

CHAPTER - 3

THE MAJOR PORT SYSTEM OF CALCUTTA & HALDIA

The present chapter considers the locational, technical and special characteristics of the two systems that together constitute the Calcutta Port Trust. These are namely, the Calcutta Dock System upriver on the Hooghly and the newer complex at Haldia located further downstream. The two systems are interlinked, making it sensible to speak of the Calcutta-Haldia Port as constituting a single *major* port. However, the chapter approaches the two port-systems chronologically.

3.1 The Calcutta Dock System

3.1.1 Location

Out of the eleven major ports in India, five are located along the east coast and the six remaining are on the west coast. Calcutta Port, on the east coast in the state of West Bengal lies to the north of the Bay of Bengal, and is one of the four largest operational major ports in India.¹ The uniqueness of Calcutta Port arises from the fact that it is the only riverine major port in India.² Calcutta is situated on the left bank of the river Hooghly at latitude 22°33'N and longitude 88°19'E (*refer map*).³ Ships bound for this port have to travel 203 kms. upriver, negotiating several difficult bars and bends, to reach Calcutta Dock System (CDS) from the Sandheads. The ships also have to wait for a rise in tide to commence the onward journey to the port, and it thus takes about 30 hours for a ship to reach the CDS, including waiting time for the tide. The outward journey after loading/unloading takes about 40 hours. Minimum draft at the entrance channel of Calcutta Port is 6.7m. and the minimum width is 467m.⁴ The Port itself extends from its mouth near Budge Budge to Serampore, with jetties and warehouses to both sides of the river. Because of the riverine character, Calcutta is an expensive port. Its mouth is frequently silted-up, necessitating large dredging operations. The maximum size of vessels able to enter the river Hooghly is restricted by the existence of several bars and bends and by the available depth, which fluctuates daily. Only ships that are under 152.4m. in length and less than 21.3m. in beam are allowed under lock-entrance restrictions of CDS, and should be loading to a maximum draft about 7.9m. The CDS has two turning circles, with diameters of 549 m.⁵

Calcutta Port commands a vast hinterland of about 80,000 sq.km. comprising the states of West Bengal, Sikkim, Assam, Bihar, Orissa and parts of Uttar Pradesh and Madhya Pradesh in India, as also the neighbouring countries of Nepal and Bhutan. The region is inhabited by about 200 million people (1981 Census) and is rich in agricultural, mineral and industrial resources. It is also extensively served by a network of transport and communication.

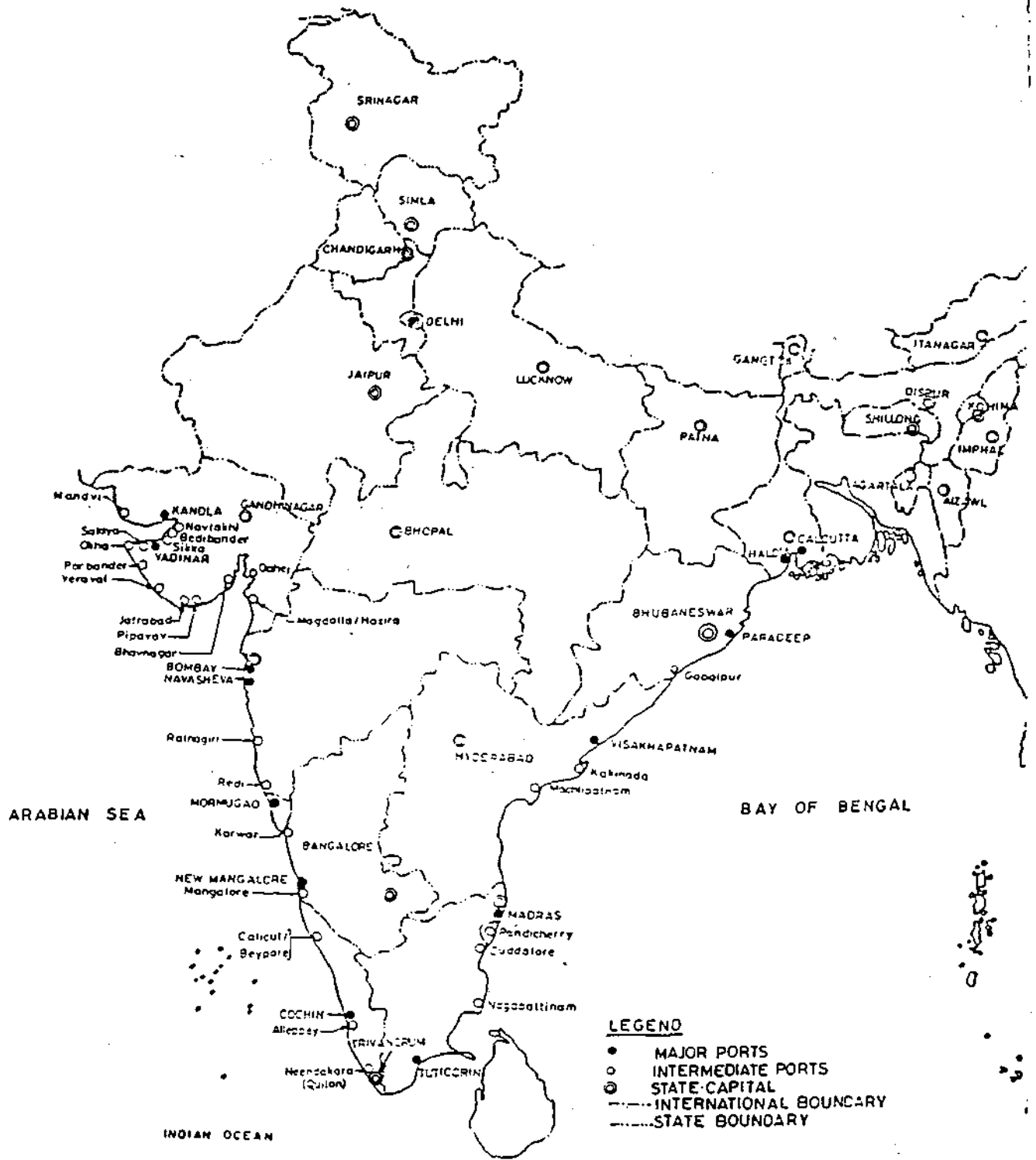
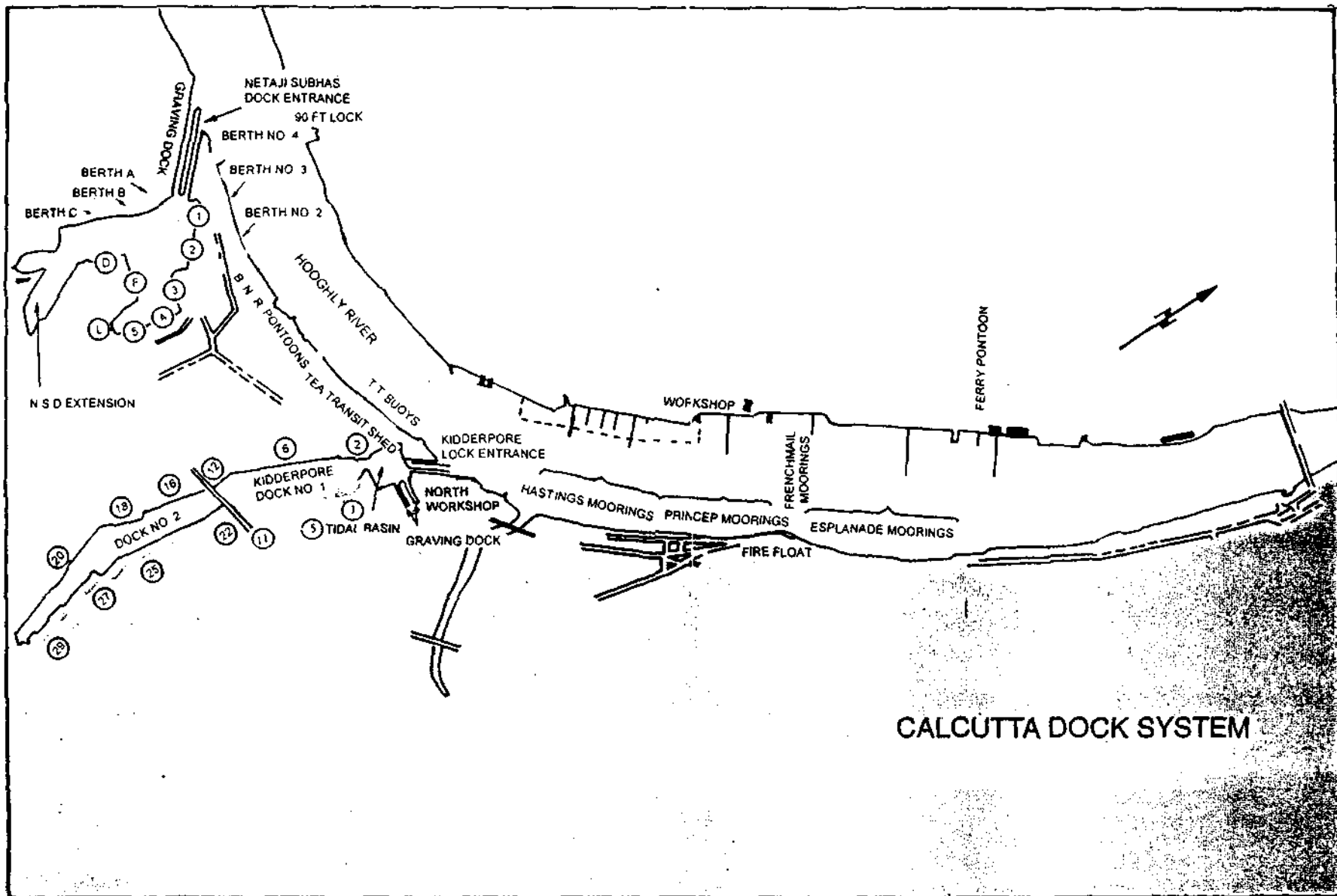


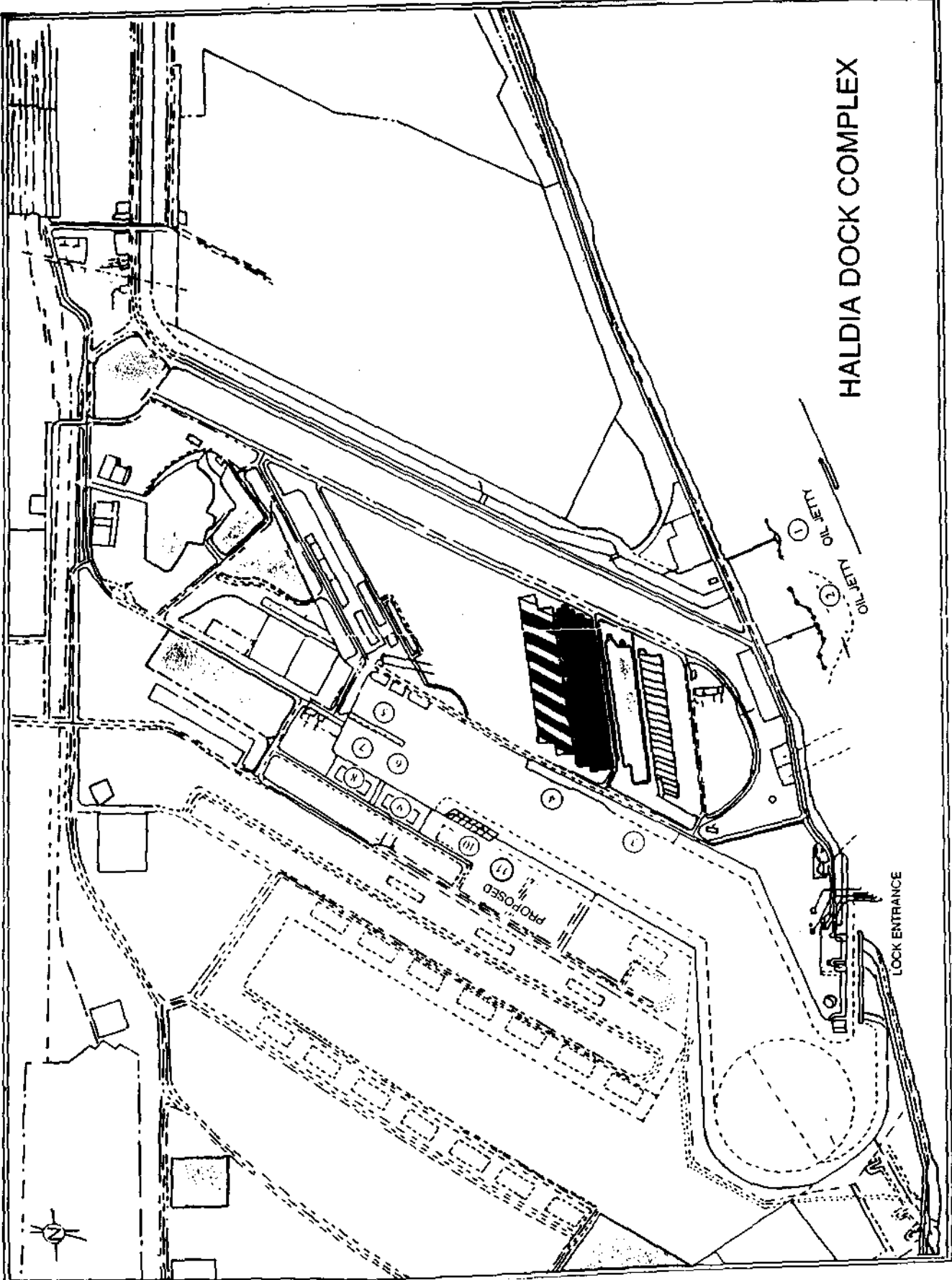
FIG. NO. 1

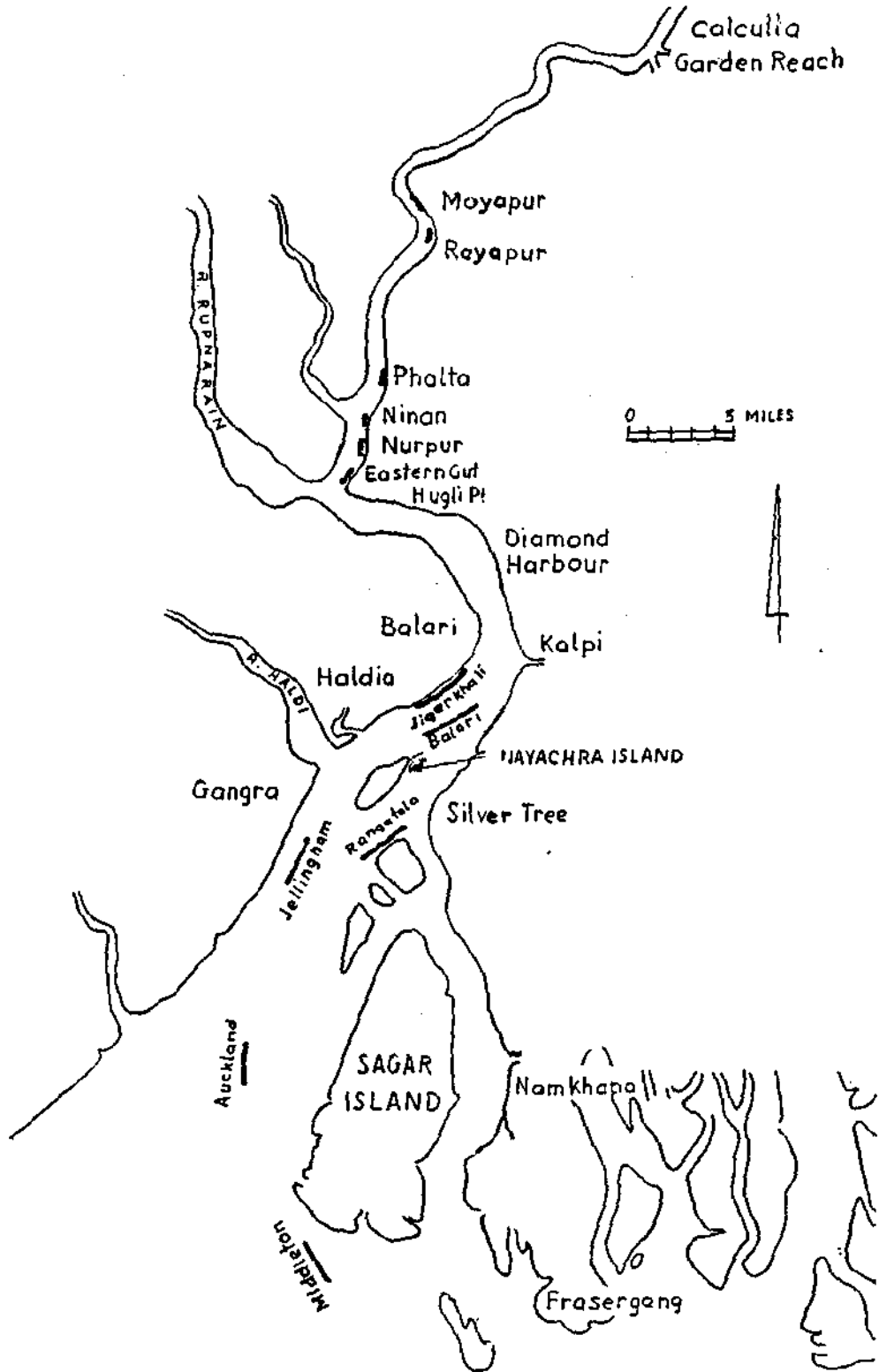


CALCUTTA DOCK SYSTEM

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HALDIA DOCK COMPLEX





In 1992-93, about 8 percent of total value of Indian exports and 14 percent of total value of imports pass through this port. The main items of export at the Port are tea, jute & gunnies, shellac, linseed, ores, hides, mica, sugar, iron scrap, finished steel, engineering goods and structurals. Principal items of import are salt, fertilisers, machinery, hardware, petroleum, cement, phosphates, edible oil and sundry other commodities. In 1992-93, the volume of imports stood at 3.68MT, against an export volume of 1.48MT. Of the import commodities, the principal item was petroleum oil & lubricants (POL), constituting about 46 percent of total imports. The nearest seaport to the port of Calcutta is Paradip, situated at a distance of 380kms. from Calcutta city along the east coast.

3.1.2 A Brief History of Calcutta Port

The history of the port dates back to the 14th century when the province of Bengal had many flourishing ports, most notable of which was Tamralipta, or modern-day Tamluk. The port of Saptagram or Satgaon (literally seven villages) began to flourish in this century. Much before the arrival of the British, Calcutta was a favourite anchorage for European traders. In the 16th century, the Portuguese felt the upriver journey to Satgaon to be unsafe for their ships and anchored them near the site of Calcutta, from where the cargoes were taken up the Hooghly by country-boat. Satgaon thus came to be superseded by the port of Hooghly and when the Nawab of Bengal captured the Portuguese fortress there in 1632, it became the Mughal headquarters.

Merchants had founded the village of Gobindapur and established a market at Sutanuti because silting of the Hooghly had made it difficult for larger vessels to sail upriver. On 24 August 1690, the English under Job Charnock anchored at this new site, but the decision to locate British trading headquarters there was not sudden. Charnock had lived at Cossimbazar, Hooghly, Patna, Balasore, Uluberia and Hijli too, but finally settled on the site that was later to become Calcutta for establishment of trading headquarters in 1690. Calcutta was preferred for various reasons. The river at the point where the Howrah Bridge (Rabindra Setu) now stands is at its narrowest, and was therefore most easily crossed. Of all upriver locations to which oceangoing vessels could proceed, Calcutta offered by far the best anchorage.

The first dry-dock was constructed at Bankshall Ghat in 1790. The Calcutta Port Commissioners came into existence on 12 August 1870, and the Calcutta Port Trust constituted in 1975.

3.1.3 Berthing Facilities at Calcutta Port

The CDS is constituted by two dock-systems and an oil-jetty. Kidderpore Dock has 19 cargo berths, including one berth with mechanical foodgrain-handling facilities that is linked to the grain silo of the Food Corporation of India (FCI). Of 9 other berths at Netaji Subhas Dock, two are exclusive to containers, one for liquid cargo, one with a 200T capacity crane for heavy-lift cargo and five others for general cargo. The Budge Budge petroleum wharves have five jetties, all for liquid cargo, with extensive tankage facilities.

Lowest berth occupancy over the composite Calcutta-Haldia Port was at the Budge Budge petroleum wharf (35 percent) and the highest (92 percent) at Berth 8 under HDC, which

handles coking coal and general cargo shipments at Haldia. Average berth occupancy at Kidderpore Dock was 59 percent, 69 percent at Netaji Subhas Dock, and 70 percent at HDC in 1990-91.⁶

3.1.4 Port Estates at Calcutta Port

The port at Calcutta has one of the largest estates among major ports in India. Land estates of CDS in Calcutta, Howrah and Budge Budge comprise 1347.03 hectares, out of which 1071.91 hectares lie in Kidderpore/Garden Reach area, 51.31 hectares alongside the Calcutta riverfront (including the Cossipore area), 83.71 hectares at Budge Budge and 140.09 hectares at Howrah. 97.56 hectares of the port estates are occupied by structures, including offices, staff-quarters, etc.(30.33 hectares), and sheds, godowns, warehouses, etc. (67.23 hectares). Approximately 626.28 hectares of port estates have been leased out for various industrial and commercial purposes, and 720.75 hectares are in the Port's direct use. Thus 46.9 percent of the CPT's metropolitan estates are under outside lease.⁷

The breakdown of the area under direct use of CDS is:

Docks, Canals & Submerged lands	242.32 ha. (33.6%)
Roads	80.02 ha. (11.1%)
Railways & Marshalling Yard	162.00 ha. (22.5%)
Open Land (Docks & Storeyards)	177.16 ha. (24.6%)
Total	661.50 hectares
Structures	59.25 ha. (8.2%)
Total	720.75 hectares (100%)

The breakdown of area leased out by CDS is :

	Land Area	Structures
i) Dock Area	466.26 ha.	31.19 ha.
ii) Howrah Area	61.16 ha.	5.18 ha.
iii) Calcutta Area	8.23 ha.	-
iv) Budge Budge Area	52.32 ha.	1.94 ha.
Total	587.97 ha.	38.31 ha.
Total Lands Leased-out 626.28 hectares		

Out of 626.28 hectares of estates leased-out, 250.58 hectares are covered by short-term lease and 279.88 hectares by long-term lease.

Considering the extent of its landholdings in metropolitan Calcutta, the Calcutta Port Trust is the single largest landowner in the city. In 1990 there were nearly a thousand

litigations relating to the Port's estates in the courts from lowest to highest level, that .⁸ Protection of land estates against encroachment and increase of rental incomes in a city where land-prices soar everyday requires constant vigilance and supervision. In consideration of this, the Calcutta Port Trust appointed two consultants in 1983, whose reports were submitted the same year. The consultancy report of H.K.Sen & Associates observes "permissible floor area ratio in Calcutta Port Trust properties is generally much higher than the present use. There is uneconomic utilisation of the valuable land. It is imperative, therefore, that the land owned by Calcutta Port Trust be put in phases to proper economic and social use over the next fifteen to twenty years".⁹ The second report of A.K.De & Associates observes "Port Trust lands have a bi-modal and tri-modal market. For example, Hide Road lands can be used for residential as well as office purposes. Thus there will always remain the obvious difficulty of defining and measuring what is the most valuable use of the Port Trust land".¹⁰

Financial particulars relating to CDS income from and expenditure on estates are summed up in the table below.

Table 3.1

Financial ParticularsonCDS Landed Estates

Items	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
Income from operations	92.30	91.07	115.64	125.52	133.24	125.85
Expenditure on operns.	88.93	91.50	101.14	106.76	113.88	114.15
Surplus on operations	3.37	-0.43	14.50	18.76	19.36	11.70
Net Surplus	-3.42	-22.51	1.27	2.56	2.19	1.85
Income from Estates	7.12	7.42	8.61	10.88	12.46	15.07
Expn. on Estates	1.53	1.61	1.65	1.83	2.24	2.61
Surplus from Estates	5.59	5.81	6.96	9.05	10.22	12.46
Income from Demurrage	NA	NA	32.61	36.12	42.83	34.17

Source : Calcutta Port Trust Administrative Reports and Annual Accounts for the above years

The credit for net surpluses since 1988-89 at CDS, which was in deficit before that year, has been the rising surplus from port operations and particularly from estates, as shown in the above table. Net surpluses at CDS in the table would have vanished in deficits, had it not been for continuously rising estate incomes and surpluses, which have helped CDS to maintain its net surplus position. Furthermore, the progressively improving financial performance of the port over the period indicated in the table is founded on the continuously rising trend of estate incomes and surpluses.

3.1.5 Dock Facilities under CDS

The port of Calcutta extends a comprehensive range of facilities such as modern computerised container terminals, mechanised dry, liquid and grain bulk-handling, and heavy-lift and break-bulk general cargo handling facilities with large storage infrastructure in its two dock systems at Calcutta and Haldia. The port of Calcutta handled 16MT of cargo in the year 1991-92, in which the contribution of CDS was 4.16MT and that of HDC was 11.84MT.¹¹

CDS comprises the two impounded dock systems of Kidderpore Dock and Netaji Subhas Dock, and a separate oil wharf at Budge Budge, 20 kms. downstream of Calcutta, and possesses usual equipment like shore cranes, mobile cranes, fork-lift trucks, tractor-trailer combinations and extensive warehousing facilities.

3.1.5(i) Kidderpore Dock (KPD)

Kidderpore Dock is divided into two sections: KPD-I and KPD-II, mainly due for operational and administrative reasons. KPD-I has 10 operational berths with single-storeyed transit sheds, and 38 shore cranes with capacities of 3T/5T for handling general cargo. There are 36790 sq.m. of covered storage area and 12310 sq.m. of open area for short-period as well as long-period storage. Of the 10 berths, one berth handles passenger ships to and from the Andaman Islands. KPD-I also has buoys to facilitate overside landing and shipment.

KPD-II consists of 8 berths for handling general import/export cargo. Of the 8 berths, one is a multipurpose berth equipped with bulk foodgrain handling directly into a grain silo which has storage capacity of 29000T. KPD-II also provides 4 buoys for overside handling, with another 4 lay-up berths for ship repairs, etc. Out of 8 berths, 5 berths have double-storeyed sheds without shore-crane facilities. The 3 other berths have 6 shore cranes of 2T capacity and 7 yard cranes with various capacities ranging from 5T to 30T for handling heavy lifts. There is total covered storage area of 51478 sq.m. and open area of 20549 sq.m. at KPD-II. This dock section also has a railway service facility for goods loading to and from the docks.

3.1.5(ii) Netaji Subhas Dock (NSD)

Netaji Subhas Dock comprises 9 operational berths, of which 6 berths are presently earmarked for handling general cargo, 2 berths for container shipments and 1 berth for POL products. Out of 6 general cargo berths, one is a specialised heavy lift berth served by a 200T cantilever crane which is the highest capacity shore-based crane installed in India. This is supported by 3 self-propelled floating cranes of various capacities ranging from 30T to 60T. Only one of the berths has lower-rated facilities of 5 shore cranes of 3T capacity, supported by 3 yard cranes of 3T capacity. 3 berths at NSD are three-storeyed and two are double-storeyed with total covered area of 60599 sq.m. and open area of 14838 sq.m. available for general cargo storage.¹²

3.1.6 Dry-docking Facilities at Calcutta Port

The Port provides adequate facilities for repairs of merchant vessels. At present, there are 5 dry-docks (2 at NSD and 3 at KPD), and 3 lay-up berths (2 at KPD and 1 at NSD). These dry-docks are capable of executing all major surveys and under-repairs. At the NSD dry-docks, a 25T travelling electric crane is available to the south side. The dry-docks are also

served to north and south by one 3T and 6T diesel electric crane apiece, and to the north by one 3T electric crane. A 5T Wieman Electric crane is also available at the KPD dry-docks. For propeller or other heavy-lift work, various floating cranes can be provided by the Port Trust on demand.¹³

3.1.7 Other Port Facilities

During the fair season (October to March) deep drafted vessels, primarily with bulk cargo, are handled at the Sagar anchorage in the estuary, around 145 kms. downstream of Calcutta. Cargoes, after discharge, are then brought to Calcutta by barge.

For maintenance of the long navigational channel in a river as capricious as the Hooghly, Calcutta Port owns a varied fleet of 72 vessels and river-craft, in addition to the normal craft requirements of a port. The average age of this vessel fleet is 22 years, and over the next fifteen years at least 37 vessels and craft would have to be replaced.¹⁴

The Calcutta Port Trust provides terminal railway facilities at Calcutta and Haldia to cater to the needs of both import and export cargo. Facilities include railway track, locomotives, staff and so on. In addition to carriage of seaborne cargo, the CPT Railway also serves a number of industrial and commercial sidings including the oil refinery and fertiliser plant at Haldia, and the FCI godowns and stock-yards of the Steel Authority of India (SAIL) at Calcutta.

3.1.8 Transportation Linkages

Calcutta is linked to the network of National Highways running through its vast hinterlands and connecting the states of West Bengal, Bihar, Orissa, Assam, Uttar Pradesh, Madhya Pradesh and the neighbouring countries of Nepal and Bhutan. The city of Calcutta directly connects to NH 2, 6, 34, 35 and 41.

The port has its own railway system with track-length of 350 kms. and route length of 36 kms.¹⁵ Rolling-stock at the CPT railway comprises 49 locomotives with varying haulage capacities ranging from 750T to 1800T, and over 400 open, covered and tank wagons. A loco crane of 60T capacity and a fully- equipped tool van keep the railway in good trim. The port railway functions as terminal agent to Eastern Railways (ER) and South-Eastern Railways (SER), under Indian Railways, affording direct receipt and despatch facilities to cargoes originating or bound for any part of the country. Calcutta Port is also accessible from insular points in the hinterland through inland water transport.

Calcutta is the largest terminal port in South Asia, and thus commands a large and resource-rich hinterland, well-connected to the Port by railways, roads, waterways and airways. ER and SER connect to the North-Eastern Railways section, and the city is also connected to the Grand Trunk Road and the old Jessore Road. Major inland waterways along the Ganga and the Hooghly, and the Damodar Canal system also link the hinterland with the Port.

3.2 The Haldia Dock Complex

3.2.1 Location

The Haldia Dock Complex occupies the right bank of the river Haldi, half-way between Calcutta and the Sandheads i.e. 104 km. downriver from Calcutta, and is located at latitude 22°12"N and longitude 80°6"E. Ships journeying to the port have to wait for a rise in tide and take about 11 hours to reach HDC from open sea. The outward journey takes about 19 hours. HDC can accept vessels upto a length of 201.2m. compared to 152.4m. at CDS. The maximum loaded draft for HDC is limited to 13.7m. against 7.9m. for CDS. Maximum depth of the entrance channel of HDC is 6.7m. and the minimum width is 467m.

Ore-loading capacity at HDC can go up to 6000T per hour, and 40 thousand tonnes of loading take just 8 hours to complete, compared to the earlier 4-6 days at Calcutta Port. Roughly, the loading time for 3 thousand tonnes is one hour at Haldia, against one day at CDS. HDC has one of the largest lock entrances in the world with an overall length of about 325 m. and width of 42m. The initial draft of nearly 10m. has now been improved to 13m. and the port can safely accommodate ships of 80000DWT and more.

The 5 bars between Haldia and the sea are Jellingham, Rangafala, Auckland, Middleton and Gasper. Auckland bar is the governing bar for HDC most of the time, and is kept under maximum dredging around the year.

Calcutta-Haldia Port is an import-based port. In 1992-93 the volume of imports was 9.24MT against export volume of 3.94MT. The principal imports from the port are POL which comprise about 68 percent of all imports from this port, Coking coal (23 percent) is another principal import. Principal items of exports are thermal coal (75 percent), and various quantities of iron and steel, tea, jute products, etc.

3.2.2 History of HDC

The question of setting up another port subsidiary to Calcutta Port had arisen from time to time over the past century, because the port at Calcutta had been constantly plagued with the problem of bars, bends and bores. Five possible sites were considered, namely Geonkhali, Haldia, Kankhali, Dariapur and Jenson Road. Of them, Geonkhali, 60km. south from Calcutta, was a serious contender. It had year-round draft 7.9m. and could allow entrance to large-sized vessels, longer than the maximum of 161.54m. allowed at CDS. It however suffered the serious constraint of being situated north of Balari, which would prove a serious handicap for the passage of large ships. Finally Haldia, 104km. from Calcutta and nearer the sea, which did not suffer from these constraints was selected. It lay on the western bank of the river, and thus would provide easy railway and road connections without intervention of the river. Besides, major portions of the port hinterland were major mining centres for coal and ore, including iron and manganese, for which there were lucrative export markets. A modern port was thus justified, as an outlet providing facilities to large ore carriers.

The Haldia Project Report was prepared by the Port consultant, Rendell Palmer Tritton (RPT) of the U.K. in 1959.¹⁶ Haldia offered a minimum draft of 9.14m. on all days, 9.75m. over 238 days and 10.67m. for 39 days in a year. The navigational channel from the

Sandheads to Haldia was straight and hence, unlike Calcutta, Haldia could take vessels of any length and beam. The outline for the Haldia project was cleared by international experts; these included Posthuma DG of Rotterdam Port; the Dutch hydraulic expert Jansen, and experts from the London Port. The project team felt that "new port facilities at Haldia should be considered as an integral part of the Calcutta Port along with its older facilities, such as the Calcutta Jetties, Kidderpore Docks, King George's Docks (later renamed Netaji Subhas Dock), and the Budge Budge oil jetties for the purpose of financial assessment of the port as a whole". It was anticipated that industries, a fishing harbour, a free trade zone, etc. would develop at Haldia making it an urban centre strong enough to act as a countermagnet to Calcutta, which would attract the migrant rural population in eastern India coming in search of employment.¹⁷

Work on the Haldia project started during the 3rd Five-Year Plan. Construction of the main dock commenced in 1968. In the meantime, the oil jetty had already been constructed and was commissioned in August 1968. By 1976, civil works on the berths were complete and the dock was commissioned in February 1977, utilising mostly indigenous knowhow with very little foreign assistance. This was, as such, a pioneering effort as most of the equipment had been manufactured for the first time in the country. Haldia might therefore be considered a landmark in the history of port development in India.

On account of perennial navigational problems faced by Calcutta Port, the HDC has steadily grown in importance. Over the past few years traffic at CDS has been sluggish while that at Haldia has been picking up. In 1980-81, Calcutta Port handled a shipment-volume of 4.06MT while Haldia handled 5.45MT. In 1990-91 i.e. after one decade, Calcutta Port handled 4.13MT traffic, barely higher than traffic handled in 1980-81. Haldia in the same year handled traffic of 5.66MT more than in 1980-81, with total handling in 1990-91 being 11.11MT. Considering these trends, it would appear that over time to come Haldia would supplant Calcutta as a port, and there is therefore greater emphasis on the provision of infrastructure and other facilities at Haldia.

3.2.3 Berthing Facilities at HDC

There are two oil jetties on the river at HDC, the second of which was commissioned as late as July, 1991. Two mechanised berths handle coal meant for exports, and one of these also handles POL products to the account of Indianoil Corporation. Another mechanised berth built to handle fertiliser imports and its raw materials now also handles coking coal. General cargo is catered to by a finger-jetty with two berthing faces and two general cargo berths. While one general cargo berth mostly handles coking coal, the other has modern container-handling facilities. An additional general cargo berth has been sanctioned on which construction is nearly complete, and it will be ready for operations shortly. The HDC as such handles very little general cargo. Out of 11.84MT handled in 1991-92, general cargo constituted only 27000T or 0.23 percent. Highest berth occupancy at HDC was at one of the berths handling coking coal and general cargo (92 percent), and average berth occupancy was 70 percent in 1990-91.

3.2.4 Port Estates of HDC

Like the CDS in Calcutta, the Haldia Dock Complex is the single-largest landowning authority at Haldia. In 1960 the Calcutta Port Trust had acquired 3049.25 hectares of land spread over 37.5 sq.kms. at Haldia in order to set up the HDC. In order to facilitate techno-economic growth of the port-city of Haldia and overall infrastructural development of the area, and in order to attract port-based industries and business enterprise, the CPT transferred 359.64 hectares of land to the State Government and to government agencies. 2689.2 hectares of land are therefore at present with the HDC, the breakdown of which is given below:

Area retained for HDC use	887.36 ha.	(33.00%)
Leased land area	804.29 ha.	(29.91%)
Area Licenced 24.70 ha.	(0.92%)	
Vacant area reserved for future use of CPT	600.21ha.	(22.32%)
Allotable land presently vacant	372.64ha.	(13.85%)
Total	2689.20 hectares	(100.0%)

The percentage analysis indicates that a large part of HDC's land estates (over 22%) are reserved for the future use of the Calcutta Port Trust, and that in addition, over 13 percent of allotable land is presently vacant.¹⁸

The CPT has been constrained to move bulk cargo handling activities downstream to the Haldia Dock Complex because of restrictions imposed on ship size by limited draft, and bends and bars on the river Hooghly. As these bulk cargoes are basically industrial raw materials, land in the vicinity of the HDC has been used for promoting port-based industries. Overwhelming pressure of the kind that a metropolitan city like Calcutta places on port land also does not exist at Haldia. As a result, demand for HDC land is not very great. Such factors have led the CPT to adopt a different approach towards commercial exploitation of its landed estates at Haldia. Unlike in Calcutta, instead of encouraging various non-port users also to lease port land, the HDC has been allotting land on liberal terms to port-based industries to generate traffic for the dock complex and to boost operational revenues for the Calcutta-Haldia Port as a whole. Therefore, while the bulk of CDS leased-lands are on short-term leases of CDS lands, a major part of HDC land has been allotted on long-term leases to port-based industries. The major lessees at Haldia include Indianoil Corporation, Hindustan Fertiliser Corporation, Shaw Wallace, Hindustan Lever, etc. representing both public and private sectors. Certain State Government agencies, in addition, namely West Bengal Industrial Development Corporation and WBIIDC have also taken up land at Haldia for establishing industries.

Of the total income of HDC, the share of income from estates is modest, unlike at CDS. This is understandable in view of the need for HDC to charge lower lease-rentals as a means of attracting port-based users to Haldia, which is situated in a relatively obscure area. Hence the estates of HDC can in no way be looked upon as a primary source of revenue generation as has been the case for CDS.

The financial position of HDC during recent years is given below.

Table 3.9
Financial Results of the Haldia Dock Complex

	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
	(Rs. crores)					
Income	65.17	69.34	99.92	110.64	123.70	148.42
Expenditure	50.35	59.88	51.51	64.74	76.38	105.49
Net Surplus	14.82	9.46	38.41	45.90	47.32	42.93
Income on Estates	1.56	1.59	2.32	2.62	3.47	4.40
Expenditure on Estates	2.75	2.82	2.92	3.57	3.98	5.18
Surplus/Deficit from Estates	-1.19	-1.23	-0.60	-0.95	-0.51	-0.78

Source:- Calcutta Port Trust Administrative Reports and Annual Accounts for the above years.

Table 3.9 shows a different picture from Table 3.1 for CDS. Of the total income of HDC, the contribution from estate rentals is modest, unlike CDS. The analysis for CDS indicated the high contributions of CDS estate-rentals towards its surplus balance. In case of HDC, estate rental incomes consistently fall behind expenditures on port estates, resulting invariably in a deficit on estates. It is to be remembered that HDC has to charge lower rentals as a means of attracting port-based users to HDC, which is situated in a non-metropolitan and relatively obscure area. Hence, estates at HDC cannot be looked upon as a primary source for generating revenues, unlike in the CDS.

3.2.5 Port Facilities at HDC

The Haldia Dock Complex comprises 9 berths, of which 2 are riverine oil jetties/berths and 7 are located in the impounded dock. The two riverine berths handle petroleum crude and POL products. Three others, presently, are coal handling berths with fully mechanised handling facilities for loading thermal coal and unloading coking coal. Another two are in fact finger jetties with no shore-based equipment and handle both dry and liquid bulk cargo. One more berth handles coal by semi-mechanised means, and the last is a multipurpose berth with a container crane to handle containers and has no other shore crane. However it also handles break bulk cargo, using ship gear. Construction of Berth 10 is nearly complete and the berth will be ready for operation shortly. HDC handles a very small quantity of general cargo. Out of 11.84MT handled in 1991-92, general cargo constituted only 27000T. The main general cargoes in break bulk form are scrap, bag-fertiliser, cases/pallets, tea, bag-mica, cases of machinery etc. The general cargo berth has total covered storage capacity of 9300 sq.m. and an open area of 13000 sq.m.¹⁹

3.3 CDS & HDC: Common Features

Viewing CDS and HDC in a unified perspective, now, an examination is made of how they constitute part of that same riverine port system, governed by the common administration of the Calcutta Port Trust. The reason for this is, of course, that the Port of Haldia has come into being to supplement the operations of the CDS which are limited by its upriver character. HDC is thus not a competitor to CDS, but is more of an adjunct.

3.3.1 Port Hinterland

The 80000 sq.km. hinterland of the Port has vast agricultural, mineral and industrial resources.²⁰ The region served by the port has the richest coal, ore and mineral deposits in India and a dominant part of India's tea and jute industry. Four steel plants belonging to both private and public sectors and various other large industrial units are also situated there.²¹

This hinterland has undergone vast transformation since Calcutta Port was founded. The hinterland of the pre-industrial port supplied commodities like saltpetre and handicrafts like cotton piecegoods and silk manufactures, which saw large-scale shipment from Calcutta. After the coming of the mechanical age in Europe, manufactured goods from Europe were commercially distributed over North India from Calcutta. Calcutta's hinterland during this phase was reduced to a raw-material hinterland, supplying the industrial countries of the world with commodities like indigo. In course of time the growing cultivation of cash crops like opium, jute - well-known as the 'golden fibre', and tea added new importance to Calcutta's hinterland. Gradual industrialisation of the region and the introduction of steam navigation and railways in the 19th century changed the face of the hinterland region. The jute textile industry - India's second most important industry, coming next only to cotton - was located in this area. Discovery of coal in Bengal and subsequent development of the coal industry added another new dimension to Calcutta and its hinterland. Other minerals like manganese and iron ore were also exported through this port. The establishment of the Tata Steel Plant in 1909 at Sakchi, Jamshedpur, 243kms. west of Calcutta, added a new chapter to India's industrialisation. Jamshedpur has been described as the hub of a great wheel, with one of its spokes pointing to the great port and market of Calcutta.²² Establishment of the Indian Iron and Steel Company near Barakar in Bengal in 1918 was another landmark in the history of the iron and steel industry in India.

Partition of India in 1947 resulted in the loss of a significant part of Calcutta's hinterland, comprising mostly the jute-growing districts of East Bengal that now form Bangladesh. Even so, Calcutta was still left the vast hinterland which covers the Indian states of West Bengal, Assam, Bihar, Orissa, Uttar Pradesh, Madhya Pradesh, Sikkim and the independent countries of Nepal and Bhutan.²³

3.3.2 Navigational Problems at Calcutta-Haldia Port

The port of Calcutta has been perennially plagued with problems of navigation. Bars and bends in the Hooghly river, subject to sudden fluctuations in depth and alignment of channels, call for constant dredging. Although the channel is well demarcated with various navigational aids, oceangoing ships encounter difficulty in negotiating these. The CPT surveys

and charts the river continuously, and broadcasts depths over the bars to shipping companies. Pilotage of ships on the river is compulsory. Drafts are allotted to shipping on the basis of depths available over different bars and the tidal rise, which varies from season to season and between days over the same season. Anchorages available on the Hooghly are used by ships in passage to and from the port.

Bars occur because of silt deposits in certain sections of the river. The curves of the river, bathymetric conditions and attendant factors decide the location, nature and extent of the bars. There are 17 bars in the Hooghly between Calcutta and the Sandheads. The upper reach of the river from Calcutta to Diamond Harbour has 12 of these, while there are 5 others between Haldia and the sea. These are listed below, along with distances from the Calcutta Docks.²⁴

Bars on the Hooghly between Calcutta and Haldia

Outram Esplanade and Hastings (0.5)
 Panchpara (8)
 Sankrail (10.5)
 Munikhali (14.5)
 Pirserang (17)
 Poojali (27)
 Mayapur (35)
 Rayapur (41)
 Ninan Nurpur (58)
 Eastern Ghat (63)
 Kukrahati (72)
 Balari (88)

Bars on the Hooghly between Haldia and the Sandheads

Jellingham (108)
 Rangafala (115)
 Auckland (130)
 Middleton (158)
 Gasper (172)
 (*kms. ex-Calcutta)

For any river-port, the bar with shallowest depth of water which poses the greatest constraint to port-access is called the governing bar. For the port of Haldia, the Auckland bar is the governing bar most of the time, and has therefore to be kept under maximum dredging around the year. The governing bar for Calcutta, between Haldia and Calcutta Port, was for the Balari bar. This has now totally silted up, and shipping thus passes through the alternate Rangafala channel. The governing bar for Calcutta has thus shifted and now alternates with high frequency between the three bars of Mayapur, Rayapur and Ninan Nurpur, for which reason these three bars too are now kept under intensive dredging.

3.3.3 Dredging Requirements

Annual dredging requirements for the port have been assessed at 22 mcm. with the following bar-wise requirement:²⁵

- Upper Reach (1)
- Rangafala or Balari (4)
- Jellingham (7)
- Auckland (7)
- Middleton (2)
- Gasper (1)
- (*in MCM.)

The CPT possesses 3 suction dredgers, called the Mahaganga (hopper capacity 2860cum.), Churni (1700cum.) and Subarnarekha (1274 cum.), and in addition has one bucket dredger, and two grab dredgers (850 cum. each). The dredging capacity of the Port's fleet of dredgers adds up to 3.35mcm. (estuarine) and 1.31mcm. (riverine and dock), or to a total of 4.66mcm.²⁶

Emergency dredging is arranged through the Dredging Corporation of India (DCI) when its very large cutter suction dredger has been available. Dredging in the upper riverine reaches and to some extent in the estuary is executed by Port dredgers, although the bulk of estuarine dredging is done by DCI dredgers engaged by the Port on annual contract. These DCI dredgers are deployed round the year in the estuary. Of these, two are new and sophisticated dredgers which have been procured by DCI from Netherlands. The annual dredging capacity of the 3 DCI dredgers on the basis of 220 days annual working, is 15 mcm.

Dredging work executed by CPT and DCI dredgers over recent years is indicated in the table below.

Table 3.3
Dredging Work at Calcutta Port
(in million cum.)

Year	CPT	DCI	Total
1984-85	10.87	3.64	14.51
1985-86	6.67	5.87	12.54
1986-87	5.70	6.28	11.98
1987-88	1.80	7.48	9.22
1988-89	3.80	6.68	10.48
1989-90	2.23	7.83	10.06
1990-91	2.01	10.21	12.22
1991-92	2.49	15.80	18.29

Source: Administration Reports and Annual Accounts of Calcutta Port Trust.

It can be seen from the table that dredging volume hovers around the 11 cum. mark in most years, and is exceeded in flood-years. The low figure for 1987-88 originates from the widespread drought conditions that afflicted most of India that year. Another point indicated by the table is that dependence on the DCI for dredging work has gradually increased, and the CPT's own dredging capacity and dredging fleet has remained static. Total cost of dredging at Calcutta Port in 1984-85 was Rs.10 crores which had increased to Rs.43 crores by 1991-92. With the same reference period, unit cost per cum. of dredging was initially Rs.6 for CPT and Rs.9 for DCI, but by 1991-92 this had increased to a uniform Rs.25 for both CPT and DCI.²⁷

The Union Government subsidises 90 percent of dredging costs incurred by the Port.²⁸ The contention exists that the Union Government should bear the entire dredging cost on a national waterway which is used not only by the Port but by others as well. It may not seem entirely fair to ask Calcutta Port to bear the cost of regular dredging over a 200 km. stretch of the river. The Port's present financial situation also does not really warrant that such expenditure be met from internal funds.

3.3.4 Upriver Pilotage Requirements

In pilotage terms, Calcutta Port presents unique features, since it has the longest pilotage distance for any major port.²⁹ All vessels bound for the port report at the Sandheads in Bay of Bengal where the navigation channel to the port commences. These vessels have to negotiate the bars on the Hooghly and move zigzag to the anchorages, river jetties and docks of the port located at different points along the river. Sagar anchorage, the first of these, is 87km. north of the Sandheads. Ships here can be worked simultaneously, but each one has to have a pilot on board at all times for safety and emergency navigation of the ship. It takes 4 hours for a ship to reach Sagar from the Sandheads. From Sagar, the Haldia facilities are 45km. upriver. This distance is traversed in 6 hours from the Sandheads. If Balari bar is not closed to operations, ships move alongside of Haldia and proceed to Budge Budge or Garden Reach (Calcutta). The distance from Haldia to Budge Budge is 80 km. and to Calcutta (Garden Reach) 104km. If Balari is closed, as has been the case over the last five years, a ship to Calcutta from Sagar travels via the Rangafala channel, bypassing Haldia and Balari. The distance to be covered from the Sandheads to Calcutta is therefore 221km., and 236km. if the traverse is via Balari. Ships can cross the bars only when river level rises with the rise of tide. The governing bar can only be crossed at high-water time.

For a journey from the Sandheads to Haldia a ship has to negotiate three bars, namely Jellingham, Auckland and Middleton. Generally, Auckland is the governing bar for Haldia. The ships cross this bar on high water and timings are adjusted accordingly so that, over every 24 hours, ships can reach or leave Haldia on the two high tide periods.

The governing bar for Calcutta or Budge Budge is usually Balari which has to be crossed with rise of tide. When Balari is closed, Rangafala becomes the governing bar. A ship takes 10 to 12 hours to reach Garden Reach from the Sandheads. At Garden Reach, just near the Netaji Subhas Dock, the river pilot hands the ship over to the harbour pilot who brings her to the lock from where the berthing master takes over. For journeys upriver from the Sandheads to Calcutta, a ship can take advantage of one high tide and thus does not have to halt anywhere in the river for lack of draft.

But the downriver journey is a different story. Depending on draft, speed, etc., ships going from Calcutta to the Sandheads are placed in the two categories of tide-time ships and 'Uluberia' ships. Tide-time ships cross the upper reaches of the Hooghly from Garden Reach to Poojali/Mayapur on the ebb tide and then meet the rise of tide on flood to cross the bars at the Hooghly point area. If drafts permit, they cross Balari/Rangafala on the same high tide and proceed straight to the Sandheads. Ships of deeper draft wait at the anchorages at Diamond Harbour/Kulpi/Mud Point and then cross Balari/Rangafala on the next high tide at night. A deep-drafted ship has therefore to halt a number of times between Calcutta and the Sandheads. Such vessels take between 40 to 50 hours to reach the Sandheads from the berths at CDS. Thus pilotage up and down the river becomes a difficult and time-consuming process. Tides play the most crucial role in pilotage to the port, the rise of tide in the Hooghly river varying from 4.2m. at neap tide to 6.5m. during spring tide.

Calcutta Port has two large oceangoing pilot vessels, one of which by turn cruises in the area of the Sandheads. Pilots disembarking from outgoing vessels make overnight halts on the pilot vessels if necessary, till they can embark on incoming ships and provide pilotage to the port.

Several lighthouses, light vessels, lighted and unlighted buoys, track marks and onshore towers guide the pilots. 64 lighted buoys mark navigational tracks between the Sandheads and Diamond Harbour, and 18 others between Uluberia and Calcutta. In between, there are 60 unlighted buoys.

Drafts at Calcutta and Haldia Ports have improved, as would be evident from the figures in the table below.

Table 3.4
Drafts at Calcutta-Haldia Port

Year	Port	(days per year)			
		7m.+	8m.+	8.5m.+	9m.+
1986-87	CDS	50	NIL	NIL	NIL
	HDC	366	100	3	NIL
1988-89	CDS	193	51	NIL	NIL
	HDC	365	242	136	36
1989-90	CDS	235	41	NIL	NIL
	HDC	365	320	178	37
1990-91	CDS	195	38	NIL	NIL
	HDC	365	350	236	112
1991-92	CDS	262	48	NIL	NIL
	HDC	365	353	271	120

Source:

1. Ray, Animesh; *Maritime India: Ports and Shipping*; Pearl Publishers, Calcutta; 1993; p.186
2. *Hooghly River Tide Tables*; Survey of India and Marine Deptt. CPT, for different years upto 1992

Thus CDS can berth vessels with draft of 7m. through 70 percent of the year. The same position applies to vessels of upto with 8.5m. draft at Haldia. Shipping companies are however yet to take full advantage of these increasing drafts, particularly at CDS, although with intensive dredging and comprehensive river training works, the draft is likely to improve further within the next few years.

3.4 Traffic Trends at Calcutta-Haldia Port

In 1870-71, which was the first operational year after Calcutta Port came into existence, port traffic was 3.27MT comprising imports of 1.47MT and exports of 1.80MT. Calcutta was and continued to be the biggest port of the country for decades after. The 10 million tonne mark was crossed in 1912-13 with cargo volume of 10.10MT, and the 11 million tonne mark in 1928-29 with 11.01MT of cargo. Lowest traffic was during the Second World War, when in 1942-43, cargo traffic came down to 3.68MT.

In 1947-48, the year India achieved independence, Calcutta handled a cargo volume of 7.06MT (38 percent) as against 18.35MT for the country as a whole. Bombay Port was next with cargo volume of 5.35MT (29 percent). This premier position was retained by Calcutta Port till 1954-55, when out of total 21.78MT, for the country, Calcutta handled 7.94MT (36 percent) and Bombay 7.71 MT (35 percent) of total cargo traffic. In the very next year however i.e. 1955-56, Calcutta's traffic was 8.16 MT against Bombay's 10.45 MT.

The volume of total traffic handled at the port since 1951-52 is given in Table 3.5. The table also shows percentage changes in the total tonnage handled, over the previous year. It is seen that traffic volumes have fluctuated, with alternate increases and decreases. Over the First Five-Year Plan period, commencing from the second year of the Plan, total volume of traffic decreased from 9.44 MT in 1951-52 to 8.01 MT in 1955-56 thus registering a fall of 15.15 percent. Over the Second Plan Period (1956-61) there was an increase of 7.56 percent in total volume of traffic from 8.73 MT in 1956-57 to 9.39 MT in 1960-61, but traffic was still down 0.53 percent over the high figure of 1951-52. Comparing the total volume of traffic over three decades, i.e. between 1951-52 and 1980-81, it is seen that there was almost no improvement in total cargo volume handled over this period. Traffic was 9.44 MT and 9.51 MT in 1951-52 and 1980-81, respectively. After this however, total volume of cargo handled began to increase, and over the twelve years from 1980-81 to 1992-93, Calcutta Port achieved a doubling in traffic. Total volume of traffic in 1980-81 was 9.51 MT but shot up to 18.34 MT by 1992-93. This was primarily because of the development of Haldia Port activities, and because of increase in imports of POL and coking coal and in exports of thermal coal to the state of Tamilnadu through Haldia Port.

Table 3.6 gives a breakup between CDS and HDC of total cargo handled since the commissioning of HDC. This reveals that out of total cargo volume handled, the major share derives from HDC. Out of total traffic of 9.51 MT in 1980-81, the share of HDC was 5.45 MT, or 34 percent higher than the traffic of 4.06MT at CDS. This percentage figure rose to 155 percent in 1992-93 when total traffic at CDS was 5.16 MT and was 13.18 MT at HDC. It is also seen that after the commissioning of HDC, the volume of traffic at CDS has in general either declined, or improved only marginally in subsequent years. In 1979-80, CDS traffic stood at 3.84 MT and was 5.16 MT in 1992-93. The major share of traffic was being handled at HDC.

Table 3.5

Traffic Handled at 'Calcutta-Haldia Port' during 1951-52 to 1992-93.

(million tonnes).

Year Cargo)	Imports year	Exports transshipment	Total(inc. over the previous	% change in total
1951-52	4.15	5.29	9.44	00.00
1952-53	3.37	6.19	9.56	1.27
1953-54	2.77	5.23	8.00	-16.32
1954-55	3.29	4.48	7.77	-2.87
1955-56	3.46	4.55	8.01	3.09
1956-57	4.42	4.31	8.73	8.99
1957-58	5.60	4.53	10.13	16.04
1958-59	5.15	4.07	9.22	-8.99
1959-60	5.03	4.64	9.67	4.88
1960-61	5.49	3.90	9.39	-2.90
1961-62	4.88	4.31	9.19	-2.13
1962-63	5.48	4.61	10.09	9.79
1963-64	6.03	4.77	10.80	7.04
1964-65	6.08	4.85	10.93	1.20
1965-66	5.28	4.44	9.72	-11.07
1966-67	5.79	4.18	9.97	2.57
1967-68	4.88	4.00	8.88	-10.93
1968-69	4.00	3.86	7.86	-11.23
1969-70	3.40	3.42	6.82	-13.23
1970-71	3.25	2.72	5.97	-12.46
1971-72	4.75	2.54	7.29	22.11
1972-73	4.15	2.47	6.62	-9.19
1973-74	3.89	2.40	6.29	-4.98
1974-75	5.08	2.42	7.50	19.24
1975-76	4.48	3.18	7.66	2.13
1976-77	4.86	3.14	8.00	4.44
1977-78	3.97	3.58	7.55	-5.62
1978-79	5.27	2.71	7.98	5.70
1979-80	6.12	2.67	8.79	10.15
1980-81	7.10	2.41	9.51	8.19
1981-82	6.82	3.11	9.93	4.42
1982-83	7.08	3.61	10.69	7.65
1983-84	6.94	3.53	10.47	-2.06
1984-85	7.07	3.45	10.52	0.48
1985-86	8.52	3.61	12.13	15.30
1986-87	8.19	3.88	12.07	-0.49
1987-88	8.84	4.23	13.07	8.28
1988-89	9.70	4.53	14.23	8.87
1989-90	9.76	4.93	14.69	3.23
1990-91	10.61	4.63	15.24	3.74
1991-92	11.25	4.75	16.00	4.99
1992-93	12.92	5.42	18.34	14.62

Sources: 1. Administration Reports and Annual Accounts of Calcutta-Haldia Port of various years
2. Basic Port Statistics of India of various years

Table 3.6
Traffic Handled by Calcutta and Haldia Ports during 1979-80 to 1992-93

(million tonnes).

Year	Calcutta Port				Haldia Port			
	Imports	Exports	Total	%change over prev. Yr.	Imports	Exports	Total	%change over prev. yr.
1979-80	2.23	1.61	3.84		3.89	1.06	4.95	
1980-81	2.65	1.41	4.06	5.73	4.45	1.00	5.45	10.10
1981-82	2.88	1.57	4.45	9.61	3.94	1.54	5.48	0.55
1982-83	3.14	1.43	4.57	2.70	3.94	2.18	6.12	11.68
1983-84	2.95	1.14	4.09	-10.50	3.99	2.39	6.38	4.25
1984-85	2.82	1.17	3.99	-2.44	4.25	2.29	6.54	2.51
1985-86	3.16	1.00	4.16	4.26	5.36	2.60	7.96	21.71
1986-87	2.98	1.07	4.05	-2.64	5.21	2.81	8.02	0.75
1987-88	3.51	0.88	4.39	8.39	5.32	3.36	8.68	8.23
1988-89	3.40	0.94	4.34	-1.14	6.29	3.59	9.88	13.82
1989-90	3.39	0.95	4.34	0.00	6.37	3.98	10.35	4.76
1990-91	3.16	0.96	4.12	-5.07	7.44	3.67	11.11	7.34
1991-92	2.93	1.22	4.15	0.73	8.32	3.52	11.84	6.57
1992-93	3.68	1.48	5.16	24.34	9.24	3.94	13.18	11.32

Sources :

1. *Administration Report and Annual Accounts of Calcutta-Haldia Port of various years.*
2. *Basic Port Statistics, 1992-93*
3. *Major Ports of India and Statistical Profile.*

While the share of imports in total cargo handled was considerably low upto 1955-56, it started assuming greater proportion from 1956-57 onwards and imports exceeded exports from that year. This rather large increase in share of imports was mainly due to rising imports of POL, foodgrains, etc. The domination of imports over exports has since continued and has risen in relative importance to total traffic. Imports in 1956-57 were 4.42 MT against exports of 4.31 MT, i.e. almost equivalent, but by 1992-93 imports at 12.92 MT registered a percentage-ratio of 139 percent over exports of 5.42 MT. For CDS, the breakup figure similarly shows that in 1980-81 the volumes of imports and exports were 2.65 MT against 1.41 MT respectively. In 1992-93 imports had risen by 39 percent to 3.68 MT while the volume of exports rose by only 5 percent to 1.48 MT. For HDC on the other hand, while imports increased by 108 percent in 1992-93 over 1980-81, exports increased by 294 percent from 1 MT in 1980-81 to 3.94 MT in 1992-93. While the increase in imports through HDC is attributable to increase in POL and coking coal imports, the increase in exports is mainly on account of exports of thermal coal to the Tamilnadu State Electricity Board (TNEB). These exports, which passed previously through Paradip Port are now routed through Haldia Port.

Table 3.7

Trends of Traffic at Calcutta-Haldia Port and its % share among Major Ports of India, 1928-29 to 1988-89.

Year	Volume of Cargo (Million tonnes)		
	Cal. Port	All Major Ports	% share of traffic of Cal. Port.
1928-29	10.9	22.0	49.5
1947-48	7.1	16.4	43.2
1951-52	9.7	23.1	42.1
1960-61	9.0	39.5	22.7
1964-65	11.0	45.0	24.4
1970-71	6.0	55.6	10.7
1977-78	7.6	66.2	11.5
1983-84	10.5	100.6	10.4
1986-87	12.1	142.4	8.5
1988-89	14.2	146.4	9.7
1989-90	14.7	147.6	10.0
1990-91	15.2	151.7	10.0
1991-92	16.0	156.6	10.2
1992-93	18.3	163.2	11.2

Notes : a) Figures refer to traffic of all ports of India.

b) The HDC was commissioned in 1977.

Source : The Commissioners for the Port of Calcutta, CPT.

Trends in traffic at Calcutta-Haldia Port and the percentage share of these relative to other major ports of India over the period 1928-29 to 1992-93 are presented in Table 3.7.

The table shows that in 1928-29 the volume of cargo of 10.9 MT at Calcutta Port constituted nearly 50 percent of the total cargo volume of 22 MT of all major ports. After this the cargo share of CPT declined until 1989-90 but has shown slight improvement after that year. The share was 10 percent in 1989-90, 10.02 percent in 1990-91, 10.2 percent in 1991-92 and 11.2 percent in 1992-93. The volume of cargo at Calcutta Port increased from 10.9 MT in 1928-29 to 18.3 MT in 1992-93, thus rising by only 7.4 MT (68%) over the long period of 64 years. As against this, cargo volumes handled by major ports other than Calcutta rose by 141.2 MT (641.8%) over the same period, indicating their burgeoning operations and importance.

Trends in cargo traffic handled by Indian ports and share in these of minor/intermediate ports over the period from 1960-61 to 1991-92 are shown in Table 3.8. The table also indicates the total cargo handled by Indian ports and the share of minor ports in these. It is clear from the table that the share of minor ports in total cargo handled has been declining, falling from 10.04 percent in 1960-61 to 6.56 percent in 1991-92, with the exception of a few intermediate years when it rose slightly. Thus the major part of cargoes handled has been through major ports, which increased their cargo volume from 39.52 MT in 1960-61 to 156.64 MT in 1991-92. The share for major ports in this last year was 93.44 percent. Cargo volumes handled at minor ports over the three decades increased by 149.43 percent against an increase of 296.36 percent in cargo volumes handled at major ports, also indicating the tendency of traffic to congregate at major ports.

Table - 3.8

Trends in Cargo Handled by Indian Ports and Share of Minor/Intermediate Ports

Year	Cargo Handled by Minor Ports	Cargo Handled by Major Ports	Total Cargo Handled by Indian Ports	Share of Minor Ports (%)
1960-61	4.41	39.50	43.93	10.04
1965-66	7.71	50.22	57.93	13.31
1970-71	6.69	55.58	62.27	10.74
1975-76	6.50	64.92	71.42	9.10
1980-81	6.73	80.27	87.00	7.74
1981-82	7.01	87.92	94.99	7.38
1982-83	6.63	93.70	100.33	6.61
1983-84	8.45	96.38	104.83	8.06
1984-85	9.62	106.76	116.38	8.27
1985-86	9.06	119.62	128.68	7.04
1986-87	8.37	124.37	132.74	6.31
1987-88	5.89	134.60	140.49	4.19
1988-89	9.07	146.71	155.78	5.82
1989-90	10.06	145.93	156.70	6.93
1990-91	11.00	150.02	161.02	6.83
1991-92	11.00	154.14	165.14	6.56

Source : 1. Basic Port Statistics of India
2. Minor/Intermediate Ports of India : A Statistical Profile, (1960-61 to 1990-91)

Table - 3.9
Trends in Cargo Traffic Handled at Various Major Ports
during 1951-52 to 1991-92

<i>(million tonnes)</i>												
<i>Year</i>	<i>Kandla</i>	<i>Bombay</i>	<i>J.L. Nehru</i>	<i>Mormugao</i>	<i>N. Bangalore</i>	<i>Cochin</i>	<i>Tuticorin</i>	<i>Madras</i>	<i>Vizag.</i>	<i>Paradip</i>	<i>CHP</i>	<i>Total</i>
1951-52	-	7.50	-	-	-	1.61	-	2.05	1.14	-	9.45	21.75
1955-56	0.15	9.68	-	-	-	1.64	-	2.34	1.29	-	8.01	23.11
1960-61	1.57	14.35	-	-	-	2.01	-	3.04	2.76	-	9.39	33.12
1965-66	2.51	17.91	-	7.87	-	2.87	-	4.87	4.46	-	9.73	50.22
1970-71	1.61	14.87	-	11.01	-	4.81	-	6.92	8.73	2.16	5.97	55.58
1975-76	3.20	16.65	-	12.77	0.34	4.26	1.36	7.88	8.55	3.33	7.66	66.00
1980-81	8.76	16.98	-	13.77	0.96	5.23	2.56	10.38	10.12	2.24	9.27	80.27
1981-82	9.69	19.40	-	14.98	1.64	5.50	2.67	11.41	10.98	2.23	9.47	87.98
1982-83	12.36	23.21	-	12.81	2.27	5.71	3.23	12.07	10.22	1.57	10.25	93.70
1983-84	14.16	23.89	-	12.84	2.84	5.00	3.55	12.84	9.88	1.37	10.01	96.38
1984-85	15.74	26.94	-	14.30	3.38	4.07	3.77	14.13	11.08	2.14	10.27	105.82
1985-86	16.49	24.31	-	16.12	3.69	5.28	4.22	18.15	15.91	3.33	12.13	119.63
1986-87	16.19	25.08	-	14.92	5.43	6.88	4.13	19.78	15.04	4.85	12.07	124.37
1987-88	18.06	29.57	-	13.33	6.11	6.80	4.26	22.82	15.37	5.19	13.07	134.60
1988-89	17.83	29.34	-	15.39	7.09	7.82	5.13	23.86	20.37	6.03	14.22	147.06
1989-90	18.92	27.75	0.70	14.17	7.66	7.12	5.32	23.94	21.12	6.18	14.69	147.57
1990-91	19.69	28.90	2.02	14.91	8.02	7.28	5.08	24.52	19.42	6.88	14.95	151.67
1991-92	21.00	26.26	2.79	16.10	8.27	7.48	5.87	25.05	21.52	7.30	16.00	156.64

Source : Basic Ports Statistics of India, 1992-93, IIPM

Table - 3.10
Traffic Handled at Major Ports for Selected Commodities
(1992-93)

Port	POL	Iron Ore	Fertiliser	FRM	Food Grains	Coal	Containerised Cargo		Others	Total
							'000 tonnes	'000 TEUs		
Kandla	17951	2	448	334	600	35	358	28	3181	22909
Bombay	20108	-	24	943	262	-	3869	314	3875	29081
J.L. Nehru	-	-	588	106	577	-	1712	145	24	3007
Mormugao	1798	13602	244	-	4	108	5	1	567	16328
New Mangalore	630	5082	241	-	-	-	13	2	1122	7088
Cochin	6180	-	134	415	66	55	309	56	804	7963
Tuticorin	510	-	378	283	189	3161	277	35	1417	6215
Madras	9813	4797	586	276	236	5593	1252	127	2777	25330
Visakhapatnam	7593	4960	484	946	186	5947	85	9	2565	22766
Paradip	195	1346	142	152	3	4414	-	-	1355	7607
Calcutta/Haldia	8920	-	313	346	117	5059	1104	81	2458	18317
All Ports	73698	29789	3582	3801	2240	24372	8984	798	20145	166611

Source : Basic Ports Statistics of India, 1992-93, IIPM

Table - 3.11
Trends in Cargo Traffic Handled (Commodity-wise)
at Calcutta-Haldia Ports (1950-51 to 1991-92)

('000 tonnes)

Year	POL	Fertiliser	FRM	Food Grains	Iron Ore	Coal	Others	Total
1950-51	781	-	119	630	277	2137	3588	7532
1951-52	926	19	48	1688	440	3167	3160	9448
1952-53	985	30	11	1084	960	3434	3056	9560
1953-54	893	18	14	562	1083	2436	2997	8003
1954-55	987	31	24	442	565	2302	3420	7771
1955-56	1154	34	30	209	882	1867	3835	8011
1956-57	1249	36	10	733	786	2024	3897	8735
1957-58	1296	29	60	1129	1003	2076	4539	10132
1958-59	1215	39	51	1313	786	1820	3994	9218
1959-60	1464	54	64	1329	1116	1705	3943	9675
1960-61	1409	51	74	1800	731	1385	3941	9391
1961-62	1687	42	82	993	632	1704	4059	9199
1962-63	1921	72	111	1083	550	2118	4236	10091
1963-64	1898	54	190	1553	790	1932	4383	10800
1964-65	1836	77	118	1696	911	1761	4529	10928
1965-66	1431	62	232	1523	1024	1370	4087	9729
1966-67	1326	50	387	2422	911	1121	3757	9974
1967-68	1207	92	480	1814	683	904	3671	8878
1968-69	1231	58	465	1085	457	909	3658	7863
1969-70	1492	27	209	788	380	970	2953	6819
1970-71	1405	3	111	852	430	660	2504	5965
1971-72	1862	31	155	1084	236	786	3140	7294
1972-73	2039	76	302	157	242	795	3006	6617
1973-74	1971	43	348	520	182	725	3496	7285
1974-75	2277	78	412	1120	107	897	2611	7202
1975-56	2888	49	351	1094	118	918	2245	7663
1976-77	3066	80	353	1026	-	808	2662	7995
1977-78	3410	109	289	109	133	1036	2460	7546
1978-79	3917	122	564	51	96	336	2385	7979
1979-80	4582	116	324	-	88	733	2678	8521
1980-81	5154	559	116	68	13	885	2477	9272
1981-82	4505	349	191	172	13	1421	2823	9474
1982-83	4595	346	-	423	10	2129	2741	10244
1983-84	4754	207	194	938	20	1947	1954	10014
1984-85	5092	560	238	204	6	1708	2460	10268
1985-86	6059	471	300	-	-	2319	2979	12128
1986-87	5722	371	232	75	-	2481	3191	12072
1987-88	5912	209	298	104	-	3124	3424	13071
1988-89	6469	166	291	447	-	3605	2892	13870
1989-90	6436	384	388	193	-	4178	3110	14589
1990-91	7257	231	457	92	-	4134	2782	14953
1991-92	7690	275	479	60	-	4603	2893	16000

Table 3.9 shows trends in cargo traffic handled at various major ports over the period from 1951-52 to 1991-92. The table indicates that where cargo volume grew by 350 percent from 7.50 MT in 1951-52 to 26.26 MT in 1991-92 at Bombay Port, it shot up by 1122 percent from 2.05 MT to 25.05 MT over the same period at Madras Port and 1788 percent from 1.14 MT to 21.52 MT at Visakhapatnam Port. Cargo volumes at Calcutta Port increased extremely sluggishly on the other hand, by only 69 percent from 9.45 MT to 16.00 MT over the period of study. It is therefore observed that while traffic development at other major ports has been rapid, Calcutta Port has displayed only sporadically increasing trends. As earlier stated, the volume of cargo at Calcutta Port was 9.47 MT in 1981-82, almost equal to cargo in 1951-52. Cargo volume then started to rise at a faster pace and reached 16 MT in 1991-92. In 1951-52 Calcutta Port handled about 43 percent of total cargo handled at major ports, but only 10 percent of this in 1991-92. Thus in 1991-92 Calcutta Port handled only 16 MT out of total volume 156.64MT of cargo handled by all major ports.

Traffic in selected commodities handled by major ports in the year 1992-93 is presented in Table 3.10. The table indicates traffic in main commodities like POL, iron ore, fertilisers, fertiliser raw materials, foodgrains, coal, containerised cargo and so on. It becomes clear that POL and coal are the main cargoes of the 11 major ports, comprising 44.07 percent and 14.58 percent, respectively, of total cargo traffic handled by all major ports. The major share of POL handling is at Bombay Port (20 MT or 27.28%), followed by Kandla Port (17.9 MT or 24.36%), Madras Port (9.8 MT or 13.32%), and Calcutta Port (8.9 MT or 12.10%). In case of coal handling, Visakhapatnam Port (5.9 MT or 24.40%) occupies first position, followed by Madras Port (5.6 MT or 22.95%) and Calcutta Port (5.1 MT or 20.76%) respectively.

The principal items of commodities that pass through Calcutta-Haldia Port are POL, coking coal, fertiliser, fertiliser raw materials, and foodgrains. Commodity-wise trends in cargo traffic handled at Calcutta Port during the period from 1950-51 to 1991-92 are indicated in Table 3.11. POL has constituted a significant proportion of cargo handled from the outset. In 1950-51 POL traffic was 0.78 MT, but rose to 7.69 MT in 1991-92, thus registering a ten-fold increase over this period. By 1992-93 it had risen further to 8.92 MT. Coal (of both coking and thermal qualities) occupied the second position, its traffic volume doubling from 2.14 MT in 1950-51 to 4.60 MT in 1991-92. Handling of fertilisers and fertiliser raw materials also increased continuously but cargo traffic in iron ore became nil from 1985-86 on, till the conclusion of the study, although rising in a few years prior to that, such as 1953-54, 1959-60 and 1965-66.

At present, principal imports through Calcutta-Haldia Port are of POL, coking coal, fertiliser, fertiliser raw materials, etc., while principal exports from this port are coking coal, POL, gunnies and jute products, tea, iron & steel etc. Coal is exported through Haldia Port to Tamilnadu for thermal power generation. Table 3.12 shows that POL registered 62 percent of total imports and 16 percent of total exports at CHP in 1992-93. The share of POL handling at Calcutta Port covers 49 percent of total traffic. By way of comparison, POL imports and exports at Bombay Port comprised 60 percent and 80 percent respectively, of its total imports and exports, while POL accounted for 69 percent of the total traffic handled by the Port. Madras and Visakhapatnam Ports registered respective shares of 39 percent and 33 percent for POL in total traffic handled by them.

Table 3.12
Import and Export of POL by the Major Ports of India in 1992-93

Ports	% share of Import on total import	% share of Export on total export	% share on total traffic
Calcutta Port	62	16	49
Madras	44	20	39
Cochin	81	60	78
Bombay	60	80	69
Kandla	83	39	78
Visakhapatnam	45	12	33
Mormugao	63	NIL	11

Source : Compiled and calculated from Administration Reports and Annual Accounts of Major Ports of India for the year 1992-93

3.5 The Financial Position of Calcutta-Haldia Port

Calcutta Port has displayed a mixture of good, bad and indifferent financial results over the century. Huge establishment costs, large recurring expenditures on dredging and maintenance of the navigational channel of 235 km., replacement and maintenance expenses on the large fleet of CPT vessels, costs of modernisation of facilities, and debt charges have always been serious handicaps in balancing the port budget. To relieve the consequent financial burden, the Port has been levying stiff tariffs for its services. Calcutta has thus been a high-cost port from the very beginning.

Revenue results have in financial terms not shown any consistency. In 1899-1900 Calcutta Port earned an income of Rs.66.51 lakhs against incurred expenditure of Rs.66.53 lakhs, and thus suffered a small loss of Rs.2000. This was followed by profits or losses of a few lakhs of rupees annually, for a number of years.³⁰ From 1929-30 to 1936-37, during the Depression and post-Depression period, the Port incurred losses every year. Over the next twelve years i.e. until 1949-50, the Port earned profits every year.³¹ Following a few subsequent years of indifferent performance, the port of Calcutta showed a favourable financial position again for a decade from 1955. This was followed however by years of alternating profits and losses. Till 1988, the largest financial deficit was Rs.12 crores in 1973-74 and the highest profit was Rs.17 crores in 1984-85. The financial position is stabilising now, with increasing quantum of profit during the last five years from 1988-89, the average profit being Rs.44.42 crores a year. It is expected that with reductions in manpower and increasing income from traffic and estates, the financial position of the Port in the years to come will be increasingly satisfactory. Financial figures on the revenue account for Calcutta-Haldia Port for the forty-two years from 1951-52 upto 1992-93 are presented in Table 3.13.

The table also presents a growth analysis for revenues and expenditure for Calcutta Port. Over the period of the table, growth rates for revenue and expenditure have averaged 10.29 percent and 9.40 percent, respectively. Average decadal annualised growth rates for the port's revenues show acceleration over the time-frame, starting at an average 6.90 percent over

Table 3.13
Revenue Account of Calcutta-Haldia Port
during 1951-52 to 1992-93.

(Rs. crores)

Year	Revenue	Growth	Expenditure	Growth	Surplus/Deficit	Growth
1951-52	7.87	-	8.14	-	-0.27	-
1952-53	8.68	10.29	8.31	2.09	0.37	237.04
1953-54	8.18	-5.76	9.00	8.30	-0.82	-321.62
1954-55	8.83	7.95	9.21	2.33	-0.38	53.66
1955-56	9.97	12.91	9.34	1.41	0.63	265.79
1956-57	10.87	9.03	9.60	2.78	1.27	101.59
1957-58	12.76	17.39	11.20	16.67	1.56	22.83
1958-59	12.96	1.57	12.48	11.43	0.48	-69.23
1959-60	12.98	0.15	12.71	1.84	0.27	-43.75
1960-61	14.12	8.78	13.62	7.16	0.50	85.19
1961-62	15.06	6.66	14.23	4.48	0.83	66.00
1962-63	16.97	12.68	16.45	16.23	0.52	-37.35
1963-64	17.72	4.42	17.19	3.93	0.53	1.92
1964-65	18.39	3.78	18.34	6.69	0.05	-90.57
1965-66	18.56	0.92	20.30	10.69	-1.74	-3580
1966-67	20.45	10.18	23.57	16.11	-3.12	-79.31
1967-68	NA	-	NA	-	NA	-
1968-69	24.20	-	27.97	-	-3.77	-
1969-70	28.24	16.69	32.83	17.38	-4.59	-21.75
1970-71	23.66	-16.22	32.64	-0.55	-8.98	-95.64
1971-72	30.42	28.57	45.44	39.17	-15.02	-67.26
1972-73	32.17	5.75	39.62	-12.81	-7.45	50.40
1973-74	30.95	-3.79	42.98	8.48	-12.03	-61.47
1974-75	42.14	36.16	48.26	12.28	-6.12	49.13
1975-76	55.68	32.13	54.02	11.94	1.66	2812.42
1976-77	59.15	6.23	55.64	3.00	3.51	111.45
1977-78	59.33	0.30	65.06	16.93	-5.73	-263.25
1978-79	71.46	20.44	74.66	14.76	-3.20	44.15
1979-80	96.20	34.62	86.39	15.71	9.81	406.56
1980-81	101.65	5.67	98.38	13.88	3.27	-66.67
1981-82	114.48	12.62	108.31	10.09	6.17	88.69
1982-83	131.74	15.08	119.85	10.65	11.89	92.71
1983-84	118.41	-10.12	121.58	1.44	-3.17	-126.66
1984-85	154.61	30.57	137.71	13.27	16.90	633.12
1985-86	146.53	-5.23	148.44	7.79	-1.91	-111.30
1986-87	167.96	14.62	156.58	5.48	11.38	695.81
1987-88	167.59	-0.22	180.64	15.37	-13.05	-214.67
1988-89	227.99	36.04	188.29	4.23	37.70	388.89
1989-90	247.37	8.50	198.92	5.65	48.45	28.51
1990-91	270.92	9.52	221.42	11.31	49.50	2.17
1991-92	302.14	11.52	257.36	16.23	44.78	-9.54
1992-93	335.46	11.03	290.78	12.99	44.68	-0.22

Sources: 1. Administration Report and Annual Accounts of various years.
 2. Basic Port Statistics, 1992-93
 3. Major Ports of India and Statistical Profile.

the 50s, through 7.63 percent for the 60s, a sharp 15.01 percent over the 70s, and decelerating slightly to 11.03 percent thereafter. The comparable averaged growth rates for expenditure on the other hand were 5.85 percent in the 50s, sharply rising to 13.71 percent over the 60s, and then decelerating to a more stable 9.43 percent, and 9.49 percent for the two decades thereafter. From the position reflected in the table, it might be stated that the port experienced sharply increasing costs in the 60s and early 70s during which significant deficits emerged, to which the port management reacted by concentrating on revenue maximisation over the subsequent decades. As earlier stated, this expansion in revenues indicates sharply increasing tariffs at the port, as well as being reflective of the better operational performance of recent years, bearing out the status of CHP as a high-cost port.

The breakup of the financial position of CHP reflected in the previous table between CDS and HDC in Table 3.14 shows that Calcutta Port, particularly, had faced deficits in most years till 1987-88, with the highest deficit of Rs.22.5 crores occurring in that year. Although from 1988-89 onwards, the CHP started to show a profit-turnaround, the surpluses have generally been marginal, constituting a relatively small part of the total surplus of the CPT. In 1992-93, for instance, the quantum of surplus at CDS was only Rs.5.44 crores (12.17%) out of the total surplus of Rs.44.68 crores accruing to the Calcutta Port Trust. On the other hand, there has been remarkable improvement in the quantum of surpluses earned by HDC, which increased five-fold from Rs.7.93 crores in 1980-81 to Rs.39.24 crores in 1992-93. Thus out of the total surplus of CPT, the share of HDC has consistently been maximal. In 1991-92, for example, HDC contributed as much as 96 percent of the CPT's surplus of Rs.44.78 crores shown by CPT, and in the next year, despite improved performance of CDS, the HDC contribution remained as high as 88 percent. Such consistent financial features of the CPT also lead to a belief that over time to come Haldia will gradually supplant Calcutta as a port.

Table 3.14
Financial Position of Calcutta-Haldia
Port during 1980-81 to 1992-93

Year	(Rs. crores)		
	Surplus/Deficit CDS	Surplus/Deficit HDC	Surplus/Deficit Net
1980-81	-4.66	7.93	3.27
1981-82	1.82	4.35	6.17
1982-83	8.53	3.36	11.89
1983-84	-5.18	2.01	-3.17
1984-85	10.24	6.66	16.90
1985-86	-12.88	10.96	-1.92
1986-87	-3.44	14.82	11.38
1987-88	-22.50	9.46	-13.04
1988-89	1.28	38.41	39.69
1989-90	2.55	45.90	48.45
1990-91	2.19	47.31	49.50
1991-92	1.85	42.93	44.78
1992-93	5.44	39.24	44.68

Sources: 1. Administration Report and Annual Accounts of 'Calcutta-Haldia Port' for the above years

2. Statistical Hand Book; 1989; 'Calcutta-Haldia Port'

The financial position of the Calcutta Port Trust can be appreciated more fully from the overall accounting position found in the Annual Accounts for a particular year. Operating incomes and expenditure for 1990-91, headwise for the Calcutta Port Trust (i.e. inclusive of CDS and HDC together), are shown in Table 3.15 below.

Table 3.15

Income and Expenditure Break-up of the Calcutta Port Trust, 1990-91.

(Rs. crores)			
<i>Head</i>	<i>Income</i>	<i>Expenditure</i>	<i>Results</i>
Cargo and Storage	146	42	+104
Finance and Miscellaneous	26	41	-15
Port and Docks	70	66	+4
Port Railways	12	15	-3
Estates	16	6	+10
General Administration	—	50	-50
Total	270	220	+50

Source : Administrative Reports and Annual Accounts of Calcutta Port Trust, 1990-91

From the table it is evident that the bulk of the surplus derived from cargo handling and storage, which contribute 54.07 percent to the port's income. Under this head, demurrage or storage alone generated a surplus of Rs.45 crores, or nearly 50 percent; this income mostly accrued from operations at CDS. The 'finance and miscellaneous' head showed an adverse position mostly because of heavy burden of interest on borrowed funding for capital works and also on account of pension payments to retired employees, which is reflected in the deficit position under this head. Port estates are seen to have been a good source of revenue for CHP.

Of total CHP expenditure of Rs.220 crores in 1990-91, Rs.93 crores were spent on wages and salaries and Rs. 15 crores on fringe benefits like medical facilities, leave encashment and leave travel concession. Thus half of total expenditure was on establishment purposes.

The table also yields the observation that the financial position of the CPT can be improved by increasing incomes from storage charges and estates, and by economy measures in establishment, reduction of the interest burden and better management of port railways.

Comparative features of financial results at major ports in India from 1950-51 to 1989-90 are shown in Table 3.16. The table reveals that where Bombay, Madras, Visakhapatnam and Kandla Ports have shown continuous surpluses in most years, Calcutta Port has not shown any consistent performance, with surplus results in some years and deficit results in others. Although the Port once held premier position, its relative position after 1950-51 has been behind Bombay, Madras, Visakhapatnam, and in some years even behind Kandla. Among major ports in India, it is Bombay and Madras Ports which show consistently good financial results.

Table 3.16

Financial Results of the working of Major Ports in India

(Rs. Lakhs)

Name of the Port.	1950-51			1960-61			1970-71			1975-76			1980-81		
	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.
Calcutta	70.9	77.1	-6.2	145.2	139.9	5.3	265.6	326.5	-60.9	556.8	540.2	16.6	1016.4	983.7	32.7
Bombay	55.9	46.4	9.5	127.4	86.7	40.7	251.4	220.4	31.0	505.1	398.6	106.5	1073.3	724.6	348.7
Madras	13.0	9.1	3.9	30.9	21.8	9.1	117.0	85.2	31.8	230.5	188.5	42.0	440.2	389.4	50.8
Cochin	6.2	4.5	1.7	12.8	9.3	3.5	42.2	36.3	5.9	105.1	82.8	22.3	194.3	201.5	-7.2
Visakhapatnam	5.3	5.5	-0.2	19.5	13.8	5.7	94.5	66.1	28.4	177.7	169.8	7.9	396.1	425.8	-29.7
Kandla				8.7	7.8	0.9	24.2	25.9	-1.7	79.3	62.1	17.2	267.1	157.6	109.5
Mormugao							28.9	20.2	8.7	55.9	35.6	20.3	236.5	234.0	2.5
Paradip							17.8	18.1	-0.3	77.2	74.6	2.6	100.7	162.5	-61.8
New Mangalore										5.0	8.9	-3.9	35.2	34.2	1.0
Tuticorin										4.7	2.5	2.2	55.7	57.0	-1.3

Name of the Port.	1985-86			1986-87			1987-88			1988-89			1989-90		
	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.	Rev.	Exp.	Sur./ Def.
Calcutta	14653	14844	-191	16796	15658	1138	16759	18064	-1305	22799	18829	3970	24737	19892	4845
Bombay	20695	13436	7259	22147	14118	8029	23723	16761	6962	29228	18909	10319	28580	21150	7430
Madras	9869	6195	3674	10433	6896	3537	11256	7622	3634	13525	8269	5256	14832	8882	5950
Cochin	3265	3930	-665	3718	4068	-350	3626	3908	-282	4654	4721	-67	5722	5225	497
Visakhapatnam	7173	6309	864	8272	7449	823	9280	8494	786	13546	9757	3789	13021	9054	3967
Kandla	4525	2248	2277	4480	2361	2119	5072	2879	2193	6245	3252	2993	7431	3924	3507
Mormugao	4168	3282	886	4257	3672	585	4058	3421	637	5160	3836	1324	5339	3889	1450
Paradip	3004	3416	-412	4309	4568	-259	4847	5015	-168	5322	4992	330	6709	5906	803
New Mangalore	1411	1316	95	1915	1590	325	2083	1795	288	2604	1653	951	2603	2217	386
Tuticorin	1511	1189	322	1440	1284	156	1435	1444	-09	1941	1511	430	2274	2073	201

- Sources: 1. Administration Reports and Annual Accounts of Major Ports of India for the respective years
2. Major Ports of India and Statistical Profile
3. Basic Port Statistics

3.6 Manpower at Calcutta-Haldia Port

Manpower at Calcutta Port has traditionally been high, although at the highly-mechanised Haldia Docks, it was ensured that manpower needs were kept to the minimum. In 1960, the CPT had 40084 employees comprising 295 of Class I rank (0.73%), 374 of Class II rank (0.93%), 11185 of Class III rank (27.90%), and 25186 under Class IV (62.83%). There were also 3044 casual employees. Overall manpower remained above 40000 till 1973.³² Manpower strength from 1980 to 1992 at CHP, with the breakup for CDS and HDC and growth rates thereof, are given in Table 3.17 below. Declining growth rates reflect the overall decrease in manpower.

Table 3.17

Manpower at Calcutta-Haldia Port between 1980 & 1992			
Year as on	Manpower at CDS	Manpower at HDC	Total Manpower
1-1-1980	31931	2397	34328
1-1-1981	31907	2571	34478
1-1-1982	30849	2785	33634
1-1-1983	29825	3150	32975
1-1-1984	29251	3294	32545
1-1-1985	27879	3352	31231
1-1-1986	26105	3442	29547
1-1-1987	24837	3432	28269
1-1-1988	23258	3427	26685
1-1-1989	22271	3490	25761
1-1-1990	21789	3711	25500
1-1-1991	20595	4020	24615
1-1-1992	20175	4260	24435

Source : Administration Reports and Annual Accounts of Calcutta Port Trust for the above years

The table shows that total manpower has been declining over more recent years. In the 12 years from 1980 to 1992 employment was reduced by around 10000. The table also indicates that manpower reductions have taken place in CDS only, while manpower has actually increased at HDC. The decrease in number of employees at CDS consistently by about 1000 a year is the result of natural attrition caused by superannuation. In 1992, successful implementation of the Voluntary Retirement Scheme (VRS) also led to retirement of 1200 employees. About Rs.30 crores were disbursed as one-time payments to retiring employees. On the other hand, there is also a long list of 1800 candidates which has accumulated over the past 30 years, comprising 'death-in-harness' cases i.e. dependents of CPT employees who died while in service, who have been agitating for employment under the Port. Growth analysis in the table shows the opposition in trends regarding manpower between CDS and HDC. Sharpest reductions in

manpower at CDS took place during the mid-years of the study, with the annualised rate of decline being as high as 6.36 percent in 1986 and 1988. At HDC, growth rates in manpower were lowest during the mid-years of the study, declining from the high value of 13.11 percent in 1983 to negative rates over 1987 and 1988, and then picking up again towards the end of the study.

The category-wise manpower position at Calcutta and Haldia as in 1992 is shown in Table 3.18 below.

Table 3.18

Manpower by Class-Category under the Calcutta Port Trust (1992)

	Calcutta	Haldia	Total
Class I	771	184	955
Class II	164	132	296
Class III	9130	1761	10891
Class IV	8732	2183	10915
Shore Labour	1378	0*	1378
Total	20175	4260	24435

* At Haldia Cargo work on shore is done by about 600 casual workers who have been pooled together in a cooperative.

Source : Administration Reports and Annual Accounts of Calcutta Port Trust, 1992

The table also presents a percentage analysis of the distribution by workforce category between CDS and HDC. Percentage distribution of the total CPT workforce in 1992 was 3.91 percent Class I, 1.21 percent Class II, 44.57 percent Class III, and 44.67 percent Class IV. However, as much as 82.57 percent of the CPT workforce was attached to CDS. Also to be noted in the table is the relatively high clustering of Class I-category employees at CDS, which in percentage-terms, bears a ratio of 3.16% : 0.75% in the table. Payrolled shore-labour is of course entirely absent at HDC, for the reason footnoted under the table.

Apart from the disproportionately huge expenditure on wages and salaries of Rs.100 crores a year and on fringe benefits of Rs.25 crores a year, the Port's liability for payment of pension to retired employees has been increasing steadily. The present annual payment of Rs.15 crores will increase to Rs.30 crores within the next five years.

At Haldia, manpower has been kept within the reasonable limit of 5,000. But with new berths and increasing traffic, work in three shifts with full manpower strength would become necessary and will require induction of 1000 more workers. The table shows that manpower at HDC has been increasing every year because of expansion of the port. Haldia is the only dock system in India where the entire stevedoring work in cargo hatches is done by port labour.

3.7 Problems & Prospects for the Port at Calcutta

Calcutta Port is one of the four largest operational major ports in India. Its uniqueness arises from its being the only riverine major port in India, located 203 kms. upriver, necessitating a difficult journey past several bars and bends. The Port however commands a vast hinterland, serving Eastern India, as also neighbouring countries. The region is highly populated, is rich in resources, and is well served by communications.

Its beginnings as a port commence with Charnock's upriver voyage in 1690. The Calcutta Port Commissioners came into existence on 1870, and the CPT was constituted in 1975. CPT comprises the twin dock-systems of CDS and HDC. Under CDS, there are two docks (Kidderpore & NSD, of which NSD is larger) and an oil-jetty. The port also has extensive land estates. In Calcutta, the CPT is in fact the single largest landowner in the city. Thus rising net surpluses at CDS originate in port operations and estate rentals.

The port of Calcutta extends a comprehensive range of facilities including container-handling, mechanised dry, liquid and grain bulk-handling, and heavy-lift and break-bulk general cargo handling facilities with a large storage infrastructure. It also provides adequate dry-docking facilities for repairs of merchant vessels. Maintenance of the long navigational channel upriver is carried out by the Port's maintenance fleet of 72 vessels and river-craft. Terminal railway facilities are provided at both Calcutta and Haldia to cater to imports and exports, and the port-railway also provides links to industrial and commercial sidings including the Haldia oil refinery and fertiliser plant, the FCI godowns, and the SAIL stock-yards of the Steel Authority of India.

Calcutta Port is linked to its hinterland via the National Highway network. It is the largest terminal port in South Asia and is well-connected by railways, roads, waterways and airways. Major inland waterways also link the hinterland to the Port.

Because of navigational problems, the channel to the Port calls for constant dredging, and for constant surveys and charting of the river-course. Pilotage is necessary for ships journeying along the river. The Port possesses 3 suction dredgers, and one bucket dredger, and arranges emergency dredging through the DCI, at 90 percent subsidy to dredging costs. However, it is contended that the Union Government should bear the entire dredging cost as the waterway is used by others as well.

The Haldia Dock Complex, which occupies the right bank of the river Haldi, 104 km. downriver from Calcutta, can accept ships of larger size and deeper draft. HDC handles more of the traffic in coking coal. The HDC, too, is the single-largest landowning authority at Haldia, but its share in rental income is more modest, since lower lease-rentals are charged in order to attract port-based users.

CHP is an import-based port. Following the development of the HDC, Calcutta Port has seen a doubling in traffic. Out of total cargo handled at CHP, the major share is from HDC. After the HDC's commissioning, traffic-volume at CDS has generally either declined, or stagnated.

Principal commodities passing through CHP are POL, coking coal, fertiliser, fertiliser raw materials, and foodgrains. At present, principal imports through CHP comprise POL, coking coal, fertiliser, fertiliser raw materials, etc., while principal exports are coking coal,

POL, gunnies and jute products, tea, iron & steel etc. The share of POL handling at Calcutta Port covers 49 percent of total traffic.

CHP displays mixed financial results, because of its huge establishment costs, large recurring expenditure on dredging and maintenance, and on the port-owned fleet of CPT vessels, costs of modernisation of facilities, and debt charges. To relieve this financial pressure, the Port has levied stiff tariffs for its services, and has thus traditionally been a high-cost port. The port experienced sharply increasing costs in the 60s and early 70s during which significant deficits emerged, to which the port management reacted by concentrating on revenue maximisation over the subsequent decades.

The share of HDC in total surplus of CPT has consistently been maximal, leading to a belief that Haldia will gradually supplant Calcutta as a port. The financial position of the CPT can be improved by increasing incomes from storage charges and estates, and by economy measures in establishment, reduction of the interest burden and better management of port railways.

While manpower at CDS has traditionally been high, the highly-mechanised HDC ensures that manpower needs are kept to the minimum. Total manpower has in fact declined over more recent years. However, manpower reductions have taken place in CDS only, while manpower has actually increased at HDC, because of expansion of the port.

In view of the importance that expansion in facilities and operations have to the health of a port, the next chapter will explore the growth of both CDS and HDC more rigorously, going into the acquisition and allocation of funds on capital assets, investments and capital-structure planning at CHP.

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