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THE PEOPLE'S REPUBLIC OF BANGLADESH

FEASIBILITY STUDY
ON
THE OPTIMIZATION OF CAPACITY UTILIZATION
AND IMPROVEMENT OF PERFORMANCE
OF
CHITTAGONG DRY DOCK LIMITED

FINAL REPORT

MAIN REPORT

FEBRUARY 1990

JAPAN INTERNATIONAL COOPERATION AGENCY



P R E F A C E

In response to a request from the Government of the People's Republic of Bangladesh, the Japanese Government decided to conduct a Feasibility Study on the Optimization of Capacity Utilization and Improvement of Performance of Chittagong Dry Dock Limited and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to Bangladesh a survey team headed by Mr. Shigeshi Umesato, Overseas Shipbuilding Cooperation Centre, composed of members from the said Centre and the Mitsui Engineering & Shipbuilding Co. Ltd., from April to May, 1989, and from August to September, 1989.

The team held discussions with concerned officials of the Government of Bangladesh, and conducted field surveys. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the People's Republic of Bangladesh for their close cooperation extended to the team.

February, 1990



Kensuke Yanagiya
President
Japan International Cooperation
Agency

February, 1990

Mr. Kensuke Yanagiya
President
Japan International
Cooperation Agency
Tokyo

Dear Sir:

LETTER OF TRANSMITTAL

We have the pleasure of submitting to you the Final Report of the Feasibility Study of the Project for the improvement of Chittagong Dry Dock Limited.

The report consists of two volumes: the Main Report which covers all items of the study and describes the results of the study in detail and the Summary Report which states the essential points of the whole reports.

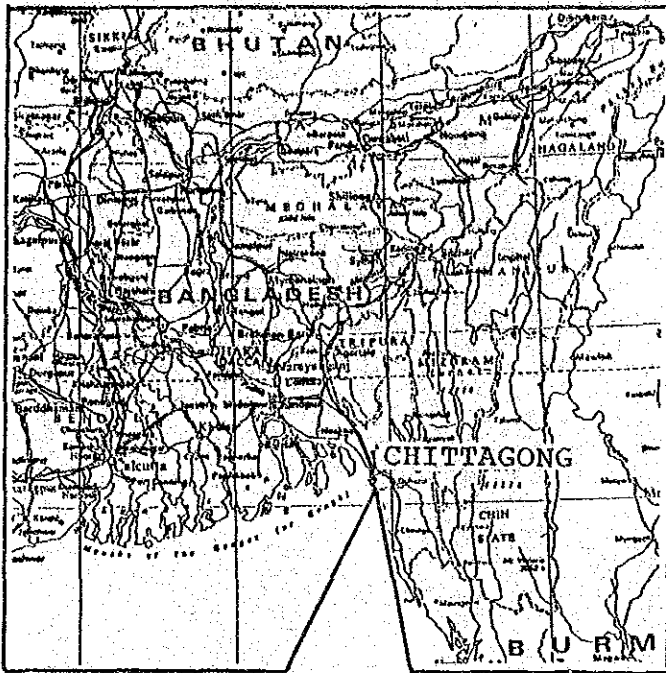
All members of the Study Team wish to express grateful acknowledgement to the personnel of the Advisory Committee, Japan International Cooperation Agency, the Ministry of Transport, the Ministry of Foreign Affairs, the Japanese Embassy in Bangladesh, as well as officials and individuals of Bangladesh for their assistance extended to the Study Team.

In conclusion, the Study Team sincerely hopes that the study results will contribute to the future development of shipbuilding industries and to the socio-economic development in Bangladesh.

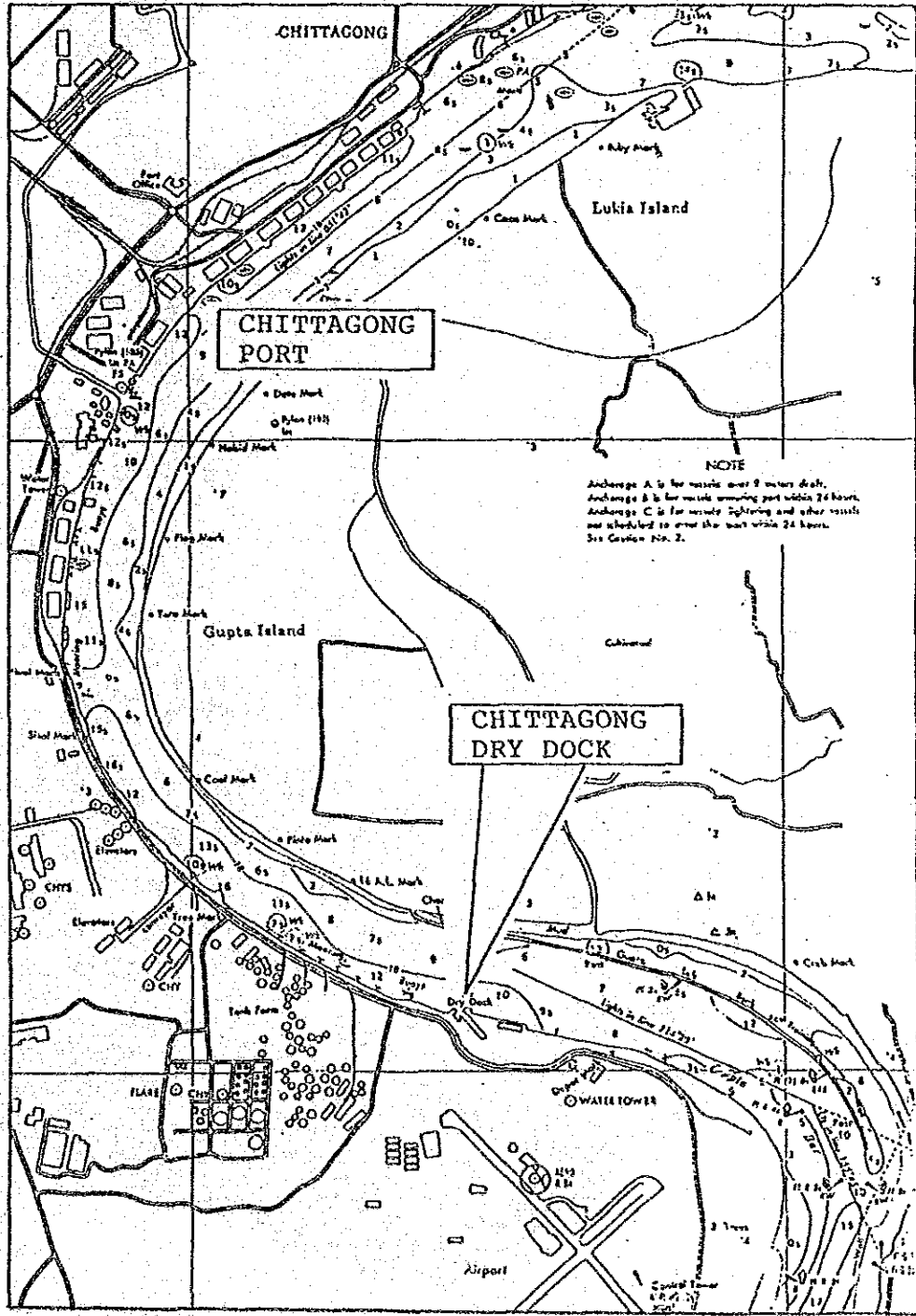
Yours sincerely,

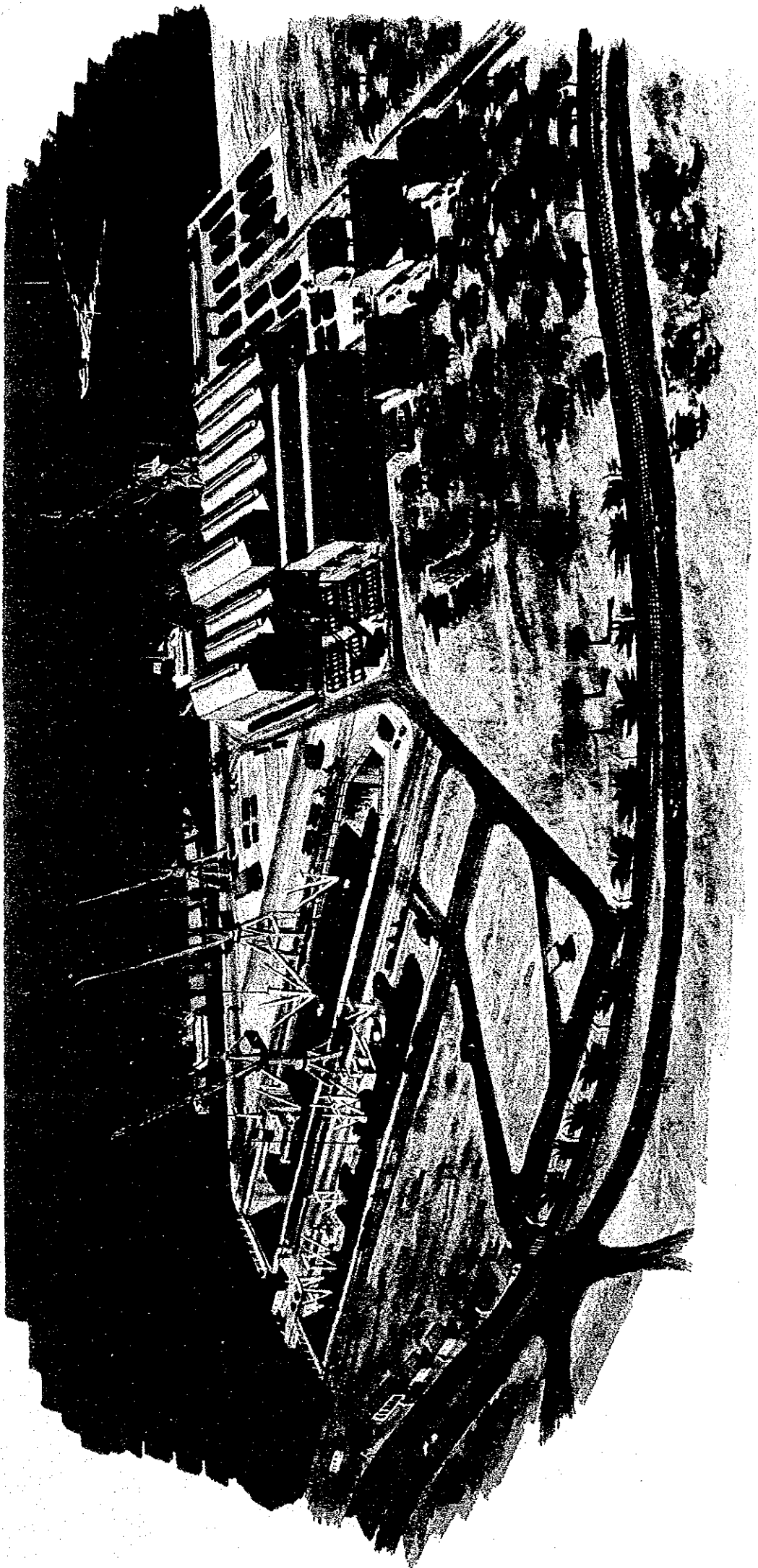


Shigeshi Umesato
Team Leader of
The Feasibility Study for
the Optimization of Capacity
Utilization and Improvement of
Performance of Chittagong
Dry Dock Limited



CHITTAGONG DRY DOCK





ABBREVIATION

ABS	:	American Bureau of Shipping
ADB	:	Asian Development Bank
ADP	:	Annual Development Programme
ASME	:	American Society of Mechanical Engineers
BBS	:	Bangladesh Bureau of Statistic
BCIC	:	Bangladesh Chemical Industries Corporation
BFDC	:	Bangladesh Fisheries Development Corporation
BHP	:	Brake Horse Power
BIWTA	:	Bangladesh Inland Water Transport Authority
BIWTC	:	Bangladesh Inland Water Transport Corporation
BPDB	:	Bangladesh Power Development Board
Br	:	Bridge
BS	:	British Standard
BSC	:	Bangladesh Shipping Corporation
BSEC	:	Bangladesh Steel and Engineering Corporation
BV	:	Bureau Veritas
BWDB	:	Bangladesh Water Development Board
CDA	:	Chittagong Development Authority
CDD	:	Chittagong Dry Dock Limited
cfs	:	cubic feet per second
c.i.f	:	cost, insurance and freight
Cont.	:	Continental
CPA	:	Chittagong Port Authority
CTG	:	Chittagong
DAC	:	Dhaka
DEW	:	Dockyard and Engineering Works Ltd., BSEC
DNV	:	Det Norske Veritas
DWT	:	Dead Weight Tonnage
EC	:	Europe Community
FFYP	:	Fourth Five Year Plan
FGSS	:	Freight & General Shipping Statistic
FIRR	:	Financial Internal Rate of Return
f.o.b.	:	free on board
FY	:	Fiscal Year
GDP	:	Gross Domestic Product
GI	:	Galvanized Iron
GL	:	German Lloyd
GT	:	Gross Tonnage
HKG	:	Hongkong
Hr	:	Hour
LPG	:	Liquefied Petroleum Gas
ICD	:	Inland Container Depot
IMF	:	International Monetary Fund
IWT	:	Inland Water Transport
JICA	:	Japan International Cooperation Agency
JG	:	Japanese Government
KSY	:	Khulna Shipyard Limited., BSEC
Lac	:	Lakh, 0.1 million
LRS	:	Lloyd's Register of Shipping
MS	:	Mild Steel

M/T : Metric Ton
MW : Mega Watt
NK : Nippon Kaiji Kyokai
OTC (OHC) : Overhead Travelling Crane
p.a. : Per Annum
Pak : Pakistan
SB : Shipbuilding
SER : Shadow Exchange Rate
SFYP : Second Five Year Plan
TC : Travelling Crane
TEU : Twenty Feet Container Equivalent Unit
The Study : The Feasibility Study for the Optimization
of Performance of CDD
TFYP : Third Five Year Plan
TK : Taka
TYP : Two Year Plan
UAE : United Arab Emirates
UK : United Kingdom
UNDP : United Nations Development Programme
USA : The United States of America
WASA : Water Supply and Sewerage Authority

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1 INTRODUCTION

1 INTRODUCTION

1-1 BACKGROUND OF THE STUDY

The Dry Dock & Heavy Steel Structure Works was originally conceived in 1963 to carry out repair of the seagoing vessels which touch at the port of Chittagong and Khulna.

The physical work started at the site in 1967.

The implementation work was frozen in 1971 by the Government due to the Liberation war and could not be started before revalidation of the Agreement with Yugoslav Government and their firm M/S. PIM and Brodoimeks in 1974.

However, in 1978, a conceptual change had been made in the original scheme by incorporating a new dock for the construction of seagoing vessels in place of a slipway. This was done due to the changed political situation of the country and also to meet the expansion program of the Bangladesh Shipping Corporation.

According to the revised plan, it was envisaged to construct three vessels of 16,500 DWT in two years and carry out docking of 30 vessels and repair 50 vessels a year.

The physical facilities were one dock for under water repair, one dock for construction of new vessels, a complex of repair and machine shops to carry out repairs for machinery and equipment of ships, shipbuilding complex for making of ships and host of auxilliary shops for various other services.

Later on, due to financial constraint the idea of constructing the shipbuilding dock was kept in abeyance and the plant initially started operations as soon as the graving dock was commissioned in 1981.

The berth and workshop buildings were completed in 1983.

However, for various reasons Chittagong Dry Dock Limited (CDD), an enterprise of Bangladesh Steel & Engineering Corporation(BSEC), is not being able to utilize its built in capacity to a desirable level.

The capacity utilization of CDD is at present not satisfactory. This meager performance has led to a financial problem for CDD and is incurring losses.

Under the circumstances, BSEC is thinking seriously as to how the capacity of CDD can be optimally utilized and to explore the possibility of constructing ship with minimum further investment and with maximum utilization of the existing facilities.

With this objective in view, BSEC requested the Japanese Government through the Government of Bangladesh to conduct a study in order to find out ways and means for optimization of capacity utilization and improvement of performances of CDD.

In response, Japan International Cooperation Agency (JICA) dispatched a preliminary study team to Bangladesh for the purpose of ascertaining the substance of the request and of determining the precise scope of work to be undertaken.

After prolonged discussion with BSEC and the Planning Commission, a "Scope of Work" was signed between BSEC and JICA for the proposed study, in August 11, 1988.

1-2 PROGRESS RECORD OF THE STUDY

In compliance with the "Scope of Work", JICA sent a Feasibility Study Team composed of seven Japanese experts to Bangladesh to carry out the field survey on 4th April, 1989.

The study team of Japanese experts together with Bangladesh counterparts carried out the field survey for one and a half months, in accordance with the schedule and procedure stated in the Inception Report.

In ending the field survey, Progress Report, in which an outline of the survey results and a basic concept for the future study were stated, was made by the study team and was presented with BSEC on 14th May, 1989.

After coming back to Japan, the study team analyzed the relevant data and information, and drafted an "Interim Report". The report containing the preliminary study results was presented with BSEC and the discussion was held mainly on the basic improvement plan, in August, 1989.

In consideration of the discussed items, the further study was done and the study results were summarized into "Draft Final Report" (DFR) covering all items of the Study.

On December, 1989, the DFR was submitted to BSEC and discussion was held between BSEC authority (including CDD's concerned officials) and the study team in Bangladesh.

The following is a report compiled from the study results.

2 CONCERNED MEMBERS OF THE STUDY

2 CONCERNED MEMBERS OF THE STUDY

The concerned members of the Study are as follows:

- Advisory committee: an advisory body to the JICA study team to implement the study successfully
- JICA study team : a study team composed of eight Japanese experts
- Counterpart team : a counterpart to the JICA study team

Their name, position and assignment are shown below.

(1) Advisory Committee

	<u>Name</u>	<u>Position</u>	<u>Assignment</u>
1	Suzuki Minoru	Senior Examiner for Transport of Dangerous Goods, Ministry of Transport	Leader
2	Ishimaru Shuzo	Special Assistant to the Director of the Shipbuilding Division, Ministry of Transport	Ship Repair
3	Yoshihara Keiichi	Planning Section, International Cooperation Division, International Transport & Tourism Bureau, Ministry of Transport	Demand Forecast
4	Kamata Takahiro	Shipbuilding Division, Marine Technology and Safety Bureau, Ministry of Transport	Facility Planning
5	Matsumoto Seigo	Second Development Division, Social Development Cooperation Department, JICA	Planning & Coordination

(2) JICA Study Team

	<u>Name</u>	<u>Position</u>	<u>Assignment</u>
1	Umesato Shigeshi	Team Leader: Naval Architect	Overall Team Management

	Name	Position	Assignment
2	Akiyoshi Hiroshi	Subleader: Naval Architect	Operation Planning
3	Danno Mikio	Member: Economist	Demand Forecast, Financial & Economic Analysis
4	Emoto Kojiro	Member: Naval Architect	Facility Planning I (Ship repair & Shipbuilding)
5	Higuchi Hideo	Member: Naval Architect	Facility Planning II (Steel Structural Engineering)
6	Hida Kenichiro	Member: Civil Engineer	Civil Work Design Natural Conditions
7	Amimoto Tomohiko	Member: Mechanical Engineer	Facility Design I Investment Estimate
8	Yamamoto Makoto	Member: Naval Architect	Facility Design II Investment Estimate

(3) Counterpart Team

	Name	Position	Assignment
1	A.K.M. Shirajul Islam	Dy. Chief Economist (PI), BSEC	Demand Forecast, Financial and Economic Study
2	Syed Shamsul Alam	Addl. Chief Engineer (PI), BSEC	Technical (Mech./Naval/Steel Structure Study)
3	Mahfuzur Rahman	Dy. Chief Eng. (Construction), BSEC	Civil Engineering Study
4	A.K. Das Gupta	Chief Accounts Officer, CDD	Finance
5	M.A. Kalam	General Manager (Ship Repair), CDD	Ship Repair
6	Enamul Baqi	Naval Architect, CDD	Planning
7	The all other concerned engineers and staff of BSEC and CDD		

3

CURRENT SITUATION

3 CURRENT SITUATION

3-1 ECONOMIC BACKGROUND

3-1-1 Demography

The present population of Bangladesh in 1987 is about 105 million people. However, the latest counted total is 89.9 million on the 1981 census adjusted for net undercount. In the period from 1974 to 1981, the population grew by almost 3% per year. The population of the major cities like Dhaka, Chittagong and Khulna are 3.43 million, 1.39 million and 0.65 million respectively. The significant higher growth rate in those areas (8.4% in Dhaka, 6.6% in Chittagong, and 5.9% in Khulna) than in the national level illustrates the migration of population towards the major cities.

Bangladesh Bureau of Statistic (BBS) and World Bank forecasts as follows based on the 1981 census:

Table 3-1-1 Average Annual Growth Rate (%)

Year	BBS estimates	World Bank estimates
1985-1990	2.4	2.51
1990-1995	2.4	2.45
1995-2000	2.3	2.33

Source: BBS Yearbook 1987 and World Bank, Recent Economic Development 1989

The results of the forecast are almost the same for both. This study will adopt the BBS estimates.

3-1-2 National Income

The gross domestic product in 1987/88 at current prices was 589 billion taka, or about 5,527 taka per capita. At an average exchange rate of 30 taka to one US dollar, this was nearly 184 US dollars per capita. Between 1981/82 and 1987/88, GDP at current price increased on the average by 14.2% per year. During this period, there was a high level of inflation and the increases in GDP in real terms averaged only 3.2% (in 1984/85 price) which, with the population increasing at 2.5% per year, meant that the annual average increase in GDP per capita in real terms was only 0.7%.

Table 3-1-2 Past GDP Growth

	1981/82	1987/88	Annual Growth Rate
GDP at current market price (Million taka)	265,144	589,220	14.2 (%)
Population (Million)	92.1	106.6	2.5
Per Capita GDP (Taka)	2,879	5,527	11.5
GDP at constant (1984/85) Market price, Million taka	372,961	449,786	3.2
Per Capita GDP (Taka)	4,050	4,219	0.7

Source: BBS Yearbook 1989

The forecasting of future GDP largely depends on the existing economic framework and the investment policy. According to the Third Five Year Plan, a target GDP growth rate of 5.4% per year will not be realized until 1987/88 and this figure is an optimistic target compared with the past achievement shown in Table 3-1-3.

Table 3-1-3 Past Target and Realized GDP Growth Rate during Each Five Year Plan Period

	FFYP	TYP	SFYP	TFYP
	1973/74 <u>-77/78</u>	1978/79 <u>-79/80</u>	1980/81 <u>-84/85</u>	1985/86 <u>-89/90</u>
Target (%)	5.5	5.6	5.4	5.4
Realized (%)	4.0	3.5	3.8	3.0
			(1985/86-87/88)	

Source: BBS, Yearbook 1989

In this study, the annual growth rate of GDP from 1989/90 to 2004/05 is assumed to be as follows. It is derived from the study team which was presented in Table 3-1-4.

Table 3-1-4 Future Annual GDP Growth Rate at Constant Price (1984/85) by Sector

Sector	(%)			
	1987/88 -89/90	1989/90 -94/95	1994/95 -99/00	1999/00 -2004/05
Agriculture	1.3	4.3	3.5	3.5
Industry	3.3	8.0	8.0	8.0
Construction	6.8	8.0	8.0	7.0
Power	20.0	8.0	7.5	7.0
Transport	5.8	6.0	6.0	6.0
Trade & Banking	6.0	6.0	6.0	6.0
Housing	3.2	4.0	4.0	4.0
Public Service	3.1	5.0	5.0	5.0
Total	3.8	5.5	5.4	5.4

Source: Study Team

Table 3-1-5 Future GDP by Sector at Constant (1984/85) Prices

Sector	(Million taka)			
	1989/90	1994/95	1999/00	2004/05
Agriculture	178,916	217,679	258,534	307,057
Industry	47,298	69,496	102,113	150,037
Construction	31,347	46,059	67,676	94,919
Power	5,851	8,597	12,343	17,311
Transport	56,815	76,032	101,748	136,162
Trade & Banking	105,928	141,756	189,701	253,863
Housing	38,053	46,297	56,327	68,531
Public Service	20,567	26,249	33,501	42,756
Total	484,775	632,165	821,943	1,070,637

Source: Study Team

3-1-3 Balance of Payments

(1) Exports and Imports

Export items are mostly primary products such as jute products, frozen shrimp, leather and tea. The USA, Italy, UK, Germany and Japan are the major export destinations accounting for over 50% of the total.

The growth of export earnings in 1987/88 stemmed principally from a 45% increase in exports of ready-made garments (additional 123 million US dollar) and to a lesser extent from increased earnings from urea fertilizer (additional 20 million US dollar) and shrimp (additional 49 million). Consequently, the value of Bangladesh's non-traditional exports exceeded that of traditional exports for the first time, with garments easily surpassing jute and jute goods as the largest single category of merchandise exports. The volume of garments exports increased by about 30%, as Bangladesh continued to enjoy favorable access to the US markets. Currently efforts are being directed towards diversifying export markets through increased sales to both western and eastern European markets and moving into higher value product lines. Recent expansion of domestic production capacity also enabled Bangladesh to export substantial quantities of urea, valued at 25 million US dollar. Prospects for further export growth in this area are promising in view of planned additions to capacity and availability of low cost natural gas. Considerable potential for expanding production for export also exists in frozen food, especially shrimp.

Import items are mainly consisting of capital goods, petroleum and food. Major countries of origin are Singapore, Japan and USA accounting for almost 30%.

Record foodgrain imports to meet anticipated crop losses, exceeding the previous year's level by 70% in volume and by 216 million US dollar in value, accounted for nearly three fifths of the increase (367 million US dollar) in the total import bill in 1987/88. Import payments also rose by 21 million US dollar for fertilizer to provide for the requirements of the crops rehabilitation program; and for edible oil (by 22 million US dollar), crude petroleum and petroleum products (by 42 million US dollar) and raw cotton (by 38 million US dollar) due to significantly higher import prices. Thus, non-food imports for the domestic market, affected by a combination of factors such as weak domestic demand, interruptions in industrial activity caused by strikes, and priority given to unloading of food imports etc., showed little increase. On the other hand, capital goods imports declined sharply by 23% in value terms, due partly to the substantial reduction in public investment (ADP).

Table 3-1-6 Export/Import by Commodity in 1987/88

(Million US dollar)

Export			Import		
Items	Value	Share(%)	Items	Value	Share(%)
Raw Jute	81	6.6	Capital Goods	774	25.9
Jute Goods	301	24.4	Food	626	21.0
Garments	434	35.3	Petroleum	272	9.1
Frozen Shrimp	145	11.8	Fertilizer	46	1.5
Leather	147	11.9	Cement	60	2.0
Tea	39	3.2	Raw Cotton	136	4.6
Other	84	6.8	Other	1,073	35.9
Total	1,231	100.0	Total	2,987	100.0

Source: World Bank, 1989

Table 3-1-7 Export/Import by Country in 1987/88

(Million taka)

Export			Import		
Country	Value	Share(%)	Country	Value	Share(%)
USA	12,044.5	29.3	Japan	10,097.8	11.0
Italy	3,677.0	8.9	Hong Kong	4,271.4	4.7
UK	2,432.9	5.9	Singapore	6,327.4	6.9
Japan	2,292.1	5.6	USA	8,160.8	8.9
Germany	2,305.9	5.6	UK	4,196.7	4.6
Singapore	1,666.7	4.0	India	4,106.1	4.5
Belgium	1,431.6	3.5	France	3,529.6	3.9
USSR	1,250.4	3.0	China	3,475.8	3.8
Other	14,060.0	34.2	Canada	2,985.9	3.2
			Other	44,436.7	48.5
Total	41,161.1	100.0	Total	91,588.2	100.0

Source: BBS Pocketbook 1989

(2) Balance of Payments

Since the early eighties, the balance of payments has undergone significant structural improvements and strengthened considerably. Dampening of import demands associated with the adjustment effort and relatively slow growth of the economy, together with rapid and more diversified growth of exports and workers' remittances helped to reduce the external current account deficit. Merchandise exports and remittances now cover 68% of the import bill, compared with only 53% in 1984/85. However, external assistance continues to be a critical element of balance of payments (and budgetary) support and rising levels of aid disbursements, along with structural improvements noted above, have helped to generate overall balance of payments surpluses since 1985/86. Consequently, the (gross) external reserve position strengthened steadily to nearly 900 million US dollar, equivalent to 3.6 month's imports at the end of FY88, compared to barely 2 month's imports in 1984/85, providing some much needed cushion to a highly disaster-prone economy.

In the capital account, aid disbursements rose by only 3%, in nominal terms, over 1986/87 level to 1641 million US dollar in 1987/88. However, the composition of aid changed significantly, with an acceleration of food and commodity aid disbursements reflecting the special needs created by the floods, and a 14% decline in project aid.

With net capital inflows exceeding the current account deficit, the balance of payments recorded an overall surplus in FY88, and gross reserves climbed to 896 million US dollar, equivalent to 3.6 month's imports, which indicates a comfortable though an excessive reserve level in view of the disaster-proneness and extreme volatility of the Bangladesh economy.

Debt service payments in 1987/88 as a ratio of export of goods and services and private transfers declined to 22.7% from 27.95% in the preceding year. This fall in the debt service ratio was due to increased export earnings and remittances and lower IMF repurchases in 1987/88, and a bunching of repayments of food credits and other short-term debt and substantial repurchases from the IMF which raised the debt service ratio to unusually high levels in 1986/87.

Table 3-1-8 Balance of Payments

	(Million US dollar)			
	1984/85	1985/86	1986/87	1987/88
Export, f.o.b.	934	819	1,074	1,231
Import, c.i.f.	-2,647	-2,364	-2,620	-2,987
Trade Balance	-1,713	-1,545	-1,546	-1,756
Service, Net	-78	-125	-151	-143
Receipts	286	260	262	310
Payments	-364	-385	-413	-453
Private Transfers (net)	477	586	731	788
Current Account Balance	-1,314	-1,084	-966	-1,111
Aid Disbursements	1,267	1,306	1,595	1,641
Food Aid	244	203	225	300
Commodity/Program Aid	432	393	403	509
Project Aid	591	710	967	832
M< Amortization	-110	-117	-154	-166
Trust Fund, Net	-13	-25	-30	-31
Aircraft Loans, Net	13	-1	-7	-11
Food Credits, Net *1	91	-69	-96	8
Borrowing	(190)	(13)	(0)	(43)
Repayment	(-99)	(-82)	(-96)	(-35)
Short-term and Other Borrowings, Net	-35	1	-140	-155
IMF, Net Purchases	-6	-3	164	13
Other Including Errors & Omissions	-36	91	-109	-44
Changes in Gross Reserves (- = increase)	144	-99	-257	-144
Memorandum Items:				
Gross Reserves (end FY)	396	495	752	896
Debt Service Ratio(%)*2	24.5	28.2	27.8	22.6

*1: Commercial borrowings on account of food imports incurred by Government of Bangladesh.

*2: Debt Service as a percentage of export of goods and services and private transfers.

Source: World Bank, 1989

3-2 CURRENT SITUATION OF SHIPPING

3-2-1 Sea Transport

(1) Current Situation

Bangladesh has two major ports for foreign trade which are Chittagong and Mongla. In 1987/88 the respective shares of total imports handled for Chittagong and Mongla ports were 76% and 24%, and shares of total exports were 50% and 50%. There is a considerable imbalance between imports and exports handling by those two ports. Both ports plan to develop multi-purpose jetties and expand their cargo handling facilities to meet the future demand of container vessels.

Table 3-2-1 Export/Import Volume

		(1,000 ton)			
		1984/85	1985/86	1986/87	1987/88
Import	Chittagong	6,829	5,902	5,836	7,108
	Mongla	1,821	1,561	1,557	2,236
	All Ports	8,650	7,463	7,393	9,344
Export	Chittagong	340	334	402	638
	Mongla	554	762	730	627
	All Ports	894	1,096	1,132	1,265

Source: BBS Pocketbook 1989

Realizing the importance of shipping to the country for a nation having essentially a seaborne trade with the outside world, the Government established the Bangladesh Shipping Corporation (BSC) on the 5th of February, 1972 to provide safe and efficient shipping services on international routes and to carry out all forms of activities connected with or auxiliary to shipping.

BSC started its business operation merely as an agent of foreign shipping lines in Bangladesh ports. The primary objective of the Corporation was to reduce the country's dependence on foreign shipping lines for seaborne trade. At present (1988, end of December), BSC owns a fleet of 22 vessels amounting to 286,850 DWT (Refer to Table 3-2-6). Fleet position can be classified as follows:

	<u>No.</u>	<u>DWT</u>
Tanker	2	28,008
Semi-Container	12	173,998
Coasters	2	3,419
Others	6	81,425

These vessels operate on major world liner routes, transporting general cargo, crude oil and food grains. BSC operate their liner services in UK-Continent (Cont), USA, Far East (FE)/Japan, Pakistan (Pak)/West Asia Gulf. Performance by sea routes are described in Table 3-2-7. The number of sailings was not much changed between two years, but tonnage carried and gross revenue earned were changed much due to freight rate fluctuation and stiff competition from other lines. Lifting share by direction shows that BSC operate mainly in Europe, Middle East and the Far East in 1987/88 (Refer to Table 3-2-5). In addition to liner service, BSC has introduced a Feeder Service which is fully containerized between Calcutta/ Bangladesh/ Singapore particularly for fast moving items like ready-made garments. BSC fleet including chartered vessels carried 16% of the nation's imports and exports in 1987/88.

However, the number of vessels has been decreasing since 1980/81 because of the scrapping due to the advanced age and shortage of foreign funds. Fifteen private companies own a fleet of 25 vessels (1988) amounting to 200,323 DWT. Fleet particulars are presented in Table 3-2-8. These vessels operated in mainly Far East/Asia routes and follow feeder routes as a tramp service. The recent booming in the shipping business make private owners want to buy more vessels. Private owners own mostly second-hand vessels. Lifting share by direction shows that private ships operate mainly in Asian Countries (Refer to Table 3-2-5). Private shipping companies increased their number of vessels and shared 4.7% of the nation's imports and exports in 1987/88.

Table 3-2-2 Route Coverage and Sailings of Bangladesh Shipping Corporation and Private Shipping Companies

Company	Route Coverage	Frequency
BSC	Bangladesh/UK-Continent Bangladesh	3 Sailings (in two months)
	Bangladesh/EC/USA/ Bangladesh	1 Sailing (in every 6 weeks)
	Bangladesh/FE-Japan/ Bangladesh	1 Sailing (in each month from month ends)
	Bangladesh/Pak-West Asia Gulf Red Sea/Bangladesh	1 Sailing (in every 6 weeks)
Atlas	Bangladesh/Far East Japan/Bangladesh	1 Sailing in a month
	Bangladesh/Singapore/ Bangkok/HKG/Bangladesh	1/3 Sailing per month
Aqua	Bangladesh/Pak/ Bangladesh	1 Sailing in every 35 days
Hegge	Bangladesh/Japan/ Calcutta/Bangladesh	1 Sailing in each month
Bulk Carriers	Bangladesh/Singapore/ Malaysia/Bangladesh	1 Sailing in each month
Maritima Orient	Bangladesh/Pak-Gulf/ Bangladesh	1 Sailing per 3 months
Sea Trade	Singapore/Malaysia/ Thai/Bangladesh	1 Sailing each month
Blue Ocean Line	Bangladesh/Japan/ Singapore/Bangladesh	Unknown
Marine	Bangladesh/Far-East	Unknown
Ben- orient	Bangladesh/Singapore/ Malaysia	Unknown
Pan Asia	Bangladesh/Singapore/ HKG/Malaysia	Unknown
South Asia	Bangladesh/Singapore/ HKG/Malaysia	Unknown
Shetu	Bangladesh/Singapore/ HKG/Malaysia	Unknown

Source: Freight & General Shipping Statistic (FGSS) No. 7

Table 3-2-3 Changes in Fleet Position of National Flag Ship

	No. of Vessels		Total DWT		Average DWT	
	BSC	Private	BSC	Private	BSC	Private
1980/81	25	2	391,821	19,136	15,673	9,568
1984/85	21	8	266,211	84,988	12,677	10,624
1985/86	21	22	270,079	186,454	12,861	8,475
1988/89 (As on Nov. '88)	21	25	270,079	200,323	12,861	8,013

Source: Freight & General Shipping Statistic (FGSS) No. 7

Table 3-2-4 Changes in Cargo Carriage Share over Export & Import

		(1,000 ton)			
		1984/85	Share	1987/88	Share
BSC Own	Import	211	2.4(%)	193	2.1(%)
	Export	126	13.9	103	8.1
	Total	337	3.4	296	2.8
BSC Own & Chartered	Import	1,748	19.6	1,584	17.0
	Export	126	13.9	110	8.7
	Total	1,874	19.1	1,694	16.0
Private	Import	238	2.7	374	4.0
	Export	81	8.9	124	9.8
	Total	319	3.2	498	4.7
Foreign Flag	Import	6,928	77.7	7,367	79.0
	Export	700	77.2	1,032	81.5
	Total	7,628	77.7	8,399	79.3
Bangla- desh	Import	8,914	100.0	9,325	100.0
	Export	907	100.0	1,266	100.0
	Total	9,821	100.0	10,591	100.0

Source: FGSS No. 4 & No. 7

Table 3-2-5 Lifting Share by Direction in 1987/88

Shipping Direction		(%)			
		BSC Own	BSC Chartered	Private	Foreign
Far East	Import	27.1	0.0	10.2	4.0
	Export	8.5	8.3	1.9	
South East Asia	Import	26.3	20.8	42.6	19.0
	Export	2.1	6.8		
Singapore & India	Import	4.1	6.4	13.7	11.7
	Export	1.3	21.4	59.4	
Australia	Import	0.0	12.1		0.0
	Export	4.6	54.8		
South Asia	Import	2.1	28.8	18.7	2.6
	Export	1.2		34.4	
Middle East & Africa	Import	9.9	10.9	0.8	0.8
	Export	30.6	2.1	4.3	
Europe	Import	25.8	0.8		29.8
	Export	35.8			
America	Import	4.7	20.2	3.8	22.3
	Export	13.6	6.6		
Other	Import			10.2	9.8
	Export	2.3			
Total	Import	100.0	100.0	100.0	100.0
	Export	100.0	100.0	100.0	100.0

Source: FGSS No. 7

Table 3-2-6 Particulars of Vessels of Bangladesh Shipping Corporation
(as of Nov. 1989)

No.	Name of Vessel	Year of Built	DWT	Reefer Space	Date of Delivery
1.	Banglar Mamata	1980	15,877	24,000 Cft.	04/06/80
2.	Banglar Robi	1981	12,720	Sockets fitted for 40 reefer containers	07/01/83
3.	Banglar Gourab	1983	13,934	22,425 Cft.	21/01/83
4.	Banglar Maya	1980	15,883	Sockets fitted for reefer containers	10/09/80
5.	Banglar Moni	1983	12,680	sockets fitted for 40 reefers containers	09/09/83
6.	Banglar Kallol	1980	16,764	27,119 Cft.	24/01/80
7.	Banglar Kakoli	1979	16,764	27,199 Cft.	18/12/79
8.	Banglar Baani	1976	15,088	Sockets fitted for 8 reefer containers	11/08/78
9.	Banglar Progoti	1970	9,190	20,286 Cft.	23/01/74
10.	Banglar Swapna	1971	9,190	20,286 Cft.	04/01/74
11.	Banglar Mita	1966	13,391	48,455 Cft.	11/10/77
12.	Banglar Kiron	1976	13,469	6,215 Cft.	14/08/78
13.	Banglar Upohar	1965	14,784	-	28/09/73
14.	Banglar Asha	1968	14,931	-	17/08/73
15.	Banglar Sampad	1970	12,883	-	11/07/73
16.	Banglar Urmi	1984	15,552	-	14/07/87
17.	Banglar Shobha	1985	15,552	-	16/07/87
18.	Dhaka	1967	1,717	-	10/06/72
19.	Khulna	1967	1,702	-	17/07/72
20.	Banglar Jyoti	1987	13,467	-	15/05/87
21.	Banglar Shourabh	1987	14,541	-	14/10/87
22.	Banglar Doot	1988	16,771	-	12/12/88
23.	Banglar Mukh	1989	16,500	-	-/ -/89
24.	Multi-purpose Dry Cargo	Not yet	12,300	under construction	Plan

Source: FGSS No. 7 and BSC and CDD

Table 3-2-7 BSC's Performance by Owned Ships
in Various Sea-Routes

Sea-Routes	1984/85			1985/86			
	No.	Name of Vessel	DWT	No. of Voyage	Name of Vessel	DWT	No. of Voyage
BD/UK-CONT	1.	Maya	15,883	5	Maya	15,883	2
	2.	Gourab	13,934	5	Gourab	13,934	5
	3.	Robi	12,720	5	Robi	12,720	5
	4.	Mamata	5,877	4	Kakoli	16,764	2
	5.	Moni	12,680	4	Moni	12,680	6
	6.				Baani	15,088	3
Total			61,094	24		87,069	24
BD/USA	1.	Kakoli	16,764	4	Maya	15,883	2
	2.	Kallol	16,764	3	Kaloli	16,764	1
	3.	Baani	15,088	3	Kolloi	16,764	4
	4.				Mamata	15,877	4
	5.				Baani	15,088	1
Total			48,616	10		80,376	12
BD/FAR EAST	1.	Progoti	9,190	8	Progoti	9,190	7
	2.	Swapna	9,190	4	Swapna	9,190	6
	3.	Mita	13,391	5	Mita	13,391	6
	4.	Tarani	10,270	1	Upohar	14,784	1
	5.	Upohar	14,784	2	Kiron	13,469	1
Total			56,825	20		60,024	21
BD/ASIA-GULF	1.	Progoti	9,190	1	Sampad	12,883	5
	2.	Sampad	12,883	1	Kiron	13,469	2
	3.	Kiron	13,469	3	Tarani	10,270	3
	4.	Tarani	10,270	3	Swapna	9,190	1
	5.	Swapna	9,190	1			
	6.	Sampad	12,883	2			
Total			67,885	11		45,812	11
Other	1.	Doot	13,023		Dhaka	1,717	
	2.	Dhaka	1,717		Khulna	1,702	
	3.	Khulna	1,702		Asha	14,931	
	4.	Asha	14,931		Jyoti	14,541	
	5.	Aco	19,268		Urmi	15,552	
	6.				Shobha	15,552	
	7.				Shodrabh	14,541	
Total			50,641			78,536	

Source: BSC Annual Report

Table 3-2-8 Fleet Particulars (Private Sector) (1/2)

No.	Name of Vessel	Year of Built	DWT	Country of Built	BHP	Speed in Knots	Date of Acquisition	Length
1.	<u>M/S. ATLAS SHIPPING LINERS</u> 1. M.V. Al-Sana 2. M.V. Al-Salma 3. M.V. Al-Swamruz	1968	7,999	Japan	4,200	11	June '84	124 m
		1971	9,219	Japan	5,200	13	May '85	119.22 m
		1974	12,155	Japan	8,000	12.2	16/12/85	143.50 m
2.	<u>M/S. AQUA LINES</u> 1. M.V. Shezan 2. M.V. Tahasin	1958	11,811	Japan	7,200	12	25/01/85	481.59 ft.
		1970	15,245	Germany	8,400	13	07/08/85	139.55 m
3.	<u>M/S. LOYAL SHIPPING LINES</u> 1. M.V. Loyal Bird	1970	10,180	Japan	5,000	13	03/12/85	418.46 ft.
4.	<u>M/S. BANGLADESH BULK CARRIERS LTD.</u> 1. M.V. Al-Tabith 2. M.V. Al-Reza	1969	15,050	Germany	7,200	15	23/11/85	139.73 m
		1977	16,036	Panama	1,200	12	22/12/86	144.65 m
5.	<u>M/S. HEGGE & CO (BD) LTD.</u> 1. M.V. Hegge Three	1971	7,095	Japan	4,100	12.2	16/04/86	98.00 m
		1971	8,738	Japan	5,200	12	19/06/86	391.88
6.	<u>M/S. MARITIME ORIENT LTD.</u> 1. M.V. Samudra Raj 2. M.V. Samudra Samrat	1973	10,186	Spain	10,500	18	-	-
		1973	1,899	-	3,200	13	12/05/88	85.13 m
7.	<u>SINGAPORE EASTERN</u> 1. M.V. Eastern Pioneer	1973	1,899	-	3,200	13	12/05/88	85.13 m

Table 3-2-8 Fleet Particulars (Private Sector) (2/2)

No.	Name of Vessel	Year of Built	DWT	Country of Built	BHP	Speed in Knots	Date of Acquisition	Length
8.	<u>SEA TRADE & CONSTRUCTION</u> 1. M.V. Susan 2. M.V. Sea Adventure	1969	5,845	Korea	2,700	11	23/06/86	108.84 m
		1970	15,327	Greece	3,500	13	12/02/87	141 m
9.	<u>M/S. BENORIENT SHIPPING LINE</u> 1. M.V. Al-Fesani	1970	3,326	Germany	3,200	15	30/07/86	-
10.	<u>M/S. BLUE OCEAN LINE</u> 1. Blue Ocean-1 2. Blue Ocean-2	1971	9,326	Greece	4,200	12.7	27/09/86	-
		1973	8,840	Greece	3,900	14.8	15/01/87	107.50 m
11.	<u>M/S. MARINE TRANS LTD.</u> 1. M.V. Marine Sky 2. M.V. Marine Joy	1973	7,361	Japan	4,200	12.7	27/09/86	-
		1971	6,051	Japan	3,800	11	09/09/87	102.24 m
12.	<u>M/S. PAN ASIA LINES</u> 1. M.V. Queen of Spade 2. M.V. Queen of Club	1971	3,063	Japan	1,500	10	02/09/86	65.47 m
		1971	3,035	Japan	1,500	10	02/09/86	65.47 m
13.	<u>M/S. SOUTH ASIA LTD.</u> 1. M.V. Queen of Heart 2. M.V. Queen of Diamond	1970	3,067	Greek	750	10	15/01/87	79.99
		1972	3,019	Greek	750	10	15/01/87	79.99
14.	<u>M/S. SHEFU SHIPPING LINES</u> 1. M.V. Yamarita	1974	1,100	Japan	2,000	11.9	June '86	62.85
15.	<u>M/S. CONTINENTAL LINER AGENCY</u> 1. M.V. Continen-1	1973	5,350	Brazil	4,400	12	15/09/87	115.45 m

Table 3-2-9 Number of Arriving Vessels

Country	1985		1986		1987		1988	
	No. of Vessel	Average G/T	No. of Vessel	Average G/T	No. of Vessel	Average G/T	No. of Vessel	Average G/T
Singapore	81	2,837	125	4,147	109	2,973	128	4,128
Malaysia	2	23,675	10	3,346	12	4,740	16	6,200
Thailand	1	-	5	4,483	-	-	5	3,778
Indonesia	-	-	1	9,986	2	1,884	1	9,005
Other South East Asia	44	6,157	125	5,953	146	5,481	151	5,969
People's Republic of China	27	4,961	32	3,933	31	2,923	30	3,985
Sri Lanka	-	-	1	12,420	4	8,302	3	4,055
India	40	2,299	23	675	24	3,309	24	1,580
Japan	26	1,988	16	1,894	14	4,362	7	163
Pakistan	12	2,330	13	2,467	18	5,652	14	4,696
Bangladesh	206	1,949	241	1,613	107	2,909	175	3,411
Other South Asia	-	-	7	3,026	10	6,184	11	3,636
Middle East Countries	3	5,676	3	1,035	3	6,985	7	2,149
North American Countries	-	-	23	20,147	11	16,043	18	2,600
South American Countries	150	4,991	141	4,212	122	5,000	164	5,010
European Community Countries	117	4,891	89	4,113	81	9,018	73	7,613
Other North West European Countries	36	5,552	54	3,533	55	5,814	55	3,544
East European Countries	64	16,534	107	3,229	80	4,987	95	3,685
African Countries	-	-	2	24,960	2	4,412	-	-
Australia, New Zealand and Other Countries in the Pacific	-	-	-	-	1	455	-	-
Others	-	-	-	-	-	-	-	-
Foreign Country Total	239	3,291	-	-	10	2,351	120	6,512
Total	1,048	-	1,018	-	842	-	1,097	-

Source: Chittagong Port Authority

(2) Future Prospectives

According to BSC's vessel acquisition programme, one cargo ship is to be newly purchased, and seven cargo ships and three oil tankers are planned to be replaced. However, the number of vessels to be replaced, 11, are reduced to eight due to the shortage of funds. Therefore, the total number of vessels in 1990 is estimated to be 25 by deducting four of the scrapped ships from 1988 to 1990.

The future target over a long-term period is to increase cargo lifting share of national flag ship from 20.7% to 40% depending on a fleet expansion programme.

BSC has been pursuing a policy of reducing the nation's dependence on foreign vessels and thereby develop a maritime fleet which should be capable of serving about 21% of the country's seaborne trade by 1989. Sharing 25% may not be achieved by the end of TFYP due to resource constraints. However, all efforts are being made to ensure materialization of the planned programme.

With the emergence of new export items like frozen marine products, naptha, molasses, garments during the past few years, the pattern of Bangladesh trade has been changing both in its composition and direction. Coupled with this is the fast introduction of container service which is becoming increasingly popular in the shipping trade. BSC is, therefore, required to gear itself to meet the changing situation by modernizing its fleet of vessels. Accordingly, BSC is now going for multipurpose vessels which will have the capacity to carry at least 250 TEU containers including reefer containers, both in its replacement programme and in new acquisitions.

Table 3-2-10 Original BSC's Vessel Acquisition Programme

Type	Present Number	1985/88 Progressed	1988/89 Expected	1989/90 Expected	Total
Cargo ship	18 Additional	-	-	1	1
	Replacement	2	3	2	7
Oil	1 Additional	-	-	-	-
	Replacement	2	1	-	3
Coaster	2 Additional	-	-	-	-
	Replacement	-	-	-	-
Passenger Ship	- Additional	-	-	-	-
	Replacement	-	-	-	-
Total	21	4	4	3	11

Source: Ministry of Shipping

Table 3-2-11 Amended BSC's Vessel Acquisition Programme upto 30th June, 1990

No.	Type of Vessels	Container Carrying Capacity	No. of Vessels	New/Second-hand
1.	Fully Containerized Vessel (under Replacement Programme).	650-800 TEU	Two	Second-hand
2.	Fully Containerized Vessel (under Replacement Programme).	650-800 TEU	Two	New
3.	Multi-purpose Dry Cargo/Fully containerised Vessel (under Replacement Programme).	12/13,000 DWT/ 693-724 TEU	One	New
4.	Main Haul Tanker (under Replacement Programme)	110/135,000	One	Second-hand
5.	Full Container/Cellular Feeder Vessel (under Replacement Programme)	250-300 TEU	Two	Second-hand

Source: BSC

(3) Registered Vessels with Mercantile Marine Department

Number of registered vessels under Merchant Shipping Ordinance 1983 are as follows:

Table 3-2-12 Registered Vessels under Mercantile Marine Department

Type of Vessel	Number	Belongings
Seagoing cargo vessel	43	BSC, Private
Coastal vessel	114	BIWTC, Private
Passenger ship	8	All BIWTC
Dumb Barge	47	Almost BIWTC
Tugs	9	BIWTC, Private
Inspection Vessel	3	BWDB
Floating Crane	1	CPA
Tanker	53	BIWTC, Private
Fishing Trawler	65	BFDC, Private
Fishing Boat	2,836	-
Cargo Boat	971	-
Total	4,151	

Source: FGSS No. 7

3-2-2 Inland Water Transport

(1) Current Situation

The transport system of Bangladesh comprises railways, road, inland water transport and air transport. A summary of the value added and the total movement of goods are shown as follows:

Table 3-2-13 Modal Split in 1986/87

Mode	Value Added Share		Goods Movement Share	
	(Million taka)	(%)	(1,000 M/T)	(%)
Railway	1,285	1.9	1,955	2.1
Road Organized	6,903	10.4	17,936	19.3
Unorganized	28,773	43.5	52,868	57.0
Road Total	35,676	53.9	70,804	76.3
Water Organized	2,186	3.3	5,710	6.2
Unorganized	26,498	40.1	14,255	15.4
Water total	28,684	43.4	19,965	21.6
Air Transport	499	0.8	2	-
Total	66,144	100.0	92,726	100.0

Source: BBS Yearbook 1989

The inland waterways serve as a complementary role to road transport by utilizing national river network. Historically the dependency on inland water transport has been high. Total water sector account for 43% of the value added and about 22% of cargo movements in 1986/87.

There is not much data available concerning the relation between domestic overland transport and the foreign trade cargo handled at two major seaports. According to BIWTA's annual report, and share of imported dry cargo carried to the hinterland is shown as follows:

Table 3-2-14 Modal Split of Imported Dry Cargo

	(1,000 ton)							
	Road Share (%)		Railway Share (%)		Water Share (%)		Total Share (%)	
Chittagong	2,664	57	605	13	1,378	30	4,647	100
Mongla	227	11	265	13	1,594	76	2,086	100
Total	2,891	43	870	13	2,972	44	6,733	100

Source: Annual Ports and Traffic Report (BIWTA 1984/85)

The total number of registered vessels in the organized sector is 3,303 in 1984/85 including 2,243 mechanized and 868 non-mechanized with a carrying capacity of 224,092 M/T of cargo and 151,629 passengers. These vessels carried 53.3 million passengers and 4.8 million tons of cargo in 1984/85.

Cargo carried:	Overseas	4,169,964 (Ton)
	Inland	668,998
	International	9,792
<hr/>		
	Total	4,848,754
Passenger Carried:	Private Sector	48.5 (Million)
	Public Sector	4.8

Bangladesh Inland Water Transport Corporation (BIWTC) operated 533 vessels and carried 1.3 million tons of cargo and 4.5 million passengers in 1984/85. As for the unorganized sector, transport fleet comprised of domestic boats accounting for 102,000 cargo boats and 189,000 passenger boats in 1984/85.

(2) Inland Waterway Containerization

In 1986/87, 67,100 TEU containers were handled at two seaports (Chittagong & Mongla) of Bangladesh and since then container handling at these two seaports has been increasing. Growth of Bangladesh container traffic and forecast container (export and import) for Chittagong - Dhaka and Mongla - Dhaka corridor may be seen on Tables 3-2-15 and 16, respectively.

But the transport of containers from the two seaports to inland destinations (particularly to the capital city) is limited due to the absence of container haulage facilities in the three modals of transportation viz. road, rail and inland water transport. As a result, congestion and stock piles of containers are being faced at seaports, particularly Chittagong port. Presently, the containers are being packed and unpacked at two seaports. Railway has already commenced a pilot operation for moving containers from Chittagong port to Kamalapur railway station. At present, roads are quite incapable of moving containers.

Even after the completion of the railway inland container depot at Kamalapur in 1991, only 19,600 TEU containers will be handled there, whereas in 1991 a total estimate of 76,000 TEU containers shall be coming from Chittagong and Mongla to Dhaka. Therefore, it is considered that the remaining 56,400 TEU should have to be handled by inland transport. Because the road is not capable of handling containers, only inland waterway transport is the remaining mode of transport. It appears that construction of container vessels are very urgently required for carrying from the two seaports. In this respect, BIWTA has prepared a project to construct temporary container facilities at Khanpur, Narayanganj.

Table 3-2-15 Growth of Bangladesh Container Traffic

Year	(TEU)		
	Import	Export	Total
1980-81	1,800	1,400	3,200
1981-82	3,600	2,300	5,900
1982-83	6,900	6,400	13,300
1983-84	9,500	11,200	20,700
1984-85	16,400	14,000	30,400
1985-86	26,400	23,900	50,300
1986-87*	36,600	30,500	67,100

Note: * Estimated Value

Source: Rail Container Transport Study Report, September, 1987

Table 3-2-16 Forecast Container Export and Import for
Chittagong-Dhaka and Mongla-Dhaka Corridor

(1,000 TEU)

Year	Chittagong Sea Port Import/Export	Mongla Sea Port Import/Export	Total Import/Export	Chittagong-Dhaka Import/Export	Mongla-Dhaka Import/Export	Total Container for Dhaka
1990/91	60.00	20.00	80.00	30.00	8.00	76.00
1991/92	68.70	25.40	94.10	34.80	10.80	91.20
1996/97	116.70	36.70	153.40	62.20	15.80	156.00
2001/02	167.90	46.70	214.60	92.40	20.00	224.80

Source: Rail Container Transport Study, 1987

(3) Future Prospectives

BIWTC has the following fleet expansion programme during the Fourth Five Year Plan (FFYP, 1990-94).

Table 3-2-17 Fleet Expansion Programme of BIWTC

No.	Project Title	1989	FFYP
1.	Procurement of Passenger Vessel		
	- Inland main truck routes	3	21
	- Coastal belt & off-shore inland routes	6	15
	- Inland feeder/transit routes	1	9
2.	Procurement of Vessels (Modern)		
	- Normal operations of SES for fast movement of passengers and flood emergency	0	10
	- Vessels for high income group	0	6
3.	Procurement of Various Cargo Vessels		
	- Cargo-coaster for dry cargo (mainly imported)	20	4
	- Oil Tanker for Seaport	12	6
	- Tugs for towing bay-crossing dumb barges	26	4
	- Acquisition/construction of container vessels	0	12
	- Misc. cargo vessels	0	8
4.	Very Fast Moving Shallow Draft Passenger Ferry	0	4
5.	Procurement of Craft for Flood Emergency		
	- Mobile water purifying plant vessels for operation	0	10
	- Mobile power generating plant	0	6
	- Rescue	0	15
	- Inspection	0	2
6.	Ambulance Ferry	0	5
7.	Vessels for Movement of Organized Bodies	0	*2
8.	Ferry for carrying Heavy Equipment and Truck - Vehicles of Forces	0	*2
9.	New Floating Dock	0	*2
10.	Vehicular Ferry	0	*2
	Total	68*1	138

Note: *1 This figure does not indicate the total number of vessels for BIWTC.

*2 This figure is unknown.

Source: BIWTC

Bangladesh Inland Water Transport Authority (BIWTA), mainly responsible for river conservation and the regulation of inland water transport operations, has the following fleet expansion programme during the Fourth Five Year Plan.

Table 3-2-18 Fleet Expansion Programme of BIWTA

No.	Type of Vessel Required	Number of Vessels			
		Presently operational	Condemned & to be disposed off	Built locally	Procured from abroad
1	Buoy Tender	2	-	-	-
2	Coastal Survey	2	-	-	1
3	Hydrographic Survey and Hydraulic Investigator	4	3	-	5
4	Inspection	5 (including one Coastal)	4	3	-
5	Tug	9	3	6	-
6	Coastal Survey Workboats	3	-	-	3
7	Inland Survey Workboats	13	6	-	7
8	General Duty Workboats	13	5	7	8
9	Speed Boats	6	-	2	6
Total		63	24	17	23

Source: BIWTA

3-3 CURRENT SITUATION OF SHIP REPAIR AND SHIPBUILDING INDUSTRIES

3-3-1 Industrial Policy

(1) Industrial Policy-1986

To accelerate the pace of industrialization, the Government of Bangladesh announces the INDUSTRIAL POLICY-1986 with the following objectives:

- (a) increase contribution of industrial sector to GDP and resource augmentation;
- (b) effect growth of industries with increased emphasis on PRIVATE SECTOR participation;
- (c) lay emphasis on small, cottage and handloom industries as a priority sector;
- (d) encourage investment from 'assembly' to intermediate and basic manufacturing;
- (e) limit role of the public sector to the establishment of strategic and heavy industries;
- (f) promote agro-based and agro-supportive industries;
- (g) ensure continual increase of production of essential consumer goods at competitive prices;
- (h) create employment opportunities especially in the rural areas;
- (i) promote efficient import-substituting, export-oriented and export-linkage industries;
- (j) encourage geographical dispersal of industries;
- (k) promote development of indigenous raw material technology-based industry through research and adoption;
- (l) support efforts to achieve self-sufficient in clothing by 1990;
- (m) encourage foreign investment in appropriate sectors and particularly in high technology, export-oriented and labour intensive industries;
- (n) encourage Bangladeshi ventures abroad in areas having competitive advantage; and
- (o) encourage tourism.

To achieve the objectives, strategies and procedures have been formulated in the POLICY which is now undertaken.

(2) Policy for Ship Repair and Shipbuilding

The present policy of the Government of Bangladesh regarding ship repair and shipbuilding industries is as follows;

- 1) Import ban up to 2,000 DWT vessel;
- 2) Duty draw back facilities for shipbuilding for construction of import substitute vessels;
(For new shipbuilding, 80% of the duties are being refunded by customs)

- 3) Bangladeshi flag seagoing vessels to be drydocked /repaired in CDD; and
- 4) The Government of Bangladesh and BSEC attaching priority to equip CDD with facilities to construct seagoing vessels.

3-3-2 Principal Shipyards

The ship repair and shipbuilding industries in Bangladesh are composed of both public and private sectors. The public sector facilities comprise the three major yards (KSY, DEW and CDD) owned by BSEC and a number of ship repair yards under the ownership of BIWTC, BWDB, BIWTA and Bangladesh Navy for the maintenance and repair of their own vessels.

In the private sector, there are numerous facilities of varying degrees of technical sophistication, ranging from modern, well equipped yards to ephemeral facilities with no fixed structures or equipment.

(1) Khulna Shipyard Limited

Khulna Shipyard Ltd. (KSY) which was constructed in the period of 1954-57 is the most important shipbuilding and repair facility in Bangladesh. The Yard is situated on the western bank of the river Qazi Bacha at Labonchora and covers an area of almost 280,000 m².

The slipway can accommodate vessels up to 84 meters in length and 700 tons in light weight.

(2) Dockyard and Engineering Works Limited

Dockyard and Engineering Works Ltd. (DEW), an enterprise of BSEC, is situated on the eastern bank of the river Sitalakhya at Narayanganj and is the largest and best equipped shipyard in Dhaka area.

It comprises an area of approx. 67,500 m² with a waterfront of 220 m including the dock.

The side docking multi-carriage slipway is designed to accommodate vessels up to 90 m in length and 800 tons in light weight.

Barges up to 2,500 DWT and tanker/coaster up to 1,500 DWT can be docked on the slipway.

(3) Highspeed Shipbuilding & Heavy Engineering Co., Ltd.

Highspeed Shipbuilding & Heavy Engineering Co., Ltd. (HSHEC) is one of the largest in this field in the private sector, and is located on the western bank of the Buriganga river between Dhaka and Narayanganj with an area of approx. 17,000 m².

HSHEC is capable of building river and coastal vessels up to 1,200 DWT or 60 m(LOA) and various steel structural products.

(4) Other mechanised ship repair and/or shipbuilding yards

Table 3-3-1 shows the outline of the other mechanised ship repair and/or shipbuilding yards.

3-3-3 Industries Related to Ship Repair and Shipbuilding

(1) Outline

The industries related to ship repair and shipbuilding in Bangladesh are now in the course of developing. Material and outfitting for small ships are manufactured by BSEC's subsidiary companies etc., but the same for bigger vessels are mostly imported.

According to the data provided by CDD, locally available raw materials and imported materials for ship repair and shipbuilding are as follows:

1) Locally available raw materials

- Mild steel plates of SB quality of thickness below 12.5 mm
- Coated electrodes for manual arc welding
- Oxygen and acetylene gases
- Electric cables
- Low quality plywood and solid woods
- G.I. and M.S. pipes up to 8" dia.
- Zn-anodes

2) Imported raw materials for ship repair and shipbuilding

- Mild steel plates of SB quality of thickness more than 12.5 mm
- Checkered plates

Table 3-3-1 Other Mechanized Shipyards

NO.	NAME & ADDRESS OF MANUFACTURING UNIT	KIND OF PRODUCT	ANNUAL APPROVED CAPACITY in No.	AVERAGE PRODUCTION in 1983-1986 in No.	ACTUAL PRODUCTION in 1986-1987 in No.	NO. OF EMPLOYEE
1	M/S Narayanganj Dock Ltd. (Narayanganj)	1. Barge 2. Launch 3. Cargo	6 8 7	Barge - 1 Launch - 1 Pontoon - 1 Oil tanker - 1 Trawler - 1	15	54 Persons
2	M/S Dhaka Dockyard & Engineering Works (Narayanganj)	1. Cargo (35 x 8.4 x 2.1 x 1.8) 2. Motor Launch (30 x 2.1 x 1.8) 3. Barge (39 x 8.1 x 2.7 x 2.1)	6 10 6	1	1	35 Persons
3	M/S Delta Dockyard & Engineering Works (Dhaka)	1. Barge 2. Cargo 3. Tug 4. Launch	6 4 4 12	Barge - 2 Cargo - 2	36	65 Persons
4	M/S Shakil Ahmed Dockyards (Dhaka)	1. Twin Towboat 2. Panel Box 3. Propeller 4. Motor Launch	8 15 12 2	Tk. 7.811 Million	Tk. 9.000 Million	35 Persons
5	M/S Alam Nagar Dockyard (Dhaka)	1. Barge 2. Ferry 3. Launch 4. Pontoon 5. Gangway	2 2 1 2 2	Repair & New- building - 8 (Tk. 8.700 Million)	Tk. 16.600 Million	75 Persons
6	M/S Bengal River Services (Narayanganj)	1. Cargo	5	(Tk. 2.045 Million) 32	(Tk. 2.630 Million) 30	310 Persons
7	M/S Sunakanda Dockyard & Engineering Works (Narayanganj)	1. Vessel 2. Ferry 3. Launch	4 4 12	Repair - 674	52	42 Persons
8	M/S Begum Dockyard & Engineering Works (Chittagong)	1. Vessel 2. Barge 3. Launch	1 2 2	Tk. 4.920 Million	Tk. 2.600 Million	60 Persons
9	M/S S.S. Alam Company Ltd. (Chittagong)	1. Barge 2. Launch 3. Cargo	4 2 2	Barge - 1 Vessel - 1 Boat - 2	Tk. 5.350 Million	60 Persons
10	M/S Kaptai Boatbuilding & Industrial Corporation (Chittagong)	1. Barge 2. Pontoon 3. Trawler 4. Launch 5. Cargo Boat	5 2 10 10 10	Barge - 1 Trawler - 3 Launch - 1 Cargo - 4	14	72 Persons
11	M/S Ioha Karakhana Malakhali Shipyards (Khulna)	1. Barge 2. Tug 3. Cargo, etc.	78 (Tk. 4.080 Million)	Tk. 0.500 Million	Tk. 1.100 Million	21 Persons

- Hot rolled steel sections like angles, bars, bulb angles, bulb plates joist, etc.
- Lignum vitae wood
- Seamless pipes/tubes, pipe fittings
- High strength alloy steel plate and sections, shafts, round bars, etc.
- Welding rods for automatic arc welding
- Main and auxiliary engines, propellers, propeller shafts and necessary fittings, seals, bearings, etc.
- Pumps, compressors, air coolers etc.
- Mooring equipments : capstans, winches, anchors, anchor cables, ropes, etc.
- Navigation equipments
- Cargo handling gears
- Different ship fittings
- Ships electric cables, except available locally
- Marine paints

(2) Chittagong Steel Mills Limited (CSM)

CSM , which is an enterprise of BSEC, has started the production on February, 1967, with the initial capacity of 150,000 metric tons per year. Subsequently its capacity was raised to 250,000 metric tons per year in 1970. It has seven main production units as follows:

<u>Unit</u>	<u>Products</u>	<u>Capacity/year</u>
1. Melting shop	Steel ingot: 600Kg & 1,000Kg square, 900Kg, 1,200Kg & 1,600Kg slab	Rated: 250,000 M/T
2. Blooming mill	Billet: 110 & 85 mm square Angle: 100mm x 10mm x 10mm	Rated: 146,000 M/T
3. Bar mill	Billet: 65 & 50 mm square	Rated: 55,000 M/T
4. Sheet & plate mill	Thin plate: 6mm below 4' x 8' B.P.sheet: 16 to 24G x 3' x 6' to 8'	Rated: 60,000 M/T

- | | | |
|---------------------------|---|----------------------|
| 5. Galv. shop | GP/CGI sheet: 24G & 26G
3' x 6' to 10'
length | Rated:
60,000 M/T |
| 6. Heavy plate shop | M.S. plate
Thickness: 6 to 25mm
Size; 4' to 5' x 6' to 10' | Rated:
57,000 M/T |
| 7. Casting & Forging shop | Steel casting, cast iron casting, Non-ferrous casting & forging for various spare parts and consumable and ingot mould production | |

Ex-mill price of CSM products, for example, are as follows:

- M.S. plate, commercial quality : 6mm thickness
Tk 25,000/ton
 - M.S. angle, commercial quality : 9mm x 100mm x 100mm
Tk 25,000/ton
- (For Lloyds quality, Taka 500 are payable over the above price.)

(3) National Tubes Limited

National Tubes Limited, an enterprise of BSEC, is a manufacturer of mild steel and galvanized iron pipes of an international standard quality for domestic and industrial purposes. The factory is situated at Tongi Industrial Area, about 20 km away from Dhaka.

It was established in 1964, and its present total annual production capacity is 45,000 metric tons. The production range is 1/2" to 8" nominal pipes in diameter. The manufactured standard length of pipes are as follows:

- Black pipes up to 3" nominal dia. ----- 6 meters
and all sizes of G.I. pipes
- Black pipes of 4" to 8" nominal dia. ----- 12 meters

(4) Bangladesh Oxygen Limited (BOL)

BOL manufactures a wide range of electrodes for welding mild steel, low alloy steel, stainless steel, cast iron, copper and copper alloys as well as electrodes for wear and abrasion resistance. These are manufactured to international standards and are packed with special care to ensure freshness and protection against moisture and long storage.

Such gases for industrial use, as oxygen, acetylene, argon, carbonic acid gas, etc., are also manufactured by BOL and are delivered to the users in bottles.

(5) Eastern Cables Ltd.

Eastern Cables Ltd., an enterprise of BSEC, is situated in Chittagong city, and manufactures various types of cables. However, they do not manufacture cables of shipbuilding quality at the moment.

(6) Berger Paints Bangladesh Limited

The company situating in Chittagong manufactures several kinds of marine paints, as well as various kinds of primers, decorative finishes, industrial paints, lacquers & varnishes, thinners & detergents and miscellaneous. However, it appears from the technical manuals that the products for marine use are very limited.

Besides the above, there are a number of engineering industries both at public and private sectors. The big and sophisticated ones are in the hands of public sectors such as Machine Tools Factory Ltd.(BSEC) having 15,000 M/T of grey casting and 2,500 M/T of forging, Bangladesh Diesel Plant Ltd.(BSEC) having a capacity of manufacturing diesel engines of single cylinder and a assembly capacity of up to 6 cylinders, 8,000 cylinders per year, General Electric Manufacturing Co. Ltd.(BSEC) having a capacity of producing 10,000 M/T of transformers from a single phase to three phases up to 11 kv and other implements.

3-3-4 Regulation, Code and Standard

(1) Rules and Regulations for Ship Repair and Shipbuilding

All ship repair and shipbuilding work conducted in Bangladesh is subject to inspection by various ship classification societies as well as by the Government of Bangladesh. At present, there are representative offices of classification society (LRS, ABS, NK, BV, GL, DNV) in Bangladesh.

For constructional, operational, and safety aspects of inland water vessels, ship surveyors and inspectors of the Department of Shipping are engaged in their duties in accordance with the Inland Shipping Ordinance in 1976.

As for the legal inspection of ocean and coastal vessels, rules and regulations of classification society and Merchant Shipping Ordinance of Bangladesh are applied as the case may be.

(2) Industrial Codes and Standards

Chittagong Steel Mills Limited(CSM) etc. have their own standards corresponding to international standards. However, there are no specific industrial codes and standards relating to ship repair and shipbuilding. British Standards(BS), Japanese Industrial Standards(JIS), American Society of Mechanical Engineers(ASME), etc. are mostly applied for these purposes.

(3) Regulation of Import

In respect to the import of goods, there are many rules and regulations. For instance, under the order called the Import Policy Order, the import of goods are regulated as items which are banned to import, restricted and freely importable. The statutory rate of duty levied on imported goods is regulated in the First Schedule Import Tariff.