments increased phenomenally. At the same time manning scales remained, by and large, unchanged. With the advent of containerisation the operations of break-bulk cargo in the Port began to decline. In 1985-86 the percentage of containerised cargo over general cargo was yet over 17 per cent. In 1994-95 it reached 36.5 per cent. This percentage is expected to rise even higher. The containerisation, however, would largely be at the point of manufacture, not at the port itself. What this means is that Clearing and Forwarding Agencies would become decentralised, eventually marginalising the role of stevedores.

Rehabilitation Schemes

After the termination of the European war in May 1945 several schemes were prepared for the rehabilitation and development of the port. Among them were the modernisation of the Prince's and Victoria Docks, reconstruction of the transit sheds, and warehouses and housing for the labour working in the Port.

The partition of the country which accompanied the attainment of independence in 1947 necessitated a total re-assessment of the Port's scheme, not only for rehabilitation but also for expansion and modernisation as much of the trade formerly handled by Karachi for despatch to upcountry, had to be diverted to Bombay. The long-term schemes for the development of Port facilities and provision of equipment were integrated with the first and

subsequent Five Year Plans starting from 1951-52.

It will be noticed that investment during the First Five Year Plan is much higher than in the second plan and the reason should be obvious; the first task which faced the port was the post-war rehabilitation. Much damage had been sustained because of the disastrous explosions and fires of April 1944 and it had to be undone before expansion work could be undertaken and facilities increased. Rehabilitation work, under the circumstances, had to be given first priority. Matters were complicated by the fact that around 1947-49 traffic increased substantially and the situation was further aggravated by recurrent go-slow campaign by the Port labour.

Heavy import of foodgrain, iron and steel made administration more difficult than it need have been. Besides, planning for modernisation meant an investment in time. In the circumstances actual expenditure on port development fell precipitously during the second Plan period (1956-57 to 1960-61). The only expansion project that was undertaken and completed during these periods was the construction of the new marine oil terminal in the natural deep waters off Butcher Island, consequent on the setting up of two oil refineries at Trombay. This terminal, comprising three berths capable of receiving large oil tankers upto 182.82 metres in length and drawing up to 10.6 metres was constructed during 1952-56.

A report published by the Port Trust says, "The terminal is equipped with all modern facilities for speedy discharge and loading of oil and is connected to the refineries by a network of pipelines. All necessary ancillary facilities such as fire-fighting, telephones, a tank farm, water and bunker supplies, a power house, hose handling cranes etc have been provided at the terminal which was commissioned between February 1955 and December 1956".

The terminal, with an estimated capacity of six million tons of oil per annum was then considered to be one of the best of its kind in the East. Actually it handled about nine million tons a year without causing much detention to shipping, which is quite an achievement. The total estimated cost of the project was Rs 10.50 crores. Among the measures taken in the first two plan periods for improving the capacity of the docks, the following may be mentioned:

1. Working of the docks in a three-shift system, with a 20-hour working day.
2. Introduction of a system of payment by result to the cargo handling labour with effect from March 1956.
3. Increased mechanisation of cargo handling operations.
4. Provision of new and larger transit sheds in place of those destroyed in sites for spillover of uncleared cargo and
5. Progressive replacement of the 50-year old hydraulic wharf cranes in the Alexandra Dock by modern electric cranes of higher handling capacity and greater speed.

By themselves the above measures were not adequate to cater to the long term requirements of the dry cargo traffic of the Port which was steadily increasing. There was no question but that the berthing facilities in the Docks had to be expanded. In May 1950 the Port Trust Chief Engineer submitted a project report for the development of the Bombay Port, including the modernisation of the Prince's and Victoria Docks, on the basis of a comprehensive scheme drawn up by the Board's Consulting Engineers, Messrs Sir Bruce White, Wolfe Barry and Partners. The scheme was broad and all-embracing and it was decided by the then BPT Chairman to limit it to essentials. A minimum scheme was thereupon drawn for the

Plans *Rs in crores*	*Plan provision*	*Actual expenditure*	*Percentage of 2 to 1*
First 5 yr plan (1951-52 to 1955-56)	22.82	10.92	47.9
Second 5 yr plan (1956-57 to 1960-61)	25.18	5.22	20.7
Third 5 yr plan (1961-62 to 1965-66)	25.53	12.94	50.7
Annual Plans			
1966-67	9.85	4.39	44.6
1967-68	10.28	5.60	54.5
1968-69	9.48	9.01	95.0
Fourth 5-yr plan			
1969-70	13.11	4.69	35.8
1970-71	9.50	3.49	36.7
1971-72	4.11	2.30	56.0
1972-73	3.31	0.83	upto Nov 1972

Opening ceremony of Alexandra Dock (1914).

development of the Prince's and Victoria Docks. The essential features of this scheme were:

1. The conversion of the above docks from a semi-tidal to a non-tidal system by the substitution of an entrance lock for the two single-gate entrances serving these docks.
2. The creation of a new approach channel.
3. The extension of the short-arm berths in Victoria Docks and
4. The widening of the communication passage between the two docks so as to make the larger turning circle in Prince's Dock available to the longer ships required to be berthed in Victoria Dock.

The cost of the minimum scheme was estimated at Rs 4.30 crores in 1951.

But it turned out that the scheme was ill-fated. All kinds of difficulties arose. The consulting engineer, for instance, made new suggestions for improvement, that raised the cost of the scheme to about Rs 8.50 crores. The government of India was none too happy with it. Added to that Mr F Posthuma, Managing Director of the Port of Rotterdam who led the World Bank Ports mission which visited India in 1957 advised against the implementation of the Minimum Scheme, pointing out, among other things that the Scheme, besides being expensive, did not add to the total number of berths and had little potential for earning more revenue. Mr Posthuma suggested an alternative scheme which, however, was not acceptable to the Trustees who resolved in May 1959 that the Minimum scheme be proceeded with and included in the draft Third Year Plan.

By then India was faced with foreign exchange difficulties and the government advised the Port Trust to abandon its scheme "for no other consideration than that of foreign exchange alone". The advice given to the Trust was to suggest some other scheme which would be cheaper, have a revenue earning potential and importantly, have as small an outlay in foreign exchange as possible.

Easier said than done!

Problems Galore

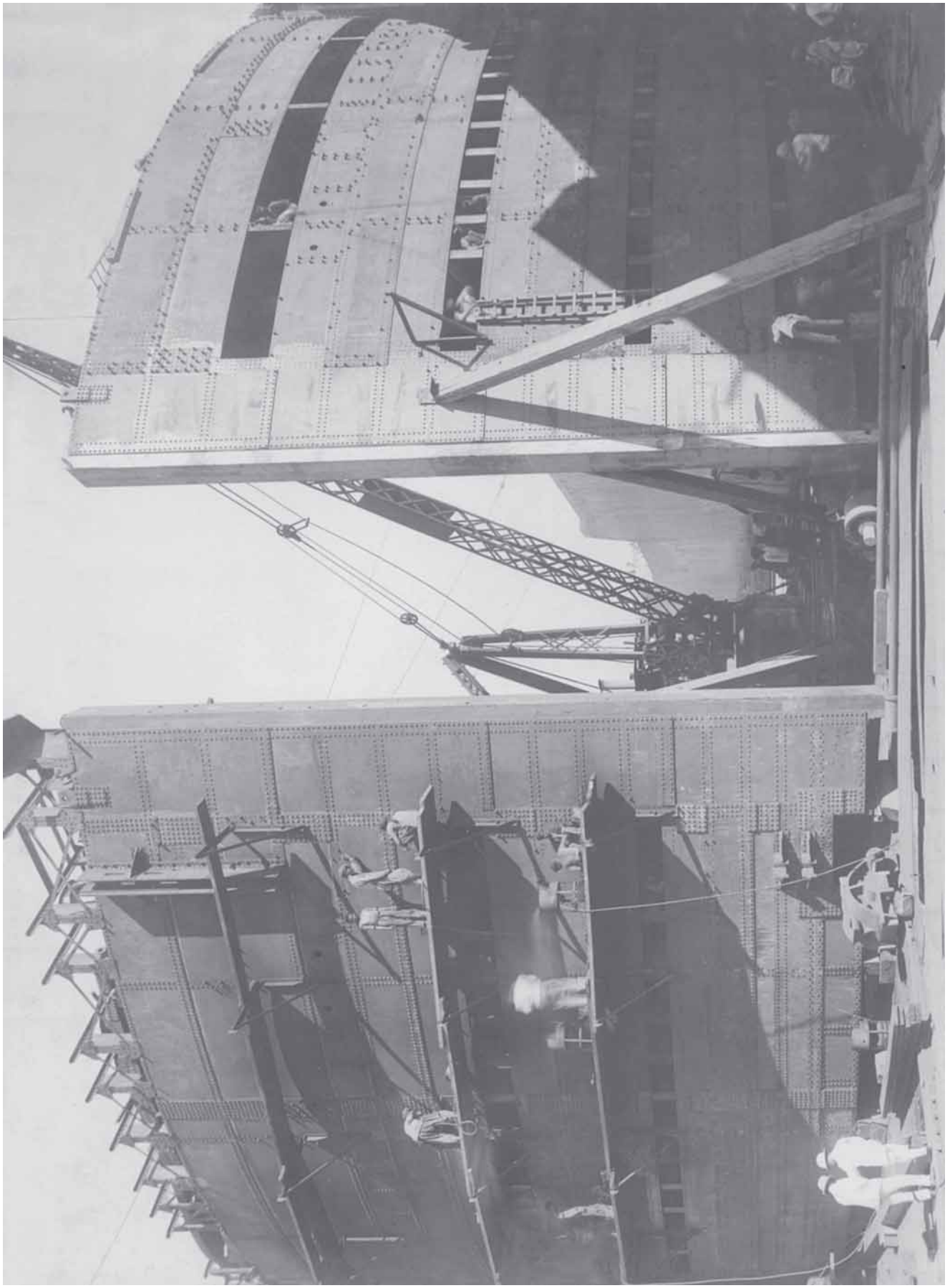
Even as these talks were going on problems began to pile up. Dry cargo traffic kept increasing because of imports, especially of foodgrains. Congestion of ships in the harbour became chronic, especially after the Suez Crisis. And ships were getting to be bigger in length and draft. Something had to be done.

The new Chairman of the Port Trust who had taken office in 1959 called for a new scheme to be called Modernisation Scheme. The Dock Modernisation scheme (1959) envisaged joining up Alexandra Dock with the Victoria Dock by extending the east arm of the former and sealing off the Prince's Dock from Victoria Dock. The Victoria Dock would then have been converted into a non-tidal dock, being served by the Alexandra Dock entrance lock. Six new berths could also have been provided three on each side of the communication channel joining the two docks. The idea was that this scheme would cost less than the discarded Minimum Scheme while, at the same time be cost effective because of the six new added berths.

Once again Mr Posthuma was consulted and once again his views prevailed. For example, he advised against combining the two docks on the ground that the existing single entrance lock would be inadequate for serving as many as 35 berths. His suggestion was that the east arm of the Alexandra Dock should, to start with, be extended by 360 metres so as to provide four additional berths instead of six, the strip of land remaining between the Alexandra Dock and Victoria Dock being used for carrying road and rail communication to the harbour wall berths in the Alexandra Dock.

So yet one more scheme was devised which came to be known as the Dock Expansion Scheme (1962) which was a truncated version of the Dock Modernisation Scheme. Its main features were as follows:

1. The east of the Alexandra Dock basis to be extended by 360 metres, so as to provide four new deep water berths;
2. The strip of land remaining between the extended arm of Alexandra Dock and the Victoria Dock to be used for diverting rail and road communications and other underground services intercepted by the extensions;
3. The excavated materials from the extended arm to be used for filling up a part of the Carnac Basin and for reclamation of the area east of it;
4. The ferry traffic to be transferred from the Alexandra Dock Harbour Wall to the Prince's Dock Harbour Wall (KIM berths); to supplement the useful quayage available at the Prince's Dock Wall, a new pier (175 m x 40 m) with an approach jetty to be constructed about 152 m away from the harbour wall; suitable passenger amenities on an improved scale to be provided at the new ferry terminal.
5. The old ferry berths to be dredged to provide three cargo berths of medium depth (7.93 m);
6. Five modern transit sheds to be constructed in the Alexandra



Erection of storm gates of Entrance channel Alexandra Dock (12-2-1912).

Dock — two at the extended berths and three along the Harbour Wall.

The scheme was designed to result in the provision of the following additional facilities:

(a) 4 deep water berths in the Alexandra Dock basin;

(b) 3 medium type berths along the Harbour Wall;

(c) 31,000 sq m (37,100 sq yds) of reclamation areas;

(d) 16,072 sq m (1,37,000 sq ft) of covered storage space in five transit sheds;

(e) and release of two berths in Prince's Dock for utilisation as repair for coastal ships.

The chairman of the BPT at that time (1960-64) was Mr Anthony Lancelot Dias, I C S, a senior civilian who was to get the Padma Vibhushan award in January 1970. The following are excerpts from an interview with him:

I was the chairman of the Bombay Port Trust from 1960-64. I recall that the major problems confronting the Port at that time was the continuing heavy congestion of ships. This was further aggravated by the fact that India had been facing quite frequently chronic food deficits. As a result there were heavy imports of foodgrains under PL 480. For one reason or another plans for the enhancement of Port capacity, prepared earlier by my predecessors, had not been implemented. Bombay Port therefore acquired the noteriety as a port where ships had to wait for a long time for clearance, incurring heavy demurrage.

My paramount task, therefore was somehow to pressurise the Central Government to make resources available to implement the Port Expansion Project. With a little bit of luck I succeeded in obtaining approval for the expansion of the Victoria and Alexandra Docks and also the improvement of related port services. This necessarily involved obtaining a loan from the World Bank. I was in the team which went to Washington in 1962 to negotiate an agreement with the World Bank. This was successfully concluded and work for the expansion of the Port began soon after.

I realised, however, that the project of expansion of the Port capacity would be only a short term solution in view of the rate at which traffic in the Bombay Port was increasing. It was clear that there was no further room for expansion in the existing Port complex.

I succeeded in pursuading my colleagues that whilst negotiating with the World Bank we must pose the problem of further expansion. The only way in which this objective could be achieved would be the creation of Port facilities across the harbour at Nhava Sheva where there is a deep-draft, and ample capacity for constructing berths.

We accordingly obtained approval of the World Bank for an ancillary scheme for the creation of Port facilities across the harbour at Nhava Sheva. The World Bank welcomed the proposal and sanctioned a scheme for the exploration of port facilities across the harbour.....

After the completion of tenure as Chairman of BPT I was appointed as Food Secretary to the Government of India at a time when the country was confronted with one food crisis after another. The biggest challenge was the Bihar famine and scarcity in seven states in 1965-66. I quickly realised that our ability to overcome this crisis would become possible only if we are able to step up the rate at which food ships were being unloaded. Mr V Subramaniam and I visited Bombay Port and a committee was appointed with me as a chairman to work out a scheme for unloading of foodships.

It was brought into effect and the rate of unloading more than doubled to everybody's satisfaction.....

Passenger traffic at the old Ferry Steamer wharf, Alexandra Dock (1930).

Board of Trustees meeting in the 125th year at the Durbar Hall, the same hall where the first Board met: Those who attended the meeting were Shri S G Kale Chairman, Shri Rajeev Sinha, Shri M G Venugopalan, Com V S Bhatnagar, Capt Devinder Singh, Shri S R Kulkarni, Shri S L Engineer, Shri Ramu Deora, Shri Suresh Kotak, Shri B B Dubash, Shri N S Kulkarni, Shri R K Chimbulkar and Shri Nikhil Gandhi Trustees, Ms S G Tahiliani Secretary and Shri P Mohana Chandran Dy Secretary all seated round the table and other Heads of Department seated behind.

Work was quickly undertaken. The four new berths in the extended basin of Alexandra Dock were completed by the middle of 1969 and the first vessel, *M V Vishwa Tirth* of the Shipping Corporation of India was ceremoniously ushered into the extended basin on 23 August 1969. The new berths were made operative in November 1969, the first vessel to carry out overside cargo operations in the extended basin being *S S Jaladharma,* owned by Messrs Scindia Steam Navigation Co Ltd which was berthed on 27 November 1969.

The old Ferry Wharf near the Harbour Wall of the Alexandra Dock was de-commissioned and the new Ferry Wharf off the Prince's Dock was put into commission immediately after the monsoon of 1969. The first coastal vessel to operate from the new Ferry Wharf was the *Rohini* of Messrs Chowgule Steamships Ltd which sailed for Panaji on 13 September 1969.

There was the question of extending the Ballard Pier southwards by 231.6 metres so as to provide a second passenger berth at the Mole Station, equipped with a spacious, modern passenger terminal building. The idea was to reconstruct the existing Ballard Pier building and convert it into a cargo-handling shed capable of handling passengers when required. It had been noticed that overseas passenger traffic was on the decline because of a number of factors such as competition from airlines and the exodus of people of Indian origin from the East African countries. It was therefore decided that the new terminal building on the extended berth should be redesigned on a modest scale as a passenger-cum-cargo handling facility the existing building being reconstructed and converted into a full-fledged cargo handling shed.

The marine works and the terminal building, as contemplated in the revised scheme, were completed by the middle of September 1972. The design and execution of the marine construction work included the Dock Expansion Scheme and Ballard Pier Extension had been entrusted to the Trust's Counselling Engineers, Messrs Bertlin & Partners (India). The contract for this part of the work was awarded to Messrs Kier Sentee, a consortium of Messrs Kier Ltd, London, Messrs Svenska Enterprenad A D Stockholm and Messrs Engineering Construction Corporation Ltd Bombay.

On the initiative of Shri S R Kulkarni, one of the two trustees representing Port labour, the Alexandra Dock was renamed Indira Dock on 8 January 1972 "in grateful appreciation" as a Port Trust document put it, "of the dynamic and inspiring leadership of the Prime Minister, Smt Indira Gandhi, during the Indo-Pakistan conflict of December 1971 resulting in resounding victory for India". The renaming was done at an impressive ceremony presided over by Shri Raj Bahadur, Minister of Shipping, Transport and Parliamentary Affairs.

This was tragically followed by an explosion on 28 June 1972 when *M V Tarsos* a Liberian tanker was undergoing repairs at the harbour wall of Indira Dock. As many as 30 persons were killed and 21 injured.

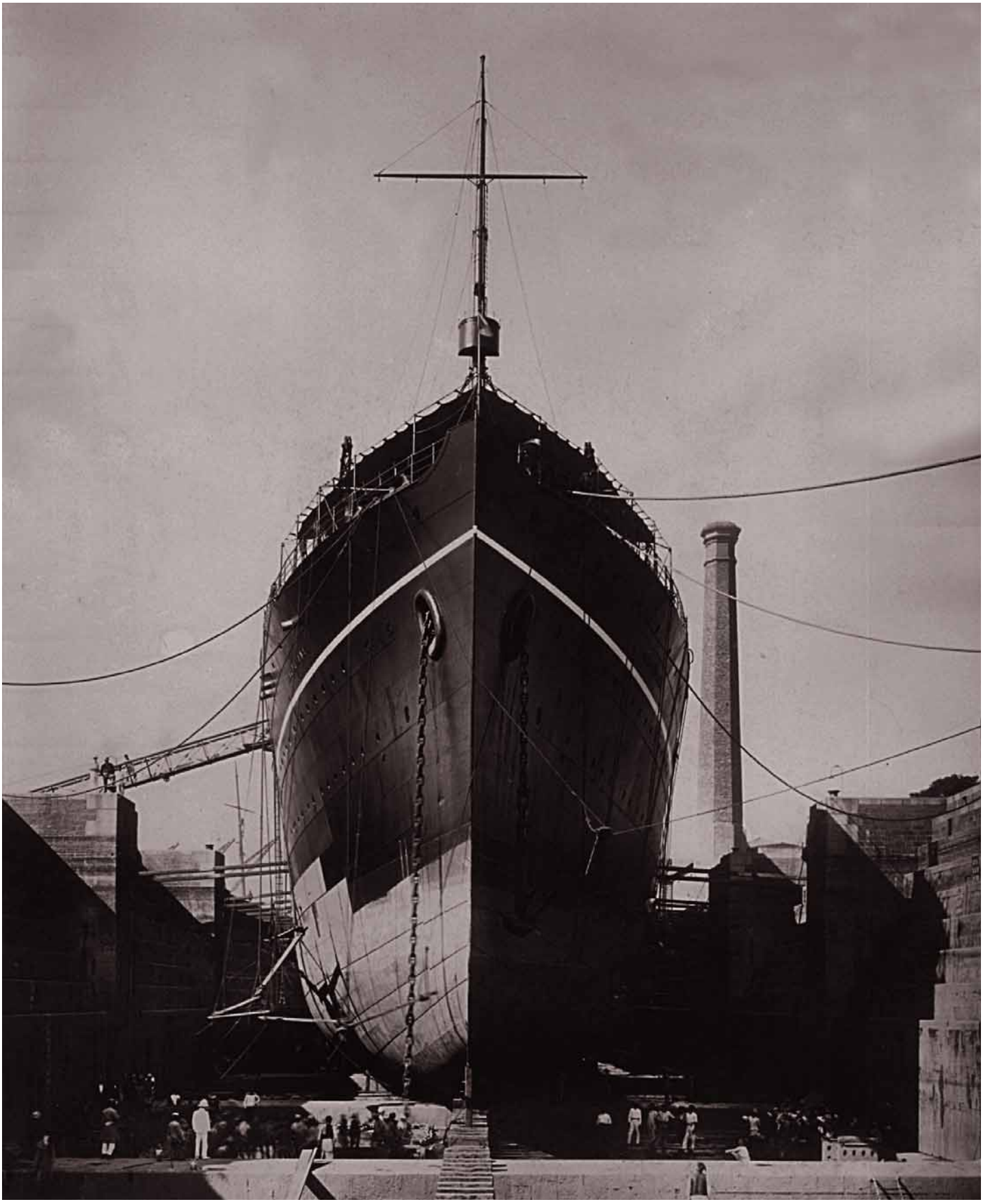
Most of the dead and injured were employees of Messrs Mazagaon Dock Ltd and of the Bombay Dock Labour Board, the former being employed on the work of vessel repairs and the latter on chipping and painting. There were no casualties among the Port Trust employees and the damage to the Port Trust property was minimum. But the unfortunate occurrence gave a setback to the work of installing new cranes on the extended berths which was in progress near the explosion site.

Mr S Y Ranade, I A S, was appointed Chairman of the Bombay Port Trust on 26 May 1972 and served for two years until 23 August 1974. Asked to give his impressions of his two years in service he said:

"My posting in May 1972 was a surprise since the corridor gossip in State Mantralaya related to several other names. I had also not reached the eligibility factor for empanelment as Additional Secretary to the Government of India (in 1972, the Chairman, Bombay Port Trust was equated to an Additional Secretary of Government of India on a salary of Rs 3,000 pm). It is for that reason that a new pay scale had to be created for me. However, my other insistence that the appointment should be for a specific period — minimum three years, was accepted and incorporated in the orders dated 23 May 1972.

"Almost immediately after I took over, the Port celebrated its centenary. It came as an unpleasant shock to me that the "pilots" had gone on strike on the day of the centenary celebrations. More of a personal shock, because I myself had begun a career as a Pilot (not as a port pilot, but as a Air Force Pilot in the Second World War). It was because of this that I decided to send out on 8 July 1972 a note on "Discipline", *inter alia* giving my definition of discipline as that quality which transforms a disorganised rabble into an efficient organisation. I had in the Note, pointed out that at least officers should act as participants in the administration. It is difficult for me to say what reception the Note had, but I did perceive some effect.

"I introduced a practice of meetings every Friday morning with the representatives of labour. It is my understanding that these were appreciated particularly by the enlightened leaders of the labour unions.



The R.M.S. "Rajputana" in the Hughes Dry Dock. Front view.

"As a centenary gift, there were two demands, I had supported both, subsequently, on mature consideration, while bonus was sanctioned, the advance increment proposal (which would have cost the Port Trust Rs 75 lakhs on actuarial basis) finally emerged in the shape of a Rs one crore Centenary Fund. The Fund was to be managed by a committee which consisted of the Chairman and all labour Trustees of the Board. The stipulation was that interest from the Fund would be utilised in the interests of the employees of the Port Trust. What the Port Trust and/or government were required to provide for/to the employees were specifically excluded from the purpose (eligibility) of the fund. Despite an initial resistence, the Fund received, I think, a welcome response and am told is being considered a boon.

"An important decision — for Welfare and Administration — was that, all things being equal, preference would be given to the children of employees of the Port Trust, in appointments to the Port Trust. I was trying to follow the Japanese mode in introducing this. It also had other ancillary benefits." Dock expansion and Ballard Pier Extension Scheme were completed by August 1971.

The contractors were claiming payment of Rs 21.37 crores (Rs 9.53 crores for work done and Rs 11.84 crores on account of various claims). The Port Trust had also preferred counter-claims of Rs 38.62 lakhs. The case was under:

(i) Arbitration of Justice (Rtd) K T Desai (Interpretation of Contract) and
(ii) Joint Arbitration of Justice (Rtd) K T Desai and Shri M A Rao, Rtd member, Railway Board (for disputes of technical nature).

"Among others, Shri Sachin Choudhary, former Union Finance Minister and Shri V K R V Rao, former Union Minister of Shipping and Transport were representing the Port Trust and contractor respectively. The expenditure incurred till October 1972 by Port Trust on the Arbitration work was Rs 10.65 lakhs besides unseen expenditure on transport, clerical assistance etc.

"The Government felt in August 1972 that the matter be finalised by negotiations. The Transport Secretary in his letter dated 31 March 1973 agreed that a committee of Chairman, BPT, Joint Secretary Department of Expenditure and Joint Secretary Ministry of Shipping and Transport enter into a dialogue. In a sudden change, the government in its letter dated 31 May 1973 decided that Chairman, BPT alone should negotiate and finalise the matter!

The trustees approved this in their Resolution No 607 of 15 May 1973.

"I undertook discussions with representatives of M/s Kier-Sentee from 14 May to 4 June 1973. The Chief Accountant, Dy Chief Accountant, the Chief Engineer, his Junior Executive Engineer and the Legal Advisor assisted me. It was possible to arrive at a final settlement of Rs 11.01 crores (which was well within the upper limit indicated). The settlement was approved by the Trustees (Resolution No 730 of 12 June 1973). The credit of this has to be shared with the Trustees who reposed faith in me, the contractors who agreed to my being the final authority despite heading their "Respondent" organisation and of course, the Port Officers who ably assisted me.

"Despite the fixed tenure, the government for reasons best known to it, decided to shunt me out in August 1974, ie before the end of my tenure. The Board of Trustees, to whom I announced my imminent departure at the last meeting attended by me in August 1974 desired to place on record their views. I was not in favour of this and said that they are free to do whatever they desired after I had ceased to be one of them, ie Chairman of the Board. Later I was informed that they did not record their valedictory orders at the meeting held on 27 August 1974. I left the government service after giving the notice in 1980. The Trustees, once again, after I ceased to be a government servant on 6 June 1980, recorded their appreciation of my service at its meeting on 10 June 1980.

It was also a pleasant surprise to me when someone brought to my notice that the cooperative atmosphere I had attempted to introduce in Port Trust had reflected in an item in the London *Economist* of 3 May 1980. The item, while pointing out the "bad start" and the shortcomings of the Indira Gandhi government on her return to power in 1980, had mentioned one bright spot in the government record — easing of port congestion and improved industrial relations in the port".

Apart from the construction of the Marine Oil Terminal and the project comprising the Dock Expansion Scheme and the Ballard Pier Extension, a whole lot of work was undertaken in the early sixties.

- The major portion of the Main Harbour Channel was dredged in 1961-62 to 10.00 metres below chart datum so that vessels drawing upto 11.69 metres could enter the Port at high water. The work was done by a Dutch firm of dredging contractors.
- The old steam pumps in the Hughes Dry Dock Pump House were replaced in 1969-71 by new electrical ones, designed for the duty of pumping the Dry Dock as well as impounding additional water in the Indira Dock. The new pump enabled the impounded level in the Dock being raised by an

additional 1.22 metres, so as to allow ships drawing upto 10.36 metres being berthed in the Dock.

- The following additional equipment was acquired to improve mechanisation of cargo handling:
- A floating crane (Shravan), 125 tonne capacity (1963).
- 2 Heavy Lift crawler cranes, 30 tonne capacity (1967).
- 53 Mobile cranes of 6 tonne, 10 tonne and 12½ tonne capacities.
- 36 Forklift trucks of 2 tonne capacity.
- 58 Tractors.
- 18 Diesel elevating platform trucks, 2 tonne capacity.
- Electric platform trucks, 2 tonne capacity.

All the berths in the Indira Dock were equipped with modern electric wharf cranes, 34 cranes being installed in 1953 and 1956 cranes in 1961-65. The old hydraulic cranes were transferred to the Prince's and Victoria Docks to replace the cranes destroyed in the 1944 explosion. The new cranes were acquired indigenously. For improving the operational efficiency of the Port services, the Port Trust acquired the following vessels:

- Diesel electric harbour tug-cum-rescue vessel (Akhshaya) in 1961
- Pilot vessel-cum sea rescue vessel (Venu) in 1962
- 4 Harbour tugs of 22.5 tonnes bollard pull (1966-67)
- 5 Dock tugs of 10.5/6.5 tonnes bollard pull (1967-68)
- 1 Anchor Hoy-cum-Salvage and Water Boat (Indira) in 1968
- 2 Ferry-cum water boats (1969)
- 2 Pilot launches (1969) and
- 3 Mooring launches (1960-71)

As part of the renewal and expansion programme for dredging equipment, the Port Trust acquired the following plant:

- Grab Hopper Dredger "Vikas", 1500 tonne hopper capacity (1959)
- Drag Section Dredger "Vikram", 2000 tonne hopper capacity (1962)
- Drag Section Dredger "Vishal", 1,100 tonne hopper capacity (1971)
- 2 Grab Pontoon Dredgers "Vidur" and "Vaishishta" (1969)
- 5 Hopper barges, each of 250 tonne capacity (1969)

A new Rim Bascule Bridge of modern design, spanning the Entrance Lock of the Indira Dock was constructed and installed in 1965 to replace the old one which was installed in 1917. The work was done by a West German firm, Messrs C H Jucho, Dortmund.

Two of the three berths at the Marine Oil Terminal were upgraded in 1969 by suitable strengthening of the fendering system to receive tankers of 70,000 tonnes displacement (55,000 dwt). This improvement reduced the delay

Bucket Hopper Dredger "Silurus". This powerful dredger carries a crew of 68, can raise and discharge 20,000 tonnes of spoil per day of twelve hours. She can with special buckets dredge hardest moorum and soft rock. Three 1,000 tonnes steam hoppers are running continuously to the dumping grounds.

to tankers. It also effected considerable economy in the freight cost of crude oil thereby saving over Rs 50 lakhs of valuable foreign exchange per annum.

A tank farm of about 12,000 tonnes capacity was provided in the Indira Dock for facilitating the bulk handling of vegetable oils and molasses.

Following the setting up of the two oil refineries at Bombay and the commissioning of the Marine Oil Terminal in 1954-56 there was a continuous rise in the traffic handled by the Port. From 7.00 million tonnes in 1950-51, on the eve of the launching of the First Five-Year Plan, the traffic reached the peak figure of 18.27 million tonnes in 1966-67. The figures of the imports and exports handled at the port in certain selected years since 1950-51 are given below:

Year	Imports	Exports	Total *(million tonnes)*
1950-51	5.27	1.73	7.00
1955-56	6.81	3.66	10.47
1960-61	10.79	3.93	14.72
1965-66	12.97	5.14	18.11
1966-67	13.23	5.04	18.27
1968-69	12.10	4.31	16.41
1969-70	11.43	3.60	15.03
1970-71	10.86	3.54	14.40
1971-72	12.43	3.70	16.13

Traffic was highest in petroleum, oil and lubricants, going up on an average of 55 per cent of the total traffic. The main items of exports were oil cakes, iron scrap and dross, sugar, iron and steel and manganese ore. The decline after 1966-67 was because there was no need to import foodgrains, due to the effects of India's Green Revolution and the virtual disappearance of the iron ore traffic as a result of the development of other ports for iron ore exports.

Hughes Dry Dock

During all these years the Bombay Chamber of Commerce took an active interest in the affairs of the Bombay Port and the Bombay Port Trust. In October 1961 the Chamber was asked by the Bombay Port Trust to give its comments on the Posthuma Report. This was done in a month's time. The Chamber emphasised the need to deepen the approach channels to the Prince's and Victoria Docks. It was perturbed to note that the Chief Engineer's Report, based on the Posthuma Recommendation did not say anything about the proposal to extend Ballard Pier and to erect an additional passenger terminal building. The Preliminary Report of the Chief Engineer had been silent on Posthuma's recommendations about training Bombay Port Trust staff abroad. The Chamber endorsed Posthuma's recommendations and urged that a definite plan be drawn up for senior officers to go abroad for training. The Chamber welcomed Posthuma's suggestion to remove the so-called Rice Market with a view to securing additional space which could be usefully employed for warehousing.

The Chamber also suggested to the Port authorities that they should examine the need to widen the road along the south end of Victoria Dock in order to eliminate the risk of bottlenecks occurring between the

BPS Container Berth (1997).

Grain site and No 9 Victoria Dock. The Chamber was enthusiastic about introducing a Planning Cell which could be entrusted with the task of studying the various problems connected with the Port activities in general and for proper and efficient utilisation of the Port facilities, conducting of surveys etc. Says the *The Bombay Chamber Story:*

The meticulosity and foresight which the Bombay Chamber brought to bear on the Bombay Port Development Scheme can be gauged by some of the points raised by the Chamber in its comments. When discussing the proposal for a sparelock gate for Alexandra Dock, the Chamber recalled that previously repairs to the inner lock-gates had been carried out with indigenous timber instead of imported timber.

The Chamber thus felt that instead of importing timber for lock-gates they should be constructed from the appropriate timber locally available, thus saving some valuable foreign exchange. The Chamber also noted that no provision had been made in the Port Development Scheme for lighting and signalling installations etc there was the risk of simultaneous movement of ships from berths 12A/B, 13A/B and Numbers 4 and 9 Alexandra Docks towards the entire lock-gates.

LPG tanker at Jawahar Dweep (1998).

This was likely to entail disruption of the schedule of shipping arrangement and danger to the vessels.

The President of the Bombay Chamber of Commerce, Mr J W Anson, during his annual address in 1967 said:

Ports are not easy things to improve, particularly a port like Bombay which has little extra space in which to manoeuvre or expand.

Any worthwhile improvement or expansion must cater not only for the immediate need but for the anticipated need of the future as far ahead as thirty to forty years. Without in any way belittling the Dock Expansion Scheme now under construction, I am firmly convinced that piecemeal alterations to the present Port, whilst naturally of value, are nothing like sufficient to solve the problems with which we are confronted. The radical change in the infrastructure of the Port demanded by current and future needs of the country can only be achieved by opening up a new port at Nhava Sheva across the harbour..... were a port constructed at Nhava Sheva where deep water is available — and I am told it could take as much as ten years to complete the entire complex — Bombay's docks should be relieved of the handling of foodgrains, which would in turn release berths so urgently needed for cargo ships in Alexandra Dock. In addition Nhava Sheva could also provide the answer to the revolutionary change in the pattern of shipping, namely, containerisation, which will require not only sophisticated port facilities but also streamlining of Customs Procedures and conventional labour practice.

Anson was looking far ahead of his times.

Satellite Port On Anvil

The need for developing a satellite port had been keenly felt even during the Second World War when the international traffic at Bombay Port had considerably increased. The idea had taken root simultaneously with the establishment of the City and Industrial Development Corporation (CIDCO) for setting up the twin city of New Bombay. In 1984 the Bombay Port Trust authorities had given a thought to this proposal and entrusted a firm of Consulting

The Rim Bascal Bridge, which spans the entrance lock in the Indira Dock, consists of a single leaf with a clear span of 100 ft and carries a 24 ft wide carriage way.

Container Freight station at MOD (1997).

seeing port efficiency. Also the Board of Trustees of the Port, the Chamber felt, spent far too much time on managing the vast estate of the Port Trust and not enough time on Port working. The Chamber was of the opinion that some solution should be found somehow to separate the estate management function from the function of the managing the Port.

It drew attention to some urgent tasks that had to be undertaken by the Bombay Port authorities such as limiting the number of vessels bringing the bulk commodities to Bombay, ordering and installing modern equipment, setting up container freight stations around Bombay (CFS) and immediately setting up data processing equipment to control and monitor containerised traffic.

Engineers, Messrs Bertlin & Partners to study the problem and make useful recommendations. At the same time the Chamber felt that even the existing infrastructural facilities could be made better use of:

- mechanical facilities for handling bulk cargoes and containers were available.
- adequate open ground for container parking was provided.
- the repair berth facility was expanded so that more ships could be repaired at a time.
- the dry-docking facility could be enlarged and
- additional warehousing facility could be created without in any way losing on the proposition.

As regards the administrative and organisational set up at the Port, the Chamber was of the opinion that top officials of the Port were spending far too much time on labour matters and could not devote sufficient time to operational matters and on over-

Container vessel at Ballard Pier extension (1998).

Container Freight Stations

Container Freight Stations (CFS) are used for storage of FCI containers, destuffing and storage of ICL cargo, carting and stuffing of export cargo, shortage of export containers, pending their removal to docks for shipment and delivery of cargo.

While some of the CFS are provided with covered area for storage of cargo and open area for storage of containers, some are provided only with container storage areas. Except Frere Basin which is just outside Prince's Dock, all other CFSs are away from the Docks ranging upto 10 kms in distance from the container berths at BPS/BPX.

Containers are transported from Docks to CFS and vice versa through the road constructed exclusively for this purpose known as the Link Road. The Container Freight Stations and the number of sheds they contain etc are given below:

Besides the storage facilities for loading containers, Port also provides limited storage facilities for empty containers. The empty storage yards are provided at Mazawar Pakhadi Road (145 ground slots), near Frere Basin, Sewri South (100) Sewri North (250), Mangrove Plot near STP (75) and S Plot at Grain Depot (200).

The Port Trust has provided 132 reefer plug points for plugging in containers loaded with perishable cargo. They are all three phases — 440 volts. There are 80 more reefer points at Frere Basin. The reefer points are allotted as per vessel/per point basis.

Cargoes can be manifested for trans-shipment to other sea ports or to Inland Container Depots (ICDs) in the country. With the advent of containers and setting up of ICDs, a large number of containers are trans-shipped at sea ports for ICDs. Containers for ICDs are manifested in a sub-manifest for trans-shipment known as SMTP.

Transhipment of cargo for other sea ports are shipped in the Docks or in stream, transhipment of ICD containers takes place in Mumbai Port at Rail Container Depot at Cotton Depot.

Containerisation, it will be remembered, is an altogether new concept that revolutionised shipping. In the relentless quest for faster despatch of cargo, minimum handling and low maritime cost there have been many innovations down the years and some, like palletisation, RO-RO ship, LASH vessel etc did make some impact, but their effect was so minimal that they did not catch on to any significant degree. Containerisation changed the scene completely. From the day, way back in April 1966, Malcolm Maclean of Sealand Shipping Inc sent the first batch of boxes from North Atlantic to European ports, transport of goods by sea took on an entirely new shape and form.

Containerisation became the watchword. It became a *fait* accompli — the done thing.

Since 1966 containerisation has developed at such incredible speed that no major port of any consequence can do without it. And in turn it has spawned a whole new world of terms, technologies and terminals.

The idea caught on quickly. From 1970 the world container traffic began to expand at an annual rate of 15 per cent. That year the global container traffic throughout stood at a meagre 6.3 million TEUs. Five years later this had risen to 19.3 million TEUs representing a 24 per cent annual increase. In 1980 the volume went up to a phenomenal 37.3 million TEUs, representing 12 per cent increase. But this was just the beginning. At the end of the 80s the volume had expanded to 76 million TEUs, showing an annual increase of 7 per cent. The decline in the annual increase in the 1980s is attributed in shipping circles to the Iran-Iraq war and the recession the world over, following a rise in the oil prices. But

CFS	*No of sheds sq m*	*Covered area slots*	*20" ground*
1. Frere Basin	6	10,336	676
2. Manganese Ore Depot	4	10,238	1200
3. New Sewree warehouse ground with 3 upper floors	part of ground floor for stuffing/ destuffing	3,500	333
4. Sewree timber depot	4	14,020	2565
5. Wadala incinerator	1	2,890	656
6. Hay Bunder warehouse	2	2,913	225
7. "E" Grain Depot	1	6,400	115
8. Cotton Depot Complex	4	11,003	382
9. Wadala Yard	Nil	Nil	450
10. Haji Bunder Con. Yard	Nil	Nil	285
11. Wadala Con. Depot	Nil	Nil	300
12. Rail Container Depot	Nil	Nil	484

Source: Mumbai Port and Procedures; Matthew and Rangnekar.

now it is being confidently predicted that the growth will average more than 15 per cent per annum.

According to Mr Sowrirajan, deputy manager at the BPT, the developing countries share of world container throughout has been steadily rising since 1970s. In 1975 its share was 10 per cent of the world traffic; it rose to 25 per cent in 1980, 30 per cent in 1985 and 35 per cent in 1990. Present estimates are that by 2000 AD the share of developing countries of the world container throughout will be of the order of 45 per cent.

Unloading of containers at Indira Dock.

Among the developing countries, India achieved as average annual growth of 15 per cent from 1975 to 1990. The last decade of the twentieth century is expected to keep up with that growth. The actual volume of traffic handled by India was 500 TEUs in 1970, 10,000 TEUs in 1975, 153,000 TEUs in 1980, 352,000 TEUs in 1985 and 5,702 TEUs in 1990. The production is that the volume will nearly double by 2000 AD to a staggering 1,365 TEUs, representing a cent per cent growth in 10 years. In this regard Bombay has been racing ahead of other Indian ports in regard to container traffic. Bombay handled 6,000 containers in 1976 which expanded to 101,000 on 1980, showing a 316 per cent increase per annum, hitherto unheard of. Then it did not stop there. The figure for 1985 was 200,000 and for 1990 a high of 320,000 at a 20 per cent annual growth rate. Even with a full-fledged working of the Jawaharlal Nehru Port it is expected that Bombay's container traffic will continue to grow at about 12 per cent annum and stabilise at about 600,000 TEUs by the turn of the country.

Originally, when containerisation was introduced RO-RO ships were employed for the carriage of containers, using the piggy-back system of operation. Subsequently, when this system was found to be uneconomical due to the wasteage of appreciable amount of space in the ship, that reduced the number of containers which were called "Combi" vessels. But not long after Combi vessels were found wanting on account of their inefficient operation. This led to construction of specialised

container vessels known as cellular ships which were classified into first generation of container ships built in 1968 and had a carrying capacity of 700 TEUs. The second generation that started coming out of the shipyards in 1969 could carry 1,500 TEUs and in 1972 saw the arrival of third generation vessels with a carrying capacity of 3,000 TEUs. By the time the fifth generation of container ships were out, they had a carrying capacity of 7,000 TEUs.

What, in effect, is containerisation? It means that goods from hinterland of an exporting port could be carried in sound condition to the hinterland of an importing port in one single package without the need to handle them several times at the points of interchange, in the transportation chain.

In India the first inland container depot (ICD) was set up in 1981 linking Bangalore to Madras (Chennai) port. It must be stated, however, that no other container handling system demands so much of port facilities and resources as containerisation. The success of a port's container operation, in fact, largely depends on specialised facilities it can provide. Prerequisites for efficient and cost-effective container operation are: (a) deep water berths (b) large area and (c) custom-made handling equipment.

Deep-water berths are a must. As container vessels are getting larger and larger, third and fourth generation vessels are getting eased out and the new leviathans that are coming into service would need berths of 35' to 40' draft. Unfortunately, the maximum draft attainable in Bombay port is only 32' and that to at one or two berths. This would explain why Bombay has not been able to attract any major shipping lines or bigger ships. In the circumstances, Bombay had to function mainly as a feeder port, getting only Combi vessels or cellular vessels of the first generation. For all that, Bombay has achieved a phenomenal growth in container traffic, handling as much as 50 per cent of the container volume going through the country. Another fundamental physical requirement of containerisation is large land space. In this department, Bombay port suffers from severe constraints and handicaps. When the port was built over a hundred years ago it was designed primarily for break-bulk trade, with narrow quay aprons, multi-stored transit sheds and small backup yards. The builders of that era could hardly have conceived the problems the port would be called upon to face a century later.

Bombay's problems is further complicated by the fact that it is after all an island port, sitting at the edge of one of the most densely populated cities of the world with no possibility of acquiring more land, unless it can be recovered from the sea. In the circumstances it has had to contend itself with modest-sized yards, with a total capacity of 710 ground slots at its two dedicated container terminals. To accommodate overflow, improvised mini-yards known as prestack had to be created at several pockets within the Dock's complex. These prestacks like these mini-yards, serve as buffer stacks till the containers are removed to CFS's. In 1995 the port had 34 acres of yard space inside the Dock, 145 acres of open area outside the Docks for stacking of containers and 16 acres of covered accommodation for aggregation and stuffing of cargo. To meet the growing demands of coming years upto 2000 AD, the port will keep exploring ways and means of augmenting the storage capacity. As a part of this initiative it pulled three huge warehouses inside the docks and many godowns immediately outside the docks. The measures yielding an extra 20 acres of land in the main Docks complex, took the total stacking area to 55 acres which could accommodate about 12,000 TEUs at any given time. Similarly for the CFS operations, newer areas outside the docks were identified for development. By the end of 1995 the port could think of a total CFS area of about 160 acres.

Container handling, of course, is the responsibility of the Port Trust, but a number of private operators also own container handling, cargo handling and other equipment such as Top Lift Trucks etc. In the early 90s there were as many as nine such operations among them being American Presidential Lines, Runadip Shipping and Transport Co, Forbes Shipping Corporation, Urmila & Co, STC Movers, Sunrise Container Speedy Transport, Seawheel Carriers and Mazda Movers.

000TEUs

Container throughout Growth in Major Indian Ports

Port	1980-81	1985-86	% increase & decrease pa	1990-91	% increase or decrease pa
Bombay	101.3	214	22	324	20
Calcutta	—	46	—	49	1
Cochin	20.8	37	2	49	5
Haldia	15.6	10	–10	22	24
Madras	9.4	69	126	109	12
Tuticorin	9.4	3	–14	20	113

Shri N M Joshi, a leading member of the Servants of India Society who later earned praise as the "Father of the Indian Trade Union Movement" (1920).

CHAPTER VI

Unionisation Takes Root

Unionisation of dock labour started in 1931 at the height of the nationalist movemet led by Mahatma Gandhi. It gathered strength with the passage of years until dock workers became a potent force that had to be reckoned with. But strike as a weapon to get redressal of outstanding issues went out of fashion by the 1990s under happier labour-management relations.

It is a well-known fact that port and dock workers all over the world have traditionally been in the forefront of the trade union movement. In the Bombay Port, the trade union movement was started in the 1920s, mainly by Mr F J Ginwalla, a solicitor, Mr N M Joshi a leading member of the Servants of India Society who was later to earn praise as the "Father of the Indian Trade Union Movement", Mr E M Bahadury, a lawyer, and Mr S N Jhabvala, a school master by profession who was later to turn his time and talent to trade union activities. As a result of their efforts, the Bombay Port Trust Employees Union, the first of the Port Labour Unions, was started in early 1920 and this was followed by the Bombay Port Trust Railwaymen's Union. Soon thereafter was formed the Bombay Port Trust Dock staff Union. In 1931, at the height of the nationalist movement led by Mahatma Gandhi. Dr M R Shetty and Mr Hansraj Gulati founded the Bombay Dock Workers Union drawing the membership largely from among the stevedore workers.

The Bombay Port Trust General Workers' Union was founded in 1944 and the year 1941 saw the birth of the Bombay Stevedores and Dock Labourers Union which was affiliated to the Indian National Trade Union Congress (INTUC).

The condition of the dock workers in the thirties and forties was such that there were two main groups among them; one was of the principal dock workers and the other of labourers working in the other activities of the docks.

The former group of labourers were responsible for handling the cargo directly, either at the time of loading or unloading, at the wharf itself or in the stream. The labourers belonging to the second group never laid even a finger to the cargo but attended to other, no less important, work of the docks.

The principal labourers included stevedores, shore labourers and coal labourers while labourers belonging to the other group included those working on water, on shore and on land. They were the ones who looked after the lighthouses, flotilla, dredging, the hydraulic establishment, dry docks, sanitation, workshops and railways.

The main feature of dock labour, as compared to labour in other industries at that period, was its casual character. As Smith noted in his *Survey of London Life and Labour*, in another context, "employment in a port is casual because the demand for labour is intermittent." "The intermittency", Smith noted, "is in the main unavoidable." The demand rises and falls due to seasonal fluctuation which corresponds with harvests and the opening and closing of ice-bound ports abroad and with the custom of traders. "It also rises and falls from day to day as ships, delayed by weather or tide, arrive and leave in great or small numbers". What was true of London labour was generally true of port labour everywhere.

In India, the monsoon was an additional factor affecting both shipping arrangements and the amount of produce available for export. The short time within which the steamers are to be loaded or

Nov. 11th 1927, Armistice Day. Fascisti laying wreath on BPT War Memorial, Ballard Estate.

Dr Shanti Patel, President.

unloaded was a factor affecting the demand for labour, especially the demand for night shifts.

Conditions in the thirties and forties in the docks have been aptly described in a well-edited study *Dock Labourers In Bombay* by Rasiklal P Cholia.

Yet another person to distinguish himself as a union leader in Bombay Docks is Dr Shanti G Patel who is currently president of the Hindu Mazdoor Sabha. He has been a labour representative on the Mumbai Port Trust since 1952 on union strength and is one of the most widely travelled union leaders of our times. It was he, along with P D'Mello who organised the port and the dock workers into an All India Federation. For a trade unionist he has held large number of positions in diverse fields. He has been a member of the All India Congress Committee, a leader of the Congress Party, a member of the Janata Party national executive and, during his long tenure in the Mumbai Municipal Corporation of 21 years, from 1952 to 1973, he has held position of leader of the house for four continuous years, the only corporator to do so. He was subsequently to become Mumbai's mayor.

His outstanding achievement as a member of Parliament was attention to his speeches, which were studied, critical but balanced in tone, language and content, from both sides of the House.

Presently he is the president of the National Union of Seafarers of India, one of the best in the country and of the Jahazi Mazdoor Union which he had established in 1947.

A familiar name on the waterfront, he has led many agitations and strikes as well as negotiated settlements. In 1975 he opposed the Emergency and was detained under MISA.

A Gandhian socialist in thought and approach, he is chairman of the Bipartite Committee on Comprehensive Industrial Relations Law, appointed by the Government of India at the instance of the Indian Labour Conference.

Dr Patel was not present when the Board of Trustees of the Mumbai Port Trust met at the Town Hall, Mumbai on the occasion of its historic 125th anniversary. It was at this very Town Hall that the first session of the Trust had been held, on 3 July 1873 under the Chairmanship of Col J A Ballard (after whom, incidentally, Ballard Estate is named). But Dr Patel compensated it by sending a video cassette recording to be played on the occasion. In that he recounted his long association with the BPT which began in 1944. He said:

> *This historic occasion reminds me of the year 1952 when I was elected to represent the Municipal Corporation of Greater Bombay on the Board as per the law then prevailing. When this healthy representation was discontinued by the Union Government I joined the Board as the representative of the Port Labour, through Bombay Port Trust Employees' Union, now called as Mumbai Port Trust, Dock & General Employees' Union, established in 1920.*
>
> *I replaced my colleague Shri S K Shetye, the general secretary. Earlier Shri Ashok Mehta, the Union President and veteran labour leader and ex-minister of the Central cabinet represented the Union on Board.*
>
> *But my association with the Port goes back to 1944 when I joined the Union. Since then, its members have showered a lot of affection on me by electing me every year to lead them in the changing scenario of politics in the country, particularly in the context of the trade union movement.*
>
> *I remember this period of over 53 years, the best years of my life, with pride, privilege and pleasure. During this period I served the interests of the port and dock workers on the one side and port management on the other and I think, to their full satisfaction. Of course, in the employer-employee relationship, the differences and sometimes conflicts do crop up, in spite of the best intentions. This is natural. It is inherent where conflict-interests are involved. But the happiest feature has been the end result, reconciliation and resolve to pull together in the primary interest of the port and the country. This philosophy has guided me in my labour policies and actions. I am glad to say that this has been generally shared by the Port authorities represented by the Chairman and the supreme decision-maker, the Transport Shipping and now the Surface Transport Ministry at the Centre. This is what has helped me in the maintenance of cordiality.*

Dr Patel then first recalled his first conflict with the administration and the Government in 1948 when, he was left with no alternative but to resort to a strike to get justice for the workers, in the matter of wages etc. The port had been paralysed and even Mahatma Gandhi was to take note of it during one of his prayer

Shri R K Bhansali, Chairman.

meetings. But then a settlement had been arrived at to mutual satisfaction. Dr Patel continued:

> *Having played a leading role in the formation of the All India Federation of the Port & Dock Workers, I became personally instrumental in all wage settlements of 1977 and 1987 and, to a large extent, of 1992, in addition to several ones since 1958. This was possible due to the cooperation of the chairmen of the MPBT and, of course, also the government.*

Dr Patel recalled the names of three Chairmen, L T Gholap, S Y Ranade and R K Bhansali who contributed immensely to the improvement of the efficiency of the Port as well as service conditions of the workers. He went on:

> *I am a witness to the old Bombay Port Trust Act becoming the major Port Trusts Act, 1963. Then the Board had sent a special delegation of which I was a privileged member, to plead for the preservation and expansion of the autonomy of the Board, but in vain. I was lucky to watch the manner in which Trustees like Sarvashri M A Master, Western Railway Manager Malhotra, Devji Ratansey, Jagabhai Doshi, S R Kulkarni, my esteemed colleague and several others, including the above chairmen, advocated and stuck to their independent views and voted accordingly, not submitting to the views, or for that matter, may I say with all respect even to those of the Chairmen. This is the glorious tradition of the Mumbai Port Trust.*

Dr Patel paid tribute to many of the trustees he had worked with and said that they had studied the agenda papers thoroughly and were fearless in expressing their views which made discussion lively and fruitful. He noted that not all the decisions were necessarily unanimous but the discussion was "free and frank" which, in his opinion, was "the outstanding merit of the MBPT proceedings".

He recounted:

> *Once the minister asked Mr Gholap to get certain government decisions implemented by the Port Trust. He politely declined to do so, saying:*
>
> *"Sir, no please, I am sorry", pointing out that it was against BPT interest. The Minister persisted, whereupon Mr Gholap volunteered to place the matter before the Board for their decision. After some discussion at the Board meeting, he was asked to give his views. He said boldly that he could not support it, explaining how the proposal was against the Port Trust interest. The Board also turned it down.*

Dr Patel went on to relate another instance of a chairman taking on the government.

BPT Building in the Ballard Estate at night (1999).

Shri Bhansali had the courage to file an affidavit against the government decision in the Mumbai High Court when he, as Chairman, was not consulted by the government as required under Rules regarding the appointment of the Head of the Department, the chief Medical Officer.

He recalled an occasion when Shri Pravinchandra Gandhi vehemently supported the workers' demand for a BPT Centenary Bonus, and made the Chairman and the Board agree to it. At the instance of the Secretary M G Pimputkar, the amount due was converted into the Centenary Commemoration Fund for the benefit of the workers to be managed by a special committee comprising the Chairman, two labour Trustees and one other trustee.

He added:

These workers remember Shri Ranade with affection. I vividly recall his positive response to my plea to meet the hopes and aspirations of the workers to give preference in employment to the children of MBPT employees. He found out a way of doing so, in face of some insurmountable difficulty. Other shining examples of our give and take approach was hammering out acceptable solutions of vexatious issues such as introduction of container building, and the third shift workers assuring cargo handling round the clock.

Dr Patel reminded his colleagues how the piece rate system for loading and unloading operations was revised through a bipartite agreement leading to further increase in output. He also pointed out for the first time, the rentals of vast landed property of the MBPT, the biggest land-owner in Bombay, were fixed on a rational basis to ensure fair returns.

Then there was the decision of the Board, to which Dr Patel had made substantial contributions, to extend the Mumbai Port across the harbour at Sheva, to meet future shipping demands. As for this, he was not happy with the role of the Shipping Ministry. As he put it: "I am sorry to state that the ministry misused, for no convincing reasons, the legal powers, and developed an independent Jawaharlal Nehru Port Trust, and, that, too, utilizing the MBPT funds". Dr Patel said that even now it was not too late in the day to merge the Jawaharlal Port Trust with the MBPT and "stop the national waste of money".

As Dr Patel saw it, the most important issue facing the MBPT Board was autonomy. That autonomy, he insisted, had been taken away subtly by the issuance of "directives and the ingenious device of guidelines issued from time to time by the Ministry of Surface Transport".

Dr Patel said on the occasion of the Board's 125th anniversary, the union government must give a "gift" of full functional autonomy to the Board which alone could be the best way of appreciating the long and meritorious services it had rendered to the country. He added:

The Board which has been given powers recently to sanction the expenditure of Rs 100 crores is, regrettably, not considered competent to sanction the necessary amount in case of labour matters, even though this may be the decision of the Indian Ports Association comprising the Major Port Trusts. Even the power of appointing the lowest paid employee does not rest with the Chairman. This is very strange. The paradox needs to be ended immediately.

Dr Patel urged the elimination of political and bureaucratic interference in the interests of progress and prosperity. And the new policy, he said, of liberalisation should find its way in the functioning of the major ports so that they could be competitive with any port anywhere in the world.

And he added:

The MBPT has an excellent and enviable record of performance of duties from the point of view of efficiency as well as honesty and fairness in dealing with port users, directly or indirectly, except one solitary blemish in recent times when the chairman succumbed to the views of the minister. I am sure this will not happen again. The reserves of over Rs 1,200 crores speak volumes about the efficient financial management notwithstanding the government controls causing delays in sanctioning the projects, contracts and expenses.....

And, as part of the celebrations, Dr Patel suggested that the MBPT contribute 125 days for the year 1997-98 to the Centenary Commemoration Fund as was done at the time of the centenary celebration. "Let us", he concluded, "rededicate ourselves to serve the country through the agency of the Port which we are privileged to manage with a view to capture the glory of the past.....".

The Historic Meeting

The meeting of the Board of the Trustees on 3 July 1997 to celebrate the Bombay Port Trust's 125th anniversary was indeed a historic one. The meeting was held in the very same hall — the Durbar Hall of the Town Hall in south Bombay — where the very first meeting of the Board of Trustees had been held on 3 July 1873 under the chairmanship of Lestock Reid. Old Mr Reid would have been pleasantly surprised to note that while the current members would have dressed quite differently, they

Where the very first meeting of the Board of Trustees had been held on 3rd July 1873. — Darbar Hall of the Town Hall.

Homi J Tallyarkhan.

S R Kulkarni lighting the lamp. Chairman S K Kale and Trustees and Officials.

nevertheless conducted the proceedings in English. In 1873 there were only six Trustees. The President was Lestock Reid, the vice-president, Captain G F Henry and the four members were T Ormiston, T N Moore, the Hon'ble S K Baythell and Lt W I Searle. The meeting could not have lasted very long. All that transpired was that a statement of Receipts and Disbursements on account of the Bombay Port Pilotage Funds for the month of May 1873 together with another statement classifying the different items under their respective heads supported with bills passed was laid on the table. This was noted in a resolution.

Anniversary of the Board of Trustees had a slightly longer agenda but before the then Chairman Mr Sharad Kale could go through it, he made a reference to the significance of the meeting. He said it was a matter of serendipity for him that he had the proud privilege of presiding over it. He said:

> *It is also a happy coincidence that MBPT with freedom fighters amongst its Trustees is embarking upon its 125th year when the Nation is celebrating the 50th year of independence. This is truly a Mani-Kanchan Yog (conjunction of pearl and gold).*

Mr Kale expressed his gratitude to the Asiatic Society for having made the grand Durbar Hall available to the Port Trust for holding its first meeting of its 125th year there. As the MBPT entered its 125th year, it was natural to feel nostalgic and to recall the glorious achievements of the Port for which all those associated with the organisation — past Chairmen, Trustees, officers and workers, Port users and sister organisations like the Indian Navy, Indian Railways, the Customs Departments, the State Government and the Ministry for Surface Transport and its various agencies must be complimented. But for the far-sighted planning of those in charge of the Port's management, said Mr Kale, it would not have been possible for the MBPT to overcome initial deficits and difficulties, to withstand the ups and downs in trade and commerce and to overcome even a catastrophic event like the explosion on 14 April 1944 and to attain and retain its premier position in the nation.

Mr Kale said that though it was time for rejoicing and feeling proud of the port's achievement in an era of technological changes, no organisation can have the luxury of resting on its oars. Therefore, he said, it must be not only a dedication, for looking back on our achievements and for looking into the future for what needs to be done, but also for assessing the port's strength as much for planning trends in the Indian economy and international trade and commerce.

As he put it, it will not be enough to maintain Mumbai's position as the premier port of the country. With the opening up of the Indian economy, it would be necessary to become globally competitive and to carve a niche by constantly improving the quality of service. Mr Kale said:

> *"This will require not just investment in human resources, for an organisation is only as good as its people (but) it will be necessary to adopt user-friendly procedures and systems and to achieve the necessary degree of flexibility in use and deployment of human and material resources. Globalisation is not a new phenomenon for MBPT. Right from its inception it has always had to contend with events taking place in far away places which influenced the pattern and magnitude of its trade. Therefore, one can feel confident that with the cooperation of all concerned, and particularly the veteran and stalwart labour leaders who have made invaluable contribution to the development of this port, and the forward-looking policies being progressively adopted by Ministry of Surface Transport, the Port can successfully meet the challenges of globalisation and convert them into an opportunity for enhancing the standing of the port — not just nationally but internationally".*

Mr Sharad Kale who presided over the 125th meeting of the Board of Trustees in the Durbar Hall of the Royal Asiatic Society (3 July 1997).

Shri S R Kulkarni who spoke next complimented the Chairman for his imaginative idea to hold the Board meeting at the same venue where the first meeting of the Board of Trustees had been held. He said that the Port had contributed immensely to the country's growing foreign trade and had given a fillip to its general growth.

Shri Kulkarni recollected with pride that at a young age, in response to the call given by Mahatma Gandhi, he had participated in the individual

satyagraha movement against the British regime in 1939 for which he was arrested. He had also actively participated in the historic Quit India Movement of 1942 under the inspiring leadership of Sane Guruji and had been imprisoned along with hundreds of others in the Yerawada Jail for nine months.

He stated that he is privileged to be a member of the Board since 1959-60 along with Dr Shanti Patel. He recalled the great contribution made by Comrade D'Mello as also the contribution made by Dr Babasaheb Ambedkar in enactment of the Dock Workers Regulation Act, 1948 which led to the decasualisation of the labour and the formation of the Bombay Dock Labour Board in 1951.

The labour leader recalled that Mumbai was the first port where the container vessel of American President Lines was berthed at BPT. In spite of the government of India's directive that Mumbai port should not handle more than one lakh TEU per annum, the port had handled 5.8 lakh TEUs during 1996-97 which is a record that no other port including the specialised container port has been able to achieve. Increase in traffic from 3 MT in 1900 to 33.7 MT in 1996-97 was no small achievement. That, said Shri Kulkarni was possible due to the unstinted cooperation of all concerned, the shippers, ship-owners, Customs and all port users.

Shri Kulkarni recalled that the Port Trust Act was amended in 1951 to provide for two labour trustees on the Board and Shri S C C Anthony Pillai was the first Trustee representing labour on the Board of Trustees of the port of Madras.

He also reminisced that during the aggression by China in 1962 and by Pakistan in 1965 and 1971 he had mobilised port and dock workers and boycotted ships carrying cargo to these countries. When Scindia's vessel was seized in Karachi, he had retaliated by detaining a Pakistani vessel at 6 Indira Dock and had got the cargo unloaded without any additional cost. So also he had intervened during 1965-66 with striking dock workers in America, as the country was facing huge shortage of foodgrains and thus ensured that shipment of foodgrains to India were exempted from the strike.

He wished to place on record the excellent cooperation extended by past port chairmen and hoped the tradition would continue. The Port Trust, he said, had to work within the framework of the Act and urged the government to recognise the full autonomy to ports as envisaged under the Major Port Trusts Act, 1963. The Board had many eminent personalities as Trustees and their decisions had stood the test of time. Mumbai Port was as competent as other ports in the world. He recalled many trustees and chairmen who had protested against arbitrary orders of the government and said he himself had objected to the order for financial assistance to JNPT.

He stated that there was still much to be done to ensure proper and safe working conditions and felt that the directorate of Dock safety was not carrying out regular checks. Also, strict instructions need to be issued to prohibit older vessels from entering the port.

Comdr Bhatnagar expressed his happiness to be present as a Trustee on this momentous occasion and read out a message sent to the Chairman by Flag Officer Commanding-in-chief Vice Admiral Avinash Tandon.

Other speakers were Ramu Deora, Suresh Kotak, Capt Devindra Singh, M G Venugopalan, Sarah P Engineer, N S Kulkarni, R K Chimbulkar, B B Dubash, Nikhil Gandhi and R R Sinha.

Pioneers in Stevedoring

No account of the Bombay Port Trust can be complete without the mention of R H Tookaram Hariba & Sons who were one of the pioneering stevedoring companies in India. Says its owner Surendra Barmukh: "Even today our company is one of the major stevedoring companies and the first contractors of the Bombay Port Trust. Our company started way back in 1800 and at present we are of the sixth generation in this business. Our relations with the port began when we helped in building the first berth of the Bombay Port Trust.

How did it start?

"At that time we were basically involved in various trading business like transporting meat to Punjab and bringing back dal. The number of labourers we employed ranged from 5,000 to 6,000. Unfortunately there was a setback in the business and the labour had nowhere to go. These were private labour who comprised mainly Pathans and Ghatis (who hailed from Pune, Satara and Junnar). Tookaram, the then owner of the company brought these labourers to Bombay (which then comprised the seven islands). Soon a new business venture loomed on the horizon and we began to deal with the Gulf countries where more labour was needed. About three vessels were purchased *Narli, Supari and Hubli*. It was around this time that the Dutch traders were in Bombay and gave the contract to the British to fill up these islands. While in close contact with the British, we came to know of the stevedoring business. It was when the port was being built that stevedoring business gained momentum. For undertaking this business licences were needed and a scheme was started by the Bombay Port. Soon the serang system of labour was started in 1954 when there were 1,000 to 2,000 labourers under a serang, a person

who acted as an intermediary. The serang was on the payroll of the stevedoring company on a monthly basis.

"After independence, need was felt to nationalise this labour system which gave rise to the formation of the Bombay Dock Labour Board in 1952. The serang labour came under the register of the Board which gave labour and owners registration. The labour under the cargo-handling category came under the Labour Board while the labour under the helping category remained with us.

Prior to the formation of the Board, in 1948, all stevedoring companies formed associations, through these a pool was formed by which all labourers came under one wing. Called the Bombay Stevedoring Association Pool, this organisation soon placed skilled workers under the Board when it was established, while the unskilled workers remained with the stevedoring companies. It was only as late as 1983 that the Pool merged with the Board and there were private workers who also came under the Board.

Another category of workers came under the General Purpose Mazdoor (GPM) formed in 1993. Its present name also remained with us. These included the trimming gang who did jobs connected with bulk material loading, the cutting gang whose work involved in giving a helping hand. The Sweeping and the Cleaning gang category were responsible in clearing away the remains of the cargo left in the ships. Another class was the Winchmen and Hatchmen who were registered with the Board. In 1983 when the Pool merged with the Direct Labour Board, whereby private workers came under the Board, it was the supervisory staff whose main function was to collect the wages of the workers from the stevedoring owners and ensure facilities like housing, medical, schooling for the children of the workers and loan possibilities. This was all done on a no-profit basis. Now protection of the labourers became the prime factor and thus began the trend of unionised

Strand Road: It is on this road close to the Taj Mahal Hotel that the BPT Guest House is located (1934).

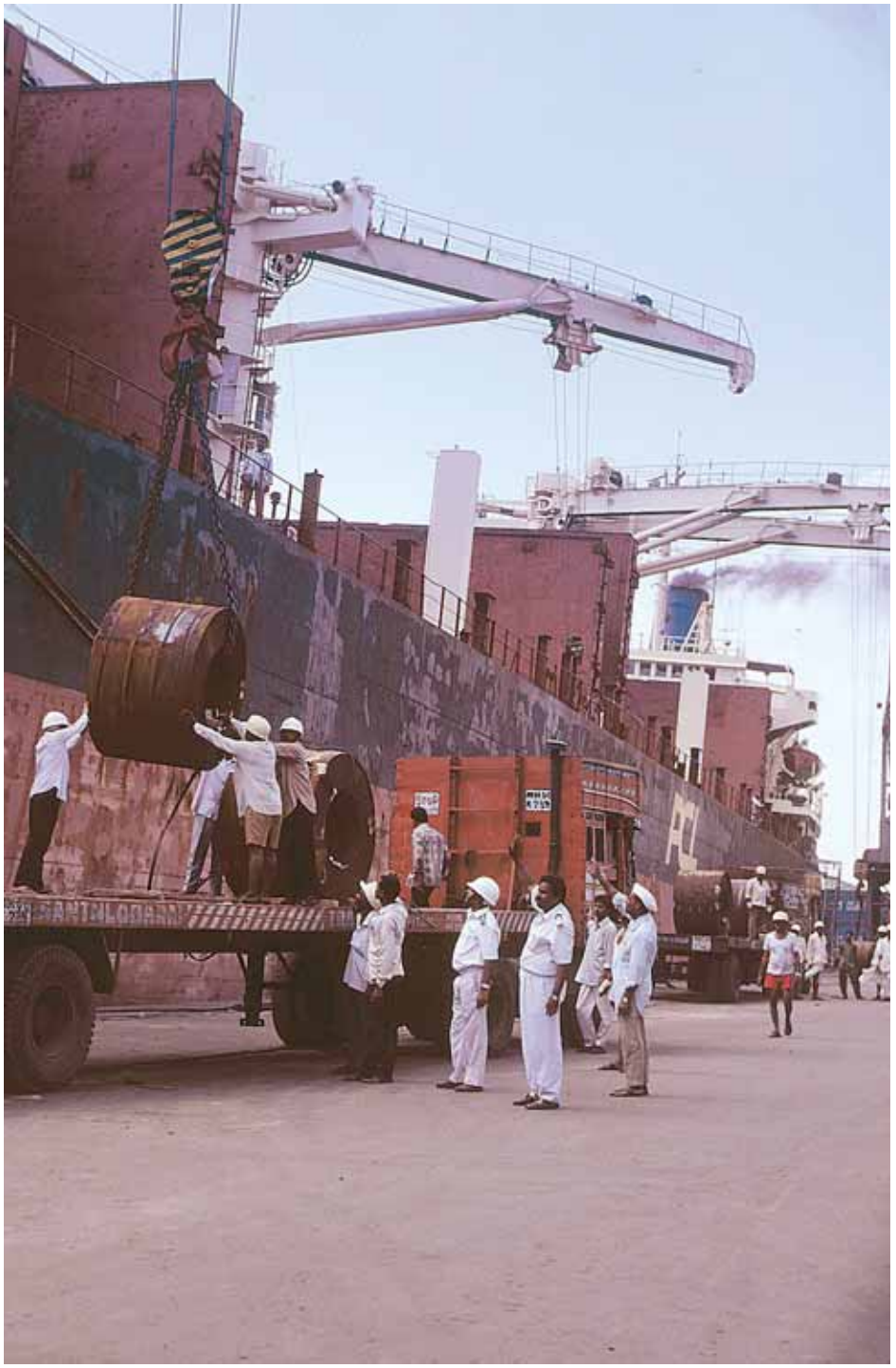
labour. Still the carpentry and the Khalasi category remained with us — they were about 700-800 of them as there was no registration for them. They were paid only attendance money. However, their scale was later recognised and in 1989 they were registered with the Dock Labour Board (this category works as messengers).

"As years rolled by and trading and port business increased, mechanisation was inevitable but labour was not minimised to that extent. Ship traffic increased and forklifts were introduced in the eighties which completely revolutionised the transferring of cargo. Hence the nature of work changed although the workers were always kept occupied elsewhere, in other departments. Soon various types of cargoes arrived and need was felt to handle each category of cargo in its own way. Perishable cargo, was wholly different from non-perishable cargo.

How did we cope with perishable cargo, considering the likelihood of petty pilferage? Earlier there used to be pilferages with cargoes like rice, dal and sugar. But as we moved towards containerisation, pilferage was reduced, although there were pilferages of another kind mainly organised pilferages, generally by outsiders, in connivance with the labourers. These included machinery, chemicals etc. The dock is a mammoth organisation with so many personnel involved with different activities at all levels that to keep track of pilferage is a herculean task.

Most of the labour consists of the bhaiyyas from Uttar Pradesh. They generally start work at the age of 18 and continue till the age of 60. Earlier the labour used to admit that they could not work due to various health reasons. Since they were on daily wages, they could be relieved of their jobs and alternate labour employed, as the labour class was constantly in search of employment, but today, with the various benefits available to them they try to derive maximum benefits from the different schemes offered to them. Also, the mode of payment has undergone drastic changes. The payment they received earlier was per man employed, now it is per tonne rate. This had affected the competition as now there are several agents involved who act as middlemen".

Barmukh was nostalgic about the days during the British regime when business transactions were direct, face-to-face, characterised by



Unloading a consignment of steel rolls directly on trailers, with a heavy lift crane.

Worker at Port Trust workshop.

relations based on trust, honesty and integrity. The most surprising factor, Barmukh said was there were no written contracts; everything was based on trust.

Recalls Barmukh sadly "those days will never come again".

Stevedoring companies were once few and far between. Now they are many, like Robinsons, Winsons, MBEC, United Marine, ABC and DBC A R Nime, Eastern Bunkers, Kanji Jadavji & Co, M Dinshaw, E Madhwani and R Shah.

Cargo Operations

A cargo steamer then usually had five hatches or holds, two in front and three at the rear. Each of these hatches had three decks, upper, lower and middle. All were filled with cargo. When the steamer berthed in the dock, the moveable cranes on the quay were brought into action and the work of unloading the cargo began. Some labourers entered the hatch, tied the goods in a sling, placed the sling in the hook of the crane which then lifted the sling and deposited the same on the shore. The labourers on the shore thereafter carried the goods to the adjoining transit sheds, where they were sorted, checked with the "general manifests" supplied by the Captain of the ship, and stacked. On satisfying the Customs Appraiser and payment of Port Trust and other charges, a Gate Pass was then issued to the owner of the goods who either took them to his own godown or kept them in the bonded or duty-paid warehouses of the Port Trust.

The reverse process was followed in the case of export cargo to be loaded on vessels. The labourers working on board the steamers were under stevedore firms, ie firms which undertook the contract of loading and unloading cargo on vessels from the steamship companies. On the other hand, all the labourers working on the shore were the Port Trust employees. The former were known as Stevedore labourers. The goods were deemed to be in the possession of the steamship companies till they were safely deposited on the wharf from the boat and only thereafter did the Port Trust take the delivery of the same.

The stevedore companies employed the labourers through intermediaries known as *Serangs.* Each firm employed its own monthly paid *Serang*. He himself approached the labourers, through middlemen called *Tindals.* Each Tindal had under him a gang of labourers, each gang consisting of six labourers, excluding the Tindal. Excepting a *Serang* and a *Tindal*, the rest of the labourers were divided into three classes; hatchmen, winchmen and foremen. A hatchman worked in a hatch a winchman worked a winch (the crane of the vessel) and a foreman's duty was to give instructions by movements of his hand to a winchman or a craneman on the wharf.

The demand for labour varied with the departure and arrival of vessels in the docks. To some extent, too, it was also affected by the urgency with which the goods were to be loaded or unloaded. In the circumstances there was no question of a labourer being hired on weekly or

POL operations through loading arms (1997) at 4th oil berth Jawahar Dweep.

monthly wages. In other words, he was a day labourer. The labour was hard. It involved carrying loads. That meant that the majority of workers were between the ages of 31 and 40 (60 per cent).

Cholia the historian states that for a long time Hindu workers did not like to work on board a steamer "on account of religious susceptibilities" — without specifying them. Most labourers who worked on board the ship therefore were Muslims who apparently had no particular religious handicaps. No special training was required to work as a stevedore labourer. But physical strength obviously mattered most.

The *Serang's* job involved supervising the work of those under him. He himself did not do any manual labour. The *Tindal* was the middleman between the labourers and the *Serang* but he was also a labourer and often served as a "relieving hand". He worked in the dual capacity of a labourer and a supervisor.

Standing in the sun all day long near the opening of the hatch, a foreman gave directions to the craneman or the winchman, since neither could see what is happening inside the hatch. They were wholly dependent on the foreman for directions. Wrong or inadequate directions could result in serious accidents as everyone was aware of. Salaries, certainly in terms of the 1990s, were abysmally low. The employer paid the *Serang* at the rate of Rs 10-8-0 per day per gang, out of which the *serang* received eight annas (50 paise) per gang for himself. The remaining ten rupees were paid to the *Tindal* for distribution among his labourers. A labourer received between Rs 1-4-0 to Rs 2 per day.

Whence did these labourers come? Writes Cholia:

> *Many of these labourers seem to have left their homes at an early age to run away to Bombay on some pretext or the other. Due to their continuous day in Bombay, broken only by their casual visits to their villages, they cease to have any affinity with their relatives at home and possess little or no property in their native land. Soon they forget their relatives and their relatives forget them and consequently the chances of marriage in their villages become remote; the only alternative is to find a bride in Bombay which task would be very difficult on account of caste system, unless the labourer has sufficient money to attract one. Hence, due to large proportion of unmarried labourers, we find that about 60 per cent of the total number of labourers have no dependents at all.....*

The term "shore labourers" include all labourers who handle cargo on the wharf or in transit sheds while it is being loaded or unloaded; but it does not include any labourer working on shore.

The situation regarding them was as follows:

Once the goods were safely placed on the shore, the Port Trust took charge of them and became responsible for any subsequent loss or damage to property. The owner of the goods had to take delivery of

the goods within five days from the date of "general landing" (ie when the vessel began unloading and was half way through). Failure to take delivery in due time meant extra wharfage charge of the Export Cargo after it was admitted in the docks on presentation of an "Allow Pass" issued by steamship companies to the Exporters. Prior to 1914 a private firm had been given the contract for the supply of necessary labour and completion of the task, but thereafter a new department — Hamallage Department — had been opened in view of the growth of trade and increase in work.

In pre-1914 days labour was hired by a private firm. The private firm did not employ the labourers but entered into sub-contracts with some intermediaries who brought in the necessary number of labourers and fulfilled their sub-contracts. These intermediaries were known as *Toliwallas*. On the abolition of the system of entering into contract with the private firm, the Port Trust did not abolish the method of giving sub-contracts to the *Toliwallas* but retained the practice of employing labour indirectly through them.

The Hamallage Department of the Port Trust maintains lists of various types of *Toliwallas* and called upon them in turn to supply the necessary number of labourers as each vessel was ready for loading or unloading. On a request being made to the Hamallage Department by the steamship companies for the supply of labour, what it had to do was simply call upon the *Toliwalla* and give him instructions as to the nature of the cargo and the time limit within which the work had to be completed. Efficient as he was at his job, the *Toliwalla* knew how to manage the rest.

Shore labourers were of two kinds; those that carried goods from the wharf to the transit sheds and those that did the sorting and stacking after getting them tallied with the General Manifesto.

Again, those who worked on the wharf were sub-divided into two classes. Some handled only bag cargo while the rest handled sundry cargo. Those who handled only bag cargoes were known as Matari labourers while those who handled sundry cargo were known as Boy labourers. The work of sorting and stacking was carried out by quite another set of labourers called stackers who worked inside the transit sheds.

In all, shore labourers consisted of six types: (1) Boy labourers (2) Matari labourers (3) Stackers (4) Cart unloaders (5) Cotton exporters and (6) Sundry coolies.

The vast majority of shore labourers (92 per cent) were from Pune, Satara, Ahmednagar and Sholapur districts. About 96 per cent of the shore labourers were Hindus and of them 78 per cent belonged to the Maratha caste. Most of the

Stacking merchandise at one of the warehouses in Indian Dock.

Dredging in operation at Ballard Pier (1934).

Matari labourers hailed from the Mahar caste.

The term "Boy labourer" is misleading since the labourers were not boys but full grown adults.

In the thirties and forties the daily wages of a boy labourer was about a rupee and of the stackers' cart unloaders and a muccadam under the Hamallage Department was about Rs 1-8-0, whereas a coolie received only 15 annas a day (a rupee was divided into sixteen annas, an anna into four quarter annas and a quarter anna into three pice). On an average a boy labourer could get work for about fifteen days a month including two to three night shifts.

Then there were the coal labourers.

The import of coal was an important component of dock work and coal labourers were a class by themselves. Their activities were scattered over three regions; in the stream, in the docks and at the storing depots at Darukhana to the east of the Reay Road Station. Coal steamers did not as a rule discharge coal in the docks since coal dust would not only spoil the cargo and properties of the Port Trust but was detrimental to the health of the public in the docks.

In the circumstances, coal steamers discharged their cargo only in the stream, usually about half a mile or away from the docks. Bunkering of coal in the steamers however, had to be permitted in the docks, but this work was completed in half a day.

Some of the stevedore firms who undertook the work of loading and unloading other cargoes also entered into contracts for discharging coal and bunkering coal in steamers. In some instances, these contracting firms who were also coal dealers discharged not only their own coal but also that of other dealers and firms. Often they supplied their own coal for bunkering.

Though the system of employment of coal labourers resembled that of the shore labourers, there was an appreciable difference between the two methods. Every stevedore firm which undertook such contracts had its own muccadam who acted as a sub-contractor for the supply of labour and completion of the work.

It was the function of the muccadam to bring the necessary member of coal labourers, to supervise their work and to see that it was completed in time.

The muccadam who was entrusted with all the work connected with the labourers engaged by him on behalf of the firm was called the head muccadam to distinguish him from other muccadams of the gangs of coal labourers. Often the head muccadams served as sub-contractors to more than one firm.

The head muccadam, however, did not employ the labourers directly, but employed them through other muccadams, each of whom had 20 to 30 men under him. This intermediary, though technically a mere leader, was virtually their master. Known as the gang muccadam, he received payment from the head muccadam at a fixed scale per labourer but fixed the wages of individual labourers under him according to their ability.

Port Trust workshop.

The gang muccadam usually directly recruited labourers from his own village or from neighbouring villages and therefore knew each of them personally. The labourers were not paid in cash at the end of each day, but the payment was credited to the account of the individual labourer, who was allowed to withdraw an amount sufficient only for his maintenance. Thus the gang muccadam combined in himself the function of a moneylender with that of a labour recruiting officer.

The coal labourer had to be a hardy soul considering that the work he was expected to do required muscle power. Most of those employed were largely between 31 and 40 years old.

Work on colliers in the stream consisted of drawing out coal from the hatch and after weighing it discharging it in barges waiting outside. As soon as the coal was discharged in barges, its possession changed, and the responsibility of the vessel ceased.

The work of discharging the coal was divided into two parts. First was that of shovelling the coal to fill baskets inside the hatch; second was that of carrying those baskets on board, weighing the coal and discharging it in barges. The labourers accordingly divided themselves in two sets.

The shovelling of coal into baskets was the harder of the two jobs and called for great physical strength. Worst still, the shoveller had to work in an atmosphere of thick coal dust. The task of carrying baskets filled with coal to the weighing machine and then to the barge was lighter, though it involved handing the basket from one person to another sequentially and bending and straightening oneself every minute.

However, this system known as the "Falka" was replaced in many instances by the Tub system whereby a tub was lowered in the hatch to be filled with coal and then lifted by the vessel's winch for the coal subsequently to be discharged into a barge. We now come to the labourers on water.

Broadly speaking they came under ten headings; (1) Serangs (2) Engine drivers (3) Greasers (4) Firemen, stokers, (5) Seacunnies (6) Tindals (7) Khalasees (8) Cooks (9) Winchmen and (10) Signalmen. None of them of course had to handle cargo in any way. For all that, their services were not less important and they are entitled to be included in the general term of "Dock labourers".

They were engaged in a wide variety of work; some were employed in the lighthouses; some operated tugs and launches; others were engaged in dredging. Indeed, dredging operations forms an important part of dock activity, considering that the harbour has to be continuously dredged to enable ships to berth. Their wages around 1940 were as follows:

Type of labourers	Monthly wages (Max) Rs	Monthly wages (Min) Rs
1. Serangs	150	35
2. Engine Drivers	55	22
3. Signalmen	87	34
4. Winchmen	70	33
5. Firemen	68	27
6. Seacunnies	68	30
7. Tindals or Khalasees	55	32
8. Greasers	40	36
9. Khalasees	34	21
10. Bhandaris	26	20

Then there were other kinds of dock workers engaged on shore like engine drivers, firemen, greasers, carpenters, fitters, crane drivers, hoistsmen, electricians, chain boys, muccadams, and coolies and finally sweepers and bhangis.

Typical Seamen sailing from the Port of Bombay (1930).

Crates being transported to the transit shed.

The work of carpenters, coolies and khalasees and other labourers working at the dry docks required a good deal of efficiency and experience. Wages of some of the labourers were settled on a monthly basis and of others as a daily basis. However, all of them were paid at the end of the month.

Some categories of workers obviously were skilled like engine drivers, carpenters, fitters, and electricians and received higher wages. The chart below gives a picture of the wages of various categories of workers around 1939-40.

Nearly 47 per cent of the total labourers received between Rs 31 and Rs 40 while 21 per cent earned less. The best paid of all were the carpenters, electricians and engine drivers. The lowest paid of all were the chain boys whose work required neither expertise nor even experience and was at the level of coolie-work.

Type of labourers	Max monthly wages (Rs)	Min monthly wages (Rs)
1. Engine drivers	133	85
2. Electricians	113	84
3. Carpenters	104	55
4. Fitters	87	42
5. Wiremen	78	32
6. Firemen	68	34
7. Linesmen	65	32
8. Muccadams & coolies	58	24
9. Sweepers, bhangis	52	25
10. Crane drivers	44	37
11. Greasers	43	39
12. Chain boys	24	24

Attached to the docks was the Port Trust Mechanical Workshop situated at Wadi Bunder which undertook repairs of dock gears and other properties of the Port Trust. Those involved were fitters, turners, carpenters, boilermakers, rivetters, holders, blacksmiths, hammersmen, coppersmiths, tinsmiths, painters, coolies etc. The following table shows the maximum and minimum monthly wages of each class of workers.

Type of labourers	Max monthly wages (Rs)	Min monthly wages (Rs)
1. Carpenters	136	52
2. Turners	124	72
3. Fitters	114	39
4. Blacksmiths	104	72
5. Boilermakers	98	48
6. Coppersmiths	95	65
7. Drivers	92	72
8. Moulders	78	59
9. Muccadams	72	52
10. Sailmakers	62	56
11. Tinsmiths	55	39
12. Painters	45	—
13. Firemen	45	26
14. Rivetters	42	31
15. Hammersmen	39	35
16. Bhisties	35	—
17. Holders	32	26
18. Coolies	32	23

And finally, there were the labourers of the Bombay Port Trust Railway. In the thirties, while the actual length of the BPT Railway from the north to the south was about 7 miles only, the trackage was about 118 miles. This comparatively large mileage of sidings and connecting lines served the extensive storage areas belonging to the Port Trust admirably.

The following are the wages received by different categories of Railway workers around 1940:

Type of labourers	Max monthly wages (Rs)	Min monthly wages (Rs)
1. Drivers	104	91
2. Boilermakers	98	39
3. Fitters	91	39
4. Painters	78	35
5. Carpenters	75	43
6. Muccadams	45	35
7. Firemen	45	35
8. Cabinmen	36	30
9. Shunters	32	30
10. Keymen	29	25
11. Loading hamals	29	25
12. Hammersmen	28	25
13. Hookmen	27	24
14. Trolleymen	27	—
15. Sundry Labourers	26	—
16. Gangmen and coolies	26	22
17. Gatemen	25	22
18. Bellmen	25	22
19. Lampmen	24	23
20. Pointsmen	24	22
21. Cleaner Boys	23	18

These lists indicate the wide range of workers employed in the Bombay Port. They generally had fixed working hours, the labourers under the railway Manager working in shifts. The working hours of the labourers in water were not regulated as they were determined by changes in the tide and the arrival and departure of vessels. Consequently the working hours of most of the labourers changed from day to day, though a working day was reckoned as consisting of nine hours. For the same reason it was possible to distinguish between the day work and the night work. The labourers engaged at the dry docks were required to work according to the time of docking and undocking of vessels.

Indeed, work was very common amongst all the principal dock labourers as the companies to which vessels belonged were anxious to load and unload in as short a time as possible due to heavy dock charges as well as their anxiety to keep to their schedule time. So every dock worker hired on a casual basis usually got night work for about two or three nights a month. Some of the labourers on shore, like crane drivers who have to work in cooperation with these labourers also had to put in night work. And wherever there was rush of work, the mechanical workshop was kept open continually for a fortnight, although night work was not usual.

The usual working hours for the labourers in the docks, though, were from 8 am to 6 pm with an hour's recess at 12.30 pm except on Sundays and holidays. The sanctioned holidays recognised by the Trustees were Christmas Day, New Year's Day, Good Friday, the King's birthday and any special occasion ordered by them. No holidays were given on Hindu, Muslim, Parsi or Buddhist religious festivals.

Those were the times!

According to Cholia who made a detailed study of dock labour, a significant percentage of it was in debts but the percentage varied with different categories of labour. The time frame, it is well to remember, is in the late thirties and early forties. More than half the stevedore labourers apparently had no debts and the debts of 36 per cent was less than Rs 101 each. On the other hand the Shore and Coal labourers were heavily into debts, the majority debts being below Rs 501 and only in a few instances rising above Rs 2,000 or almost the earnings of over two years!

The Port Trust ran a Bombay Port Trust Employees Cooperative Credit Society which gave loans but the rules concerning non-payment were strict. According to one rule:

> *Employees taking the benefit of the Insolvency Act or known to be heavily involved will be liable to be suspended, pending inquiry and to dismissal. Any employee whose pay, or part of it, is attached by the Small*

Stocking cargo inside the transit shed.

Causes Court and who does not effect an arrangement for the removal of the attachment within three months, will be liable to dismissal.

There were rules for Provident Fund. These were made under Section 22 of the Bombay Port Trust Act, 1879, for the benefit of certain servants classed as temporary employees. There were also rules for the payment of gratuities to such employees who did not elect to join the Provident Fund.

The servants of the Port Trust were admitted to the benefits of the Provident Fund Trust from 1 April 1920. The object of the Fund was to provide employees of the Port Trust on their retirement, or their, dependents on their deaths, with a certain lump sum of money, which would be readily available. Experience had shown the value of such a Fund. It functioned as follows:

Each employee was required to set aside from his pay a certain fixed percentage. These compulsory savings accumulated and at the close of each official year, the Board of Trustees of the Port of Bombay contributed an amount equal to the employee or his dependents in accordance with the rules made by the Board on retirement or death of the employee.

The rules implied that the employee's own contribution might, under certain conditions be advanced to him during his service in case of illness or for building a house.

These advances were recoverable by the Board, by deductions from the pay of the subscriber to whom it was made by monthly instalments of such amount as might be fixed by the Board.

All temporary employees were eligible to subscribe to the Provident Fund with effect from the date of completing 3 years continuous service, with the exception of casual labourers such as those under the Hamallage Department. Contributions were to be made by all subscribers at the uniform rate of $^1/_3$ per cent of their pay calculated as follows:

(a) In case of employees paid at the monthly rates, the calculation was made on the total pay excluding over-time;

(b) In case of employees paid at daily rates, the calculation was made on the daily rate of pay multiplied by the number of days worked during the month upto a maximum of 26 days, and excluding all time worked in excess of that number.

Though a subscriber was eligible to contribute to the Provident Fund after completion of three years' service, he had to put in five years service in order to entitle him to receive his share of the Board's contributions.

Temporary employees who completed 3 years continuous service on or after 1 July 1926 were allowed the option of subscribing to the Provident Fund or of qualifying for a gratuity under the "Rules made for payment of gratuities to temporary employees who do not elect to join the Provident Fund".

Container handling operations in Indira Dock.

Labour Unrest Looms Large

Conditions in the 1930s were hard. Trade was decreasing thanks to a world-wide recession. Life of the labourer was not made any easier by the demands of middlemen like Tindals, Toliwallas and Muccadams who all wanted their cut when jobs were offered. These intermediaries were parasites but their existence was a reality that had to be faced.

Traffic Office (Time Ball Building) at P & V Dock, Memorial erected in the honour of those who died in the Dock explosion on 14th April 1944 seen in the foreground.

Labour unrest in such conditions was bound to grow and on 12 March 1932 sixty workers under one stevedore firm struck work, demanding *inter alia* an increase in the rates of wages. The strike fever soon caught on and in no time the number of strikers increased to 1,000. Action was called for. Talks were held between the stevedores and their employers and on 4 April a compromise was arrived at and the Dock Workers' Union called off the strike.

The war time was comparatively quiet. Work had inevitably picked up because of the war and the import of various items but simultaneously cost of living was slowly creeping upward. A labour explosion was bound to take place sooner or later, but the time was not yet ripe. The war had to come to a successful conclusion. At this point entered a fascinating personality on the dock worker scene: Placid D'Mello.

D'Mello had joined the Bombay Port Trust in 1936 as a Tally Clerk and rose to become a Labour Supervisor in 1940. Those who knew D'Mello then have described him as a committed trade unionist, honest to the core, entirely unselfish whose only passion was the welfare of the dock labourer. As both Tally Clerk and later as Labour Supervisor he

had plenty of occasion to watch how labour was exploited by, among others, Serangs and Toliwallas. Inevitably he was drawn to the labour movement. Resigning from the Port Trust service in 1947 in order to infuse a new vigour into the dock worker's union, he gave his full energies to trade union work. First he unionised the non-Port Trust Labour working in the docks, founding the Bombay Railway Employees' Union in 1950 and the Bombay Lorry Drivers and Cleaners' Union in 1958. The next year, 1959 he successfully merged the five unions with which he was till then associated, namely the BPT Dock Staff Union and the aforementioned three unions founded by him into the Transport and Dock Workers' Union. D'Mello was getting ready for action.

On the eve of independence there was acute labour unrest in the Port — as should have been expected — and the workers threatened to go on strike in May 1946. However the Trustees considered their demands sympathetically and made far-reaching concessions to them, such as the basic pay of Rs 30 pm a 48-hour week, house rent allowance and abolition of the age-old system of daily wage payment.

Details of the subsequent strike have been provided in B Sheshagiri Rao's biography of S R Kulkarni, a close associate of D'Mello.

The end of the war had not really mitigated the economic conditions of the dock worker. Following independence labour unrest continued and there were frequent stoppage of work and go-slow tactics. Sheshagiri Rao narrates:

> *The first strike led to the constitution of a Tripartite Committee headed by S C Joshi, Chief Labour Commissioner with the government of India, G H Kale and D'Mello representing labour on the Committee while S C Sheth and K Dubash, the stevedores. This was to sound the death knell of the Toliwallas not only in Bombay Port but in all the other major ports of the country.*
>
> *On the basis of the report submitted by the Joshi Committee, the Centre, under the guidance of the great Babasaheb Ambedkar, who was then the Law Minister, a scheme called the Dock Workers' Regulation of Employment Scheme was formulated. It was D'Mello who had conceived the idea and was the brain behind the scheme.*
>
> *The government, however, did not act. The failure to implement the Scheme caused widespread discontent and D'Mello was not found wanting in giving the correct lead to the aggrieved. In June 1948 he organised a major strike in Bombay Port.*
>
> *The Government gave in eventually, assuring his union in writing that it would implement the Scheme in Bombay on 1 January 1949 and also undertaking to study the need for bringing the other categories of Port and Dock Workers under the protective decasualisation schemes to guard their interests and liberate them from the clutches of middlemen.....*

The Union organised a mass rally on Thane Street near the office in Kavarana Building on Frere Road (now named after D'Mello). From there the workers were to move towards the Union premises when the police held their leaders who included D'Mello himself, S R Kulkarni, K A Khan, Babu Bengalee, N Nadirshaw and F P Godrej. The militancy of the Transport and Dock Workers' Union attracted the attention of the then Home Minister of undivided Bombay Province, **Morarji Desai** who decided that the union leaders had to be kept in check. He thereupon enforced the provisions of the Bombay Security Measures Act under which those who were not born in the then Presidency could be externed if they were found to be indulging in activities "prejudicial to the security of the state". S R Kulkarni, being a son of Maharashtra within the jurisdiction of Bombay Presidency could not be externed. But he was lodged in Nasik jail. F A Khan was sent to Farukhabad in Uttar Pradesh, his native state. D'Mello was despatched to Mangalore. He was released only toward the end of 1951, to return to Bombay thereafter. It was a triumphant re-entry for the Sher-e-Docks as D'Mello had come to be known. At Victoria Terminus he was given a rousing welcome by thousands of workers who cheered him and chaired him and took him through the streets of the metropolis in great style.

With the arrests of P D'Mello, S R Kulkarni, K A Khan and others in 1948, the activities of the Bombay Dock Workers' Union came to an abrupt standstill. It is said that members of the union were even afraid to go to the union office.

At this juncture the late Dinkar Desai took a hand in the reconstruc-

Morarji Desai, Home Minister of undivided Bombay Province.

Container handling with heavy lift Reach-Stackers in Rail Container Dept., at Cotton Green

tion of the union. D'Mello had deep faith in Dinkar Desai. He was at that time president of the Bombay Port Trust (BPT) Railwaymen's Union, of which Manohar Kotwal was general secretary. Desai deputed Kotwal to recommence the activities of the union even as the late Asoka Mehta, the socialist leader, who was also associated with BPT employees Union, rushed P V Khandekar, an active member of the Socialist Party, to take charge of the union. Not to be left behind, the late Maniben Kara, the noted labour leader, sent the late B G Sukhi to look after the Union's affairs. In the end, the control of the union was to go into the hands of Kotwal, Khandekar and K R Prabhu Desai.

D'Mello Reigns Supreme

But with the return of D'Mello at the scene, the pattern of leadership again changed. D'Mello was of the opinion that trade unions should be run by the workers themselves and not by outsiders and that the posts of president and office-bearers should go to employees of the industry.

Differences arose between D'Mello and G R Kale who was then Union President. D'Mello's views prevailed and Kale left the Union. With his departure, a Port Trust Shore Worker Nana Tukaram Zende, who was very popular with port labour, was unanimously elected president in 1959. He had an uninterrupted tenure for more than eight years, till his untimely death in 1967.

He was succeeded by W T Pinto, a labour supervisor who was also to pass away within months of resuming office, in 1969. He was in turn succeeded by yet another from the ranks, Rabha Bhan Temgire, a shore worker (1969-71) Genu Bala Sakpal (1972-74). Sukhdeo Eknath Kharat (1974-75) Noor Mohammad M Ismail, a painter and a chipping worker (1976) Khundik B Durafe, a shore worker (1977-85) and Shankar Krishna Tope, an FCI employee.

Another healthy practice introduced by D'Mello was that no subscription should be collected from members of the Union on Pay Day. They should come to the union office on their own to pay their subscription.

With the merger of five unions under the nomenclature Transport And Dock Workers' Union, a new chapter was ushered in labour management relations. First in 1954 came a prolonged strike by Chipping and Painting workers in support of a demand for bonus. This strike had a precedent in the earlier 17-day stoppage of work in Bombay Port way back in 1949 when D'Mello, Khan and Kulkarni were not in the city, having been externed. But L T Gholap, the just but stern chairman

P D'Mello founder of the Union.

of the BPT was understanding and gave in to the workers' demand.

But to go back to for a while to 1948. As a result of protracted negotiations with the Labour Unions, the Port Trust had taken the historic step of abolishing the traditional Toliwalla (constructor) system and decasualised the cargo handling labour from April 1948. This had ensured for the dock workers a minimum guaranteed wage, security of employment and service benefits such as Provident Fund, gratuity leave etc. Simultaneously the scale of pay of all categories of the Port Trust had been liberalised on the lines recommended by the First Pay Commission with retrospective effect from 1 January 1947.

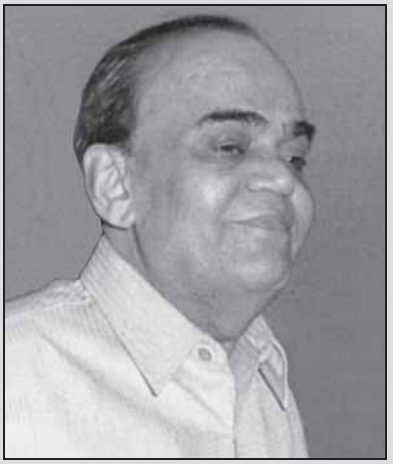
Introduction of Piece Rate Scheme

The decasualised Dock Labour and wharfside crane drivers were on time-rates pay until March 1956 and there were many occasions for complaints about "go slow" by the workers and the consequent congestion of shipping in the Port. There were also quite a few stoppage of work. Despite the introduction of a third shift in 1949 and an Incentive Bonus Scheme in 1950, the rate of cargo handling and turn round of vessels in the Docks deteriorated perceptible from 1951-52 onwards. The malaise was finally cured by the introduction of an incentive piece-rate scheme for the dock shore workers, crane drivers and stevedore workers from March 1956 as awarded by an Industrial Tribunal and suitably amended by the Labour Apellate Tribunal of India.

The piece-rate scheme which originally applied only to packaged cargo was subsequently extended to bulk commodities as a result of agreements arrived from time to time between the Trustees and the representatives of labour. Piece rate schemes were formulated for several other categories of employees besides cargo-handling workers in the Docks. The rate of turn-around of ships at berths by the Dock Labour, despite the lack of sophisticated mechanical aids available to the Dock workers in developed countries soon came to be appreciated by shipping companies and foreign visitors.

Tragedy Strikes

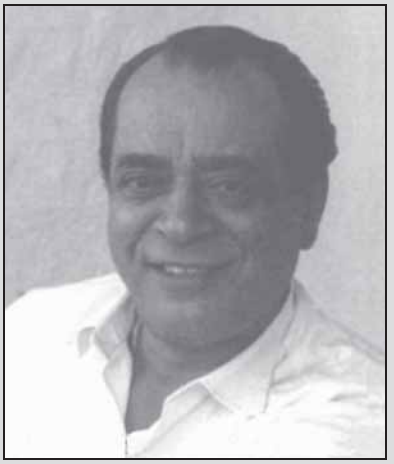
The executive committee of the All-India Port and Dock Workers



S R Kulkarni

K R Prabhudesai

Manohar Kotwal



K A Khan

Jawaharlal Nehru: on his intervention a strike was called off in 1958.

Federation met in Calcutta on 17 March 1958 and its deliberations lasted two days. At this point tragedy struck the Bombay Union. D'Mello collapsed and died without warning on 20 March. He was then barely 39 years old. The dock workers all over the country, but more especially in Bombay were plunged in grief. A mantle of gloom settled on Bombay's waterfront. D'Mello's body was brought to Bombay where it was kept in state in the Union Office for a few hours before being taken in a silent procession to the Sewri cemetry accompanied by thousands of grief-stricken workers. It was later said that not since the funeral of Lokmanya Balgangadhar Tilak in 1920 had Bombay witnessed such a mammoth funeral.

Tributes poured in from all corners of India and abroad. *The Times of India* described D'Mello as "a politician among some trade unionists and a trade unionist among politicians". But meanwhile, a strike was under preparation and it had to be temporarily halted. But not for long. D'Mello's death merely postponed the day. Considering the unrest among workers, a strike had become inevitable. It came about on 16 June.

Dock Work Comes To A Halt

On 16 June 1958, the entire lot of Port and Dock workers of India were engulfed in a strike for 11 days. In Bombay all attempts to avert the strike, including the efforts made by the chairman of the Bombay Port Trust, I T Gholap, failed. There was a near total disruption of berthing and cargo handling. Only some passenger vessels and some ships carrying essential cargo were kept working by the port authorities. The workers were kept informed of the developments on a regular basis. In Bombay they were told

of remarks made by Congress leader S K Patil to the effect that workers could not afford to loose wages and were soon bound to return to work. Workers were urged by their leaders to meet the challenge and face all consequences until some favourable decision was reached at the proposed meeting of Government and representatives of the All India Port and Dock Workers Federation to be held in New Delhi on July 17.

The near paralysis of the operations at all major ports in India dislocated shipping and trade. The morale of the workers was high in spite of the privations faced by them. The strike was front page news and the country was faced with severe dislocation of trade and commerce. At this point, Prime Minister Jawaharlal Nehru took a hand in settling the issue.

On his intervention and service, the workers called off the strike to facilitate a favourable consideration of their demands. Nehru assured the dock workers that the government wished to do justice by them. He observed that the workers should not treat the strike as a matter of prestige and he further assured them that the government wanted to give them a fair deal.

In response to the Prime Minister's appeal, a ten-member working committee of the All India Port and Dock Workers Federation met to take a final decision on whether or not to prolong the strike. At the same time, the Union Cabinet met in Delhi on June 24, to decide whether it was possible to concede the demands made by the Federation. In the end, wiser counsel prevailed. The government announced the appointment of a Tripartite committee, presided over by F Jeejeebhoy, retired president of Labour Appellate Tribunal for the classification and categorisation of employees of the major ports on the basis of duties and responsibilities and their refixation, wherever necessary, into the appropriate standard pay-scales as evolved by the First Pay Commission. This was the first occasion on which the Wage structure of the major ports of India was investigated on a broad and rational basis by a Committee on which were represented both employers and labour. The unanimous recommendations of the committee regarding revised pay scales for Port Trust employees were implemented as from October 1957. Subsequently the benefit of the Second Pay Commission's scales of pay and allowances was extended to the Trustees' employees with effect from July 1959.

An important decision was taken in 1958 by the government pertaining to labour welfare legislation.

S K Patil.

On 15 April of that year, the then deputy minister for labour, Abid Ali introduced a bill in the Lok Sabha seeking to place the public sector and the private sector on par, in the matter of application of the Employees' Provident Fund Act. Till then the Act did not apply to any establishment belonging to the Government of India or local authorities. It was felt that this offended against the principles of uniformity of treatment of the public and private sectors in the matter of application of labour laws. Between 1958 and 1963 labour relations were more or less on an even keel though there were minor hiccups now and then. There was, for example, some difference of opinion on who should be represented on the board of Trustees of the BPT, the Indian National Trade Union Congress or the All India Port and Dock Workers Federation.

The labour representation of the Board of Trustees had remained with the INTUC which the Dock Workers' Federation considered unfair. However, following the then Union Labour Minister's decision that representation should be given solely on the basis of the strength of membership and following of a trade union, the Hind Mazdoor Sabha affiliated to the All India Port and Dock Workers' Federation was given representation on the Board in August 1958. The representatives chosen were S R Kulkarni and Manohar Kotwal.

In November 1958 the staff employed by the loco sheds of BPT decided to go on strike in protest against the action taken by the then Chief Commissioner of Labour, Government of India who had allegedly shown "favouritism" to the INTUC Union. The matter was referred to conciliation that same month, an eight-year old dispute regarding the service conditions

of 300 stevedore workers employed by Messrs Kunji Jadhavji, a firm of stevedores and clearing agents, was settled amicably between the management and the labour representatives. The settlement covered the main demands of the workers, concerning bonus, provident fund, gratuity, leave, holiday wages, etc. and was signed by Gokuldas Pragji on behalf of the company and S R Kulkarni on behalf of labour.

In January 1959, a five-year bonus pact was signed between 600 coal workers in the docks and the employees as a result of the agreement arrived at between the representatives of the Bombay Coal Bunkering Labour Port and the Transport and Dock Workers Union. The agreement was signed in the presence of R J T D'Mello, Conciliation Officer, Govt. of India. The employees were represented by S C Sheth, Managing Director, Eastern Bunkers Pvt. Ltd. and R C Shah, Secretary, Bombay Coal Bunkering Labour Port and the workers were represented by S R Kulkarni and Nana Tukaram Zende Secretary and President respectively of Transport and Dock Workers Union. The pact provided for the regulation of the payment of bonus to various sections of coal workers.

In March 1959, Omer Bacu, General Secretary of the International Transport Workers' Federation visited India and assured the unswerving support of 1,000,000 members of that Federation to the Indian port and dock workers. Addressing a rally of workers at Carnac Bunder, the labour leader pledged the services of the ITFW to the cause of the dockers in the ports of Asia and Africa. Kulkarni welcomed Bacu and invited him again to inaugurate the new building of the Transport and Dock Workers' Union.

Although the strike of June 1958 had been called off in response to the appeal by Jawaharlal Nehru, it was felt that the government had not done much to implement the various demands of the port and the dock workers as a result of which discontent began to build up.

Officers and some of the crew of Benares in 1862. Asian seamen were recruited as soon as P&O ships sailed in eastern seas.

Courtesy: The Story of P&O

A matter of immediate concern was the unemployment arising out of the introduction of the piece-rate system which had been introduced in the Bombay Docks in 1956 on a decision taken by the Labour Tribunal for loading and unloading of cargo in the port of Bombay. All the parties concerned had benefited considerably as a result because of the increased output and improvement in the turnaround of vessels. But the drop in terms of manpower had been taken advantage of by some stevedore employers, which resulted in the reduction of the status of the monthly paid workers to daily paid ones. In the light of this development the Union started to reconsider its attitude towards this piece-rate system. It also came to the conclusion that the rate of output in the docks required control.

Action Plan

At the annual meeting of the Transport and Dock Workers' Union held in Bombay on Independence Day, August 15, 1959, the newly appointed executive committee was empowered to evolve a plan of action if the outstanding issues and demands of the dock workers pending settlement were not conceded by the employers within a reasonable time. A resolution urging the Union Government to direct the Port Trust and dock employers to implement the assurance of the Prime Minister to the Federation which had ended the nation-wide dock strike in June 1958 was passed at the meeting.

Another resolution noted the widespread discontent prevailing among the dock workers consequent on the alleged failure of the Port Trust and other employers to refer the local and sectional demands to arbitration according to prior agreement and to implement the recommendation of the Choudhary Committee in respect of service conditions. The meeting viewed with concern the deteriorating labour relations in the port of Bombay. The meeting further directed the new Executive Committee to be prepared to meet any eventuality that might arise if authorities failed to implement the strike settlement.

On January 19, 1960 the discontent found expression in the shape of huge demonstrations organised jointly by the Transport and Dock Workers' Union and the BPT Employees' Union before the office of the Bombay Port Trust, the Bombay Dock Labour Board and the Regional Labour Office. The main and immediate demand was for the application of the piece-rate system to certain sections of labour concerned with the loading and unloading of ships, including tally clerks. February 2 was observed as a Demands Day by the 1.5 lakh port and dock workers all over the country. The Working Committee of the All India Port and Dock Workers' Federation had passed a resolution advising the affiliated unions to build up an agitation by organising rallies and meetings in support of their demands. The demands included the fulfilment of the assurances to refer all outstanding local disputes to arbitration on adjudication references in many sections not covered by it; granting to all categories an allowance calculated at twice the ordinary rate of pay over and above the normal pay for work on holidays; early finalising of the housing scheme through the grant of aid and loans and implementation of the Choudhary Committee's recommendations on retirement benefits. Another resolution passed by the Committee welcomed the appointment by the Government of the R I Mehta Committee to inquire into the functioning of the Calcutta Dock Labour Board. Yet another resolution noted with concern and disapproval that the pay scales proposed by the Second Pay Commission did not restore even the level of wages recommended by the First Pay Commission in the case of Class III staff.

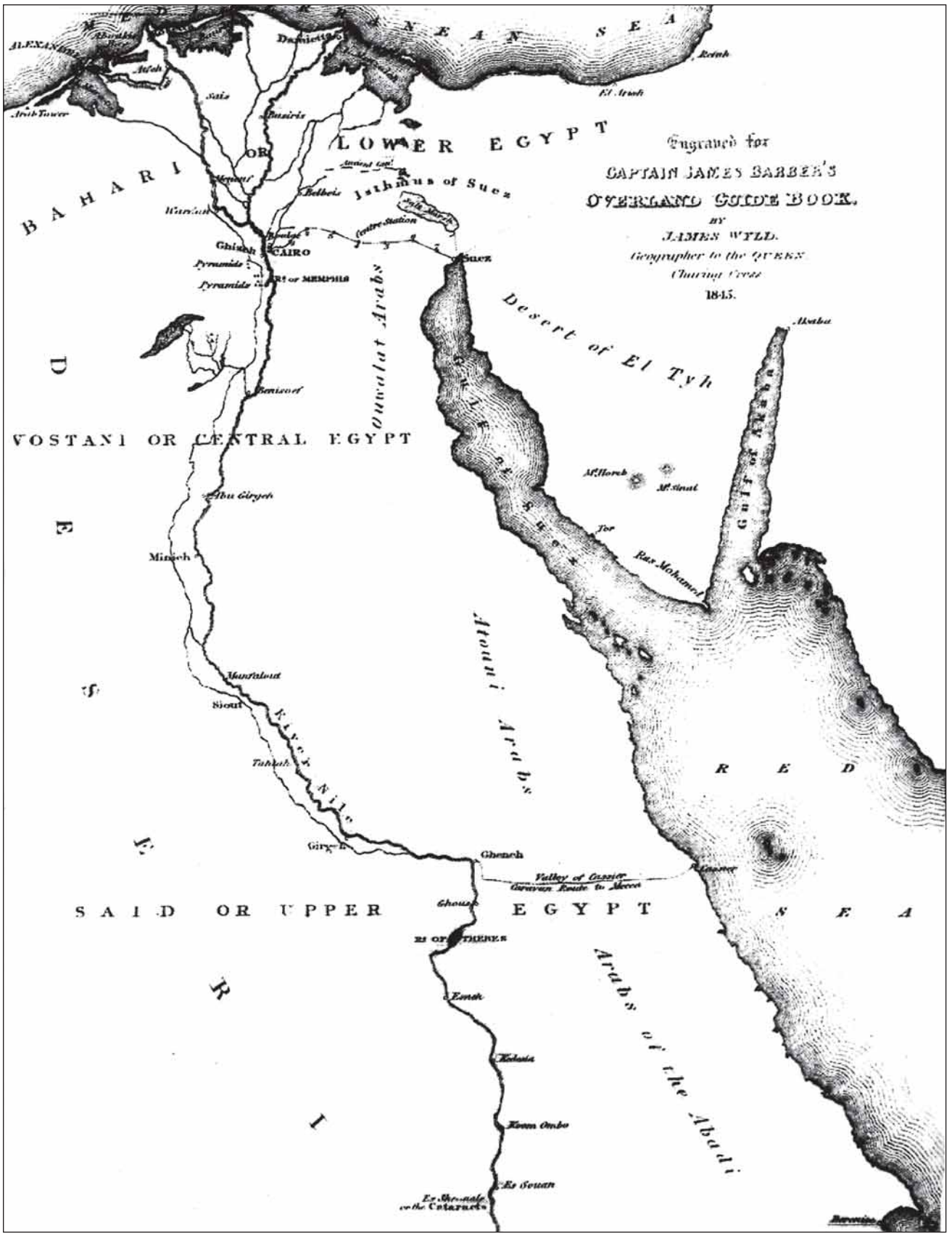
In July 1960, the piece-rate system of payment in the Bombay Docks was extended to scrap iron handling, a matter that had been under dispute for two years.

In July 1960, the piece-rate system of payment in the Bombay Docks was extended to scrap iron handling following an agreement between the port authorities and other dock employer's bodies and the Transport and Dock Workers' Union. The question of bringing scrap iron within the piece-rate system had been under dispute for two years.

The inclusion of scrap iron in the system of payment by results was intended to push up the export of that commodity as well as increase the earnings of the workers as labour taking advantage of the bonus payment over the datum lines would accelerate the pace of loading.

Tackling Grievances

On December 15, 1960, over 1,000 workers engaged in foodgrains clearance activity took time off to demonstrate before the Regional labour Commissioner. Led by Kulkarni and Kotwal, they demonstrated against the intransigent attitude of the labour contractors to press the demand of the 3,000 odd foodgrain handling workers. Kulkarni met S C Gupta,



A map of the land area adjacent to the Red Sea (circa 1845) indicating the distance to be covered from the Mediterranean Sea to the Red Sea.

Regional Labour Commissioner and placed the grievances before him. He was assured that the grievances would be investigated and suitably met. The same month Kulkarni took up the issue of provision of adequate housing for dock labour. He severely criticised the Union Labour Ministry for failing to provide housing to 30 to 40 per cent of dock labour during the Second Five Year Plan, as far back as 1950 but had subsequently gone back on its commitments. The BDLB had built 560 tenements for stevedore workers at Cotton Green out of its own funds but when it approached the Central Government for the promised subsidy, it had been told that it would not be forthcoming. Kulkarni demanded that the original Rs 197 lakh project to build 3,500 tenements which should have been completed by the end of Second Plan should at least be taken up by the Third Plan. The authorities were warned that if the housing programme was not taken on hand immediately the Union would start an agitation to achieve its objective. But by then the government of India on its own was considering a proposal under which in the case of new industries it would be obligatory for employers to provide housing for their workers right from the start. The Union usually kept away from getting embroiled in political activities unless they were necessary for patriotic reasons. Thus, the larger federation had imposed a boycott of ships trading with Goa as far back as in 1954 and that boycott had been maintained since then. But then it was noticed by the Union that shipping companies and even the government was not very particular about honouring the boycott and in January 1960 the Federation decided to re-impose the boycott of ships touching the Portuguese territories of Goa, Daman, and Diu and pledge full support to the Goan Liberation Movement. In addition, it was decided to approach the International Transport Workers' Federation and the International Conference of Free Trade Unions with a request not to handle any vessel trading with the Portuguese — held territories, in India.

On the eve of the monsoon in 1961 dock workers issued an ultimatum for settlement of their pending demands failing which they would go on an indefinite strike after 15 June. After reviewing the directive given by the general body of the Transport and Dock Workers' Union, the managing committee decided to take effective steps to prepare the workers for strike action. The basic demands of the workers included immediate increase in dearness allowance, decasualisation of chipping and painting workers, foodgrains handlers and other contract labour, subsidy by Central Government for the Bombay Dock Labour Board (BDLB) for constructing tenements for workers etc. Kulkarni appealed to the port authorities to adopt a human approach in solving the problems of the workers. He told the Trustees of the Bombay Port that they were quite competent to decide upon a regional wage structure for port employees and did not have to wait for the Central Pay Commission's recommendations.

> Strike threats had become endemic. In July 1962, 7000 shore workers of the Bombay Port Trust threatened to go on strike if their demands were not settled...

But then came the Jeejeebhoy Committee's Report which was published in June 1961, which classified and categorised employees of major ports. The scales of pay that is fixed for different categories dock workers were to take effect retrospectively from 1 October 1957. The pay of each port employee was to be fixed in the scale prescribed by the Committee at such minimum stage as would give the incumbent an increase in the pay not less than the last increment drawn by him, subject to not exceeding the maximum scale. If, in any case, the scale prevailing prior to the revision was higher than the one fixed by the Committee the higher scale was to continue to be applied.

Port workers meanwhile were to achieve a major victory. The Union Labour Ministry informed the Union that the Planning Commission has given sanction to a separate subsidised housing scheme for the dock workers. A sum of Rs 2 crore for building houses for dock workers in Bombay and other ports had been sanctioned in the Third Five-Year Plan.

In July 1951, the BPT General Workers' Union supported the boycott of ships carrying coal for the Western Railway in Bombay which was launched by the Transport and Dock Workers' Union. The boycott was in support of demand for reinstatement of 600 workers who had been displaced by the engagement of new labourers by contractors for receiving coal sanctioned for the Western Railway. The boycott was subsequently to be vacated.

A four-term Bonus Pact was signed between the Bombay Stevedores' Association and the Transport and Dock Workers' Union in the presence of the Central Conciliation Officer, Bombay. According to the agreement, stevedore workers, both monthly gangs and daily rated pools,

Deck of the P&O Steam vessel Madras (1,185 tons, built 1852); P&O believed its ships to be better than any others and the Crews also believed this, so passengers soon became aware of 'that essential quality' that meant P&O (water colour by William Carpenter 1854).

Courtesy: The Story of P&O

numbering about 5,500 and supervisory and other staff numbering about 1,000 were to receive bonus calculated on the basis of the tonnage handled for the year.

February 18 saw the Bombay Port Trust and the Transport and Dock Workers' Union reach an agreement on the mode of decasualisation of casual workers, About 1,000 casual service workers were to be immediately upgraded and the rest were to be gradually absorbed.

On February 25, 1962, the movement of shipping in Bombay harbour was brought to a complete standstill following a strike by 865 members of the crew of the harbour flotilla and pilot vessels' crew who downed tools demanding the grant of weightage to night work in the shape of additional compensation. Subsequently it spread to other categories of dock workers, nearly 1,000 of them engaged in the Butcher Island oil pipeline work, other mechanical workshops and dredger flotilla. The strike was launched by the BPT General Workers' Union. It completely immobilised port operations and it was only when the Union Labour Minister gave an assurance to hold a tripartite conference to settle all outstanding disputes that the strike was called off after six days.

Strike threats had become endemic. In July 1962, 7,000 shore workers of the Bombay Port Trust threatened to go on strike if their demands for the restoration of a paid weekly off, withdrawn from September 1, 1960, was not settled. The Supreme Court had upheld the Union's contention that the workers were entitled to a weekly paid holiday.

In August 1962 an agreement was finally reached under which 6,000 daily-rated shore workers of the BPT were benefitted by holiday wages being paid to them with retrospective effect. But there was growing frustration among the dock workers at the failure of the government to fulfill its promises expeditiously. The Working Committee of the Federation at its meeting held on 31 August 1962 passed a resolution expressing its grave concern over the growing frustration among the workers due to the long delay in several port administrations — and not just Bombay Port deciding issues. The major undecided issues included the Wage Board for port and dock workers, payment of bonus etc.

Largely as a result of frustration, strikes and bandhs were to become fairly common in the years that followed. On June 23, 1963, for instance, a strike organised by the BPT General Workers' Union involving 1,800 of the port flotilla and

180 men of the Port Trust's Fire Service paralysed port operations which lasted five days, when it was called off thanks to the mediation by Raj Bahadur. The Minister of Shipping agreed to hold a conference on the condition that work would be immediately resumed and that the union would not resort to any more strikes without consulting the All India Port & Dock Workers' Federation. There was a token strike on 20 August when a bandh was organised bringing life in the city to a standstill. The port and dock workers played a notable part in making the bandh a success.

Then again, in April 1964 the BPT's flotilla personnel numbering over 1,000 struck work in connection with the dispute concerning rules of seniority of certain categorises of employees, as well as other demands. The strike was organised by the BPT General Workers' Union without consulting the Federation of which it was a member. Navy personnel had to take over the strike-hit services. There was also a go-slow campaign by foodgrain workers in the Bombay docks. Clearances of foodgrains and fertilisers also suffered on account of the negligence of the contractors.

Towards the end of April 1964 tripartite conferences were held to discuss the outstanding dock labour problems. At last the series of discussions held with the Ministry of Labour bore fruit and the Federation's long-standing demand for the appointment of a Wage Board for the port and dock workers was accepted by the government. But no agreement could be reached on the demand for uniformity in Dearness Allowance and weekly off with pay. Also more demands like the decasualisation of shore workers, abolition of the contract system and extension of fringe benefits to the Port Trust railwaymen remained to be settled.

Pandit Jawaharlal Nehru died in May 1964 and was deeply mourned. Port and Dock Workers spontaneously stopped work in homage to him and expressed their gratitude to him for the way he strove to better the lot of the workers.

Discontent Raises Its Ugly Head Again

But the rumblings among the dock workers continued. In June 1964 there was considerable delay in the clearance of foodgrains which were then arriving in large quantities at Bombay port. This situation was met when in July 1964 a scheme of incentives to accelerate handling of foodgrains was finalised, providing for additional payments for workers who took up extra work load.

In September 1964 the composition of the Wage Board for Port and Dock workers in major ports of the country was finalised. This was the culmination of a long-drawn out agitation...

In August, the 18-year-old system of foodgrain handling by the contractors in the docks came to an end with the Regional Directorate of Food taking over the unloading of foodgrains cargo. The abolition of the contract system was hailed as an important victory for the Union. The 3,000 labourers employed by the contractors in the docks were absorbed by the government. It marked the end of employment through middlemen in the port. The foodgrain workers were the last of the categories to have been so employed. The piece-rate system for foodgrain workers was also introduced for the first time.

Slowly but surely matters began to improve. In September 1964 the composition of the Wage Board for port and dock workers in major ports of the country was finalised. This was the culmination of a long drawn out agitation by the Federation. But it was felt that there was not adequate representation on the Board of labour. Yet there was a threat of another strike. Indeed, in January 1965 dock workers' demands for an increase in dearness allowance for Class III and IV staff of major ports was not settled. But an understanding was soon arrived at.

Despite all threats and slow-downs, when the nation was threatened by war, port and dock workers were not found wanting. Indeed, during both the 1965 and 1972 Indo-Pak conflicts they played a commendable role by efficiently handling defence cargo and maintaining normal port operations despite blackout restrictions, unmindful of considerations of personal safety. Their heroic role as a second line of defence was appreciated by the government.

Meanwhile a proposal to mechanise cargo handling was gaining ground and the port workers' leader made it clear that any such scheme which would lead to the retrenchment of the labour force would be stoutly opposed. Mr S R Kulkarni pointed out that the Union Minister of Transport had already paid adequate compliments to the port and dock workers for their performance for clearing the backlog and this had been done without any benefit of mechanisation.

In October 1965 the government proposed a wage freeze as a measure to resolve the financial crisis faced by the country, but labour leaders opposed it on the ground that with

Inner gates of lock and dry dock caisson in course of erection. View looking towards north.

the increase in prices, the real wage levels had become erratic.

After the termination of hostilities between India and Pakistan, the two countries agreed on the exchange of vessels seized by each.

India Puts Forward Conditional Proposal

But Mr Kulkarni made it clear that Indian port workers would not agree to load a single tonne of Pakistan-bound cargo offloaded and seized at Indian ports unless the Pakistan government agreed to release and ship to India all India-bound cargo seized by it, in good condition. Kulkarni insisted that India should ask Pakistan to return all frozen properties of Scindia Company in Karachi as also 162 Indian inland vessels along with their cargo.

The death of Prime Minister Lal Bahadur Shastri at Tashkent came as a shock to Bombay's port workers who brought all activities in the port to a standstill for two days.

In February 1966 there was a six-day strike by the pilots in the Bombay port which was brought to an end by the intervention of the then Union Transport Secretary, S Chakravarti. Six months later, on 22 August, a Bonus Agreement was signed between the Bombay Stevedore's Association and the Transport and Dock Workers' Union under which 6,000 stevedore workers and other dock employees were to receive a bonus for the year 1965-66.

Threats of strike were often heard in 1966 and matters came to a head when in January 1967, some 5,000 employees of clearing and forwarding agents, customs house agents and dalals in the Bombay docks threatened to go on an indefinite strike from May 25, if the Union Government failed to refer their disputes to the Central Industrial Tribunal. The strike in November 1966 had been called off, following an agreement between Transport and Dock Workers' Union and the employees' associations referring the dispute to the C I T but there had been no follow up.

There were other signs of unrest.

Thus, early in February 1967, the port pilots, dock and dredging masters in Bombay port went on a strike which however, was withdrawn after five days following a settlement of their dispute over pay scales.

On 21 February 5,000 dock workers demonstrated in front of the BPT office to voice their protest against the application of service conditions rules to port workers in all the major ports.

On June 20, dockers in Bombay port observed a "demands day" and the country might have landed with a major strike had not an accord been reached at the last minute.

> The 1967 settlement marked a milestone in the history of the Federation and a land mark in the labour movement of the country. The retirement benefits secured were substantial.

Commented the *Free Press Journal*: "Relief over the calling off of the all-India port and dock workers' strike will be tempered by some reflections. The most important of them is whether this means merely a temporary respite. Intermittent strike or threats of strikes in the docks in recent years have been disconcertingly frequent. In July last year there was a similar threat and although the strike was averted, it appeared to be merely a precursor to sectional strikes or threats of strike. The authorities periodically get over the trouble by relying on the customary paliative of making partial and piecemeal concessions. All this may imply a deeper malady which has remained unremedied for long".

The Times of India was no less acerbic. It said: "What might have been a disasterous strike in all the major ports has been averted. The circumstances in which the All-India Port and Dock Workers' Federation felt compelled to threaten a strike, the haste with which its major demands were conceded and the failure to settle all the points of dispute, though some have been outstanding for more than three years, show that New Delhi is still not out of the woods. Most of the present demands form part of those made last year when the Federation threatened an indefinite strike which was forestalled by the offer of some major concession as has been done on the present occasion. Admitted, the Federation's demand for liberal retirement and provident fund benefits is legitimate, but the circumstances in which it has been conceded reflect New Delhi's singular incapacity to deal with labour problems on the waterfront unless it is faced with a strike threat.

"The port authorities cannot be blamed for not coming to grips with the problem as their autonomy has been considerably eroded over the years.....New Delhi's tendency is to handle port problems piecemeal. Dr V K R V Rao's belated promise to set up a commission to go into the problems of major ports is a welcome sign of awareness of the dangers of tackling them on an *ad hoc* basis. But the proposed commission's capacity to end them cannot be taken for granted unless it is constituted on the lines of the Rochdale Commission set up some years ago by the British Government to go into the working of British ports".

For all that was said, the 1967 settlement marked a milestone in the history of the Federation and a landmark in the labour movement of the country. The retirement benefits secured were very substantial, constituting a big gain as well as a significant victory for the dock workers. The total expenditure involved for the retirement and other benefits accruing from the Accord was estimated at about Rs 5 crore, of which Rs 3.5 crores was to be borne by the Port Trusts and Rs 1.5 crores by private sector employers. The Bombay Port Trust spokesman described the terms of settlement as overgenerous.

Better Employer-Employee Relations Mooted

Addressing the dock workers at a reception held in his honour by the Transport and Dock Workers' Union, Jaisukhlal Hathi, the then union Labour Minister stressed the need for better employer-employee relations to accelerate productivity in the country. He observed that as long as workers were unhappy, no national development could be achieved. He reminded the workers that a strike should be the ultimate weapon. If it was used improperly, it would not only jeopardise industrial progress but also have disastrous consequences to the workers themselves. Happily the incidence of strike began to significantly decrease after 1967. In May 1968 there was a strike by 800 Bombay Port Trust railwaymen demanding the implementation of the Industrial Tribunal's award in a dispute between the Port Trust and the BPT Employees' Union. An understanding was quickly arrived at. Similarly, in May 1968, employers of coal handling workers in Bombay agreed to implement the recommendations of the Wage Board for port and dock workers as a result of which the workers concerned received 30 per cent increase in their rates of wages.

The Ports and Docks Study Group meanwhile went into various aspects of industrial relations in the ports and docks. The labour members of the Study Group wanted that the wages of the port and dock workers at all ports should be fixed on the following principles:

- An immediate basic wage which should be the same as a decent living wage not in any way related to the output;
- Wherever reasonable, the norms of output could be fixed in consultation with the workers;
- Adequate incentive wages should be paid to them;
- The basic wages should not be fixed on regional basis but should be uniform in all parts;
- The question of fair wages and adequate amenities and benefits to employees and to protect their real earnings should be taken care of in fixing the port charges and provision should be made to neutralise any rise in the costs of living by incorporating the escalation clauses and with the improvement in the productivity of labour consequent upon modernisation;
- The resultant benefits should allow commensurate improvement in the wages and conditions of service of the employees.

Even as the group continued its study, in July 1968 the Federation decided to grant affiliation to the Bombay Port Pilotage Services Association.

Then, in September 1968, an indefinite strike by dockmen at the major ports was about to commence when it was realised that there was no basic dispute about the main issue and there had only been a communication gap. The demand was that for Wage Board purposes, port and dock workers should not be considered as government employees but as industrial workers governed by local authorities. The Shipping ministries readily conceded it.

View of Indira Dock, and Hughes Dry Dock (1999).

Indeed, in the last week of November 1968, the Wage Board for the Port and Dock workers decided on an appreciable wage increase for time-related labour numbering 80,000 at various ports, apart from the interim relief.

In September 1969 there was an indefinite strike by Bombay-based Indian seamen on the right to be represented at the International Labour Conference by their own accredited representatives.

At the same time, some 6,000 clearing and forwarding workers went on strike. This lasted a week and ended following a statement arrived at after protracted talks by the office-bearers of the Federation of Stevedores' Associations, the Bombay Dock Labour Board, the Bombay Customs House Clearing Agents Association and the Transport and Dock Workers' Union. The clerical and supervisory staff got an immediate benefit. The 3,000 protected workers in the Customs Clearing and Forwarding Agencies in Bombay was set up. With this, the middlemen system which had led to many evils in the employment of *mathadi* workers was done away with and the Bombay Clearing Agents Labour Board alone became responsible for their recruitment and employment. The Board would lay down the service conditions and provide for the grants and benefits and welfare amenities. Over 4,000 *mathadis* were to be registered immediately with the Board from the pool maintained, by whom labour would be withdrawn.

At long last, late in 1969, the Central Wage Board for port and dock workers submitted its report to the Government. While some of the recommendations were unanimous, most were majority recommendations. The recommendations covered nearly 2,50,000 (two and half lakh) port and dock workers in eight major ports in the country. About the same time, the BPT pilots and dock masters struck work to press for their demands and it was supported by the Federation. The Union government promptly invoked the Essentials Services Act which labour leaders condemned as unwarranted and provocative. There was even some argument as to whether it was a strike or a lock-out as the BPT had closed the control room from where they were functioning. However the strike was called off after eight days and it was agreed that the pilots would work on the turn system as a continuous roster or alternatively divide themselves into groups.

In December 1969, a safety week was held in which various categories of dock workers were presented awards and certificates for their exceptionally meritorious services.

O.N.G.C. Vessel in the Merewether Dry Dock.

There were some interesting interludes. In June 1970 the Federation made known the findings that Russian export organisations had been systematically showing under weight in their invoices. This was proved by careful examination and study of the actual weight and number of packages. Because of the major weight shown, irregularity and malpractice was not stopped.

Certain beneficial steps were also taken. In March 1971, thanks to the joint efforts of the Transport and Dock Workers' Union and the Bombay Customs House Clearing Agent's Association, a pool was formed of 2,000 labourers engaged till then by muccadams, ensuring better system of employment and benefits. Under the new system, workers were guaranteed 13 days wages and four weekly paid holidays.

Centenary Bonus

In February 1973, the Trustees of the Port of Bombay unanimously decided on the payment of a centenary bonus equal to one month, a salary and a centenary special investment in honour of the occasion to all the employees, then numbering around 30,000. The centenary bonus cost the Port Trust an amount of Rs 1 crore, while the special increment cost a recurring expenditure of Rs 25 lakh per annum. The employees were to enjoy this benefit in addition to their normal increment, as long as they would remain in the Port Trust's employment.

An important settlement was reached between the Government and the Federation in April 1973 under which some basic demands of the latter were met. A strike, thus, was averted. Another major victory achieved by the Federation on the occasion was that ultimately the Government of India was compelled to accept the majority recommendations made by the Wage Board for port and dock workers in the matter of definitions of pay for computing pensionary benefits. Till then the government had been claiming that the recommendations of the Wage Board in connection with the definition of pay for pension was outside the purview of the terms of reference to the Wage Board and hence not acceptable to the Government. Under the new scheme all elements of commitments were considered for computing the pensionary benefits.

In July 1973, over 2,000 employees including manual labour working for clearing and forwarding agencies in Bombay Port came under a decasualisation scheme. These workers had no security of employment. The demand for their decasualisation made by the Transport and Dock Workers' Union led to an agreement between it and the Bombay Dock Labour Board which accepted the need for bringing these workers under the purview of an appropriate decasualisation scheme administered by it.

In January 1975, port and dock workers at the major ports in the country went on an indefinite strike which was supported by many other labour organisations on a demand for an increase of Rs 100 in their wages as interim relief. Prices of consumer goods were getting out of hand and the cost of living index was shooting up relentlessly. Marathon talks were held between the Federation leaders and the then Shipping Minister Kamalapathi Tripathi and after five days the Government agreed to pay an interim relief of Rs 50 a month, whereupon the strike was called off.

Came the emergency. It was a terrible time for the dock workers. All agitation and strikes had been banned and while there was peace on the waterfront, there was tension among the workers. True, the wage Board recommendations had been implemented and interim relief had been received, but increasing cost of living was once again corroding the take-home pay. With the ending of the emergency and the coming to power of the Janata government, the dock workers again were to decide on a strike. The decision was taken in July 1977, with the Federation wanting the minimum wages for port and dock workers to be fixed at Rs 375 pm with DA at Rs 1.30 per point. As in the past once again the strike was averted with the government coming to terms with the workers.

The announcement of Ravindra Varma in the Lok Sabha that the port and dock workers had decided to withdraw the strike notice following an agreement between them and the government was greeted by members with the thumping of desks and loud applause. Varma praised the representatives of dock workers for their unfailing cordiality and cooperation.

It was agreed that the recommendation of the Wage Revision

Inside view of new Sewree warehouse. — Largest multistories warehouse in Asia with covered storage area of 33000 sq. metres.

Committee would be implemented retrospectively from January 1, 1974 subject to the following:

- D A would be paid at a fixed rate.
- Variable D A would be paid for variations in consumer price index number above 250 of the 1960 series at a flat rate of Rs 1.30 per point at all levels of pay from the same date.
- Review of the variable D A would be made every three months on the basis of recommendations made by the Wage Revision Committee but it would be done for a change of every point in the quarterly average.
- In case the quarterly average of consumer price index number crossed 362, a formula for the grant of variable D A as per the agreement would be reviewed.
- The ceiling of Rs 100 for the total of compensatory allowance and fitment money for those drawing above Rs 300 basic in the existing scale would be waived.
- The pay of an employee who between 2 January 1974 and 15 August 1977 moved into the next higher slab of fixed D A under the Wage Board formula would be re-fixed so that his pay in the revised scale on that date was the same as would be allowed on 1 January 1974 to another employee drawing the same pay in existing scale.
- Employees stagnating at or beyond the maximum of the revised scale would be entitled to one stagnation increment once in two years subject to maximum of three such increments.

One would have thought that this would see the end of the strikes; but that was not to be. Two more strikes were to hit the port workers, one in 1978 and another in 1984.

The 1978 strike hit all ten major ports in the country, including, of course, Bombay. The dispute involved issues of wage parity, removal of anomalies in the pay structure schemes and their extension to categories not covered earlier.

Also in dispute were such issues as re-categorisation of certain classes of workers, redefining of criteria for the decasualised labour, higher fringe benefits and higher ex-gratia payment in lieu of bonus, abolition of contract labour and implementation of the settlements already reached.

The then shipping minister Chand Ram, appealed at a later stage to call off the strike, but this was rejected by the Federation. The Bombay Port Trust claimed that it had implemented the settlement of July 1977 and that along with the Dock Labour Board had paid Rs 46 crores towards arrears of workers, accruing from the settlement.

The 1978 strike hit all ten major ports in the country including Bombay. The dispute involved issues of wage parity, removal of anomalies in the pay structure schemes and their extension to categories not covered earlier.

The All India port strike was declared illegal by the government under the Industrial Disputes Act and the Minister of Shipping threatened that the services of the Navy may be commandeered. This enraged the workers and in Bombay port about 6,000 supervisory staff in stevedore firms went on a strike 36 hours in advance by way of retaliation. Tension began to rise.

The Calcutta-based *The Statesman* wrote editorially on the strike situation. It said: "The Union Government as well as the AIFDWF have taken rather rigid positions.... The position taken by the Federation is that a settlement of all the pending demands is long overdue as also the implementation of issues settled last year when the strike was narrowly averted thanks to the intervention of the Union Labour Minister, Ravindra Varma. The Shipping Ministry had contested the validity of the Federation's claims. Chand Ram has also pointed out that the Janata Government has been quite fair to the port and dock workers by raising the total amount of wages and allowances payable by Rs 19 crores a year with retrospective effect from 1974. But settling old claims does not buy time for resolving present demands..... the government reacts to crisis in ports only when it is about to be overwhelmed".

On 16 November the country-wide strike by port and dock workers began. The impact of the strike was felt most in Bombay, Madras and Calcutta. The government held onto its position that no talks were possible until the strike was on. Dock workers insisted that their demands should first be met if the strike was to be called off.

The longest part of the strike took place in 1984. In March of that year the Federation submitted its demands, including a fair wage revision, housing and city compensatory allowances which are allowed to the employees with Public Sector Undertakings. In pursuance of these demands the Federation called for an indefinite strike by all port and dock workers in the country beginning 16 March 1984. The government stuck to its position that all demands should be settled within a total amount of Rs 40 crores. This was not acceptable to the four federations.

Unloading of wooden logs in Victoria Dock.

The strike commenced, and lasted 26 days involving 3 lakh workers. All dock operations were paralysed. Once again negotiations began and an agreement arrived at — a familiar story — and workers benefitted to the tune of Rs 91 crores. Other benefits were: two additional increments to each worker, fixation of wages at the next level and house rent allowances at the rates admissable to steel workers. There was a 14 per cent increase in the wages available to the workers engaged in the piece-rate incentive scheme. The government agreed to set up a committee to study the question of regularisation of casual labourers and to refer the issue to that body comprising representatives of the Shipping and Labour Ministries with a directive that it suggest a via media for decasualisation within a given time frame. The agreement involved an increase in the wage bill by about Rs 44 crore per annum as against the government's first offer of about Rs 40 crores and the Federation's demand of Rs 57 crores.

The strike in February 1985 by the workers in the clearing agencies was of a short duration. It lasted eight days. The Chief Labour Commissioner presided over the discussions which were successfully concluded.

Mechanisation of ports meanwhile had been steadily going on and Bombay Port was increasingly feeling its effect. Labour leaders like S R Kulkarni were not against mechanisation as such, but their stand was that any innovation should not be at the cost of workers. In December 1985 Kulkarni outlined a 12-point programme to protect the workers from the adverse effects of any form of mechanisation, computerisation and containerisation in a memorandum submitted to the sub-committee of the Major Ports Review Committee, of which he was a member. He suggested the following measures:

- The gang strength of workers on board ships as well as ashore should be maintained.
- Along with direct employment potential, the manning of workers should not only be maintained at the existing levels, but adequately enhanced to enable them to share the gains of higher productivity.
- Total decasualisation of port and dock labour and granting of suitable conditions of service for it should be aimed at considering that they are pre-requisites to any efficiency drive in the port transport industry.
- Tendency to tamper with established norms of output should be avoided.
- There should be provision of adequate medical benefits etc.
- Hours of work should be reduced without reduction in the wage rate or earnings.
- There should be protection and widening of promotional activities for workers.
- There should be adequate provision ensuring retirement benefits and rehabilitation of disabled workers.
- Creation of proper climate by putting industrial relations on a sound footing should be aimed at, to give the workers a sense of participation in productivity.
- Activities of all agencies concerned with port working should be co-ordinated.
- Payment of 20 per cent bonus without ceilings should be made as ports earn huge surpluses to all sections including dock labour and
- Outdated and cumbersome procedures should be streamlined.

After 1987 there was relative peace on the dock front.

Mechanisation had gone apace, workers accepting its inevitability.

All the berths in Indira Dock, for example are now equipped with modern electric wharf cranes, replacing the old hydraulic ones. A floating crane capable of handling 125 tonnes had been acquired in 1963 but laid up in 1996. Mumbai Port now handles the highest number of TEUs (twenty foot equivalent units) among all major ports in India. In 1990-97 it handled

Year	Pre-berthing detention (days@)	Turn around time (days)	Ship berth day output (tonnes)	Gang shift output for port labour (tonnes)
1983-84	2.29	8.61	1896	92.46
1984-85	3.04	9.43	1963	105.39
1985-86	1.91	7.65	2108	132.05
1986-87	0.53	5.66	2409	140.63
1987-88	1.53	7.17	2579	138.12
1988-89	1.27	7.98	2188	154.41
1989-90	1.04	7.93	2059	157.19
1990-91	0.48	6.71	2380	185.60
1991-92	0.13	5.09	2901	177.66
1992-93	0.66	6.11	2692	174.95

Source: Bombay Port Trust Special Supplement

34 per cent of the TEUs handled in all the major ports.

The number of mandays lost has come down significantly. The performance of the port during the last few years can be appreciated from the physical efficiency parameters given below:

It will be noticed that there is a remarkable improvement in the pre-berthing and turn around time in the decade from 1983 to 1993. The pre-berthing detention in 1992-93 is lower by almost 11 per cent and turn around time by 29 per cent as compared to 1983-84.

Another outstanding achievement during the decade has been in the field of labour productivity. The average output per gangshift grew steadily and almost doubled. And the number of mandays lost has come down, as the following figures would show:

Year	Mandays lost
1983-84	4,59,219
1984-85	3,24,452
1985-86	18,376
1986-87	2,487
1987-88	20,605
1988-89	10,420
1989-90	1,68,302
1990-91	2,463
1991-92	3,701
1992-93	735

Notwithstanding the strikes and threats of strike, development of Bombay Port was steady from the very first five-year plan following independence. Understandably, the principle objectives of the first two five-year plans were to rehabilitate the damage to the port suffered during the second world war and to provide for the maintenance and effective functioning of the existing facilities. The following measures were taken for improving the capacity of the port:

- Construction of the new Marine Oil Terminal in the natural deep waters off Butcher Island, consequent on the setting up of the two oil refineries at Trombay. This terminal comprising three berths capable of receiving large oil tankers is equipped with all modern facilities for speedy discharge and leading of oil and is connected to the refineries by a network of pipelines.
- Provision of new and larger transit sheds in place of those destroyed in the explosion of 1944 and an

Vessel entering the Prince's Dock (1999).

uncleared goods warehouse and buffer sites for spillover of uncleared cargo.
- Progressive replacement of the 50-year old hydraulic Wharf Crane in the Indira Dock by modern electric cranes of higher handling capacity and greater speed.

The third plan aimed at relieving chronic congestion in the docks by adding fresh capacities. The highlights of the third Five Year Plan were the execution of Dock Expansion Scheme, Construction of Ballard Pier Extension Berth and New Ferry Wharf off Prince's Dock. The main features of these schemes are:
- Four deep water berths inside the Indira Dock Basin and three medium-type deep water berths along the Harbour Wall.
- Additional berth at Ballard Pier equipped with a modern passenger terminal building.
- Additional 31,000 sq meters of reclaimed area to the Estate.
- Provision of 16,072 sq meters of coverage storage space in five transit sheds.
- Two repair berths for coastal vessels.
- A new Ferry Wharf off Prince's Dock for coastal passenger vessels.

Most of the works connected with the above schemes were completed by 1969.

The Fourth, the Fifth and the subsequent two Annual Plans mainly aimed at modernisation of existing facilities. During the period no major development schemes were undertaken by the Port, barring the construction of the Fourth Oil Berth at Butcher Island. The spillover schemes of the previous plan were pursued and three berths at Marine Oil Terminal were upgraded to receive tankers of 70,000 displacement tonnage.

The Sixth Five-Year Plan period saw the Port laying greater emphasis on provision of Container handling facilities, modernisation of Flotilla and completion of the Schemes undertaken during the Fifth Five-Year Plan. The following important new Schemes were undertaken:
- Development of a Container Terminal at Ballard Pier Station berth and No 1 Indira Dock.
- Development of Container Freight Station at Timber Pond and Manganese Ore Depot with suitable equipment.
- Installation of a computer system to be used for various port operations including container handling.
- Purchase of three rubber type mounted yard gantry crane for handling containers.
- Purchase of two Voith Schneider Tugs.
- Purchase of one Grab Dredger.
- Purchase of two quayside gantry cranes to be provided at Ballard Pier Station berth.
- Purchase of 7 mobile cranes for shed management.
- Setting up of a Training Institute for Port Workers.

New Pir Pau Pier, chemical berth was inaugurated by Shri T G Venkatraman, The Honourable Minister of Surface Transport, Government of India with Shri Liladhar Dake, The Honourable Minister, Industries, Government of Maharashtra on 7-12-1996.

The Seventh Five-Year Plan of the Port laid emphasis on modernisation of handling systems and provisions of container handling facilities. The important new schemes undertaken by the Port included:
- Replacement of (a) the two tugs (b) one fire float and (c) one dredging tug.
- Reconstruction of transit shed at No 6 I B.
- Providing infrastructure facilities for RORO Shipping at Ferry Wharf.
- Purchase of one new Grab Dredger.
- Construction of quarters and provision of welfare facilities.
- Provision of container and handling facilities.
- Improvement of telecommunication system at MOT, Jawahar Dweep, Docks and Administrative Offices.
- Improved oil and chemical handling facilities at Pir Pau Pier.
- Improvement of oil handling facilities at Jawahar Dweep.
- Measures to prevent oil pollution with skimmer facilites.

- Modernisation of existing docks.
- New navigational aids for main harbour channel.
- Procurement for modern medical equipment for Port Trust Hospital, and
- Construction of warehouses at Haji Bunder Dump and at Wadala Incinerator Plot.

Schemes included in the Eighth Five-Year Plan mainly relate to replacement, renewal and modernisation of port facilities, schemes which will help in operational efficiency and welfare schemes. Some of the important ones are:

- Augmentation of container handling facilities by providing 3 additional Transtainers, communication system and a workshop.
- Modernisation of wharf facilities with replacement of wharf cranes of higher lifting capacity.
- Replacement of submarine pipelines at Pir Pau and Jawahar Dweep, with loading arms provided as Jetty Nos 1,2,3 JD.
- Replacement of 2 tugs, 5 dredgers 1 firefloat of suitable capacity.
- Procurement of modern equipment for marine survey department.
- Replacement of outer lock gate at Indira Dock.
- Replacement of Pir Pau Oil Pier.

The Bombay Port Trust has now formulated the Ninth Five-Year Plan (1997-1998 to 2001-2002) with an Outlay of Rs 980 crores and the same has been submitted to MOST. Some of the major schemes included in the Plan are:

- Construction of a second berth off New Pir Pau Pier for liquid chemicals/specialised grades of POL.
- Replacement of old outdated harbour tugs, dock tugs dredgers and cargo handling equipments by modern ones of higher capacity.
- Development of Dock complex at Gamadia Road.
- Integrated development of petroleum godown of Wadala.
- Augmentation of water supply system.
- Development of terminal facilities for water transport between New Mumbai and south Mumbai and
- Procurement of 2 nos Wharf Cranes of 25 tonnes capacity and replacement of OGCs. Roughly the prepared outlays are as under:

Schemes	Proposed outlay in crores of rupees
Facilities for handling POL/Chemicals	425
Facility for handling containers	58
Facilities for handling break-bulk cargo	112
Navigational Aids, dredgers, tugs, launches etc	126
Other infrastructural facilities	200
Welfare facilities	58
Total	979

Shri T G Venkatraman, The Honourable Minister of Surface Transport, Government of India with Shri Liladhar Dake, The Honourable Minister, Industries, Government of Maharashtra, Shri S R Kulkarni and Trustees before inauguration 1st Chemical berth at Pir Pau (7-2-1996).

Bombay Port is provided with the following navigational aids:

Marking the southern boundary of the Port limits stands the *Kennery Lighthouse*, a light of the first order dioptic, group-flashing, white and above groups of two flashes with a visibility upto 25 kms in clear weather. The name of this lighthouse has now been changed to *Kanoji Angre Lighthouse.*

From Colaba Point marking a reef southwards and resting on dangerous ground which extends for a distance of 1.6 kms from it lies the *Prongs Lighthouse*. The light is of the First Order dioptic and exhibits at night, every 10 seconds a white flash light with a visibility upto 27 kms.

Jetty approach to 4th Oil Berth, Jawahar Dweep in background.

Further there are three light buoys moored south-east of *Prongs Lighthouse*; one flashes a green light every five seconds, another flashes a red every five seconds. Prongs reef buoy is fitted with a radar reflector.

Off P*rongs Lighthouse*, 3.2 kms ENS stands the unattended *Sunk Rock Lighthouse* with a red light above with a white rays flashing every 6 seconds.

There are two subsidiary lights — the Dolphin Rock Light and Tucker Beacon Light.

Control Station and Port Signal Station, situated on top of the tower at the Ballard Pier, monitor and control all ships that move in the harbour. It also hoists storm warnings. These stations are also equipped with VHF Radio sets on international frequency.

Four lighted floating buoys mark the approach channel, two jetty end becomes at mooring dolphins 1&4 and two leading lights for night navigation. In addition, the Elephanta Beacon Patch has been upgraded to improve its range. Actually Bombay Port Trust has been pretty uptodate in many ways. Two electronic exchanges with a capacity of 1000 L and 400 L were installed in the Indira Dock and Coal Bunder, Sewri respectively under the Mahanagar Telephone Nigam's R&D Scheme in 1990. Subsequently the telecommunication network at Indira Dock Exchange was upgraded to 2000 L capacity. In addition, the then telecommunication network of the BPT from Colaba to Wadala was extended upto Pir Pau for the use of all industries. That enabled BPT to replace age-old Magnet System by state-of-the-art telecommunication system. The port has wireless network consisting of fixed VHF sets and walkie talkies servicing the communication needs of various departments. For meeting the needs

of document transfer, Fax facilities have also been provided at various locations. The Control FAX station operates internal as well as external network.

Until 1989, due to strong opposition from labour, very little progress could be made in introducing computerisation. However, since then, beginning with the introduction of Pcs, the port has made significant progress in this field. Various activities computerised so far are; Port billing, yard billing, pension processing, pay roll saving scheme, container tracking and billing, hospital management, sale of uncleared cargo and pay roll.

Butcher Island was rechristened as Jawahar Dweep on 5 April 1989.

The origin of the name remains a mystery. The Portuguese called the island "Patecas". Fryer's map of Bombay (1672) shows the island as "Butachoes". Later maps of the 17th century, when the British were in occupation, refer to the island as "Butcher's Island".

The same name persisted right up to the end of the 20th century. Butcher Island is a name apparently of 20th century origin. In 1701, the Deputy Governor of Bombay wrote of this land as "*Robin the Butcher's Island*". Referring to this, Campbell (*Bombay Town and Island Materials,* Vol I) writes as follows:

"The only apparent sense is that the butcher after whom the island was supposed to be called, was named Robin. Perhaps a fairy Robin Goodfellow name suitable to the mythical name-giver. In spite of Grose's (1700) explanation (*Voyages* Vol I, p 58) that the island was called Butcher, because cattle were kept on it for the use of Bombay, the English name Butcher Island seems a case of meaning making. Fryer (1673) calls the Island Butachoes (properly *Patecas*) or water-melons and this derivation is accepted in a Portuguese account of Bombay, 1728. Patachus, Yachts a word used by Baldaeu, 1680 and Putas, (Harlots), in connection with a story that as in Goa, a bishop banished the harlots to an island, have also been suggested. But *Pateca*, melons, seems the only derivation name; Bhat or Bhatiche Bet, the low-lying island, is said to be still in use for Butcher's Island. It seems fairly certain that the English *Butcher* is the Portuguese *Pateca*. The absence of any connection between the island and water melons suggests that in its turn the Portuguese name is also a meaning — making the Marathi *Bet*."

Whatever the origin of the name Butcher Island (Jawahar Dweep) is a natural island and lies isolated from the city of Bombay, west of Elephanta Island.

It is a low rocky island about 0.4 miles long and 0.2 miles wide. This island was well-suited for a Marine Oil Terminal (MOT) being located north of the harbour away from the fury of the south-west monsoon and away from other shipping activity.

The only disadvantage was that tankers going to or coming from the island had to traverse the entire

A tanker discharging bulk petrol at Jawahar Dweep.

harbour and through dense shipping and, not an ideal situation for a tanker.

The lone jetty at Pir Pau, south of Trombay was found inadequate to cater to the then oil imports and in 1952 three oil berths were planned for construction east of the island and commissioned in 1955-56. There are 14 storage tanks on the island itself which cater to oil products storage and bunkers, fresh water and slop. The island is connected to the shore by means of eight underwater pipelines of different sizes, for crude products and fresh water.

With oil being explored offshore and further increase in oil trade, need was felt for another berth. In 1984, No 4 berth was commissioned where larger and deeper tankers could be berthed, the depth available being 15m. The limitation of all four berths are governed by:

(a) Total displacement of tanker
(b) Length of the tanker and
(c) Depth available along the berths, as well as in the main channel.

Tankers and berths for them are nominated not by the Port but by the Oil Coordination Committee (OCC) since the latter monitors and controls all oil requirements for the entire country.

The actual handling, monitoring and control of loading and discharging from shore side is done by different oil companies. In charge of the island is a dock master whose duty it is to carefully co-ordinate and plan all tanker movements, keeping various factors in mind.

In 1994 a total of 726 tankers were handled at Jawahar Dweep and Pir Pau with a total cargo throughput of 20 million tons.

Jawahar Dweep handles about two thirds of the total tonnage of the port of Bombay and earns about the same revenue for the port. It is from here that all oil products are distributed far into the country both by road and rail. Indeed the Marine Oil Terminal (MOT) at Bombay can be said to be one of the most vital spots in the country from where radiates energy. Certainly, MOT plays a very significant role in India's oil trade and economy, a point hardly realised by outsiders.

Operations at Port Trust workshops.

Keeping everything working smoothly, is the Port's Mechanical Engineering Department whose responsibility it is for maintaining and repairing all equipment, mechanical, electrical and electronic at the highest operational efficiency. Ships coming to Bombay Port and sailing out need a variety of services like pilotage, berthing, cargo handling etc. This calls for perennial readiness to maintain floating crafts like tugs, launches, dredgers, etc at maximum efficiency. There can be no excuse for keeping, for example cargo handling equipment like container handling cranes, mobile cranes forklifts etc idle for want of repairs. The Port's Central Workshop is at Mazagaon and is managed by the Mechanical Engineering Department. The workshop is manned by 1100 men, has five slipways for repairs of floating crafts upto 350 T. The workshop is also provided with Universal Chain Testing machine with capacity upto 150 MT and is used for testing chains, anchors, hooks, shackles etc belonging to BPT as well as outside firms.

Says Mr N L Khodnaney of the Department: "The lock gate provided for the Indira Dock lock system allows 24 hours shipping movement through the Indira Dock Basin irrespective of the tidal conditions. These gates are normally taken for major repair every 12 to 15 years, thus rendering the Indira Dock tidal for about 4 to 5 months. This used to greatly affect the shipping industry as the draft in such a situation was limited to about 26 ft in Indira Dock basin from the usual 30 to 32 ft. To tide over the problem, the outer lock gate was replaced by a new one for the first time along with conversion work of its operating system as well as

A View of Container yard at 4-5 Indira Dock (1998).

that of other lock/storm gates and 17 sluice gates in Indira Dock at a total cost of Rs 9 crores. The gates were installed in a record time of 4 days. As such the Indira Dock which would have been normally rendered tidal for about 4-5 months was available for shipping within 4 days. The operations of the gate on the oil hydraulic system is also a new feature. While designing the gate several features such as Solid Ballast, eccentricity of the heel post have been incorporated making the design a modern one."

In 1994 Caisson Gates at Merewether Dry Dock and Hughes Dry Dock were replaced for the first time since their commissioning more than 83 years back at a total cost of Rs 5 crores.

In the last three years, the Mechanical Department also undertook the task of replacing wharf cranes, getting heavy duty forklifts of 16 ton capacity and modernising existing ship facilities.

Incidentally, three categories of workmen are directly involved in handling of cargo; viz shore labour, quay crane drivers and stevedore workmen including winchmen who work on board the ship. The total strength of port workers and staff and dock workers is given below:

As on	Port workers and staff	Dock workers
31.3.86	31,832	11,214
31.3.87	31,886	11,308
31.3.88	31,948	10,005
31.3.89	31,580	9,832
31.3.90	31,198	9,350
31.3.91	30,185	8,645
31.3.92	39,903	8,198
31.3.93	26,614	7,696
31.3 94	26,552	7,412
31.3.96	25,036	7,412
31.3.97	25,272	7,543

Source: Port of Mumbai Brochure 1997; Planning and Research Department.

With port operations becoming more and more complex with containerisation and with rapid change in cargo handling methods and packaging of various cargo, the authorities quickly learnt that training of the work force had become imperative. To begin with, operational supervisors had first to be trained. The training of these men of the Traffic Department commenced in July 1977. The training scheme was extended to the shore workers in 1979. The main subjects covered for shore workers were dock safety, accident prevention, fire fighting, first aid, principles of cargo handling, proper stacking of cargoes etc. The training scheme covered almost all the labourers. Training facilities were further expanded by adding a Management Training Centre for holding training courses for Officers were conducted with the assistance of UNCTAD (United Nations Conference on Trade and Development) TRAINWAR Project.

From July 1995 Director Training was given independent charge of training. Under the director are the Apprentice Training Centre of BPT Workshop and BPT FOSMA Seafarers Training Centre.

Under the Apprenticeship (Amendment) Act, 1973, every year two graduate engineers and two diploma engineers each in the discipline of mechanical and electrical are recruited. Every year BPT recruits 15 Marine Engineers Apprentices under 10 plus 2 science scheme. The period of training of these apprentices is four years. The Manager (Apprentice Training) also conducts periodical training courses for various tradesmen like carpenters, electricians, fitters and others.

The other important operational department of BPT is the Marine Department which is responsible for the marine operation in the port, namely, pilotage, towage, berthing and unberthings, dredging etc. While drawing up a training scheme for crew in 1990 it was observed to no one's surprise, that the skill, knowledge and subjects for BPT flotilla crew were almost common to those for crew of sea-going vessels and offshore vessels.

BPT FOSMA (Foreign Ship Owners and Ship Managers Association) Seafarers Training Centre started functioning from February 1992 from Shed No 2 Ferry Wharf, with the Port Trust providing premises, equipment facilities and FOSMA providing the faculty. The various courses conducted at this Training Centre are:

- Pre-sea training for deck ratings for 4 months
- Pre-sea training (Transfer familiarisation course) for ratings and junior officers for 5 days duration and Able-bodied Certificate course for 4 *weeks'* duration.

There is provision for other courses as well like the one in Basic Survival, Chemical Tanker familiarisation etc, with all courses approved by the Director General of Shipping. The aim is to ensure competitiveness of Indian seamen in the International market.

Enlightened Labour Policy

The Bombay Port Trust is unquestionably one of the largest employers in Bombay but what is significant is the fact that the Trustees have always adopted an enlightened labour policy and have provided a lot of meaningful amenities to the staff. By 1975 the Port Trust had constructed about 4,000 residential units for the staff of which about 3,500 were constructed *after* independence. The largest Port Trust residential colony is at Antop Hill village, near Wadala. According to the Chairman's administrative report for 1996-97,

BPT Staff colony at Antop Village, Wadala (1938).

about 57 per cent of the officers, 26 per cent of Class III staff and 22 per cent of the Class VI staff are provided with official residence. To enable the staff to construct their own houses or to purchase flats (apartments) 9,344 House Buildings advancements have been granted. Advance granted upto 31 March 1997 amounted to Rs 68 crores.

Various welfare activities are organised through 14 Welfare Centres in the residential colonies. Blood donation drive, Eye Testing Programme, vocational training classes, excursions for nursery children, athletic and sports meets are some of the welfare activities conducted during the year.

Seven consumer co-operative societies serve the Port Trust employees through twenty five stores. BPT has employed an Employees' Welfare Fund to meet the expenditure on miscellaneous welfare activities of the employees which cannot normally be met under the Service Regulations, the fund being utilised to meet the expenditure on running welfare centres, libraries, sports events, subsidised canteens etc.

Importantly, employees are provided with medical facilities through a chain of dispensaries and a major hospital which is equipped with modern diagnostic and therapeutic facilities. An independent Blood Bank was commissioned on February 20, 1997. The hospital's central laboratory functions round the clock. Significantly, the hospital has been registered as a Teachers Institute for Post Graduate Diploma Course.

A special ward constructed and attached to the Talegaon General Hospital and Convalescent Home for the tuberculosis near Pune is an additional facility extended to the affected employees. Expenditure incurred by the employee or families for specialised medical care and surgeries not available in WBPT Hospital and not admissable under Medical Attendance regulation in force is reinbursed from the Welfare Fund. Detailed health check-up programmes for employees and families are arranged every year. Malaria Prevention Measures are taken fortnightly at residential colonies. The National Pulse Polio Immunisation Programme was carried out successfully. Total expenses on Medical Care of the employees amounted in 1995-96 to Rs 12.75 crore and in 1996-97 to Rs 13.96 crores.

View of Botanical Garden at west of New Sasoon Fish Harbour Colaba (1995).

Preserving Its Environment

The Bombay Port Trust is especially — and rightly — proud of the measures it has taken for the upgradation of the environment. The Port Trust botanical garden is maintained by World Wide Fund for Nature-India. Water used for the garden is through the Sewage Recycling Water Plant which treats the sewage water from adjacent residential colonies and makes it safe enough for use in the garden. The garden attracts visitors round the year. The rockery located on a mound and the various zones such as flowering tree section, giant and forest tree section, rose garden etc are immensely popular with the public. The garden serves as a green lung to the city as well as a nature centre.

Lakri Bunder Timber Imports from Coating Craft.

For development of horticulture, specific programmes for growing coniferous trees on the harbour belt and development of greeneries on roadsides and junctions are being undertaken.

Some green patches along the Dock boundary wall at Sewri Warehouse and 5:47 Timber Pond Container Yard have been developed. Many small gardens in the Docks and large lawns at Grain Depot and at Officers Quarters at Mazagaon have been developed. Several saplings were planted at various places in the WBPT estates. Plots at Ballard Estate and Apollo Reclamation have been allotted for development as gardens. Under the Emerald Project, it has been decided to project and preserve the man-groves which are found all along the Sewri-Wadala coastline and concerted efforts are being made in the direction to maintain ecology of the environment upgradation and protective measures.

A measure of Port Trust's performance can be had from the statistics available for the year 1996-97:

Shipping: 4,600 vessels called at the port as against 5,417 vessels in the previous year. Similarly GRT for 1996-97 was 37.51 million down from 40.25 million in the previous year.

Traffic: The following table gives the growth of traffic from 1980 onwards:

Year	Import	Export	Total (in million tonnes)
1980-81	13.28	4.29	17.57
1985-86	11.99	12.41	24.40
1990-91	14.45	15.41	29.86
1991-92	12.32	14.89	27.21
1992-93	14.93	13.77	28.70
1993-94	17.14	13.60	30.64
1994-95	17.50	14.89	32.39
1995-96	17.32	16.22	34.05
1996-97	18.37	15.36	33.73

Source: Shipping and Marine Industrial Journal

Container Traffic: With more than 40 per cent of India's container traffic passing through Bombay, the port of Bombay continues to occupy a pre-eminent position on the Indian container scene. What started as a trickle in 1973 has virtually become a flood as will be seen here below.

Year	No of TEUs	Containerised cargo in million tonnes
1973-74	1,220	0.04
1975-76	5,991	0.04
1980-81	101,281	0.81
1985-86	216,691	2.00
1990-91	324,206	3.62
1991-92	279,556	2.88
1992-93	315,400	3.88
1993-94	427,630	4.53
1994-95	486,993	5.27
1996-97	583,000	7.79

Passenger Traffic: There was a significant decrease in passenger traffic over the year. Thus, 3,959 overseas passengers disembarked in and 1,586 embarked from the port in 1996-97 as against 12,870 and 8,990 respectively in 1995-96.

Railway Traffic: Approximately 87,000 wagons were received and despatched to Indian Railways contributing 1.5 million tonnes of traffic during 1996-97.

Dry Docks: About 80 vessels with 92,000 Gross Registered Tonnage were dry docked, including 23 port vessels in 1996-97 as against 72 vessels with 118,000 GRT including 16 port vessels in 1995-96.

Port Finance: The port's operating services generated an income of Rs 593 crores in 1996-97 as against Rs 582 crores in 1995-96, registering an increase of 1.89 per cent. The 96 crores was generated from

Port Trust Hospital.

Rail Container Dept at Cotton Green (1998).

investment of surplus funds and from other miscellaneous income.

Bombay Port is easily one of the richest ports in India. Its net internal resources at the end of 1997 amounted to Rs 2,102 crores. This is exclusive of Rs 50,521 crores of loans granted to other ports with interest capitalised during the moratorium period.

But loans have been availed of. Under its Second Ports Project the Asian Development Bank had agreed to advance a loan of $ 50.70 million through the government of India to partly finance the following projects of the Bombay Port:

- Modernisation of Ship Repair facilities (Rs 25.5 crores).
- Replacement of Pir Pau Oil Pier (Rs 106.5 crores).
- Replacement of outer lock gate of Indira Dock and ancillary works (Rs 9 crores).
- Procurement of Fire Float (Rs 4 crores) and
- Installation of VTMS (Rs 33 crores).

Under the Third Ports Project, the Asian Development Bank has agreed to lend MRPT $ 97.8 million for financing partly the projects of Replacement of submarine pipelines (Rs 165 crores), modernisation of MOT berths (Rs 167 crores) and replacement of common user, shore pipelines (Rs 70 crores) etc from manifold at Pir Pau to Sewri/ Wadala.

Actually, an outlay of Rs 979.86 crores has been proposed in Mumbai Port's Ninth Five-Year Plan (1997-2002). To improve the cargo handling capacity and to ameliorate the existing operational efficiency emphasis has been given on replacement, rehabilitation and modernisation of old and outdated assets.

Major projects on hand are:

- Replacement of two Dock Tugs (Rs 9 crores).
- Replacement of a Drab Dredger (Rs 38 crores) and
- Modernisation of existing ship repairs facilities including installation of Syncro Ship Lift Transfer System at Clarke Basin and replacement of two caisson, one each at HDD and MDD (Rs 25 crores).

Clearly, Bombay Port wants to keep up with the times, even as it wants to be cost effective.

How are all these operations run? How is the administration structured?

First came the Bombay Port Trust Act of 1873 which set up a Board of Trustees of the Port of Bombay. The Trust was reconstituted by the Bombay Port Trust Act 1879 which came into force from 1 November 1879.

This Act, though amended from time to time continued to retain its basic pattern in a substantial manner till 1 February 1975 when the major Port Trusts Act, 1963 became applicable to Bombay Port. Under this Act, all the eleven major ports of the country come under its jurisdiction. Control rests with the Ministry of Surface Transport, Government of India. The Central Government is responsible for constituting a Board of Trustees for each port.

The Board of Trustees for each major ports consists of:

- A chairman appointed by the Central Government.
- A deputy chairman, if the Central Government deems fit to appoint one and
- not more than 19 members in the case of the ports of Mumbai, Calcutta, Chennai and not more than 17 members in the case of other ports.

The Board of Trustees should represent any one or more of the following:

- Labour employed in the port
- Mercantile Marines Department
- Customs Department
- The government of the state in which the port is located
- Defence Services
- Indian Railways and
- Such other interests as, in the opinion of the Central Government, ought to be represented in the Board.

Members elected by such bodies and representing any one or more of such of the following interests as may be specified in the notification by the Central Government, viz:

- Ship owners
- Owners of sailing vessels
- Shippers and
- Such other interests as in the opinion of the Central Government ought to be represented in the Board.

The Chairman and the Deputy Chairman hold office during the pleasure of the Central Government. Every other person elected or appointed to be a Trustee shall hold office for a term of two years commencing on the first day of April next following his election or appointment as the case may be. The term of office of a member elected to represent any body of persons shall come to an end as soon as he ceases to be a member of that body.

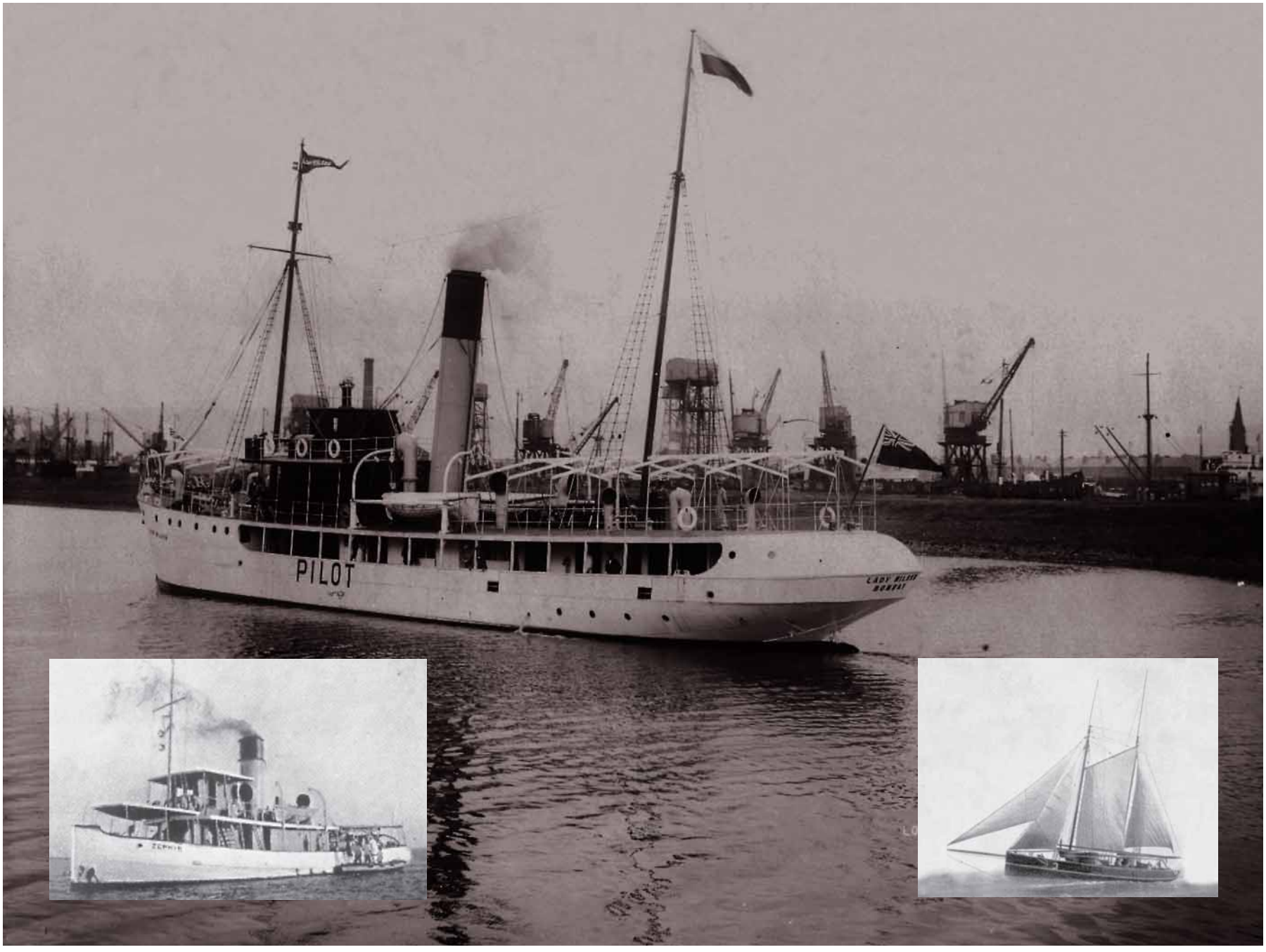
The Mumbai Port Trust is presently composed of 21 Trustees headed by the Chairman. There are 16 departments which look after the day-to-day administration of the port.

They can be categorised under four heads: General Administration, Operational, Online Services and Welfare.

Their responsibilities are as under:

- The Secretary is responsible for all the policy matters concerning administration and handles Board and Committee meetings and maintenance of their records.
- The Financial Adviser and Chief Account Officer deals with Port Finance, accounts, internal audit, investment and establishment.
- The Estate Manager is in charge of the management of the vast estates (except Docks and Open Areas).
- The Manager, Services and O & M handles personnel matters, Watch and Ward of the Docks and Hospital, in-house training, Hindi implementation and SC/ST liaison.
- The Chief Law Officer and Advocate as the title suggests on all legal matters and filing of suits.
- The Chief Personnel and Industrial Relations Manager deals with industrial relations.

View of Container Freight Station, Sewree.



Memories of the Bombay Pilot Service,—.(Left) S.T. "Zephyr" as Pilot Tender (1868) and (Right) Pilot—Schooner "Wavelet" (1868) has given service over 50 years, and Steam Pilot Vessel "Lady Wilson" (1928).

- The Director, Planning and Research is in charge of coordination of Formulation and Monitoring of Plan Schemes, Statistical Analysis and Investigation and providing Computer and Telecom facilities.
- The Chief Vigilance Officer obviously in charge of vigilance work.

On the Operational side there are three managers:

- The Traffic Manager, who handles allocation of berths, labour, equipment, Storage and Delivery of goods and docks sanitation.
- The Railway Manager naturally deals with Transportation and commercial work of the Port Railway.
- The Deputy Conservator is assigned the task of maintenance of harbour regulation of navigation, harbour communication, pilotage, tonnage and dredging.

The Online Service is dealt with by three officers:

- The Chief Engineer who is in charge of civil engineering works, marine survey and salvage.
- The Chief Mechanical Engineer, who handles all mechanical, electrical and marine works and
- The Materials Manager who is in charge of purchase inspection storage and distribution of stores.

And finally there is the Department of Welfare which consists of

- The Chief Medical Officer whose responsibility it is to take care of the medical needs of all employees and
- The Chief Welfare Officer whose task is to look after the welfare and dock safety. For all the care and the trouble taken to keep Bombay Port safe, the years 1996-97 have proved to be particularly unfortunate for the authorities. The uncleared wrecks of seven vessels, including barges and tugs littering the sensitive inner anchorage area of Mumbai Port have proved costly.

Of Sunken Ships and Salvage Operations

In June and August 1997 alone, three ships sank outside the port, a few nautical miles from the Gateway of India. Though the sea turns rough and boats are warned not to venture out into the sea during the monsoon, ships are generally considered safe. However, as many as 24 crew members met a watery grave when merchant ship *M V Arcadia Pride* sank near Mumbai on June 19, 1997.

"The weather was normal, the sea calm and nobody knows why the ship sank off the harbour without a trace", said one port official commenting on the tragedy.

Meanwhile, even as salvage operations were on for the sunken *Arcadia Pride*, in August another ship, the *M V Sea Empress,* carrying 4,200 tonnes of sulphur from Bahrain sank about 1.7 miles off the Gateway of India. Helicopters from the *INS Kunjali,* naval base managed to rescue 19 crew members. "In fact the *Sea Empress* had been safely anchored outside the harbour waiting for a berth pointed out an official of Unimarine Service, the Indian agent for the Dubai-based shipping company, Bayat International, which owned the ship. He added; "she had a seaworthiness certificate and was in a fine condition. How she sank is a mystery".

Then on August 7, 1997 yet another ship, the 1,300 tonne general cargo vessel *M V Vishwa Nandini* belonging to the state-owned Shipping Corporation of India (SCI) sunk in the shallow waters right in front of the harbour. The ship gently rested its bottom on the nine-meter deep seabed leaving only its tail mast above the water. Helicopters from *INS Virat*, the Indian Navy aircraft carrier which was at the time anchored outside the naval dockyard, rescued the 40-member crew. The ship had been loaded with 9,000 tonnes of general cargo including 50 containers. The ship's crew had earlier reported that two-metre wide gash had developed in the engine room.

As bad luck would have it, in 1996 the supply *Sindhu VII* belonging to the Oil And Natural Gas Commission (ONGC) sunk in the harbour while being towed after an accident off Bombay High, an off-shore oil exploration platform.

Many believe maintenance of ships is rather poor and stringent measures are being proposed to prevent sinking. A port official told the media: "Now we do not provide berths for ships which do not have insurance cover".

Among vehicles that have sunk are *Moonlight Glory* which sank sometime in 1990, a barge *Satyam* which sank in April 1995 and a dredger *Vishal* which went down a year earlier. *Satyam* was towed away from the main channel.

The clearance of wrecks is giving the authorities a major headache. Every ship sunk in turn becomes a menace to all incoming ships, adding to the port's problems, even if the accident happens beyond the jurisdiction of the Port Trust. The anchor of one sunk ship got entangled in a submarine telecom linking Mumbai with Dubai which caused enormous damage to Videsh Sanchar Nigam Ltd (VSNL), the state-owned communication giant. But there is a positive side to accidents. Enterprising hoteliers are planning to convert a ship abandoned off the Bandra coast into a "flotel" — a floating hotel. It is a case of every abandoned ship having a hotel lining.

Essar, one of Indias' first private sector companies operating a rig for oil and gas exploration.

Courtesy: Essar World Trade Limited

CHAPTER VII

Boost In Port Traffic On Anvil

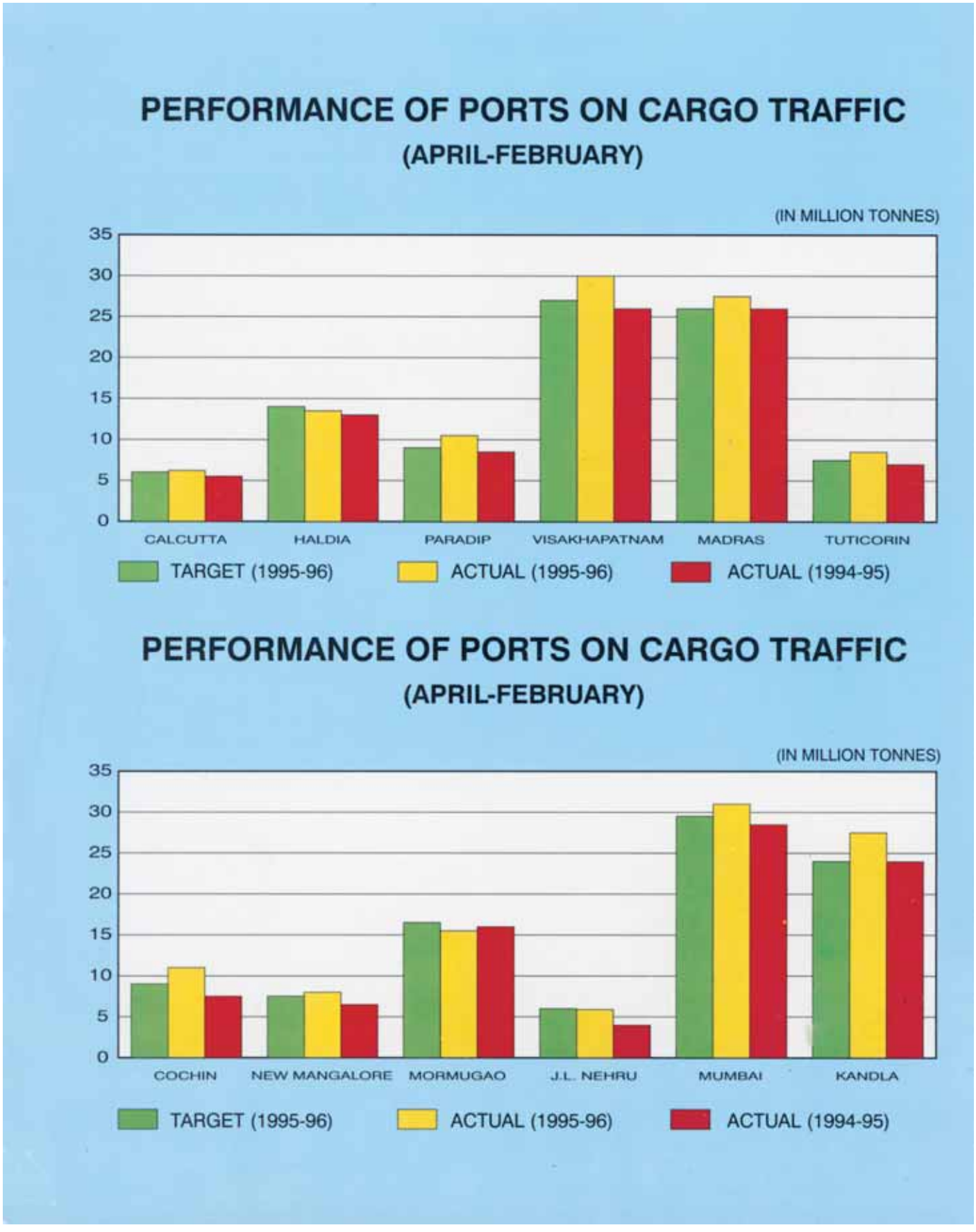
A decline in the volume of traffic in Bombay Port has become legitimate cause for concern and this has been noted by the Board of Trustees, whose responsibility is to set matters right. Several recommendations have been made and this chapter takes a quick look at them. There is still hope for Mumbai Port to regain its ascendancy over all others.

Just as Mumbai has long been considered India's First City (Urbs prima in Indis) so also its port was known to be the leading port in the country. But as the millennium drews near there were apprehensions over Mumbai Port holding on to its position. Port traffic was becoming a matter of deep concern. During 1997-1998 Mumbai Port had slipped into the fourth rank and going by the performance of the port during the first two months of the year 1998-1999 the fear was that the target of 34 million tonnes was unlikely to be achieved. The facts were as follows:

Year	Volume of traffic handled in million tonnes
1993-1994	30.75
1994-1995	32.05
1995-1996	34.05
1996-1997	33.73
1997-1998	32.08
1998-1999	30.97
April to Sept. 99	15.08

The decline in the volume of traffic legitimately became a cause of concern when the Board of Trustees held a meeting on 26 June 1998. The Board noted that the port's performance also caused concern when seen in the back-ground of traffic handled by other major ports in 1997-98 which was invariably higher than in 1996-97. The traffic analysis of major ports revealed that the total volume of traffic handled at all major ports together had been growing at an average rate of about 10 per cent during the past five years. Mumbai Port, however, recorded the lowest overall growth rate of just 1.09 per cent annually over the same period. In fact, the rate of growth for the past three years showed that Mumbai was the only port which had registered a negative growth rate.

Panna & Mukta — off Bombay High. Crude Oil Natural Gas platform-Northwest of Mumbai.
Courtesy: Reliance Industries Ltd.



The operating income of the ports

Courtesy: Ministry of Surface Transport

POL has always been the major contributor to the traffic handled at Mumbai Port. The POL traffic reached a peak of 20.62 million tonnes in 1993-94. After hovering around 20 million tonnes in the following two years, the traffic in POL has shown a declining trend. In 1996-97 it was 18.71 million tonnes and in the following year, 1997-98 it was distressingly still lower: a mere 16.73 million tonnes. In April 1998 the volume was 1.53 million tonnes and in May a bare 0.93 million tonnes.

Since the discovery of oil at Bombay High, a part of the crude oil produced at this field was exported to the coastal refineries. The export of Bombay High crude reached a peak of almost 10 million tonnes in 1995-96. Thereafter it has been on the decline and was down to 8.1 million tonnes in 1996-97 and 6.4 million tonnes in 1997-98.

The situation was duly noted by the Board at its June 1998 meeting. The records note:

The existing capacity of refineries at Mumbai Port is around 13 million tonnes per annum. There is little scope for further expansion of existing two refineries at Mumbai. Requirement of imported crude of these refineries is around five to six million tonnes per annum. Therefore, if the traffic in crude projected by the OCC is to materialise, export of crude has to be of the order of 12-13 million tonnes per annum. There do not appear to be any signs of Bombay High production going up. Further, a new berth for handling chemicals and POL will be constructed by BPCL at JNPT with a guaranteed throughput of 3.5 million tonnes per annum to which a part of MbPT's traffic may get diverted.

It therefore seems highly unlikely that the above projections will materialise. In fact, if the present trend continues, the annual target of 17.7 million tonnes will not be met. Consequently, the existing POL handling capacity of 21 million tonnes will remain partly unutilised. The on-going projects, viz, replacement of submarine pipelines and modernisation of jetties 1,2,3 at Jawahar Dweep when completed will further enhance the POL handling capacity of the port by 8 to 15 million tonnes.

Docks Traffic

Though the traffic handled at the Docks reached an all-time high of 14.86 million tonnes during 1997-98, it showed only a marginal increase over the 1996-67 traffic as can be seen from the following:

Year	Container	Non Container	Total
1993-94	5.41	4.68	10.09
1994-95	6.27	5.77	12.04
1995-96	6.75	6.81	13.56
1996-97	7.63	7.12	14.75
1997-98	8.10	6.76	14.86
1998-99	7.10	6.58	13.48
April 99	3.22	3.16	6.38

The Board noted that the percentage share of containerisation traffic had gone up while the share of non-containerised traffic had decreased, indicating that more and more break-bulk cargo was getting containerised.

As against the falling trend in container traffic experienced by MbPT, container traffic handled at JNPT was growing and in the month of March 1998 not only overtook MbPT but crossed the 50,000 mark for the first time. This is seen as due to the shifting of the Maersk Lines and American President Line both of whom have started bringing bigger ships to JNPT. Other lines like P&O and Nedlloyd, it was noted, have recently shifted their operations to JNPT. Was JNPT then doing better than MbPT?

In some way it was. Thus, the container operations were faster at JNPT despite bigger parcel size. Noted the Board:

"Due to increased containerisation of break-bulk cargo, prospects of increase in volume of break-bulk cargo are bleak. Moreover, the traffic in oil cakes, fertilisers and fertiliser raw material may also drop further to a gradual shifting of this cargo to JNPT, Kandla and minor ports of Gujarat".

But was there any other reason for JNPT doing better? Yes. There was the matter of cargo handling cost where JNPT scored over MbPT. The table below indicates the Terminal Handling Charges (THC) at various major iners.

(in rupees)

Port	Import		Export	
	CFS	CY	CFS	CY
MBPT	8,500	4,745	9,420	4,465
JNPT	5,785	4,130	8,630	3,740
Chennai	2,745	1,415	2,745	1,415
Kandla	2,800	2,200	3,000	2,250

After considering the trend in traffic handled at Mumbai Port, the Board summarised the major challenges faced by it as follows:

Changing Traffic Pattern

Over the years, dry cargo have been either unitised or are moved in bulk form. As a result, ship designs have undergone radical changes. Bigger, deep-drafted ships are being built to take advantage of economics of scale and bring down transport costs. The advent of containerisation has witnessed a sea change in the manner in which commodities are transported and handled. More and more break bulk cargo is now going in containers. With the draft/lock gate limitation in Mumbai Port, bigger ships cannot come.

Declining Yield from Bombay High oil field

Liquid bulk handling at Mumbai Port is to a great extent dependent on output from Bombay High. The Fourth Oil Berth at Jawahar Dweep was constructed precisely for handling high crude. In the last few years, the yield from Bombay High has shown a declining trend and there do not appear to be any signs of the production going up.

Infrastructure/Space limitations

The liquid draft available in the docks, access channels and the restrictions imposed by the present lock system in Indira Dock impedes the entry of modern deeper-drafted vessels. The growth of the city around the port has left no space for further expansion of dock facilities.

Traffic Bottlenecks

Mumbai is an island city. There are two rail and road corridors for transportation of men and materials from Mumbai to the rest of the country viz; the Central Railway and the Western Railway with the roads almost running parallel. With the growth of population, these roads and rail corridors are almost saturated with surburban passenger traffic leaving not much room for movement of cargo from and to the hinterland of Mumbai port.

Maintenance and availability of equipment/flotilla

Availability of equipment and flotilla is adversely affected due to the poor maintenance and restrictive practices. Consequently, break-downs are frequent and time taken for repairs high. Some of the old equipment also need replacement.

When in the 1950s P&O entered the tanker trade, it began with ships of about 20,000 tons, but successive orders were for larger vessels. The 66,048-ton Orissa was built for Trident Tankers in 1965, but by 1970, 215,000-ton tankers were in service.

Labour

The port today has large manpower. The practices and procedures set aside at a time when old technology was used are still being continued, resulting in, large labour deployment and outdated manning scales. It has not been possible to fix realistic productivity norms in various spheres/areas of port working. Interchangeability of labour between various sections during similar work has not been accepted, despite various efforts and it has not been possible to make optimum utilisation of the available manpower.

Competition from JNP

JNP, with availability of deeper draft, large back-up areas and latest equipment hold a decisive edge over the old Mumbai port. Being on the mainland also helps JNP in avoiding the congested roads and ever busy rail routes of the island city.

What is more, JNP has already started handling kerosene, chemicals and some amount of general cargo at the existing berth and has plans to construct a berth for handling POL and chemicals through participation of IOC and BPCL, the proposal for which has already been cleared by the government. The handling cost of cargo at JNP is lower besides higher efficiency levels in cargo operations.

Development of minor ports in Maharashtra and Gujarat

The state government of Maharashtra and Gujarat are in the process of handing over selected minor ports for private sector development. The minor ports of Gujarat and the minor ports of Maharashtra to the north of Mumbai will share a common hinterland with JNP and MBP. The smaller privatised minor ports offering dedicated services will market aggressively to attract cargo of deliberation, the Board entertained proposals to meet these challenges along the following lines:

Changing Traffic Patterns

Increasing level of containerisation has brought about changes in handling of cargo and shape and size of vessels with the concept of hub and feeder ports running smoothly in the shipping sector.

Its limited draft, old and narrow lock gates and various other infrastructural limitations, inhibit Mumbai port from being a hub port and catering to bigger container vessels. The latest feeder vessels are also growing in size. In this context, the study undertaken by JICA is relevant. In their Interim Report they have recommended construction of 3 deep drafted open sea berths about 800 meters of the harbour wall berths, connected by link bridges. This will enable Mumbai Port to handle about one million TEUs. These can be further extended to add additional 3 berths enabling MBP to handle a total of 2 million TEUs.

Procurement of modern equipment

Speedy replacement of old equipment to enhance productivity.

Reduction in handling costs

Efforts will have to be made to bring down the cost of cargo handling on port operations so as to make the port more competitive.

Coordination between MBP and JNP

The declining PCL traffic at Mumbai Port could render POL handling capacity of MBP idle. JNP though exclusively developed for handling dry bulk and container, has already started handling POL and chemicals and has plans to construct an exclusive berth for handling POL and chemicals. Therefore, it is necessary to establish a coordination mechanism so that facilities at both the ports are optimally utilised.

Leasing of berths/assets

The port had already made a beginning by licensing two container berths to container operators. Possibility of leasing additional berths on long-term basis may be explored to obtain guaranteed throughput/ revenue.

Labour

It is necessary to improve productivity for which realistic productivity norms need to be fixed in various spheres/areas of port working. The manning scales should keep in pace with the technological development. Datum should be made more realistic. Wasteful and restrictive practices should be eliminated. There should be interchangeability and redeployment of employees after suitable training, if necessary. Voluntary Retirement Scheme may be offered to specialised categories of employees after rationalisation in manning scales/datums.

There should be extensive training programmes for upgrading the skills of employees at all levels.

Marketing

Mumbai port enjoyed monopolistic situation till recently. Moreover, with the emergence of JNP and the planned development of minor ports in Maharashtra and Gujarat, the need to have a commercial outlook is felt. The port may set up a marketing wing for promoting trade which will make efforts to attract especially high value low volume cargo.

Port Railway

There is a serious constraint in evacuating rakes from Mumbai Port since there is a narrow window available during the night. Moreover, as Mumbai Port is manning its own railway, there is a loss of time when for each rake, the engines between

NOTES:

1. BASED UPON SURVEY OF INDIA. MAP WITH THE PERMISSION OF THE SURVEYOR GENERAL OF INDIA.
2. © GOVERNMENT OF INDIA COPYRIGHT 1993.
3. THE TERRITORIAL WATERS OF INDIA EXTEND IN TO THE SEA TO A DISTANCE OF TWELVE NAUTICAL MILES MEASURED FROM THE APPROPRIATE BASE LINE.
4. THE BOUNDARY OF MEGHALAYA SHOWN ON THIS MAP IS AS INTERPRETED FROM THE NORTH EASTERN AREA (REORGANISATION) ACT, 1971, BUT HAS YET TO BE VERIFIED.
5. RESPONSIBILITY FOR THE CORRECTNESS OF INTERNAL DETAILS SHOWN ON THE MAPS RESTS WITH THE PUBLISHER.
6. THE ADMINISTRATIVE HEADQUARTERS OF CHANDIGARH, HARYANA AND PUNJAB ARE AT CHANDIGARH.

Courtesy: Ministry of Surface Transport

Trunk Railway and Mumbai Port have to be changed at Wadala. Possibility of handing over port operations and management of Mumbai Port Railway to Trunk Railway needs to be examined.

Passenger Traffic

During recent years, the number of cruise vessels visiting the port has been on the rise. If the port develops more modern facilities in this area, it may be possible to attract more such vessels giving a boost to the tourist traffic which will be in the national interest and will also fetch additional revenue to MbPT.

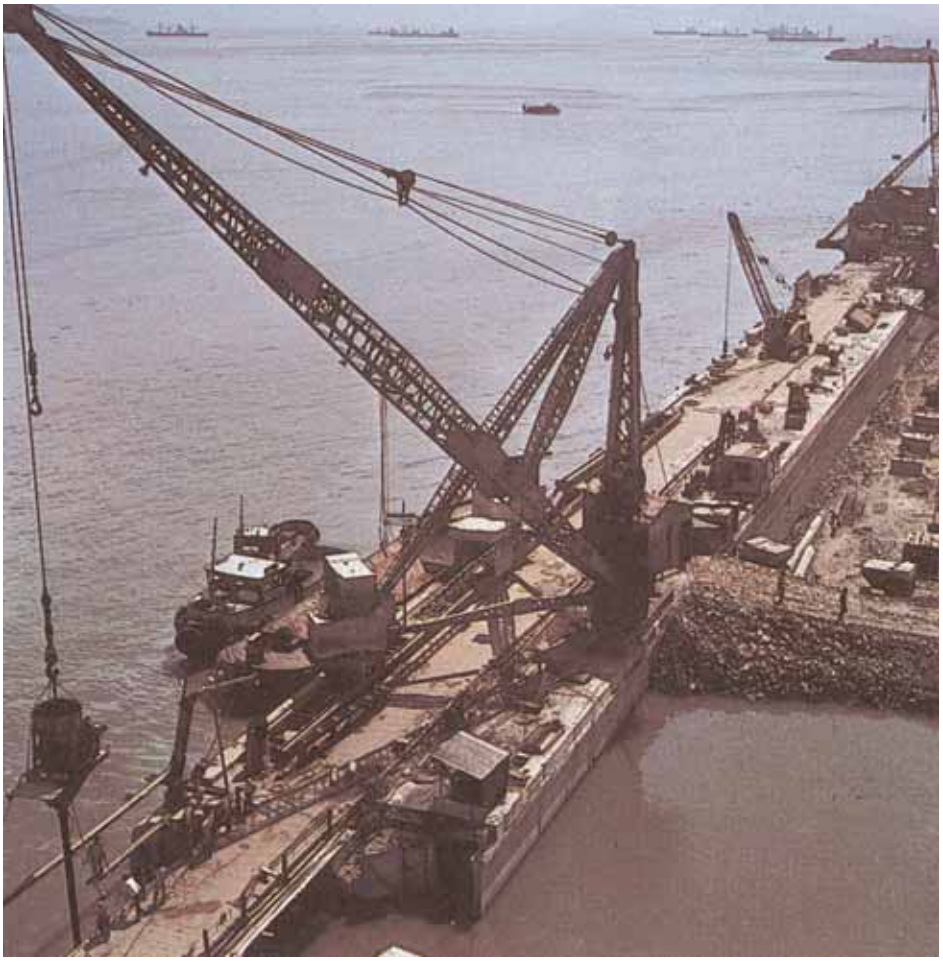
Strategic Plans Take Shape

Such was the urgency felt in facing the challenge that a workshop was organised on the 15th and 16th July 1998 jointly by the ILO, MOST and MbPT to work out a strategic plan for Mumbai Port. Many other bodies participated in the workshop and Mr Bala Subramanium from ILO acted as the co-ordinator.

Detailed deliberations, as can be expected in the circumstances, were held. There was loud and clear concensus among participants that Mumbai Port was no more preferred by users, especially when better facilities were available at other ports. It was agreed that drastic reforms had become necessary for Mumbai Port to remain as a leading Major Port. There was full agreement that Mumbai Port certainly has a future in the maritime trade as a general purpose port handling containers, general cargo and POL, provided immediate measures are taken to improve the productivity and efficiency of services and bring down the cost of handling.

There was also agreement that a Task Force be constituted to prepare a formal document of the Strategic Plan for Mumbai Port, containing actions and procedures for achieving identifiable goals within a period of five years with the following agenda:

- assess the current situation and identify the future status, role functions and objectives of the MbPT and private sector operators.
- identify the potential size, composition and nature of the key markets which the port is able to serve in the future.
- take appropriate action to prepare a plan for the development of the dock estate to enable the priority traffics to be handled safely and efficiently.
- identify the major institutional, organisational and management reforms required to improve the administration and management of the port and agree to a plan of action to achieve this.
- identify the essential changes to operating procedures and practices needed to achieve efficient cargo handling operations.
- identify the necessary actions with respect to modernising employment practices and human resource development in the port.
- take action to develop strategic and business development plans that focus on priority markets and sectors where the probability of MbPT obtaining traffic is high and where the long term trading prospects are good and
- secure funds to implement the Strategic Plan.



Work under way at Ballard Pier extension at Bombay Harbour involving precast buttresses bridged by 160T precast arch units.

Courtesy: Larsen & Toubro Ltd.

Nhava before construction of port

Sheva before construction of port

A Whirlpool of Controversies

The manner in which the MbPT was going to face the challenges was being carefully watched by the media considering that for weeks preceding the workshop MbPT had been engaged in a whirlpool of controversies as well. It had recently crossed swords with the State Government over three contentious issues: opening up of Port Trust roads for general traffic, grouting of the *INS Vikrant* and giving up of the old Pir Pau jetty for constructing Mumbai Trans Harbour (MTH), an 18-kilometre long sea-link connecting Mumbai with Navi Mumbai. What damage control exercises were the Board of Trustees contemplating? What had Chairman Arun Mago to say? In an interview to *The Economic Times* he highlighted the declining volume of traffic in recent years stating that over the years the port has kept up with the changing trends by acquiring modern equipment and adding new berths through expansion of the Indira Docks at Jawahar Dweep and Pir Pau. He had requested Japan International Co-operation Agency (JICA) to conduct an indepth study of the further development and expansion of the port. It has already submitted its interim report and is in the process of completing the final report.

It has brought out a master plan of action, both short term upto 2007 and long term upto 2017. The master plan envisages various construction activities that include offshore jetty type container berth of 800 meters (11 meter draft). The cost of the project is estimated at Rs 1,108 crore.

Mr Mago was further posed with a series of questions;

ET: The Maharashtra State Board Road Development Corporation (MSBRD) has criticised the MbPT on the issue of Mumbai Trans Harbour Link (MTHL). Can you tell us why?

Mr Mago: At the outset, let me clarify that the MbPT has nothing against the MTHL. Our concerns are based on the alignment of the sea-link. The MTHL should not hamper the port's existing operations and future plans. The Board is concerned over the usage of the chemical berth at the old Pir Pau jetty and the Navy's anchorage for explosives which comes in close proximity. When the MTHL was constructed, the span and height of the bridge should be such that the vessel traffic to the old Pir Pau jetty should not be affected. The Oil Coordination Committee (OCC) had asked the EIL to carry out a study about operations at old Pir Pau jetty. The EIL had given a sketchy report but has been asked for more details. The exhaustive report is expected in two month's time. The MbPT has plans to add another berth at the jetty. Our effort is to reduce the turnaround time of the vessels.

ET: The State Government was critical of the Port Trust for not opening up the internal trade for public transports during the monsoons. What's your response?

Mr Mago: As far as the MbPT is concerned, free cargo movement is very important. All activities of the port are supplementary to it. The port is already suffering from space constraints and if the internal roads are opened up, our loading and unloading operations will be badly affected.

The three internal roads are the Dock Express Way, the MOD link road between Malet Bunder and Messent Road and the Inspection Road between Wadala and Mahul. The Dock Express Way is a road inside the dock boundary wall running very close to the ships at

Mr. Arun Mago signing papers of taking over of Survey Launch "Sanshodhinee", gift from the Netherlands, from left Mr S Gopalan, Development adviser (Ports) and Mr N M Purohit, Dy Chief Engineer.

berth. Due to cargo operations and a large number of trucks and trailers engaged in movement of cargo, this road is not suitable for unrestricted traffic.

The MOD Link Road is the life-line of the port and very crucial for the container operations. With the present level of container traffic in the port, traffic on this road is heavy, many times leading to congestion and jams. The Inspection Road is a narrow road constructed for the purpose of inspection and maintenance of the pipelines running along the road and monitoring of the oil pumping operations. If we open up these roads, and in case of an accident or a traffic breakdown, the entire port operations would be thrown out of gear.

ET: The issue of granting the *INS Vikrant* near Colaba in south Mumbai for converting it to a maritime museum had brought MbPT into bad light for some time. What is your response?

Mr Mago: Initially, the State Government had proposed granting of *INS Vikrant* for converting to a maritime museum and constructing an inland water transport terminal near Colaba. The Navy had obliquely hinted that the old warship can also be used as a terminal. In October 1997, the MbPT Board set up a six — member committee under the deputy chairman Mr R R Sinha with representatives from the Port Trust, State Government and the Navy. The Committee had written to the government to look into various issues regarding environment and congestion and bear all the expenses. We had to look into whether these issues would adversely affect our shipping activities.

A major concern was the possible shift in the wave regime and siltation pattern with the granting. The Committee had asked the Pune-based Central Water and Power Research Station (CWPRS) to study the siltation patterns at the two earlier proposed sites of Jamshetji Bunder and Oyster dock. Their study revealed that the granting of *INS Vikrant* would not affect the harbour regime. Following which, MbPT agreed upon the two granting sites, but subject to carrying out environmental impact assessment, effect on congestion and obtaining statutory clearances. Meanwhile, we have referred all the representations from fishermen and residents to the state government for its perusal. The government has set up another committee under the chairmanship of the State Principal Secretary, Mr R Nalinakshan and with

P.O.L. tanker at New Pir Pau Pier Chemical Berth (1996).

MBPT's latest acquisition — Survey vessel "Sanshodhinee" a gift from the Netherlands 1998.

representatives from the Navy and MBPT to further pursue the matter.

ET: How do you propose to equip the MBPT's 32,000-strong workforce to face future competition?

Mr Mago: Future competition can only be met by improving efficiency and productivity and implementing cost-cutting measures also giving a thrust on user services.

We have to make the work-force conscious about the growing competition. Certain measures, have to be implemented by tapping all human resources and sometimes re-deploying them. Frequent workers' unrest needs to be sorted out by working out strategies.

ET: What does the future hold in store for MBPT?

Mr Mago: The MBPT is planning to set up its second chemical jetty at New Pir Pau. Another 1.5 million tonne captive coal jetty will be constructed by Tata Electric Station Companies (TEC) at Pir Pau which will be mainly used to import coal for their own power station. The Port Trust is also planning several modernisation and expansion programmes. The Rs 170-crore sub-marine pipeline project will replace all existing oil pipelines to the Jawahar Dweep by 2000. Another major activity proposed at Butcher Island is the oil terminal project. Of the existing four jetties, three will be modernised shortly. We are targetting a modest 43 million tonnes cargo by the end of ninth year plan.

* * *

On 26 June 1998, Mr A L Dias, I C S, the seniormost and the former chairman of the Bombay Port Trust released the special First Day Cover issued by the Indian Postal Department to mark the historic occasion of the 125th anniversary of the Mumbai Port Trust. The function was held at Vijaydeep, the MPT building and was attended by port officials, members of the maritime fraternity, special invitees and distinguished citizens. A well-produced film made by the National Institute of Port Management, Chennai on MBPT was also screened. The film traced the history and growth of Mumbai Port, its contribution to the development of the city and the trade in this region. For those who attended the function, it was a nostalgic occasion.

Gerald Aungier the man who literally made Bombay in the last quarter of the seventeenth century would have applauded. And so would have Col J A Ballard who presided over the meeting of the Board of Trustees on July 3, 1873.

125 Years of Mumbai Port Trust

Mumbai Port – known as the 'Gateway of India' or the 'Nations Window to the outside World' – has made a significant contribution to the nation's trade and commerce. Strategically situated at the mid-point on the west coast and gifted with a magnificent natural harbour of 400 sq kms Mumbai Port has been the country's premier port for several decades.

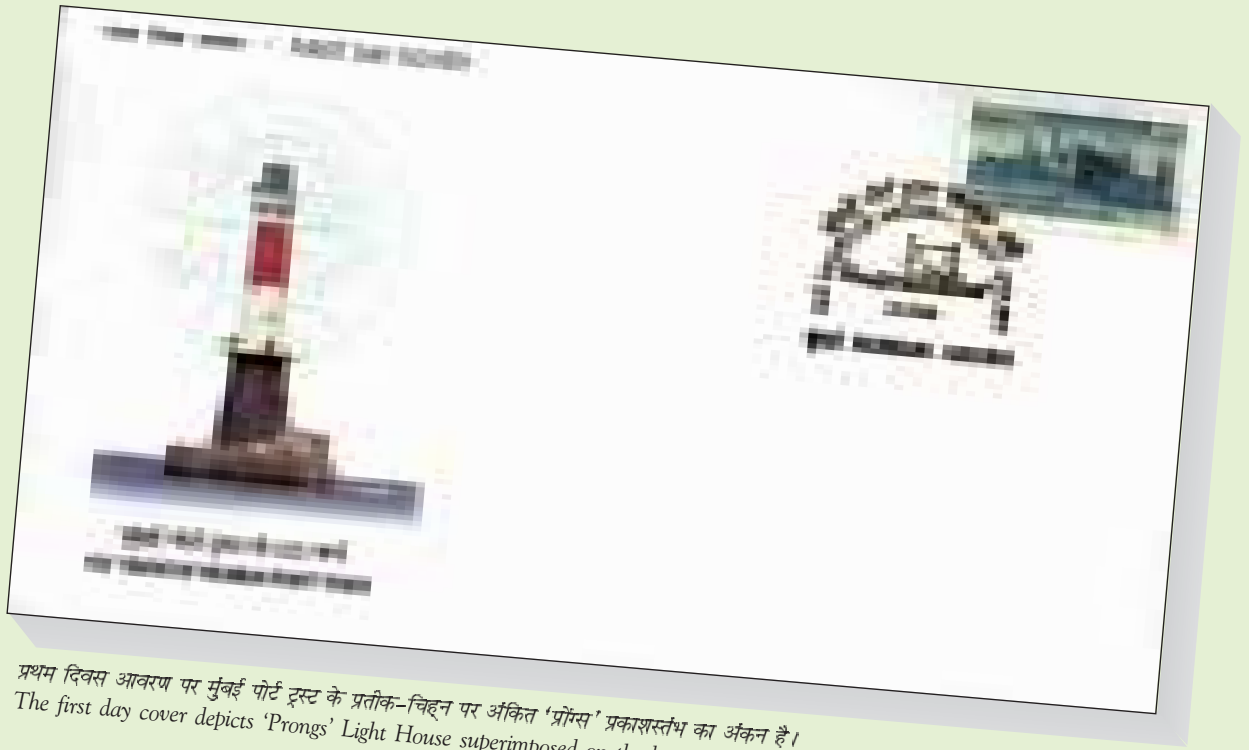
The Mumbai (Bombay as it was then known) Port Trust was constituted on 26.06.1873 for the administration of the affairs of the port and to take care of the interest of trade endangered by the possession by private companies of a monopoly of landing and shifting facilities.

On its constitution the port management immediately set about constructing facilities to service the trade. First came the Prince's Dock in 1880 followed by Victoria Dock in 1888. With these two wet docks in operation, concentration was on development of other infrastructure facilities, equipment, transportation and storage. The deepening of the Suez Canal hastened the growth of trade which in its wake brought in deep drafted vessels. Taking cognizance of this change, the Port Trust constructed Alexandra Dock, now known as Indira Dock, in 1914, with 9.14 metres draft in the basin and an entrance lock providing for berthing of ships round the clock. Road and railway infrastructure was added to handle the increasing traffic with the port's own railway running from Wadala to Ballard Pier serving all the cargo berths in the docks and the passenger berth at Ballard Pier and linked with the main railway network thereby providing connectivity to the entire country.

The Port has now 50 berths in the three dock systems mentioned above for handling of general cargo and containers and 6 berths for liquid cargo at Jawahar Dweep and Pir Pau with various crafts and equipment for handling of the ships and cargo and covered storage accommodation of approximately 3.5 lakhs sq mtrs and open storage spaces of approximately 5 lakh sq mtrs. The Port also provides modern ship repair facilities through its two dry docks.

The Mumbai Port has provided the base for development of the city with employment opportunities and commercial and financial trade. It has been a major factor in Mumbai becoming the commercial and financial capital of India. A number of Public roads in the city were originally constructed by Mumbai Port trust and handed over to the Municipal Corporation. The Mumbai Port Trust made a significant contribution that has been recognised a commemorative stamp to mark the 125th anniversary of Mumbai Port Trust.

Cover Illustrations
1. *Port House, Mumbai Port Trust Head Office*
2. *New Pir Pau Pier — Chemical Berth*
3. *POL operations through loading arms*
4. *BPS Container Berth*



प्रथम दिवस आवरण पर मुंबई पोर्ट ट्रस्ट के प्रतीक-चिह्न पर अंकित 'प्रोंग्स' प्रकाशस्तंभ का अंकन है।
The first day cover depicts 'Prongs' Light House superimposed on the logo of Mumbai Port Trust

Looking to the Future: Artist impression of proposed three deep draft container berths and container yard at Victoria Dock. (Masterplan prepared by JICA)

Looking to the Future : Epilogue

Mumbai Port moves on, keeping up with the latest developments. At the start of the new millennium one can look back with nostalgia over the centuries past and with increased hope that in the centuries ahead it will grow both in usefulness and commercial splendour.

The liberalisation and globalisation of the Indian economy has brought about development of new ports. Mumbai Port is faced with competition from Jawaharlal Nehru Port (JNP) and other private ports. This has led to decline in its traffic to 30.41 million tonnes in 1999-2000, which is in level of with the port's rated capacity of 30.5 million tonnes. It has been argued that facilities developed by the port in the docks were essentially designed to handle general cargo traffic of about 6.5 million tonnes. Its adaption to handle container vessels was also not to the accepted norms. With the Government missive at the time of development of JNP to restrict container traffic at Mumbai Port to only 1 lakh TEUs, equipment addition for handling container traffic was also limited. However, the Port has handled traffic much beyond its capacity.

Another argument advanced is that JNP was set-up to decongest Mumbai Port, as a result of which, traffic at Mumbai Port inevitably had to decline. However, having handled a traffic of over 34 million tonnes and beyond the rated capacity, the reversal to traffic trend becomes a cause for concern, specially considering the large work force deployed by the port.

Unlike other ports, Mumbai Port has physical constraints of limited draft and enclosed docks with lock gate system, which impose restrictions on ship size Mumbai Port has thus recognised that the only way to meet the competition is with improved productivity, operational efficiency and cost effectiveness, breaking away from the traditional systems and procedures. Towards this, the port has taken a number of measures and has made significant progress in the performance parameters of average pre-berthing detention, average turn round time of ships and ship berth day output, which are, in fact, the key stones of judging a port's performance. Systems and procedures have been reviewed and streamlined and the process is ongoing. With computerisation, there is on line clearance of cargo. Green channel delivery for star trading houses is introduced ensuring delivery of cargo within 2 hours of clearance by Customs. The system of single window clearance helps in making all payments and clearance of documents at one spot. To boost continuous pre-shipment facilities for aggregation and storage of export cargo is allowed with a free period of 30 days at nominated sites.

It is also recognised that increase in traffic can be brought about only with the capacity addition. M/s. Japan International Cooperation Agency (JICA) have prepared a Master Plan for the Port for the next 20 years upto 2017. JICA has made traffic projections as under:-

To handle ships of bigger size, especially container ships, which need berths outside the enclosed dock system, JICA has recommended construction of three deep drafted off-shore jetties with water depth of 13.5 metres to handle container vessels of 2,000-2,500 TEU capacity, and provision for three more

(in million tonnes)

	2007-2008	2017-2018
Crude Oil	18.891	18.891
POL	9.788	17.605
Liquid Chemicals	0.200	0.386
Edible Oil	0.869	1.338
Fertilizers, Raw Material And other	1.277	1.854
Dry Bulk Break Bulk	4.984	6.061
Containerised cargo*	11.660	12.300
*Excludes tare weight	(1mn TEUs)	(1mn TEUs)
Total	**47.669**	**58.435**

additional berths in future with filling up of the Victoria Dock to from the back-up container yard. The cost of the project of three jetties and infrastructural back-up facilities is estimated at Rs. 2,000 crores. These berths will enable handling of annual container traffic of 0.73 million TEUs and with the existing container terminal of BPS, the port will have a capacity of one million TEUs per annum. The Mumbai Port Trust Board has accepted in principle the recommendations made by JICA in the Master Plan. Consultants are being appointed for assessing the viability of the project.

Considering the declining trend of container traffic and the fast increasing size of container ships, the above plan of 3 off-shore deep drafted berths assumes great importance. Also JICA has estimated container traffic for Mumbai region to be 5.9 million TEUs by 2017-2018 with the share of JNPT at 4.9 million TEUs and the remaining to be handled at Mumbai Port. Thus, Mumbai Port has to gear up to handle this level to traffic.

Other capacity addition programmes on the anvil are construction of new berth at Pir Pau for handling coal and other compatible liquid cargo and construction of second liquid chemical berth at Pir Pau which would increase capacity by 3.5 million tonnes.

Considering that Mumbai Port is an old port, it has a continuous programme of upgrading and modernising the facilities. In fact, the Port's 9th plan of over Rs. 1200 crores is mainly aimed at replacement and modernisation of facilities. The major schemes in the plan include upgradation of POL handling facilities through replacement of submarine pipelines and modernisation of jetties, replacement of the existing craft such as harbour tugs with higher capacity modern crafts with sophisticated controls, addition of high capacity cranes and other equipment.

To face the challenges of future, the port is preparing a Strategic Plan, which is in the final stages. The Plan covers all areas of operations and include suggestions on reforms. The Plan highlights the importance of implementing the recommendations made by JICA in the Master Plan for handling future container traffic. It emphasises the need to professionalise port management by promoting corporate culture, practices and systems. Major restructuring recommended is through rationalisation of manning levels fixed years back, which have unfortunately not kept pace with the changing times. Cargo packaging and transportation, mechanisation and technological upgradation. The Cornell Group, Consultants appointed by the Asian Development Bank (ADB) as part of their assistance to India and Mumbai Port, have, in their report on commercialization of Mumbai Port, observed that the Port needs to downsize its manpower from the existing 32,000 to a mere 4,000. However, while this may not be feasible, reduction by at least 50% is necessary for the port to be cost-competitive and comparable to other major ports. Discussions are currently on with the union representatives on rationalisation of manning in various areas of operations. "Golden Handshake" to surplus employees has also been formulated.

A beginning has been made with rolling back of retirement age from 60 years to 58 years. Further it has been decided not to have any recruitment in the next few years and meet the operational requirements through re-training and re-deployment. This is a very difficult and painful task but vital for the Port's very survival. As it is its past record, the port management and workers will surely adapt to the technological and cultural changes that are necessary and move forward.

Considering the new economic scenario, the Port has also recognized that the key to progress is through commercialization and privatisation of existing facilities. Which would not only bring in investments but also operational efficiency. The port has thus identified existing facilities private sector participation namely container terminals and general cargo terminals and the dry docks. Likewise now capacity addition projects are decided to be executed through private sector participation.

Mumbai Port moves on, keeping up with the latest developments. At the start of the new millennium one can look back over the centuries gone by when Bombay was just a cluster of islands and a few scattered huts of fishermen set in a sylvan atmosphere where only the winds from across the blue-green seas disturbed the even tenor of life, where the only movement was those of the waves and the coconut leaves.

Here came the Portuguese, the Dutch and the British and merchants from across the seas to do business and trade and for some time to rule and have gone their way. Mumbai Port goes on for ever.

Author's Note

There have been two earlier studies of the history of Bombay Port sponsored by the Trust authorities and this is the third.

The two earlier studies are decades old and needed to be updated. That is the rationale for this study.

The second of the earlier two, according to the title page was "compiled by orders of the Trustees of the Port of Bombay by W R S Sharpe, deputy chairman, Bombay Port Trust".

Compilation implies that the material from different sources was merely pieced together, but the compiler unfortunately forgot to provide references. This volume, in a sense, is also a compilation though involving much original writing. However, every attempt has been made to source the material extracted from other books. Any inadvertance in failing to do so is regretted.

The trouble is that technical data cannot be re-written for the sake of form. Opinion may be free but facts are sacred and cannot be tampered with in the pursuit of originality.

In another sense this volume is an extension of the earlier two slim volumes and incorporates information available in them. Additional information available since their publication has naturally been added on to bring this work up-to-date.

This work, again, is indicative, not exhaustive. To present a total history of the Port would involve outlays in time, money and energy to go through the massive archives of the East India Company in London and the historical archives available in Lisbon and some other European port cities.

Shipping companies like the P & O, Lloyd Triestino, Anchor Line and others mentioned in the text would surely produce even more information than it has been found necessary to include in this work.

A great deal of technical details herein provided are culled from old studies, with no effort made to re-write them. The sources are acknowledged in the body of the text.

The bibliography appended at the end of the volume would also clearly show the original texts from which material has been drawn.

The photographs and most of the charts published in this book are from the archives of the Mumbai Port Trust. Acknowledgement of sources other than the Port Trust is made at appropriate places. Among others, thanks are due to Mr Subhash V Sampat of the Indian Merchant's Chamber for his generous cooperation.

The author wishes to acknowledge the support given to him by Mr Sharad Kale, former chairman of the Mumbai Port Trust who had commissioned the work and the able assistance rendered to him by Ms Mrinal Kulkarni in connection with research.

Thanks are also due to the present chairman of the Mumbai Port Trust Mr Arun Mago, Ms Saroj Tahiliani, secretary and Shri Ashok Lokhande, Superintending Engineer for their assistance and guidance.

Appendix

BPT Chairmen down the years

Sr. No.	Chairman	From	To
1.	Col. J.A. Ballard, C.B.R.E.	26-06-1873	24-05-1875
		25-08-1875	31-05-1876
2.	G. I. Robinson	25-05-1875	24-08-1875
3.	Col. W.A. Baker, R.E.	01-06-1876	31-03-1880
4.	Col. I.P. Cox, R.E.	01-04-1880	22-09-1880
5.	Col. G.L.C. Merewhether, R.E.	25-10-1880	07-05-1887
		08-06-1887	05-05-1889
		12-06-1889	07-05-1892
6.	G. Manson	08-05-1887	07-06-1887
		06-05-1889	11-06-1889
7.	Sir Walter Charleton Hughes, C.I.E. K.G.	03-06-1892	13-05-1893
		15-08-1893	23-05-1895
		10-08-1895	15-05-1896
		19-11-1896	30-04-1898
		22-12-1900	25-10-1901
		09-11-1901	07-12-1901
		06-01-1902	19-04-1904
		19-11-1904	26-04-1907
		16-11-1907	23-04-1909
		29-10-1909	23-04-1910
8.	J.M. Champbell, C.I.E., I.C.S.	14-05-1893	14-08-1893
		24-05-1895	09-08-1895
9.	C.T. Burke	16-05-1896	18-11-1896
		01-05-1898	03-03-1899
		05-06-1899	21-12-1900
10.	W.T. Morison, I.C.S.	04-03-1899	04-06-1899
11.	E. Gray, I.C.S.	26-10-1901	08-11-1901
		08-12-1901	05-01-1902
		20-04-1904	10-05-1904
12.	P.J. Fitzqibbon	11-05-1904	18-11-1904
13.	P. Glynn Messent, C.I.E.	27-04-1907	15-11-1907
		27-09-1915	25-10-1915
		14-10-1916	22-11-1916
		12-05-1919	27-11-1919

Sr. No.	Chairman	From	To
14.	Sir Frederick Lawrence Sprott, K.T.	24-04-1909	28-10-1909
		24-04-1910	22-04-1911
		20-10-1911	26-09-1915
		26-10-1915	13-10-1916
		23-11-1916	01-01-1918
15.	G.E. Lillie	23-04-1911	19-10-1911
16.	G.W. Hatch, I.C.S.	02-01-1918	11-05-1919
		28-11-1919	23-03-1922
17.	P.R. Cadell, C.S.I., C.I.E., I.C.S.	24-03-1922	20-05-1923
		22-08-1924	13-04-1925
		22-08-1924	13-04-1925
		04-06-1925	28-06-1925
18.	W.H. Neilson, O.B.E.	21-05-1923	21-08-1924
		24-04-1925	03-06-1925
		29-06-1925	11-03-1928
		09-11-1928	06-12-1931
19.	W.R.S. Sharpe	14-04-1925	23-04-1925
		12-03-1928	08-11-1928
		07-12-1931	10-04-1933
		04-09-1933	25-03-1935
20.	G.E. Bennett	11-04-1933	03-09-1933
		26-03-1935	09-06-1935
		26-04-1937	21-10-1937
		03-01-1938	06-05-1938
		04-06-1938	07-10-1938
		15-12-1939	01-01-1940
21.	Sir Gilbert Wiles, K.C.I.E., C.S.I., I.C.S.	10-06-1935	25-04-1937
		22-10-1937	02-01-1938
22.	N.M. Morris	07-05-1938	03-06-1938
23.	H.K. Kirplani, C.I.E., I.C.S.	08-10-1938	14-12-1939
		02-01-1940	24-09-1941
		01-12-1941	02-01-1942
24.	Sir Benegal Rama Rau, C.I.E., I.C.S.	30-09-1941	30-11-1941
		03-01-1942	27-09-1943
		28-10-1943	28-09-1945
		10-11-1945	18-04-1947
		04-06-1947	06-07-1947
25.	Lt. Col. J.R. Sadler, C.B.E., R.E.	28-09-1943	27-10-1943
26.	Y.N. Sukthankar, C.I.E., I.C.S.	29-09-1945	09-11-1945
27.	F.M. Surveyor	19-04-1947	03-06-1947
		07-07-1947	14-09-1947
28.	V.S. Bhide, C.I.E., I.C.S.	15-09-1947	16-08-1949

Sr. No.	Chairman	From	To
29.	L.T. Gholap, I.C.S.	17-08-1949	31-05-1959
30.	V.T. Dehejia, I.C.S.	01-06-1959	19-11-1960
31.	A.L. Dias, I.C.S.	20-11-1960 05-01-1964	27-10-1963 24-08-1964
32.	E.H. Simoes	28-10-1963 25-08-1964	04-01-1964 17-09-1964
33.	L.M. Nadkarni, I.C.S.	18-09-1964	21-03-1972
34.	Govind H. Seth	22-03-1972	25-05-1972
35.	S.Y. Ranade, IAS	26-05-1972	23-08-1974
36.	K.K. Uppal, IAS	24-08-1974 13-06-1977 16-07-1980 01-04-1983	24-09-1974 17-07-1977 16-03-1983 28-02-1985
37.	J.C. Agarwal, IAS	25-09-1974	12-06-1977
38.	B.C. Cariapa, IAS	18-07-1977 18-06-1979	23-04-1979 30-06-1980
39.	N.R. Mane	24-04-1979	17-06-1979
40.	K.B. Srinivasan, IAS	17-03-1983	31-03-1983
41.	Zafar Saifullah, IAS	01-03-1985	02-04-1986
42.	S. Ramamoothi, IAS	03-04-1986 09-01-1988	13-12-1987 18-04-1989
43.	R.K. Bhansali, IRSE	14-12-1987 19-04-1989 17-07-1990	08-01-1988 13-03-1990 14-05-1992
44.	M.R. Natarajan, IAS	14-03-1990	16-07-1990
45.	Ashoke Joshi, IAS	15-05-1992	14-10-1992
46.	D.K. Afzulpurkar, IAS	15-10-1992	24-02-1996
47.	B.P. Pandey, IAS	25-02-1996	08-08-1996
48.	S.G. Kale, IAS	09-08-1996	31-10-1997
49.	A.K. Mago, IAS	01-11-1997	—

Certain Street Names and their derivations, on the Port Trust Estate.

STRAND ROAD

This is so named because it is situated abutting the Harbour Wall (from Apollo Pier to Henry Road)

LANDSDOWNE ROAD (From Colaba causeway to Adam Street)

Named after the fifth Marquis of Landsdowne (b 1845) who was the governor general of India from 1888-1894.

WELLINGTON LINES

Named after the first Duke of Wellington who was connected with Bombay, while in India. The Bombay Govt. helped him with supplies during the Memorable Maratha campaign which ended in the victory of Assay (1803). The citizens of Bombay presented him with an address when he was here in 1804 on his way home (ch. 36, Bombay and Western India by James Douglas).

WELLINGTON PIER

The official designation of Apollo Bunder, Maclean in his guide to Bombay says it was never used in common parlance, and the name would have long ago been forgotten if it were not included on the Bunder wall.

MEREWHETHER ROAD (Colaba causeway to Arthur Bunder)

Named after the former Chairman of BPT (Oct 1880 -May 1892) Colonel G. L. Merewhether, R.E.

ORMISTON ROAD

Named after the Ormiston brothers, Civil Engineers. Thomas Ormiston, the older brother was chief engineer BPT since its foundation in June 1873 — June 1882. He planned and constructed the Princes Dock, Prong's Lighthouse. His statue was erected in the University Gardens in 1888. (d - 1882)

George Ormiston (1844-1913) was chief engineer, BPT from July 1882 — May 1892.

WALTON ROAD (From Colaba Causeway to Merewhether Road)

Named after Mr R Walton, Executive Engineer, Bombay Municipality. The Vihar Lake was partly constructed under him.

HENRY ROAD (From Colaba Causeway to Merewhether Road)

Named after the late Capt. George Fitzgerald Henry of P&O Co. Capt. Henry was president of the Municipal Corporation when it was first constituted in 1873 and was Chairman of the Town Council in 1876.

BATTERY STREET (From Apollo Pier to Lands down Road)

Named after the Saluting Battery which was situated on this road until it was transferred to middle ground.

ARTHUR BUNDER ROAD

Named after Sir George Arthur Bert, Governor of Bombay, 1842-46 Born in 1784, he entered the army in 1804 and served in Italy, Egypt and Sicily.

MANDLIK ROAD (From Colaba causeway to Merewhether Road)

Named after the late Vishwanath Rao Saheb Narayan Mandlik (1833-89) a distinguished Konkansth Brahmin from Ratnagiri, who became a government pleader in Bombay in 1884, for several years he was a member of the local as well as supreme legislative council. He published substantial work on Hindu law and owned a paper "Nature Opinion"

A Journey Through Mumbai Port

GLIMPSES OF PROGRESS

ERA OF CONSTRUCTION (1873-1914)

1873	Constitution of Bombay Port Trust as a Body Corporate.
1875	Opening of Sassoon Dock, the first Wet Dock for sailing vessels with an entrance of 12.2 m with 4 Berths.
1880	Opening of Prince's Dock for Steam Ships with designed entrance of 20.1 m and depth of 6.4 m with 14 Berths.
1888	Opening of Victoria Dock with designed entrance of 24.4 m and depth of 7.3 m with 15 Berths.
1891	Creation of Dry Docking facility by setting up Merewether Dry Dock in Prince's Dock with 160 m length.
1914	Opening of Alexandra Dock (renamed as Indira Dock) with designed Entrance Lock Gate of 30 m width and 180 m length and 10.7 m depth with 20 Berths, including a Passenger Berth.

ERA OF EXPANSION (1915-1950)

1915	Commissioning of the Port's own railway system interfaced with Trunk Railways.
1916-1922	Construction of roads, transit sheds, warehouses and support infrastructure.
1923	Commissioning of Berth for handling POL products at Pir Pau, towards north of Mumbai, with maximum permissible length of 170.69 m and draft of 6.4 m.
1950	Construction of a second Dry Dock, viz., Hughes Dry Dock with 304 m length in Indira Dock.

EXPANSION — POST INDEPENDENCE ERA (1947-1999)

1947-48	Rehabilitation and repair of damage suffered due to explosion aboard vessel Fort Stikine in Victoria Dock on 14 April 1944 and handling increasing post independence traffic.
1948	Decasualisation of port labour and setting up of Dock Labour Board to regulate employment of labour in the Port.
1954-56	Commissioning of Marine Oil Terminal at Butcher Island (renamed Jawahar Dweep) with three jetties for handling large crude and POL product tankers upto 48,000 DWT and draft between 10.2 m to 11.3 m.
1969	Addition of 7 more Berths in Indira Dock under Dock Expansion Scheme.
1970	Commissioning of new Passenger Berth for Luxury Liners at Ballard Pier Extension.

CHALLENGE OF CONTAINERISATION:

1973	Containerisation era sets in Mumbai Port with arrival of first Container Vessel belonging to American President Line.
1980-84	Adaptation of facilities to handle container traffic procurement of container handling equipment, setting up of Container Freight Stations, development of Rail Container Depot connecting Inland container Depots and Conversion of BPS Berth as a dedicated Container Terminal.

MEETING TRADE FUTURE REQUIREMENTS

1984 Construction of Fourth Oil Jetty at Jawahar Dweep with draft 14.3 m to handle large oil tankers upto 80,000 DWT.

1993 Construction of Asia's largest warehouse with covered area 33,000 sqm. at Sewree.

1994 Supercession of the Bombay Dock Labour Board and absorption of its employees in Mumbai Port Trust towards unified cargo handling and efficiency in operations.

1996 Commissioning of new state of the Art Chemical Terminal Pir Pau with draft 11.1 m.

1997 Installation of Radar based computerised modern Vessel Traffic Management System covering the entire Mumbai Port harbour area as well as JNP.

MODERNISATION TOWARDS FUTURE

1989 Introduction of computerisation in various areas of port operations aimed at on line.

1994 First attempt in all major port at private sector participation in port operating cargo operation licensing of existing berth to American President Line for container vessels.

1996 Licensing Scheme extended to two more berths for container vessels, licencees M/s X-Press Container Line (UK) Ltd. and M/s Shreyas Shipping Ltd.

MAJOR MODERNISATION PROJECTS ON ANVIL

CAPACITY AUGMENTATION

1. Replacement of submarine pipelines between Jawahar Dweep and shore, modernisation of Jetties 1,2,3 at Jawahar Dweep and replacement of shore pipelines capacity increase by about 16 million tonnes per annum.
2. Construction of a berth at Pir Pau for handling coal — 1.5 million tonnes per annum.
3. Construction of a second liquid chemical berth off new Pir Pau Pier — 2 million tonnes per annum.

EQUIPMENT UPGRADATION

1. 10-Tonne capacity 8 Electric Wharf Cranes.
2. High Powered Bollard Pull Harbour Tugs.
3. Floating Crane of capacity 125 Tonnes.

PROJECTS IDENTIFIED FOR PRIVATE SECTOR PARTICIPATION

1. Construction of Berth at Pir Pau for handling Coal, and other liquid cargo on BOOT basis.
2. Construction of a Second Berth at Pir Pau for Liquid Chemical/Specialised Grades of POL Products on BOT basis.
3. Development, Operation, Maintenance and Management of two Container Terminals in Indira Dock on BOT basis.
4. Development, Operation, Maintenance and Management of two General Cargo Terminals in Indira Dock on BOT basis.
5. Licensing of the two Dry Docks with 2 Wet Berths each for ship repairs.

MASTER PLAN

- Construction of 3 deep-drafted offshore jetties with water depth of 13.5 m for handling container vessels of 2000 to 2500 TEUs capacity.
- Filling up of Victoria Dock to form back-up container yard.
- Connection Bridge with 4 lanes and length of 1180 m.
- Procurement of six QGCs 19 RTGs and other equipment for efficient operative of these jetties.
- Estimated cost of jetties and infra-structural back-up facilities Rs 2,000 crores.

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Proposed Ninth Five-Year Plan for Mumbai Port (1997-98 to 20001-2002)

Handling of Chemicals at Mumbai Port (R.D. Joshi)

Baisc Port Statistics (1993-94) Port of Bombay

Insight (1996)

Bombay Port Trust (T.R.No. 832)

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— Bold Indicates Photographs of personalities

— (s) Indicates names of ships

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↑ *A view from Pir Pau landfall point.*

↓ *Pre trenching in progress at Pir Pau end.*

↓ *Dredger a closure view*

Six Submarine pipelines as they approach
↓ *Jawahar Dweep shore*

Replacement of old band of 7 submarine pipelines laid in 1955 by new ones with higher diameter (6 pipes) between Jawahar Dweep & Pir Pau. Approx. cost Rs. 286 crores The work was commenced on 11-2-1999 completed in June 2000.

↑ *Tie-in of submarine pipes and lowering. (Pipe lay barge in background)*

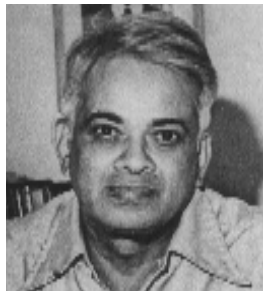
↑ *Joining of Submarine pipe sections on the pipe lay barge.*

↑ *View of pipelines between land fall point. & Pir Pau manifold*

Manifold shed construction Jawahar Dweep. →

DIORAMA OF BOMBAY (1934)

This Diorama presented by the Trustees of the Bombay Port Trust at the request of the High Commissioner for India can be seen at the Imperial Institute, London. The diorama of Bombay was constructed by Mr. M. B. Black of the Imperial Institute, from data supplied by the Bombay Port Trust. A diorama consists of a perspective model inside a glass fronted case with the background painted on the back and sides of the case. This requires considerable ingenuity in producing the perspective of the modelled portion and in arranging that this portion merges satisfactorily into the painted portions.



The Author

Mr. M.V. Kamath has had a long career as a reporter, foreign correspondent and editor, having served in Bombay, Delhi, Bonn, Paris, Geneva, United Nations (New York) and Washington D.C. During different times he has been editor of *Free Press Bulletin, Free Press Journal, United Asia* (Contributing editor), *Sunday Times of India* and The Illustrated *Weekly of India.*

Mr. Kamath has authored over 40 books on a wide range of subjects, including history, politics, journalism and fiction. He has chronicled the history of three banks – The Canara Bank, The Corporation Bank and The Saraswat Urban Cooperative Bank. Among the personalities he has written biographies of are: Henry Kissinger, T. A. Pai, B. G. Kher, Ramakrishna Bajaj, G. V. Mavlankar, Lala Charat Ram, Ahalya Bai Holkar and Sai Baba of Shirdi. He has just completed the history of the Mumbai Port Trust.

His books on journalism are prescribed text books in many Institutes of Mass Communication. His book on *The Philosophy* of *Death and Dying* has been translated into Gujarati, Marathi and Korean and his book on Sai Baba into Spanish and Hindi.

In 1953 he was elected President of the Bombay Union of Journalists. He is a founder – member of the Foreign Correspondents' Association, Washington DC, a trustee of the Dr T. M. A. Pai Foundation and a member of the Executive Committee of the Manipal Academy of Higher Education (MAHE) which is a Deemed University and of the Heras Society.

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He currently writes for over a dozen newspapers and periodicals.