



# LOOKING BACK TO LOOK BEYOND

— 1870–2020 —

Sesquicentennial Commemorative Volume



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
SYAMA PRASAD MOOKERJEE PORT, KOLKATA

Formerly  
**Kolkata Port Trust**



1876





1988



*Published by*

Sanjoy Kumar Mukherjee  
Sr. Public Relations Officer  
Syama Prasad Mookerjee Port, Kolkata  
15, Strand Road, Kolkata 700001

October 1, 2021

*Designed by*

Advertising Bureau & Consultants  
Kolkata

The book is hyperlinked and will take the readers to videos of important occasions. For hyperlinks look for the hand signal. 

Each page at the bottom right corner has  which allows the reader to return to the table of contents from any page.

*Looking Back to Look Beyond*

©2021, Syama Prasad Mookerjee Port, Kolkata

All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher.

*Disclaimer*

Every effort has been made to ensure accuracy of the information provided. Opinions expressed in the articles are exclusively those of the authors. Publisher is neither responsible nor liable for any claims or compensation for omissions, incorrect information, alterations or distortions which, if found are unintentional.



# LOOKING BACK TO LOOK BEYOND

— 1870–2020 —

Sesquicentennial Commemorative Volume



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**

Formerly **Kolkata Port Trust**

**15, Strand Road, Kolkata 700001**



# TABLE OF CONTENTS

Message from the Prime Minister.....	1
Message from the Minister of Ports, Shipping & Waterways and AYUSH.....	2
Message from the former Minister of Ports, Shipping and Waterways.....	3
Message from the Minister of State for Ports, Shipping, Waterways & Tourism .....	4
Message from the Minister of State for Ports, Shipping and Waterways.....	5
Message from the Secretary Ministry of Ports, Shipping and Waterways.....	6
Glimpses of the Sesquicentennial Celebrations Inaugural Event held on 12 January 2020.....	7
Glimpses of the Sesquicentennial Celebrations Curtain Raiser Event held on 11 January 2020.....	8
Glimpses of the Ceremonial Closure of the Sesquicentennial Celebrations.....	11
Preparation of 150 year celebration .....	13
The Publication Team .....	15
Port Anthem .....	16
Foreword.....	18
Preface .....	21
From the Editors' Desk .....	26
Advisory and Editorial Committee .....	30
ANCHORED IN RICH HERITAGE	
Facing an Augean Challenge and Remaking of the Port <i>Prof. Mihir Das</i> .....	32
Kolkata Port and City: Entrepot Of Heritage <i>Gautam Chakraborti</i> .....	50



## OUR VALUED STAKEHOLDERS

Nepal's Transit Trade through SMP, Kolkata <i>Eshor Raj Poudel</i> .....	65
Sesquicentennial Celebrations of Syama Prasad Mookerjee Port, Kolkata: Consultative Role of ASIC and Sharing of Ideas with Port for Betterment of the Mercantile Community <i>Ashok Janakiram</i> .....	72
The Bengal Chamber of Commerce and Industry Our Enduring Relationship with The Kolkata Port <i>Capt S B Mazumder</i> .....	78
MV Dongbang Giant No. 2 <i>Carrying an oversized Goliath Gantry Crane</i> .....	87
The Synergy: IndianOil and Syama Prasad Mookerjee Port <i>Shrikant Madhav Vaidya</i> .....	88
SAIL's Growing Exim Operations at Kolkata Port <i>Anil Kumar Chaudhary</i> .....	92
SCI's Emergence As The Country's Leading Carrier: Adoption of Technological Developments in the Maritime Field and Modernisation of its Fleet to the Changing Needs of the IT, with Special Reference to the Port of Kolkata <i>HK Joshi</i> .....	97
The Synergy between Kolkata Port and Haldia Petrochemicals in Achieving India's Self-sufficiency in Production of Petrochemicals <i>Subhasendu Chatterjee</i> .....	106
A Lifetime Of Relationship <i>Dibyendu Bose</i> .....	113
Synergy of the Kolkata Port and MCPI in Achieving India's Self-sufficiency in Manufacturing of PTA <i>Debi Prasad Patra, IAS (Retd.)</i> .....	118



## EXPLORING NEW HORIZONS

Syama Prasad Mookerjee Port Kolkata:  
A Leading Partner in the Sagarmala Initiatives  
*Dr. A. Janardhana Rao*..... 128

Haldia Dock...  
Promises and Possibilities  
*G. Senthilvel*..... 136

The Private Participation in the Port Sector...  
The Haldia Story through Radical Policy Alignment...  
Lessons Learnt  
*A K Dutta* .....142

## NAVIGATING THROUGH THE CHALLENGES OF THE RIVER HOOGHLY: A LOOK AHEAD

*The River Hugli - Farakka to Sandheads* ..... 163

Marine Services of Kolkata Port: Leveraging Technology  
*Capt J. J. Biswas* ..... 164

Maintaining Navigability of the Hugli River–A Challenge  
*Tapobrata Sanyal*..... 177

*The oldest dry dock facilities in the country*..... 189

Problems and Prospects of Hugli River  
and its Estuary  
*Bikas Chaudhuri* ..... 190

## STRATEGIC ROLE OF SMP IN TRADE AND LOGISTICS IN INDIA'S ACT EAST POLICY

Emerging Forces of Trade and Investment in  
the BIMSTEC: A Commentary  
*Dr. Nilanjan Ghosh*.....215

India's Neighbours, Shipping Logistics and the Role of Syama  
Prasad Mookerjee Port, Kolkata  
*Utpal Sinha*..... 228

Transformation and Logistics Integration at Kolkata Port:  
Prospects of an International Bulk Transshipment Hub  
*Prabal Basu*..... 237

*Swing Bridge and Bascule Bridge*..... 247



STRUCTURAL DYNAMICS OF A RIVERINE PORT  
AS IT EVOLVES THROUGH AGE

A Dynamic Organisation SMP, Kolkata  
*Sarmistha Pradhan*..... 249

CARING FOR THE COMMUNITY

The Other Half of the Port  
The Port Officers' Wives' Association  
*Jyoti Kumar* ..... 261

REMINISCENCE

Kolkata Port – Some Reflections  
*Anindo Majumdar*..... 267

Reminiscences of a Hydrographer  
*Cmde Gautam Dutta* ..... 272

Information Technology in the Port of Kolkata  
A Journey that Continues  
*Dr. Deepankar Sinha* ..... 285

My Early Days in Calcutta Port (1945 - 1949)  
*K N Ganguly*..... 297

*The Lock Gates*..... 306

Kolkata Port Trust  
Excerpts from a diary that was never written  
*Dr. A. K. Chanda* ..... 307

Past Chairpersons ..... 342

What They Say ..... 348

Port Performance ..... 353

“Utsav”, a 33-foot high commemorative installation ..... 354

L'envoi ..... 355



## LIST OF HYPERLINKS

Glimpses of the Inaugural Ceremony at Netaji Indoor Stadium on 12th January 2020 .....	7
Speech by the Hon'ble Prime Minister .....	7
Glimpses of the Celebratory Event at the Millennium Park on the riverfront on the 11th January 2020 .....	9
Glimpses of the Closing Ceremony of the Sesquicentennial Celebrations on 17th October 2020 at Belur Math.....	11
Preparations for Sesquicentenary Celebrations.....	13-14
Port Anthem .....	16-17
Port's Tableau on the Republic Day Parade at New Delhi 26th January 2020 .....	62
Prime Minister with the Hon'ble Prime Minister of Nepal .....	67
Transportation of a Goliath crane on the Hugli .....	87
Sagarmala creating job opportunities .....	135
Amphibian boat - an advancement in marine technology.....	169
Dry Dock Facilities .....	189
Transit movement of goods from SMP, Kolkata to Tripura via Chattogram port under Indo-Bangladesh Coastal Agreement....	230
Sagarmala-Port-led Developments Creating Opportunities.....	247
Riverfront Development- An Architect's Vision .....	258
The Laying of the Foundation stone of King George's Dock (NS Docks) 1921 by HRH Duke of Connaught.....	303
The Lock Gates of the Impounded Docks.....	306
The Hydraulic Scaled Model of the River Hugli.....	341
What They Say - Employees and Port Users.....	348-352
L'envoi - Looking Beyond .....	355



प्रधान मंत्री  
**Prime Minister**  
**Message**

The completion of 150 years of Syama Prasad Mookerjee Port, Kolkata is a momentous occasion. It is a proud moment for generations of people who have served the Port and the nation during this journey.

Ports have been the hub of socio-economic activities, trade and commerce for long. Coasts and ports are gateways to development that play a prominent role in the nation's economic growth.

Our Government is unwavering in its commitment to modernize the infrastructure, improve connectivity and augment the capacity of ports. Our emphasis on expansion of river waterways is boosting trade and commerce and furthering our all-round progress. We have implemented several projects to ensure not just the development of ports, but to herald port-led development.

This Port has been a witness to many a momentous event in history. I am sure that the Port and the people working in it will draw inspiration from Dr. Syama Prasad Mookerjee's selfless dedication and vision of development in the country.

The e-publication being brought out to commemorate the occasion will trace the Port's origin and evolution. May the digital publication be read and liked widely.

Best wishes to all the members of Syama Prasad Mookerjee Port for their future endeavours.

**January 23, 2021**  
**New Delhi**



(Narendra Modi)



सर्बानंद सोणोवाल  
मंत्री  
पत्तन, पोत परिवहन और जलमार्ग एवं आयुष  
भारत सरकार



**SARBANANDA SONOWAL**  
Minister  
**Ports, Shipping & Waterways and AYUSH**  
Government of India



### Message

It is indeed very encouraging to note that Syama Prasad Mookerjee Port, which is playing a pivotal role in catering to the country's economic and maritime interests since its inception, had completed 150 years of its glorious existence in the year 2020, and is bringing out an E- publication to mark the occasion befittingly.

As a premier and the only riverine major port of the country which had handled a substantial constituent of maritime trade and commerce, I find newer opportunities in store for the port. Various projects, I understand, are already on the anvil to expand its container and bulk cargo handling capability which, I am sure, will take the port to newer heights.

I convey my best wishes to the Syama Prasad Mookerjee Port on this auspicious occasion.

(Sarbananda Sonowal)

**September 29, 2021**  
**New Delhi**



मनसुख मांडविया  
राज्य मंत्री  
पोत परिवहन (स्वतंत्र प्रभार),  
रसायन एवं उर्वरक  
भारत सरकार



**MANSUKH MANDAVIYA**  
Minister of State  
Shipping (Independent Charge)  
Chemicals and Fertilizers  
Government of India



### Message

It is heartening to note that Syama Prasad Mookerjee Port, the country's oldest major port and the only riverine major port of India, is bringing out an E-publication on the occasion of its 150th year of formal existence.

2. This once premier port of the country, which, I understand, had handled, at one time, around 50% of the country's merchandise trade, has lost its pre-eminence mainly due to the limitation in the size of vessels it could accommodate being a riverine port, unlike sea-ports that have come up in the last fifty years on the eastern coast of India.
3. However, of late, the Port has been showing renewed promises by following state-of-the-art practices as it is poised to play a for greater role as the entrepot of Eastern India as an emerging Inland Water Transport (IWT) hub while catering to the Bangladesh Bhutan Nepal (BBN) countries, the North Eastern Region and the Association of South East Asian Nations (ASEAN), in the wake of the Government of India's Act East Policy.
4. I convey my best wishes to the Port on this happy occasion.

(Mansukh Mandaviya)

October 6, 2020  
New Delhi



श्रीपाद नाईक  
राज्य मंत्री  
पत्तन, पोत परिवहन, जलमार्ग एवं पर्यटन  
भारत सरकार



**SHRIPAD NAIK**  
Minister of State for  
Ports, Shipping, Waterways & Tourism,  
Government of India



### Message

I am happy to note that the port of Kolkata, now rechristened Syama Prasad Mookerjee Port, is bringing out an E-publication on the occasion of completion of 150 years of its dedicated service to the nation.

I understand the port currently ranks fifth in cargo handling and enjoys fourth position in handling containers among the major ports of India. Apart from launching various user friendly digital initiatives aimed at easier trade and business, I am told, a slew of capacity yielding infrastructure projects are also coming up in near future to further boost its container handling and multipurpose bulk cargo. It is also harnessing its deep-drafted facilities at the anchorages by carrying out regular transshipment operations there.

As the eastern most major and only riverine port of the country, I am sure, it can leverage its IWT potential to expand its trade with Bangladesh and the North Eastern Region of the country, while reaching out to the Far East ASEAN countries, in tune with 'Act East' policy, envisaged by Govt. of India.

I convey my best wishes to the Syama Prasad Mookerjee Port on this auspicious occasion.

September 30, 2021  
New Delhi

  
(Shripad Naik)

शान्तनु ठाकुर  
राज्य मंत्री  
पत्तन, पोत परिवहन और जलमार्ग मंत्रालय  
भारत सरकार



**SHANTANU THAKUR**  
Minister of State  
For Ports, Shipping and Waterways  
Government of India



### Message

I am happy to learn that Syama Prasad Mookerjee Port, erstwhile Kolkata Port, which had played a pioneering role in the service of the country's maritime interests had completed 150 glorious years of its existence in the year 2020, and is bringing out an E-publication to mark the occasion.

I find the port of Kolkata, by its strategic position, is presently poised at a historic juncture of time to play its manifold roles in India's maritime circuit. Apart from serving its traditional hinterland along with the landlocked countries of Nepal and Bhutan, it is assuming an important fulcrum in its expansive ties with Bangladesh and the entire North Eastern Region of India, through harnessing the dedicated Indo-Bangladesh protocol route, coastal and inland waterways network, as it plans to reach out to the ASEAN countries, in tune with the Maritime India Vision, 2030 and the 'Act East Policy' envisaged by Hon'ble Prime Minister of India.

I convey my best wishes and heartiest congratulations to the Syama Prasad Mookerjee Port on this special occasion.

(Shantanu Thakur)

September 29, 2021  
New Delhi



डा. संजीव रंजन  
सचिव  
भारत सरकार  
पोत परिवहन मंत्रालय



**DR. SANJEEV RANJAN**  
Secretary  
Government of India  
Ministry of Shipping

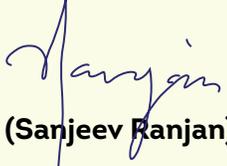


### Message

I am glad to learn that Kolkata Port, now rechristened as Syama Prasad Mookerjee Port, is planning to launch an E-publication in celebration of its 150th year of existence.

2. The Port has always served as important trade link with the rest of the world. The ambitious Sagarmala Programme along with various 'Ease of Doing Business' and promoting the multi modal connectivity initiatives announced by the Government of India has provided an excellent opportunity for the only riverine major port of India to unlock its potential to cater to the coastal and IWT traffic, serving the larger hinterland of North/Central India as well as the North Eastern Region through the National Waterways/Bangladesh Protocol Routes.
3. The completion of the Eastern Dedicated Freight Corridor, being put on fast track, also holds out a great promise of faster aggregation and dispersal of cargo traffic for the terminal port as it reaches out to the ASEAN countries. The transshipment of sea-cargo from Cape-size vessels being ferried by the daughter vessels to its dock systems at a matching draft, which the Port has started of late, with installation of floating cranes at the anchorages, are encouraging markers for the future.
4. I convey my best wishes to all the members of the Port on this happy occasion.

**October 12, 2020**  
New Delhi

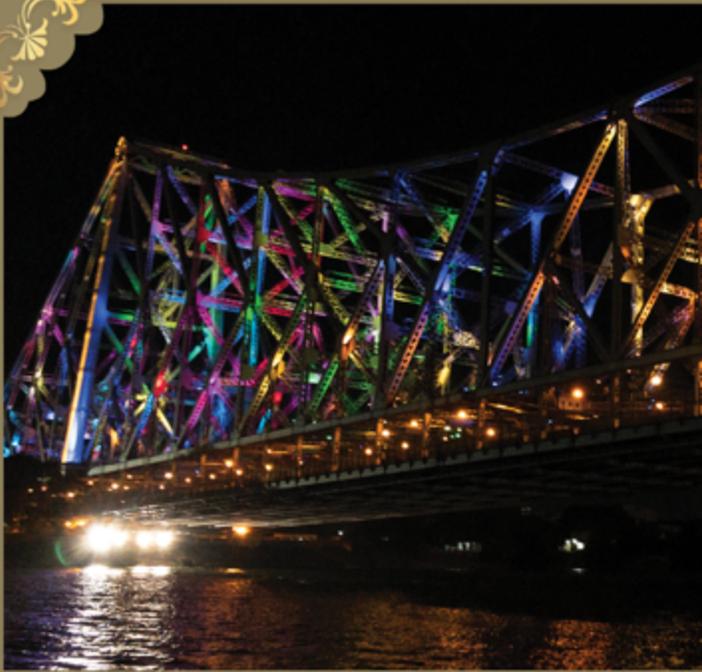
  
(Sanjeev Ranjan)





The sesquicentennial celebrations of the oldest major port of the country got a grand start on 12th January 2020 when Shri Narendra Modi, Hon'ble Prime Minister of India launched the Port Anthem and inaugurated projects, employee welfare measures and CSR initiatives. Shri Jagdeep Dhankar, Governor of West Bengal and Shri Mansukh Mandaviya, Union Minister of Shipping(IC) graced the occasion.

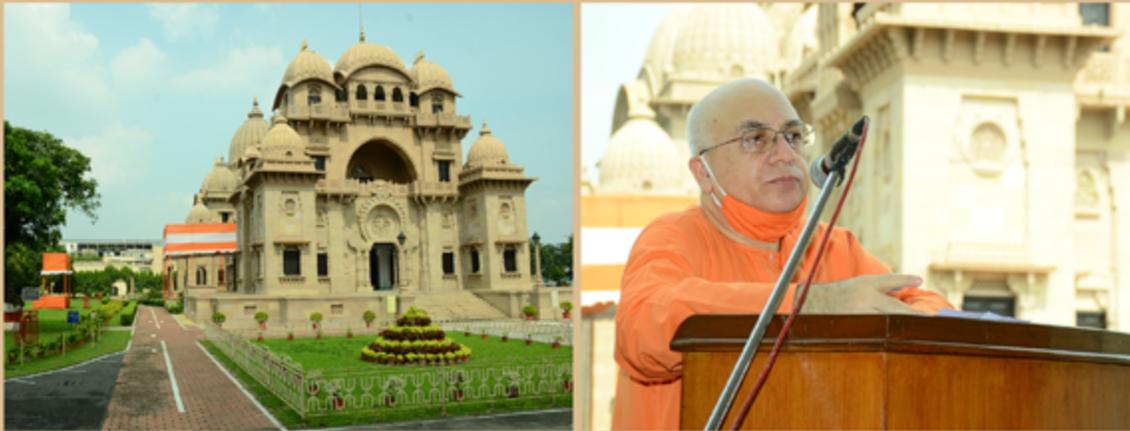




On the evening of 11th January 2020, a curtain raiser event was held at Millennium Park, the site where port operations began 150 years back with four screw-pile jetties. Dynamic 'light and sound' show of Rabindra Setu was launched and history of Howrah Bridge was showcased through a water screen projection followed by laying of the foundation stone of the sesquicentennial installation 'Utsav'







## CEREMONIAL CLOSURE OF 150 YEARS CELEBRATION BY SMP, KOLKATA

The closing ceremony of the Port's sesquicentennial celebration was held on 17th October 2020, at Belur Math with the inauguration of the SMP Kolkata sponsored 100 KW Roof-top Solar Power Project for the Main Temple complex by Swami Smarananandaji, President and blessings by Swami Suviranandaji, General Secretary and Swami Bodhasaranandaji, Asst General Secretary of the Ramakrishna Math and Mission. Keynote address was delivered by Dr A. K. Chanda, former Chairman, SMP, Kolkata. Participation was through Digital platform.

The celebration also included the ceremonial launch of Sesquicentennial e-bulletin and official YouTube channel of the port by Shri A. K. Mehera, Deputy Chairman and a new corporate logo by Shri Vinit Kumar, Chairman. The logo graphic shows a sailing vessel with green and two shades of blue, which signify energy and youthful exuberance, charting its way through the oceans, mirroring its modern infrastructure and dynamic service ethos.







# Preparations for Sesquicentenary Celebrations

## When the embryo of an idea transformed to a giant tree of a Mega Event

The idea of celebrating the Sesquicentenary of the Port in 2020 in a befitting manner was mooted in 2019. With the active encouragement and support of Chairman, brainstorming sessions were held, drawing upon the inherent talents and insights of our in-house port personnel. Various committees were formed constituting Officers and Staff members to oversee the related activities, right from coordination with various agencies, conceptualization, planning and execution with the details being immaculately charted out. This meant continual interaction with the agencies, reviewing and synchronization of activities, making course corrections as per suggestions of Chairman, Ministry officials, other stakeholder agencies etc.

The untiring efforts of all those who worked often at ungodly hours, undertook control room duties, their enthusiasm and energy in making the gala event a great success, is here for a snapshot view. We might have missed the shots of some of our fellow colleagues who were there working behind the scenes and our thanks and well meaning gratitude to all of them.



<https://youtu.be/wdTRsGXnXvc>







## The Publication Team



## पत्तन गान



आशा हो तुम, उम्मीद हो तुम, एक नए कल का गीत हो तुम  
आशा हो तुम, उम्मीद हो तुम, एक नए कल का गीत हो तुम

कोलकाता पोर्ट पहला बन्दरगाह हो  
कोलकाता पोर्ट पहला बन्दरगाह हो

तुम प्रगति का द्वार हो, एक नया संसार हो

आशा हो तुम उम्मीद हो तुम, एक नए कल का गीत हो तुम

इस हावड़ा पुल के सीने पर है लिखी दास्तां जीवन की  
इस पुल के पीछे खड़े हो तुम सुनते आवाज हर धड़कन की  
इस पार हो, उस पार हो, इस शहर का तुम आधार हो  
तुम प्रगति का द्वार हो, एक नया संसार हो

कोलकाता – हल्दिया पोर्ट तुम्हारे नाम और भी कितने  
पर हमको तो बस लगता है तुम सच करते हो सब सपने

आशा हो तुम उम्मीद हो तुम, एक नए कल का गीत हो तुम  
आशा हो तुम उम्मीद हो तुम, एक नए कल का गीत हो तुम

तुम सदा बदलते आए हो, संग-संग तुम चलते आए हो  
श्रमिकों का योगदान लिए, दीपक सा जलते आए हो  
बस, बन्दरगाह कहाँ हो तुम, तुम विकास की सरगम हो  
तुम साक्षी हो इतिहास का एक नए कल की धड़कन हो

आशा हो तुम उम्मीद हो तुम, एक नए कल का गीत हो तुम  
आशा हो तुम उम्मीद हो तुम, एक नए कल का गीत हो तुम

कोलकाता पोर्ट पहला बन्दरगाह हो  
कोलकाता पोर्ट पहला बन्दरगाह हो  
तुम प्रगति का द्वार हो, एक नया संसार हो

आशा हो तुम उम्मीद हो तुम, एक नए कल का गीत हो तुम

- प्रसून जोशी

## PORT ANTHEM



Aasha ho tum, ummeed ho tum, ek naye kal ka geet ho tum  
Aasha ho tum ummeed ho tum, ek naye kal ka geet ho tum

Kolkata port pehla bandargah ho  
Kolkata port pehla bandargah ho

Tum pragati ka dwaar ho, ek naya sansaar ho

Aasha ho tum ummeed ho tum, ek naye kal ka geet ho tum

Is Howrah pul ke seene par hai likhi daastan jeevan ki  
Is pul ke peeche khade ho tum sunte aavaaz har dhadkan ki  
Is paar ho us paar ho,  
Is shehar ka tum aadhar ho  
Tum pragati ka dwaar ho, ek naya sansaar ho

Kolkata-Haldia Port, tumhaare naam aur bhi hain kitne  
Par humko toh bas lagta hai tum sach karte ho sab sapne

Aasha ho tum ummeed ho tum, ek naye kal ka geet ho tum  
Aasha ho tum ummeed ho tum, ek naye kal ka geet ho tum

Tum sadaa badalte aaye ho, sang sang tum chalte aaye ho  
sramikon ka yogdaan liye, deepak sa jalte aaye ho  
bas, bandargaah kahaan ho tum, tum vikaas ki sargam ho  
tum saakshi ho itihaas ka ek naye kal ki dhadkan ho

Aasha ho tum ummeed ho tum, ek naye kal ka geet ho tum  
Aasha ho tum ummeed ho tum, ek naye kal ka geet ho tum

Kolkata port pehla bandargah ho  
Kolkata port pehla bandargah ho  
Tum pragati ka dwaar ho, ek naya sansaar ho

Aasha ho tum ummeed ho tum, ek naye kal ka geet ho tum

- Praseon Joshi





# Foreword

It gives me immense satisfaction and pride to write the foreword to this 'Commemorative Volume' celebrating the joyous occasion of the sesquicentenary anniversary of the port of Kolkata, now rechristened as Syama Prasad Mookerjee Port, Kolkata.

The story of the country's oldest port started on 17th October 1870, a hundred and fifty years earlier, laying the foundations of India's only riverine port. With the long legacy as the major point of entry and exit of colonialists and resources respectively, the port acted as a catalyst in the urbanization of the city, so much so that that the history of the city of Kolkata is not complete without the history of the River Hooghly and the shifting nature of the port.

In the journey of 150 years, the port has held the numero uno position at one time and with changing times has to face threats of losing cargo and financial viability. When I took charge of the port in October 2017 with the distinction of being the first Chairman with technical background, I was overcome with a sense of great trepidation as to how to affect a paradigmatic shift to revive the fortunes of this great port. Dwindling prospects of port's survival in a dynamic business environment required a paradigm shift in its outlook and delivery of service. For long, the relationship of the port with its stakeholders had been sliding

and there seemed to be a quiet and resigned acceptance of the inevitable. Keeping an open mind and belief, I visualized the immense strength of an autonomous government entity that, despite going through various trials and tribulations, had so successfully carried out international trade and commerce, for well over a century, establishing itself as the premier port in the maritime map of the country, contributing to the socio economic growth of the region by spurring industrial activity in the twin cities of the then Calcutta and Howrah. Right from the beginning I could see that the need of the hour was a planned and profound radical transformation of the processes and infrastructure that would catapult the port to new heights, surpassing all metrics. Consumed by the desire and intent in my service at the port, thus started an arduous journey to reinstall the port to its glory and optimize its potential.

The next two years were devoted to reinvigorate the morale of the organization, instilling customer confidence and strengthening of port governance to create an integrated network of efficiency, capacity creation and transparency. With the support of a dedicated team, I assembled various task forces to address the concerns related to market integration, process standardization, digitization and infrastructure creation, in a time



bound manner to create confidence and rejuvenate the flailing course, the port was headed to. Capacity creation and effective service delivery became the hallmark of the port's commitments to its stakeholders and such was the effect of this new policy that the port registered a historic growth of cargo, easily outstripping all its past benchmarks. For the last two years, the port has created new records in all its avenues; be it cargo throughput, efficacy metrics, infrastructure capacity or even customer service delivery. Radical approach was also adopted to optimize the rich land resources that only this port and Mumbai port have had within the thriving metropolitans.

This journey of the port's revival continues with attentive focus on infrastructure creation, flexibility and trade facilitations. The last two years saw tough yet creative, out of the box administrative measures to facilitate business and create a new yardstick for 'Ease of Doing Business' at the port. The port is continuously pioneering digitization and paperless service delivery models to usher in new mechanisms targeted at transparent and timely services. With a solid techno-administrative edifice now established, the port is poised to the next leap through ERP and block chain technology. New processes have been instituted in response to the changing business dynamics and proactive customer engagement has been undertaken to provide agile value to trade and mercantile community in the region. Definitely, there have been challenges which seemed too big to surmount at the time, but with the rallying support of the port community, I have been privileged to chart a new course for the port to march with the times.

Any successful international port model evidences a unified connectivity model aimed at end-to-end logistic solution delivery and Syama Prasad Mookerjee Port is no exception to it. Rail and road connectivity with round the clock assistance have allowed the port to register a turnaround in its performance for two years in a row now. In addition to the city amenities and facilities, creation of new cargo handling infrastructure in the far reaches of the river has also created new prospects for increasing cargo handling. New plans have also been drawn to put the port on the tourist map and create a spirited mix of culture and business. The upcoming township policy of the port will indeed play an important role in optimal utilization of the port's lands, creating bright dividends for the city and its residents. The strong foundations that have allowed the port to withstand the last hundred and fifty years have been reinforced for its next stint, blending its glorious past with the vibrant future, and I am confident that the benefits of the port's contribution to trade in the region will accrue merits for the entire community.

In line with the Government of India's vision to create a self-reliant model of 'Aatma Nirbhar Bharat', where the ports take charge of industrial development in the region, I have received constant support and guidance from the Hon'ble Minister of Shipping in all my efforts. The policy support and guidance of Secretary (Shipping), and the team in the Ministry could give us the necessary confidence to go ahead with all the plans. The story of this great old port is of a phoenix that has arisen from the deep abyss to create and forge a new path of port-led development. I and my team are dedicated to the idea of creation of



a new responsible port authority model to herald a new future for trade passing through the port.

I will be failing in my duties if I do not recognize the valuable work done by all my predecessors and officers and staff who have served this port in the last so many years. It is because of the solid foundations laid by them that we could build this edifice.

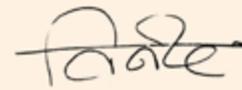
I thank and congratulate all the staff, officers, stakeholders without whose support it would not have been possible for me to take the port to the glorious heights.

As I write the Foreword on this October morning standing on the docks, overlooking the shimmering waters

of the Hooghly which have witnessed the changing fortunes of the port, I feel proud to be associated with the initiation of this great port's vibrant future. I am thankful to the entire port community of employees and their families for their belief in my vision, and also all stakeholders who have given their unstinted support to create a new trajectory for the port.

With the Hon'ble Prime Minister himself giving the clarion call in January early this year from the ramparts of this very port, breathing a new name and dare, I say - a new life to it.

The port is now poised to take the next big leap forward, 'from its glorious past to vibrant future'.



Vinit Kumar, IRSEE

Chairman

Syama Prasad Mookerjee Port  
Kolkata

October 9, 2020





# Preface

It gives me an immense joy and a quiet satisfaction that by a pleasant turn of events, I have come to join Kolkata Port, recently rechristened as the Syama Prasad Mookerjee Port, in my second innings as its Deputy Chairman when it is at the historic crossroads of celebrating 150 years of its formal footprint in the maritime canvas of the world. In my earlier stint at the Port, I had occasion to look after its Estate Management and functioned as Chief Engineer for a good period of time, which helped me familiarize myself with the various operational intricacies of this Port. And I was always fascinated by the complex web of the river Port system, functioning at diverse locations under the two dock systems having impounded locks, catering to ocean going/domestic carriers of varied dimensions, ferrying essentially dry bulk, liquid bulk, break-bulk and containers with lighterage traffic being handled at the river as well as seaside anchorages of Sagar, Diamond Harbour, Kulpi etc. I must say it's no mean achievement for an organisation like the Port, with its sprawling and ever dynamic and evolving appendages, to trace its seamless linkage to a system of cargo carriage, spanning over quite a few centuries, conterminous with the growth and evolution of the eponymous city of Kolkata; and the two forming a bond of synergy as they grew, developed and prospered. The journey of the Port,

the first major as well as the only riverine port of the country, has been a curious ride of expectancy and challenges, interwoven with the varying draft and navigational constraints of a typically wily river like Bhagirathi-Hooghly, as it continues to battle the odds, while adapting itself to the newer dictates of time and technology.

The formative years of Calcutta Port (the original name) were ushered in during 1860s, when a river trust was ideated by the then Lt. Governor. Though the initial thought of the Government of India was to constitute a separate Trust which would look into the developments of the port and shipping as its exclusive task, the River Trust which ultimately came about under the aegis of the Bengal Legislative Council, relegated much of the port work to the Department of Municipality, under a Sub Committee of Justices. Due to the strong objection raised by the Bengal Chamber of Commerce, for the works of the port being supplanted by interests of the Municipality, which in a way also received the support of the Govt. of India, it was finally decided that a separate Body will be created for improvement of the Port of Calcutta. Thus, with the enactment of Calcutta Port Act, 1870 and initial deployment of 9 Commissioners, the Port started functioning in the Calcutta City. Initially, 4 screw pile jetties were constructed for cargo handling operations.



Another important milestone in the history of the Port was setting up of a major river crossing, connecting the cities at Calcutta and Howrah through a Fixed-cum-Openable pontoon Bridge for ease of movement of vessels. This was done by East India Railway Company during 1874. The subsequent developments came with the Budge-Budge oil jetties in 1886 and then during the 1890s, the construction of the Khidderpore Dock. The 1920s was an important decade with the Garden Reach Jetties coming up in 1925, followed by the opening of the King Georges Dock (KGD) in 1928, (renamed subsequently as Netaji Subhas Dock). The journey of the Port of Calcutta started with a flourish and was thus consolidated in the first phase from 1870s to 1920s when the two impounded Docks at KPD, KGD and Budge-Budge oil jetties were completed.

The river crossing through pontoon bridge connecting the twin cities of Kolkata and Howrah, which was constructed during 1874, had already outlived its life by 1920s and accordingly, the Government of India had taken a decision to replace it with a modern bridge. The New Howrah Bridge Act, 1926 was enacted by the Government and the responsibility of planning, designing and execution for the New Howrah Bridge was entrusted to Calcutta Port Commissioners (erstwhile name). The world-famous consulting firms M/s. Rendell, Palmer and Tritton (RPT) of London were engaged in designing the iconic bridge. This process concluded itself during 1934-35 and the actual construction of the bridge started from 1937 and was completed in 1943, when World War-II had already begun with the political scenario being quite disconcerting in this part of the country. As a result, the iconic Howrah bridge was inaugurated in a much-subdued manner

through running of a tram car on the night of a chilly February, 1943.

Another important decision was taken during the early part of 1940s to make KGD (now NSD) an all-weather 9 mtrs. draft Port. The Commissioner's consultant M/s. RPT had suggested making a canal of 100 ft. wide from Diamond Harbour to KGD with several lock gates in between just like Suez Canal. The draft report was placed before the Commissioners during 1943-44. However, there was not much headway of the proposal since the British Government had already involved themselves in World War-II with the effects of the war being already visible in India during that period with the great Quit India Movement also gaining momentum. Due to this political unrest, the Government neither supported the idea of the canal from Diamond Harbour to KGD nor could the Commissioners take a decision.

The next major development was the decision to construct a new Dock System down South the river, below Diamond Harbour. Finally, the place in the erstwhile Midnapore district (presently East Midnapore) was selected for the new impounded dock site. The Haldia Dock Project was the first comprehensive Port Project after Independence. Initially, the Haldia Oil Jetty No 1 ( now known as Satish Samanta oil Jetty ) was set up for handling crude oil for the IOCL Haldia Refinery. Though Haldia Anchorage was set up near the outfall of the River Haldi in 1959, actual construction of the Haldia Dock was started during 1965-66 and the first vessel was handled in 1977, marking the commissioning of Haldia Dock Complex (HDC).

From the position of a frontrunner among all Major Ports of India in the mid-fifties



when it handled almost 50% of the total volume of the all-port cargo, the Port of Kolkata, functioning as the gateway for trade and commerce in the eastern region of the country, gradually lost its position of pre-eminence, competing with numerous sea ports dotting up the Indian coastline, in quick succession with largely overlapping hinterlands. The Freight Equalization Policy of the Government also did its bit in blunting the competitive edge that the Port and its hinterland enjoyed with regard to development of various manufacture/processing industries, due to its proximity to the source of industrial raw materials, while radical/unionized political climate led to a considerable flight of capital/withering away of industrial resources and energy with resultant industrial recession.

In the context of escalating fuel costs, driven by the objectives of economisation of freight/route rationalisation, rapid strides were being made in shipping technology which led to replacement of older and smaller parcel-size ships by relatively larger, deeper drafted ocean-going vessels. These vessels, however, could not visit the impounded dock systems due to the constraints of draft, beam and lock restrictions. The port's commercial fortunes sank along with the whole belt of Eastern India since the mid-sixties. However, due to a gradual turning of tide and the need for adaptability to the time-tested improvisations to gravitate southwards and create sister dock systems/anchorages to harness its deep drafted facilities, the port has continued to re-engineer itself in newer locales and diversifying functions.

The formal commissioning of the Haldia Dock, in 1977, some 125 km down the river, for catering to the merchant

vessels of larger dimension, was a great add-on to the riverine Port of Kolkata, handling dry and liquid bulk cargo, apart from containers, the future of unitized sea-borne carriage of cargo. With the object of improvement of depth in the navigational channel of Kolkata Port, the Farakka Barrage Project was commissioned in 1975 to provide the much-needed headwater flow during lean season, to the Hooghly, one of the trickiest rivers in the world to have baffled the master mariners for safe pilotage and navigability.

Through all these troubled times, the Port, characterized as it is with a multi-draft USP Port, (having 7-7.5 metres draft near the impounded docks of Kolkata, to gradually increasing to 50 metres down beyond the Estuary, near the Sandheads), and with one of the longest navigational channels of 232 kms, had continued to make efforts to harness its riverine characteristics. With its strategic connectivity to two major National Waterways viz. NW1 (Ganga) and NW2 (Brahmaputra) and with its proximity to Bangladesh through the Indo Bangladesh Protocol route, Kolkata Port is ideally positioned to emerge as a major Inland Water Transport hub in the country, while effectively serving the land locked countries of Nepal and Bhutan.

With a slew of new investments and value driven initiatives and trade expectations also picking up in recent years, Kolkata Port handled 63.983 million tonnes (mt) of traffic in 2019-20 creating an all-time record in the history of the Port, surpassing the previous highest of 63.763 mt handled in 2018-19, with a percentage growth of 38.21% and a CAGR 6.69%, recorded over 2014-15. The growth of traffic slowed down



particularly in the last quarter of 2019-20 primarily due to COVID-19 pandemic that disrupted worldwide trade. In spite of these constraints, KoPT ranked 5th in the current fiscal in cargo handling among Indian Major Ports. In container traffic also, the Port is continuing to hold on to the 3rd rank for quite a few years now, including in 2019-20, amongst Indian Major Ports. The total number of containers handled at KoPT during 2019-20 increased by 34.07% from 6,30,094 TEUs in 2014-15 to 8,44,762 TEUs in 2019-20, clocking a CAGR of 6.04% over the same period. To facilitate container trade, integrated ship-to-shore services including back-up operations at berths 3, 4, 5, 7 & 8 NSD at KDS and integrated container operations at Berth Nos. 11 & 12 of HDC are being operated with additional ground areas being hardstanded for stacking containers. The (additional) 4th Mobile Harbour Crane (MHC) at NSD and the 3rd Rail Mounted Quay Crane (RMQC) at HDC are being deployed to cater to the surge in container throughput.

To ensure improved productivity and faster turnaround and reduced dead freighting of the gearless vessels carrying dry bulk cargo, the Port during the last few years has mechanised quite a few of its berths inside the impounded dock at HDC with Mobile Harbour Cranes and other ancillary equipment. With an aim to augmenting the capacity of dry and liquid bulk handling and to ensure faster turnaround of vessels with improved handling rates, Liquid Cargo Handling Jetty at Salukkhali, at Haldia Dock-II and Outer Terminal-II for handling Edible Oil and Chemicals, are being set up which, while optimising the cargo handling capacity, will also ease the pressure on the lock systems.

The Floating Riverine Minibulk Terminal in the upstream of 3rd Oil Jetty outside the impounded dock, was commissioned recently for handling dry bulk traffic, being transported through the daughter vessels from the transloading/transshipment points at Sandheads/Saugor/other anchorages where floating crane facilities have already been commissioned. These facilities with synchronised functioning of the outer riverine terminals are expected to bring incremental cargo at HDC, logical to it at matching draft, through daughter vessels and barges, while serving the cluster of industries and power utilities in and around the Port city of Haldia, at a much-reduced logistics cost.

I find in these developments, viz., setting up the outer riverine terminals, the Outer Mooring Terminal, fly ash jetties at Haldia, or the IWAI terminals at HDC/Garden Reach Jetties at KDS for catering to IWT traffic, a mark of our curious savouring of a slice of our Port history. Kolkata Port in its early days, before the coming of the impounded docks had started with a few screw pile jetties, jutting around the river side for catering to diverse merchandise like jute, tea, hemp, leather goods, coal etc., before the concept of sheltered docks within the lock systems materialized. In recent years, we have been retracing the history of sorts, as we are unlocking the riverine potential of the Port to reposition our handling systems outside the impounded docks, unencumbered by the lock restrictions. In view of the unique riverine potentials of the Kolkata Port and in keeping with the ambitious Sagarmala project, around 61 acres of land has been awarded on long term lease basis to IWAI who had completed the construction of a multi-model terminal at Haldia for transportation of



Coal, Fly ash, chemical, fertiliser etc. through Inland Waterways.

Harnessing of the NW1 and NW2 for reaching out to the North Eastern Region through carriage of EXIM/transit trade through the Indo-Bangladesh Protocol route, holds a pivotal key to the future evolution of a hub-spoke model that the Port can strategically leverage as it caters itself to BIMSTEC/ASEAN countries, involves itself in the Kaladan project which proposes to connect the port of Kolkata with Sittwe Port of Myanmar through sea etc., in the wake of the Govt. of India's 'Act East Policy'. The host of schemes currently under implementation through the ambitious Sagarmala Project of the Government of India aim to precisely tap the coastal/IWT/maritime potential of the region along with unleashing of enterprise/opportunities in various port-led economic clusters in an energy-efficient way.

Completion of 150 years in the chequered history of our never-say-die port indeed calls for an exercise in introspection as it tries to assess its varied degrees of strengths and shortfalls, while objectively scanning its environment for leveraging the opportunities to make whatever mid-course corrections are

needed to refocus itself as it embarks on its new path to the future.

Looking towards the past, the river behaviour has taught us a lesson to move towards down south to harness the deep-water locations. In the first 50 years of this Port's journey from 1870 to 1920, the Kolkata Dock System was developed which had given the much-needed life for the next 50 years. Thereafter, the Port has further expanded into the South at Haldia (HDC) which is well serving this Port and keeps it vibrant till now i.e., after 150 years. Taking the lesson from the past, it is paramount to move further South, in the deeper water locations to remain relevant with changing ship size to maintain/realise cargo handling potentials for decades to come and to keep the Port vibrant. The deep-water location at Tajpur may be the solution.

I am happy that the Port is bringing out an E-publication on this occasion which would ideally hold a mirror to itself as it makes an effort, standing in the historic cross currents of the times, to chronicle the past in the light of newer experiences and insights to gain enduring lessons for the future.

I wish the E-publication all success.



AK Mehera

Deputy Chairman  
Syama Prasad Mookerjee Port  
Kolkata

October 6, 2020



# From the Editors' Desk



Capt Biswajit Pakrashi is a seasoned mariner and a Hooghly Pilot, of long-standing sea and shore experience. Retired recently as Harbour Master with a rich trail of marine and administrative experience at India's only riverine Port, Capt. Pakrashi has been a heritage and publication enthusiast with keen literary interests.



Kaushik Chatterjee, Co-editor, is currently Jt Director, In-Charge Planning and Research Division of Syama Prasad Mookerjee Port. He has not only wielded an articulate pen as writer and translator for the different and multifarious publications of the Port since 2005, but has also been an active contributor to the Port's Heritage Research and unique archive-making Initiatives.

There are but only a few entities in India which have existed for 150 years at a stretch and more, standing the test of time and continuing with their core business. The erstwhile Port of Kolkata, now renamed as Syama Prasad Mookerjee Port, having traversed a long and eventful path spanning over one and a half centuries and being witness to many political and economic upheavals and social transformations of the country, some at a glacial pace and others quite cataclysmic, stands out even today with its importance and strategic position hardly compromised.

An uninterrupted travel time of a century and a half, gifts any organization, at one, with a treasure trove of articles, stories, anecdotes and facts, disseminated largely through written texts of varied forms which have managed to survive through the times and at others, that get subsumed in the layers of history and public consciousness and are deeply entrenched in popular imaginings and interests.

The Port had earlier, among others, published an anthology, a moving mirror of images and reflections, drawn from the large repository of its textual materials, of reports and articles and reminisces lying in its archives and loosely strewn elsewhere. That was in a way, a recountal of the evolving dialectics of the port and its constantly changing environs



through the overlapping shifts of space and time, being as much a close look into the system from within as well as from without. Judged in that light, we thought we would take the opportunity of this landmark occasion of the port's sesqui-centenary to bring out a Commemorative Volume which would have in essence a more contemporary and futuristic take of our port and the whole cluster of the maritime ecosystem associated with it .

The volume comprises articles on diverse topics penned by the stakeholders of the port, the opinion leaders of industry and trade bodies, economists and port veterans, nearly all of whom have weathered well over three decades in the port and have congealed their learning into interesting lessons for the future. It was decided to bring it out in an electronic edition, to reach out to a wide readership, in keeping with the contemporary readers' choice. However, the old world charm of flitting through the pages of handheld tomes at one's leisure still remains desirable to many.

Lay readers and researchers alike, would be delighted to go through the collection of articles gleaned from a wide cross-section of experts providing an insight into the myriad challenges that the port has had to steer through, be they the fluctuating fortunes of the river ecosystem of navigability and dredging, the trials of technology to tend to these vagaries, effects of downturn of international trade and commerce, the conflicts of overlapping hinterlands, outcome of the EXIM policies of the government, or the fallout of changing geo-political equations in evolving trade patterns.

Readers would find it heartening to note the quiet optimism imbued in the assessments of the authors in the futuristic opportunities that lie ahead for Haldia Dock Complex, as well as Kolkata Dock System, in terms of anticipated surge in trade, synergizing it with the coastal and inland waterways, that the only riverine port of India offers as a unique gift. The opportunity imbedded in the slew of maritime initiatives pivoted to the 'Act East' policy of the Government of India is sure to unlock the port's hitherto unexplored potential of not only reconnecting with Bangladesh and the North-Eastern States, but also nurturing trade relations with the landlocked countries of Nepal and Bhutan, as well as, leveraging the sub-regional trade opportunities with Myanmar, Laos and Vietnam. The Government of India has given due impetus for the promotion of inland water transportation, with planned development of 111 national waterways, since a vast potential for growth lies latent and waiting to be harnessed in our riverine routes.

It is also the time as some of the authors believe, for the port to ramp up its infrastructure, create additional cargo handling capacity, forge public-private-partnerships, monetize its assets of hitherto unutilized estates, as well as re-orient and galvanise its human resources from a legacy port to a modern day port buoyant with the ready spirit to step into the competitive, 'here and now' world of trade and commerce, where IT and Artificial Intelligence is poised to play ever expanding roles in future. This becomes all the more imperative with private ports coming up in close proximity of the traditional hinterlands, with state-of-the-art technology and rapidly



evolving benchmarking standards, often vying for the same space of cargo and clientele.

A few of the authors have penned their memoirs of the long years that they served in the port, lending a refreshing insight into how the port functioned in the times gone by, while there are still some who bring to light the lesser known tales woven in the rich fabric of the port, whose bond with the city is inseparable, like the 'Siamese-twins'. The publication has been broadly segregated into thematic sections, as evident from the titles of the divides, grouping the articles accordingly, as much as possible, to facilitate the readers navigate through the narratives, with ease and in terms of their individual preferences and interests.

Being an e-publication, it has been possible to connect through hyperlinks, with the employees of the port at work, and other stakeholders involved in the day-to-day operations of the port, and hear them speak their experiences and perceptions through the videos. The links would also lead the readers to other interesting videos in the dedicated You-Tube channel of the port, which has also been launched recently.

At a personal level, it has been an extremely rewarding experience for the Editors to learn and re-learn, distilling the layers of history anew, corroborating the facts with hearsays, going through the articles of the contributors, trying to appreciate their varied slants and nuances, as they voiced their deep seated convictions and fond wishes, often tuned and tempered in the sieves of time. We must warmly put on record their eager and spontaneous response in clarifying the doubts and missing

links, whenever they were called upon, often at ungodly hours.

The job of the editors as well as for many of the authors, has been no less unenviable, if not daunting when the world continues to be partly shut with months of total 'lock-downs', with the Covid-19 pandemic still raging havoc, offices running with minimal employees, locked libraries and limited physical interchanges, restricting the scope for research and iteration and collective application of mind.

It was the warm encouragement and inspiration we received from Chairman, Shri Vinit Kumar, former Dy Chairman, Shri Balaji Arun Kumar and the Deputy Chairman, Shri A K Mehera, that gave us the headway with the Commemorative Volume, despite all these constraints.

We are especially thankful to Smt Sarmistha Pradhan, Ex-Secretary, who has taken a consummate interest in associating herself with the various nitty gritty of the publication, looking after its aesthetic appeal and coming up with her well meaning suggestions.

We have been fortunate enough to receive helpful advice and unstinted support from Prof. Mihir Das, Shri Gautam Chakraborti, Shri Sumanta Roy Chowdhury, Capt D K Rao, Capt. J J Biswas and Capt. N. Rajaram all retired officers, having distinctively served the port in their varied assignments and who had been our colleagues at work, sharing common interests and passion in the heritage of the port and have been extremely generous with their ideas and suggestions for the production's enrichment.

We are grateful to Shri Praveen Das, General Manager (M&S) (I/C),



Shri Chandan Chatterjee, Sr Dy Manager (Admn), HDC Shri Debangshu Sarma Chaudhuri, Dy Director (Research), Shri Gautam Basak, Executive Engineer, Smt Paromita Ghosh Majumdar, Dy Traffic Manager, and Shri Pabitra Mukhopadhyay, Superintending Engineer who have wholeheartedly assisted us at different stages of the work, with their resources and inputs, driven by a deep sense of belonging they always shared with the port.

Shri S K Dhar, Secretary in-charge, and Shri S.K Mukherjee Sr Asst Secretary (PR), have been most resourceful and responsible, in helping with the office procedures and formalities that go in the making of such a work of publishing, in such a short period, especially during the trying times.

We are sure the anthology would generate interest amongst the readers, providing them glimpses of the port's past, present and the future from a host of esteemed contributors. The article extolling the dedicated and silent contribution of the port officers' wives in community-care work in looking after the needs of the marginalized sections of society, with the active support of the port, has been an exemplar of Corporate Social Responsibility, much before the term 'CSR' came into official vogue.

December 10, 2020  
Kolkata

We must profusely thank all the contributors here who, despite the criticalities of time and resources, invested their energy and effort with spontaneity and *elan vital* that should add to the vigour of their creative endeavours. We reserve our quiet sense of admiration for our former Chairman, Dr A.K.Chanda, who despite his indifferent health, has done a phenomenal research work to come up with scintillating pieces of historical anecdotes and insights of vintage value and significance.

We shall fail in our duty if we fail to sincerely acknowledge the services of Shri Amit Srivastava, the official photographer, who, in times of need, was always quick to provide rare and vintage photographs to embellish the articles. A quiet word of appreciation is also due to Shri Rajendra Prasad Majumdar, Jr. Inspector, Estate Division who, on his own initiative, took the video clips of the port employees uploaded in the link, titled 'What They Say'.

Lastly, we must put our words of gracious thanks to Advertising Bureau & Consultants for executing the work of designing, e-printing of this publication, a maiden venture of its kind in our port, with the professionalism and finesse as it deserves, to give it, we hope, an enduring value to the referral and research material for posterity.

**The editors can be reached at [pakrashi08@gmail.com](mailto:pakrashi08@gmail.com), [kaushik.c@kolkataporttrust.gov.in](mailto:kaushik.c@kolkataporttrust.gov.in)**





## Advisory and Editorial Committee

### Advisory Committee

**Shri Vinit Kumar**

*Chairman, SMP Kolkata*

**Shri A. K. Mehera**

*Dy Chairman, SMP Kolkata*

**Shri S. K. Dhar**

*Secretary (I/C), SMP, Kolkata*

**Shri D. Guha**

*Chief Hydraulic Engineer & TM I/C, SMP, Kolkata*

**Shri A. K. Mahapatra**

*GM(Traffic) HDC, SMP, Kolkata*

**Shri P. K. Das**

*General Manager (M&S) I/C HDC, SMP, Kolkata*

**Smt. S. Pradhan**

*Ex Secretary, SMP, Kolkata*

### Editorial Committee

**Shri B. Pakrashi**

*Ex Harbour Master (Port) SMP Kolkata*

**Shri K. Chatterjee**

*Jt Director (P&R) I/C*

### Publisher

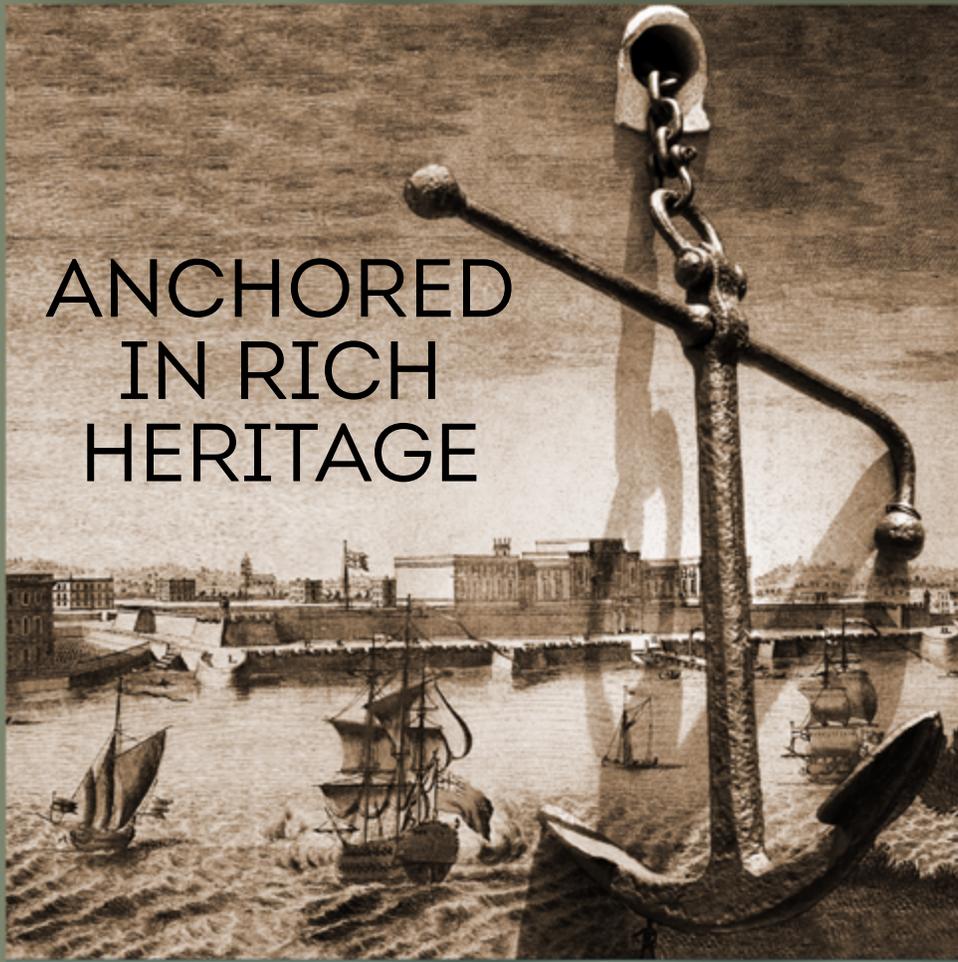
**Shri S. K. Mukherjee**

*Sr Public Relations Officer, SMP Kolkata*





ANCHORED  
IN RICH  
HERITAGE





# FACING AN AUGEAN CHALLENGE AND REMAKING OF THE PORT

*Prof. Mihir Das*

Prof. Mihir Das spent more than three decades in port and shipping industry, beginning with Kolkata Port and with international exposure in later years. Amongst his various publications, notable are 'Bandar Katha' (on thousand years history of Indian Ports), Port Management and Ship Management. He also served as Faculty in CEPT University (Ahmedabad), UPES (Dehradun), Gujarat University and undertook consultancy assignments for close to another decade.

*In the article that follows, Mihir Das, port insider-turned-academician, lays out an informative overview of the major segments in the evolution of the Port, and attempts to identify the critical phases and complexities in its long journey.*

*In tracing the salient issues, he has relied on the observations and insights not only of several pioneering Chairmen, but also of leading economists, analysts and consultative bodies, laying out an optimistic roadmap for the future of the Port.*

## Introducing the theme

While the port has managed to tide over most of the challenges, it is daunting to fit the journey of the Port across one and a half-century within a few pages. While trying to condense the story logically, some issues could have remained unattended and I request readers to pardon me. But the effort is there to present the main flow and discover the hidden strengths together, that keep the port youthful as ever.

Books and journals have described this port from multiple perspectives; economic, social, urban-industrial, union and labour relations, technological, etc. while few people, unfortunately, had made acidic criticism of the organisation. Some of these writings are abstruse and when viewed with thin data support, the picture becomes all the more opaque and quite often spreads gloom. Thus, the happenings inside the port remain a 'closed book' for many. Additionally, to



people with a western outlook the port is considered a place where people sing “*Yo-ho-ho and a bottle of rum!*” This could have been the picture half a century ago but certainly not today, with the IMO regulations in place. With a hundred percent safety implementation through ISM, the crew and the people interacting commercially and operationally with the ships have to be compliant with every norm. I have personally met umpteen number of Masters and crew members from different nations over this long period and found most of them, professional. Casual reports on the port, do not help comprehension of its pulsating nature that engulfs the life of organisation and men in and around it. It is a fascinating story each day. It is certain that if more space was made available to write everything about what

happened in the last 150 years, it would have been equally fascinating like an ‘*Arabian Nights*’ volume.

Though not a historian, I went on preserving my memories, torn pages, circulars, photographs and remembered the lively discussions with an extremely large spectrum of the port employees, and each of those interactions has enriched my overall perception that I am going to share here both as a Port Officer and as an academician. So, the narrative could evoke a different flavour.

A Port is generally a ‘restricted’ place in government parlance; it is not accessible without formal permission. Thus, it remains a dark chamber for a large number of people. But, today all ports, including Kolkata, are destined to create a sustainable maritime community



The Fort as viewed from the embankments of Haora - Elisha Kirkall - circa 1735



around and enrich the life of cities, which grew out of an embryonic port, from the

seventeenth century.

## Beginning of the beginning

The Port of Calcutta is born out of the convenience of the European traders to use the waterways both up and down the river while operating from the city and to resist the inroads of the Portuguese and the Magh, both infamous for piracy. We have to use a bit of imagination to perceive what the 'port' was then. However, in 1758, the Company created its Marine Establishment<sup>1</sup> with a Master Attendant and his Deputy was tasked to take care of the repair of the company's vessels and also to record details of all incoming and outgoing ships the process of which was improved later. The place was battered by the periodic lashing of cyclones (1837, 1842 & 1864)<sup>3</sup>, lack of infrastructure for ship-repairs and intrusion of the pirates and these made the company's directors think seriously about strengthening the port system. A representation of the Master Attendant followed by a plan by the Chief Engineer, helped the construction of a Dry-dock near Bankshall Ghat, only to be removed in 1808.<sup>2</sup> In 1824, Major Schalch produced a plan (different from that of Col. Watson's plan) but around a common site of *Tolly's Nullah*; Watganj in Kidderpore area is named after him.

It was clear that a port was essential and they found that a wet-dock system between Akra and Kidderpore was possible but it was left to hibernate for ten long years. In this period of

indecision, another futile attempt was made to create the 'Port Canning' on the Matla River. In 1865-66 only 26 ships called but after five years no ship visited the port.<sup>4</sup> Discussions are galore these days about Kolkata Port drying up with eroding drafts, but there was an urgency of setting up a port in those days too, amidst the fear of the Hooghly becoming unnavigable. When the capability of dredging was appreciated, looking at the examples of dredging on

***It was clear that a port was essential and they found that a wet-dock system between Akra and Kidderpore was possible***

Danube and Mississippi the government accepted the idea of riverside screw-pile jetties between *Clive Ghat* and *Chandpal Ghat*. The government was looking for the development of public facilities, rather than

transferring responsibilities to private businesses. A River Trust was formed then but was short-lived and bitter criticism on lack of landing places and high charges continued.

As a true example of stakeholders' support, The Bengal Chamber of Commerce (erstwhile Calcutta Chamber) strongly supported the case of a separate and distinct Trust for the port, seconding the proposal of the Lt-Governor. While all these were on the table, social and economic forces like the arrival of steamships (before 1857), telegraph invention in 1865, the great Indian rebellion of 1857, liquidation of the East India Company, opening of the Suez canal (1869) accelerated railway



construction (between 1869-1881 9,000 miles network was established with lines snaking inward from the three major port cities of Bombay, Madras and Calcutta)<sup>6</sup> ripened the situation for the birth of a global port.

Schemes for construction got consolidated, while administration grappled with pressing commercial issues and the erupting scandals - all

those were paving the way for an able management. A Bill was accordingly moved. Act V of 1870, meant to "appoint Commissioners for making improvements in the port of Calcutta" received the assent of the Governor-General-in-Council on August 12, 1870, and came into effect on October 17, 1870. We consider this as the natal day of Calcutta Port.<sup>5</sup>

## Traversing from 1870 to 1970

In the beginning, sailing ships used to lay leisurely at the river moorings and only participated in loading and unloading with the jostling country boats alongside them. The second period is marked by the construction of 4-screw-pile jetties on the strand bank in 1860 to handle the growing traffic.

The construction of 4 more jetties at Calcutta and the replacement of the steam cranes by hydraulic cranes soon followed and it was a landmark event for the third period. Finally, the port had built nine jetties (including Inland vessels and petroleum wharves) which accepted vessels up to 510 feet and were two-storied constructions.<sup>7</sup>



View of steamers in the Calcutta Moorings along the Strand Road - 1890s [© British Library Board. Shelf mark: Photo 15/4(84)]



The construction of a wet-dock, about four kilometers downstream of Calcutta jetties in 1892, and the provision of a separate oil-wharf at *Budge Budge* (Baj-Baj) nearly 21 kilometers below Kidderpore are the developments in the next period. The fifth period is marked by the construction of 4 riverside jetties and a coaling jetty at Garden Reach in 1925. Soon the construction of the second dock i.e. King George's Dock (later renamed as Netaji Subhas Docks) followed in 1928. These expansions were due to the steep growth of cargo handling demands from the hinterland (covering 0.5 million square miles comprising UP, MP, Assam, and the North East). The business at the port was booming for some time with Jute, Tea, Coal, and Pig-iron being the major commodities. To manage the operation with varied commodities (incl. wood and salt) a host of moorings e.g. *Hastings*,

*Prinsep*, *French Mail*, *Esplanade* and *Calcutta* were set up, which facilitated lightening of ships on the river. Over the decades, the port's cargo-profile started changing with the global realignment of production and transportation systems. Also, at one point in time volumes drastically got reduced in coal, ore, tea and jute. However, the city port remained a true logistics hub as the cargo reached the consumption point straight, with the least cost.

The port was building roads, promenades, hospitals, and even the best of bridges that we describe in the following. The port's outreach towards societal needs is extremely uncommon. Continuing with the story, the Legislative department of the then Government of Bengal passed the Howrah Bridge Act in the year 1871, empowering the Lieutenant Governor



Old Pontoon Howrah Bridge - 1880s [© British Library Board. Shelf mark: Photo 514/1]





Loading jute into steamer at Kidderpore Docks - 1910 (Picture Courtesy: © Dundee University Archive Services, Scotland)

to have the bridge constructed with Government capital under the aegis of the Port Commissioners (with options considered<sup>8</sup>) and it became a reality in 1943. Since inception, the port remains the custodian of the bridge, undertaking elaborate maintenance and repair works for it. With care, it has successfully overcome the ravages of time, remaining as functional and reliable as ever; no doubt the city of Kolkata is most identifiable with the Howrah Bridge.<sup>9</sup>

It was a period of elaborate construction of infrastructures like roads, rail-yards, berths, jetties, locks, warehouses, offices, and everything that are needed to run a very large port. By then it was a major port and globally considered next

to London Port. The ancillary services like hospitals, water supply, bunkering (both coal and mineral oil), security, substations, etc. all were bundled to offer first-class facilities. The channel was unduly long and a pilot vessel remained at Sandheads<sup>10</sup>. The marine services were strengthened with the acquisition of tugs, launches, dredgers (of different types), light vessels, dinghies, hawser boats, cargo barges, and large floating cranes (up to 60T capacity, which was quite impressive during that time). These assets demanded elaborate administrative work to keep them going.

For servicing cargo operations, purchase, operation and maintenance of land-based mobile and fixed equipment like Cantilever Crane, Goliath Crane,



shore-based level-luffing cranes, barge unloading cranes, crawler cranes, large and medium mobile cranes, tractors, etc., had to be made. It will be quite impossible now to appreciate how in 1964-65 more than 70 ships worked in a day (in berths, jetties, buoys, and river-moorings). It is not surprising that at one point in time Kolkata port was handling 49% of the total Indian Ports' cargo traffic. It was a period of growth and fervour with which the port worked; 'Port Commissioners' was a much-respected organisation in the country.

The construction of the port's mega warehouses (well-equipped with cargo lifts and adjacent railway line) continued during this time. The Indian Railways accepted mixed load and small parcel loads and those were stored in the warehouses as pre-shipment cargo. The process was effectively integrated

with railway yards that could accept a full-train and then detach individual wagons<sup>11</sup> (or groups) at EJC / GCD yard and then moved by small locomotives, to these warehouses. The cargo profile for Kolkata Port remained export-oriented for a large part of the time till 1970. This also gives a clue as to why the port maintained a fleet of 60 locomotives<sup>12</sup>. Some of the important ones are Hide Road Warehouse, Hoboken Sheds, Sale Tea Warehouse and Libyan Tea Warehouse. At a subsequent date, some of these have been refurbished and leased out; others are, however, lying in disuse with demand tapering off.

Now looking from a macro-perspective there had been industrial developments, wars and diseases, and economic tsunamis across the globe, but the port had continued to perform its duties to the nation. The state of West Bengal had



Rakes for Interchange in East Dock Junction, KDS



also passed through multiple changes of guard, labour unrest, dwindling tea exports, emergence of Bangladesh as a competitor in jute exports, shifting of

coal and iron ore to mechanised ports. Containerisation was also making its ingress since 1967.

## Sketches from 1970 – 2020

The port celebrated its Centenary year in 1970 with much fanfare with an eye on the CSR activities like building a 180-bed multi-speciality hospital (Centenary Hospital) near the Majerhat Bridge, creating quarters for port-workers, schools, refurbishing the promenade on the banks of the Ganga and a few other infrastructure additions. I guess that the best way is to visualize the conditions through the eyes of different Chairmen, without the use of numbers and statistics.

We begin with the statement of Shri B. B. Ghosh who was addressing an august gathering at the '*Symposium on Future of Calcutta Port*' organized by the Institute of Port Management at Kolkata on 7<sup>th</sup> June 1969.<sup>13</sup>

*"...I feel today that it was worthwhile for me to serve this port for so many years.*

*Before I came to the Port of Calcutta in 1962. I was warned by many friends that I would be taking on a very, very difficult task. It was generally felt that Calcutta Port was coming to a halt. The river was silting up fast and there were many alarming signals of impending death. No doubt, the Farakka barrage project had been taken up and the Haldia project was being planned but few expected these to become realities in the foreseeable future. The traffic of the port was more or less stagnant but even so, congestion of ships was a frequent affair. There was considerable unrest amongst the employees of the port...The position from the labour side was also not very different. The overall picture was one of gloom. A well-known*

*person occupying a very high position told me that if I could manage the Port of Calcutta it would be a great good fortune and the picture was such that he seemed to be right.*

*...Before I left office the other day, I was asked what had impressed me most or what had made me most happy. I said in reply that what appeared to me to be the greatest thing was the change in mental attitude, i.e., from one of pessimism to one of optimism, from differences and disputes over minor matters to a desire to participate jointly in furthering the interests of this port. It is this change of mental attitude which makes me confident of the future of the port."*

Kolkata Port had been subjected to multi-dimensional forces that are often non-existent in other Indian ports. Apart from the global uncertainty, it was the evolving trans-border foreign policy or relationships especially with Bangladesh and Nepal that went through the periods of ebb and flow. These have added to the rather vexatious nature of our evolving development plans. Port needed more support.

Late Dr. Ashok Mitra, who was the Chief Economic Adviser to the GOI and later became finance minister of West Bengal and a member of the Rajya Sabha, had in his key-note address in 2005 stated<sup>14</sup>:

*"Let me return to the theme of Calcutta Port. It is in a way, sui-generis. It is a river port. It hardly handles any riverine traffic, and almost exclusively handles sea-borne traffic. This is an anomaly and this anomaly was established by*





Heavy Project Cargo being unloaded by 200 T Cantilever Crane at NS Docks

*the East India Company. They arrived as trader and they picked Calcutta as the point of entry into the Eastern parts of the India.*

*... I know this was a very unusual location, which perhaps was made possible by the state of navigability of the Hooghly River 300 years ago. ...the river was very much more navigable than it is today. ...the problems that confront us today were simply not there during that period. There are problems being an inland port which have increasingly made manifest over decades and over three centuries. ...But by and large, the Ganges, as a river did not ever attain the kind of navigational achievement comparable to the record of Yangtze or Amazon."*

As per Xinhuanet, in 2018 about 2.69 billion tonnes of cargo passed through the Yangtze in China which is about 30-32% of the total merchandise of whole

China.

Mr. M.K. Kargupta who headed the port in somewhat turbulent times, reminiscences in the commemorative volume of 1995.

*"My attempts at introducing reasonable shop-floor discipline were the cause of a few unpleasant occasions where I was advised by some eminent persons that while the improvement of productivity was a good idea, looking after the interests of the workers of the port was even more important. Nowadays I feel amused when, while reading newspapers, I find that points which I sought to make during my stay in Calcutta port regarding higher productivity, better work culture, self-imposed discipline etc. are now not only accepted as reasonable but are almost considered fashionable by eminent people at all levels."*

Late T. C. Dutt seemed to ponder<sup>16</sup>: *“There were some successes, such as increase of container traffic, establishment of a CFS, however primitive, establishment of an ICD at Amingaon, sanctioning of a Major Dredging scheme, for increasing draft of the river, planning for second oil jetty at Haldia, improving coal handling and the basic infrastructure of Haldia, induction of management trainees and intensification of training in the Institute of Port Management and not the least, conclusion of good number of agreements with the major Labour Unions and improving physical image of the port by overall repairs of the yards and sheds. There were many failures also. Continued stagnation in productivity in port work, problems of river draft, poor state of cargo handling equipment, continued financial difficulties despite increases in port charges and delay in implementation of development projects are some such samples.”*

Here is a later-day excerpt from Dr. Bikram Sarkar’s thought on “Perspectives Plan for Calcutta Port 1995-2020” published by Calcutta Port in 1995<sup>17</sup>

*“Whether this port shall grow and prosper shall be largely governed by the degree of success with which national and regional plans get dovetailed in future with port’s development. The search for excellence may need to cover the entire gamut of options--- development of maritime growth centers, adequate transport linkages and nodes, requisite policy-intervention and support in the key areas of cargo routing-transport mode, river-related aspects, and estate development for generating surplus fund as an ‘engine of growth’ of the port. ....Growth is possible only if the port and elite-providers of service unitedly bring down their cost and pass on the benefits to customers, exporters and importers.”*

Dr. A K Chanda who had been a strategist commented on the 135th year celebrations<sup>18</sup>:

*“The Port of Kolkata like all riverine ports has to endure certain inherent perennial problems. The river Hooghly is notorious for traps and treacheries, and there is a constant struggle with nature to keep the channels from sea to the port open to navigation throughout the year. Dredging coupled with river training is a part of life - an accepted reality. KoPT lives happily with the problem of the draft. It has now mastered the art of keeping the channel safe, easily navigable despite everything.*

*... It works towards augmentation of cargo, rehabilitation of cargo and attracting new types of cargo.”*

He summarised the situation mentioning about the healthy monetization of the port’s lands, investment outlay of Rs. 752 Crores, river regulatory work of Rs. 350.8 Crores and construction of second lock entrance at HDC, along with additional berths. This was supposed to convince most of the critics of the port that it had a future.

Port management has modernised through internal rationalisation of policy and practices, and also through inputs received from external consultants like Rotterdam Port Authority (2007), JICA (1988-89), Sagarmala (2014), and B.C.G (2016) and so on. Its automation and digitalisation initiatives across the last few decades are yielding results. During the last five years, overarching policy changes were implemented through MOS viz., Stevedoring Policy, Revised Model Concession Agreement making PPP more acceptable and finally the Port Authority Bill 2020 is on the anvil, which is likely to ease processes and simultaneously strengthen the port’s management efficacy.



## Dredging pains

Despite the positive developments in cargo-front, the bores, bars and bends remained very much a part of the existence of the port. The Ganga drainage basin that was approximately 1.3 lakh square kilometer (*as of '70s*), brought down a large quantity of sediments. Irrespective of the powerful tidal rise, a long delta has been formed, through which it flows through a number of tributaries. Port's River Survey organisation was born out of these challenges. The estuary was open for navigation, day and night. To maintain light vessels and the hundreds of light buoys and river marks, two despatch-vessel-cum-tugs (*Seva & Nadia*) were pressed into service.

The fact remains that the dredge planning and monitoring in India had been following a conventional style and it had sparked off many rows in the past. Kolkata port had been flooded with comments from different committees (and from the CAG) as to the dredge-planning efficacy and also in terms of the performance. If we consider that

the area under the port's jurisdiction to be very large (vide the port limits in the associated Gazette Notification & KoPT website) and also the fact that most of the time the dredging had been executed through the DCI, a public sector undertaking, the achievement of the target sometimes missed the mark.

Dr. Jose Paul, former Chairman of JNPT & MGPT in an article mentioned: *The cost of capital and maintenance dredging at all the 12 major ports in India in the year 2013-14 was 2,470 crore. Kolkata Port registered the highest expenditure on maintenance dredging at 347 crores accounting for about 14 percent of the total dredging costs* (as a corollary it affected cash flow at times). Maintenance dredging over 232 km *of the entrance channel contributes to the high dredging costs at Kolkata port*<sup>19</sup>. He also added that maintaining waterways, is in the nature of a public good which strengthens the economy and referred to the quantum support, by the US Federal Government, for ensuring minimum depths up to 45 feet.

## Mega schemes for the future

The aspects that are being described here have a technical connotation and require a large space; hence, it has been condensed to a readable format.

- a. Haldia Dock Complex at one point of time faced the challenge of the inadequate draft in the channel. IIT-Madras looked into the problem through Mathematical Model studies and recommended "permanent

opening of HDC Dock Basin" (with an indicative cost of Rs. 230 Crores) by removing the existing Lock Gate and adjoining River Bank which offers sufficient width for manoeuvrability of ships thereby having the least siltation in the basin and later providing a second lock. The ultimate aim is to increase the number of ships entering the Haldia Dock<sup>20</sup>. The port is expected to get





Panaromic View of Container Park at Haldia Dock Complex

- a second opinion from the Port of Antwerp International, Belgium and if confirmed to implement in a phase-wise manner.
- b. KoPT is also exploring the possibility of optimizing the container ship run through the East-West Corridor. IIT Madras is examining the feasibility of using East-West Corridor as the navigational channel and the area is under regular monitoring through bathymetric survey.<sup>23</sup>
- c. Floating port operations: Chairman KoPT tweeted on 20th June 2018: *Kolkata Port Trust has started cargo transfer operations at Sandheads & Sagar anchorages using floating cranes. Successful handling of a Capesize vessel, carrying 55000 tonnes coal, took place at Sagar y'day. 'We'll be able to carry higher parcel loads now!'*<sup>25</sup> On
- a different occasion he had communicated: "Floating cranes discharge cargo from ship to barges. They'll go to a floating terminal in Haldia where they'll discharge coal outside the dock complex. Ships coming to our port were carrying 30000 tonnes, this ship is carrying 55000 tonnes so sea freight has come down."*
- d. Inland Waterways Authority of India has made its foray into a PPP<sup>27</sup> when it handed over the operation and management of its terminals [GR Jetty-I, BISN and GR Jetty-II in Kolkata and Gaighat and Kalughat Terminal in Patna] to an Operator on SOM model in August 2017 under a revenue-sharing arrangement. The port expects that this development can exploit the huge potential of Nepal-bound containerised cargo on



NW-1 and create a modal switch. The Kolkata IWT terminals are geared to facilitate both domestic and international cargo for NE-Region and Bangladesh through the Indo-Bangladesh Protocol Route. Kolaghat (West Bengal, India) and Chilmari (Bangladesh) were declared as new ports of call.<sup>28</sup> It is no more a dream. The first containerised movement

from Haldia to Pangaon (Bangladesh) through Inland waterways (NW1) and Indo-Bangladesh Protocol Route kick-started from Haldia International Container Terminal (a port operator) inside the HDC on 30<sup>th</sup> June 2020. M.V. Pruthvi operated by Adani Logistics loaded 45 TEU-s for Bangladesh and reached the country by about 8 days.

## Changing geopolitics and Kolkata Port

The changing geopolitics of Asia, marked by China's sharp rise and India's emergence, has led to renewed importance of Kolkata Port. The earlier 'Look East' Policy has now been modified to 'Act East' Policy. Already a basket of projects at bilateral and regional levels are under implementation to develop and strengthen the connectivity of

Northeast with the ASEAN region with interconnected physical infrastructure. Some of the major projects include the Kaladan Multi-modal Transit Transport Project (*a US\$ 484 million<sup>29</sup> project connecting the eastern Indian seaport of Kolkata with Sittwe seaport in Rakhine State, Myanmar by sea*), the India-Myanmar-Thailand Trilateral Highway Project, Rhi-Tiddim



Aerial view of Haldia Docks





Mobile Harbour Crane handling containers at Netaji Subhash Docks - 2018

Road Project, Border Haats, etc. It was expected to be operational only by 2019-2020 as all components of the project, including Sittwe port and power, river dredging, Paletwa jetty, have been completed, except the under construction Zorinpui-Paletwa road, construction of which commenced in April 2018 (December 2018 update).<sup>30</sup>

Making history on India-Bangladesh route, a modern cruise ship departed from the historic Kolkata Port on 30<sup>th</sup> March 2019. It was the first cruise company to sail their passenger ship from India to Bangladesh since Bangladesh became separated. It was a very significant moment for both the

countries, now that people can travel on either side, along the river route. The dream of connecting the two parts of erstwhile undivided Bengal has come to fruition.

The ship needed to sail along several rivers, including the Ganga in India and the Meghna in Bangladesh, the journey covering Sunderbans mangrove forests of India and Bangladesh, ports including Barishal, Chandpur, and Narayanganj, the port of call will also include the Mosque City UNESCO World Heritage Site in Bagerhat and Sonargaon, the ancient capital of undivided Bengal.<sup>31</sup>



## Envisioning the future of the port

During this long journey, KoPT strategies also evolved in line with global and national transportation

demands. The port is considered to be a 'multi-drafted port' and thus the capacity of adapting to multiple water



First Mini Cape size vessel MV 'Kishore' discharging coal onto barges at Sagar - June 2018

transport modes is easier. Imperceptibly, it had evolved from a first-generation port, that only supports safe anchoring of a ship and assisting it for cargo operations, to a fourth-generation port which is a 'network coordinator'. It is now deeply involved as a coordinator, in the supply chain, as becoming a 'port of choice' demands the ability to synergise the performances of all the stakeholders to optimize the logistics.

Kolkata Port stands at a juncture that is complex in terms of the social and economic environment and this challenge is to be overcome with the

growth of a well-knit symbiotic maritime community. The Government is keen to see coastal communities grow and prosper. It has a rich history of nurturing the society at different points of time. It was considered as a 'terminal port', where the arrival and sailing drafts were always less, being the last port of call. Most of the liner ships had ample time to get the ships' equipment repaired and supply replenished. Consequently, a large number of repairers and suppliers mushroomed close to the port. The port had always been a source of creation of numerous indirect employment



opportunities <sup>32</sup> that involved all walks of people. Interestingly, a 1964 survey by Calcutta Port revealed that one third of 5.5 million people in Calcutta was directly or indirectly employed by port.

Any kind of port planning cannot escape automation and digital intervention but often it is noticed that when a scheme is put to details, we usually overestimate the things that can be structurally done in one year, and underestimate those which are stretched further in the time horizon, say, around 10 or 20 years. With the emergence of key technologies like augmented reality, virtual reality, 3D printing and artificial intelligence driving autonomous cars, vessels, and vehicles, we can be confident about the future.

We are currently looking at these technologies instead of implementing them on a larger scale. These technologies are still on the lower-end side of the *Gartner-hype cycle*. If we think of the shipping and port industry, it is a genuine laggard, when it comes to technology adoption. Many of us feel happy about those different technology areas, including 5G, that will exponentially increase the possibilities that we shall see in five to ten years from now on but we have to be a bit conservative when it comes to its adoption in the port industry. Moreover, the fourth industrial revolution differs from the previous big leaps in history because of the 'speed' at which it unfolds its omnipresence in society and systems change in the way people live, move, work and communicate. The shift to a new era goes hand in hand with an imminent change in the energy mix. The unexplored value of this new era lies in renewables. HDC has registered itself as the pioneer among Indian Major

Ports in the 'Go Green' initiative in use of eco-friendly Bio-diesel, in operational locomotives, cargo handling equipment, firefighting equipment, etc. HDC, in reality, has created milestones.<sup>33</sup>

This is the moment to take a collective outlook where the port has acclimatized with the challenges of the draft, using the river as a true Inland Waterway that joins nations, connects cities in our own countries with a logistics mesh, invented operational models that allow some very large ships to visit the port. These are serviced at optimal cost, created management processes that are favourable to business and people, adopted the best of technologies suitable for the port and finally moving forward with green and smart port initiatives.

This generation brings the stakeholders closer to the port and thus they do not remain as "only names" in the "list of the Board of Trustees" but actual partners in the dream that the port nourishes. A few years back the common word 'customer' that was being used in formal communications was replaced as 'partner' and this simple change in attitude, brought in accolades. Another important aspect is sustainability, through 'stakeholder support' and 'strong branding' that are often considered as challenges. But the port had been maintaining closest interactions and symbiotic relationships continuously undertaking this journey of 150 years. Thus, this complex and integrated relation is likely to spread its roots further and the port is likely to grow from strength to strength.

Abraham Lincoln said: *The best way to predict your future is to create it.*

I firmly believe that the Kolkata Port will do that.



## References:

1. *Abandoned Port in the Sunderbans - The Port of Calcutta - A Short History*, pp. 29 , Nilmoni Mukherjee, Published by Calcutta Port Trust, 1970
2. *Abandoned Port in the Sunderbans - The Port of Calcutta - A Short History*, pp. 30 , Nilmoni Mukherjee, Published by Calcutta Port Trust, 1970
3. Bilham, Roger. "The 1737 Calcutta Earthquake and Cyclone Evaluated" October 1984. [Cires. colorado.edu/~bilham/gif\\_images/1737\\_Calcutta.pdf](http://colorado.edu/~bilham/gif_images/1737_Calcutta.pdf) [Divine Wind: The history of Science of Hurrricanes" Pub 2005. Page 223].
4. *Abandoned Port in the Sunderbans - The Port of Calcutta - A Short History*, pp. 36 , Nilmoni Mukherjee, Published by Calcutta Port Trust, 1970
5. *Calcutta Port - Annual Report: 1871-72* (Kolkata Port Archives)
6. (<https://www.railway-technology.com/features/timeline-165-years-history-indian-railways/>).
7. Centenary Publication by Calcutta Port - with a forward by N C Sengupta Chairman CPC
8. Resolution of the CPC 1906 - date not available - quoted in-page: [http://www.howrahbridgekolkata.gov.in/History\\_Middle.htm](http://www.howrahbridgekolkata.gov.in/History_Middle.htm).
9. BS News Report: [https://www.business-standard.com/article/opinion/a-k-bhattacharya-lessons-from-howrah-bridge-105033001047\\_1.html](https://www.business-standard.com/article/opinion/a-k-bhattacharya-lessons-from-howrah-bridge-105033001047_1.html).
10. JICA Report, Final, 1989
11. Centenary Publication by Calcutta Port - with a forward by N C Sengupta Chairman CPC
12. IPA report on Port Railways - 1998
13. Symposium on the Future of the Port of Calcutta - Address by Shri B.B.Ghosh - 7th June 1968 (Published by Institute of Port Management, Calcutta)
14. 135th Anniversary of Kolkata Port Trust - KoPT Anniversary Lecture by Ashok Mitra - 17th October 2005 ( internet resource)
15. *Port of Calcutta, 125 Years Commemorative Volume*, pp. 123
16. *Port of Calcutta, 125 Years Commemorative Volume*, pp. 125
17. Dr. Bikram Sarkar's forward in summary report "Perspective Plan of Calcutta Port: 1995-2020" published in the 1995 by Calcutta Port Trust ( Internal Circulation)
18. Commemorative Volume of 135 years of Kolkata Port, Published by Kolkata Port Trust
19. <https://www.thehindubusinessline.com/opinion/why-grudge-a-subsidy-for-dredging/article7151265.ece>
20. <https://timesofindia.indiatimes.com/business/india-business/kopt-to-experiment-without-lockgate-at-haldia/articleshow/64770407.cms>
21. Final Report for Sagarmala - (3-10) Vol. VI, submitted by AECOM in November 2016
22. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=151420>



23. KoPT Administrative Report 2018-19 ( Page 53)
24. Report Gadkari's Sagar port plan .....: P Manoj Mumbai | Updated on January 11, 2018 (Published on July 23, 2017-- The Hindu Businessline.com).
25. Official Tweet by Shri Vinit Kumar - Chairman KoPT
26. [https://www.porttechnology.org/news/kolkata\\_port\\_trust\\_given\\_goahead\\_for\\_diamond\\_harbour\\_container\\_terminal/](https://www.porttechnology.org/news/kolkata_port_trust_given_goahead_for_diamond_harbour_container_terminal/).
27. Maritime Gateway News Report: <http://www.maritimegateway.com/iwai-hands-kolkata-terminals-summit-alliance-port-east-gateway-india-put-ltd/> and <https://www.outlookindia.com/newscroll/iwai-makes-its-first-foray-into-ppp-model/1412758>
28. <https://www.jagranjosh.com/current-affairs/india-bangladesh-sign-agreements-for-enhancing-waterways-connectivity-1540529576-1>
29. [https://en.wikipedia.org/wiki/Kaladan\\_Multi-Modal\\_Transit\\_Transport\\_Project](https://en.wikipedia.org/wiki/Kaladan_Multi-Modal_Transit_Transport_Project)
30. <https://mdoner.gov.in/kaladan-multi-modal-transit-transport-project-inland> (Updates from Ministry of Development - NE Region)
31. Mail dated 12/8/20 from Shri Raj Singh - Promoter & Owner (Heritage River Journey, New Delhi) addressed to the author.
32. Survey conducted by Calcutta Port Trust in 1964 - The Port of Calcutta - A Short History, pp. 208 , Nilmoni Mukherjee, Published by Calcutta Port Trust, 1970
33. <https://economictimes.indiatimes.com/industry/transportation/shipping/-transport/haldia-to-become-countrys-first-green-port-nitin-gadkari/articleshow/46949993.cms?from=mdr>

The author can be reached at [mihirkdass@gmail.com](mailto:mihirkdass@gmail.com)

*"Whatever work you undertake, do it seriously, thoroughly and well; never leave it half-done or undone, never feel yourself satisfied unless and until you have given it your very best. Cultivate the habits of discipline and toleration. Surrender not the convictions you hold dear but learn to appreciate the points of view of your opponents".*

- Syama Prasad Mookerjee



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**  
 Formerly Kolkata Port Trust



# KOLKATA PORT AND CITY ENTREPÔT OF HERITAGE

*Gautam Chakraborti*

Serving a long and varied spell in the Traffic Department and retiring as the Port's Security Adviser in 2020, Gautam Chakraborti was also a Port Heritage enthusiast. He introduced, crafted and ran the first Port Heritage Tours as well as the Port Heritage Initiative, holding heritage events. He is currently engaged as Honorary Adviser Heritage for SMP Kolkata.

*The Port of Calcutta, the first Port to be born of enactment, had set its voyage through time much earlier when technology was stranger to navigation and shipping on a wily and tidal river as the Hooghly was on the lookout for a durable Port. It did find one finally on the left bank of the river, but the struggle for an enduring choice had left behind historic trails that can be the subject of both tangible and intangible maritime heritage.*

*Gautam Chakraborti's story picks stones and pebbles both from his personal path trodden in Port as well as archival sources, to illustrate aspects of the rich heritage of the river, ranging from stillborn urbanities, immigration to superstructures.*

In the way we understand “heritage”, it is a way of linking identities and promoting a sense of belonging to the past. In the constantly evolving mainstream of History, interpretation and re-interpretation are major ingredients. Heritage however serves to be those abiding and binding objects conferring a permanent value and a sense of inheritance. The UNESCO, over the years, has broadened its definition of Heritage, to include the cultural environment beyond tangible monuments, artifacts, structures and built evidences. The range of what is regarded as heritage has broadened significantly over the

last half-century. Heritage properties tended to be individual monuments and buildings such as places of worship or fortifications and were often regarded as standalone, with no particular relationship to their surrounding landscape. Today, there is general recognition that the whole environment has been affected by its interaction with humanity and is therefore capable of being recognized as heritage. It becomes even more necessary to make judgments about what has significance and what does not. For the Port of Calcutta (or Kolkata) the most significant way the cultural heritage



of a maritime environment is conjured up is the river itself. The most interesting aspect of a riverine Port is the gradually evolving and changing nature of the settlements along its course and embankments.

The history of the city of Calcutta (now Kolkata) has been and is being written, and re-written. The name itself attracted some of the best of academic and legal debates before the millennium turned in. Whether Job Charnock's arrival on the left riverbank ushered in a city is settled in the Court paper-books but the academic discourse lingers in knowledgeable circuits. But the proposition that will always defeat an argument is the fact that without a wily, unpredictable and highly charitable river we know as Hooghly, a Port would not have been born. The Ports that served as trading gateways, many of which faded over time, finally brought up the metropolises that grew on them, most importantly the one we know as Calcutta. At every turn in time, over more than five centuries, the river network

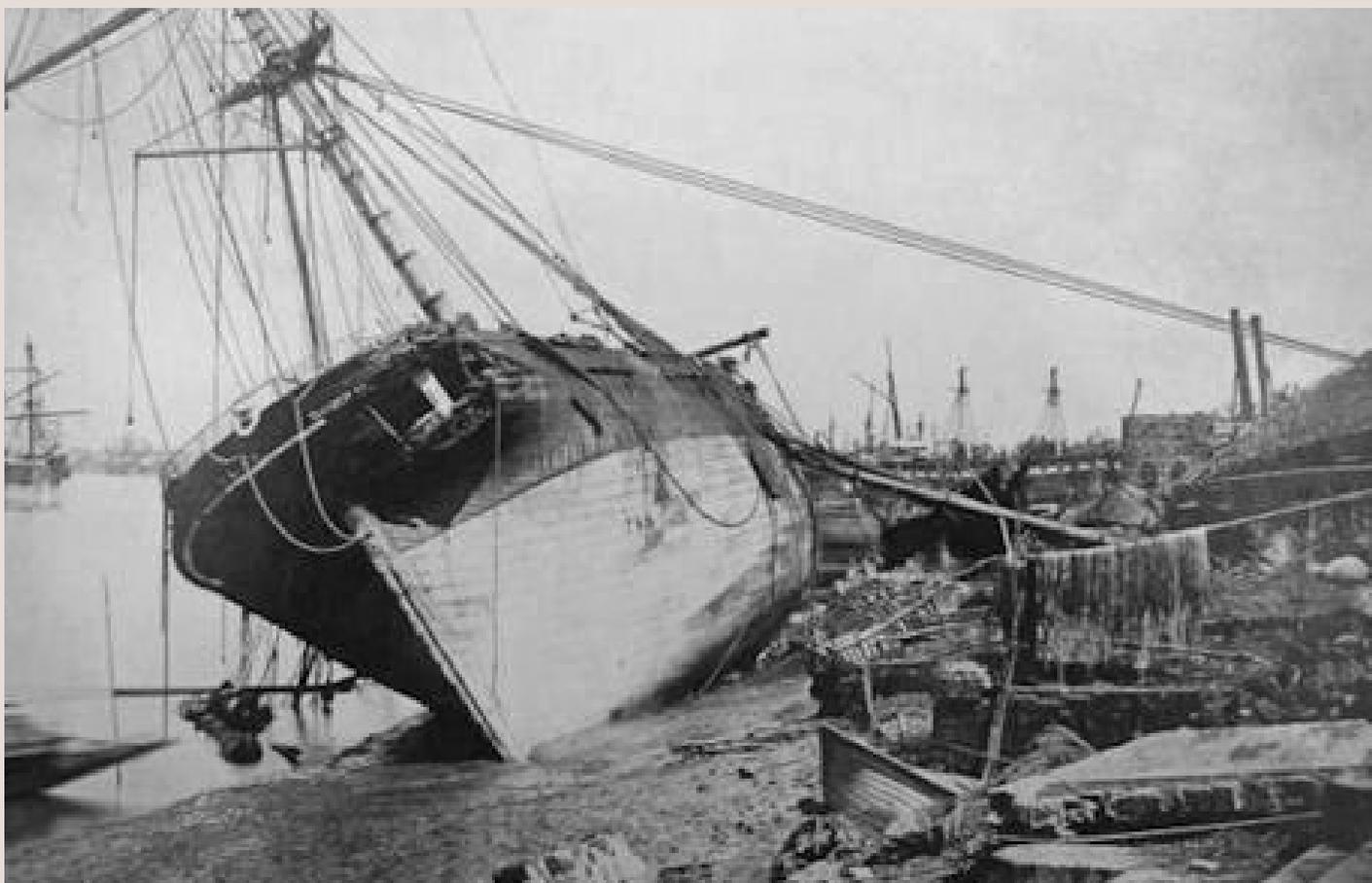
underwent changes bringing with it changes in routes, trading points as well as the emergence and disappearance of townships that could have possibly grown to have become burgeoning cities and of course, waterine gateways. The outcome of the vicissitudes of nature and the corresponding tryst of man to take his commerce and polity forward, is the leftover of a huge and collective memory that today constitutes both tangible and intangible port heritage, so unique in its appropriation of a riverine cultural landscape. Each and every such point is associated with the old and the new. It has its own space, its physicality with the imprint of time, its own content with both historical and societal association. It has its people, its places, and its characters defining its own cultural heritage, gifting one that unparalleled sense of belonging. This article is an effort to pick up a few such pulsating beats of heritage from random nooks and corners of what was once the second most important Port during the British raj.

## The heritage of defining times

Such a place that incites both tangible and intangible memory, is a town called Khejuri or Khijri, once known during the raj as Kedgerree, in close proximity to Hijli. Hijli, incidentally, became a great centre of maritime trade. Ralph Fitch records in 1586: "to this heaven of Angeli came every year many ships out of India, Negapatam, Sumatra, Malacca and diverse other places and laden from thence great store of rice and much cloth of cotton, wool and sugar and long pepper, great store of butter and other victuals". The Portuguese had also an agency at Hijli, from which

they were ousted by the Moghuls in 1636. Kedgerree was a village and police station on the low lands near the Hooghly, on the west bank and 68 miles below Calcutta, once developing into a booming Port town affording anchorage to the larger "Indiamen". As HG Reaks, Asstt River Surveyor describes it "With the rise of Calcutta, Khijiri being a fairly sheltered anchorage at the head of open sea navigation, became an important station. The journey up the river to Calcutta was considered so tedious and dangerous for the larger vessels, and these accordingly lay in





The cyclonic devastation - 1864

the road at Khijiri, and there unshipped and shipped cargo and passengers who were brought to and from Calcutta in sloops. An Agent's house and Port Office were built, and a town grew up rapidly with taverns for the accommodation of passengers waiting for their vessels. Many of the traders doing trade through Kedgerree were prominent Scotsmen, as B R Tomlinson writes in his article "From Campsie to Kedgerree : Scottish Enterprise, Asian Trade and the Company Raj" .

Why I begin by mentioning Kedgerree is because of the sense of discovery and belonging that greeted me and stayed with me since I visited the place, for the first time in my official capacity in 2015. That was more than thirty years after joining the Port. I remember spotting a large open pond and village-

folk washing clothes on its stairs. On a closer look I found that the platform for the wash was actually a stone tablet, bearing an epitaph of a ship Captain who arrived at this town sometime in the early 19th century but never went back. A small cemetery nearby, lying in neglect and ravaged freely by locals, is where mariners both young and old were interred during the busy days of the port-town. Somehow Khejuri is a representative reminder of how this Port that we know as Calcutta ( now Syamaprasad Mookerjee Port), with its Docks, jetties and long embankments came into being. Like a Ray film, it conjures up images of destruction followed by a new course of life, so very akin to the rise and fall of the river that binds all such intangible leads to form a repertoire of rich port heritage. The



1864 cyclone brought about unseen destruction for Khejuri and the vessels lying on the river-road. On the other hand, the series of the hurricanes of 1842, 1844 and the calamitous one of 1864 shook the British govt sufficiently enough to think in terms of constructing the first wet docks at Calcutta which came up as the Kidderpore Docks in 1891.

The Report of the Calcutta Cyclone of 5th October 1864 by James Eardley Gastrell, and Henry Francis Blanford is a document in testimony of the devastation at Kedgerree. At Kedgerree, 3 miles above Cowcully the height of the storm wave was..... 15.9 feet above high springs and 28.9 feet above the low water mark. The Salween surveying vessel was driven on shore at this

## Howrah-From Stillborn Port to Ship building hub

The Port's own Heritage tour named "A Voyage through Tide and Time" that was introduced for the curious citizen in 2018, was an attempt to package not only the History of the Port, but also the heritage of the industrial landscape that preceded it. While it appeared that the tourists were largely familiar with the historicity of European settlements downstream like Chandernagore, Chinsura or Barrackpur, Howrah with a rich maritime heritage to command, was little known. Steeped in history, Howrah the twin city was part and parcel of this environment. The Howrah District Gazetteer's accountal ( Amiya Kumar Banerjee and Durgadas Mazumdar, 1972 ) offers an excellent pre-view of the right bank of the river, and the emerging industrial environment. 'As regards Howrah city and its environs, the oldest record from which their physiographic

point, and when the water sank, she rested on the sand close to the ruins of the Telegraph office. The inundation was 13 feet above the land level, both as sounded from the ship, and as subsequently measured on the walls of the Asstt Port Master's Bungalow. The whole of Kedegree village and Bazaar was swept away, and the PostMaster and his family, with a great number of natives, drowned". By virtue of the intrinsic nature of the storm wave, when it reached the shallows of a river delta, it further piled up by friction in the same manner of the tidal bore and in a river like Hooghly on that fateful day formed a bore greatly surpassing the tidal bore in height as also in destructive power.

features can be reliably determined is Mark Wood's map of 1782-83, which, according to Kyd's manuscript of 1790, may be considered as fairly accurate. There are also other contemporary and subsequent maps and records. It appears from these documents that the entire river bank, excepting the projecting built-up portion now occupied by the Howrah Bridge approach was formerly comparatively low lying. The bank on the Ramkrishnapur Sibpur side was much broader in extent and sloping towards the river. ....The channel on the Howrah side was known to have been deeper before the days of Job Charnock, who, however found the river deeper on the Calcutta side. This change is accounted for, from the fact of a sand bank called the 'Sumatra Sand Bank' having formed by the sinking of the ship 'Sumatra' at the projecting angle of the

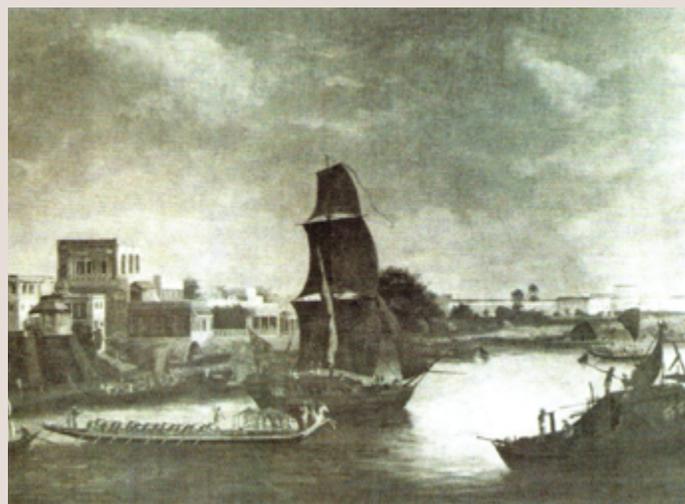


Howrah Ghat'. Betor was an important trading point and ship anchorage for the early European traders. As Prof Nilmani Mukherjee in his unequalled "The Port of Calcutta - A Short History" tells us 'On the arrival of the Portuguese fleet every year, a bazaar of mud and thatch huts would spring up at Betor, on the West Bank, to be burnt down on its departure and re-erected next year on its return'. Betor figures in the maps of Jao De Barros and Blaeu (early 17th century) but not in Van Den Broucke's and later maps. It obviously means the fading away, like Khejuri, of another fledgling gateway for trade and commerce. Betor was replaced, in the latter part of the 17th Century, by two new settlements at Salkia and Thana Makua. We learn from Barros that at the latter place, immediately south of the present Botanic Gardens at Sibpur, Pratapaditya, one of the well-known Chiefs of Bengal has raised a mud-fort (from where today's Metia Buruz derives its name) in the 16th century to protect the inhabitants from Arakanese and Portuguese piracy. Salkia is known for its Golabari, or the salt Golahs that were erected during the regime of the East India Company. The river, as per records quoted by the Gazetteer, registered far-reaching changes in its headwater flow around the 16th/ 17th Century. Around this time, the mouths of the Saraswati, Rupnarayan and Adi Ganga became separate and the Damodar Saraswati delta disappeared. 'Very interestingly, this brought an improvement in the Bhagirathi channel, which coincided with the growth of European settlements on its Banks and the decline of Portuguese piracy. By 1757 the Bhagirathi channel had improved so much that under Admiral Watson, three or four 64 or 66 gun British men-

of-war sailed up the river and captured the French Fort of Chandernagore'.

*In 1780 Colonel Watson, the pioneering shipbuilder founded a marine Yard at Kidderpore and got a grant of land from the East India Company for construction of a wet dock, which he proceeded to design and construct. His plans did not materialize, although it is said that he practically expended his life's earnings to his dream-cause. There was no major concerted effort in this direction until about seventy years thereafter.*

The flat mud-banks on the Howrah side were found suitable by early European traders to build mud-docks (dockyards) to careen and repair their vessels after long-sea voyages. The older anchorage of Betor perhaps prompted this choice. As early as in 1706, long long before the Calcutta jetties or Docks were even sighted in administrative or entrepreneurial imagination, there were efforts to set up dockyards here, for the repairing and fitting of ships' bottoms. Howrah can therefore claim its distinct heritage, alongwith Bombay or Surat, of having spawned a ship manufacturing industry from very early times. This can be located as the point in history from when Calcutta was to



Garden Reach



be known as a terminal Port with one of the best facilities for what will slowly develop into the Dry Docks at KPD and Netaji Subhash Docks ( King Georges Docks). In 1796 a dockyard existed at Salkia known as the Dockyard of one Mr Bacon. In 1800 MacKenzie's Docks, in 1810 the 'Patent Slipway', which was renamed in 1849 as the Caledonian Dock and in 1815 the Commercial Dock came into existence in Golabari. In 1823, the construction of the Strand Bank on the Calcutta side of the river resulted not only in the change in the

configuration of the embankment and the ghats, but also the relocation of quite a number of busy shipbuilders to Salkia and other proximities. The names of Indian entrepreneurs like Dwarakanath Tagore, Jyotirindranath Tagore, Joygopal Mullick, Radhamohan Pramanik, Pitambar Mukherjee, Ramkinu Sarkar, Joynarayan Santra or Kalikumar Kundu were uttered in the same breath during these times with their English peers in industrial Howrah.

## The KPD Clock-tower – still chiming to itself

Despite the demand of the mercantile community, and the pressing necessity of constructing wet impounded docks to provide safe working accommodation



The 1899 KPD Clocktower with a Cooke and Kelvey Turret Clock

to ships, it took nearly half a century for the first docks to see the light of day. The establishment of the Chambers of Commerce articulated the aspirations of smaller Indian merchants who had a tough time wriggling out of a sense of commercial alienation dogging them in their own marketplace. Although the Kolkata Port was the first Major Port by enactment, Bombay got its first wet docks earlier ( 1875, Sassoon Docks) .It took years and of course, massive acquisition of land and replacement of much of the built environment along the banks of the Hooghly, at a time when concern for heritage was not in public reckoning. The first barge that entered KP Docks on 21 June 1892 was Luise, followed by the Anchor Line steamer Bohemia. The Harbour Master's Establishment, the most important wing in Port affairs at the time also housed a large Marine Workshop which could attend to all works pertaining to repair and construction of port craft.Slowly gaining popularity as 8 Workshop, it grew to be Asia's largest marine workshop equipped with imported machinery and slipways. At the corner



of 2 KPD, after Westwood Baillie's Swing Bridge ( set up in 1891), one can still sight the dilapidated building of the first Customs Dock unit in Calcutta Port. On the shoreline with the river, a clock tower built and operationalised in 1899 overlooks the sprawling workshop and still reminds the onlooker of the busy days of yore. The Clock-tower, below which the Port's Heritage Tour ends, was constructed in 1897-98. One of the architects of the tower was W Banks Gwyther, known for his construction of several city structures and was also associated with the making of the Writers' Buildings, Calcutta. It was constructed by an American firm

Martin and Company. The Clock in the turret, that still maintains and chimes in time thanks to the good efforts of the Mechanical Engineering Department of the Port, was supplied by Cooke and Kelvey through a global tender floated by the Port Commissioners. The clock operates on a fully mechanical operating system of bevel gears actuated by two counterweights utilizing their motion due to gravity, requiring a weekly rewinding. The tower, that once served as the time-keeper for navigators sailing out of Port, is a monument by itself, serving as an abiding relic of heritage for the Port as it developed over the centuries.

## Another Clock-Tower at the earlier King George's Docks, now Netaji Subhash Docks

On the first day of 2019, heritage enthusiasts in the Port and the city found an interesting news to make their day. During a bout of routine dredging, the port dredger pulled up a unique unexpected gift from the depths of time. It happened to be an US Aerial bomb of 1000 pounds of Second World War origin. During the War period, Calcutta and more particularly the Port was taken over by the American army. It appeared that when the war ended, as in many other parts of the world, the returning forces dumped all unwanted baggage wherever they were. Unfortunately the device was found to be retaining its explosive portents, and could not be preserved in the Port's Maritime Heritage Centre. But even while being carried off, it momentarily set the time back by 60 years for the city enthusiast. Lord Irwin did the inauguration of the new King Georges Docks on 18 December 1928 and the



1000-lb WWII US aerial bomb retrieved from NS Dock in 2019



first ship that entered the Docks was on 23 February 1929. As in every stage of the Port's development, struggle has been a constant companion. The creation of King Georges Docks was no exception. Although planned before 1914, the project was stalled with the outbreak of the First World War. The Foundation stone was finally laid at the base of where the present Clock Tower stands by the Duke of Connaught on 2 February 1921. Delivering a lecture on one of the Birthdays of the Port, Late Prof Barun De, eminent Historian and Conservation expert recounted his admiration of the structure, not forgetting, at the same time to hand over a piece of advice for the heritage-conscious- ' Having been taken recently to visit Netaji Subhas Dock, I came across the old Clock Tower, a very elegant piece of architecture that could easily beat the Ghantaghar of Allahabad, in terms of beauty. People, thirty years ago, used to talk of the Ghantaghar only when they went to eat grimy kebabs there. No one really takes notice of the Clock Tower which was used to keep work time for the whole of

the old King George's Dock. There is a notice affixed to it, difficult to read; or at least my eyesight is bad but others also found it difficult to read, it is so high up. Some clear signs along the older buildings, marking their original significance, would be interesting'. Netaji Subhas Docks, renamed after the national icon, has also undergone changes in form in order to keep in tune with the necessities of time. Not so with the long embankment beyond it, that is known to all as Garden Reach. The lovely European houses that once gave the place its name have long disappeared. The only solace is perhaps the buildings of the BNR complex, notably the "Parikhana " where Wazed Ali Shah put up with his entourage after being released from Fort William on May 6 1856. This building as well as Metcalfe Hall on Strand Road were apparently inspired by the Temple of Winds of Athens. There is no doubt that the Railway authorities, one more government body that has shown exemplary enterprise in preserving history and conserving heritage, have done wonderful work here as well.

## The old yielding to the new-The Howrah Bridge – standing tribute to Heritage

A bridge connects not just spaces. It can interconnect memories of two times. As an example, there is perhaps none more articulate than the Howrah Bridge itself. Its earlier avatar the Pontoon bridge was Calcutta's link with Howrah and a busy railway station that had come up in 1854. Initially, there was considerable vacillation on the type of a Bridge to be chosen. In 1862, Turnbull, the East India Railway's' Chief Engineer who also designed the Howrah

Railway Terminal, proposed a Bridge more towards Pulta Ghat, some 12 miles north of Calcutta. The plan didn't find favour, and a Committee assigned Sir Bradford Leslie, the English Bridge specialist who also designed the Jubilee Bridge, to construct a pontoon Bridge over the river. Thus the Port- built first avatar of a floating Bridge (then Called the Hooghly Bridge) connecting the growing city with the rest of India across the Ganga was opened on 17 th October



1874, the same date on which its owners, the Calcutta Port Commissioners (or Port Trust) were officially born four years back in 1870. The Port opened the Bridge for passage of marine traffic mainly during the night. During daytime it allowed the passage of vehicular traffic between Calcutta and Howrah. The wooden Bridge was baptized by adversity of nearly all kinds. A massive cyclone hit the bridge within days of its inauguration, followed by the head-on collision of a ship named Egeria, and as if that was not enough, dynamites were placed on it during the Jugantar days.

Braving all odds, the old Howrah pontoon Bridge continued to serve till 1945. A Port Trust Resolution of 27th August 1906 records that bullock carts formed eight-thirteenths of the vehicular traffic across the existing bridge.

The middle part of the pontoon bridge used to detach when the vessels passed. Calcutta Newspapers carried the timings everyday in a small corner. The bridge hardly exists today in any corner of collective memory, although the tangible version that we see on the river serves to remind us of a long bygone era.

## A 'New' Bridge

Of the few surviving wonders that Calcutta, present-day Kolkata can probably boast of, the Rabindra Setu or the Howrah Bridge is one. This aesthetic giant smilingly astride the Hooghly river, had inspired poets from Tagore to Kipling and filmmakers like Ritwik to Ratnam. Perhaps the most tangible

gift of the British to Independent India., the Bridge recently celebrated its 75 th Birthday in 2018 and a new illuminated makeover in LED in 2020. A mute witness to Bengal's tide of events and upheavals, the New Howrah Bridge as it was called, was constructed under the aegis of the Port Commissioners



The resplendent Howrah Bridge in LED - 2020



when the clouds of the Second World War were darkening over the city. It should be an abiding surprise that it survived the onslaught of the Japanese 'Sallies' (the Mitsubishi Ki-21 heavy bombers as they were nicknamed). The reason perhaps was not just the helium balloons flying on top, but the Port itself – with the Kidderpore Docks taking the brunt of the one-off day-time bombing and saving this wonderful engineering marvel to endure for Calcuttans.

In 2006 the Bridge saw its first decorative electrical illumination, with the idea emanating from Dr. Anup Chanda, Chairman, who had pioneered several

other unique projects including the setting up of the first Maritime Heritage Centre in any Indian Port. In 2020, in the 150th year of the Port, the idea has been taken to another level by the present Chairman of the Port, Shri Vinit Kumar who has already left an indelible mark in his groundbreaking initiatives in many spheres, Heritage being just one of them. Talking about the spectacular illumination of the bridge that changed the Kolkata night-sky forever, one cannot resist showering credit on two most enterprising leaders that the Port found in the new millennium, namely Dr. Anup Chanda and Shri Vinit Kumar.

## Migration Memory-the Port's very own memory of Indenture transit

While carrying out compilation work for a Port publication, I asked Nalini Mohabir, researcher at Leeds and a child of the Diaspora whose forefathers left from and returned through this Port, to contribute an article on her perception of Calcutta Port as a conduit point for Immigration. Obliging me, she wrote an article and observed "This "inheritance of memory" located in the stories transmitted by my grandfather, led me to Kolkata in 2007, and specifically to Babu Ghat, in search of any traces of the West Indies still alive in Calcutta. With support from a local professor, I wandered throughout the ghats trying to emotively and imaginatively fill in the details missing from official reports. Where are the vestiges of the community of repatriates who lived in make-shift settlements beside the Hooghly river? Do "urban slums" simply disappear? Surely, I thought, their presence must be here, even if only in

memory. Moreover, has the poignancy of the Calcutta port, busy with the comings and goings of indenture ships, seeped into -- if not an Indian national consciousness – at least a Calcutta consciousness? Did those who were left behind ever look to the river and wonder where their family went? The purpose of this speculation may seem rather sentimental or even naïve considering the overlap with the trauma and chaos of the post-partition years. My point is simply that all around me, as I walked along the Hooghly river were reminders that the Kolkata port is, among other things, a landscape of indenture. It is the site of collective memories".

Calcutta Port, the main conveyer of the onward British domination over the maritime trade of India was also a great facilitator of human trade to and from the colonial plantations. The period 1830 to 1890 marked a period of transition in the British colonial



economy, a period that also saw the Calcutta Port system undergoing 'institutional transformation' to meet the needs of the time. The infrastructure that facilitated the comings and goings of indenture ships and labourers was centered in and round Kidderpore Docks, with emigration depots at Garden Reach, boats to guide the 'coolie' ships down the Hooghly and the ghats and jetties which stretched out to meet the ships. The pining of researchers and the diasporic progeny for what is now a classic form of intangible heritage is best exemplified in Nalini's words above.

The Indenture Memorial was set up in Port premises and inaugurated on 11 January 2011. The then Ministry of Overseas Indian Affairs and the GOPIO pioneered the memorialisation. The plaque reads

*"This memorial commemorates the thousands of indentured Indian workers who sailed from Kolkata Port between 1834 and 1920, to lands far away, seeking better livelihoods for themselves and their families. This*

*is a celebration of their pioneering spirit, endurance, determination and resilience. They made significant contributions to their adopted countries, yet cherished and passed on the spirit of Indianness—culture, values, traditions—to their descendants.'*

In 2015, one more memorial came up on Port land. This was located to the West of Netaji Subhash Docks at the Surinam Jetty and is dedicated only to the immigrants who set off for Paramaribo in 1873. The Dutch Govt added a special plaque to it in 2017.

Both the memorials are an attempt to establish markers of imagined memory. I have personally encountered discomfiting questions from individuals like, 'Is this the place from where they went, is this where they stayed before boarding? It is, as Nalini writes, 'a conceptual gateway located in the interior space of the mind, a limbo-space (neither here, nor there)'. None of the depots exist today, that once served as pre-departure points dotting the left



The 'Mai-Bap' statue, Suriname Ghat, Kolkata - 2015



bank of the river. These were mostly the European houses, the ones that Amitav Ghosh describes in his *Sea of Poppies* as 'the verdant suburb..., where the leading white merchants of Calcutta had their country estates.' There was no 'Calcutta Depot' except for the first ones that came up in Bhowanipur primarily for Mauritius deportees very early in the era of Indenture. These were pulled down in the early days of this century, despite some disjointed efforts by the diasporic community. Subsequent efforts by individuals (most importantly by the Late Leela Gujadhur Sarup, with whom I interacted very closely in ideating the memorialisation) and the GOPIO finally resulted in the setting up of what is known as the Kolkata Memorial and

the Suriname Memorial to millions of avarasis the world over. After a lapse of nearly nine years, and once again due to the singular foresight and drive of the present Chairman of the Port, planned efforts are underway to redo and refurbish the memorial precincts. On 30th January 2020, before the onset of the Covid pandemic, the Kolkata Port Heritage Initiative, which was also formed in 2018, organized its third seminar at the Indenture Memorial site, where international and national scholars participated. Of all the riverine sites planned to be brought within the map of heritage tourism, the Indenture Memorial evokes universal interest.

## The Port's own floorshow to bridge History and Heritage

The first meaningful effort taken by the Port in 2009 to locate, identify, preserve and showcase the archival wealth of this large heritage institution, is the creation

of the Maritime Archives and Heritage Centre. The historic Fairlie building of the Port overlooking the Hooghly on the Strand where the Archives cum Museum



The Port first Heritage Tour "Voyage through Tide and Time" being flagged off by Shri Vinit Kumar Chairman, Feb 2018





Prof. Geraldine Forbes delivering her key-note address at Port Heritage Seminar - January 2020

is located, is itself a bridge between the future and the past. It is a tangible part of the Port's memory from a time that witnessed phenomenal growth in cargo handling all along the river. It breathes life into the 53-odd exhibition panels and the great many artifacts and models in the range of display. At the same time they bear witness to the heritage, both tangible and intangible, of the different chapters in the history of a Port that was officially born 150 years back, but existed in perennial quest for a location long ago. There are detailed

windows even on comparatively newer entities like the Haldia Dock system .

It will be to the benefit of posterity to recall the contribution of both the Port's own functionaries like Sarmishtha Pradhan, S B Das, A K Mehera. G Basak, Kanak Chakraborti among others as well as external experts like Dr A K Sarkar, Dr Pranab K Chatterjee and the late Dilip Mukherjee in the setting up of the Heritage Centre in the shortest possible time.

In the matter of collection of archival material and assistance in Port publications, officers like Kaushik Chatterjee, Paramita Ghosh Majumdar, S Roy Chowdhury, Capt B Pakrashi (and perhaps the author himself) played seminal roles. The National Archives, The State Archives, the National Library and many other institutions extended help to lend a shape to the dream that today appeals to hundreds of tourists, visitors and researchers across nationalities.



Kolkata Port's tableau on Republic Day 2020, the first ever tableau by any Port on this occasion

The author can be reached at [rachtam@gmail.com](mailto:rachtam@gmail.com)





# OUR VALUED STAKEHOLDERS





*The Port of Kolkata has always drawn its sustenance from the maritime community since the very beginning. This section is a rich collection of remembrances and recounts from some of the leaders in Trade and Industry, who are but the varied stakeholders of the Port, being silent but rock steady Partners in the Port's evolution in the larger maritime canvas, contributing their mite in EXIM generation, logistics network, and spawning a whole genre of port-centric eco system, leading to the Port's growth and diversity.*





# NEPAL'S TRANSIT TRADE THROUGH SMP, KOLKATA

*Eshor Raj Poudel*

Mr. Poudel, the Consul General of Nepal in Kolkata joined the Consulate General in July 2020 for a four year term. Before this he was in the position of Director General of Immigration in Nepal. He is the Senior Joint Secretary of Government of Nepal. He joined the Civil Service of Nepal in 2003.

## Introduction of Nepal-India Trade and Transit Relations

Nepal and India have a close and friendly bilateral relation. Both countries do enjoy cordial and multidimensional ties since times immemorial. We do share many civilizational attributes. Our bond is well cemented over time with geographical proximity and open borders, linguistic, religious and cultural similarities and the ever growing interdependence on economic matters. This relation has been taken to new heights with the exchanges of high level meetings and continuous engagements in bilateral forums at different levels.

The economies of both Nepal and India depend on each other. India is the largest trade partner of Nepal. Two thirds of Nepal's trade flow is with India whereas, Nepal has procured goods equivalent to 564 billion Nepali Rupees from India and

sold goods equivalent to 63 billion Nepali Rupees to India in 2019/20. On the other hand, Nepal is the tenth largest export market for India in 2018 and is an ample market for Indian goods. Both countries have huge potential to enhance bilateral trade and investments further with socio-cultural similarities, geographical proximity and growing markets in the years to come as the economies of both the nations are growing continuously.

As a landlocked country, Nepal relies on neighboring countries for its transit access for third country trade. Nepal-India Treaty of Trade and Commerce, 1950 has recognized Nepal's full and unrestricted right of commercial transit of all goods through the territory and ports of India. The Government of India has been providing sea access to Nepal



for its third country trade through Syama Prasad Mookerjee Port (SMP), erstwhile

Kolkata/Haldia port and Visakhapatnam port as well.

## Bilateral Transit Instruments between Nepal and India

The Treaty of Transit between the Government of Nepal and the Government of India was signed in 1978 by separating transit from trade. The Treaty has been renewed and replaced from time to time. The existing Treaty of Transit between Nepal and India was signed in 1999 and renewed every seven years in terms of the provision of automatic extension in the Treaty. Nepal and India have also

signed Rail Services Agreement (RSA), in 2004 for the movement of bilateral and transit cargo of Nepal through rail. These instruments have been amended from time to time through the instruments of letter of exchanges and MoUs, focusing equally on the development of infrastructure and changing dynamics in trade, transit and technology sectors.

## Role and Importance of SMP for Nepal's Transit

The Syama Prasad Mookerjee Port (SMP), Kolkata is, historically, the major partner in handling overseas trade of Nepal as

it is the nearest sea port of Nepal. The SMP has been continuously providing gateway port facilities to Nepal's third



Inauguration of CFS of NTCWL in the presence of Commerce Minister Nepal and Chairman SMP Kolkata --2019





[Right Honourable Prime Minister of Nepal, Mr. K. P. Sharma Oli and Prime Minister of India, Shri Narendra Modi jointly inaugurated ICP Birgunj on 7th April 2018 from Hyderabad House, New Delhi through a virtual platform](#)



country trade. The SMP handles more than 80% of Nepal's third country transit trade in volume terms. According to SMP report, in 2019-20, SMP handled 2.8 MMT of Nepal Cargo (increase of 8% vis-à-vis previous year). It is the point to mention here that the SMP has been providing special preferences like storage free time to Nepal bound containers at the Port, has established Nepal Customer Care cell, and assigned priority on bulk cargo handling, such as fertilizer and vegetable oil, among other facilities. During the COVID-19 pandemic, SMP has been showing extraordinary performance in trade facilitation despite having several challenges of lockdowns prevailing both in India and Nepal. Considering the difficulties faced by the importers in the wake of adoption of precautionary measures for COVID-19 in India and Nepal, SMP has waived various charges and had extended full support to

Nepali importers in the course of which importers have saved millions of rupees, while handling cargo through SMP. The SMP coordinated with the stakeholders to sort out the grievances of Nepal Importers in respect of charging for detention by Shipping Lines. The effort of SMP to maintain smooth flow of the supply chain for Nepal bound cargo is noteworthy.

The Consulate General of Nepal in Kolkata is one of the earliest missions set up in 1948. The role and responsibility of this Consulate general is primarily inspired by trade, transit and bilateral relations between the Government of Nepal and the Government of India. The Consulate General is working with the objective of Trade and Transit Facilitation in coordination and support of SMP, Kolkata, Customs, customs handling agents, shipping companies and exporters/



## 1. Leased Land of CGR Road, Netaji Subhas Dock (NSD), Kolkata Port Trust

The previous leased land area:	<b>4332.81</b> Sq.Mtr.
Leased from	<b>1st May 1973 (for 25 years)</b>
Lease period	25 years
Renewed from	01.05.1998 (for 25 years)
Additional land taken	553.34 sq.mtr land attached to the old plot from 1st May 1999 (for 24 years).
Total land	<b>4886.15</b> Sq.Mtr.
Lease Validity	30th April 2023
The Current monthly rent of the entire (4886.15)Sq.Mt. Land	IRs. <b>59,265/-</b>

## 2. Leased Land of Haldia, Dock Interior Zone & Residential Zone

Leased from	<b>1st Nov 1984</b>	
Lease period	30 years	
Renewed from	01.11.2014 (for 30 years)	
Lease Validity	31st October 2044	
Leased Land	6985 Sq.Mtr. Dock Interior Zone	
	2000 Sq.Mtr. Residential Zone	
Total land	8985 Sq. Mtr.	
The Current monthly rent	Dock Interior Zone 6985 sq.mtr.	IRs. 1,92,604.00
	Residential Zone 2000 sq.mtr.	IRs. 31,306.00
Total Monthly Rent	<b>IRs. 2,23,910.00</b>	

importers. Since its establishment in 1948, the SMP has always been extending full cooperation to CGN with the highest

assurance for the unfettered movement of transit cargoes.



A state owned Company Nepal Transit and Warehousing Company Ltd. (NTWCL) has been working as the representative of the Government of Nepal (GoN) to provide warehousing facilities and conducting all the transit related activities at the Kolkata/Haldia port. In terms of The Treaty of Transit between GoN and GoI, the GoI provided land at the Kolkata and Haldia port for the uses of warehouses, sheds and open space to Nepal. On behalf of the Government of

Nepal, the NTWCL has taken the below mentioned land in a long term lease from SMP for facilitating Nepal's transit through Kolkata and Haldia. The NTWCL has developed temporary infrastructures for operating the warehousing facilities in the leased land plot inside the NSD of SMP in C.G.R. Road, Kolkata. After the operationalization of the warehousing facilities in SMP by the NTWCL, it will further facilitate Nepal's transit trade.



Ambassador of Nepal visiting NS Dock - 2019

## Transit and Logistics development in trade facilitation

Trade is the engine of economic growth and development. For enhancing trade and increasing competitiveness, transit, logistics development and investment play an important role. Globalization has intertwined our concern and interconnected our economic and social progress. Openness, innovation and connectivity are pre-conditions to flourishing trade and investment in the globalized world. Our region is endowed with immense natural

resources; we need to consolidate our strengths and energy to utilize them for capitalizing opportunities in trade, tourism, hydropower, agriculture, mineral resources, for bringing a positive change in the life of our people. Openness, infrastructure development and innovation can spur economic growth and prosperity of any country. Openness demands regulatory reforms; innovation demands sharing technology across the borders while connectivity



## Trade Competitiveness in 2014 among SAARC Countries

#	Country's Name	Cost to import (US\$ per container)	Time to import (days)	Cost to export (US\$ per container)	Time to export (days)
1	Afghanistan	5680	91	5045	86
2	Bangladesh	1515	33.6	1281	28.3
3	Bhutan	2330	37	2230	38
4	India	1462	21.1	1332	17.1
5	Maldives	1610	22	1625	21
6	Nepal	2650	39	2545	40
7	Pakistan	1005	18.4	765	20.7
8	Sri Lanka	690	13	560	16
	South Asia	2117.75	34.3875	1922.875	33.3875

demands infrastructure development along with logistics sector development. As a landlocked country, Nepal has been bearing huge cost and longer time in transit trade. In the World Bank's 2018 reports of the Logistic Performance Index, Nepal stood at 114th position while India is in 44th position. The performance of Nepal is not merely related to its geography since some of the top performers, such as Belgium (holding 4th rank) or Switzerland (13th rank) are incidentally landlocked countries. The reports show our weaknesses in all six components: Timeliness, Tracking and Tracing, Logistic Competence, International Shipment, Infrastructure and Customs.

The cost and time of import and export determine the trade competitiveness of any country. Following table shows the trade competitiveness of SAARC countries in 2014. In the above table, Nepal's trade cost and time is highest after Afghanistan. For trade facilitation, as transit providing country India's role

is also crucial to improve the logistic performance of Nepal. Nepali importers are not able to get proper facilities extended by the Indian ports. Nepali importers/exporters are paying a lot in the name of detention/demurrage charges in the process of transit. The contribution of SMP in infrastructure development and extension of facilities to Nepali importers is exemplary.

The government of Nepal is eagerly working to reduce the business and trade cost in Nepal where logistics is one of the priority areas. The operation of Birgunj ICP and ICD and Biratnagar ICP have eased the congestion and has expedited the custom clearance procedures as well as parking and other related issues to a large extent. However, improvement is required to cater to the need of growing volume of annual transit trade. year by year. The Government of Nepal and Government of India have agreed to construct two other ICPs at Bhairahawa and Nepalgunj, with the technical assistance of Government of India, which



will further ease the trade flow between Nepal and India. To promote logistics services in the country, the initiative is being taken for formulating a new Port Authority Act which will ensure private sector's participation in establishing Container Freight Station (CFS) and promote multimodal transport services in the country. The Government of Nepal is working towards improvement of the major trade routes connecting Nepal-India major trade points with the East-West highway.

In addition, to enhance the infrastructure of roads, bridges and ports, the Government of Nepal is also working to diversify the modes of transportation in transit. Currently, the government is working to use the inland waterways transportation system to carry transit goods to and from gateway ports and other inland ports of India and relevant customs points of Nepal. Three points

namely Sahebgunj, Kalughat and Varanashi have been agreed for using inland waterways followed by road transport between Nepal and India from/to Nepal's three respective customs points, namely Biratnagar, Birgunj and Bhairahawa for transit movement. For using inland waterways, Kolkata/Haldia will be the gateway for Nepal's transit access. After operation of the inland waterways, it will reduce the cost of transportation and provide another lucrative alternative to road and rail transportation for Nepal's transit.

Currently, bulk cargo movement has been allowed through Raxaul-Birgunj route only. In the meeting of Transit Treaty Review on 26-27 November 2019, it was agreed to provide additional two routes namely Jogbani-Biratnagar and Sunauli-Bhairahawa from Kolkata/Haldia and Visakhapatnam. This will ease movement of bulk cargo such as coal,



Trade felicitation - Consul General of Nepal with the Chairman of SMP Kolkata, 2018



clinker, cement and fertilizer through rail movement from India Port. To use technology in transit, an Electronic Cargo Tracking System (ECTS) was introduced to facilitate movement of traffic-in-transit for Nepal on a pilot basis, in terms of the Memorandum of Intent, inked between the Government of Nepal and Government of India, on 6th June 2017. Under the pilot project, the Asian Development Bank has been supporting this endeavor. ADB has selected a Managed Service Provider (MSP) to provide services to Nepal traders on payment of a transaction based fee. After various levels of consultation between high level officials of Nepal and India, the ECTS was implemented in rail cargo from Visakhapatnam on 1st August 2018 and in Kolkata / Haldia on 15 February 2019. Existing ECTS has covered Nepal's transit cargo movement partially. It is implemented in import cargo and means of transport is only through rail; However, cargo flow in the export leg and the road transport mode is yet to be covered. Full fledged transshipment modality can only be ensured after the implementation of ECTS in all modes of transport both in export and import legs.

## Way forward

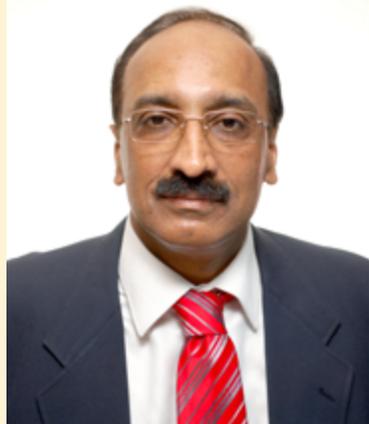
Being a close and friendly nation and recognizing that Nepal being a landlocked country, needs access to and from the sea to promote its international trade, India has been facilitating Nepal's transit trade through its territory. The Treaty of Transit and Rail Services Agreement are essential instruments in regulation of transit trade through Indian territory. These instruments are being amended from time to time to in tune with the emerging dynamics in the areas of development and technology. Last year, the inland waterways modalities

were included in the draft Treaty of Transit and it is in the process of receiving endorsement by both the Governments of Nepal and India. Historically, the Syama Prasad Mookerjee Port has been extending transit facilities to Nepal as it is the nearest port for Nepal's transit access. SMP has been contributing to economic growth of Nepal and ensuring maintenance of a smooth supply chain in Nepal.

Both countries, Nepal and India, have a high commitment towards achieving the developmental goals. Focus is needed to be given on areas which are yet to be integrated and drives taken for removal of barriers for the full and optimum utilization of new technologies. As a landlocked country, unfettered movement of transit is crucial for the development of Nepal. Efficient and modern port handling facilities, simplified and paperless transit procedures and all possible modes of transport are pivotal to maintaining smooth supply chain management and improvement in trade competitiveness. Government of Nepal has set the goal of development and prosperity with the vision of 'Prosperous Nepal and Happy Nepali'. International trade and transit has a significant role to play in achieving this goal. Globally, most of the countries are under the scourge of the pandemic of COVID-19. Hence, planned and coordinated efforts are required to overcome the adverse consequences of the pandemic.

Lastly, on the occasion of 150 years of operation and advancement of SMP, Kolkata, I, on behalf of the Consulate General of Nepal, Kolkata, would like to congratulate the SMP to travel beyond its frontiers of excellence and create a strong and vibrant bridge of cooperation and support in transport infrastructure in the days ahead.





# SESQUICENTENNIAL CELEBRATIONS OF SYAMA PRASAD MOOKERJEE PORT, KOLKATA

Consultative Role of ASIC and  
Sharing of Ideas with Port for  
Betterment of the Mercantile Community

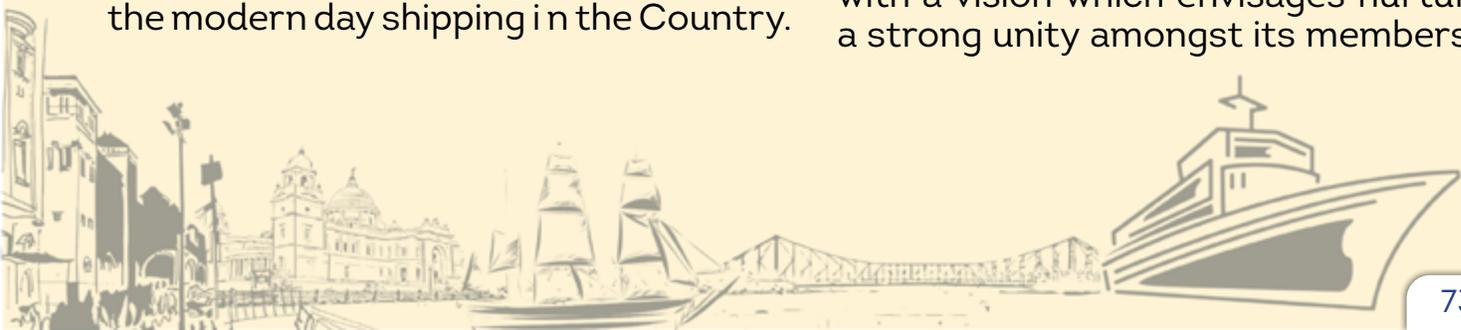
*Ashok Janakiram*

Ashok Janakiram is the Jt. Managing Director of T.P. Roy Chowdhury Group of Companies, leading logistics providers for over five decades. He is also the President of The Association of Shipping Interests in Calcutta (ASIC), Chairman of Federation of Ship Agents Association of India (FEDSAI)

At the outset, and on behalf of all members, the Association of Shipping Interests in Calcutta (ASIC) wishes to convey its heartiest greetings to the Hon'ble Chairman and all at Syama Prasad Mookerjee Port on the glorious occasion of the Sesquicentennial celebrations, which is truly a milestone achieved by our Port.

Eastern India has many firsts to its credit, like our Riverine Port of Kolkata, which is the first Major Port in the Country. No wonder Kolkata also witnessed the formation of the first ever organised Shipping Association of the modern day shipping in the Country.

In the early 70's when ASIC was formed, it had all the desired support from the Port Management to make it a premier consultative forum to discuss the shipping and maritime issues at hand. In the later years, ASIC was included in the Board of Trustees successively for a considerable amount of time which saw many milestones, namely, dealing with Labour, Marine or Traffic issues. The yesteryears office bearers had worked hand in hand in pioneering the containerization of Kolkata Port amidst doubts, apprehension and excitement and ASIC is continuing to move forward with a vision which envisages nurturing a strong unity amongst its members,





Industry Meet -Maritime Conclave -2019

built on the foundation of common professional interests and uphold the very objectives of the Association.

As our Port is celebrating its 150th year in 2020, ASIC too would be celebrating its Golden Jubilee in the coming year, marking an eventful 50 years in Kolkata Shipping as the Nodal Body to associate the aspirations of the Shipping Fraternity in this region.

ASIC today is well acknowledged as the recognised voice of Shipping Lines, Vessel Operators and Agents established in Kolkata. With the interests of members as the focal point of all its activities, ASIC has been continuously evolving as a Nodal Body dedicated to

championing the cause of its members and constantly interacts with concerned Ministries, Government departments, Port, Customs, Trade Bodies and other Associations/Federations, and has established a strong presence in Eastern India's shipping industry.

***ASIC today is well acknowledged as the recognised voice of Shipping Lines, Vessel Operators and Agents established in Kolkata***

ASIC had immensely contributed towards rationalization of Terminal Handling Cost to the end users till the time CCI was formed in 2008 and it was left to the scope of individual Shipping Carriers. ASIC key group has been part of the various marketing efforts initiated by KoPT Marketing Committee both in East India as well as in North India and continues to share suggestions and

recommendations to uncomplicate the various documentation procedures and assisting the end users. ASIC also worked very closely with respective teams at Port during implementation of Port Community System (PCS). It also has various close group activity to create proper synergy between Trade, Customs and Port. Successful launch of ICEGATE is another such example.

ASIC is in constant deliberations with Kolkata Port and other Statutory Authorities to address all the issues of

common concern, which enables it to keep all its members abreast of the latest developments in the industry on a regular basis, besides organizing Seminars, Lectures and interactive sessions for the members and the Shipping fraternity on topics of interest and changes in rules and procedures of Port and Customs.

For years, ASIC has played a consultative role with Syama Prasad Mookerjee Port to discuss on the various challenges, threats and issues that may affect the shipping trade at large in this region and to promote healthier environment, besides imbibe proper synergy amongst Port, Customs and Stakeholders and promote Ease of Doing Business by assisting in reducing hard copy submission and adhere to a more system oriented working environment in a streamlined manner.

Today Port of Kolkata is back again with its past glory as one of the consistently growing container Ports in the Country

which needs to be augmented further by tapping the opportunity of the upcoming freight corridor linking North India with Kolkata and sub regional trade opportunity with Myanmar, Laos to even Vietnam. The concept of K2K (Kolkata-Kunming) linking and Yantian province of China serves to the right idea of expanding its cargo profile and reach, keeping aside the emerging new political equation. BIMSTEC also to be explored further.

Connectivity with Nepal and Bhutan and multimodal logistics opportunity with Bangladesh has brought back the desired attention of both domestic and EXIM parcels via Inland Waterways and Protocol route. Both demand of essential and infrastructure related traffic is bound to increase due to the burgeoning size of population in the region, which needs to be tapped, making our Port facility cost effective and user friendly.

The digitization drive and PPP is one of them but cargo handling cost needs to be rationalized for the Port to remain in the forefront in days to come.

Another key recommendation would be to prioritize the land bank project for Port led developments like Multimodal logistics park, Cold Chain, more Rail facilities, and to make the deployment attractive for investors. Further, Dedicated Freight Corridor work is in advance stage and we must keep the blueprint ready on linking Dankuni with the Port facility, resulting in handling North India Cargo via Port

***Further, Dedicated Freight Corridor work is in advance stage and we must keep the blueprint ready on linking Dankuni with the Port facility, resulting in handling North India Cargo via Port of Kolkata.***



of Kolkata. The proposed Project for construction of FSRU (Floating Storage Re gasification unit) is one of the key projects which Port also needs to look into for immediate take off, given the fact this region serves a very vast hinterland and refinery around Bihar, North East, West Bengal and Odisha.

It is also strongly felt that in order to overcome the recurring cost of the Port towards dredging the Channel on a sustained basis, wherein the concerned Ministry is also withdrawing its subsidy, our Association few years back had proposed to create a SPV (Special Purpose Vehicle) to circumvent the issue of meeting the cost of dredging and RRM since Capital dredging is recommended only for Sea Port. The idea could be supported with a minimum user fee, in order to manage the fund for a greater cause. This proposal could be reviewed by the Port Management, in order to

explore a deeper draft facility, as cargo holding facility is slowly reaching its saturation stage.

Further, as we all know, the long stretch of the River Hooghly, right from Nawadweep - Belur to Princep Ghat offers a beautiful sketch, besides providing nostalgic memories of our History. Port could explore running of cruise service on this stretch, which could be a refreshing initiative, besides earning additional revenue.

While Syama Prasad Mookerjee Port is gearing up for providing more efficient and cost effective services to its Users, it's all round efforts to attract more traffic is gaining attention from all quarters, and we can proudly say that our Port, which is the Gateway to Nepal, Bhutan and the hinterlands, is now in the limelight of Government of India's 'Act East Policy' to promote Coastal



Industry Meet: Shri SS Chatterjee , MD Haldia Petrochemicals, with Chairman SMPK, Shri Vinit Kumar - 2019





Container Terminal NSD - 2010

Shipping by utilizing the locational advantage of the Port.

It has always been ASIC's endeavour to work in tandem with Port to promote growth of shipping at Kolkata and Haldia. The Association has hands on information on the operational efficiencies and the existence of close and constructive interactions between the Port and ASIC have assisted in the Port's expansion projects, infrastructure upgradation, logistics support, handling equipments, system enhancement, attending to EXIM Trade issues faced on a day to day basis, etc., thus helping in the rapid development of the Port and handle more EXIM cargoes with least constraints, amidst constant challenges faced by a Riverine Port.

While Association of Shipping Interests in Calcutta will continue in it's efforts to interact with Port and other Statutory Bodies, besides organizing Seminars, Workshops/Training programs, with the changing dynamics in the shipping and logistics industry, vis-à-vis all round commercial activities, ASIC and Syama Prasad Mookerjee Port are in seamless touch with each other and working hand in hand for further development and betterment of the twin Ports of Kolkata and Haldia, its Users and Trade at large.

We finally would like to wish our Port and all its Stakeholders a bright future ahead in promoting their activities through this grand old Port of ours, which has been a lifeline to the Users in this region.

*The author can be reached at [a\\_janakiram@pennonshipping.com](mailto:a_janakiram@pennonshipping.com)*





# THE BENGAL CHAMBER OF COMMERCE AND INDUSTRY -OUR ENDURING RELATIONSHIP WITH THE KOLKATA PORT

*Capt S B Mazumder*

Capt SB Mazumder has 18 years' sea service and over 35 years of management experience. Since 1982, he has been with the Seahorse Group of Companies in Kolkata. An active member of the Association of Shipping Interests in Calcutta (ASIC) since 1983, he is also one of the members of the Calcutta Dock Labour Board. He is a past Chairman of The Shipping Committee of Bengal Chamber of Commerce and Industry and currently its mentor.

The Bengal Chamber of Commerce and Industry was set up in 1853. However, the Chamber's origins date back to 1833 when its founding fathers came together to form the first association of its kind in the country, which was later formalized as The Bengal Chamber. For the last one and a half centuries and more, the Chamber has played a pioneering role as a helmsman, steering the evolution of commerce and industry in India and has been a witness to the momentous events that have shaped India's industrial and social character. The Bengal Chamber since its coming into existence in 1833, by the mid 19th century, as an institution have become a dominant voice of industry and in fact was being recognized as a sounding board by the East India

Company initially and eventually by the Crown for the passage of many critical legislations. The Chamber has played a leading role in the formulation of national legislations like Customs Act, 1863, Calcutta Port Act 1869, Indian Electricity Bill, 1902, Indian Life Assurance Act, 1910, Indian Factories Act, 1934 and other institutions of repute. The Bengal Chamber Formula on Dearness Allowance, the creation of the first arbitration body in India in 1853, the creation of the Indian Bar and modification in Indian Companies Act and Indian Insurance Act are the areas in which the Bengal Chamber has played a distinctive role and etched its place in India's economic history.





Shri Vinit Kumar Chairman SMP, Kolkata

The Chamber with the renewal of the East India Company's Charter in 1853 had prepared a petition for presentation at Westminister where it sought to direct the Company's attention towards the absence of railways in the country and the then defective state of internal communications in the nation, the high postal charges, the inconsistencies of the Usury Laws, the heavy salt duty, the uncertainty of land tenure and the imperfect state of the law as laid down in the Company's Regulations and how all these deficiencies had affected the entire trade, particularly the sea-borne trade of the country. In the first five years of its inception (1853 - 1858),

The Bengal Chamber was largely pre-occupied with local matters and with the liquidation of the East India Company and transfer of powers of governance to the Crown, the Chamber had also begun to assert its interest in the rapidly widening field of public administration. The local problems handled by the Chamber were largely centered around the development of the port on areas like good pilotage services, adequate approaches to the river's banks, the provision of port installations and the need for up-to-date facilities to handle the rapidly growing trade in Calcutta. Around this time, a Committee was



formed to examine whether the Mutlah river, through which Calcutta was joined to the main trade routes of the world, should be developed as a possible alternative route to the Bay of Bengal since there was a discussion going on regarding the deterioration of the navigability of the Hooghly river. Though the Chamber Committee welcomed the enquiry of the various sites of the Calcutta docks, they came to a conclusion that apprehensions with regard to the Hooghly river were exaggerated. They recommended that instead of putting money and effort into the Mutlah project, the authorities would better be advised to enlist the highest engineering and hydraulic skills in maintaining the principal channel of the Hooghly river in navigable condition. The late 1860s were a period of minor upheavals which eventually led to The Chamber playing a major role in the

formation of a new Port Trust in 1870. The municipal commissioners were made port Trustees in 1866; however in 1869, when the port finances showed a significant dip, a New Port Trust was established in 1870 with the support from the Chamber and the then Government of Bengal. By the 1870s, The Bengal Chamber had firmly established itself as a strong, independent and reliable chamber of members, an Institution with a modern perspective and a broad horizon supported by some of the most dedicated minds of Bengal. The 80s ushered in The Chamber's long awaited golden opportunity to play a more direct and active role in the affairs of the port when it was allowed to nominate four representatives to the port trust in 1886. The number further increased to 5 in 1890. From then onwards The Bengal Chamber has been in direct contact with the Port Trust working towards the goal



Loading jute onto a steamer at Kidderpore Docks - 1910 (Picture courtesy: © University of Dundee Archive Services, Scotland)



of leveraging the Calcutta Port in trade, commerce and industry. Throughout this time, The Bengal Chamber armed with the Calcutta port played an active role in boosting trade of the then flourishing agricultural industries of Bengal - Indigo, Jute and Tea. For over 200 years, Indigo remained the chief export of Eastern India with Indigo plantations and factories largely operating in Bengal and Bihar and shipped to all over Europe through the Calcutta Port. Indigo had succeeded in making a prominent place for itself in Bengal trade and commerce soon enough and eventually also came under The Chamber's radar. In order to regulate the Indigo trade in India, especially in Eastern India, there was Calcutta Indigo Traders' Association which used to work to protect the interest of their traders. In 1890, the association placed itself in the hands of The Bengal Chamber of Commerce and the following year it became the Indigo Trade Department of the Chamber. They

prepared standard sets of samples for purposes of valuations and regulated the trading practices of the industry, thereby helping the growth of export of Indigo from India. The Jute industry wasn't far behind. Jute cultivation had hit a few bumps along the road right at the beginning but the industry soon emerged as a large contributor to the nation's wealth bringing in scope for profitability for the trade and commerce industry of the Gangetic Delta.

The Tea industry of Eastern India had also turned into a profitable market,

with auctions in Calcutta and London, largely due to The Chamber and the Calcutta Port working towards it in close correspondence. The growth of this maritime trade received consistent support from The Chamber which had greatly pressed the port commissioners for building special Tea warehouses at the Calcutta jetties so that Tea cargo could be conveniently loaded and unloaded. The Bengal Chamber took a step further for the construction of the first ever Tea Transit Sheds in 1887, which were then connected to the Eastern Bengal Railway and the newly built Khidderpore Dock, thus facilitating Tea trade through both rail and waterway. The contributions of

***For over 200 years, Indigo remained the chief export of Eastern India with Indigo plantations and factories largely operating in Bengal and Bihar and shipped to all over Europe through the Calcutta Port.***

the Bengal Chamber to the trade of Jute, Tea and Coal through the Calcutta Port has been unparalleled, to say the least. When the Chamber was founded, the Jute industry was in its nascent stage. With consistent support from The Chamber, Jute exports grew from few lakhs a year to 12 crores worth

of raw Jute exports in 1902. That's not all. Calcutta went from importing Coal worth Rs. 4 lakhs in 1853 to exporting 1.5 million tonnes of Coal in 1902. The number of vessels coming to the port in 1853 were only 774 which grew to 1300 in 1902. It is imperative to emphasize here that The Calcutta port has been acting as the spine of Eastern India and a gateway to Southeast Asia since time immemorial and supporting this spine throughout, has been The Bengal Chamber.



# SYAMA PRASAD MOOKERJEE PORT

## *- A journey through Time*

Kolkata Port has collected many feathers in its cap over the centuries. KoPT has traversed 150 years and in this journey it has rightly served as the epicentre of commerce, trade and economic development for Eastern India. All this while, it stood as a witness to India's struggle for independence, the two World Wars, bombing of the port and rapid socio-economic and cultural changes that occurred over the years. Starting from being the oldest operating port in India, its 223 kilometers stretch from the sea with the Kolkata Dock on the eastern bank and the Haldia Dock on the western bank have stood strong as two dock systems of the only riverine port in Indian maritime circuit.

One must delve deeper into its legacy to understand its significance. It is well known that the Kolkata Port had started its journey as the premier port for the British trade and commerce. Even in the 19th century its strategic location catered to maritime trade from India to all over Europe. KoPT was not only at the helm of colonial trade, commerce and industry but also emerged as a principal conduit of trade. Apart from its primary objective of trade facilitation, the port had also served its purpose sheltering thousands even after its bombing in World War II. The port had stood strong in carrying out its duty but had lost its premier status after Independence. The partition of Bengal



Discharge of over dimension cargo (ODC) onto a barge inside the docks



had halved its hinterland between West Bengal (India) and Bangladesh (formerly East Pakistan) causing a massive blow to its trade volumes.

Fast forward to 1977, the Haldia Dock Complex came into existence. The Haldia Dock was designed midway between the sea and the Calcutta Docks due to the port's navigational restrictions. It was built with the objective of diverting some of KoPT's growing trade volumes and to cater to large vessels and bulk cargo of fertiliser, coal, various types of ore cargoes, petroleum and even bulk sugar. The Container Handling Facility in Haldia Dock became a complementary addition to the main existing Container Terminal at Kolkata Docks. Retail export and import goods emanating from the Haldia region can use this facility which otherwise would have to be trucked down to Kolkata Docks in a reverse direction. In fact, the Haldia Dock was a welcome change as it reduced the extensive need for labour in bulk cargo handling. As the old Kidderpore dock's coal berths became non-functional with age, Haldia Dock stepped up for the purpose. It could handle any kind of bulk cargoes with modern handling equipment. In fact, over the years, as the prospect of bulk export of iron-ore did not quite materialise, the gears installed for that purpose were quickly remodelled to serve bulk handling of Coal. Similarly, when the attempt at fertiliser trade failed, it was again compensated by bulk import of coking coal. Coal, iron ore and petroleum products needed refineries, modern machinery and factories which were not available at the old Calcutta Port and so these merchandise had the potential to flourish at the Haldia port. Armed with an access to a vast hinterland comprising the entire North East India, West Bengal, Bihar,

Jharkhand, Uttar Pradesh, Madhya Pradesh, Bangladesh, China and our two land-locked neighbours, Nepal and Bhutan, the Kolkata Port has, over the decades, leveraged its strategic location and emerged as the gateway to SouthEast Asia. With Kolkata providing the excellent road and rail transport facilities along with the ever flourishing Calcutta market, the Kolkata Dock along with its twin sister Haldia Dock became the principal, if not the sole catalyst for the development of the industrial belts of Haldia, Durgapur, Asansol and Kharagpur. Their strategic location has made them more than capable to handle the country's east-bound cargo. From being feeders to the Iron and Steel plants of Durgapur to contributing to the fast development of Haldia as an industrial zone of Eastern India, KoPT has undoubtedly made substantial contributions to the state infrastructure and its development over the decades.

From facing major challenges due to siltation, falling navigable depth, and extreme cargo congestion, KoPT is now seen making headlines in South Asia's premium maritime business magazine, Maritime Gateway for recording the highest-ever cargo volume in FY 2019-2020 by handling 63.762 million tonnes, an impressive growth of about 54% percent from 41.386 million tonnes in 2013-2014 and further for emerging as the 2nd fastest growing port in the country.

It gives us immense pleasure, collectively as drivers of state growth to note that the FY 2019-2020 has taken the port from strength to strength so much so that KoPT has rightly emerged as one of the important contributors in *the Ease of Doing Business* (EoDB) Ranking Report.<sup>2</sup>





Capt SB Mazumder , Chairman Shipping Committee , BCC&I and Shri Vinit Kumar, Chairman SMPK, among others at the Shipping Conclave - 2017

<https://www.thestatesman.com/opinion/landmark-event-maritime-history-1502844248.html>

<https://www.thestatesman.com/opinion/landmark-event-maritime-history-1502844248.html>

The future of the Kolkata & Haldia Docks lies in its power to increase the exporting capabilities in the eastern region. One such initiative is the enhancement of export cargo to Bangladesh using the facility of Inland Waterways. Maritime Gateway has further emphasised that KoPT has the potential to generate an additional earning of Rs. 30-40 crores per year from auto exports to Bangladesh. Tata trucks have already been lined up for export from KoPT to Bangladesh's Mongla Port. Bengal Chamber sees a greater scope of exporting passenger cars to Bangladesh via this inland Waterway route. It is

pertinent to mention in this context that KoPT features in many prospective multimodal and maritime trade routes including those via the borders of South East Asia and Asia Pacific leveraging cross-border cooperation for enhancing connectivity and infrastructure development. It is interesting to note how The Kolkata Port is evolving with the setting up of concepts such as extended terminals for better port functioning, port logistics and so on. Two such initiatives worth mentioning are the cargo terminal at Balagarh and the Land Policy. Balagarh not only creates a convenient water route for heavy cargo from Kolkata to Allahabad but also helps to reduce congestion at the parent ports. The Land Policy, formulated by the Government of India, has the potential to generate large investments and is based on cargo revenue instead of land revenue unlike the previous land policy. Further



Relief work by BCCI during cyclone 'Amphan' - 2020

it is based on investment decision making i.e if investment is large then probably the land would be provided at a specified price. The Chairman of The Kolkata Port had touched upon the subject of land policy in our recently held Shipping forum. In addition to the above numerous developments taking place in Kolkata and Haldia Regions, the Inland Waterways Authority of India has also made several strides in developing the Hooghly River and National Waterway No. 1. In conjunction with Kolkata Port Trust, several steps are being taken to develop NW 1 and NW 2, not only to connect Cargo movement between India and Bangladesh, but also to move cargoes to/from our North Eastern States by transiting via Bangladesh Ports and Land Territories. In the coming years, Kolkata Port is well-positioned to bring in increasing profitability in terms of infrastructure development and generation of

employment opportunities. The key weapon would be the port's extensive land bank in Kolkata and Haldia which is under-utilised and could be looked upon for potential investors at national and international levels to set up their industrial units. It will open up further investment opportunities in the country, particularly in the State of West Bengal.

<https://www.nkrealtors.com/blog/kolkata-port-complex-contributed-economic-growth/>

#### References

<http://www.maritimegateway.com/kolkata-port-touches-highest-ever-cargo-throughput-2018-19/>  
<https://www.outlookindia.com/outlooktraveller/explore/amp/65999/a-day-at-the-kolkata-port-trust-maritime-archives-and-heritage-c>  
<https://www.thedollarbusiness.com/>

magazine/haldia-dock-complex-more-of-politics-less-of-a-port/15046

[http://www.worldportsource.com/ports/review/IND\\_Port\\_of\\_Kolkata\\_236.php](http://www.worldportsource.com/ports/review/IND_Port_of_Kolkata_236.php) <https://www.thestatesman.com/opinion/landmark-event-maritime-history-1502844248.html> <https://www.nkrealtors.com/blog/kolkata-port-complex-contributed-economic-growth/> <https://m.economictimes.com/news/politics-and-nation/kolkata-lone-indian-link-in-chinas-mega-maritime-silk-road/articleshow/46729153.cms>

<http://www.maritimegateway.com/kopt-plans-economic-zone-cum-extended-terminal-balagarh/>

The author can be reached at: [sujitmazumder@seahorsegroup.co.in](mailto:sujitmazumder@seahorsegroup.co.in)

“A customer is the most important visitor on our premises. He is not dependent on us. We are dependent on him. He is not an interruption in our work – he is the purpose of it.”

- Mahatma Gandhi



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**  
Formerly **Kolkata Port Trust**



## MV Dongbang Giant No. 2 carrying an oversized Goliath Gantry Crane

For the first time in Kolkata's maritime history a gigantic heavy-load-carrier as wide as 38 metres across the beam carrying an oversized Goliath Gantry Crane for Garden Reach Shipbuilders & Engineers navigated through the treacherous riverine channel of the Hooghly, towards Kolkata on 21 February 2021.

Watch the video: <https://youtu.be/HOa-tXwOiOU>





## THE SYNERGY: INDIANOIL AND SYAMA PRASAD MOOKERJEE PORT

*Shrikant Madhav Vaidya*

Shri Shrikant Madhav Vaidya, Chairman of IOC, is a Chemical Engineer, having over 34 years of extensive experience in refinery and petrochemicals. He is among the select technocrats in the Indian oil and gas industry who is proficient in all facets of refinery-petrochemicals integration.

IndianOil extends its hearty congratulations to the Syama Prasad Mookerjee Port (Kolkata Port Trust) for completing 150 years of glorious service to the nation. The Port has played a pivotal role in the development of the region since 1870, when it was first established.

Renamed as a tribute to India's first Minister of Commerce and Industry, late Syama Prasad Mookerjee, the Port has been a partner for the nation's progress and has played a key role in supporting and developing economic activity in the region. The Port is the gateway to eastern India, not only for states in the hinterland but also neighbouring countries including Bhutan and Nepal.

The Port, with two distinct systems – Kolkata Dock System and Haldia Dock Complex, has played an important role in anchoring IndianOil's growth in the region, and ensuring energy sufficiency in eastern India through its inland

waterways. IndianOil's association with the Port is now in its 50th year, going back in time when the Corporation, in its first year of existence (1961), established a port terminal at Budge Budge near then Calcutta and a petroleum terminal in Haldia.

Petroleum products were imported and received at the Haldia terminal, transported through barges to Budge Budge and subsequently the products made their way to the hinterland by various modes of transport including rail and road.

Budge Budge and Haldia continued to be the only hubs in the eastern region for distribution of petroleum products for a long time, and the Port supported the Corporation through its fledgling years.

The petroleum distribution system in the region got a fillip, thanks to the support of the Port when IndianOil commissioned the Haldia-Mourigram-



Rajbandh Product Pipeline in 1967 to feed its petroleum terminals at Mourigram (Calcutta) and Rajbandh (Durgapur). In the same year, the Haldia-Barauni Product Pipeline was also commissioned, enabling movement of product to the Barauni Refinery, thereby increasing energy access to Central India too.

Considering the increasing requirements of petroleum products, IndianOil commissioned the Haldia Refinery in 1975 to produce fuel and lubricants, with the able backing and guidance from the Port. The Refinery started with a capacity 2.5 metric tonnes crude per annum (MTPA) and now has progressed to a capacity of 7.5 MTPA.

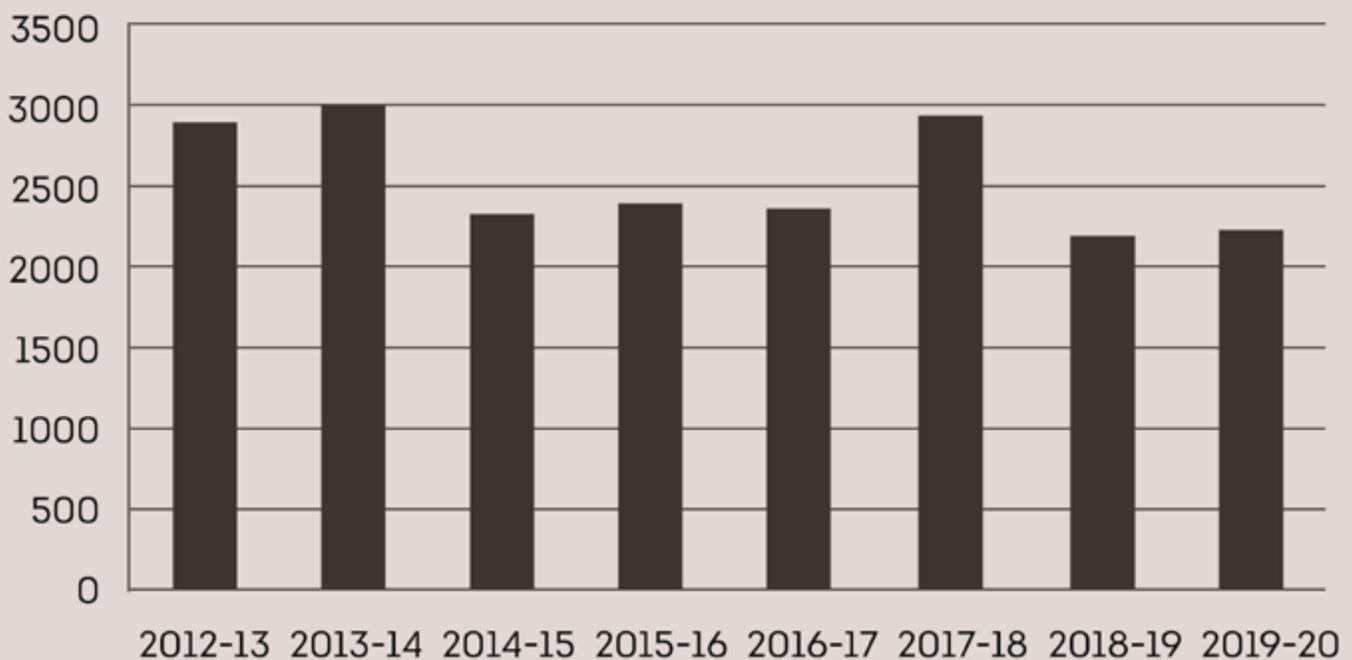
***The Port has nurtured the Haldia Refinery from its early days and has thus played a key role in sustaining IndianOil's operations to meet the fuel demands of the region.***

The Syama Prasad Mookerjee Port has played a vital role in the success of IndianOil's Barauni and Haldia Refineries, with imported crude oil received at the Haldia Dock System. In 1999, the Port facilitated the construction of the Haldia-Barauni Crude Oil Pipeline to help achieve seamless operations. The Port also handles import of LPG and other deficit products and aids in exports and domestic coastal movement of surplus products.

IndianOil also operates a Lube Oil Blending Plant at Paharpur, Budge Budge, the raw material (Lube Oil Base Stock) for which is transported through barges on the Port's waterways. The Port has nurtured the Haldia

**Cargo Handling Figures by Port (PORT+CRUDE)**

■ Qty (TMT)



Refinery from its early days and has thus played a key role in sustaining IndianOil's operations to meet the fuel demands of the region. The products produced at Haldia are distributed as far as up to Kanpur through various bulk supply nodes at Mourigram, Rajbandh, Jasidih, Barauni, Patna, Mughalsarai and Lucknow through pipelines, and railway wagons.

IndianOil also handles LPG at Haldia through its joint venture - Indian Oil Petronas Private Limited (IPPL). The Haldia terminal undertakes the receipt of propane and butane tankers (both imported and domestic), hydrocarbon storage in cryogenic conditions, blending, dosing and dispatch by road and by pipeline (Paradip-Haldia-Durgapur Pipeline) to cater to LPG requirements of the entire Eastern

and North Eastern region. The Kolkata Port Trust has played a major role in the successful implementation of the Pradhan Mantri Ujjwala Yojana, which achieved its target of eight crore connections in September 2019.

Kerosene - the yesteryear fuel of the common man was ferried in large amounts to meet the demand through public distribution systems. Despite such mammoth operating scales, IndianOil and Kolkata Port Trust upheld the values of being a public sector enterprise at core; rendering selfless public service to reach energy to public at large.

IndianOil is proud to be the major supplier of bunker fuels in the Port. The quality of bunker fuels has evolved over time and IndianOil was India's first



Commencement of IMO 2020 VLSFO (0.5% sulphur) supply at Haldia Port during November 2019



supplier of IMO 2020 compliant bunker fuel. IndianOil also produces the world-class enhanced high flash high speed diesel for the Indian Navy at the Haldia Refinery.

IndianOil aims to enhance supplies to the port through a pipeline network, bringing in efficiency in operations in an eco-friendly medium.

The Haldia Refinery is proud to partner with the Syama Prasad Mookerjee Port, which has cradled industrial development in eastern India. Due to the presence of a world-class port, the area has attracted huge investments from various sectors including chemicals, petrochemicals, engineering, automobile, food processing, packaging etc.

IndianOil supplies to all major industries in the Port area including MCPI and Haldia Petrochemicals Limited. Most of these industrial units draw their requirements from the Haldia Refinery.

With continued support from the Port, IndianOil has been able to extend its distribution reach internationally. South Asia's first trans-national pipeline to

Nepal from Motihari in Bihar (connected through the Haldia-Barauni-Kanpur pipeline) was commissioned in July 2019 to meet the energy needs of our neighbouring country.

The Syama Prasad Mookerjee Port helped IndianOil meet fuel demands while the Haldia Refinery underwent a mega shutdown for the BS-VI fuel upgrades, and fuel had to be received via the coast from Paradip Refinery.

From 2012/13-2019/20, the Syama Prasad Mookerjee Port, Kolkata, has

handled 20282 TMT of crude oil and petroleum products.

IndianOil takes pride in being one of the largest business associates of the port since the inception of Haldia Refinery. The synergy between the two parties has fuelled the growth of industries around the region.

IndianOil looks forward to being a trusted partner of the Syama Prasad Mookerjee Port in years to come, providing fuel solutions and achieving sustainability in the region.

***From 2012/13-2019/20  
the Syama Prasad  
Mookerjee Port, Kolkata,  
has handled 20282  
TMT of crude oil and  
petroleum products***

*"You can't cross the sea merely by standing  
and staring at the water."*

**- Rabindranath Tagore**



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**  
Formerly Kolkata Port Trust



# SAIL'S GROWING EXIM OPERATIONS AT KOLKATA PORT

*Anil Kumar Chaudhary*

Shri Anil Kumar Chaudhary, former Chairman SAIL, had more than 35 years of experience in the Iron and Steel sector . An Associate Member of the Institute of Cost Accountants, and the Institute of Company Secretaries of India, he has been a recipient of awards from various Institutes and Industry Bodies.

India's Ports Sector serves as gateway to India's international trade, facilitating via maritime traffic, 90 percent of India's external trade by volume and 70 percent by value. The cargo handling at Indian Ports has witnessed significant growth over the last decade and given the pivotal role it continues to play in the economy, the Indian Ports Sector appears to be well-poised for

a long-term growth wave. All port-users are aware of the comprehensive plan chalked out by the Ministry of Shipping to develop ports, build ships and improve inland waterways in the country to effectively meet the challenges of logistics in the context of a rapidly growing Indian economy.

## Indian Steel Industry

India has steadily consolidated its position amongst world's largest steel producers, standing at second spot in 2018 and 2019. The growth in the Indian Steel Sector has been driven by a combination of factors working on the supply side such extensive availability of inputs such as iron ore, land bank, water, cost-effective labour as well as on the market side in the form of consistently growing demand with potential for multi-fold improvement. Over the

past decade, the Steel Industry has seen a spurt in capacity expansion and consolidation. Now, Government of India under the National Steel Policy (NSP) 2017 has targeted 300 million tonnes (MT) steel-making capacity by 2030. Going forward, the accelerated spend in infrastructure sector, expansion of railways network, development of domestic shipbuilding industry, opening up of defence sector for private participation, anticipated growth in



automobile and capital goods industry and the construction in urban and rural

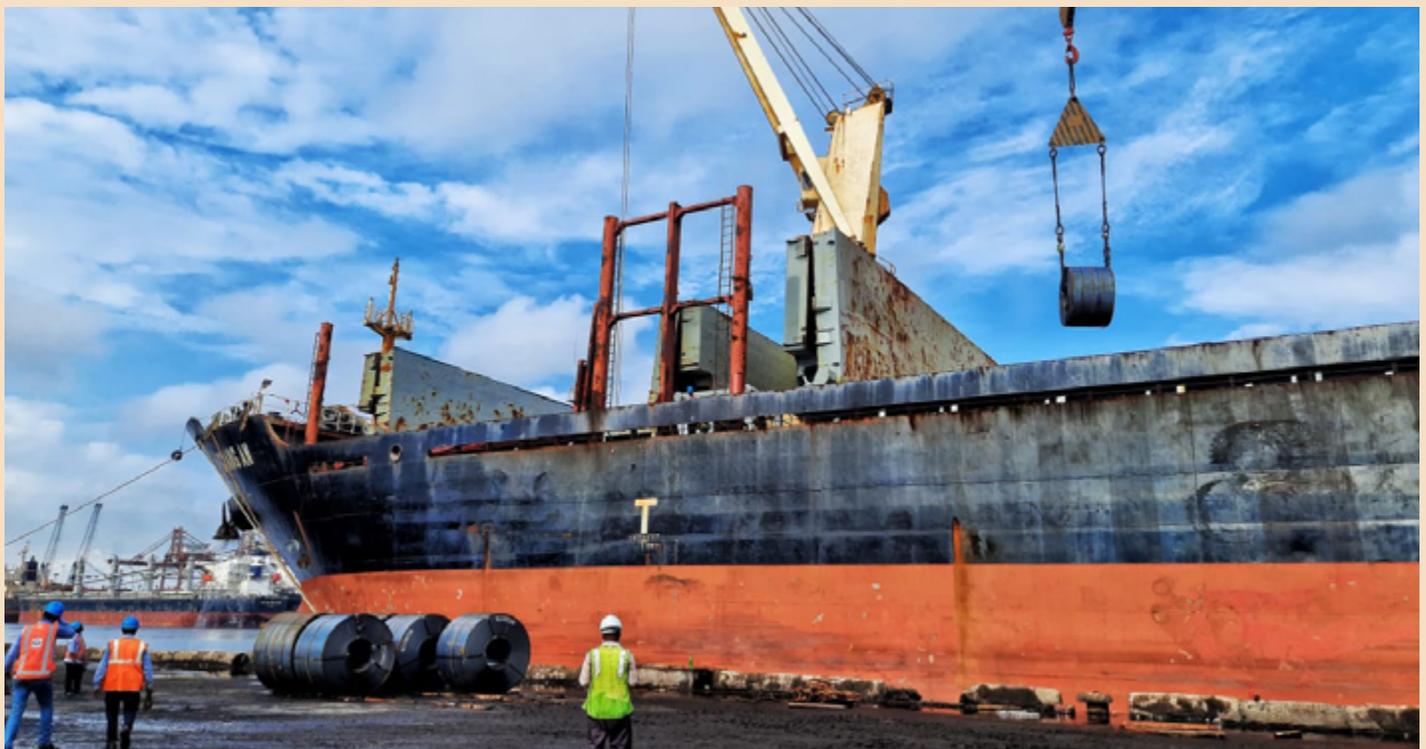
areas, are expected to create significant demand for steel in the Country.

## Steel Authority of India Limited - A Maharatna CPSE

SAIL Plants/Units started coming up immediately post-independence to address the steel requirement for infrastructural development of our Nation which was in its infancy stage. Since then SAIL has contributed immensely towards Nation Building by providing steel for infrastructural development, strategic areas and iconic projects, etc. We have also been making meaningful contributions to the lives of innumerable people through our widespread CSR activities. As one of the biggest producers and suppliers of steel in the Country, SAIL has identified its vision as 'To be a respected world-class corporation and the leader in Indian steel business in quality, productivity, profitability and customer satisfaction'.

SAIL has completed more than 6 decades of steel production and its cumulative crude steel production so far stands close to 500 Million Tonnes finding application in numerous projects in infrastructure development, railways, space, defence, power generation and number of other avenues and helped the country move ahead on the path of progress. SAIL had undertaken a massive Modernisation and Expansion Plan under which its crude steel capacity was envisaged to reach the level of 21.4 Million Tonnes. With its various facilities under different phases of ramping up and stabilisation, the Company is soon expected to produce at capacity level.

SAIL is essentially an Eastern India



Exporting steel products from Haldia Docks



based steel manufacturer having four of its five Integrated Steel Plants (ISPs) in this part of the Country viz. at Bokaro, Burnpur, Durgapur, and Rourkela. Accordingly, its major import/export activities also get regulated through the Ports on the Eastern Coast, viz. Vizag, Paradip, Dhamra and Haldia/Kolkata. SAIL is one of the major importers of Coking Coal, Limestone and other raw materials required for steel making. Coal, one of the basic inputs for steel making, is getting imported by SAIL in the range of 14 Million Tonnes. This requirement is likely to go up to 18 million tonnes in

near future as the Company presses to reach the post-modernisation capacity levels. Apart from these raw materials, SAIL also imports Plant and Machinery, Stores and Spares, etc. for meeting its capital requirement, again through these Ports. Besides import, SAIL is also using the facilities at these Ports for exports of finished and semi-finished steel to various overseas countries. With the capacity set to increase by more than double, it is quite apparent the increase in cargo size that would be required to be handled at these Ports for both imports and exports.

## Kolkata Port Partnering Growth of SAIL

Kolkata/Haldia Port has a strategic importance for SAIL owing to its proximity to the three major Steel Plants. Since renamed as Shyama Prasad Mookerjee Port (SPM Port) after the renowned Indian politician, barrister and academician, the Port has served as the gateway for importing various items as per its requirement be it raw materials or necessary capital equipment. As mentioned after coming up in the 50s, SAIL Plants have augmented their capacities from time to time. At these junctures, the requirement for imported machinery, stores, spares, etc. have been majorly facilitated through Kolkata Port. Later, upon commissioning of the Haldia Dock Complex in late 70s, both the Dock System under KoPT became the vital

***It is worth mentioning that during COVID 19 Pandemic, the role of ports in general and Kolkata/Haldia Port in particular, has been a great facilitator in augmenting exports which was necessary for survival of the Steel Industry in general and SAIL in particular***

lifeline for maintaining supply chain of essential raw materials like Coal, Limestone, etc. imported from overseas which is not available from indigenous sources. Further, major volume of steel exports from the four eastern Plants is also routed through Kolkata/Haldia Port. At present, about 200 chartered ships on account of SAIL are calling at both the dock systems of KoPT on a yearly basis, apart from several liner shipments (containerized & break bulk). The Port is an integral part of day-to-day functioning of SAIL for the EXIM trade and bonds between the two great institutions are getting strengthened day by day. SAIL's cargo volume at KoPT has grown over the years, presently touching almost 6 MMTPA and is expected to grow further with some of the new





Import of coking coal at Haldia

facilities of the port that are planned. The volumes could have been even higher but for the non-availability of the required draft of handling bigger vessels with heavier cargo.

It is worth mentioning that during COVID 19 Pandemic, the role of ports in general and Kolkata/Haldia Port in particular, has been a great facilitator in augmenting exports

which was necessary for survival of the Steel Industry in general and SAIL in particular when there was hardly any demand in the domestic market but a minimum level of production was required to be continued at the steel plants owing to technical reasons. We remain thankful to Haldia/Kolkata Port for all the necessary support extended to us during these testing times.

## Medium and Long Term Vision of SPM Port and SAIL

The new facilities that are coming up at Haldia That is Berth -3 Mechanisation, Transloading at Sandheads/Sagar will be of great help to SAIL and the Industry as a whole by leveraging modern technological advancement in port logistics and supply chain. The

growing EXIM operations at Haldia Docks will bring both the entities closer and provide mutual benefit to each other in the medium to long term.

SAIL is also actively considering operational possibility and commercial viability of movement of



its finished products to Bangladesh and North-Eastern States of India from Kolkata/Haldia Port through Inland Waterways Route and Indo-Bangladesh Protocol (IBP) Route.

Kolkata Port has a long term vision to create a deep draft Port at Tajpur in Midnapore District. It is given to understand that the Project to set up the deep draft Port at Tajpur is also being paid attention at the highest level of the Central and State Governments. As and when this becomes a reality, a substantial part of the overall import volume of SAIL can be diverted through this Port.

SAIL plans to augment its capacity to 50MTPA under its VISION 2030. This will drive significant growth in upstream as well as downstream industries. As a major portion of the planned expansion will be at the ISPs in Eastern Parts of India, it presents a great opportunity to SMP Kolkata to play a critical role in support of associated

export and import activities. Both the Organisations-SAIL and SMP Kolkata have immensely contributed in writing the success story of India's industrial and economic growth and should continue to contribute positively by working together for the success of 'Purvodaya Mission' of the Government of India under its 'Look East Policy'.

We congratulate SMP Kolkata on the occasion of completion of its 150 years of servicing the Nation. I am sure over such a long span of its existence the immense contribution that must have been made by SPM Port for the economic growth and development of the Nation. With the Government now putting emphasis on 'Make in India' and 'AtmaNirbhar Bharat', the manufacturing activities in the Country are bound to see an exponential growth presenting the Port with new and greater opportunities. I wish KoPT a bright future ahead.

Jai Hind!

*"It is difficult, but not impossible, to conduct strictly honest business."*

- Mahatma Gandhi



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**  
Formerly **Kolkata Port Trust**





# SCI'S EMERGENCE AS THE COUNTRY'S LEADING CARRIER

Adoption of Technological Developments in the Maritime Field and Modernisations of its Fleet to the Changing Needs of the IT, with Special Reference to the Port of Kolkata

*HK Joshi*

Smt H K Joshi, has been the Chairperson and Managing Director, SCI since September 2019. She is a member of the Institute of Directors, Fellow Member of The Institute of Cost Accountants of India, and recipient of prestigious industry awards.

As the Nation's largest Shipping Line and proud National Flag Carrier, The Shipping Corporation of India Ltd. carries the Nation's hopes, dreams and aspirations of 'Atmanirbhar Bharat' as it sails across vast seas and far flung continents to reinvigorate and reaffirm the Nation's emergence as a major Global Power. The Shipping Corporation of India is literally part of India's growth story and since inception SCI has cemented the bonds linking the Country to the rest of the world.

Established on 2nd October 1961 with just 19 ships comprising 0.19 Million DWT by the amalgamation of Eastern Shipping Corporation and Western Shipping Corporation, SCI gradually metamorphosed into a conglomerate having 70 vessels and crossed 6

Million DWT mark on April 2017 with its footprint in diverse segments like Bulk Carriers, Crude Oil Tankers, Product Tankers, Container Vessels, Passenger-Cum-Cargo Vessels, Phosphoric Acid / Chemical Carriers, LPG / Ammonia Carriers And Offshore Supply Vessels.

SCI since inception has been consciously and continuously aligning to the dynamic needs of the national and international trade and has always been a front runner in venturing into uncharted pastures. SCI became the first company in India to acquire a Very Large Crude Oil Carrier (VLCC) in 1975, after having entered the crude oil transportation business in 1964, extending its support to the Indian refiners to meet the energy needs of the country and today takes pride





Commencement of coastal shipping by SCI - 2018

in owning five VLCCs. The need of development of the E&P sector in India to increase domestic production of crude oil propelled SCI into the Off-shore operations when it acquired 10 Off-shore Supply Vessels (OSVs) in 1984 and started managing offshore vessels of ONGC ranging from OSVs to the highly specialized MSVs (Multipurpose Supply Vessel) and MODUs (Mobile Offshore Drilling Unit). The latest technologies adopted by the Offshore Segment is clearly evidenced by the induction of its first Deep Submergence Rescue Vehicle (DSRV) in the fleet of Indian Navy making it a proud moment for the nation considering that only a handful of countries in the world can claim possession of a DSRV in their fleet. SCI embarked into the Chemical tanker business and subsequently in 1993 ventured into the Container business with acquisition of three Cellular Container vessels. SCI's foray

into the Joint Ventures with some of the best shipping lines in the LNG Sector in 2004 for management of the most sophisticated LNG vessels ensured an alternative and clean source of energy to the nation. Modernization and expansion continued with a milestone achievement of 6 million deadweight tonnage in 2017.

SCI's sustained dedication and devotion towards excellence and steadfast persistence over the years has made the Organization a unique and strategic asset for the country. Time honored values, ethics, and a vibrant organizational culture has always been a hallmark of SCI, which remains omnipresent even today. Built on this staunch foundation, even during this worldwide pandemic crisis, SCI's fleet is sailing proud over the seven seas.

SCI over the years has evolved into the largest Indian Shipping Company



accounting for around one third of the country's total tonnage. SCI has effectively contributed to the growth of India's EXIM trade and the national exchequer, by being a net earner and saver of valuable foreign exchange.

Over the years, SCI has been a lifeline for the country in times of emergency and distress, by ensuring continued and uninterrupted supply of essential commodities, crude oil etc., and essential for powering the country's economy.

Liberalization and globalization of the Indian economy had presented SCI with an array of growth and diversification

opportunities. SCI's growth has been further spurred on by the building up of a modern and young fleet, operated by a large pool of well trained and experienced manpower, both onshore and at sea. As a profitable commercial venture

***As a profitable commercial venture of the Government of India, SCI has an excellent track record of profitability since its inception.***

of the Government of India, SCI has an excellent track record of profitability since its inception. SCI's annual performance has consecutively been rated excellent for a record 16 times, under Memorandum of Understanding

(MoU) signed with the Government of India and eventually culminating in



MT 'ASEEM' Liquefied Natural Gas (LNG) carrier of SCI



the Government of India conferring “Navratna” status to SCI on 01.08.2008.

The Company, despite adverse market conditions and extreme volatility in the industry since the downturn which commenced in 2008, which affected shipping companies globally, has managed a turnaround after three consecutive years of losses from FY 2011-12 to FY 2013-14 through application of prudent financial wisdom and adherence to cost cutting measures. It continues to strategize and use innovative methods to address the challenges while remaining focused on building its resilience and sustainability in business.

Consistent development and modernisation of the SCI has been due to a slew of innovative strategies and measures adopted by the SCI management, encompassing judicious and optimal deployment of tonnage, commencement of new services in

niche markets; forging operational alliances with leading market players to provide bespoke services; expeditious disposal of underperforming assets; effective cost control, corporate governance, CSR, sustainability etc. SCI has heralded India’s entry into the specialized field of LNG transportation. SCI is the only Indian shipping company engaged in transportation of LNG, a vital fuel for India’s power plants and chemical / petrochemical industry. SCI also pioneered ‘ship-to-ship’ transfers (lighterage operations) for Crude Oil / POL (Petroleum and Other Liquids) and dry bulk cargoes in India as also Cryogenic operations i.e. transportation of LPG / Ammonia. It was also the trend setter in providing management and consultancy services in ‘Shipping’, including manning management of vessels and consultancy for handling acquisitions of ships for various Government agencies, departments and ONGC.



Ship-to-ship (STS) operation being carried out by SCI vessels Desh Prem and Swarna Godavari



SCI has few parallels in the industry when it comes to its role in developing the seafaring profession in India or its significance as the second line of defence in times of crisis. Whether being the Flag bearer of the Nation in EXIM trade or transporting Pilgrims for Haj on MV "AKBAR", managed vessel owned by A and N Administration, or being part of the 'Mars Orbiter Mission' of India or being part of the induction of first DSRV in Indian Navy fleet; SCI has been the front runner in providing true service to the nation in all its facets.

SCI takes pride in serving the Nation by its contribution towards fleet acquisition and augmentation for Andaman and Nicobar Administration, Union Territory of Lakshadweep Administration, Union Territory of Daman and Diu, Government of Gujarat, Geological Survey of India (Ministry of Mines), National Institute of Ocean Technology (Ministry of Earth Sciences), Director General of Lighthouses and lightships, Andaman Lakshadweep Harbour Works (ALHW) etc.

SCI since inception has had a strong presence in the Eastern sector with a Regional Office in Kolkata, which has been catering to the trade in the Eastern sector. The growth story of SCI and Kolkata Port has had a very similar graph of achievements, laurels etc. with a huge number of vessels calling Kolkata port during the latter half of the last century and SCI having the maximum number of vessels calling the port at any given time during the break-

bulk era. SCI with active cooperation of the Kolkata Port has been successfully operating the Kolkata - Port Blair passenger vessels on behalf of the Andaman and Nicobar Administration which acts as the lifeline service for sustenance of the livelihood in the Islands.

Kolkata Port is the only riverine Major Port in India, situated 232 kms. upstream from Sandheads, having arguably the longest navigational channel amongst Major Ports of India and its navigational channel is one of the longest in the world. On 17th October 1870 an Act to appoint Commissioners for making improvements of the Port of Calcutta, post receiving the accent from Governor General in Council marks the birthday of Calcutta Port Trust. The Syama Prasad Mukherjee Port (erstwhile Kolkata Port) is considered the most premier port in the country and is rightly called the 'Gateway to Eastern India and South East Asia'.

With the Government's 'Act East Policy', India is committed to work towards integrating the South East Asian Region and forging close knit relations among the ASEAN Countries. Along with the Major Ports in the Eastern Region, Kolkata Port and Kolkata City have emerged as one of the prime gateways for connecting the vast eastern hinterland to South East Asian countries. Eastern India is closely linked to trade across Bangladesh, Nepal and Bhutan together with coastal movements to Andamans and also along the Bay of Bengal coast.

***The Syama Prasad Mukherjee Port (erstwhile Kolkata Port) is considered the most premier port in the country and is rightly called the 'Gateway to Eastern India and South East Asia'.***





'SCI MUMBAI'

SCI's bulk carriers have been regularly calling at Haldia port and have had a marked presence there. SCI and Kolkata Port's relationship has always been a mutually inclusive and symbiotic one. The support that SCI has always received from Kolkata Port has been tremendous and the relationship goes back a long way.

With the turn of the century the volume of throughput at Kolkata port has started increasing steadily and so has SCI's involvement. As of March 2018, the port is capable of processing 650,000 containers annually, mostly from Nepal, Bhutan, and India's north eastern states. SCI's involvement in catering to this trade has also been steadily increasing and showing promising signs of regaining the glorious days when SCI and Kolkata Port Trust enjoyed a

symbiotic relationship in supporting the EXIM trade in the eastern sector.

Traditionally, SCI's EXIM boxes moving in and out of Haldia and Kolkata port were carried using outside feeder services with a very minimal activity at Haldia port with respect to container shipments. However, this changed in 2016 when SCI became one of the first lines in India to make a foray into coastal trade, bringing in coastal imports from Mundra and Pipavav using feeder services at Haldia. Salt, Sugar, Bentonite, Tiles etc. were the major commodities that played a pivotal role in enhancing the coastal cargo volumes.

To support and promote coastal trade, Kolkata Port on their part played a stellar and pivotal role and ushered in numerous trade facilitation measures such as allowing 20 demurrage free days



for coastal boxes. This in turn boosted the growth of coastal cargo from other ports viz. Kandla, Tuticorin, Cochin etc. In mid-2018, SCI made a few calls to Haldia port with its vessel MV “Lal Bahadur Shastri” and coastal volume saw a manifold increase. MV “Lal Bahadur Shastri” was a mainline vessel and was one of the largest container ships to have called Haldia port. The momentum further received a thrust with the calls of SCI’s in-chartered vessel MV. “Sentosa Trader”. In addition to this, outward movement of rice to Tuticorin and Cochin started picking up pace. To bolster coastal traffic growth, Kolkata Port permitted containerised vessels to call KPD with 7 days additional demurrage free time.

On its part, SCI initiated a coastal service by deploying 2 vessels namely, MCP Salzburg and MCP Linz from December 2018 and scripted a new chapter in successfully connecting the remote Andaman & Nicobar Islands with Kolkata, Haldia, Krishnapatnam and Chennai. Further, this also provided the much needed connectivity for North East and Eastern cargo to the Southern part of India. As on date, SCI is moving full vessel load at Kolkata and Haldia with an average 150 TEUs of coastal boxes on every call. The COVID pandemic and the unprecedented challenges brought on by it was taken in its stride by Kolkata Port, and remained resolute in their commitment to serving trade through these trying times with the adoption and implementation of extremely accommodative trade facilitation measures.

SCI’s progress and success story has

### ***Lighterage operations of crude were taken up at Sandheads and Sagar in 1997.***

been accentuated in the backdrop of the support garnered from the Kolkata Port in easing and facilitating its carriage of crude oil, lighterage operations, passenger vessels and trade routes for Containers and Bulk carriers. A special mention needs to be made about the creation of a dedicated Lighterage Cell in SCI to cater to the lighterage operations which was clearly an innovative technology adopted to address the draft restrictions faced at Kolkata. Kolkata Port rose to meet up the challenge along with SCI and helped it pioneer Lighterage operations in the East Coast of India. In fact, offshore STS Lighterage operations were introduced on the Indian coast by SCI way back in 1975 and developed to maximise utilisation of large tankers which could not enter the Port at their fully laden draft. The operations soon became the backbone of Crude oil transportation and supplies to Indian refineries. Lighterage operations of crude were taken up at Sandheads and Sagar in 1997.

SCI Oil Tankers and Gas carriers regularly call Haldia and Budge Budge ports under Kolkata Port Trust, majority of which are made by SCI’s GP and MR tankers serving charterers and catering to approximately 0.45 MMT of liquid cargo such as Naptha, Motor Spirit, High Speed Diesel and crude oil per annum. SCI Bulk Carriers also regularly call Haldia for loading and discharging of various critical cargoes and have played a vital role in ensuring movement of coal, critical for steel manufacturing and power generation companies. SCI’s VLGC size LPG carrier with capacity of 17,601 DWT



calls the Haldia port for transportation of relatively cleaner fuels as per the requirement of the refinery.

Kolkata Port and SCI together play a paramount role in providing transportation to Port Blair and keeping the lifeline alive. By some estimates, by the year 1993, approximately one and half lakh passengers had been carried between Mainland and Andaman islands, and a majority of which were from Kolkata Port. SCI operated its own Passenger vessel M.V. Harshavardhana which could carry 748 persons from Kolkata port's Kidderpore docks to Port Blair. She sailed from 1974 till 2018 for an incredibly long and sustaining period of 44 years providing invaluable service to the Nation by connecting not only the people of Andaman and Nicobar

Islands with Mainland but also fulfilling the needs of the Islanders by carrying the necessary supplies as cargo.

During the 1980s the Master Stevedores Association of Calcutta, with their members had been raising the stevedoring rates for the vessels, quite unreasonably and thus the cost of ship operations in Calcutta Port became nearly unviable. The Calcutta Port through their Board resolution, had approved the registration of Calcutta Dock Labour Board as a stevedore in 1985. The SCI had sailings from Europe/ Gulf / USSR and other places. Thus they had opened the route for tendering for work to CDLB (which worked as CDLB / CPT combine) along with other existing stevedores. CDLB offered the lowest rates. SCI handed over nearly



Passengers boarding M V Akbar for Port Blair - Khidirpur Docks



90 ships (for stevedoring) across a couple of years. That brought down the stevedoring cost for SCI and as a consequence, other ship-owners also reaped the benefits. In spite of many hindrances and threatening to boycott operations by some stevedores – the SCI remained unmoved in the decision and strongly supported the port and was instrumental in reducing ship-cost (for EXIM Trade) in port. It had immense impact on the shipping circles.

With a vision towards an integrated water transportation system by commercializing the synergies of high sea shipping, coastal shipping and inland waterways, SCI has formed a dedicated subsidiary company registered in Kolkata. The Company has been named as Inland and Coastal Shipping Limited (ICSL) The subsidiary company is working on development of a viable business plan on the Inland Waterway System. The formation of the Inland and Coastal Shipping Limited at Kolkata, reiterates SCI's commitment to Nation First philosophy. In turn SCI and Kolkata Port are poised to further contribute to the growth story in a much more extensive and long term manner, mutually aiding to each other's

growth and hopefully not just reaching but surpassing the growth that both enjoyed during the golden period of Kolkata port in the last century.

Advances in shipbuilding, propulsion, smart shipping, advanced materials, big data and analytics, robotics, sensors, drones and communications in conjunction with an increasingly skilled workforce are expected to bring a monumental shift in how the maritime industry handles new challenges and turns them into opportunities. All these technological developments are likely to transform the way industry operates, from being reactive to proactive using real time data about the conditions of the ships and its equipment helping in taking measures by predicting the scenarios. The drivers for these technologies are balanced between environmental and commercial necessities. Environmental policies have pushed for greater R&D and adoption of technology to reduce GHG emissions, and the benefits are clear. SCI and SPMP are ready in all respects to absorb these upcoming technologies and continue supporting each other and achieve new maritime frontiers.

*"Dream is not what you see in sleep.  
It is the thing that doesn't let you sleep."*

Ignited Minds - **APJ Abdul Kalam**



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**  
Formerly **Kolkata Port Trust**





# THE SYNERGY BETWEEN KOLKATA PORT AND HALDIA PETROCHEMICALS IN ACHIEVING INDIA'S SELF-SUFFICIENCY IN PRODUCTION OF PETROCHEMICALS

*Subhasendu Chatterjee*

Shri Subhasendu Chatterjee Whole-Time Director, HPL, graduated from Jadavpur University in Chemical Engineering and postgraduation from IIT. Shri Chatterjee has more than 40 years of experience in the fertilizer and chemicals industry covering design, engineering, commissioning, technical services and project management with leading consultancy and operating plants in India and abroad.

## Driver of Economic Growth in Eastern Region

Syama Prasad Mookerjee Port or SMP (erstwhile Kolkata Port Trust), commissioned in 1870, is the first Major Port and is also the only riverine port in India. SMP is the nerve centre for trade for Eastern India. It is the lifeline for the economy of neighbouring countries like Nepal and Bhutan as well. The Port has played a crucial role in promoting maritime trade in India and acted as a fulcrum for development of ancillary industries in and around Bengal solely dependent on the Port.

During the last two decades, Haldia Port under SMP Authority and Haldia Petrochemicals Ltd (HPL) have been the major catalysts leading to the resurrection of industrial growth in Eastern India. Haldia Petrochemical Ltd is Eastern India's largest Petrochemical Company, which was conceptualised in the 1990's with the sole purpose of becoming the Engine of Industrial Renaissance in Eastern Part of India. HPL was to provide localised cost-competitive petrochemicals raw





Polypropylene Plant

materials to inspire augmentation of many value-added downstream industries making eastern India a production hub for petrochemicals thereby generating employment and upliftment of society.

With the adoption of latest technology HPL's products have been competitive with other domestic and foreign producers. Due to inadequate availability of domestic Naphtha meeting HPL's quality requirement, HPL has been largely dependent on import of high paraffinic Naphtha from Middle East Asia to operate the plant. For the finished products, we are largely dependent on SMP for export of our polymers to China, South East Asia and Europe. For Chemical products like Benzene, Butadiene, Cyclopentane, MTBE, Pygas India as a country is net exporter. With most Chemical end users being situated away from Eastern part of India, South East Asia remains our market of choice and hence most of our chemicals are exported, for which we are totally dependent on SMP.

In today's Petrochemical business,

technology is no longer the differentiator, rather the scale and efficiency of supply chain of a producer determines the fate of business.

It is in this sphere of supply chain that SMP is the central cog in realisation of HPL's dream since it serves as the only gateway for import of our raw material Naphtha as well as exports of finished products to South East Asia and other parts of the world. It is therefore needless to mention that the image of HPL as a reliable partner is largely dependent on the performance of the SMP. The efficiency of the Port in reducing turn-around time of import and export vessels has been a major factor contributing to our image to the outside world and also impacts our competitiveness.

Being a riverine port, SMP has been handicapped by lower draft at the Port as compared to the newer deep-sea Ports commissioned in Eastern part of India. The higher costs of transportation due to 'dead-freighting' of vessels remain a challenge for all Port users. SMP officials had acknowledged



the impediment and had taken up the challenge head-on. When the periodic capital dredging of the river channel did not yield the expected results, the SMP Authorities have opened up the Eden Channel after much circumspection. The improved draft after opening up of Eden Channel has been a boon for all users enabling them to increase cargo loads thereby partially reducing dead freight.

With increase in business activity Haldia Dock under SMP Authority has witnessed a phenomenal increase in congestion. The uncertainty in berthing of vessels acted like a double edge sword for Port users like HPL as it jeopardised our overall supply chain and planning. While delay in berthing of import vessels led to stock out scenario which at times threatened sustenance of plant operations, delay

in berthing of export vessels led to tank top situations which not only resulted in lowering of Plant throughput but also led to stock out situation at our end, the user's plants in South East Asia, which had a huge negative bearing on HPL's image as a reliable supplier. Further the additional outflow of foreign exchange due to vessel demurrage also impacted our bottom-line.

HPL had highlighted the challenges and threat to HPL operations with SMP officials, who appreciated the difficulties and multiple actions have been taken by HPL with the support of SMP officials to transform the challenges to opportunities so that the resolution to such challenges brings in a win-win situation benefitting all users. A few of the synergy initiatives taken up with support of SMP are highlighted on the following pages:

## Increase in Parcel Size of Naphtha Shipments

The increase in fresh water draft at Haldia post opening up of Eden channel

has enabled HPL to consciously increase the parcel size of Naphtha shipments



Product Silos



into Haldia. This has increased Port revenue and also reduced the number of shipment requirements on a yearly basis

thereby partially reducing congestion at Haldia.

## Increase in Parcel Size of Chemicals Exports of HPL

Over the years, to reduce congestion at Haldia Port (especially Haldia Oil Jetty 1) HPL has tried to reduce the number of export vessel requirement by increasing the parcel size of export shipments. This can be evidenced from the increase in Benzene export parcels from earlier 3

vessel. Butadiene export parcel size was increased from 1.5 to 2.0 KT per vessel to 3 KT per vessel. The parcels size of Methanol imports starting from March'2019 was increased from 3 KT to 5 KT per vessel. The increased cargo size reduced Benzene and Butadiene



Entrance to the Plant

KT per vessel to 6 KT per vessel, Pygas export parcels from earlier 5 KT to 7 KT per vessel to currently 10 KT per

shipments by 50% and Pygas shipments by 33% in FY 2019-2020.

## Utilisation of Single Tide Operation

Being a tidal port, there has been numerous instances wherein the Haldia Oil Jetty 1 (HOJ-1) remained vacant at night tide due to night berthing restrictions for vessels having higher LOA. HPL co-worked with Port and planned some Butadiene shipments of 1.5 KT per vessel and reduced parcel size

of MTBE to 4-4.5 KT per vessel to enable the smaller vessels to berth at night and complete their operations in a single tide (10 - 12 hour operations). These efforts by HPL reduced vessel waiting and also enabled additional revenue for Port by reducing idle time of jetty. This synergy in operations benefitted both



parties in a win-win situation.

## Co-working with Other Local Industries for Back-loading of Same Vessel in Single Berthing

HPL co-worked with other local industries like MCPI, Haldia, wherein HPL tried to Charter the same vessels which were bringing in Paraxylene import into Haldia for MCPI to export HPL's chemicals like Pygas, Benzene

and MTBE. This sort of synergy of back-loading through simultaneous or sequential discharge and loading operation ensured reduction of idle time and increase in the volume handling at HOJ-1.

## Multi-cargo Loading in Single Vessel

Though such multi cargo loading of Chemicals in single vessel is not a regular affair as the end users of different chemicals are not necessarily situated in similar geographical locations, all HPL shipments are planned to load multiple cargoes in single vessel to reduce the number of shipment requirement,

which finally increases the overall cargo handling at Haldia Port increasing their revenue earnings and also helps all users by reducing congestion due to lower shipment requirements. From 2017 HPL has done 6 such shipments involving multiple chemical cargo loading in single vessel.

## Installation of Additional Fenders at HOJ-3 to Accommodate Smaller LOA Vessels

The additional fenders at HOJ 3 along with priority berthing norms for



Central Control Room



Petroleum Oil and Chemicals vessels at HOJ 3 after 48 hrs has helped in accommodating smaller LOA vessels at

HOJ 3 thereby reducing the congestion at HOJ 1 to some extent.

## Digitisation Endeavours of Port

Cashless transaction (Wallet) for man /vehicle entry in port through RFID system where User can access RFID Portal to prepare required permit, Online e-services and information for

user like status of cargo A/c, Marine A/c, bill dues of Port, vessel position have been a great support of Port users reducing transaction time and improving ease of doing business.

## Infrastructure Support by Port

Port has worked hand-in-hand with the users to identify and remove the bottlenecks limiting Port throughput which in turn also has improved operational efficiency for the users. Port has extended all support in restoration of 9 M draft after opening of Eden channel, implementation of draft forecast 45 days prior to the month, reduction of cycle time at Lock gate, improvement of Pilotage service by implementation of Navigational aids, building up of barge facilities, extending berthing facility at OT2, granting ROW

(Right of Way) for additional pipeline for new product pipelines and also existing products for improvement in operational efficiency.

The above support from Port has helped HPL to sustain higher operation rate allowing HPL to maintain its position as 2nd biggest Importer & exporter of Liquid Bulk cargo at Haldia Dock Complex continuously for two years in a row during FY2017-18 and FY 2018-19. The felicitation of HPL by KoPT is an acknowledgement of the synergistic efforts of Port and HPL and which will



3rd Oil Jetty, HDC





HPL Plant

bring in an era of industrial renaissance in Eastern India.

It is our pleasure and privilege to be associated with the SMP Authorities in our journey towards excellence. During the recent period of uncertainty, the professionalism, encouragement and guidance of the Port officials has acted like storm shelter for the local industries. The SMP management

has through their words and actions supported and nurtured the Port users, enabling them to sustain operations and continue their journey towards a brighter future.

We wish the SMP Authorities all the best for completing its 150th year of operation and service to the Nation. May you continue to be the beacon of hope for a resurgent economic growth in Eastern India.



Greenbelt

On the occasion of the sesquicentennial celebration of Syama Prasad Mookerjee Port, HPL reiterates its commitment to make sincere efforts to carry forward the strong and pleasant relationship with the Port officials with more value-added joint initiatives for win-win operations. We remain dedicated to the overall industrial growth of the Eastern India and assure the Port of our support in its endeavours to build a strong Nation.





# A LIFETIME OF RELATIONSHIP...

*Dibyendu Bose*

Shri Dibyendu Bose is Vice President Supply Chain at Tata Steel and Chairman of Tata Martrade International Logistics Limited. (TMILL) An alumni of Indian School of Mines Dhanbad and PGDM from Indian Institute of Management, Calcutta, Shri Bose represents Tata Steel's interests through Board positions and Chairmanship in a few of its Subsidiaries.

My first interaction with Kolkata Port happened much before I joined Tata Steel. As a child while travelling to the Kidderpore area once, I got stuck in front of the bascule bridge when it opened to allow a ship to pass. My father took me down from the bus to show me the opened-up bascule bridge. I didn't know the meaning of bascule then, nor had I ever been to the Port area before that incident. To the pair of inquisitive eyes of a child, the huge hulk of concrete and steel created an indelible impression of intrigue and respect. Much later just after doing my post graduation from college, nine of our wing mates from Joka took a trip to the Andamans and we chose a voyage over a flight. The romance of an ocean liner crossing the river lock gate at the middle of the night was an experience which very few people were exposed to. The river journey upto the Sandheads with pre-independence industrial units lining up the banks and the change of pilots in open sea more than 100 miles away enhanced the experience.

I realised that Kolkata Port was one of the best engineering marvels built in the marine sector, something to be really proud of as an Indian. Much later, after joining Tata Steel and being a part of the International Trading division, Kolkata Port became a part of our daily lives. There was a period of time in the early 90s when not a day passed without a visit to the Kolkata Port.

I understand from our records that Kolkata Port had played a very important part in all our initial construction as well as expansion of our plant in Jamshedpur. Regular imports of machinery, spares and accessories through this port kept the premier steel plant of India going. In 1951, Tata Steel launched a modernisation of the Plant to upgrade production capacities. For this purpose, they had commissioned reputed steel consultants and erectors, Kaiser Engineering Overseas Corporation of USA. KOEC imported plant and machinery through the Port of Kolkata and 1 Garden Reach Jetty





Passenger ship MV 'Harshavardhana' passing through the Bascule brige in Kidderpore Docks - 2002

was licensed by the commissioners of the Port of Kolkata to the then TISCO to serve as a transit point for expeditious clearance of import cargos pending their transportation to Jamshedpur by rail and road with the yard having its own railway siding. Import Cargo lightened by Ships overside were also transported by lighters to the 3 GR jetty for aggregation at the transit yard.

In the late 60s, TISCO decided to export their steel products. Kolkata port became a beehive of activity for Tata Steel. These exports necessitated taking on open yards of the port on license /lease at Jhinjirapole serviced by a railway siding for receiving the thousands of tonnes of Steel on a daily basis.

In the 70s also, large consignments of structurals were exported to the

Middle East by the then Tata Exports from the Port of Kolkata. Folklore has it that the labour of Kolkata Port was so efficient that when a ship was chartered with inadequate hatch openings, the labourers were able to surmount the problem by loading the joists and other structurals in an inclined manner to the hold of the ship, thereby solving a rather insurmountable problem. The golden period of the relationship of Tata Steel and the then CPT came in the late 80s and early 90s. Tata Steel expanded its operations in volumes and domestic raw materials available till then were no longer sufficient for the expanded quantities. Tata Steel had to resort to overseas raw material sources but required a reasonably large port facility to handle this import. Although Paradip offered that infrastructure but Haldia,



with the advantage of its proximity to Jamshedpur provided the ideal support for this. Tata Steel embarked on its necessary importation of low ash coking coal from Australia and high quality limestone from the middle east with the assistance of Haldia Dock System.

While Tata Steel commenced its journey in Haldia in October 1991 with its maiden shipment of imported Pig Iron from Brazil by the vessel MV RMS which carried 14500 tonnes of Pig Iron, Coal imports closely followed it and thereafter there was no looking back and Tata Steel gained significantly with the relationship with Haldia Port. A memorandum of understanding was signed on 1st June 1992 between Kolkata Port Trust and TISCO, for giving TISCO exclusive use of Berth no. 8 and also to allow TISCO to departmentalise many of the Port operations. TISCO gave a commitment of more than half

a million tonnes of imports and export traffic to KOPT. By this MOU, TISCO was also allotted a 35,000 sq metre of plot as a backup of Berth no. 8 with a half rake railway siding. If I am not mistaken, the first import of Coal in a Panamax vessel in the port of Haldia was also done by Tata Steel. M.V. MAERSK SENTOSA carried more than 30,000 tonnes of coal in December 1991, to the port of Haldia. Meanwhile the exports of Steel continued relentlessly from the Port of Kolkata and the availability of expert labour ensured that Kolkata remained a port of choice. There have been days when the Port of Kolkata had six vessels, all dedicated for the export of Tata's Steel and it remained a beehive of activity whenever Tata Steel felt the need to take the assistance of export markets to sell its entire production.

In August 2002, a new chapter opened in the history of Indian maritime



Discharging limestone at Haldia Docks





TMILL exporting finished steel products from berth no 12 at Haldia docks

sector. KOPT invited applications from interested parties for privatisation of the multi-purpose Berth no. 12 (now renamed Berth no. 13). After due process of RFQ and RFP, KOPT awarded the project to a newly formed Joint Venture company of TISCO called the TM International Logistics Limited (TMILL). TMILL was formed on 18th January 2002, primarily to implement the above project. The license agreement signed thereafter allocated this berth as well as backup areas for operating, managing and maintaining these facilities for the export and import of both bulk and break bulk cargoes. Operations commenced at Berth no 12 with the first vessel MV Maritime Lapis

carrying imported limestone on behalf of Tata Steel. TMILL also commissioned the first LIBHERR mobile harbour crane in India, of more than 100 tonnes capacity in the port of Haldia in Berth no 12. Berth no 12 continued its journey and very soon attained more than a million tonnes of annual handling in 2005-2006. To aid the expansion of activities in this berth, KOPT allocated 63,000 sq metre of Port area to TMILL, coterminous with the license agreement. A new dedicated railway track line was laid to serve this 63,000 sq metres of area and the tonnes of cargo handled by the licensed berth has never been looked back. Infact, TMILL had to install a second mobile harbour crane in October 2017 in the Port of Haldia.

The Kolkata Port system including Haldia dock complex forms a significant backbone of Tata Steel's International operations. Along with Berth no 12 of TMILL and other facilities of both Kolkata and Haldia, Tata Steel along with TMILL today imports and exports millions of tons of both bulk and break bulk cargoes. With constant vigil and focus given on the draft situation of Haldia, we strongly feel that this association will continue to forge even as new deep drafted ports come up in the East coast of India. The vantage position of Haldia, the extreme efficiency of its labour and extremely cooperative Port authority has ensured that the ties with Tata Steel becomes stronger by the day. Not only bulk and Steel but Kolkata port also played an important part in the expansion of Tata Steel Ferro Alloys division. Other divisions of Tata Steel like Tubes and Wires divisions have depended on Kolkata Port Trust for decades together, for its container operations. As I write this piece, Tata Steel is planning its first ever slab exports



to its sister unit in Ijmuiden Europe in October 2020 through Kolkata only.

Many memories rush today while reminiscing our journey in the port of Kolkata. But I am going to mention one of them which is still fresh in my mind. Probably in 1990 our first vessel of wire rods was getting loaded in NSD in Kolkata. All cargoes of the 6,000 ton parcel had reached the port barring three wagons which had to be kept away somewhere in Kharagpur on account of some railway technicalities. While we were happy with the first wire rod exports from Kolkata, we were sad at the prospect of this little incompleteness. In the afternoon of the day when the vessel was supposed to sail, news reached that those three wagons were on the way. But the time left was not sufficient for its intermediate

unloading and carriage to the berth. But someone came up with this idea that why not place the wagons directly under the vessels' hooks in the berth itself. Not known to too many, Kolkata port was one of the few ports in the country which had a railway track right up to its berths. So, with less than an hour left for completing the operations before sailing, the wagons were placed alongside the vessel. And "oven fresh" wire rods were loaded to make our day.

On its 150th anniversary of KOPT recently renamed the Syama Prasad Mookerjee Port, Kolkata, we wish our very best for the continuation and the growth of this extremely important Port system which has acted as a very important enabler for the growth of the entire Eastern region of our country.

[75 years of Rabindra Setu](#) (Courtesy: Victoria Memorial Kolkata)



An architectural marvel





# SYNERGY OF THE KOLKATA PORT AND MCPI IN ACHIEVING INDIA'S SELF-SUFFICIENCY IN MANUFACTURING OF PTA

*Debi Prasad Patra, IAS (Retd.)*

Shri D P Patra presently Whole-Time Director MCPI Pvt Ltd , joined the Indian Administrative Service, West Bengal cadre in 1979. He served a period of over 24 years in Government service, wherein, apart from heading district administration, he held several key portfolios, including the post of Managing Director of the West Bengal Industrial Development Corporation, Secretary, Information Technology and Managing Director of India Power Corporation Limited (IPCL) before joining MCPI Pvt Ltd.

On behalf of MCPI Private Limited, I congratulate all the members of Syama Prasad Mookerjee Port Kolkata, the

oldest major Port in India for attaining glorious 150 years of service to the nation.

## Emergence of MCPI

MCPI is a leading producer of Purified Terephthalic Acid (PTA), having its 1.27 Million Tons per annum facility in Haldia, West Bengal. It began its journey two decades back as a subsidiary of the Mitsubishi Chemical Corporation (MCC) - Japan. It has all along been contributing to the growth of Polyester and Man Made Fibre based Textiles units by supplying world class PTA to the downstream industries.

Among the main reasons for MCC deciding to set up its PTA manufacturing facility in Haldia in 1997 was the excellent chemical handling facilities at "Haldia Dock Complex" (HDC). Since inception MCPI has received commendable cooperation from the HDC that has helped it to run its business smoothly. MCPI still depends 100% on the movement of feedstock Paraxylene (PX) and Acetic Acid (AA) in chemical tankers, hence a well-developed port



was a primary pre requisite to set up the plant at Haldia. With an initial investment of Rs, 1,475 crores MCPI emerged as Japan's largest Foreign Direct Investment (FDI) in India and began construction of a 350,000 tonne PTA plant at Haldia, West Bengal. Subsequently in the year 2000 another plant with capacity of 800,000 tonne PTA plant was commissioned at the same premise with an investment of

Rs 2,490 crores.

PTA industry in India has been adversely affected by huge capacity addition of PTA plants in China, causing meltdown in profitability over the years. In November, 2016 the management of the company was handed over to The Chatterjee Group (TCG) which is also having the management control of the co-located plant at Haldia namely Haldia Petrochemicals Limited (HPL).



MCPI Plant, Haldia

## Reasons for Selecting Haldia for the PTA Plant Site

- Close vicinity to a well-developed Port
- Availability of Skilled Manpower
- Availability of Land
- Well connected by Roads, Railways and Waterway



# TCG Key Group Companies



Trust-based relationships include 15 of top 20 global pharma companies

R&D services focusing on integrated drug discovery

World's largest standalone LIMS vendor

Fully web-based, multilingual product with workflow engine that can integrate and report

Biotech parks, IT parks, SEZs and high-end commercial and residential properties

Presence in seven cities

Leading master licensor of proprietary technologies in refining, petrochemicals, gas processing and coal gasification

Supplier of proprietary catalysts

Has 130 licensed technologies and more than 3,400 patents & trademarks



Largest Petrochemical Company in Eastern India and Leading Polyethylene Exporter from India.

World's first producer of purest quality cyclopentane

Offers proprietary hedge funds and trust management products

Advanced global technology to manufacture and sell PTA

Flagship IT company of group

Combination of SkyTech and TCG software

## History of MCPi

MCPI Phase 1 (DP)

PRODUCT: PTA (Purified Terephthalic Acid)

PRESENT CAPACITY: 470,000 MT/Annum

TECHNOLOGY: MCC, Japan

TOTAL INVESTMENT: US\$ 350 million / Rs. 1,475 Crores

MAIN RAW MATERIAL: Paraxylene, Acetic Acid (Solvent)

CONSTRUCTION PERIOD: 27 Months, Sept '97 to Dec '99

COMMERCIAL OPERATION: From April 2000

MCPI Phase 2 (HP)

PRODUCT: PTA (Purified Terephthalic Acid)

INSTALLED CAPACITY: 800,000 MT/Annum (1 Line)

TECHNOLOGY: MCC Proprietary Technology  
TOTAL INVESTMENT: US\$ 436 Million/ Rs. 2,490 Crores

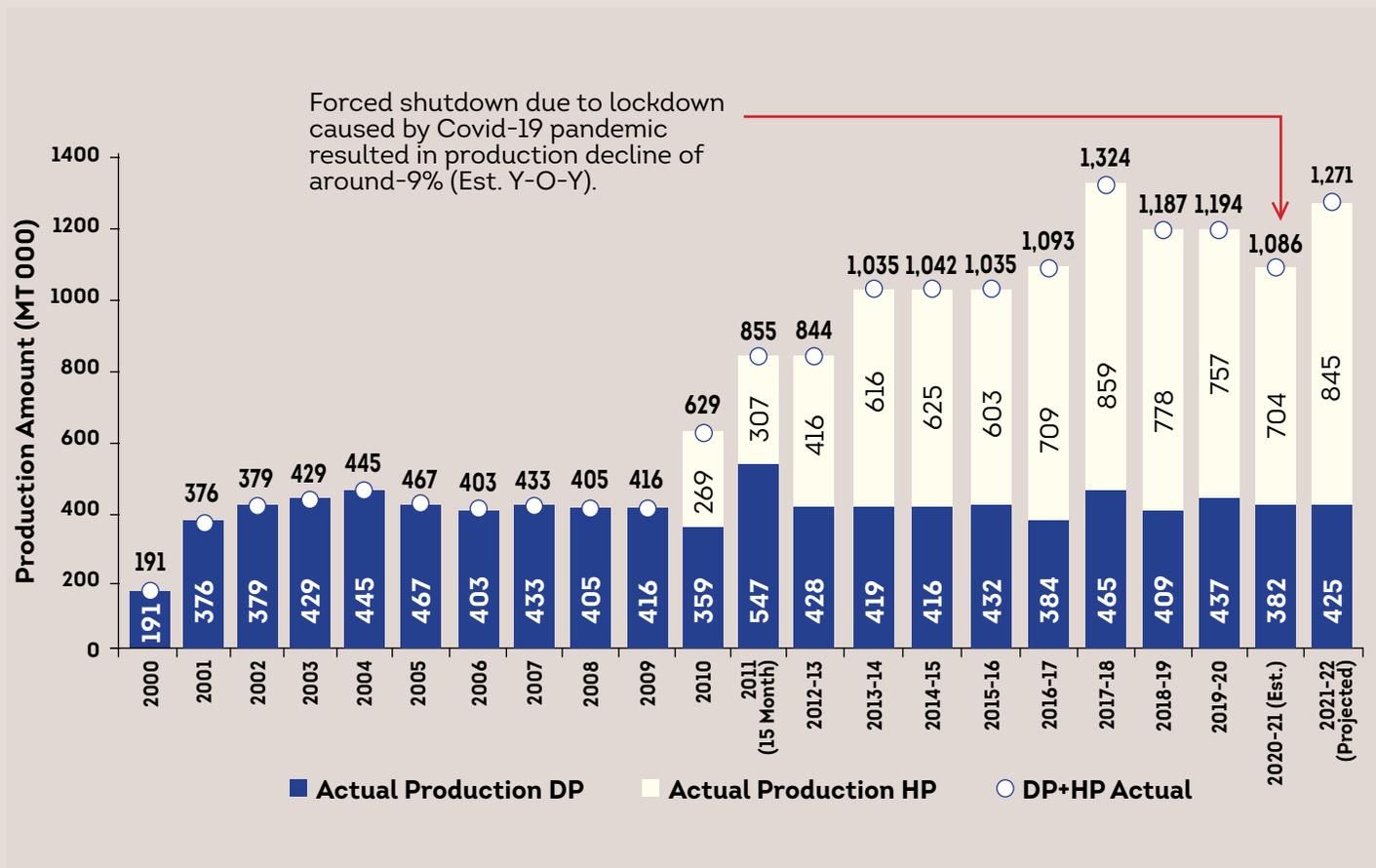
MAIN RAW MATERIAL: Paraxylene, Acetic Acid (Solvent)

CONSTRUCTION PERIOD: 38 months

COMMERCIAL OPERATION: From March, 2010



## MCPI Production Trend



## Dependence of MCPI on HDC

MCPI is a port based chemical industry. The two major feedstocks Paraxylene (PX) and Acetic Acid (AA) are imported in chemical tankers using the facilities at HDC. PX is unloaded in HOJ-1, Berth No. 2 & Berth No. 3, whereas AA is unloaded in Berth Nos 6 & 7. The approximate import quantity is 0.9 MMT (0.82 MMT of PX and 0.06 MMT of AA) per annum.

PX is directly transferred from Ship

to the Plant through two dedicated pipelines each of about 13 km in length. AA is discharged from Ship to Stainless Steel Tanks, located in the Dock Area, and then transferred to the Plant by dedicated stainless steel tank lorries.

The finished product PTA is distributed across the country by Road, Rail & Waterways. MCPI depends entirely on HDC for distribution of PTA by Rail & Waterways movements.

## Cargo Handling through HDC (In Million Tons)

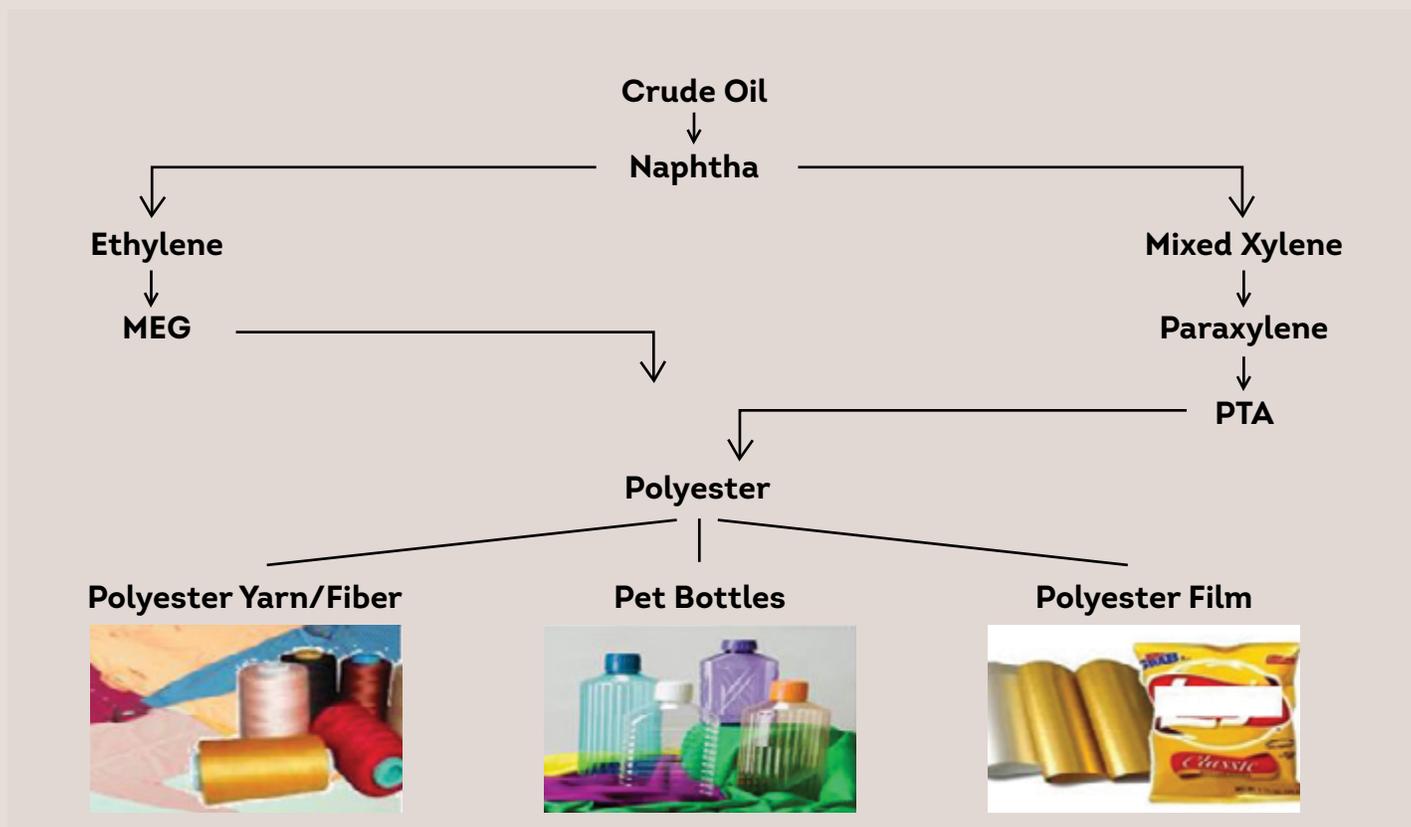
Year	Paraxylene Import	Acetic Acid Import	PTA Export / Costal / Railway
	(In Million Tons)	(In Million Tons)	(In TEUS)
2000 - 01	0.21	0.01	5,087
2005 - 06	0.29	0.02	587
2010 - 11	0.47	0.05	NIL
2015 - 16	0.67	0.05	5,526
2019 - 20	0.78	0.06	7,436

## One Company - One Product

PTA is the most important raw material for Manmade Fibre (MMF) and adequate domestic manufacture of PTA is a necessary pre condition for the steady growth of Polyester Yarn

and downstream segments based on MMF. The four major usage of PTA are Polyester Filament Yarn (PFY), Polyester Staple Fiber (PSF), Polyethylene Terephthalate (PET) and Polyester Film.

## Schematic Flow of Crude to PTA and Polyester



The estimated global PTA capacity stands at 91 million tonnes while total estimated production is around 74 million tonnes in 2020. (Operation rate around 81 %)

Asia dominates the global PTA production capacity with 71 million tons contributing to 78% of PTA global capacity.

China dominates the PTA capacity and

## PTA Producers in India

1) Reliance Industries Ltd., installed capacity around 4.5 Mn Ton

2) MCPI Pvt Ltd., installed capacity 1.27 Mn Ton

3) IOC Limited., installed capacity 0.55 Mn Ton

MCPI is the second largest PTA producer in India and has significant merchant market share in the Indian domestic polyester market. MCPI is

production in Asia . Its PTA capacity is 56 Million Ton, which is around 71% of the Asia PTA capacity followed by India which is a distant second.

India's total PTA requirement stands at 6.4 Mn Ton. There are three PTA producers in India serving to the local demand. India is also importing around 0.5 Mn Ton per year.

selling 100% of their PTA production to the Indian domestic market. MCPI has also encouraged investments in the PTA downstream sector in Haldia. IVL – Dhunseri set up two PET plants in Haldia because of easy availability of PTA. There is excellent synergy between the two companies where MCPI is selling almost 30% of their product to IVL – Dhunseri and they get 'Just-in-Time' delivery of their key raw material PTA. Of late



MCPI Plant



MCPI is also exploring the possibility of investing in the downstream market as

a part of its strategic move to become an integrated PTA to Polyester Makers.

## Indian Polyester Market

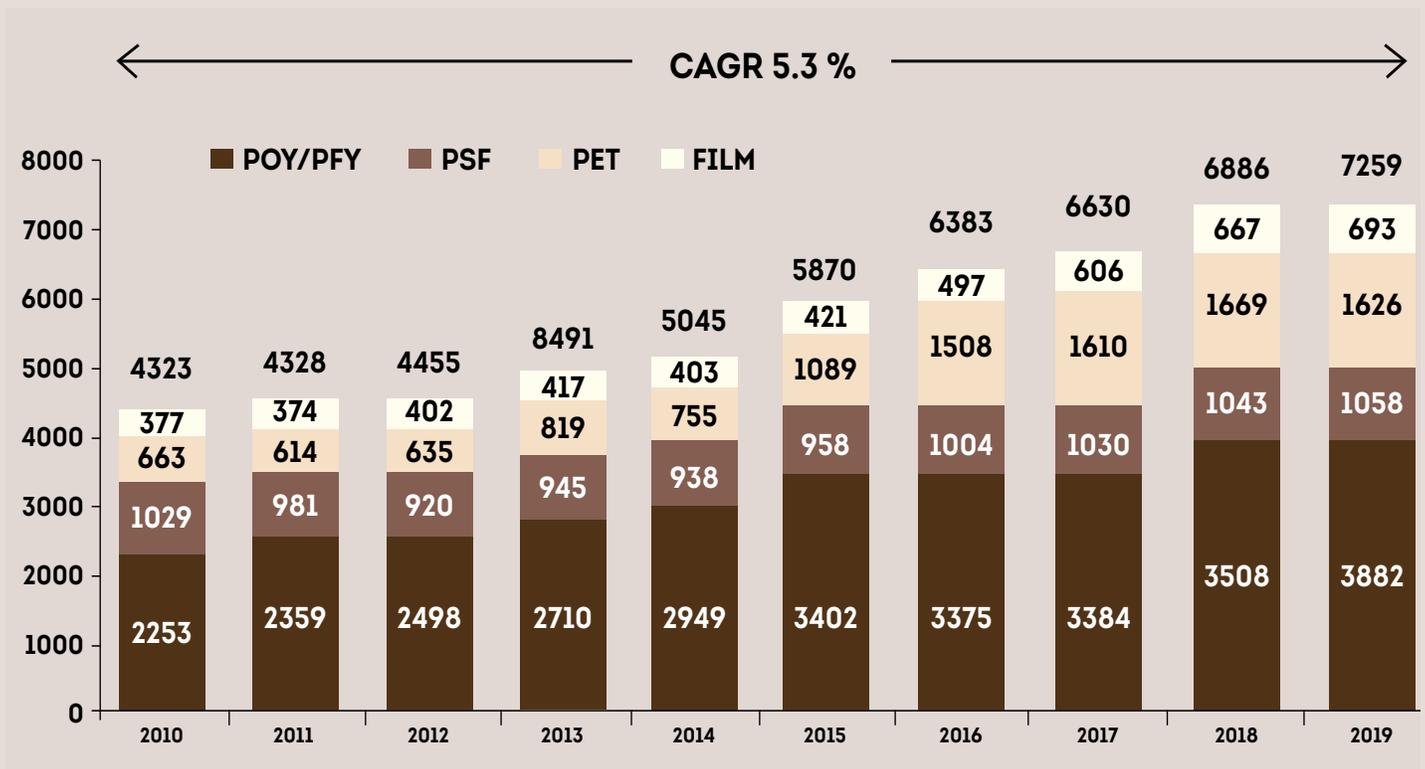
Total Polyester Installed capacity in India is 9.6 million Ton and Total Polyester Production is around 7.2 million Ton. Filament yarn and staple fibre comprises of 74% market share whereas balance 18 % comprises of PET bottle grade and 8% is Polyester Film.

- Western India accounts for 6.4

million ton around 88% of total Polyester production

- Western India dominates most of India's Polyester Yarn, Staple fibre and bottle grade PET production.
- Polyester Film production on the other hand is evenly divided between West and North.

## Graph of India's Polyester Demand



## Care for Society and Environment

MCPI has been actively participating in various CSR activities since inception.

Some of the activities undertaken on CSR & Environment are as follows:

Free rural medical camp with Paediatrician by IMA, Haldia

Free Eye check-up camp with medicines and spectacles

Donation of Two Ambulances to Social Organizations of the District, Purba

Medinipur.

Developed huge Green Belt with 70,000 trees and water body of 3.5 lac Meter Cube area for pollution control – conducted biodiversity study through West Bengal Biodiversity Board.

First company in West Bengal to initiate co-processing of solid hazardous waste.

Recipient of several Environment Excel Award / SH&E Awards from Govt. and other agencies.

## CSR activities in MCPI Private Limited



Free Rural Medical Camp with Pediatrician by IMA, Haldia



Book Distribution amongst needy students

## Haldia Port – Lifeline for MCPI’s Survival

MCPI could not have grown to a leading PTA Maker in the country without the support of Haldia Dock Complex. There has not been a single day in the past 20 years when the plant had to adjust operations because of

any port related issue. The company did receive the best of service from the Port at all times. Even during the recent Covid pandemic MCPI received the fullest co-operation from HDC.



## Growth Prospects

In the context of a strong policy initiative to catalyse growth in Textiles Sector to reach turnover of USD \$ 350 Billion by 2025, it is natural that the domestic PTA industry would have ample opportunity to expand manufacturing capacity and enhance its contribution to the growth of downstream segments. With the recent declaration of utmost priority to 'ATMANIRBHARATA' (Self Reliance) by Hon'ble Prime Minister, the growth prospect looks all the more attractive in this sector. However, to make this happen the Government of India needs to provide adequate barriers to unbridled imports at dumped prices across all items in the Polyester value chain - from PTA down to Fabrics. We

believe, such measures would not only strengthen domestic manufacturing but also would create millions of jobs in the labour intensive downstream segments.

MCPI stands committed to play a proactive role in realizing the vision in Textile Industry by continuing its support for the polyester value chain and MMF (Man Made Fiber) based textiles. And for the future expansions of its business in this region MCPI would be eagerly looking forward to enhanced support and encouragement from the HDC.



Aerial View of the Plant





# EXPLORING NEW HORIZONS





# SYAMA PRASAD MOOKERJEE PORT KOLKATA: A LEADING PARTNER IN THE SAGARMALA INITIATIVES

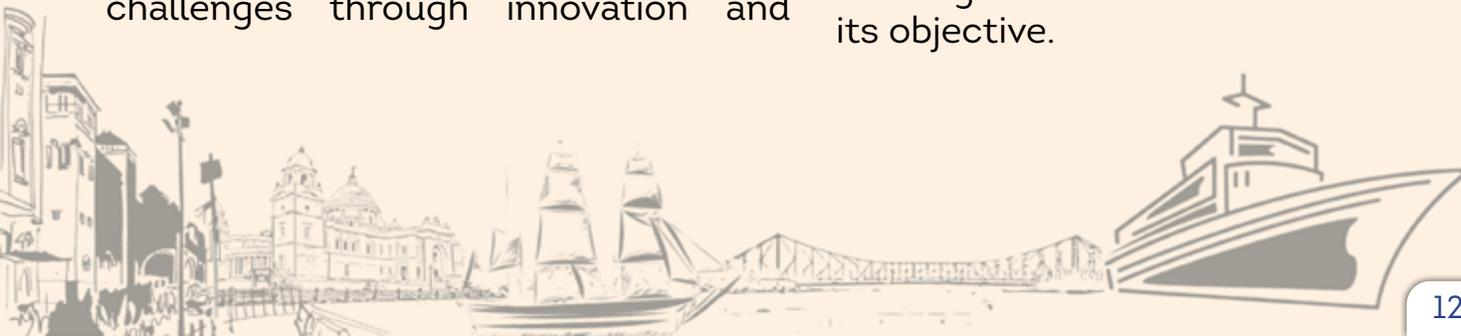
*Dr. A. Janardhana Rao*

Dr. A. Janardhana Rao, Managing Director, Indian Ports Association has served in different capacities in the major ports of Visakhapatnam, Kochi and Deendayal Port Trust and as Adviser (Sagarmala) in the Ministry of Shipping. He was associated with framing of Maritime Agenda-2010, National Maritime Programme, "Sagarmala - a Coastal & Port-led Development of India" and is presently associated with drafting of Maritime India Vision 2030 of the Ministry of Shipping.

Syama Prasad Mookerjee Port (SMP Port), erstwhile known as Kolkata Port Trust, holds a special place in the history of India. The oldest Major Port, which was initially conceived to promote and protect the British colonial interest, is today championing the national cause and becoming a hub for connecting the East and North East India along with South East Asia. Despite its locational advantage, the port has its own operational challenges for survival. Kolkata Port, comprising two dock systems, one at Kolkata and other at Haldia, have both the docks riverine in nature. Therefore, the siltation problem is common and the docks have to take advantage of rise in tide to obtain the maximum draft for shipping. Over the years, the port has overcome all these challenges through innovation and

effective port management and has reported a continuous improvement in growth and performance.

Sagarmala has been the flagship programme of the Ministry of Shipping and is in its fifth year of implementation. The vision of the Sagarmala Programme is to reduce logistics cost for EXIM and domestic trade with minimal infrastructure investment. The components of the Sagarmala programme are Port Modernization & New Port Development, Port Connectivity Enhancement, Port Linked Industrialization, Coastal Community Development, and Coastal Shipping & Inland Waterways Transport. SPM Port due to its location and legacy is a natural leading partner in implementing the Sagarmala Initiatives and fulfilling its objective.





Doubling of Railway Track between Durgachak and Haldia Dock, under Sagarmala



SMP Port is undertaking 23 projects (cost Rs. 1,967 Cr) under the Sagarmala Programme. Of which, 12 projects (cost: Rs. 561 Cr.) have already been completed and the remaining 11 projects (cost: Rs. 1,406 Cr.) are under various stages of development and implementation.

In the recent past, SMP Port has laid emphasis on efficient evacuation of cargo from the port and movement to the port areas and have tried to properly synchronize the process so that the intermodal network functions smoothly which is quite evident with the completion of their road rail connectivity projects. Prior to the project, one of the facilities which could only handle half rakes, after the completion of the project, can now handle 2 full rakes coming inside the dock area leading to reduced turnaround time which significantly got lowered from 20 hours to 6 to 8 hours to load a full rake. This has led to increased cargo handling capacity of the Port along with the completion of other technological intervention projects such as the RFID facilities and container scanners. Further, completion of port modernization projects has resulted in efficient handling and evacuation of cargo thereby increasing the productivity of Port. SMP Port has also been trying to allocate the regional distribution of cargo to different modes of land transport.

Amid present day dynamic business environments, it is imperative that the ports leverage their vital assets like waterfront, land and connectivity for facilitating trade and industry leading to vibrant economic activity

thereby generating more investment, employment and cargo. Appreciating the role of Ports in industrial development, the Government of India has identified 'Port Led Industrialization' as an important pillar in its Sagarmala Programme for Port Led Development. Under this, a port-led industrialization Programme will be delivered through Coastal Economic Zones (CEZs) and industrial clusters. The objective is to make India an attractive destination for investment, create more jobs, making our people digitally competent and provide a better quality of life. SMP Port because of its location and land parcel availability has huge opportunities ahead to leverage its land and marine assets and become a catalyst for Industrial development in the region. Kolkata has always been a nerve center of trade and commerce for East and North East and with the subsequent connectivity and



Development of Road in KDS, under Sagarmala



port modernization projects can retain its premier status of a major economic hub in the region.

SMP has a land bank of over 11,000 acres of land which includes existing dock facilities, future expansion projects, industrial zones as well as residential zones. Prevalent industries in its surroundings are food processing industries, oil storage facilities for various PSUs, Steel industry, etc. As on date, SMP port has a land bank of around 830 acres available for port led industrialization where preferred industries can be set up such as light engineering, chemicals, readymade garments, hosiery, etc.

As per the study for promoting coastal shipping in India carried out by Ministry of Shipping in association with Asian Development Bank (ADB), a huge potential has been identified for development of an agglomeration center near Haldia Dock (load port) where smaller parcels can be agglomerated from different players and transported through vessel of higher cargo carrying capacity. It will optimize capacity utilization of vessels and ultimately reduce cost of transportation of steel cargo from SMP to various parts of the country through coastal shipping. Concept of agglomeration center can be viable only with support from private players in the hinterland such as TATA Steel Ltd., Steel Authority of India Ltd., etc. The proposed agglomeration centers could

be developed at Haldia Port to handle ~4-5 MMTPA of steel cargo.

Over the years, the role of ports has undergone significant change. From being only cargo handling points, ports first evolved to take care of other items of the supply chain like warehousing, bagging, value addition to cargo before and after shipment, etc. and later even other items of the logistics ecosystem like multimodal facilitation, cargo movement tracking, maximization of fleet usage etc. Today as an active stakeholder in 'Ease of Doing Business',

***With such ongoing mechanization, automation and digitization initiatives, SMP Port is all set to modernize itself into a world-class port.***

ports have made the interaction with port users/trade and industry much easier, paperless and fast. Port Community System (PCS) is already live at all the Major Ports. SPM Port being among the ports where the Enterprise Business System is under implementation and is leading the vision to develop a world class port ecosystem in India. Such

a system will play a key role in enabling and sustaining Port's businesses. Other digitization efforts such as RFID based permit, paperless procedure for delivery and receipt of cargo, online payments etc. are other commendable efforts being implemented by the port. With such ongoing mechanization, automation and digitization initiatives, SPM Port is all set to modernize itself into a world-class port.

Regional integration and connectivity is no longer an option but an essential part of a national policy in this age



of shared challenges such as trade protectionism, terrorism, climate change, and food security. All countries across the world have been facing these challenges and searching for common solutions. In other words, regional integration is nothing but building blocks for globalization. The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) constitutes a bridge between South and SouthEast Asia and represents a reinforcement of relations among these countries. BIMSTEC has also established a platform for intra-regional cooperation between SAARC and ASEAN members. The huge population and combined GDP of around \$4 trillion of BIMSTEC region is a major driver of economic growth in the region as many countries have more than 50 per cent of their population in the working age. Also, with many BIMSTEC countries (viz. Nepal, Bhutan, Bangladesh and Myanmar) about to graduate from low income country status, the size of the middle class will increase, thereby representing a growing consumer market. The group has immense potential to grow into a major economic bloc, enhancing the standard of living of its people through trade, investment, employment generation and infrastructure development. Coastal shipping and maritime transport has vast potential to

boost intra-regional trade in BIMSTEC. SPM Port is most probably the best strategically located port to act as a link for BIMSTEC and also exploit the opportunity for its own growth and development.

Apart from developing as a regional hub, Syama Prasad Mookerjee Port has a potential to become a hub for coastal and inland water transport as well. Inland water transportation is also viewed as a

***The huge population and combined GDP of around \$4 trillion of BIMSTEC region is a major driver of economic growth in the region as many countries have more than 50 percent of their population in the working age.***

big opportunity, through the Jal Marg Vikas Project. This includes development of national waterways and terminals at important locations. Focus of the strategy is to integrate water transport with other modes of transportation involving, railways, highways, and to develop multimodal transport; and to extract the advantages and efficiency of various transportation means; thus, helping optimize the transportation structure and reduce costs. The

National Waterway-1 is connected to Kolkata and Haldia thereby providing ample opportunities for import/export cargo to be carried to the hinterlands of UP, Jharkhand and Bihar and vice-versa. The Brahmaputra, along with its continuous water routes through Bangladesh leading up to the ports of Kolkata and Haldia, is a very important traditional IWT route. Under an agreement between India and Bangladesh, vessels of both the



countries ply their cargo vessels between Assam and Kolkata regions using IWT transit facilities through Bangladesh. This provides the waterway with a potential to cater to the traffic in the northeastern region of the country and relieve pressure on the already congested Siliguri corridor. Instead of travelling by road or rail, goods from the Northeast can instead travel by waterway down the NW-2, IBP route and NW-1 to SM Port from where they can be either exported or coastally shipped to other states of India. Likewise import goods and goods from Bengal, Jharkhand, Bihar and UP can be transported to the Assam region via the IBP route.

The concept of 'Blue Economy' has opened up a new horizon for economic development of countries through the use of ocean and marine resources, both at the national and international level. The popular perception is that the ocean economy has been equated with the fishing sector, but the coverage of the Blue Economy is well beyond fisheries. It encompasses the entire economy of a littoral country, covering all economic activities including agriculture, mining, construction,

manufacturing and services sector. The development of the Blue Economy depends on the evolution of the established and emerging sectors and ocean-based industries and activities. The Blue Economy has a large potential in terms of income, employment generation, exports, but benefits cannot flow automatically. Conscious efforts have to be made in terms of planning, investment, and sectoral allocation of factor endowments to ensure natural growth of the Blue Economy. Impetus provided to encourage Blue Economy initiatives can substantially uplift coastal communities by providing them with employment opportunities. Development of river fronts, cruise and ferry services, fishing docks, renewable power development etc. are some of the areas that must be exploited to fully realize the objective of Sagarmala Programme.

With 150 years of existence, Syama Prasad Mukherjee Port has not only survived and flourished but also has contributed a lot to the national economic development. In years to come SMP Kolkata would reach even greater heights and become the fulcrum of regional and national development.



**Annexure I – List of Projects of Syama Prasad Mookerjee Port Kolkata under Sagarmala Programme**

Sl. No	Project Name	Project Pillar	Project Category	Project Cost	Project Status	Implementing Agency
1	RoB cum Flyover at Ranichak level crossing at KoPT	Port Connectivity	Road	157	Project Completed	Haldia Dock Complex
2	Mini Bulk Carrier Facility on upstream of 3rd Oil Jetty at HDC -Floating Cargo Handling Jetty	Port Modernization	Port Capacity Addition	73	Project Completed	Haldia Dock Complex
3	Deployment of 2 floating cranes near Sagar	Port Modernization	Port Capacity Addition	65	Project Completed	Haldia Dock Complex
4	Installation of 2 MHCs at Berth13- HDC	Port Modernization	Port Capacity Addition	50	Project Completed	Haldia Dock Complex
5	Upgradation of the track 10-12-14-16-18-19-20-21- 22 and 23 at EJC yard of KoPT	Port Connectivity	Rail	47	Project Completed	Kolkata Port Trust
6	Development of hardstand storage area of 1.13 Lakh sqm behind Berth No. 13 at HDC	Port Modernization	Port Capacity Addition	44	Project Completed	Haldia Dock Complex
7	Container Scanner KoPT and HDC	Port Modernization	Port Modernization	40	Project Completed	Kolkata Port Trust
8	Replacement of Fendering System at lead in Jetty - HDC	Port Modernization	Port Modernization	28	Project Completed	Haldia Dock Complex
9	Upgrading to accommodate full rake length at 7 Netaji Subhas Dock and its yard under KDS- KoPT	Port Connectivity	Rail	16.5	Project Completed	Kolkata Port Trust
10	Installation of RFID facilities at HDC	Port Modernization	Port Modernization	16	Project Completed	Haldia Dock Complex
11	Improvement of road connectivity to facilitate trade and port users at KoPT	Port Connectivity	Road	15	Project Completed	Kolkata Port Trust
12	Upgrade of existing rail network at Kolkata Dock System	Port Connectivity	Rail	9	Project Completed	Kolkata Port Trust
13	Mechanisation of Berth3 at HDC	Port Modernization	Port Capacity Addition	323	Under Tendering	Haldia Dock Complex
14	Extended port gate at Balagarh	Port Modernization	Port Capacity Addition	320	Concept Stage	Kolkata Port Trust
15	Setting up of LNG facilities at HDC	Port Modernization	Port Capacity Addition	200	Under Implementation	Haldia Dock Complex



Sl. No	Project Name	Project Pillar	Project Category	Project Cost	Project Status	Implementing Agency
16	Setting up of Liquid Cargo Handling facilities at Shalukkhali- Haldia Dock-II	Port Modernization	Port Capacity Addition	173	Under Implementation	Haldia Dock Complex
17	Improvement of road connectivity to facilitate trade and port users at KoPT (Phase-2)	Port Connectivity	Road	88	Under Implementation	Kolkata Port Trust
18	2nd Railway Line from Durgachak take off point to 'A' cabin at Durgachak at HDC	Port Connectivity	Rail	75	Under Implementation	Haldia Dock Complex
19	Setting up of Outer Terminal-2 for handling of liquid bulk cargo at Haldia Dock Complex	Port Modernization	Port Capacity Addition	74	Under Implementation	Haldia Dock Complex
20	Procurement of 1 no. Rail Mounted Quay Crane -RMQC at HDC	Port Modernization	Port Modernization	61.31	Under Implementation	Haldia Dock Complex
21	Construction of 1.5 Lakh sq.meters of Hardstand inside HDC	Port Modernization	Port Modernization	54.48	Under Implementation	Haldia Dock Complex
22	Building barge jetty for Coal in KPD II- KoPT	Port Modernization	Port Capacity Addition	25	Concept Stage	Kolkata Port Trust
23	Reconstruction of Bay No. 04 & 5 of the CPY/reconstruction of damaged portions of Bay No.1 CPY (excluding rail line portion) and other allied works	Port Modernization	Port Modernization	12.44	Concept Stage	Kolkata Port Trust

Sagarmala Creating Job Opportunities through Coastal Community Development

<https://youtu.be/xHlz67pIbIs>





# HALDIA DOCK... PROMISES AND POSSIBILITIES

*G. Senthilvel*

Shri G. Senthilvel is an Associate Member of Institute of Cost and Management Accountants and an MBA, had served in five major ports of the country, in the capacity of Head of Finance and as Deputy Chairman at Kochi and Haldia Dock Complex of SMP Kolkata.

The undulating waters of the River Hooghly have made their passage through meandering time, and today, at this juncture, we stand in front of a momentous event wherein Syama Prasad Mookerjee Port (formerly Kolkata Port Trust) is celebrating its 150 years of glorious history with renewed aspiration to scale greater heights towards a vibrant future.

The River, the Port, the City of Kolkata and the entire country have evolved with time through various phases of both defining the history of trade and commerce as well as life of the entire region - and the story continues catering to a huge hinterland comprising eastern, north-eastern and central India, including the land-locked countries of Nepal and Bhutan, would entail a saga which is no less than Odyssey or a Mahabharata.

The Port of Kolkata with her three

impounded dock arms located at KPD, NSD and HDC and the anchorage facilities at Sandheads, Sagar and Diamond Harbour, remains one of the longest riverine channels in the world with a stream-length of almost 232 km from Sandheads to Kolkata. The ambit of operations has been stretched further up to Kalughat near Patna with commencement of Inland Water Barging service and further upto Nepal along the Narayani River Basin, in the near future.

With a cumulative cargo-handling of 64 MMT during the 2019-20, Syama Prasad Mookerjee Port, Kolkata is in 5th position amongst the eleven major ports in terms of cargo-handling. Apart from generating her own revenue, Syama Prasad Mookerjee Port serves to generate substantial revenue for the Government of India by means of



Customs Duty, Railway Freight, GST, etc. as well as providing direct employment to around 5,500 personnel and livelihood for around 33000 pensioners. The Port of Kolkata has been the source of livelihood for generations and has been the pivotal support to overall economic and cultural growth of the region. The Port had to withstand the brunt of several natural as well as man-made catastrophes of historical importance including the two World

Wars. The quay lines of the Port have borne the footprints of some of the greatest patriots and statesmen like Mahatma Gandhi, Swami Vivekananda, Rabindranath Tagore to name a few, and across the years, the history and culture associated with the growth and development of the City of Kolkata, has closely associated itself with the growth and expansion story of the Port and the 78-year-old Howrah Bridge serves as a living milestone to the Association.

## Creation of Facilities at Haldia

In 1959, a deep-drafted port facility was conceived downstream of the channel at Haldia and the construction of Haldia Dock Complex began. The first oil jetty (Satish Samanta Oil Jetty) was operationalised in 1968. Subsequently, construction of the full-fledged port began during 1973-74 with the port facility being operationalised in 1977. A new era of development began with large scale industries, especially in the steel sector led by SAIL, Tata Steel; Oil and chemical industries like IOCL, BPCL, HPCL, HPL, MCPPI etc. setting up installations. During recent times, the Port City of Haldia has developed into a business, cultural and educational hub, fostering the economic growth in southern Bengal. Haldia now boasts as a hub for major industrial development with several edible oil installations set up by pan-India groups like Adani Wilmar, Ruchi Soya Industries, Emami Agrotech, etc. Haldia Dock Complex today is one of the premier mechanised port facilities in the country.

HDC has a slew of facilities, which it offers to the Trade for their cargo

movement. There are three Oil Jetties on the river, 14 berths inside the Impounded Dock, 1 Floating Cargo Terminal for handling barges / Mini bulk carriers, 2 POL Barge Jetties and 4 Fly Ash Jetties. In addition, 2 Floating Crane facilities along with a sizable barge fleet are available for operations at Anchorages. In its promise to provide possibilities for the Trade, major infrastructural development and upgradation of facilities are continuing.

I have always wondered about the challenges which HDC faces and how the HDC Team has overcome them with sheer professional approach, duly backed up by the dynamic leadership in the Ministry and the Port. Some of the main challenges are a long navigational channel (130 km), draft, lock and tidal constraints, huge dredging requirement, resulting in high cost of handling, etc. I think no other Dock has coped so effectively.

To overcome draft constraints, the Port has set up off-shore deep-drafted facilities at Sandheads and Sagar, which have enabled Syama Prasad Mookerjee



Port, Kolkata to handle fully laden Cape-size vessels and a large fleet of barges plying along the Hooghly River regularly, effectively connecting the dock systems to the lighterage points. This is no mean achievement, considering how some of the other seaports are struggling to create infrastructure to handle Cape-size vessels.

HDC was spending about Rs. 450 crore per annum on dredging due to the long navigational channel. This was mainly due to the charter hire of dredgers. With the help of IIT-Madras, areas of dredging and quantities were revisited and Eden channel was recommended for using as the main shipping channel instead of Auckland channel. A new

mode of dredging contract was formulated wherein assured depth-cum-quantity was envisaged and this has brought down the annual dredging cost to about Rs. 300 crore.

Complete Lock Automation is now ready and will be implemented shortly after imparting training. This will reduce the avoidable delays in the lock operation. Not only faster and efficient movements, but also the number of vessels handling per day will increase and that too with less manpower. Whether to have a lock or to remove the lock and make HDC a tidal port is being examined. If the Lock is removed, 50% more vessel handling may be possible. Alternatively, second lock or a new basin within the same dock is also under study.



Loading ore at the Haldia docks



# Constant Improvement is the Mantra for the Success of HDC

Since dry bulk cargo is the backbone of HDC, existing Berth no. 3 is being fully mechanised with rapid wagon loading system, and is in award stage (RFP in September 2020) at an estimated cost of Rs. 331 crore to handle dry bulk cargo. This will increase the capacity by about 3.5 MT.

Container traffic is registering continuous growth and to cater to the increased container traffic, one more RMQC (Rail Mounted Quay Crane) is being procured at a cost of Rs. 42 crore. This will increase the Container handling capacity to 3.50 lakh TEUs from the existing 2.00 lakh TEUs.

There are many liquid, Oil and Chemical industries solely dependent on HDC. HDC encourages such industries as a business strategy and caters to their needs to retain these volumes. To augment the capacity of liquid cargo handling, a contract for construction of Outer Terminal II on EPC mode (Engineering, Procurement and Construction) to cater to liquid cargo, mainly chemicals, has been awarded at a cost of Rs.150 crore, and is expected to be completed by September 2022. This will add 2 MT capacity. Further an LOI (Letter Of Intent) has already been issued for construction of another Liquid-handling Jetty at Shalukhali on



Wagon unloader - Railway Operations at Haldia





Loading containers at HDC

BOT (Build, Operate, Transfer) basis at a cost of Rs.175 crore. Environmental Clearance has been received and the project will be operational by June 2022. This will increase the capacity by about 2.5 MT. Not waiting for this, during January 2020 HDC has constructed a Floating Liquid cargo handling facility at a cost of Rs. 3.80 crore to handle mainly edible oils and non-hazardous chemicals alongside Berth no 18 (Outer). This will increase the liquid cargo handling by about 1 MT and reduce waiting time of such vessels.

Since there is no waiting berth at HDC, if a vessel is detained or arrested by the statutory authorities for some reasons, one berth's productivity is lost for the period of idling of such vessel. To avoid this, one lay-off berth has been constructed inside the Dock Basin near the turning circle which will avoid working berths being occupied with such waiting vessels.

HDC's Railway network is one of the best among other ports in the country. It is connected to the trunk railway through S.E. Railway by Panskura – Haldia Broad Gauge electrified Railway Section. Further, NH-116 connects HDC with NH-16 and to the rest of the country. Through National Waterways, Haldia is connected to the Eastern and Northern part of India by NW-1, Assam and North Eastern States by NW-2 and to Bangladesh through the Protocol route.

LPG has gradually developed into one of the primary cargoes for HDC and is growing at a rapid pace. LPG is handled at the two Oil Jetties, namely, Berth Nos 16 (Outer) and 17 (Outer) where facilities have not only been created but are being upgraded constantly.

HDC is essentially a Dry Bulk handling Port, where Dry Bulk Cargo like Coking Coal, Limestone, Manganese Ore,





Oil-tanker berthing at HOJ-2

Coke, Steam Coal, Iron Ore, Fertilizer are handled, which require huge area for transit storage. HDC has been constantly increasing and developing storage area. From 4,04,000 sq.m. in 2017, the storage area has increased to 8,80,000 sq.m. in 2020 and currently development of 3.7 lakhs sq.m. at a cost of Rs.121 crores is underway.

Haldia is being developed as a multi-modal hub for Inland Waterways under the Rashtriya Jal Marg Vikas Pariyojna for which HDC has allotted 61 acres of land to IWAI (Inland Waterways Authority of India ) with waterfront of 460 m. for setting up jetties, storage yards, railway connectivity, etc.

HDC has introduced RFID (Radio Frequency Identification) based access control and tracking system, which not only ensures security and surveillance but also makes entry and exit to / from

Docks seamless.

Haldia Dock Complex is committed to creation of values for all the customers and stakeholders through continuous improvement and development of facilities and services. From a modest handling of 31.01 MMT in 2014-15, the handling has increased to 46.68 in 2019-20, thereby, resulting in an increase of 50.53% in just 5 years.

Finally, HDC has a robust and invaluable asset in its manpower, which is dynamic and adept to challenges and changes. These personnel along with loyal and supportive Trade partners will ensure that HDC propels further and earn more and more laurels for itself.

*I have no doubt that Haldia Dock is poised for consistent growth and wish Haldia Dock Complex and each and every person associated with it the very best for the future.*

The author can be reached at [gsaisenthil@gmail.com](mailto:gsaisenthil@gmail.com)





# THE PRIVATE PARTICIPATION IN THE PORT SECTOR... THE HALDIA STORY THROUGH RADICAL POLICY ALIGNMENT... LESSONS LEARNT

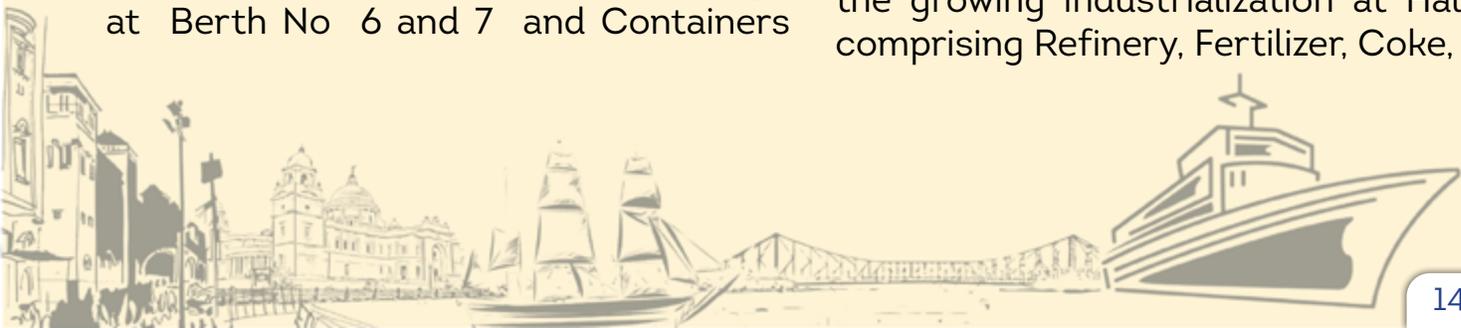
*A K Dutta*

The author had joined SMP, Kolkata in January, 1984 as Management Trainee and retired as General Manager (M & S), HDC on 31st May, 2020. He was actively involved in planning and implementation of different port development projects undertaken through private investment at HDC from 1998 to 2017.

Haldia Dock Complex comprising Berths, a Lock Entrance and a Turning circle was commissioned in February 1977, when a coal vessel MV Vishva Vijay entered the impounded dock on 28th February, 1977. Prior to this, one Oil Jetty was set up at Haldia in August 1968. HDC, the first mechanized dock system in the country at that time, was established with full-fledged automated cargo handling facilities at all the berths for handling Iron Ore at Berth No 3, Thermal Coal at Berth No 4, Fertilizer and its Raw Materials at Berth No 5, Dry Bulk Cargo at Berth No 6 and 7 and Containers

at Berth Nos 8 and 9. Unfortunately, the double armed crane of Berth No 6 and 7 toppled into the dock basin at the time of its commissioning and hence its benefit could not be reaped by the port. The said berth was thereafter earmarked for handling general cargo in conventional mode by using ships' cranes and liquid cargo by pipelines.

The proximity of HDC to the Steel Industries, Power Utilities, Coal and Ore Mines, its cost-effective connectivity by Rail, Road and IWT, coupled with the growing industrialization at Haldia, comprising Refinery, Fertilizer, Coke,



Year	77-78	80-81	90-91	2000-01	2007-08	2010-11	2015-16	2016-17	2017-18	2018-19	2019-20	CAGR 77-78 to 2019-20
Cargo (in Million tons)	3.51	5.52	11.11	22.84	43.59	35.01	33.51	34.14	40.50	45.21	46.68	6.35%

Edible Oil, Thermal Power Plants have led to growth of cargo handling at HDC at a CAGR of 6.35% since 1977-78.

Although the overall growth till 2019-20 was 6.35 %, but from 1977-78 to 2007-08, the cargo at HDC grew at CAGR of 8.76% leading to HDC alone becoming 4th and KoPT as a whole ranking 2nd amongst the major ports in cargo handling and maintained the same till 2007-08. This growth of nearly 9% could be sustained as KoPT continued to expand its capacity

during this period at HDC. The Govt of India, in recognition of the potential of HDC had even decided to corporatize it along with JNPT. The 2nd phase of capacity expansion took place during the period from 2009-10 to 2016-17 paving the way for growth of cargo at HDC at a CAGR of 8.64% during the period from 2015-16 to 2019-20. The following table shows the manner in which cargo handling facilities were created, post commissioning:

Year	Mode of Creation	Major Cargo Handling Facilities Created
1991	External Borrowing (OECF Loan)	2nd Oil Jetty with associated facilities.
1995-2007	Internal Resources	Berth Nos. 10 (1995), 11(1998), 4B(2000), 3rd Oil Jetty (2000), 12 (2000), 2(2007)and 13, (2007) and Container Handling Equipment (2007)
	Private Investment	b) Equipping Berth No 12 on BOT basis(2002) a) Mechanized Berth 4A on BOT basis (2003)
2013 to 2018	Private Investment	a) Equipping of Berths: 4B (2013), 2 (2016), 8 (2016)and 13 (2016) , Floating Terminal (2018), Fly Ash Jetty (2016) and Outer Mooring Terminal (2020) on outsourcing model. b) Floating Cranes on licensing model (2018). c) Upgradation of Container Terminal on OandM mode (2015). d) LPG handling facilities on land lease mode (2017/2020).



It is evident that till 2007, KoPT developed the major cargo handling facilities at HDC primarily through internal resources. Thereafter, there has been a radical policy change and from 2009 onwards, additional facilities were created entirely by private investment.

It is on record that the port has missed two significant opportunities, harnessing of which would have led to further growth including arrest of diversion of Crude Traffic

2000/2001:- Despite a Committee of experts engaged through IPA finding the project of Creation of Floating Storage Facilities with mooring arrangements at Sandheads for handling Crude, technically feasible and commercially viable, was not taken up. An attempt to create this on PPP basis might have put to halt the laying of the Haldia-Paradip

pipeline, diverting the entire Crude Traffic from Haldia.

2014/2015:- Getting hold of the best location at Konika Sand for transshipment /transloading, despite having strong legal footing after the Ministry of Shipping notified the area within the limits of Kolkata Port Trust in 2011. This Notification was quashed by Hon'ble Odisha High Court and the Ministry of Shipping and KoPT moved Hon'ble Supreme Court, where KoPT and the Ministry were holding on to strong grounds. However, the Ministry of Shipping, Govt of Odisha and Govt of West Bengal eventually decided to settle the issue through a consultative mechanism leading to identification of a compromised solution, a site under Paradip Port. This location has limitations for round the year Transloading.

## Need for Private Investment in Port Sector

Inadequate infrastructure was recognized as a stumbling block in India's growth potential since the beginning of 1990. Improvement in physical infrastructure was found to be the priority area but the same was capital intensive and required huge resources much more than what public resources could pay for after meeting fund requirements of the social sector, irrigation, water resources, dredging at ports, etc. It was therefore found essential to rope in private investment for funding the financially viable infrastructure projects and the major ports were one such area. The Ministry of Shipping went a step forward and

mooted the idea of gradually converting the major ports into "Landlord Ports", where the development of the facilities, their operation and maintenance and labor engagement would be gradually transferred to the private entrepreneurs. An outline in this regard was sent by the Ministry to KoPT in April, 1993 which primarily contemplated leasing of existing assets, equipment etc. Since then, it became known that development through private investment would be the future for the major ports. This got further reinforced with the Ministry imposing almost complete restriction in recruitment of personnel at major ports.



# KoPT's journey towards capacity expansion with private funding

Kolkata Port Trust was perhaps the first major port to take initiatives in attracting private investment way back in 1992, i.e. before the Ministry had circulated the privatization framework, when it roped in the steel majors like SAIL and TISCO (now TATA Steel) to invest at HDC. KoPT, since then had adopted various innovative models of private investment that included

- (i) Berth Reservation through MoUs
- (ii) Outsourcing or Contracting Model

(iii) licensing Model

(iv) Land Lease Model

(v) OandM Model etc., from time to time in addition to the BOT model.

*An attempt has been made in this article to present in brief the different models adopted by Kolkata Port in development of port facilities through private investment at Haldia that are already functional and the reasons for adopting such models.*

## Captive facilities through MOU

The Coking Coal traffic brought by TISCO (now TATA Steel) and SAIL at HDC was seen growing from meagre 50,000 tons in 1984-85 to more than 1 million ton by 1990-91 and it was projected to grow further. As such, this commodity was found to have potential to become the captive cargo for HDC. At that time, the mechanized unloading facilities of Berth No 5 were found to be grossly underutilized due to non-functioning of the fertilizer plant of HFCL at Haldia. The bare Berth No 8 was already handling Coking Coal and General Cargo and had capacity to handle more. This berth had adequate land area at the immediate back up, conducive to development of storage area and railway handling facilities. This prompted KoPT to allocate Berth No. 5 to SAIL and Berth No 8 to TISCO, under

Memorandum of Understandings (MOU) signed in 1992, for 10 years, with provision for extension by another 5 years.

SAIL, under the MOU, refurbished the mechanized system of Berth No 5 and operated the same for unloading their Coking Coal and limited amount of Fertilizer a/c Hindustan Lever Ltd, at their cost and arrangements. TISCO deployed equipment at Berth No.8 for cargo handling on shore and created a hard stand storage area with railway siding. Both of them gave Minimum Guaranteed Throughput of cargo ( SAIL- 1.5 MTPA and TISCO- 0.55 MTPA ) and Minimum Berth Occupancy ( 330 days) backed up by Bank Guarantees. SAIL and TISCO enjoyed ousting priority of their vessels at their respective berths.



At Berth No 5, KoPT shared 2/3rd of the cargo handling charges with SAIL for the services they rendered at this berth. However, as KoPT undertook on-board cargo handling operation at Berth No 8, the entire cargo handling charges were retained by the port. The MoU with TISCO expired on 31/05/2007 and that with SAIL on 06/11/2002.

The simple Berth Reservation scheme

through MOUs not only brought investment from SAIL and TISCO but also resulted in growth of Coking Coal traffic from 1.25 million tons in 1990-91 to 4.3 million tons by 2002-03 at a CAGR of about 11% without adding any additional berth. This arrangement also created a long-term interest for SAIL and TISCO in using HDC for handling their EXIM cargo.

## Development through Public Private Partnership mode on Build Operate and Transfer (BOT) basis Government Guidelines of 1996.

The then Ministry of Surface Transport issued guidelines for private sector participation on Build Operate and Transfer basis in the major ports in October, 1996. The areas for private sector participation included

- (i) Leasing of existing assets
- (ii) Construction of new port facilities
- (iii) Captive power plant and Dry Docking/Ship Repair facilities
- (iv) Pilotage and
- (v) Captive facilities for port-based industries.

The port and the successful bidder would execute License Agreement for a period of 30 years for constructing, operating, management and maintaining the project. On expiry of the license period, the infrastructure so created would be transferred to the port free of

cost. The selection of successful bidder (licensee) was to be based on maximum realization to the port, to be assessed by computing NPV of the financial offers of the technically qualified bidders constituting

- (i) Upfront Fee for grant of license
- (ii) Royalty per ton of cargo
- (iii) MGT at the SoR and
- (iv) Rent for the land and waterfront to be provided by the port on lease.

The Ministry did not initially provide any Model Bidding Documents and Model License Agreement to be commonly adopted by the major ports for implementing PPP projects, following the 1996 guidelines. Hence, it was left to the ports to design their own bidding documents for selection



of the successful bidder, terms of the Agreement etc. which proved to be

difficult in absence of prior in-house experience on the subject in the port.

## Creation of Mechanized Berth 4A following 1996 guidelines

The Coking Coal traffic at HDC crossed 3 million mark in 1996-97 at a 5 yearly CAGR of about 11% and it was slated to grow further owing to expansion plans of the Steel Industries in the hinterland of HDC. Along with this, other dry bulk cargo like Limestone etc., were also slated to grow. Only 2 berths viz. Berth No 5 and 8 were available for these commodities and the mechanized facilities of Berth 5 (commissioned in 1977), under MOU with SAIL at that time, were poised to outlive the duration of the MOU, expiring in November, 2002.

KoPT, with a view to bridging the emerging capacity gap, decided to construct two berths using the vacant waterfront between berth No 4 and 5, viz Berth no 4A and 4B. The project of Berth no 4B was conceived as bare berth without any equipment facilities with estimated cost falling within the delegated powers of the Board and was decided to be set up through internal resources. The other berth viz No 4A with full-fledged mechanized facilities were found to require capital cost, beyond the delegated powers of the Board. As such, this mechanized berth was decided to be set up on BOT basis following 1996 guidelines. It was also envisaged that the private initiative at proposed Berth 4A would draw best management practices and marketing strategies to maintain a competitive edge over the neighboring

ports and the emerging private ports which were all eyeing the growing Coking Coal traffic of the Steel Industries, with overlapping hinterland. Moreover, this would also lead to intra-port competition for handling dry bulk cargo that would give impetus for improving the productivity and cost effectiveness at the port operated berths.

In absence of Government approved Model Bidding Documents and Model License Agreement for PPP projects, KoPT was fraught with the task of preparing the bidding documents with the terms and conditions that would encourage private players to invest for Berth 4A. This uphill task was elegantly completed by a committee of port officers with collective application of mind. The Bidding Document of JNPT for their upcoming P & O terminal on BOT basis was also referred to.

The tender was invited in January 1998. The consortium of M/s Precious Shipping Public Co. Ltd, M/s SSA Asia Inc. and M/s Larsen and Toubro Ltd became the successful bidder for Berth No 4A. The Ministry communicated approval for award of the license to the consortium on BOT basis. By this time, the Ministry in March, 2000 had circulated Model License Agreement prepared by IDFC and directed KoPT to redraft the license agreement for 30 years following the



IDFC model, subject to the conditions that wherever the IDFC conditions would contradict with tender conditions, the tender conditions would prevail. The consortium incorporated a SPV viz International Seaports India Pvt. Ltd with whom the License Agreement was signed on 14/05/2002 for 30 years for setting up of a new berth (Berth No 4A) with full-fledged mechanized facilities for handling Dry Bulk import Cargo. The Licensee constructed the Berth and the entire mechanized facilities comprising unloaders, Stacker cum Reclaimers, wagon loaders were all connected by conveyor system, in a record time of 19 months.

**The salient features of the project are summarized in the following table:**

Investment In Rs crore	Land area	Capacity	MGT	Royalty
150.00	Waterfront: 12175sqm Back up: 90825 sqm	3.5 MTPA	1.25 MTPA rising to 1.9 MTPA by 24th year	46.88% of cargo handling charges rising to 61.04% from 5th year onwards



*As the record goes, Berth No 4A was the first mechanized dry bulk berth implemented on BOT basis in the major ports' sector. SAIL is extensively using this berth for importing their Coking Coal. During the last fiscal, the Concessionaire has handled about 3.2 million tons of Coking Coal a/c SAIL at an effective shipday output of 14,850 tonnes. KoPT at present is earning a royalty of Rs 94.86 per ton from this Berth.*

## Modified BOT guidelines of 2000

While a few PPP projects were on board, following the 1996 guidelines in the major ports, difficulties were faced in raising finances by the private partners as the bidding mechanism and the terms of license agreement prepared by the ports had certain shortcomings to make them bankable. It was also noted that the PPP projects in the infrastructure sector required transfer of public assets, delegation of governmental authority

for recovery of user charges, operation and control of public utilities/ services, sharing of risk and contingent liabilities by the Government; and therefore, the PPP projects were regarded as public projects, where the accountability would be with the Government. It was also viewed that the PPP modality was advised for getting private investment into public



projects with the objective of enhancing public welfare and hence a need was felt for devising appropriate documents for invitation of bids/ formulation of terms and conditions of the Agreement for carving out PPP projects in a fair and transparent manner.

The Ministry of Shipping in March, 2000 came up with Model License Agreement and Model Bidding Documents (RFQ and RFP), as per the recommendation of Infrastructure Development Finance Company Ltd (IDFC) upon consulting the major stakeholders, Law Firms, Financial Institutions etc. and advised the ports to follow the same.

The new guidelines provided for two stage selection processes through RFQ (1st stage) and RFP (2nd Stage) and the selection of the successful bidder was modified from the earlier principles of maximum realization to the port to sharing of gross revenue only. Pre-

qualification was based on the past experience of managing facilities for similar cargo with Net-Worth and Net Cash accruals (for 3 preceding years) being at least equal to 50% of the estimated project cost. Besides, in case of termination of the Agreement for default on the part of the port/ licensee or for reasons of force majeure, provision of compensation to the licensee was incorporated. The leasing of land and waterfront was done away with and the right of the private partner on the port assets was given as a bare license, albeit with rights of mortgaging the assets by the licensee for securing loans from financial institutions. The bidding on land rent was also removed from the new guidelines and the land was to be provided on SoR basis. The provision of Independent Engineer was also included for approving designs and drawings.

## Development at HDC following 2000 Guidelines

The single RMQC that was commissioned in 1977 toppled into the dock water in April, 1997 due to a severe storm, while under operation. Since then, the containers along with clean dry bulk, break bulk cargo were handled commonly at Berth Nos 9, 10 and 11, using ship's cranes. The productivity of cargo handling at these berths was abysmally low resulting in annual handling of about 0.4 million tons at each of these berths. With a view to increasing the capacity for handling these commodities, construction of additional berths (No 12) next to Berth No 11, commenced in 1998. The port was also considering equipping some of

these berths.

The container traffic, taking all the major ports together had grown at a CAGR of 12% between 1994-95 to 1999-2000 and it was clear that the surge would continue in future at an accelerated pace, in view of the projected growth in Indian economy and progressive conversion of break bulk traffic in containerized mode. The successful implementation of the container terminal at JNPT by P & O Ports on BOT basis encouraged other major ports to also adopt the BOT route in setting up container terminals of international standards.



A detailed study conducted by JICA around the late eighties recommended development of a full-fledged container terminal at HDC along the western quay face. The internationally acclaimed container players like P & O, Australia and NOL, Singapore evinced keen interest in developing container terminals at Haldia, since early 2000. Such was the demand for creation of container handling facilities at Haldia that Mr. Jimmy Sarbh, the then Chairman, P & O Ports, India, visited Haldia to take a first hand account of the port facilities even in the height of a disruption/ strike called by the All Major Workers Federation, in demand of wage revision across the major ports. Most importantly, the unions at HDC extended a warm welcome to Mr. Sarbh and escorted him during Dock visit so he didn't face any problem by the striking employees. Mr. Sarbh, during the interaction with port officials, explained Haldia's potential as the emerging container terminal in the east coast. Interestingly, the TATA Steel also showed keen interest in having a berth for handling clean cargo like steel, limestone, fertilizer etc.

Kolkata port, on the basis of the demands emanating from reputed organizations aimed at improving cargo handling productivity, decided for allotment of two of its berths namely Berth No 11 and 12 (being under construction at the relevant point of time) for equipping, operation, management and maintenance on BOT basis for 30 years for handling containers and clean cargo, following the 2000 guidelines. The RFQ was floated in 2000 separately for the two berths where the interested parties might bid for either or both the berths.

P & O Australia and NOL Singapore participated for both the berths but could not qualify during the RFQ stage as they failed to comply with one of the conditions of the RFQ. The Consortium of TATA Steel and IQ Martrade, Germany emerged as the successful tenderer for berth no.12. The consortium incorporated TM International Logistics Ltd with whom KoPT, upon obtaining approval of the Central Govt, inked the License Agreement on 29.01.2002 for handling break bulk and clean dry bulk cargo other than Coal etc. As both the bids of the container players turned unresponsive, there was no qualified bidder for berth no 11. The KoPT Board decided not to go ahead with the privatization of Berth No 11 further.

**The key features of the BOT project of Berth No 12 are as follows:**

Investment In Rs crore	Land area In sqm	Capacity in MTPA	MGT	Royalty
115.00	81,300	2.0	0.45 MTPA rising to 0.6 MTPA by 26 <sup>th</sup> year	10.511 % of the gross revenue going up to 10.855%, subject to Rs 1.6 crore per annum.

*At the end of the Agreement period of 30 years, the assets of TMILL would revert to the port on payment of the terminal value of Rs 2.3 crore, less amounts due to KoPT. TMILL gradually expanded the facilities from initial investment of Rs 23 crores going upto Rs 115 crores. They have deployed 2 MHCs, different shore handling equipment, covered the open*





*Storage with a full rake siding.*

TMILL is presently handling more than 2 million tons of cargo per annum at Berth No 12 at effective shipday output of about 12,500 tons with KoPT earning a royalty of Rs 43.84 per ton from this berth.

**The debate regarding advisability of pursuing with the tender for selection of the container major at that time for both the berths 11 and 12 of HDC, taken together continued for quite some time.**

## Outsourcing mode... An innovative approach...

By 2007, HDC had 13 berths inside the dock including the newly constructed berth no 2 and 13. Barring BOT berth no 4A and 12, the dry bulk cargo (other than coastal thermal coal) used to be handled by conventional means, using Ship's cranes at the bare berths like 2, 4B , 8 etc. The average ship-day output of dry bulk cargo handled conventionally during 2007-08 was around 5700 tons. This, coupled with the growing trend of dry bulk cargo, resulted in an abnormally high PBD and TRT of Dry Bulk vessels at 4.6 days and 8.03 days respectively. Hence, a strong need was faced to improve the productivity of the dry bulk cargo handled conventionally at the existing berths like 2, 4B and 8. In addition, the port was saddled with the problem of addressing the critical issues of (i) compensating the apprehended loss of revenue due to the likely diversion of 10 to 12 Million tons of Crude traffic to Paradip and (ii) the need for generating adequate corpus for the superannuation fund and meeting a substantial portion of expenditure of KDS.

In order to address these critical issues, it was decided to equip Berth No 2 and 8 by adopting a model where the private service provider would deploy, operate and maintain the required equipment for handling dry bulk cargo at its cost and arrangements, being paid by the port on the basis of cargo actually handled. The tariff was to be realized from the



importers/exporters by the port by incorporating suitable tariff in its SoR that would provide adequate contribution after meeting the contractual expenses. This model was approved by the Board in principle and the tender was invited in November, 2008 as per the terms and conditions approved by the Board and the processing was completed by April, 2008. However, some major issues were raised in May, 2008 from both internal and external sources viz. (i) the eligibility criteria of the tenderer, (ii) under the cost-based Tariff regime laid down in 2005 Tariff guidelines, the port is not entitled to recover any additional amount over and above the payment to be made to the contractor as per the quoted rates in the proposed model, as port would not be getting any ROCE in absence of any capital expenditure and any additional amounts if recovered using the rates of the prevailing Scale of Rates (SoR) would likely to get adjusted in future tariff settings and (iii) the BOT approach would be beneficial as Royalty from BOT contracts are not considered as revenue for the purpose of tariff setting as per Tariff Guidelines of 2005. The Officers' Forum and the workers Unions constituted a committee viz. Haldia Dock Bachao Committee who filed a PIL against the project on the basis of the above issues. The problems got further compounded with media getting actively involved with their own version of the entire matter that immediately drew public attention and created confusion in the decision making process.

The issue as to whether KoPT would get financially benefited out of the project

was not easy to address at the relevant point of time. This was because the actual revenue earned by KoPT by rendering different services at the relevant point of time was found to be higher than the permissible revenue as per Tariff guidelines of 2005 assessed on the basis of admissible costs and allowable return on capital employed and the surplus so generated were to be adjusted by TAMP while dealing with the future SoR proposal. Hence, it was essential to find out at that point of time as to whether KoPT would be able to earn additional revenue from the proposed outsourcing project.

The matter relating to the eligibility criteria was examined by the competent governmental authority who cleared the same by March, 2009. As regards the issue, whether KoPT would be able to earn revenue over and above the actual contractual expenses, activity wise surplus / deficit was estimated for the years 2009-10, 2010-11 and 2011-12 upon taking into account all the admissible costs and permissible ROCE for the different activities as well as the estimated income made on the basis of the projected traffic duly adjusted with the emerging loss of Crude traffic. The outcome of the same as presented before the Board is given in the table below:

(in Rs crores)

Item	2008-09	2009-10	2010-11	2011-12
<b>Cargo</b>	(-) 37.22	(-) 133.40	(-) 174.84	(-) 198.85
<b>Other activities</b>	(-) 62.51	(-) 74.37	(-) 82.80	(-) 84.77
<b>Total</b>	(-) 99.73	(-) 207.77	(-) 257.64	(-) 283.62



The above analysis clearly brought that KoPT was in position to earn additional revenue to the tune of Rs 208/- crores in 2009-10 which could go upto Rs 284/- crores by 2011-12 to reach upto the permissible revenue limit comprising the admissible costs and the permissible return. Out of this, the cargo might contribute additional revenue of nearly upto Rs 200 /- crores by 2011-12. It was further assessed on the basis of Upfront Tariff Guidelines of 2006 that the Upfront Tariff in case of BOT route or estimated cost in case of outsourcing would be about Rs 94/- per ton. Hence in case the project is implemented in the BOT mode, even at 25% revenue share (achieved at Paradip port at that time) on the estimated upfront tariff of Rs 94/- per ton, the royalty to port would be about Rs 23.5 per ton which for likely annual traffic of 8 million tons for 2 berths came out to be Rs 18.8 crores. The tariff guidelines only permitted the BOT operator to earn 16% ROCE after meeting its cost from where it may share revenue with the port which for the projected investment of Rs 150 crores was only Rs 24 crores and as such the revenue share of Rs 18.8 crores from this amount was also found very optimistic. **The findings of the study were presented before the Board in detail with all members present, in its much talked about meeting of 25th April, 2009 for award of contract to HBT for equipping of Berth Nos 2 and 8 when the agenda was discussed threadbare for more than 4 hours.**

KoPT Board after deliberating on the details shown in the said presentation

in its meeting held on 25th April, 2009 approved the award of contract to the consortium of ABG Infra logistics and ABG Kolkata who formed the SPV viz. Haldia Bulk Terminals Pvt Ltd. The HBT invested about Rs 140 crores for providing 3 MHCs, and other shore handling equipment at each of the Berth No 2 and 8 for handling dry bulk cargo both at ship face and on shore in an integrated manner at Minimum Level of Productivity (MLP) of 20,000 tons of ship-day output under predetermined contractual provisions at their cost, expenses, manpower etc. The port would pay to them for the cargo actually handled at the rates determined through tender and there would be penalty/incentive depending upon shipday output actually achieved vis-a-vis MLP. The beneficiaries of the services i.e. receivers/shippers would pay to the port as per port's productivity linked Scale of Rates. The contract for both the berths commenced in September, 2010.

The port also grouped the various commodities in an innovative manner and allocated the admissible costs and returns appropriately as the mode/mechanism of handling while framing the SoR which led to obtaining reasonable rates for commodities handled at Berth No 2 and 8 using MHCs and other equipment. The rates so approved resulted in achieving the contribution to KoPT exchequer that was envisaged from this project.

The detailed scrutiny of the tendering process and detailed assessment of benefit of the outsourcing model vis a vis



the BOT arrangement might have caused the project of equipping at Berth Nos 2 and 8 commencing a bit late but such scrutiny had made it abundantly clear to KoPT that benefit of implementing similar projects through private investment in future lies in the outsourcing model. This model was appreciated by the Ministry as an alternative model for facility creation on private investment and was referred as the Haldia Model for quite some time.

Although the contract awarded to HBT did not survive for more than 2 years for various reasons leading to both domestic and international arbitrations, policy-wise this output based outsourcing model was found to be an effective alternative to BOT mechanism in development of port facilities such as equipping etc. through private investment where the port stands to be substantially benefited by way of applying its own tariff on the

beneficiaries of the services.

*The outsourcing model in respect of equipping of Berth No 2 and 8 for the first time allowed KoPT to earn revenue from cargo handling services on shore at these berths, the revenue of which till then was accruing fully to the private cargo handling agent. This development, within a few years brought to the fore the issue of earning from shore handling services at other berths, also resulting in KoPT becoming the first major port introducing payment of Royalty by the Handling Agents and Stevedores in 2015 for Dry Bulk cargo at HDC upon obtaining approval of the Ministry. This ultimately paved the way for adoption of Stevedoring and Shore Handling License Regulation by all major ports that empowers the ports to earn royalty from shore handling services from licensed agencies.*

## The developments post HBT abandoning the contract...2012-13 to 2015-16

HBT commenced the contract at Berth No 2 and 8 in September, 2010 and

abandoned it in September, 2012 i.e. exactly after 2 years.

**the traffic was showing a downward trend as indicated in the table below.**

(in million tons)

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Total Cargo	31.02	28.08	28.51	31.01	33.51	34.14
Crude	4.41	2.16	0.56	0.79	0.50	0.45
Coking Coal	6.01	4.94	4.5	5.35	6.00	5.72
Iron Ore	2.17	2.35	1.98	1.60	1.24	1.55



HDC was passing through the worst phase at that time because of;

- Due to the sudden exit of HBT in October 2012, KoPT faced severe problems in handling gearless vessels which came in large numbers when HBT was operating Berths 2 and 8, leading to cargo diversion to neighbouring ports.
- A huge workforce inducted by HBT lost their jobs resulting in agitation by these workers including demonstrations at the residences of senior officers.
- Inclusion of shore handling operations as a component of integrated handling at Berth No 2 and 8 had also led to the equipment and manpower of the licensed shore handling agents becoming surplus, in the event of abandonment of the contract. This was further aggravated due to sharp fall in cargo.
- The rates obtained in the subsequent tenders for integrated handling at Berth nos 2 and 8 were exorbitantly high, shrinking KoPT's share of revenue vis-a-vis the reserve/norm, leading to the discharge of the tenders.

- The overall gloomy situation sent an adverse signal about HDC amongst the trade, industries and the maritime world.

The port management warded off the adverse conditions with resilience. It had a number of interactions with the trade and industries, political leadership at Haldia, the service providers as well as media. The advice of the Ministry was also taken. As a first step, the port decided to deploy Mobile Harbour Cranes expeditiously at Berth No 4B on outsourcing mode leaving the shore handling for the licensed agencies. At the same time, the port proposed to the Ministry to approve recovery of Royalty from Shore Handling Operations from the licensed agencies to make good the revenue that it lost from shore operations after the exit of HBT. This model was also subsequently adopted for Berth No 13. But for Berth Nos 2 and 8, shore handling was also decided to be done through outsourcing arrangements along with MHCs as the same was also necessary to invoke risk-purchase provision of HBT contract. With a view to encouraging

**The features of the equipping projects are shown in table below:**

Sl. No	Project	Service Provider/ Year of commissioning	Investment (Rs crores)	Contribution to port revenue per ton*
1	Supply, Operation and Maintenance of 2 MHC at <b>Berth No. 4B</b>	Universal Seaports Pvt Ltd./ July, 2013	60.00	Rs 106.53 per ton
2	Supply, Operation and Maintenance of 2 MHC at Berth No. 2	Bothra Shipping Services Pvt Ltd./ February, 2016	50.00	Rs 146.35 per ton
3	Supply, Operation and Maintenance of 2 MHC at Berth No. 8	OSL Ripley Shipping Pvt Ltd./ February, 2016	50.00	Rs 146.35 per ton
4	Supply, Operation and Maintenance of Shore Handling Equipment for Berth nos. 2 and 8	Ripley and Co Stevedoring and Shore Handling Pvt. Ltd./June.2016	40.00	Included in 2 projects at Sl no 2 and 3
5	Supply, Operation and Maintenance of 2 MHC at Berth No. 13	IRC Natural Resources Pvt Ltd. / November, 2016	50.00	Rs 91.75 per ton.

\*includes contribution from wharfage, onboard and cleaning charges.





MHC's in operation

greater participation, the contracts

for MHCs and shore handling at these berths were segregated and the tenders were invited with ceiling rates to restrict abnormally high bids.

**The performance of these 4 berths during 2019-20 are given in the following table:**

	Berth 2	Berth 4B	Berth 8	Berth 13
C a r g o Handled (in million tons)	4.61	3.86	4.35	2.87
Effective Ship day Output in tons.	23556	20646	21928	16692

*During this period, the fall in traffic also gave an impetus to go for creation of transshipment facilities on war footing for bringing additional cargo by addressing the draft constraints. Decision to create mechanized facilities for handling barges on the river to support transshipped cargo was also taken. Special focus was given for increasing LPG traffic and the land lease model was adopted to attract investment.*

## Outsourcing Model applied for projects requiring construction of fixed assets also

In the year 2015, KoPT took a decision for constructing a mechanized Barge Handling Terminal on river Hooghly for handling barges bringing lightered cargo from Sagar and deep draft locations of KoPT. It was decided to set up this berth with private funding following an outsourcing model. However, considering the project would require creation of fixed assets etc., in the tender document prepared by the port many of the provisions of the BOT Agreement were incorporated including issues like contingent liability, ownership of assets, transfer of assets free of cost to the port etc. to make the project under the tendered conditions, attractive to the prospective bidders. The project was commissioned in June, 2018 under an outsourcing model.



Subsequently the outsourcing model has also been used for 2 more projects requiring creation of fixed assets as given in the table below.

Sl. No	Project	Service Provider	Investment (in Rs crores)	Contribution to port revenue per ton*
1	Construction, Operation and Maintenance of a fully mechanized terminal for handling dry bulk cargo from Barges and Mini Bulk Carriers on river Hooghly	Haldia Floating Terminal Pvt. Ltd.	80.00	Rs 70/ per ton
2	Fly Ash Jetty on river Hooghly	IRC Ltd	2.00	Rs 15/ per ton



Outer Mooring in operation



Floating Terminal

## Authorization/Licensing Model...

Lighterage of cargo between the Mother vessels and Barges was in vogue at Sagar and other deep drafted locations of KoPT for ages. Such operations including arrangement of barges etc. are undertaken by the private agencies. KoPT felt the need for making such lighterage / transshipment operations more safe, productive and bring the gearless vessels within the ambit of such operations under arrangements to be regulated by the port. Another objective was to promote Transshipment at deep drafted locations for bringing additional cargo to the port including handling of Capes/Minicapes by providing improved lighterage and transshipment operations.

Considering the specialized nature of the job, it was decided to engage a service provider for providing Floating Cranes for cargo transfer operations from all types of OGVs to barges and MBCs in deep drafted locations, which would come to KoPT for final discharge.

The contracting/outsourcing model was found to be inappropriate in this case as the outsourcing model is based on direct supervision of the operations of the private players by the port and certification of performance by the port officials for releasing payment to the service provider. This was found to be a near impossible proposition at far off





Floating Cranes in operation at Sagar

locations in the deep sea. As such, it was decided to grant authorization through a license to the service provider who would deploy, operate and maintain Floating Cranes and other required equipment/crafts at their cost and arrangements and would earn revenue as per TAMP approved rates. There would also be a minimum level of performance, failing which the service provider would charge lower tariff. The qualified bidder quoting the highest revenue share with the port would be granted the license.

The tender invited by the port resulted in parties becoming successful tenderers with whom license agreements were executed for deployment, operation and maintenance of Floating Crane Facilities at Sagar and other deep draft locations for undertaking lighterage/transshipment operations.

*This project has enabled KoPT to handle fully and partly laden capes/minicaples within its limit, leading to growth in dry bulk traffic at KoPT. Besides, the port is also earning about Rs 20 per tonne as Royalty from cargo transshipped by Floating Cranes. The two floating Cranes together have transferred 1.7 million tons and 1.6 million tons of cargo during 2018-19 and 2019-2020 respectively which are entirely additional cargo for KoPT.*

## Land Lease Model

KoPT has also adopted a land lease model for creation of LPG/ LNG storage facilities along with handling facilities at its Oil Jetties by the lessees. So far, BPCL and Hindustan Aegis have created LPG unloading facilities at the oil jetties. Offer for lease of land has also been

### The Floating Cranes have provided deep draft solutions to KoPT within its limit.

Sl. No	Service Provider	Investment (in Rs crores)/ Year of commissioning	Productivity	Revenue Share with the port from the tariff
1	M/s. Ripley and Co. Stevedoring and Handling Pvt. Ltd.	About 42.00 December, 2017	7980 tons WWD for dry bulk cargo	15.61% upto 2 MTPA and 19.41% above 2 MTPA
2	M/s. Sarat Chatterjee and Co.	About 42.00	2.00	Rs 15/ per ton
	(Visakhapatnam) Pvt. Ltd.	January, 2018	Same	Same

made to a consortium led by VLNG for creation of LNG storage and handling facilities at 2<sup>nd</sup> Oil Jetty.

**The following table gives a brief of the same:**

Lessee	Facilities created	Investment within the jetty area (in Rs. crores)
Hindustan Aegis Ltd.	Marine Unloading arms at 1st and 2nd Oil Jetty	150.00
Bharat Petroleum Corporation Ltd.	Marine Unloading arms at 3rd Oil Jetty	100.00

## O&M model

The Container Traffic at HDC was seen falling from 1,49,339 TEUS handled in 2010-11 to 1,01,928 TEUS in 2014-15 with no signs of recovery despite availability of 2 RMQCs and 4 RTYGCs. The availability of these equipment were less than optimum due to frequent breakdown with repairs

taking significantly longer time. This model was accordingly adopted by the port for engaging a service provider on contract for 10 years in 2015 for operation and maintenance of the 2 RMQCs and 4 RTGS of the port at Berth No 10 and 11 of HDC. The service provider viz Haldia Container Terminal Pvt Ltd was also required to invest for procurement of RSTs, Tractor-Trailers etc. for transfer of containers and handling at the CPY. The contract requires the service provider viz Haldia International Container Terminal Ltd. to handle containers at 20 moves per hour. HICT has invested about Rs 20 crores for refurbishing the port owned equipment and procurement of new RSTs, Tractor-Trailers etc.

Since engagement of HICT, the container traffic at HDC had grown from meagre 101928 TEUs during 2014-15 to 177933 TEUs during 2019-20 at a CAGR of 12%. The project is also contributing to HDC @ Rs 2056 per TEU. HICT has not restricted themselves in OandM activities only but are also taking extensive marketing initiatives.

All the above initiatives, primarily routed through private investment in the last decade, have put HDC on the growth track once again as depicted in the table below:

(In million tons)

Year	2015-16	2016-17	2017-18	2018-19	2019-20	CAGR
<b>Cargo</b>	33.51	34.14	40.50	45.21	46.68	8.64%



## Going Back to BOT way

The Govt of India had further modified and improved the BOT arrangements for undertaking PPP projects in the port sector. Although the Outsourcing Model was found to be beneficial to the port, however, it emerged during interactions with various private players that this model may not be appropriate for very high investment projects requiring substantial financial assistance. For such projects, it emerged that the Govt approved bidding system and Concession Agreement would be more acceptable to Financial Institutions/ Banks. In this

backdrop, the projects (i) Liquid Cargo Jetty at Shalukkhali (Rs 175 Crores) and (ii) Mechanization of Berth No 3 (Rs 350 Crores) are being taken up on BOT basis after obtaining approval of the Central Govt through SFC route.

The port, however, with a view to protecting its financial interest incorporated a provision of Minimum Royalty with the approval of the Central Govt in respect of Mechanization of Berth No 3., presently under bidding stage.

## The impact of privatisation... a Haldia experience

*The total private investment at HDC so far made is close to Rs 1000 crores resulting in additional capacity built up of about 20 MTPA which is about 40% of the existing capacity of HDC. Barring the mechanized coal handling berth, the cargo handling at all other berths of HDC is being undertaken by private players under different contractual/commercial arrangements. All the privatization initiatives are fetching*

*significant contributions to the port revenue.*

While it is expected that private investment would improve the quality of service, the most important feature in Haldia's case is that the political environment which has significant influence in port activities at Haldia, had largely contributed to the policy of port development through private initiatives.

Privatization is a bitter pill but it is a pill that will cure.

*Frederick Chiluba*



In fact, a strong synergy has been built between the private players and the local political and trade union environment for which strikes and work stoppages, which were once a regular phenomenon at HDC, have become a thing of the past. Such synergy is also helping the investors to address various worker-related and other local issues, impacting their business with cooperation from the local political leadership. Most importantly, the cordial relationship between the political environment and the private investors has ensured that the workers' interest in terms of wages and other social benefits are not compromised.

The local political environment is also being benefited from the strong synergy in pursuing their most important agenda of ensuring employment generation for carrying out different cargo handling and other operational activity in a sustained manner because of their greater negotiating power vis-a-vis the private

operators. This has created a strong sense of ownership in the local political leadership for ensuring business growth at Haldia.

The port, on its part, is basically managing the different contracts /agreements with a view to ensuring that the service providers render the services at the desired level of productivity and comply with the various terms and conditions of the contracts/ agreements, instead of going for nitty-gritties of the routine operations and labour management. This has also given the port officials the opportunity to concentrate more on simplifying the procedures for Ease of Doing Business and bringing in IT oriented automated systems, undertaking infrastructure development activities as well as addressing the safety issues in different areas of port operations.

**With this, Haldia Dock Complex has already set the true example of a Landlord Port.**

*The author can be reached at [amal.haldock@gmail.com](mailto:amal.haldock@gmail.com)*

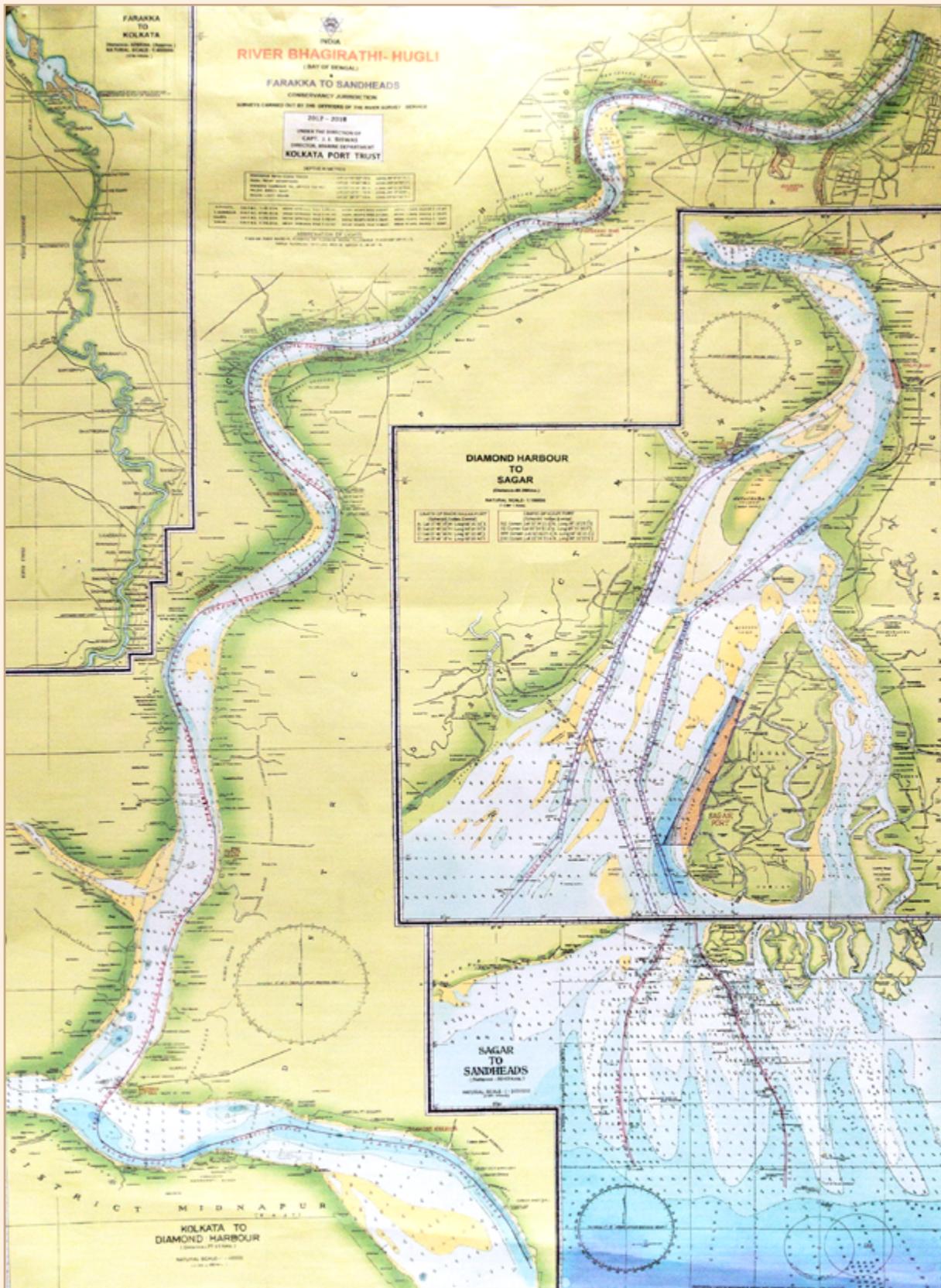


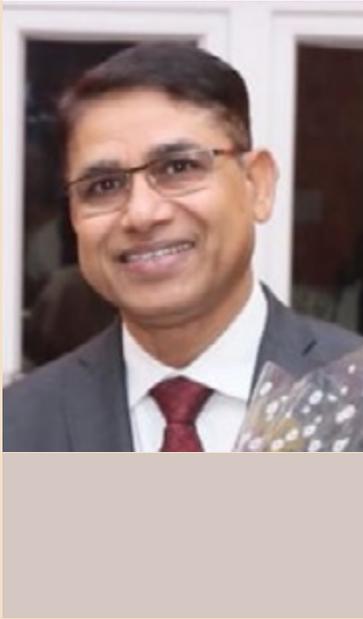


NAVIGATING  
THROUGH THE  
CHALLENGES OF  
THE RIVER  
HOOGHLY  
– A LOOK AHEAD



# The River Hugli Farakka to Sandheads





# MARINE SERVICES OF KOLKATA PORT Leveraging Technology

*Capt J. J. Biswas*

Graduating from T. S. Rajendra, Capt J. J. Biswas joined Kolkata Port in 1979 after a brief stint at sea. A Fellow of the Institution of Surveyors, he worked in various capacities Commodore, Dy. Director, Chief Hydrographer and finally retired as the Director, Marine Department. He led the department through several innovations

“Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.”-

Albert Einstein - Time's Person of the Century (1999)

Human mind by the virtue of its imagination has ushered into an age dominated by revolutionary technological developments. Landing on the moon, a trip to Mars, Microsoft Windows, inception of 4G and 5G, 3D TV, Apple iPods, smartphones, World Wide Web - Internet search engines, social networking websites,- technological developments have impacted our lives in every possible way.

Global marine activities have also been greatly influenced by modern technology. Some of these technological advancements in the last 3-4 decades have in fact transformed the life of the mariners. Fortunately for myself, like all other mariners of my generation, it was

a privilege to witness many of these modern advancements. Present day ships carry, along with other equipment, a GPS (Global Positioning System), ECDIS (Electronic Chart Display and Information System), AIS (Automatic Identification System), RADAR (Radio Aid for Detection and Ranging), NAVTEX (Navigational Telex), EPIRB (Emergency Position Indicating Radio Beacon), SART (Search and Rescue Transponder), DSC (Digital Selective Calling), GYRO Compass, Echosounders etc. and most of these have been introduced during the last 3-4 decades. While each of these equipment have greatly enhanced safety and security of the ships, no other single technology like GPS has impacted the life and work of the mariners so intensely.

The Global Positioning System (GPS) is a constellation of 24 artificial satellites uniformly distributed in 6 orbits (plane) such that there are minimum 4 satellites





Pilot Vessel 'Samudra' launched at Newcastle-upon-Tyne, UK - 1964

per orbit. These satellites circle the Earth at an altitude of about 20,000 km and complete two full orbits every day. The first prototype spacecraft was launched in 1978 and the full constellation of 24 satellites was made operational in 1993. Originally limited to use by the United States military, civilian use has been allowed since 1994. Radio waves from these satellites are decoded by the GPS receivers and by combining signals transmitted by several satellites, the receiver can calculate its geographical position on the Earth (i.e. its latitude and longitude) with an accuracy of  $\pm 1.5$  m. Several other countries like Russia, China, European Union and even India (around India only) are also now capable of providing GPS services through their own satellites.

The impact of GPS on deep sea navigation can be appreciated if we compare the only technique available

in pre GPS days for ascertaining a ship's location with the help of celestial bodies. The altitude of a celestial body i.e. its vertical angle with the horizon was first measured through a Sextant (one sixth of an arc- an instrument with two reflecting mirrors in the same plane with an arc of 60 degrees). This information was correlated with an Almanac and precise GMT (Greenwich Mean Time) maintained by a Chronometer and then deducing the geographical coordinates through a complex and lengthy mathematical equation. Accuracy of such observations could, at best be, one nautical mile. Minimum three celestial observations were necessary for one complete result. As no other celestial body, apart from the Sun, was visible during the day, one had to depend on the twilight sky, available after sunset and prior to sunrise. Thus, the ship's position could be ascertained only a





Acetylene gaslight

few times daily. Cloudy sky meant 'no observation' and the ship continued to move on assumptions i.e. on DR (Dead Reckoning). Quite often, the ship deviated from its course in wind and current. The channel in deep sea being very wide, such deviations did not affect except delaying the ship's itinerary. But not knowing the correct position for a long period or for several days at times,

itself, was a cause of great anxiety. The GPS receiver, by continuous recording of the ship's location with great accuracy, has removed all such uncertainties in a single stroke. In the pre- GPS era, the Sextant was the most important equipment on the bridge and a junior navigator was always advised to take utmost care in its handling and storage to the extent that he should save the equipment even at the cost of his own life. Though all ships are still required to carry a Sextant as per regulation, the navigators of the post GPS era have hardly any exposure to its use.

In keeping pace with the global trend, Kolkata Port too pioneered into adopting advanced technological solutions for its marine operations to enhance safety and efficiency and resolving issues which otherwise appeared insurmountable. It is my endeavour to highlight few such initiatives taken by Kolkata Port in recent times which revolutionized the marine operations in this port in terms of efficiency and cost. It is essential to provide a brief sketch of marine activities in Kolkata Port for proper appreciation of these initiatives.

## Marine Department- Past and Present

The oldest major port Kolkata, is the only riverine port of India comprising two dock Systems KDS and HDC. KDS with two impounded Dock Systems KPD & NSD is situated on the Eastern bank of Hugli at Kolkata 148 kms north of Sagar, the confluence of river Hugli with the sea at Bay of Bengal. HDC is situated on the western bank of Hugli 107 kms south of Kolkata. The port jurisdiction comprises over 620 kms of

the river and sea from Jangipur barrage near Farakka in the north to latitude 20 degrees 45 minutes North in the south. The span of Sandheads anchorage within the port limit itself is 100 kms both in length and width. Ships enter KDS and HDC through two different channels from the sea and their lengths are 232 kms and 125 kms respectively. For conservancy and pilotage of this vast stretch of water body, its Marine





Modern survey vessel Sarojini of SMP, Kolkata

department has been equipped with adequate resources and manpower. In the year 1970 when the port celebrated its centenary, 389 officers were employed in this department as Pilots, Hydrographers, Dredging experts, Marine Engineers, Radio officers etc. Another 5000 employees manned the marine assets comprising Pilot vessels, Survey vessels and stations, Dredgers, Despatch vessels, Light vessels, Mooring vessels, etc. adding to almost 100 in numbers. In fact, a separate Section for Marine Engineers had to be created in the year 1950 for operation and maintenance of such a large fleet of vessels under the disposal of the Marine department. Today, after another 50 years, while the port is celebrating its sesquicentenary, the strength of officers in the department is about 60% of its original strength. The fleet strength has been reduced by almost

50% (inclusive of hired crafts) with commensurate reduction of employees by almost 80%. Such rationalization could be achieved by modernization, adoption of appropriate technology along with prudent outsourcing of some of the activities. Even today, the department owns five principal sections and three minor sections, each dealing in different and highly specialized subjects of marine technology. The primary sections comprise River Pilotage, Harbour Pilotage including Dock Pilotage, Hydrographic Service, Dredging and Despatch Service and Marine Engineering Service.

The port operations on the Hugli commenced in the 16th century when Portuguese and the English merchantmen sailed up the muddy waters of Hugli for muslin, exotic spices etc. In order to encourage



vessels to proceed to Kolkata via Hugli safely, the directors of the East India Company sent a 60 tons pinnace called 'DILIGENCE' in the year 1667 to take notice of the channels in the river and its entrance, laying the foundation of the Indian Marine Survey Department. Simultaneously, it set up the Bengal Pilot service in 1669 for safe transit of the vessels. The company also set up another establishment for demarcation of the channel by transits, buoys and light vessels and dredging the same.

One year after the formation of Calcutta Port Commissioners i.e. in the year 1871, the Marine establishment

all its assets. Another 10 years hence in 1881, 8 hydrographers from Indian Marine Survey Department were transferred to the Port Commissioners and the remaining officers joined the Navy for setting up its Hydrographic establishment. Subsequently in the year 1962, another wing of this service called Hydraulic Study Department was formed with the help of 7 River Survey officers headed by Dr. D.M. McDowell to carry out systematic study and research on the behaviour of this typical river. The Hydraulic Study Department, since then, apart from providing valuable guidance, has partnered the



Inauguration of state-of-art survey launch 'River Pearl -1' by Shri Mansukh Mandaviya, Hon'ble Minister of Shipping - January 2018

of the Government which dealt with the laying of buoys, terminal facilities, conservancy of the port was transferred to the Port Commissioners along with

Marine Department in identifying and espousing appropriate technological inventions from around the globe. The Bengal Pilot Service, which was under





Amphibian Boat under trial at Kolkata



the direct control of the Government since inception, was handed over to the port Commissioners immediately after independence in November 1948. Its name was changed to Calcutta Pilot Service after the amalgamation of the river and port sections in 1964.

As a navigable waterway, the Hugli does not enjoy the best of reputations. Treacherous shoals and sand banks lurking a few feet under the water surface, swirling currents and sharp bends, onslaught of bore tide make the Hugli one of the most dangerous navigable waterways of the world. Responsibility of safe passage of the ships is thus vested upon the pilots, having acquired the required expertise

and skill over a long period of training and practice. The pilots would take charge of a vessel right at the entrance to the port at Eastern Channel in the Bay of Bengal, some 80 kms south of Sagar Island. A seagoing pilot vessel, by turn, was required to maintain the 'Pilot Station' at Sandheads round the clock and the pilot transfer was undertaken through small boats. Along with the Bengal Pilot service, the Commissioners also inherited two very old pilot vessels 'Andrew Fraser' and 'Lady Fraser' which were replaced by two oil burning frigates the 'Bengal' and 'Hooghly', converted in Canada in 1949. These were replaced by two modern dieselized air-conditioned pilot vessels 'Sagar' and 'Samudra' in 1963-64.



# Technology - The Troubleshooter

The pilot boarding at Sandheads through small motorboats was a risky operation and quite often the boating remained suspended due to unfavourable weather when shipping became a casualty. Maintaining two large seagoing pilot vessels with a large contingency of officers, engineers and employees was becoming rather costly and the port could hardly afford to incur the cost of their replacement. Therefore, the port sought for a globally accepted technological solution to overcome this problem. A Vessel Traffic Management System [VTMS] with three integrated RADAR surveillance stations (Haldia, Sagar and Frasergunj), connected through microwave data link, was established in April 1996. The system was further revamped by establishment of a stand-alone VTS station on Sagar Island in April 2005 and one more

RADAR station at Dadanpatra in 2014.

On successful trial of VTMS, compulsory pilotage limit of the port was shifted northwards to Sagar (Middleton Point) in August 1997 and the pilots commenced providing remote guidance to the Masters of seagoing vessels for their sea passage between Sandheads and Sagar from VTMS control station at Haldia. The pilot vessels were withdrawn from service and physical pilotage distance was reduced by 80 kms.

A pilot Station was established on Sagar Island where the pilots could take rest between one outgoing and the following incoming vessel. However, the attempt to create a jetty inside an excavated basin at Sagar for round the year movement of pilots from ship to shore remained unsuccessful due to vagaries of nature. Thus, the pilots are



Newly commissioned Pilot Vessel 'Ma Ganga' - Aug 2008



compelled to commute to the shore station through a makeshift jetty in fair weather and to a small inland pilot vessel 'Ma Ganga' in foul weather. However, the port is now carrying out trial operations of an Amphibian Boat at Sagar, capable of treading both on land and on water without the support of a jetty. The trial has been successful in the current winter and there is a bright prospect of being successful in the monsoon too. Therefore, if this process of seamless pilot transfer between shore-to-ship becomes a reality, Sagar Pilot Station will be able to function throughout the year as was planned initially even without a jetty, and the existing pilot vessel Ma Ganga can also be withdrawn from service.

Thus, Kolkata Port was not only a pioneer in establishing a chain of VTMS RADAR stations in India but also in

providing remote guidance to the ships as a substitute to physical pilotage. With timely and proper adoption of this technology, the port was able to enhance safety of operation, eliminate uncertainties in shipping during adverse weather, ensure better availability and faster mobilization of pilots while bringing down the operational cost.

Another crisis was resolved in 2008 through technological intervention. The depth of Auckland channel (between Haldia and Sagar) fell abruptly due to adverse morphological changes, making it difficult for the larger vessels (Panamax) to enter Haldia even with minimum parcel load. The port, in consultation with the pilots, reduced the channel width on 15th August 2008 from 460 m to 345 m and acquired appropriate technology (Pilot Kit) for precision navigation through the



Fully laden Cape vessel (M V Samjohn Solidarity, LOA-298m with 1.65 lakh MT of coal) had lightered at Sandheads in October, 2018



channel of reduced width. The Pilot Kit comprised a laptop with in built Electronic Navigation Chart procured from the British Admiralty along with MARIS pilotage software from Singapore and a portable GPS receiver. This new technology also allowed reduction in the width of the KDS channel to 300 m and thus helped the port not only in restoring the lost draft but also in reducing dredging cost.

Gradual technological advancements have also been made in other conservancy works of the port. Observation and broadcast of tide is of utmost importance for Pilotage, Hydrography, Dredging and all other marine related works. In the early days of the port, recording of tide was done manually and the report was broadcast through semaphores, a long mast having three signaling arms indicating rise of tide in metres and decimetres, which was visible to all ships from a distance. Automatic tide gauges were installed at important locations for round the clock recording of tidal data on a graph paper. Most of these gauges were of pneumatic type connected to an 'Air bell'. Newman's pattern or float type tide gauges were installed at Haldia, Garden Reach and Tribeni. Walkie talkie or VHF transmission of tide commenced since 1990. Trial of a few electronic gauges with auto transmission of tidal heights commenced since 2010. The project of installing modern integrated sensor based electronic gauges with auto transmission facility including two buoy based gauges at Sagar and Eden is under implementation at present.

Since the days of ancient civilizations, navigators relied on the 'Lead Line' for ascertaining the depth underwater. A weight, typically lead, attached to a

calibrated rope was thrown into the water and when it hit the bottom, the reading on the line revealed the depth below the water surface to an accuracy of maximum 10 centimetre. Four Kelvin Hughes echosounders fitted with 'magnetostrictive' oscillators were procured after independence. The port, thereafter, upgraded to electronic microprocessor based echosounders, initially to single frequency and then to Dual frequency which provides the depth up to a resolution of  $\pm 1$  centimetre. Dual frequency echo sounders operate on both 30 and 200 KHz simultaneously and are, thus, capable of identifying the slush content on the river bed offering depth advantage for navigation. This service has also been using multibeam echosounders for 100% coverage, sub-bottom profilers with multiple frequencies for under sea-bed investigation and side scan sonars for detection of wrecks and underwater obstructions. However, in view of high cost and the requirement being occasional, these services are being hired as necessary instead of making capital investments.

Like the deep sea navigation, QUINTANT (variant of Sextant) has been the most trusted friend of the hydrographers in determining the location on a chart. Instead of measuring vertical angles, the hydrographers observed two horizontal angles simultaneously between three known shore objects and plotted them with a Station Pointer. The surveyors also used other optical instruments like Distomat, Range Finder etc. for special purposes. No survey, however, was possible on days when the visibility was poor. Oldest electronic position fixing instrument that was used in Kolkata port was Hi-FIX. SYLEDIS, a patented French electronic position fixing system was set





Ships of the future - Wind Energy Propulsion with Flettner Rotors

up in May 1983. Syledis chain comprised four shore transmitting stations at Frasergunj, Sagar, Dadanpatra and Roychak. After the Sagar Syledis station was endangered by sea erosion, the station was shifted to Haldia in 1991. This user friendly system made the surveys simpler, accurate and faster. Immediately after civilian use of the GPS was allowed, the port also geared up for making best use of the same in 1994. However, the accuracy provided by the system was not adequate for survey and research works and further, there was some induced inaccuracy in the form of Selective Availability to deter its military use. These issues were addressed by setting up a Differential station on a known location ashore which observed the induced error in GPS signal and transmitted the corrections to the receivers on board. The Differential Global Positioning System (DGPS) is providing an accuracy of  $\pm 1\text{m}$ . The base station is transferable

and can cover the entire waterway under the control of the port.

Cartography, processing and printing of charts have been manual till acquisition Hi-Pack software for automatic data acquisition and processing in 2015. Storage of raw data and charts in soft versions in the server has enabled its users to access them at will. The enormous task of printing a large number of charts daily by ports' DUFA Press (replaced by photocopiers in 1990) and then distributing them to all users is no longer necessary. With the new system, the Hydrographic service commenced in-house production of Electronic Navigational Charts which is navigated by the pilots through an open CPN chart plotter software requiring no payment or royalty. Unlike British ENC, the port's in-house ENC is more user friendly and is updated with each survey undertaken by the port. Acquisition of this system has, therefore, literally



transformed the Hydrographic Service by improving the quality and efficiency with reduced cost.

The technology in providing lights to the channel buoys has also been upgraded keeping in pace with available technology. Kerosene lanterns were replaced by Acetylene gas lights in the beginning of the 20th century. Solar Lights with panels were introduced in the year 1995 which, however, was costly and failed to provide desired results due to rampant pilferage of solar panels. Presently, the port is using compact solar LED marine lanterns with inbuilt solar panels. These programmable lights are cheaper and long lasting, having better visibility and somewhat damage-proof. As these lights are of no use to common people, incidences of pilferage have been rare. High intensity LED range lights with varying arc of visibility are also now available which can be used for demarcating the transits and entrances to the ports.

Human wisdom and experience cannot still be substituted with technology but it is possible to create a 3D model of the real time scenario in a computer which can be simulated under various imaginative conditions. Results of such studies are dependent on the accuracy with which all ground conditions have been replicated and, thus, may not always be conclusive. Yet, findings from such studies would instill a great degree of confidence in the mind of the decision maker. The decision to increase the dimension of the vessels for lighterage operation at Sagar Anchorage is a classic example.

The vessels that were being accepted at the Sagar anchorage since time immemorial was maximum of Panamax size i.e. LOA-240 m and beam 32.2 m.

The port mobilized two floating cranes for faster transfer of cargo by barges with resultant quicker turnaround of mother vessels in 2017. This initiative, however, failed to evoke expected enthusiasm amongst the trade, apparently due to the poor parcel load carried by the Panamax vessels (Approx. 30,000 T at an average draft 9.5 m). Since increasing the draft was not feasible, port had to consider the only option of accommodating vessels of higher dimension at this anchorage. Navigational parameters in this port have been evolved through decades of practice and any major revision was fraught with great risks. After considering the important findings of the model study undertaken through a reputed institute, it was decided to accept vessels of higher dimension with due caution. The port accepted the first Baby Cape size vessel (LOA 253 m beam 43 m) at Sagar anchorage in June 2018 which carried a parcel load of nearly 60000 T. Being encouraged with this success, for the first time in history,



Compact solar lanterns for buoys and transits





Sensor based automatic tide gauges



the port started accepting partially laden Cape vessels (LOA-300 m) at its new anchorage just 7 miles below Sagar since October 2018 to allow transfer of cargo by inland barges in fair weather, increasing viability of such operations.

Two more such scientific studies are in progress at present, one for examining the feasibility of removing the lock gate system from Haldia Dock towards

increasing the number of ship calls each day and the other for examining the feasibility of berthing vessels at Baj-Baj petroleum wharves during the Bore Tide period. Whatever the findings of such studies might be, the same must be weighed with caution followed by an appropriate decision while keeping in mind that 'Fortune favours only the brave'.

## And miles to go...

Technology is an ever-evolving process, millions of scientists across the globe are relentlessly exploring new ideas which would reduce human intervention and cost. Preservation of the environment is also a priority and marine operations are of no exception.

Ship builders, owners and operators are now obsessed with the 'Green-ship' concept. Use of LNG as fuel, fitment of Sulphur Scrubber System for vessels using conventional fuel (ultra-low Sulphur Diesel), advanced rudder and propulsion system, waste heat recovery system, exhaust gas recirculation etc. are already the norms in modern ship

construction. Cochin Shipyard Limited, Kochi is in the process of constructing two Autonomous Electric Ferries for ASKO Maritime AS, Norway. Experiments are being conducted for development of hybrid propulsion systems, using solar and wind energy in tandem with or without the use of conventional fuel. Sail and Kite Propulsion System, Fuel and Solar Cell Propulsion, Energy Sail technology with an array of rigid solar sails, Flettner rotors (special vertical spinning cylinders which utilize the Magnus Effect for ship propulsion) is likely to save a lot of conventional fuel. We have already witnessed UMS ships (Unmanned Machinery Space) where



the vessel is fully mechanized with the control room mostly on the navigation bridge allowing a single person to operate and oversee the machinery while ensuring safe navigation of the vessel.

Japan's NYK has already completed a trial on the world's first autonomous ship, a 70,826-tonne pure car truck carrier (PCTC) Iris Leader, sailing from China to Japan in September 2019. The objective of such trials with Maritime Autonomous Surface Ships (MASS), is loud and clear - 'Minimize Human Intervention and Cost'.

The US Coast Survey department in association with concerned Marine, Research and Aviation departments are undertaking extensive trials of Unmanned Surface Vehicles (USVs), programmed to move on pre-planned survey lines, for survey of shallow and murky waters along the coast line which otherwise are inaccessible by regular survey launches. Prospect of Hydrographic Survey through satellites is also being examined seriously.

Vacuum-based automated mooring technology (Moor Master) developed by Cavotec has eliminated the need for conventional mooring lines and mooring

gangs. Remote controlled vacuum pads on the quayside and attached to hydraulic actuated arms, moor the ships in a few seconds. Though the system is already in use in some parts of the world, its efficacy in areas having strong surface current and high tidal range is yet to be established.

Ship handling during berthing is one of the most sophisticated tasks that a navigator must perform and the task becomes more complicated in adverse current and wind. Experienced human brain can only decide the most appropriate action to be taken under the prevailing circumstance. Scientists are presently experimenting with the use of Artificial Intelligence Technique to perform the same action that the human brain is capable of during berthing i.e. to replicate the human brain through Artificial Neural Network.

List of such technological inventions will be endless and to remain relevant in this era of stiff competition, these have to be welcomed. However, the age-old proven practices should not be abandoned merely for the sake of modernization. Ground realities must be considered during each step of modernization as skilled manpower is abundant in our great country.

**The author can be reached at [biswasjj@gmail.com](mailto:biswasjj@gmail.com)**

*"I slept and dreamt that life was joy. I awoke and saw that life was service. I acted and behold, service was joy."*

**- Rabindranath Tagore**



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**  
Formerly **Kolkata Port Trust**



# MAINTAINING NAVIGABILITY OF THE HUGLI RIVER -A CHALLENGE

*Tapobrata Sanyal*

Shri Tapobrata Sanyal is retired Chief Hydraulic Engineer of SMP, Kolkata and now a free-lance consultant on River Engineering with varied experience in Government of West Bengal. He is the recipient of Best Technology Paper on Geotextiles, Central Board of Irrigation and Power, 1996 and holds a Lifetime Achievement award from International Geosynthetics Society India, 2006

*Any serious discussion about the Port of Kolkata (now renamed Syama Prasad Mookerjee Port ), the only riverine port of India, invariably raises the issue of navigability of the river Hooghly. The waning depth of the river has long been a major issue of concern, more so now, in view of the current global trend to go in for bigger ships.*

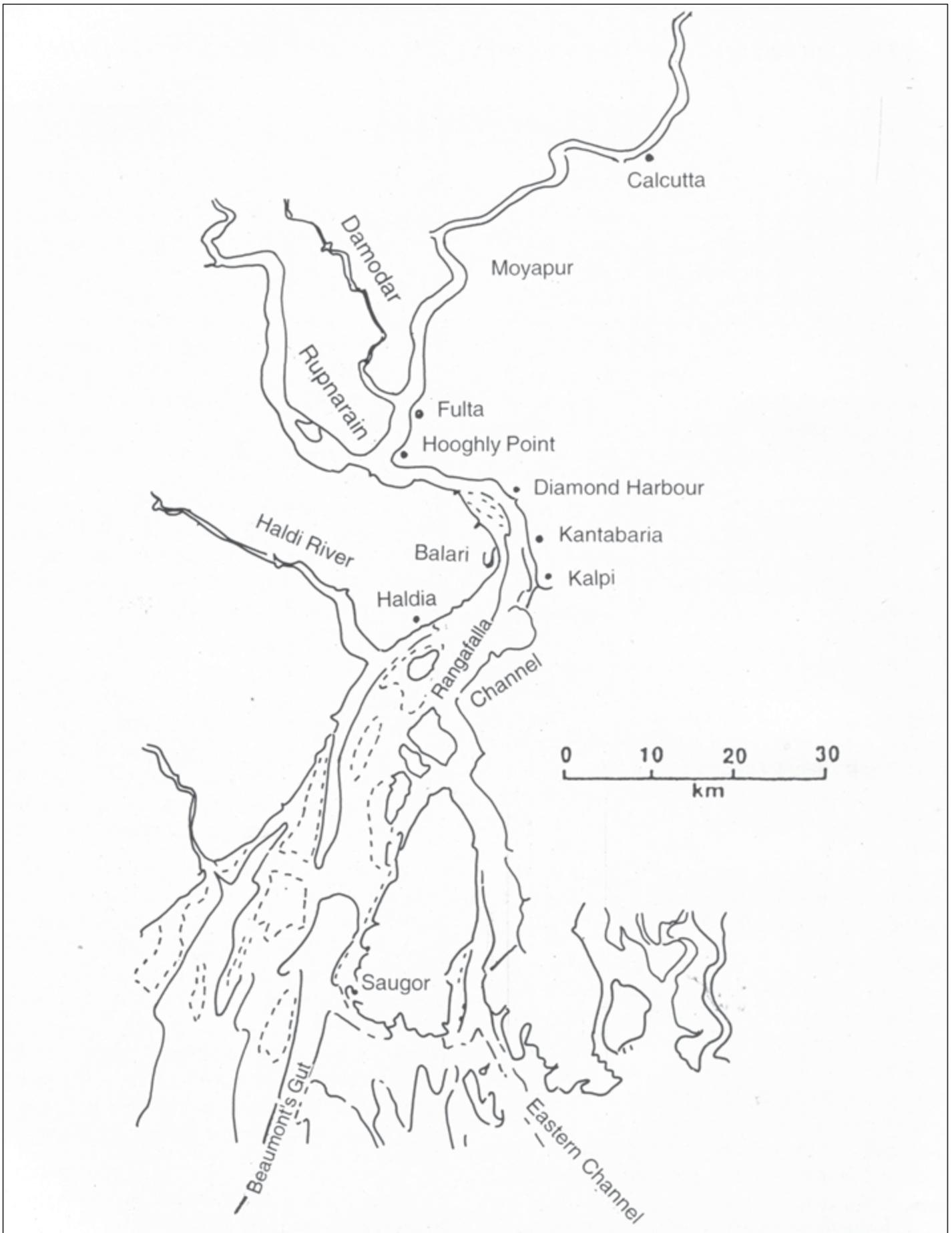
*In the following articles of this section, the various causes behind the relatively shallow depths of the river have been outlined along with the consistent efforts of the port to maintain navigability of the river. Plausible technical solutions to sustain improved river-depth have also been indicated in brief in conclusion.*

## Introduction

The term 'navigability', according to lexicons, is indicative of a waterway's depth and width safe for movement of water-borne vessels. The point that is missing in the definition is dimensions of vessels that are supposed to navigate along the waterway. Navigability is essentially vessel-specific. A river may be navigable for small boats, but may not be so for bigger vessels or ships. In so far as the river Hugli is concerned, its poor navigability is often brought to focus in media presumably on the notion of the

river's big-ship-worthiness. Gone are the days when lighter ships using sails or powered by steam-engines used to navigate along the Hugli. Ship-sizes are now far bigger requiring deeper water to steer them safely. Haldia docks were designed to handle oil-tankers. Loaded oil-tankers in general, according to current international practice, require at least 8 to 9 meters of governing depth which is hardly available in the Hugli normally even in its estuarine reach. In fact, navigability of the Hugli has been a





Index map of Hugli from Kolkata to the Sea



bane since long because of uncertainties about its adequate depth-availability.

In this paper, problems and the causes of navigability of the river Hugli on which docks at Kolkata and Haldia are located

have been dwelt upon in brief along with indications of its morphological changes, the role of Farakka barrage and the nature of challenge that calls for premeditated approach for circumvention.

## Kolkata Dock System and Haldia Dock Complex - Their Location

Kolkata dock system is located on the eastern bank of the Hugli while its auxiliary dock complex at Haldia down south is situated on the western bank in its estuarine reach. Kolkata Port is the only major river-based port in the country. Unlike other sea-based ports it has been struggling with inadequacy and uncertainties about depth for decades. In fact, all river-based ports are affected by depth-limitation, posing problems to shipping. The Thames in UK is an example. The Hugli river incidentally was

instrumental in founding a new port-based city at Kolkata centuries back (1686 AD to be precise). When Calcutta was the capital of India during the British regime, the economy of the entire eastern region of India evolved round it. The port has over the years become an inseparable part of the city despite its fall from glory after the capital of the country was shifted to Delhi in 1911. But yet it is difficult to think of Kolkata without port activities even now.

## Depth-inadequacy of the Hugli and its Implication

Fall in depth in a river if persisting for long is a pointer to its failing health. The Hugli however being a tidal river is replenished by semi-diurnal tidal ingress from the Bay of Bengal. Discharge from the upland has however been fluctuating and inadequate all along. The port authority has been struggling to maintain navigable depth for ships in vogue in the river since decades. Dredging operations in the river at vulnerable reaches below Kolkata commenced nearly a century back. Barring surveys, there was hardly any scientific aid to measure and

record hydraulic data for analysis and prediction in the past. As a consequence flow-regulation, when required, was used to be done empirically. Dredging operations were used to be carried out in exigencies. Bathymetric survey was thus the only tool to comprehend the behaviour of the river in the past. Absence of advanced techniques and sophisticated instruments for collecting necessary river-related data eluded systematic and precise collection of data and their collation. The port of Calcutta however can boast of the legacy of an efficient



pilotage system long before its formal recognition in 1870 AD as a major port.

The problem of waning depth of the Hugli stems primarily from recurrent deposit of sediment sourced principally from eroded banks and bed of the river itself along with the load spewed by its feeder rivers and detritus brought with flood tides from the sea. The Bhagirathi -the non-tidal upper compartment of the Hugli -also contributes significantly to the huge sediment load sourced from the Ganga. Floating sediment particles oscillate with the sea-ward ebbs and landward flood-tides twice a day in the Hugli with a portion settling on the bed under favorable hydraulic conditions. Only a small part of it could ultimately reach the Bay of Bengal beyond its precincts.

According to an earlier study, about 80% of sediment in circulation is sourced from eroded banks of the river. Unlike rivers in the developed countries, Indian rivers are not trained and their banks are mostly unprotected. Alluvial bank-soil in the Ganga-Brahmaputra delta is easily erodible and yields to erosive forces of fluvial current, vortices, water-level fluctuation and other uncontrollable factors. As a result, bank-erosion goes on unabated in all rivers connected with the Hugli

## Fluvial Disposition in the Estuary

The flow pattern of the Hugli in its estuarine reach is far more complex than its reaches upstream. Flow in the estuary is governed by several factors. These are-

adding to its sediment load relentlessly.

Characteristics of sediment particles especially their size and plasticity largely influence the sedimentation process. The estuary of the Hugli is characterized by a vast expanse of fluvio-tidal marine sediment comprising sand, silt and clay in varying proportions. The estuarine sediment is coarse at the upper reaches (D50 -0.12 mm) and finer at the lower (D50-0.09 mm). Floating sediment particles with plasticity coalesce under conducting hydraulic conditions and settle on the bed when fluvial current is minimal usually during slack periods.

Transport of sediment with flowing water is a complex phenomenon in the Hugli. Complexity of sediment transport is accentuated by continually mutating governing factors such as the quantity of upland discharge and its duration vis-à-vis amount of tidal ingress, its duration and intrusion of saline water with flood tides among other extraneous factors. Fluvial pattern in the Hugli also frequently changes as a result of these mutating factors. Suspended sediment load when settled on bed raises the bed-level of the river reducing its depth. Interestingly, the path of oscillation of load in the Hugli is different during ebbs and floods.

- Recurrent change in the water level of the navigable track due to alternated high and low tides
- The shape and position of shoals and islands;



- Volume, duration and intensity of sea-bound discharge coming from the upstream (mainly from Farakka Barrage releases),
- Transverse centrifugal forces acting on current;
- Salinity intrusion causing change in water density. Water-density variation leads to formation of density gradient influencing movement of sediment and its deposit pattern. Degree of salinity changes periodically from reach to reach due to variation of upland discharge and tidal volume.
- Meteorological effects on tidal forces and effect of littoral (along-shore) flow.

Transverse centrifugal forces in current incidentally develop as a result of the effects of Coriolis force (deflecting force acting on the flow due to the earth's rotation) and rip current (strong surface current flowing away from the banks due to curvature). Understandably, it is not easy to predict

the fluvial trends in the Hugli especially in its estuary which flares almost exponentially from Kantaberia –a place down-south of Diamond Harbor–up to the sea-face. There are areas within the Hugli where accretive tendencies of sediment are dominant. River-bed at such locations gets shallower and helps develop bed-bars as a consequence of morphological changes within the river in response to influencing factors imposed on the flow. If the hydraulic conditions are conducive, bed-bars may turn into elevated outcrops (islands) within the river (Nayachar island opposite Haldia is an example). The most convenient time for accretion of sediment as already indicated is during 'slacks' i.e. during the brief transitional still-water phase between onset and retreat of flood tides. Tidal asymmetry over different reaches of the Hugli and accompanying seasonal variation of discharge add complexity to the fluvial and sediment transport pattern in the Hugli especially in its estuarine reach.

## Causes behind waning depth

The reason behind the problem of depth-inadequacy of the Hugli is its waning capacity to flush out sediment to the sea. In fact the problem was evident from the time of christening Calcutta as a major port way back in 1870 AD due to lack of head-water supply (Bhattacharya 1995). The Hugli is a difficult river considering its behavioural complexities. During the pre-Farakka years, seasonal flow variations were more pronounced in the Bhagirathi. It would wear different looks in different seasons with banks overflowing during

the monsoon, brimming during the autumn and trickling during the summer. But no apparent sign of behavioural change, the fluvial pattern and the nature of sediment conveyance going on within was perceptible in the tidal compartment from outside. The main flow-paths continue to shift with varying velocity vectors as a consequence.

In fact, one disturbing aspect in maintaining ship-worthy depth in the river is frequent shift of navigable



paths especially in the estuary. Due to wavering of direction of the dominant flow, deep channels frequently change their position. Fluvial direction is dependent mainly on several mutating factors such as tidal volume and its duration vis-a-vis upland discharge, density gradient created in the benthos due to varying salinity intrusion, course geometry etc. Evidently ships are required to be piloted with great caution keeping in view of the depth as well as the width and alignment of the shippable channel. Many sandbars and shoals exist on the river's course. There are many bends too on its way. In fact the Hugli is characterized by three 'B's—bars, bends and bores. Incidence of bores has however come down after increased release of water from Farakka barrage.

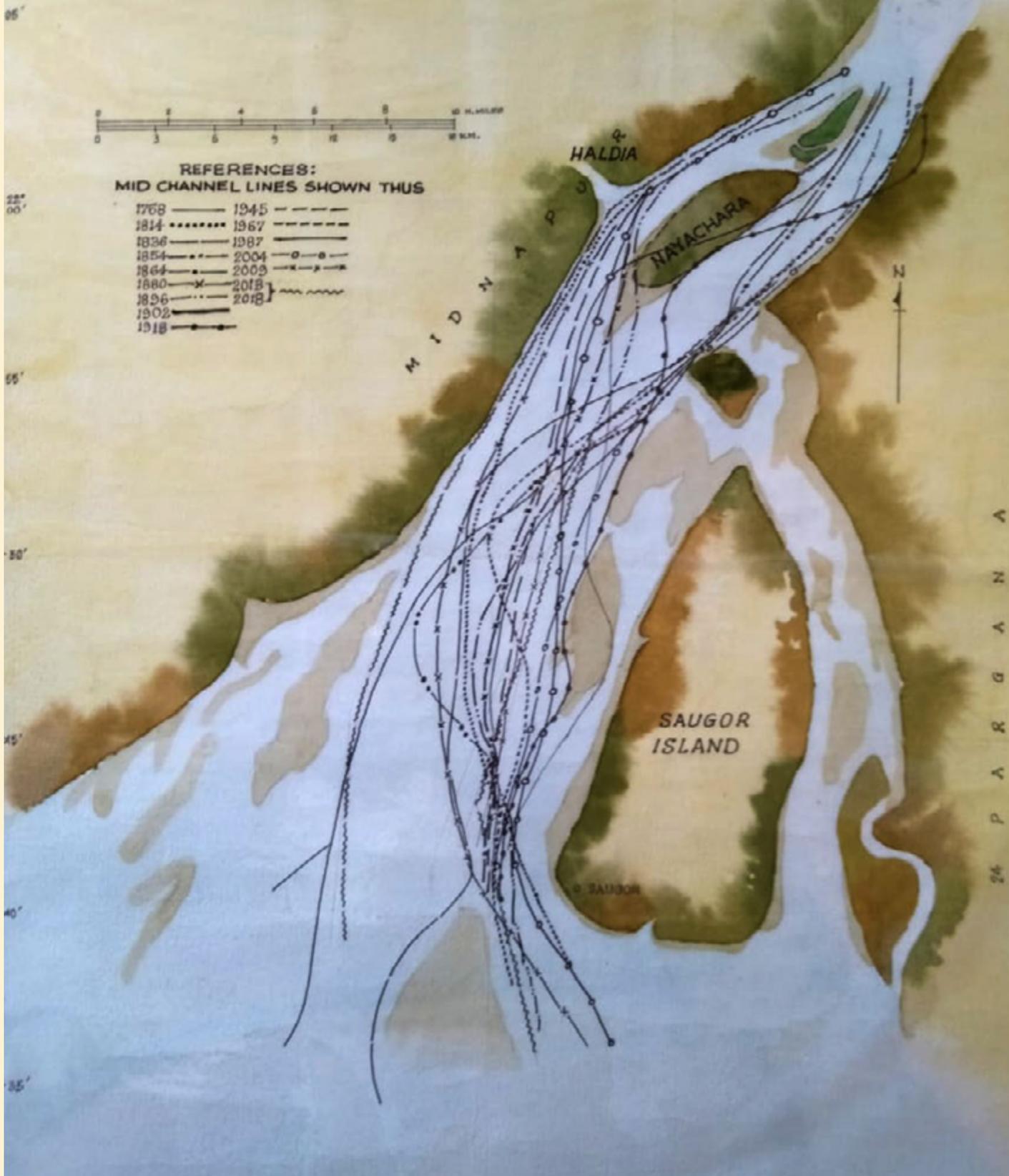
Fluvial dynamism of tidal rivers with two-way flows shapes their morphology, dominantly in their estuarine reach. Studies have shown that fluvial pattern of the Hugli estuary is governed by several factors as already indicated. Besides, diffusion pattern of sweet upland discharge and brackish tidal influx cause density gradient to develop facilitating accretive tendencies of sediment afloat and meteorological effects play active role in triggering fluvial diversities in the Hugli. All these factors over which there is no human control, vary continually.

Morphological changes are more pronounced in the estuary of the Hugli starting from Kantaberia, a place down Diamond Harbor. The width of the river

is about 1.83 km at that point. It flares exponentially from that point and widens to around 30 km at the point of its convergence with the Bay of Bengal. There are fourteen bars from Kolkata to the sea-mouth. These are Panchpara (8 km), Sankrail (10.5 km), Munikhali (14.5 km), Pirserang (17 km), Poojali (26.6 km), Moyapur (33.8 km), Raipur (41 km), Nainan-Nurpur (56 km), Eastern Gut (61 km), Kukrahati (72 km), Balari (88 km), Jellingham (112 km), Auckland (124 km) and Middleton (132 km). The figures in the parenthesis indicate the distance of the bar from Kolkata. Prominent bars in the estuarine reach are Middleton, Auckland, Jellingham and Balari. Opposite Haldia stands the most prominent and the largest land outcrop within the river Nayachar which first featured in bathymetric surveys in 1947 as Nayachar Sands. Nayachar island divides the flow into two channels on its either side viz Rangafala which is about 6 km wide to its east and Haldia to its west which is about half as wide. A few years back a small outcrop has raised its head to the west of the northern end of Nayachar island. This land form is actually an extension of Balari bar. Blockade of flow through Balari could be the reason for its spatial extension. To the south of Kantaberia and opposite Kulpi is Diamond Sands which is apt to change its shape and size in near future having its link with Balari bar if flow conveyance through Balari continues to get impaired. At the southern end of Rangafala channel stands a group of small islands. Two of the three islands in the group viz Bedford and Lohachara



# CHANGES OF COURSES OF NAVIGABLE CHANNELS SINCE 1768



The Hooghly Estuary

have been engulfed by the river. Ghoramara, the remaining island of the group, still holds out. This island which is populated is under severe threats of erosion due to its proximity of the shipping channel. This group of islands was part of Sagar island in the past but got delinked from it subsequently. Other palpable signs of morphological changes are evinced by reduction of the size of Sagar island, bulging of the western face of Nayachar island (which has constricted the width of Haldia

channel) and extension of its southern tail. Obstruction of flow-conveyance along Haldia channel through Balari region is the main reason behind change in shape of Nayachar island. The shape and dimensions of Auckland and Jellingham bars have also altered. In fact all these sands, bars, shoals continually change their shape and position bringing about changes in river-morphology and fluvial disposition adding to problems in navigation.

## Farakka Barrage and its Role

It is pertinent to point out that Farakka Barrage Project was supposed to play a critical role in improving the Hugli in so far as its depth was concerned. The concept of constructing a barrage at Farakka was the brain-child of the British rulers of the undivided India who were concerned about the future of Calcutta port due to waning navigability of the Hugli and started thinking of devising measures to improve the river-depth at least 150 years ago from now. They rightly realized that to ensure the desired level of sustained navigability of the river, sediment carried by it requires to be flushed out to the sea by supply of adequate water from upland. The scheme was initially conceived as a project for improvement of navigability of the Port of Calcutta but ultimately its primary objective got out of the project-purview presumably for more compelling reasons.

The Union Government engaged Dr.

Walter Hensen, a German expert, to determine the minimum volume of water needed to flush out sediment borne by the river for ensuring the desired depth, especially during the rainless months, along the shipping track to Kolkata. Dr Hensen was also called upon to specify the period and frequency of release of water with the help of simulation studies. In other words, the objective of the study was to ascertain as to how much water should flow along the Hugli and for how long, so that the river could sustain its improved depths downstream of the port of Kolkata. Later, Dr. J.J. Dronkers, another expert from Holland, also was inducted to conduct a similar study at the instance of the Government of India. Both of them suggested that in order to rejuvenate the Bhagirathi-Hugli in terms of measurable depth-increment down of Calcutta, a minimum of 40,000 cusecs of water should flow along the river uninterruptedly every day during the dry season (i.e., from January to



May). Availability of the said quantity of water in the Hugli for the remaining months of a year is not a problem. Both the experts were also categorical in their opinion that the said volume of water would be inescapably needed for improvement and sustenance of navigability of the Hugli to the south of Calcutta up to Hugli Point (confluence of the Hugli and the Rupnarayan rivers). According to them, implementation of the recommendations would restore the depth scenario of the Hugli down of Calcutta to the situation prevailing in 1936. Sustained daily discharge of 40,000 cusecs of water during the first five months of a year would ensure seaward flushing of the bulk of sediment load of the river with consequent restoration of depth to the 1936-situation.

Incidentally, prototype studies conducted by the said experts considered another aspect-- what would be the volume of upland discharge to restore the depth-situation in the Hugli back to its 1924-position? The studies revealed that in that case, almost 65,000 cusecs of water would be needed in the dry season (i.e., during the first five months of the year), and that too, without any interruption. The probability of this amount of water reaching Farakka in virtually rainless five months was considered very remote. The option left in the circumstances was to go back to the 1936-situation.

***Sustained daily discharge of 40,000 cusecs of water during the first five months of a year***

The discharge from Farakka was determined with emphasis on two points. First, there was the problem of restoring adequate depth in the Hugli down of the port to ensure navigability. This would need sufficient water for seaward transportation of the bulk of the alluvial load carried by the river so that the mean depth of this river could go back to what it had been in 1936. The second point of consideration was to restrain the infiltration of the saline water into the Hugli as prevalent in 1936. In other words, the intention was to replace the volume of saline water that had infiltrated into the river after 1936 by sweet water from upland. In both the cases, it was found from the simulation studies by the two experts that about 40,000 cusecs of sweet water on a sustained basis would be the bare minimum to achieve the intended replacement of brackish water. Ultimately, it was decided that the river should be revived to the prevailing situation in 1936. Both the foreign experts, however, warned that it would be impossible to halt progressive deterioration of navigability of the Hugli without uninterrupted discharge of 40,000 cusecs of water daily from upstream during the first five dry months of the year. Even peak discharge of the Hugli during the monsoon was found to be inadequate, according to their studies, to flush out the bulk of the load seaward. Incidentally the feeder canal of Farakka was designed with the



maximum carrying capacity of 40,000 cusecs (+10%).

The initial objective to rejuvenate the Hugli with the recommended sustained discharge especially during rainless months from the impounded water of the barrage unfortunately did not finally materialize due to trans-border political compulsions. Seaward transport of sediment was hampered as a result. Moreover, the amount of water reaching Farakka through the Ganga is far less to ensure release of 40,000 cusecs of water to the Bhagirathi-Hugli daily during the dry months of the year. Diversion of water by the states with riparian rights in the upper reaches for irrigation and other purposes is a reason behind lower quantum of water reaching Farakka through the Ganga. Added to it is the decaying of the rivers feeding the Ganga. At the present juncture with continuing sediment-

accretion on river-bed going on for years, even sustained upland discharge of 40,000 cusecs daily during dry months will be insufficient for flushing out sediment.

As the matter stands, natural flushing of sediment seaward is well-nigh impossible. Ebb current gains in strength during the monsoon usually, but is often not strong enough to carry sediment to the sea overcoming landward tidal forces. Velocity and direction of wind, formation of density gradients due to infusion of salinity from the sea during flood tides, geometry of the river course apart from other diverse influencing factors indicated in the preceding play significant roles to affect sea-ward transport of sediment naturally. Dredging thus remains the only viable option to remove sediment from the aggraded river-bed to facilitate navigation to the extent possible.

## Dredging and its limitation

It may be mentioned in this context that it was earlier established after protracted observations that around 20 million cum of sediment requires to be removed annually at various sand bars in the estuarine reach to maintain a navigable depth of 9.1 meters up to Haldia. Kolkata Dock System handles lighter ships. The reach between Kolkata and Hugli Point therefore requires less depth. Moreover frequency of dredging in this reach has marginally come down after increased (though insufficient) release of water from Farakka barrage. The fact remains that the present

resources of dredging in the country are not adequate enough to fulfill the indicated target. The annual dredging target as a result runs into deficit every year leaving a large back-log every year. Due to the cumulative shortfall in the targeted dredge-volume over years, the navigable channels continue to shoal leading to a seemingly irretrievable situation. The regressive capacity of transport of sediment by the river coupled with the continuing backlog and relentless intrusion of sediment make it a difficult task for the port authority to improve depth of the river



by dredging alone.

Dredging however is not the panacea. Deepening of an area of the river bed attracts re-siltation. The rate of re-siltation in the Hugli estuary is significantly high. What is needed is concurrent flow-regulation in shipping channels to sustain the dredging efforts by not allowing dredge-spoils to come back.

Given the fact of fluvial frolics of the Hugli below Kolkata in particular due to uncontrollable factors governing them,

## Concluding Comments

From theoretical point of view there could be three options for improving navigability of the Hugli.

- a) To modify the flood amplitude in conformity with the depth of the river
- b) To reduce the velocity of flood current and
- c) To augment the ebb velocity.

The first option is impractical as it will require huge in-water structural interventions and dredging to match the river depth with tidal amplitudes throughout the year. The investment is also not one-time. Cost-benefit analysis will certainly disfavor such an exercise. The second option is even more difficult to implement as it means regulation and restraint of land-ward tidal flux to such an extent as will ensure easy flow of silt-

especially insufficiency of head-water needed for flushing out sediment, there is hardly any room for adopting uniform streamlined measures to improve depth the river. This is a technological challenge which warrants repeated adjustments in curative plans based on river-related inputs and their computational analysis with the help of numerical models and interpretation of satellite imageries through remote sensing. Optimization of dredging with appropriate flow-regulation appears to be the only answer in the circumstances.

laden ebb flow to the sea. We are then left with the remaining alternative i.e. to increase the ebb velocity sufficiently with available upland discharge.

This may be done in two ways: a) by appropriate regulatory measures to channelize the flow along pre-defined paths; and b) by fulfilling the annual target of dredging in channels for unhindered flow-conveyance. River regulation as indicated is expected to sustain channels deepened by dredging by generating fluvial velocity sufficient to flush out re-circulated sediment.

It is worth-mentioning in this connection that a numerical model of the Hugli estuary is learnt to have been developed in IIT, Kharagpur on the basis of one-dimensional and two-dimensional hydrodynamic and sediment transport

***Optimization of dredging with appropriate flow-regulation appears to be the only answer in the circumstances.***



models (Das). Sediment budget has reportedly been prepared in a study which reveals that the outer Hugli estuary has sustained a sediment loss of 48.57 million cum vis-à-vis 52.49 million cum of sediment ingress per year (ibid). The study initiated in the institute deserves to be continued for construction of a reliable predictive model of the estuarine behavior of the Hugli. The model requires to be validated by comparing its results with in-situ data. Hydraulic Study Department of the port also initiated action to develop a numerical model sometime back. The status is not precisely known. As the matter stands, a research collaboration of IIT, Khargapur with the Port is worth considering. Concurrently it is deemed an imperative necessity to ensure regular and systematic collection of all relevant river-related data especially related to the river bathymetry, hydraulic parameters, tidal volume, upland discharge etc for analysis.

The Hugli river is considered one of the most difficult rivers in the world by experts. The problem of navigability of the Hugli demands a comprehensive well-planned approach for solution. The Government should come forward to meet the challenge before it is too late.

### Reference

Bhattacharya S K- 'The Hooghly and The Port of Calcutta'-Commemorative Volume-125 Years of The Port of Calcutta-Ed. By Dr Satyesh Ch Chakraborty-Pub. by Cal. Port Trust -October 1995

Das Manas Kr (2014)-Estuarine dynamics, processes and sediment transport-Case Study from the Hugli Estuary in the Ganges Delta--Doctoral thesis submitted to IIT, Kharagpur (ascertained from internet)

### Concurrent Reading-

Sanyal Tapobrata - 'On The Ganga -Facts Less known'- Pub. by Best Books, Kolkata (Dec 2008) -ISBN: 978-81-7926-090-6

The author can be reached at : [sanyaltapobrata@gmail.com](mailto:sanyaltapobrata@gmail.com)

*"All problems of existence are essentially problems of Harmony."*

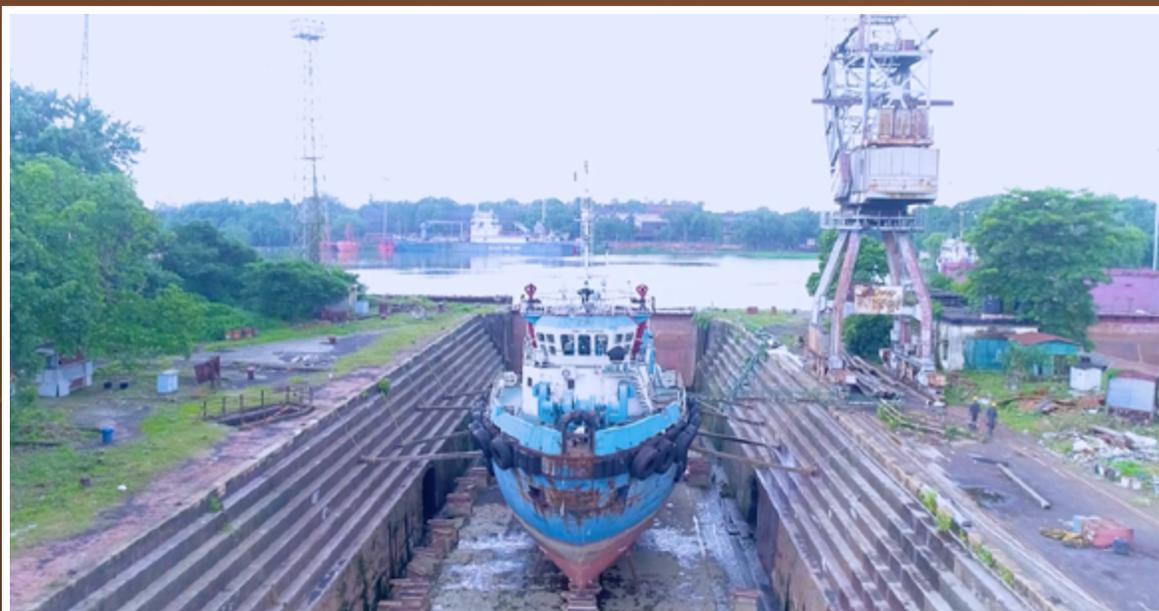
- Sri Aurobindo



# The oldest dry dock facilities in the country

The three dry docks in Kidderpore Docks and two in the NS Docks are inside the impounded dock systems and they cater to the diverse repair and maintenance needs of sea-going vessels, dredgers, naval vessels etc.

Watch the video: <https://youtu.be/k5XEwxrD1nA>





# PROBLEMS AND PROSPECTS OF HUGLI RIVER AND ITS ESTUARY

*Bikas Chaudhuri*

Shri Bikas Chaudhuri, retired as Chief Hydraulic Engineer KoPT in 2017. As head of the Hydraulic Study Department, the only R&D department in any Indian port, he led a team of engineers and scientists from diverse fields and made significant contributions in innovating dredging techniques in the Hooghly river. Presently, he is associated as a Guest Faculty with IIT Kharagpur and IEST Shibpur.

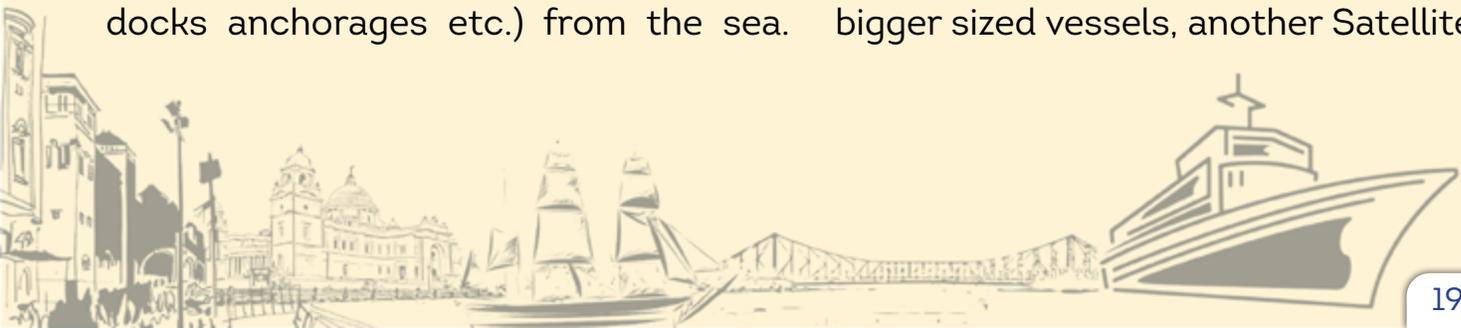
## Introduction

India has a coastline of around 7500 km. However, the coastline in the state of West Bengal is only about 200 Kms. The coastline along the right as well as in the left bank is limited before the river Hooghly debouches into the Bay of Bengal. Moreover the Sunderbans in the East and the inter-state boundary in the West restricts the length of the coastline immediately after Digha. The trail of Bhagirathi-Hooghly river from the outfall of the Feeder Canal of Farakka Barrage to Sagar Island is shown vide Fig. 1.

The river Bhagirathi-Hugli and its estuary provides the waterway for movement of ships and barges to the inland port facilities (jetties, berths, impounded docks anchorages etc.) from the sea.

It's a well-known fact that since inception of port facilities in the State, in the form of Calcutta Port Commissioners (presently SMP, Kolkata) the locations of port operations got shifted as well as drifted southwards, to cater to the increased shipping and larger vessels.

There is a long pending need for a deep drafted port in West Bengal which will serve complete East and North East region of India. The port operation in Hugli River and Estuary started in Kolkata in the 18th Century. This is the only riverine port in India which started its operation with an approach channel of around 232 kms from the sea (Sandheads). Thereafter due to problem of siltation and to accommodate the bigger sized vessels, another Satellite



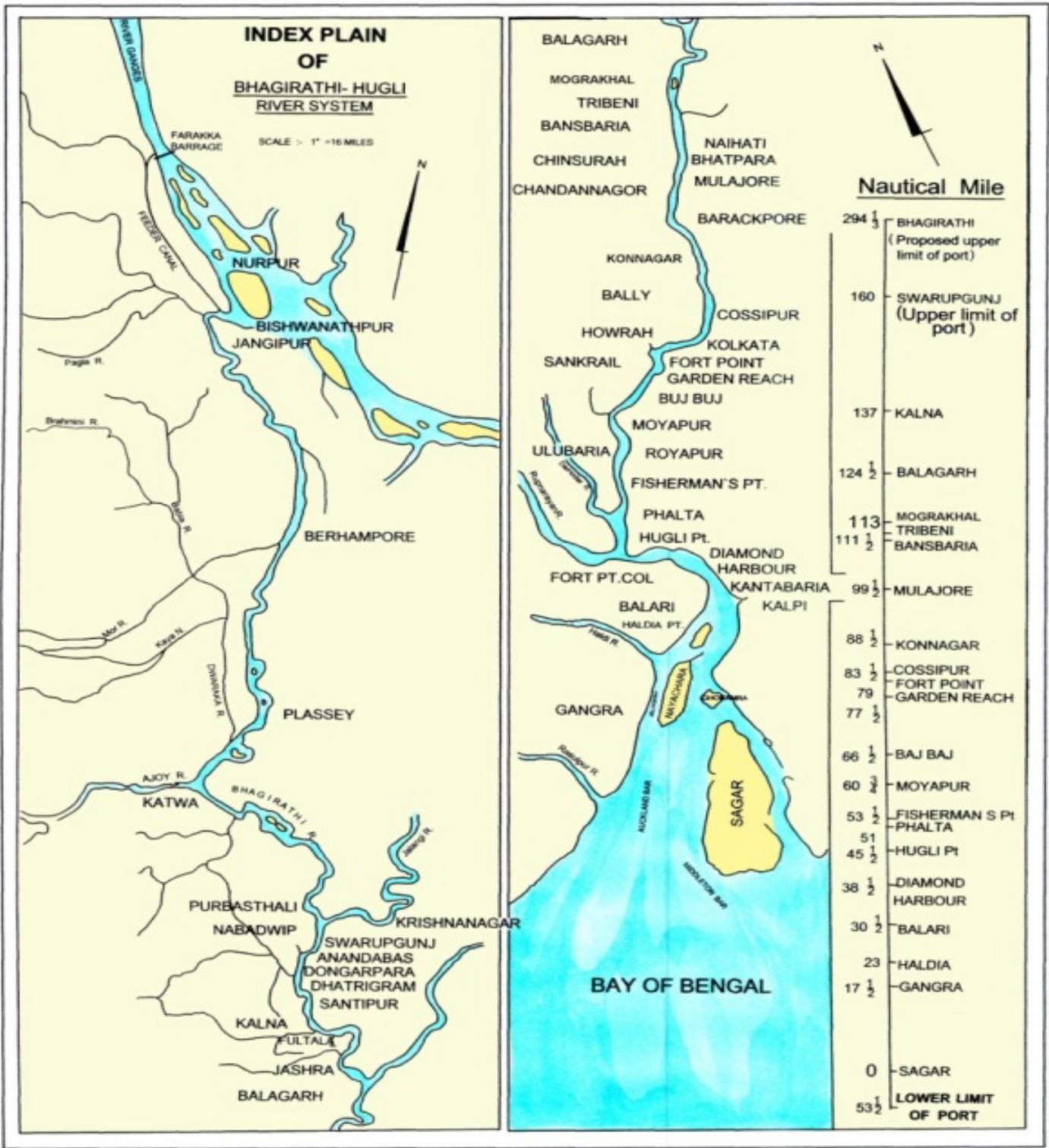


Fig1: Index plan of Bhagirathi-Hooghly Estuary

Dock System (Haldia Dock complex, HDC) commenced operation since 1974 with 9.5 meter average draft, whereas the draft available at Kolkata Dock System at that time was varying between 7.5 to 8

meters on an average.

Any estuarine port has both advantage and disadvantage, depending on the bank or in the influence zone, which in the

case of the mighty estuary of the Hughli is extending to almost 100 kms on both banks. Whereas the estuary provides better depth and shorter channel for

navigation, the disadvantage is that the depth and alignment of channel depends on natural force of the estuary.

## Historical Background of Survey and Dredging

To trace the pattern of development of the Hughli estuary, the earliest chart available is that of 1687 prepared by John Thornton for the East India Company. The rare and splendid survey of 1902-03, in addition to the monthly large scale survey of the riverbed and its banks, had been carried out from Calcutta to Sagar. These formed a very accurate record of the river banks. A survey of the Sandheads on a scale of 2" to the nautical mile from Sagar to the other light vessels was made during the cold seasons of 1909-10, 1910-11. Manuscript chart of 1687 (1220 x 890 mm) embodied detailed marine surveys (several on large scale i.e. Hugli 1:120,000, Bengal 1:350,000 etc.) showed the configuration in and around 1669-79.

The next chart available was that of 1785. In this chart the Eastern channel known as 'old passage out' had a depth over 9m.(27ft.) The record reveals that earliest available chart of the Inner estuary was that of 1720. It showed that the navigable channel was via the western channel up to Khejuri and then crossed over to left bank. It ran along the left bank from off-take of Channel Creek to Kantaberia. The approach to the Eastern channel was closed by a shoal, similar to Auckland bar connecting to Island with the Upper Long Sand area. Thereafter charts were prepared at regular intervals to trace the morphological transformations occurring in outer as well as inner estuary. Some of the enclosed charts

**Table: 1**  
**Information related to Navigational Aids**

	Year 1903	Year 1914
Navigation marks	165	210
Survey marks	25	70
Buoys river approaches	126	Same
Light vessels - river approaches	7	Same
Cask buoys - Diamond Hbr. To Calcutta	47	51
Gas buoys - port	4	6
Gas buoys - lower reaches	5	15
Semaphores with tide gauges	5	7
Deepest vessel		28'10"
Longest vessel		520 ft



and Satellite Images demonstrate the morphogenesis that had occurred between early nineteenth Century and late twentieth century intruding into early 21st century.

The above record shows that not only did the river traffic increased dramatically from 1903-1914 but so too did the concomitant surveying, dredging and buoyage work, necessary to keep shipping running smoothly.

The whole approach from Sagar to Calcutta was surveyed once a month, the more important bars (unavoidable obstructions across the bed of the channel caused by sand banks and general silting) were surveyed at least once in a fortnight. The “more important bars” were Moyapore, Nainan, Eastern Gut (also called Hooghly Point), Gabtola, Balari and James & Mary. Of these, the Eastern Gut, Nainan and Moyapore were sounded daily and the information telegraphed to Calcutta and Diamond Harbour. Not only were these surveyed regularly, they were also dredged to admit deeper vessels.

The Eastern Gut required dredging the most which could only happen under favourable weather conditions. On an average the Eastern Gut was dredged four months of the year. Dredging in the lower reaches was limited to the “two fine months of the year “. In 1907, “the powerful suction dredger” SAND PIPER”

was put into commission, mainly to deal with the bars on the Upper Reaches, while the suction dredger “BALARI” was deployed in Lower Reaches. Dredging the bars and lighting the channel permitted vessels to proceed from Calcutta as far as Mud Point in one day, that is . without waiting for “high water” and by lighting the river between Mud Point and Sagar, ships were able to proceed to sea the same night.

As far as dredging in Upper Reaches is concerned, the same trend continues even after a century, only with the difference of availability of suitable dredgers, throughout the year. However, the dredging requirement of Upper Reaches has been reduced considerably with the availability of perennial upland discharge, though not fulfilling the requirement of KoPT as due to sharing of water with Bangladesh under the bi-lateral Water Sharing Treaty of December 1996.

On the other hand, the picture in lower Estuary (below Diamond Harbour) is different. The river underwent huge morphological change. Sagar Island disintegrated to form several new islands during 1890-1915 (Fig.3A & 3B). Thereafter, again during 1980-1995, the Bedford and Lohachara group of Islands got eroded whereas Jigerkhali area got transformed into Balari Island by the process of “Spread-Bulge-Build” of the sand flat. As a result, the single



fairway leading to Kolkata via Auckland-Jellingham-Haldia-Balari route ceased

to exist beyond Haldia and the shipping to KDS commenced through Rangafalla

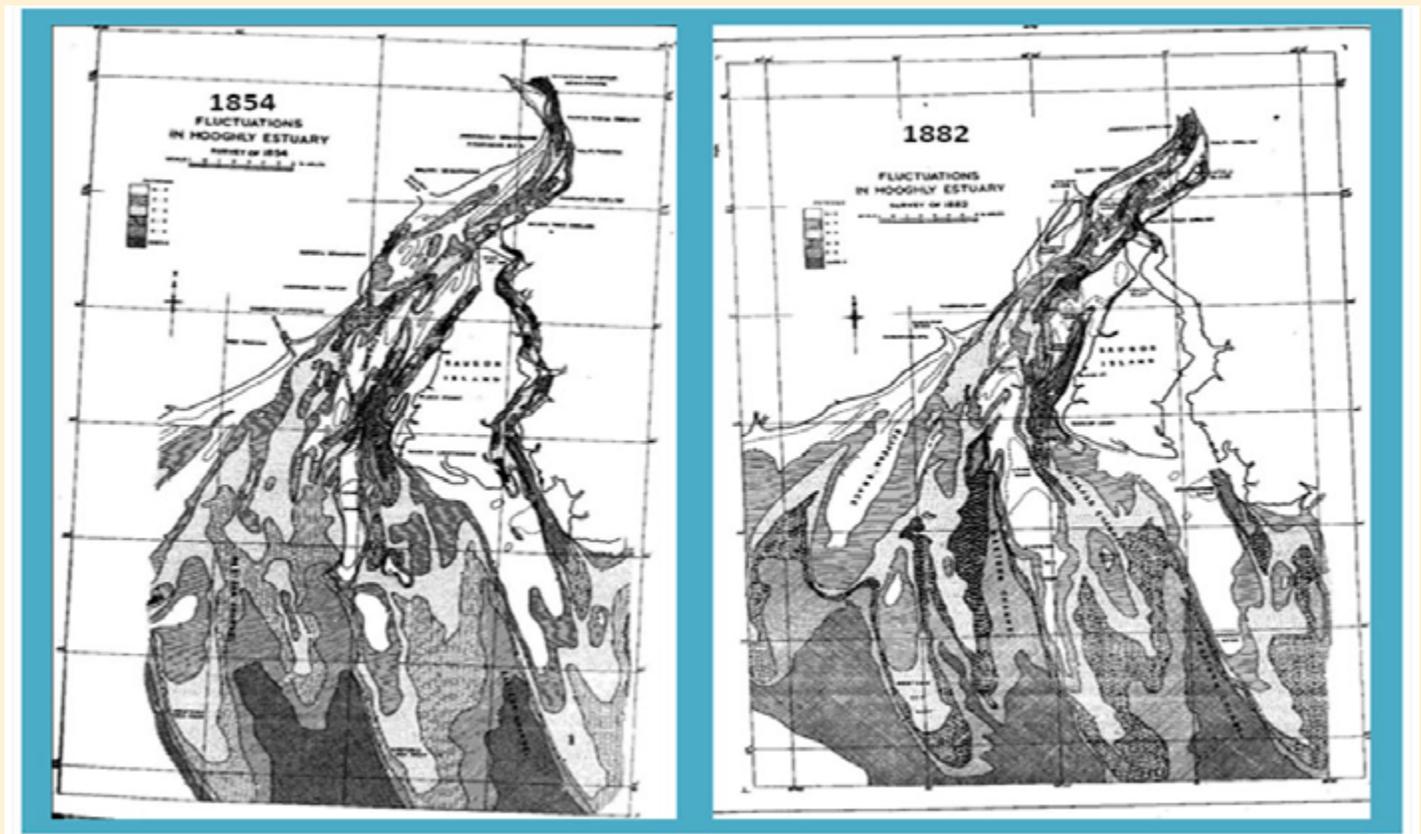


Fig. 2

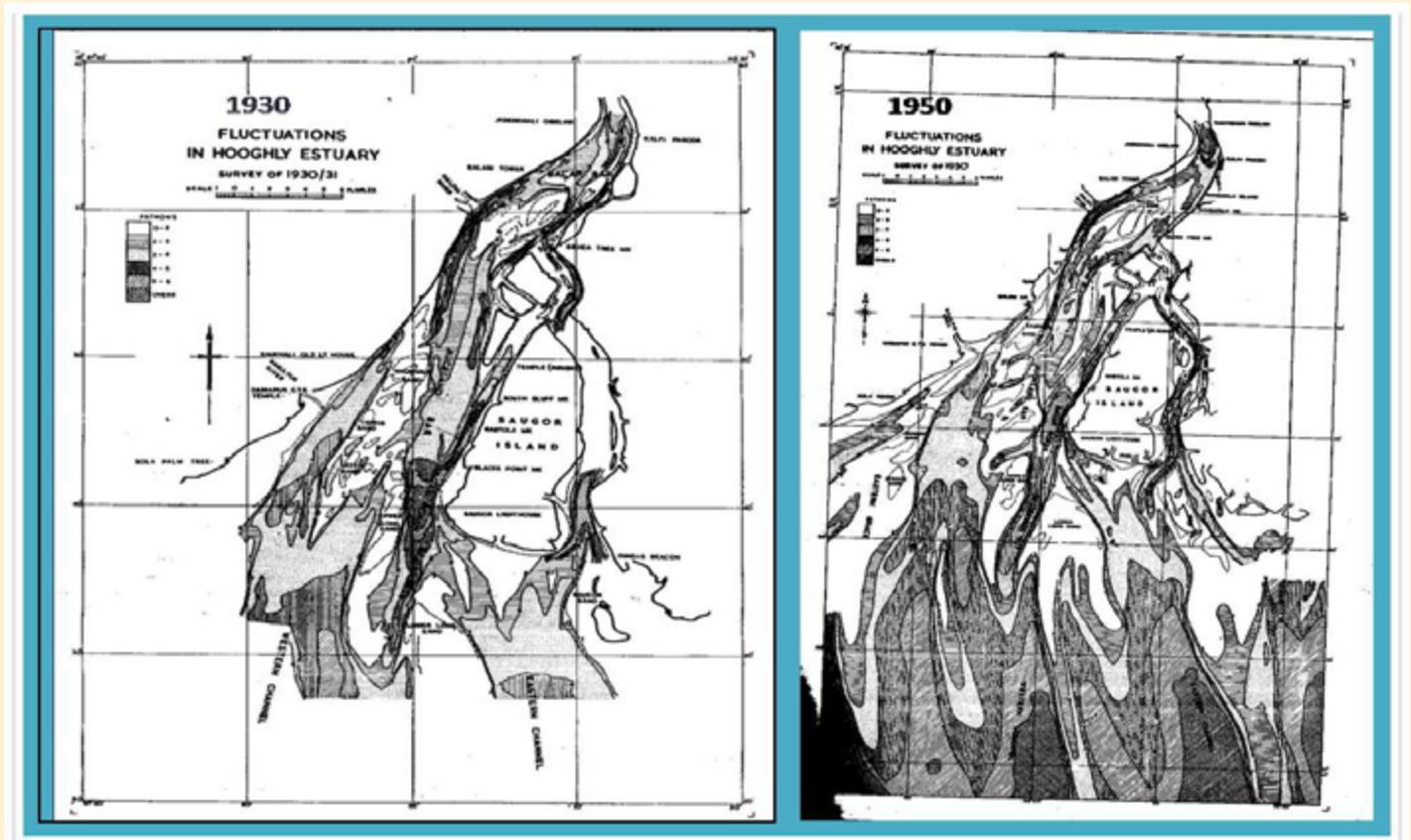


Fig. 3



Channel from May 1987. This channel again suffered several twists and turns, swing as well as abandonment of certain stretches but continued to give a comfort level of depth with very little dredging. The stretch of Kolkata

channel through Rangafalla, below Diamond Harbour, practically remained self-maintained whereas the dredging in Auckland-Jellingham and Haldia Anchorage spiralled up. (Fig. 2& 3).

## Morphogenesis of Hugli Estuary

### **There are a few fundamental principles that apply to all estuaries**

The ebb flow is governed and directed by the geomorphology of the channels immediately upstream of any point. The flood tide enters an estuary on a broad front and takes its direction mostly from the channels existing at the time. Charts and hydraulic models generally give the impression that certain parts of estuaries are very deep. In fact, they are not. Estuaries and rivers are very shallow in relation to their breadths.

In the case of the outer Hugli estuary, the shore near Kulpi is quite resistant to erosion and forms a nodal region with Jigerkhali. The shoreline at Haldia and to the west side of the Balari channel has shown very little change over centuries. The eastern shoreline of the Rangafala channel, however, is much less resistant to erosion and has changed greatly over the past two hundred years when the southern shore between Buffalo Point and Jigerkhali eroded to form an island isolated from the shore (shown on charts of 1964 Fig.5) The channel that existed to the east of Rangafala Island was used for navigation in the past (18th and 19th centuries). It no longer exists, though its outline is shown on the charts. By the 1880's, the shore between Buffalo Point and Jigerkhali had accreted strongly

and remained stable well into the 20th century. Rangafala Island silted up and the Balari Channel became the preferred route to Calcutta.

The Jigerkhali-Buffalo Point shore began to be slowly eroded in the 1930's, (Fig.4) shifting the effect of the ebb tide away from the Balari/Haldia channel. By 1936, there had been some deterioration of Balari Bar and a mid-stream shoal had begun to form east of the entrance to the Haldia River mouth. By the 1950's this shoal had grown into an island (Nayachara). Serious deterioration of Balari Bar began.

It is important to note that the growth of Nayachara was directly linked to the deterioration of Balari. By the late 1950's, plan for building the port of Haldia was in an advanced stage. Planners needed to secure drinking water for the new town and land adjacent to deep water. They proposed erecting a barrage in the Haldi River until it was pointed out to them that any reduction in the tidal capacity of its estuary would weaken tidal flows into the Haldia and would cause loss of depth in the port approaches.

It appears from earlier charts that the conditions were favourable to Balari Bar



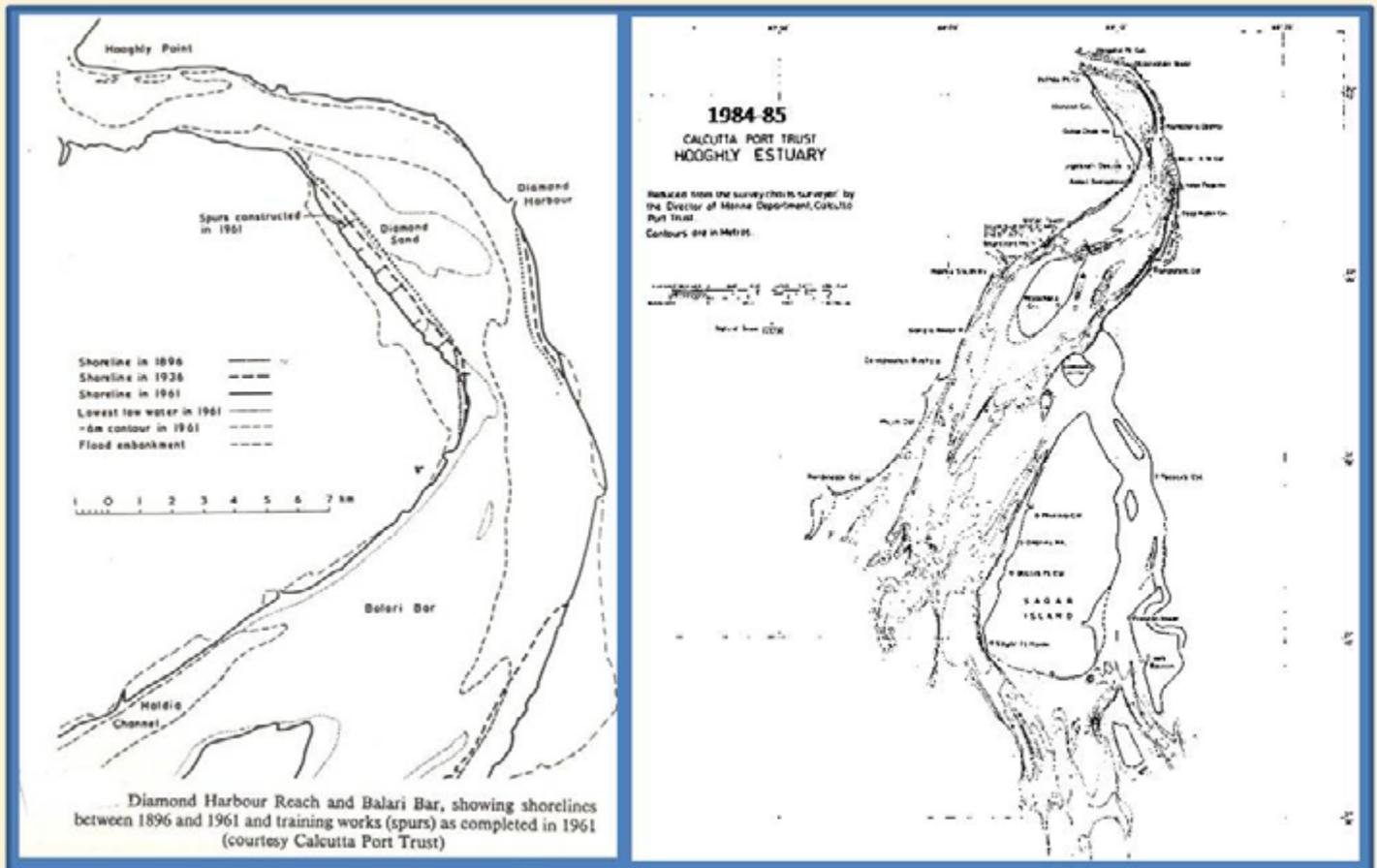


Fig. 4

and the Haldia channel in the 1890's and that the shoreline opposite Diamond Harbour was much further advanced than it was in 1960. It seemed that these conditions might be related. The land opposite to Diamond Harbour had lines of vegetation which showed clearly former shorelines showing that there had been major re-alignments as the estuary had evolved. It appeared that the southern shore of Diamond Harbour had a major effect on conditions of Balari Bar. The alignment of 1890 was clearly favourable, allowing the ebb to flow more directly down the Haldia channel, while the alignment pre-1960 and the present alignment caused the ebb to flow easily past Kulpi and down the Rangafala channel.

**Model experiments showed that advancement of the shoreline would have a most beneficial effect.**

In late 1960, construction of brickbat spurs started. At the start of 1961 monsoon, this work stopped. By then short (600m) spurs had been completed at each end of shoreline and one 2000m spur had been largely completed at the east end. During the 1961 monsoon, a cutter section dredger was put to work on the new preferred alignment of Balari Bar. After 6 (Six) weeks or so it had to be withdrawn. The channel was eroding faster than it would be dredged.

Records say that the work done in the 1960's has not been maintained later on. At that time, perhaps it was felt that the reclamation of the Diamond

sand southern shore could not work to improve Balari Bar. It is difficult to understand the subtleties of the hydraulic behaviour. Growth of Nayachara Island, its build spread and bulge approach was a symptom of the shift of the ebb in the Estuary away from the Haldia channel and towards Rangafala. Its existence was a result of unfavourable conditions for navigation in the Haldia channel and its erosion would have been an indication of improving conditions. The Northern guide



Fig. 5

wall, constructed under comprehensive scheme (Phase-I), perhaps did not serve the purpose to induce and control the ebb flow over Balari Bar, as the scheme was not implemented in totality. Without execution of Capital Dredging and other River training components, the flood flow adjacent to it was directed across Balari Bar as shown in Satellite image of 1991-92 (ref. Fig.5). They show Flood tide eddies carrying sediment in movement across the line of the channel.

**Latest available Satellite Images (Fig. 6 &7) and their interpretations point out the following:**

- Shrinkage of Balari Passage
- Ebb flow filament leaving Balari-Haldia

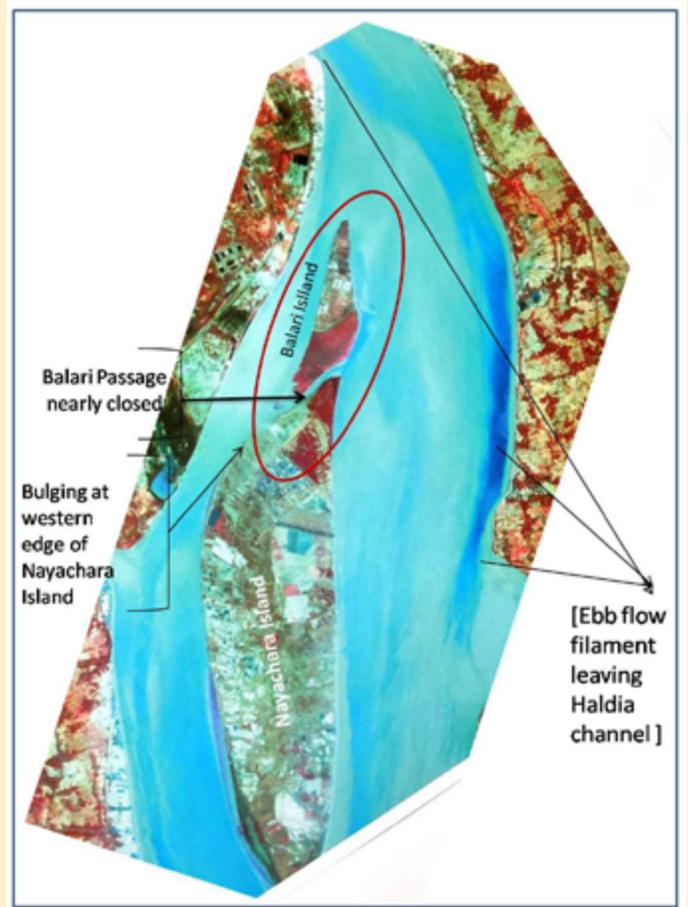


Fig. 6

Channel (Fig. 6) and moving through Rangafalla Channel, hugging the left bank following smooth Radius of curvature

- Balari island in a fully grown stage shaping up as a frontal node of Nayachara island (Looks like a composite formation detached by a thin stream).
- Opposite to confluence of Haldi river (Haldia Anchorage), a lenticular sand plume appears to be a concern and may be verified through field examination.



Fig. 7

**The lower part of the processed image shows the following features (Fig.7):**

- Erosion of Nayachara “tail”
- Flood flow filament pushing through Eden-Upper Auckland-Jellingham route
- Opposite to Rasulpur river some transient sand movement
- Deep water in the Sagar south-west corner seems to improve Sagar Anchorage- requires field studies

**Satellite Image interpretation of lower Hugli estuary over last 30 years enlightens the following**

- Gradual transformations of Jigerkhali flat into Balari Island
- Lenticular and Spatial (North Western part) expansion and build-up of Nayachara Island.
- Emergence-growth of Nayachar “Tail”, formation of East-West corridor and subsequent erosion of Nayachara “Tail”.

## Down memory lane

- Closure of the distributary intake from Ganga into Bhagirathi between 1890 - 1900.
- Event forecast in 1857-1860 by Sir Arthur Cotton - A British engineer recommending Farakka Barrage.

- Long term gradual change in hydrological environment, Falling depths, Dredging introduced in 1907.

- DVC projects executed during 1950-1960 exercising flood control over Damodar basin but cutting off flushing discharges in the Hughli outer estuary. The project introduced long term gradual change in hydrological environment downstream of Diamond Harbour. It was an “Anthropogenic” intervention.

- Haldia deep-water dock system on board in 1966 , to relieve Calcutta.

- Dredging quantities spiralling.

- Govt. expediting construction of Farakka Barrage project.

- Farakka Barrage operation commenced in 1975.

- Draughts in upper estuary started improving and dredging reduced.

- Haldia oil jetty commissioned in 1968. Balari started growing.

- It was earlier dredged in 1956 and 1960-61 or so. It is a natural long term morphological impediment attracting very high sedimentation per annum.

- CPT considered procuring a Cutter Suction Dredger for Balari in 1977-1978.

- 1978-1981: CPT designed River Training Water and Balari dredging plan under foreign consultancy following directives from Ministry of Shipping and Transport..

- 1982 works started - Dredging programmed in 1984.

- 1st phase of work completed 1988-

Dredging could not be started.

- Outer estuarine channels shrinking - Maintenance dredging increasing for Haldia Dock System.

- Deferred maintenance dredging (Recessional dredging) over Jigerkhali Flat started by M/S Boskalis Dredging Co. during March 1990, the same could be continued only for a few hours. The said dredging could not be continued due to shearing of the pipeline.

- Completion of northern guide-wall and cross-spur at northern tip of Nayachara Island - 1992 Capital Dredging and other River Training components not executed.

- Intensive maintenance dredging by Dredge .VII and Dredger. AQUARIUS of DCI for creating Pilot dredge cut over Balari as Experimental Dredging (Nov 1994 - March 1995). The cut could not be maintained due to non-availability of less drafted Trailing Hopper Section Dredgers (THSDs). Jellingham area was losing depth.

- Indo-Bangladesh, bi-lateral water sharing treaty of Ganga, for 25years was signed by the Hon'ble Prime Ministers of both the countries during Dec, 1996 for getting assured supply of upland discharge (35000 Cusecs.) for each alternate cycle of 10 days during 10th March to 31st May, by each country.

- River Regulatory Scheme (RRM) formulated (considering the balance non executed components of earlier comprehensive scheme of 1982) by. Hamburg University on the strength of proto-type data collected by KoPT and modelling result (hydraulic and



mathematical) carried out jointly by CWPRS and KoPT. (1997-1998).

- Additional maintenance dredging over Jellingham and Auckland carried out by M/S HAM DREDGING COMPANY (Feb 1998-July 1999). Navigable depth of Jellingham improved to 5.7m. from 4.6m. (1.1m increase). Capital dredging not executed over Balari.
- Execution of a submerged dyke by geotubes placed within Gabion. (2002-03) as a R & D project in Jellingham area.
- Bank protection work at the right bank of river Hugli near Sandia Column (downstream of Haldi River confluence) (2003)
- Removal of broken derelicts of spur at the north-western face of Nayachara

island below the cross-spur (2006-07)

- Nourishment/ Refurbishment of spurs at the left bank of river Hugli between Nishchinatpur and Silver Tree Column. (2008-2010)
- Bank protection work at north-western face of Ghoramara island (2008-2010)
- Removal of impediments in the vicinity of spur no.26 adjacent to the junction of Eden-Auckland area (For opening of Eden channel-executed in two season 2009-2011)
- Installation of AIS at Dadanpatra for commencement of Trial run of ships through Eden channel (2011-2012)
- 'Rainbowing' by DCI dredgers over Jellingham for improvement of Nav. Depth as a R & D approach (Proto-type

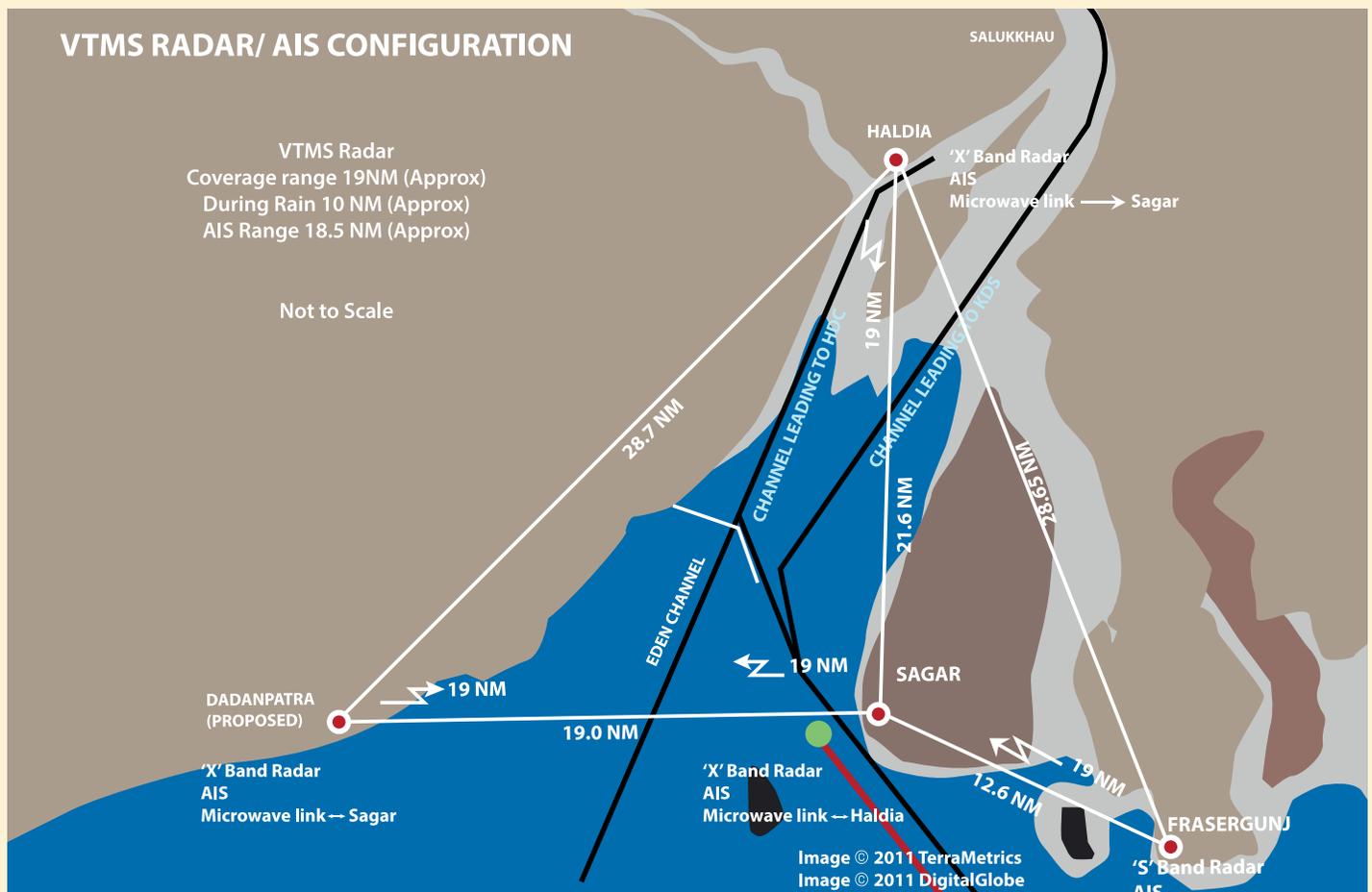


Fig. 8

Experiment (2014-2017)

- Installation of full-fledged VTMS at Dadanpatra including replacement as well installation of complete new system over Sagar, Frazerganj, Haldia with networking etc. (2013-2015) (Fig.8)

- Opening of Eden Channel for movement of all Haldia bound vessels from March 2017.
- Bank protection work in the upstream of 3rd oil Jetty. (2017-2018)

## Approach Channel leading to Haldia and Kolkata - problems of falling depth - and Maintenance:

The approach channel leading to Kolkata is 232 kilometre long whereas the same leading to Haldia Dock Complex and Oil Jetties is 125 kilometre long as its present state. The present navigational channel leading to Haldia is a new channel which has been operationalized on and from March, 2016. The opening of the Eden Channel was conceptualised way back on 2007, when the river health, especially the depth of the governing

bar i.e. Lower Auckland Bar (LAB) leading to Haldia, was at it's least and simultaneously a group of Spurs at the left bank downstream of Nischintapur jetty were badly damaged resulting in erosion of bank as well bringing in sediments to the river system, down below south, a significant stretch (800m to 900m) of Ghoramara Island (Western part) had also eroded engulfing mud houses, trees and other household

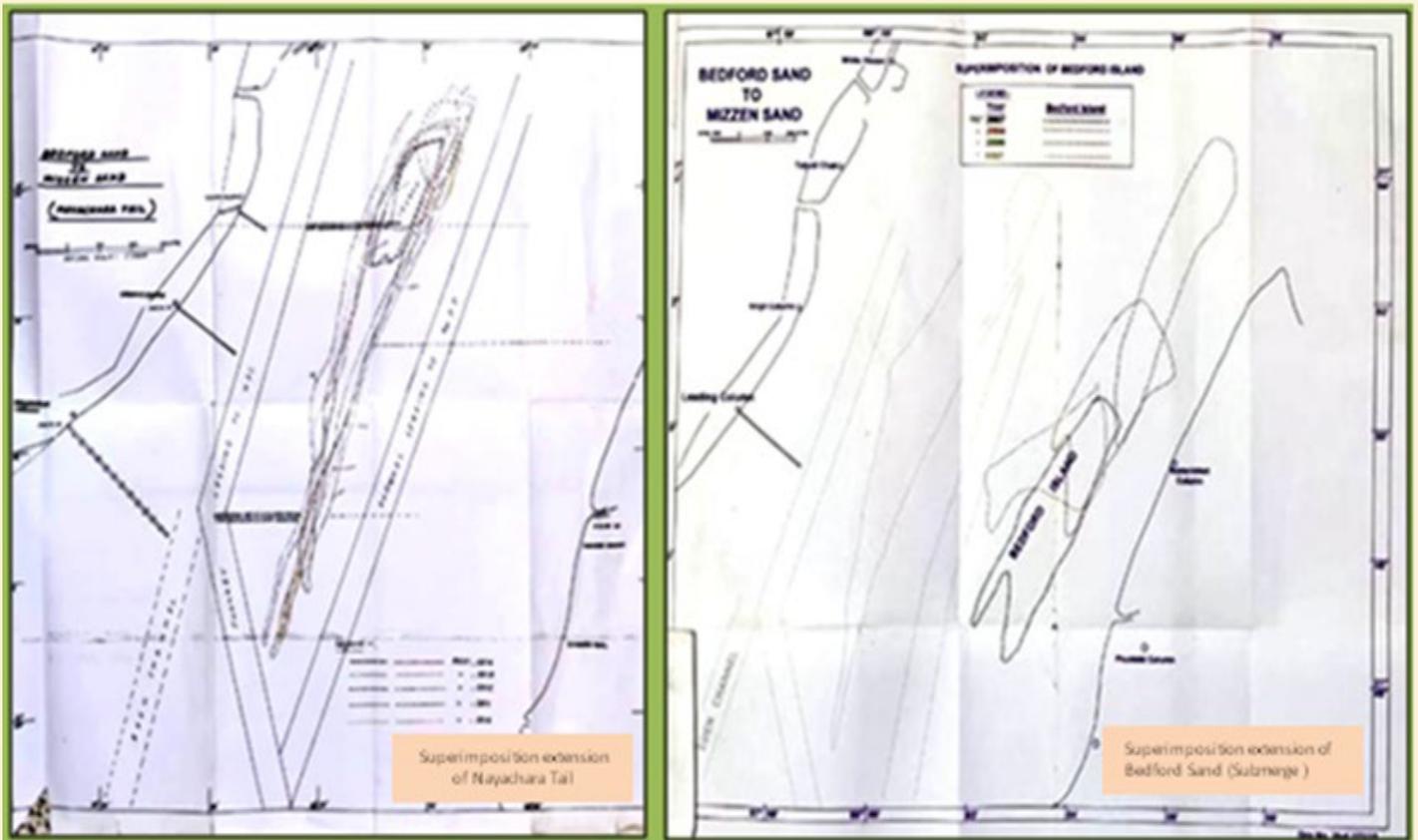


Fig. 9



properties of the villagers. Noticeably, the alignment of advancement of Nayachara "tail", infringing to the outer tracks of the navigational channel of

LAB, resulting in its fall in depth, was encouraged (adversely) by such erosion vis-à-vis transference of the sediment laden water. (Fig.9)

## Development of Eden Channel

In 1882 the conditions were more or less the same as in 1881. In the Kantaberia-Gangra reach, it is important to note the shoal patch of Haldia Sand similar to what exist (1959) through at a higher level. The main meander in 1882 in this appears to favour the eastern edge of the Haldia Sand. Below Kantaberia off the Rangafala island, the channel had a convexity to the eastern side, drawing the ebb land. Further down, the convexity was again evident along Mud-Point-Bedford sand region. On the other hand, Mizzen and Long sand down to about latitude  $21^{\circ}35'$  were on the concave of the ebb. One would, therefore, expect erosion of the eastern face of the Eastern Sea Reef and development of shoals along Rangafala Mud Point-Bedford stretch. This is exactly what is shown by 1888 plan. The

sand transport from north of Bedford island took place across to the long sand off Rasulpur off take and east of Mizen Sand. This nature of sand transport developed Eden Channel. Development of Eden channel cut off the downward sand movement from Mizen Sand to the Upper Long Sand. The ebb sand load passed down the main ebb channel to the Eastern Channel thereby shoaling the Gasper Channel; this is what is seen in 1890-91 plan. With the deterioration of the head of the Eastern Channel, the ebb had to find some way out which it did at Beaumont's gut. This also is clear from the 1890 plan. Thus in 1890-91 generally right from Kulpi to about latitude  $21^{\circ}43'$  (i.e. off Rasulpur outfall), sand transport took place along the eastern bank.

## Meandering of Flow

The analysis of the sand movement in the estuary brings out the following points:

1. The sand transport to the sea generally conforms to the curvature of the ebb flow. In the estuary, the duration of the rising tide is about one hour less than the duration of the falling tide. Consequently, during the eight months of the dry season the ebb velocities are generally less than the flood ones. The flood tide may tend to scour a channel for itself but whether it

will maintain or not depends on the sand transport characteristics of the ebb. If such a channel is across the alignment of the sand drift, it does not maintain. This is amply evident from the Eden and other channels across the northern half of the Eastern Sea Reef. In this zone as already explained, the sand transport runs in a direction from Kaukhali to Lower Long Sand and as such any channel forced by the flood lies across the sand drift. As a result, these channels are short lived.



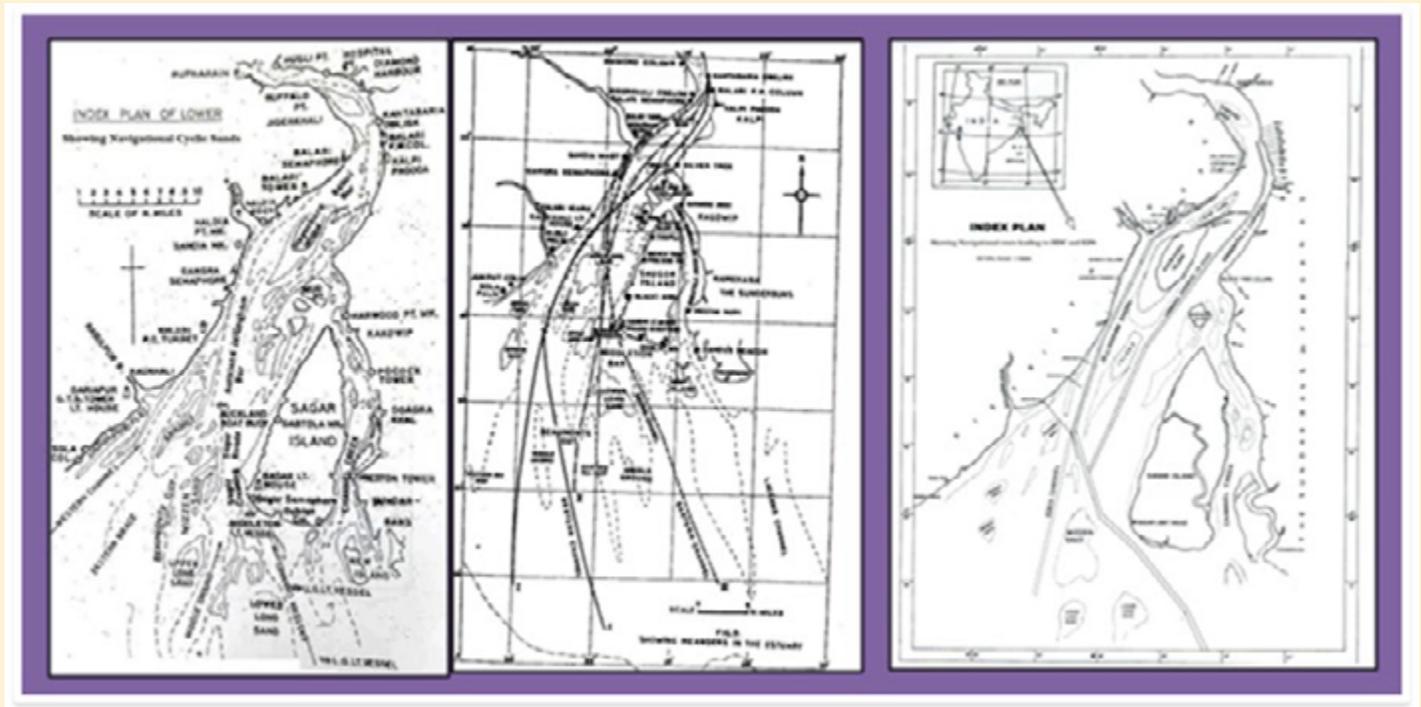


Fig. 10

Fig. 11

Fig. 12

It is reasonable to infer that for a channel to maintain in the estuary the flood must form clear of the thalweg of ebb sand drift.

2. The regime at Balari may be considered in the light of meander in addition to the sand transport characteristics. As seen from the various survey plans there appear to be three possible meanders passing through various cyclic, migrant sand out crops (Fig.10 and Fig.11) Meander 1 runs from the extreme westerly channel across Kaukhali - Rangafala to Kantabaria. The other extreme meander viz 3 runs from the Eastern Channel via Sagar Roads, Auckland, Balari to Kantabaria; in between these, meander 2 runs from the central Western Channel along the western face of the Lower Long Sand-Beaumont's gut-Auckland-midway between Rangafala and Balari channels to Kantabaria. It is important to notice that these three meanders pass through

a common stretch near about latitude  $21^{\circ} 52'$ .

The flow through Eden Channel bypasses the stretch of LAB (Fig.12), which connects Eastern Channel in the outer estuary with Upper Auckland Bar in the inner estuary.

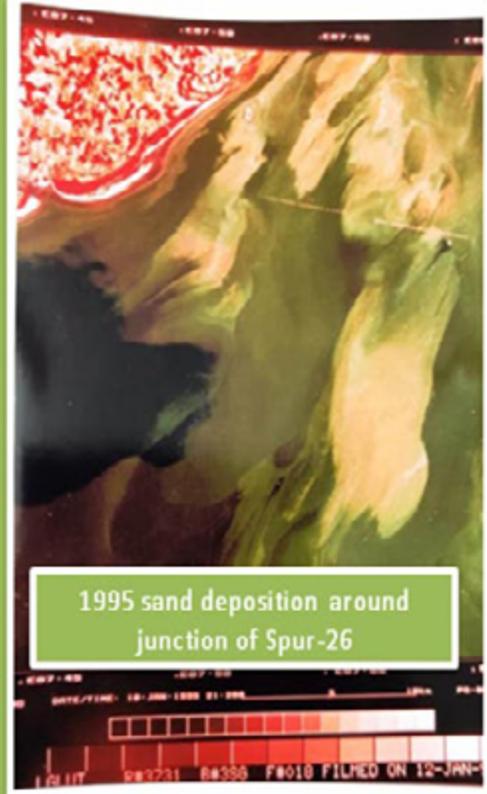
This stretch of the navigational channel (LAB) badly suffered by siltation from 2007 onwards and in spite of vigorous maintenance dredging the governing depth in the navigational channel at Lower Auckland Bar could not be improved significantly.

As a matter of fact, maintenance dredging of the order of  $8 \text{ Mm}^3/\text{year}$  was required over LAB to maintain a depth of 4.5/4.6 meter. The look out of an alternative channel was on from 2007, when the navigable depth of LAB reduced to all time low of 3.7 meter. A study of old satellite images and hydrographic

1999 Edge enhancement for identifying sand deposition around junction of Spur-26

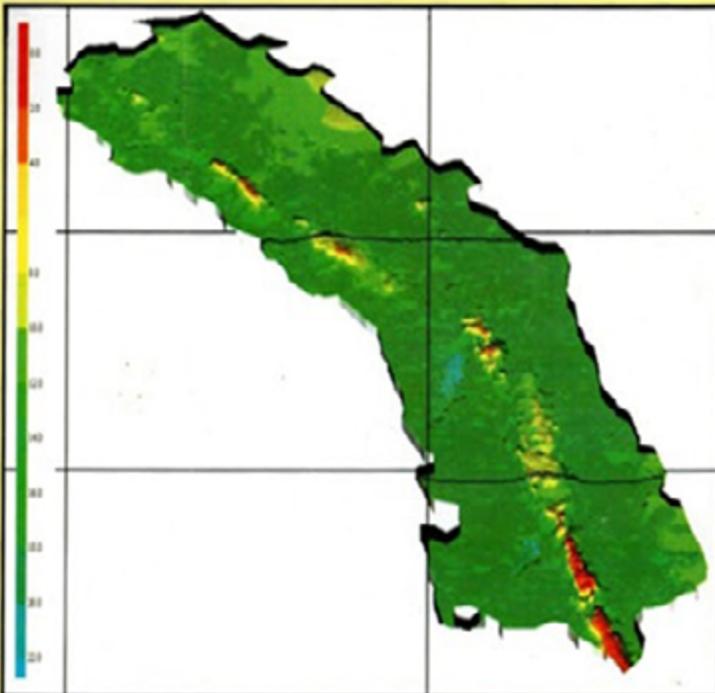


INS IN LR  
 25-01-91  
 SECH-CHNL  
 CLOSURE  
 ENUMERATED  
 FROM SOBEL  
 FILTERED  
 IMAGEU



Digital Bathymetry Model (DBM) showing derelicts of broken Spur

GÉOPHYSICAL AND HYDROGRAPHIC SURVEY IN AUCKLAND CLOSURE SPUR No. 26, AT HUGLI RIVER ESTUARY, WEST BENGAL.



Hydrographic Survey Chart during Removal of impediment

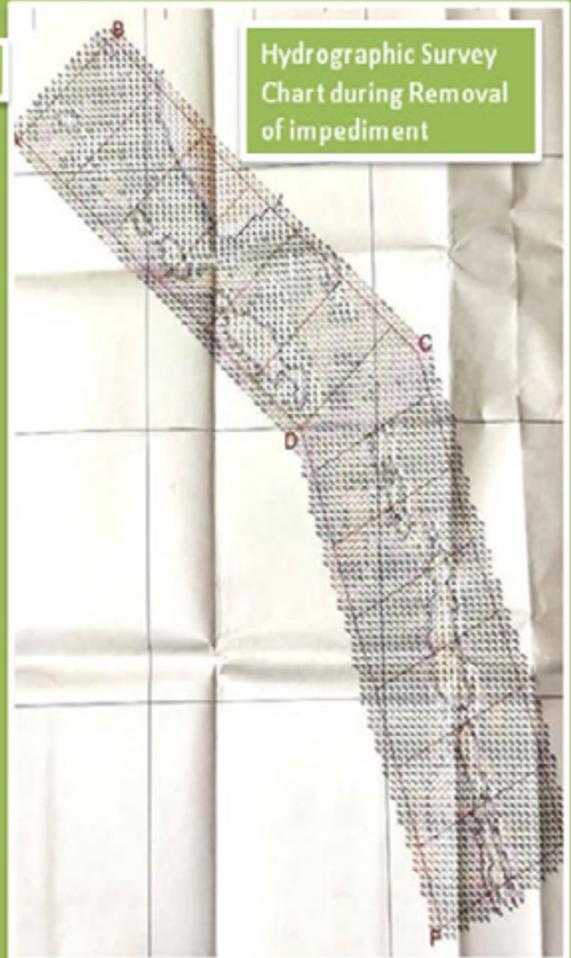


Fig. 13

charts coupled with mathematical model analysis lead to establish the feasibility of operation via the alternate channel known as Eden Channel which was however, monitored thorough Satellite image interpretation from as early as 1991. The digitally processed images and the interpretations are shown in (Fig 13). The conceptual scheme (Fig.14)

comprising of nourishment of spurs, bank protection work (following the basic principle of holding the estuarine frame) and removal of impediments (remnants of a spur for opening Eden Channel) was drawn up, tested (by Mathematical Model) and successfully implemented between 2008-2011. Ultimately with all its requirement i.e. laying of buoys,

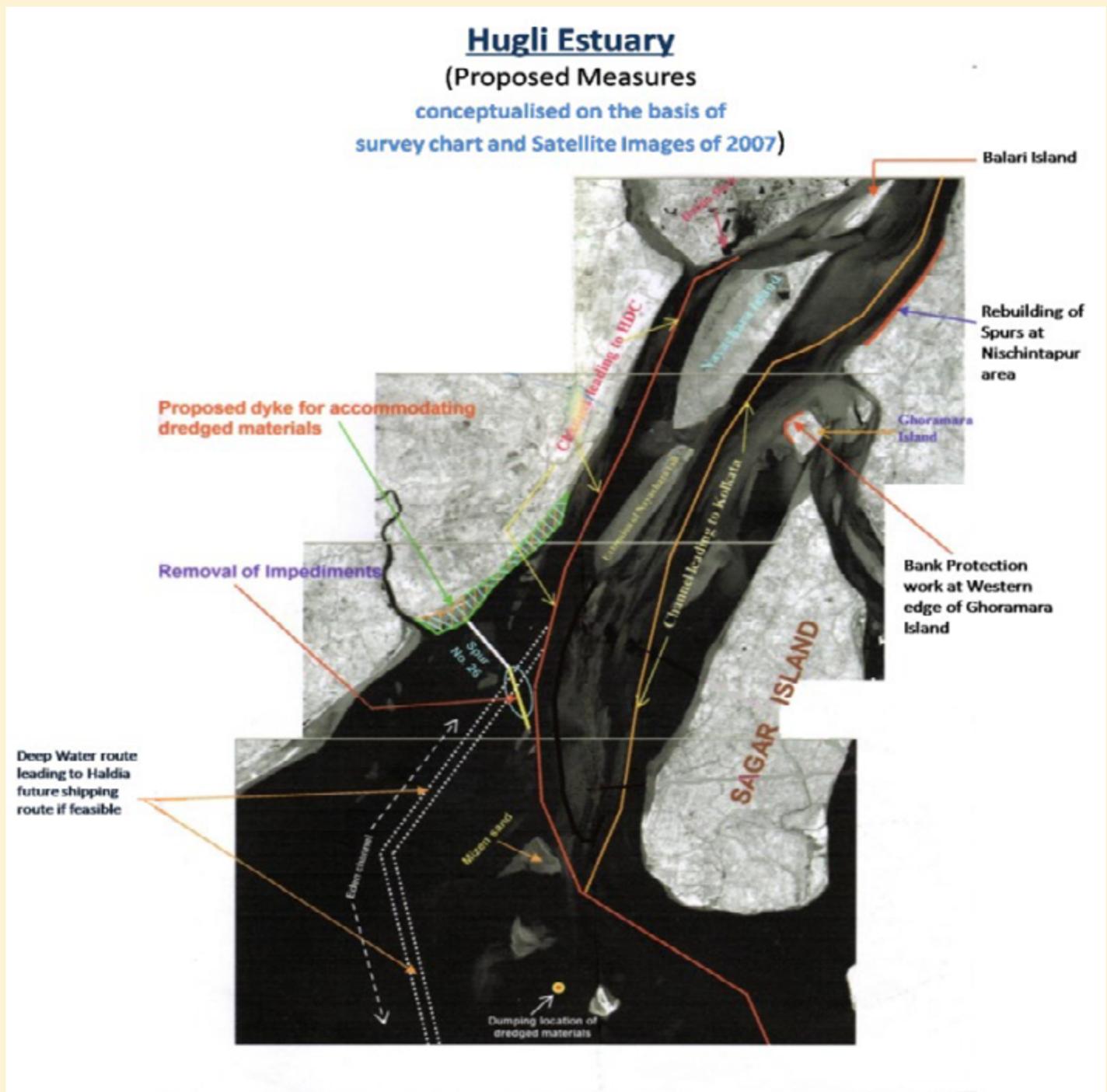


Fig. 14

installation of AIS, the channel was made open for trial run from 2012-13, pending installation and commissioning of full fledged VTM-System at Dadanpatra including complete new replacement of System over Haldia, Frasergunj and Sagar.

Finally, after installation of full-fledged VTMS, the channel was made operational for all Haldia bound vessels. This channel is blessed by flood flow and thus required very less dredging for maintaining

adequate level of depth in comparison to LAB. Thus a considerable amount of annual maintenance dredging volume has been reduced to maintain the navigational channel leading to Haldia. The channel leading to Kolkata is more or less self-maintained in most of the part below Diamond Harbour i.e. lower part of inner estuary. It requires very insignificant dredging 0.5 to 1.0 Mm<sup>3</sup>/year for maintaining comfort level of depth in the upper part of navigational

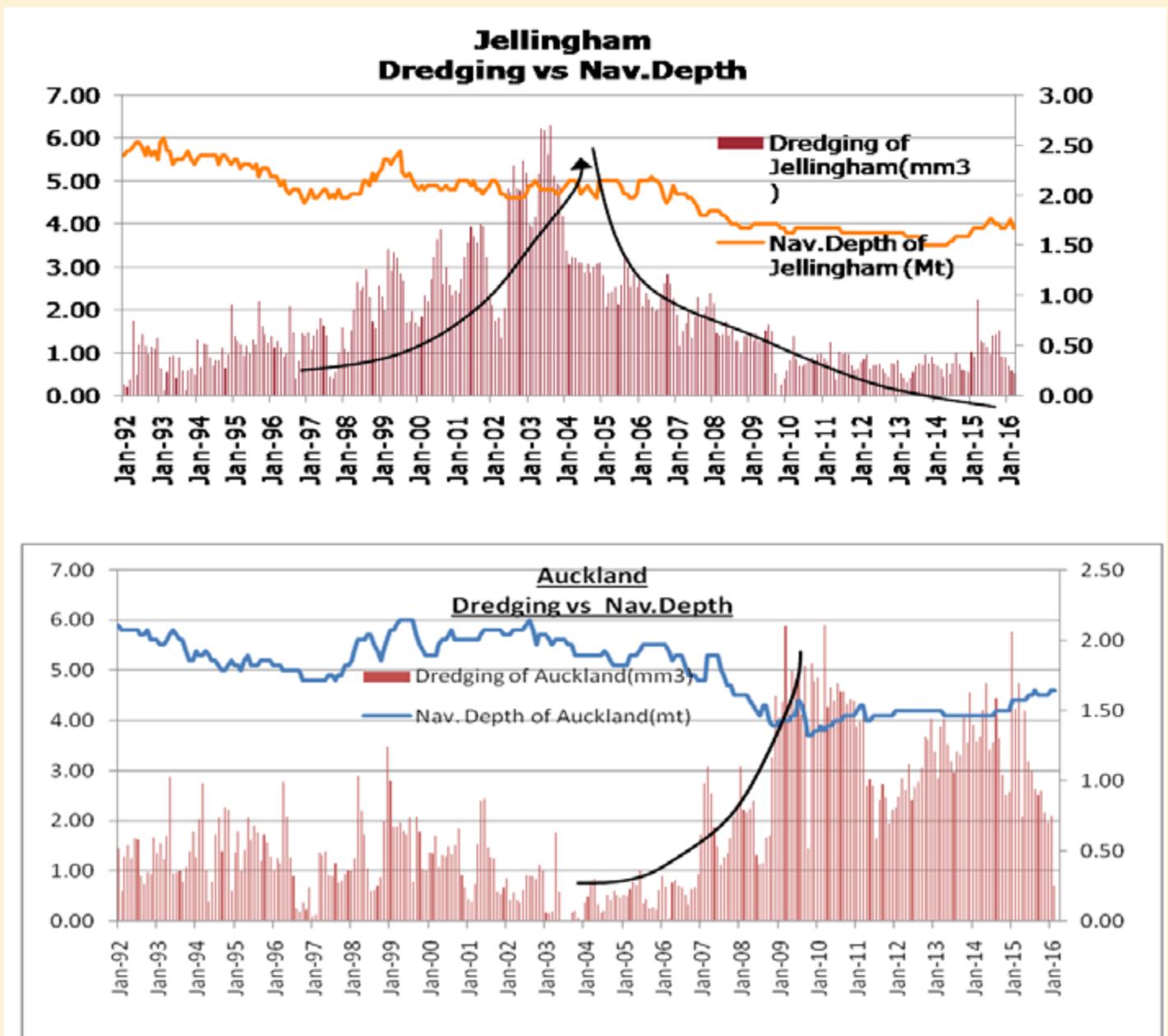


Fig. 15

channel in the inner estuary, leading to Kolkata Dock System (KDS). Thus the overall annual maintenance dredging quantum of Kolkata Port Trust has got reduced from 16 Mm<sup>3</sup>/year to 10-11 Mm<sup>3</sup>/year from 2016-17 (Fig.15).

At present, the average draft of approach channel leading to Haldia varies between 8.2 m to 8.6 m, whereas that leading to Kolkata varies between 6.8 m to 7.5 m on an average. With the demand of deeper drafts around the world, the Government

## Problems

The Problems of navigation and maintenance of adequate depth over the governing bars leading to Kolkata Dock system (KDS) and later on to Haldia Dock (HDC) are perennial and did remain a major concern for the officials and as well Port management who remained in the helm of affairs.

The navigational channel, apart from being plagued with Bars, Bends and Bores, is subjected to tidal asymmetry, insufficient supply of upland flow during Dry season (lean period). Further the estuarine hydrology is encountered with following characteristics:

- Varying upland flow
- Varying tides
- Varying M.T.L due to changing wind set-up and wind direction
- Waves/ Winds
- Spatial change of velocity of flow over a tidal cycle.
- Spatial change of Sediment

of India has stressed to deepen all the Major ports in India upto at least 12.5 meter draft which, however, is extremely difficult and costly in this riverine port. To achieve this, apart from Capital and maintenance dredging, the navigational channels leading to the dock systems of the port (KoPT) require bank protection and river training works in the form of pitching, revetment and nourishment and/or rebuilding of Spurs.

concentration over a tidal cycle.

- Change of Sediment character in Monsoon, Winter and Summer.
- Change of sedimentation with “mixing” of salt and fresh water.
- Deposition by “flocculation” of clay particles over channel bed.

Amidst all the above adversaries of maintaining the longest navigational channel (232 km for KDS and 125 km for HDC) in the Country, there are bright patches of glory for KoPT, to become only major and premier port in India to successfully implement Integrated Vessel Traffic Management System, AIS and RDF etc. along with additional latest state -of- the- art technology for surveillance of vessels, dredgers and other moving objects, (detecting as well tracking ) within the jurisdiction of KoPT.

KoPT faced the challenges of siltation and fall in depths, in the navigational channel leading to its Dock systems, managed workable stability and lived, sustained as



well grown-up with the problem. Since the activities of NW-1 are accentuated to operationalise 'Partitioned Depth' theory as being used in Yangtze Estuary of China (Variable Least Assured Depth in different Reach) , KoPT has got golden opportunities to thrive and reap the benefits from different areas of operations. Implementation of LAD of 3.0 m. between Farakka to Tribeni (Dredging and maintenance) is in the horizon.

Hugli Estuary and Yangtze Estuary have got quite reasonable similarity. In both the cases the waterway shows

sharp, curved, bayonet. The water level fluctuation amplitude is large with fast flowing and ever changing riverbeds, compounded with complex flow pattern as well critical navigation condition.

In the Yangtze River and Estuary, the successful development model says "Deep the downstream, unobstruct the middle extended upstream, connect the branches."



Fig. 16

# Prospects

When we look at European ports, the scenario is rather encouraging. With a meagre draft of around 3m, Liege Port is handling barge traffic of 15.4 Million ton through Albert canal. KoPT has got excellent opportunities to develop Eco-Transshipment Hub at its upstream of KDS similar to Liege Port, Belgium and KDS having excellent Rail, Road, Water, Air connectivity and may well perform

the role of a multi-modal hub.

KoPT has already lunched a Project “Extended Gate of KDS” at Balagarh to tap and transfer the cargo at upstream of Kolkata, which in a way follows the Yangtze development model. Fig.16 Shows the Probabilistic development of Balagarh and its operation.

**Similarly, the following issues/ opportunities may provide food for thought:**

- To develop the idea of Deep Sea Port in the right bank of Hugli Estuary at Tajpur.
- To explore- identify-examine and build Riverine Jetties in the open river front of

Haldia Dock.

- To explore possibilities of building cluster of marine jetties and ship repairing yard at a stable reach (Upstream of

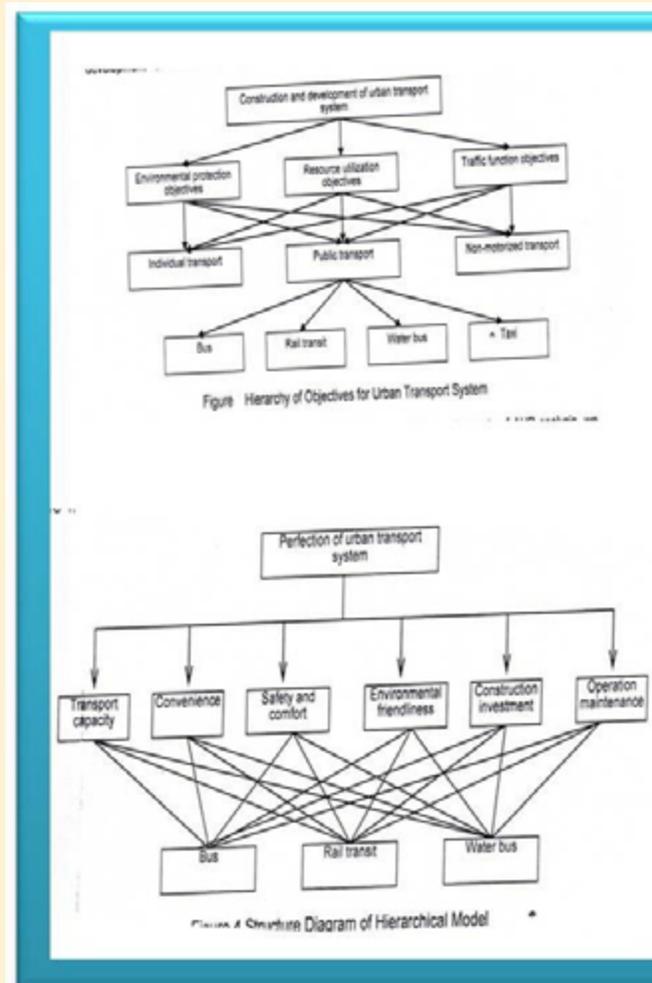


Fig. 17

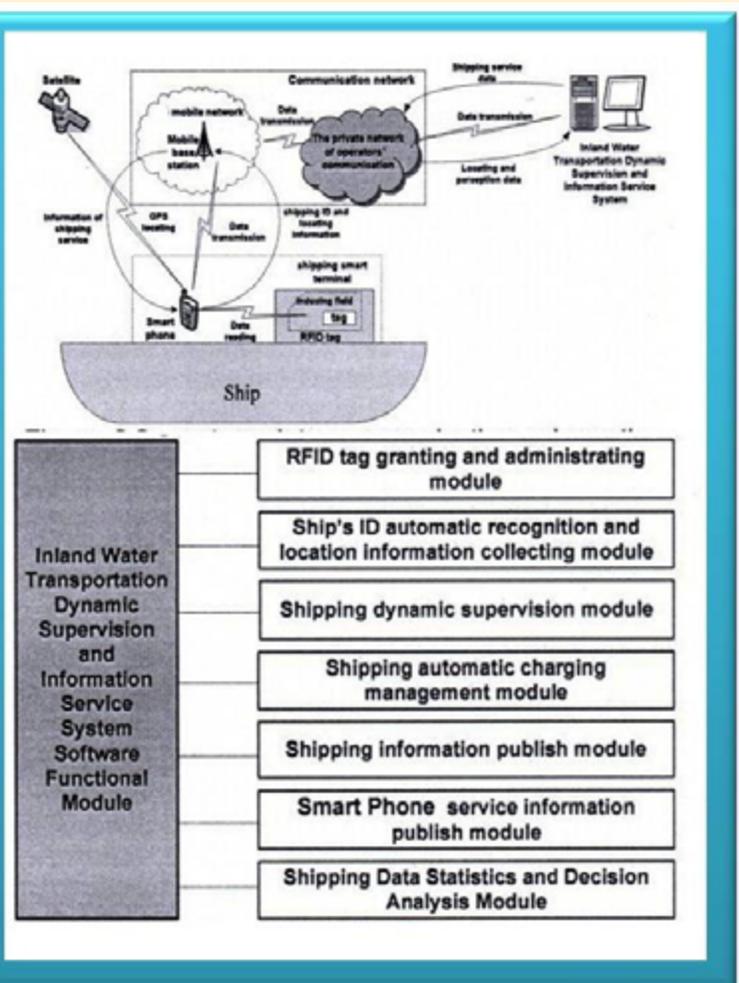


Fig. 18

Nischintapur Jetty)

- To explore the possibilities of construction of Ship building and Boat Repairing Complex at Bduar region (Geonkhali Reach)
- To promote Cruise Tourism, Water Bus (Between proposed IWT terminals for efficient expansion of the urban public transport system. (Fig.17)
- To help develop Inland water Transportation Dynamic Supervision and information services based on Smart Phone and RFID ( Fig.18)

- To explore possibilities of Recycling Dredged Materials within the jurisdiction of Kopt (Washing the dredged material by setting up plants either on shore or water, considering the bed material at upstream being quite coarse and NW-1 dredging from Farakka to Tribeni are in the horizon).
- Consider the possibility of Modernization of Hydraulic Model and Co-ordinate with I.M.U, Kolkata for providing Research and Consultancy services to the Engineering Colleges, Universities in Eastern India in Hydraulic as well Marine Engineering field.

## RIS in the Intermodal Transport Domain and Maritime e-Navigation Development

It is expected that RIS Flagship projects will take into consideration the developments in e-Navigation in order to pave the way for a coordinated implementation of RIS and

e-Navigation in Inland Waterways.

**These Flagships projects will cope with challenges that need to be solved:**

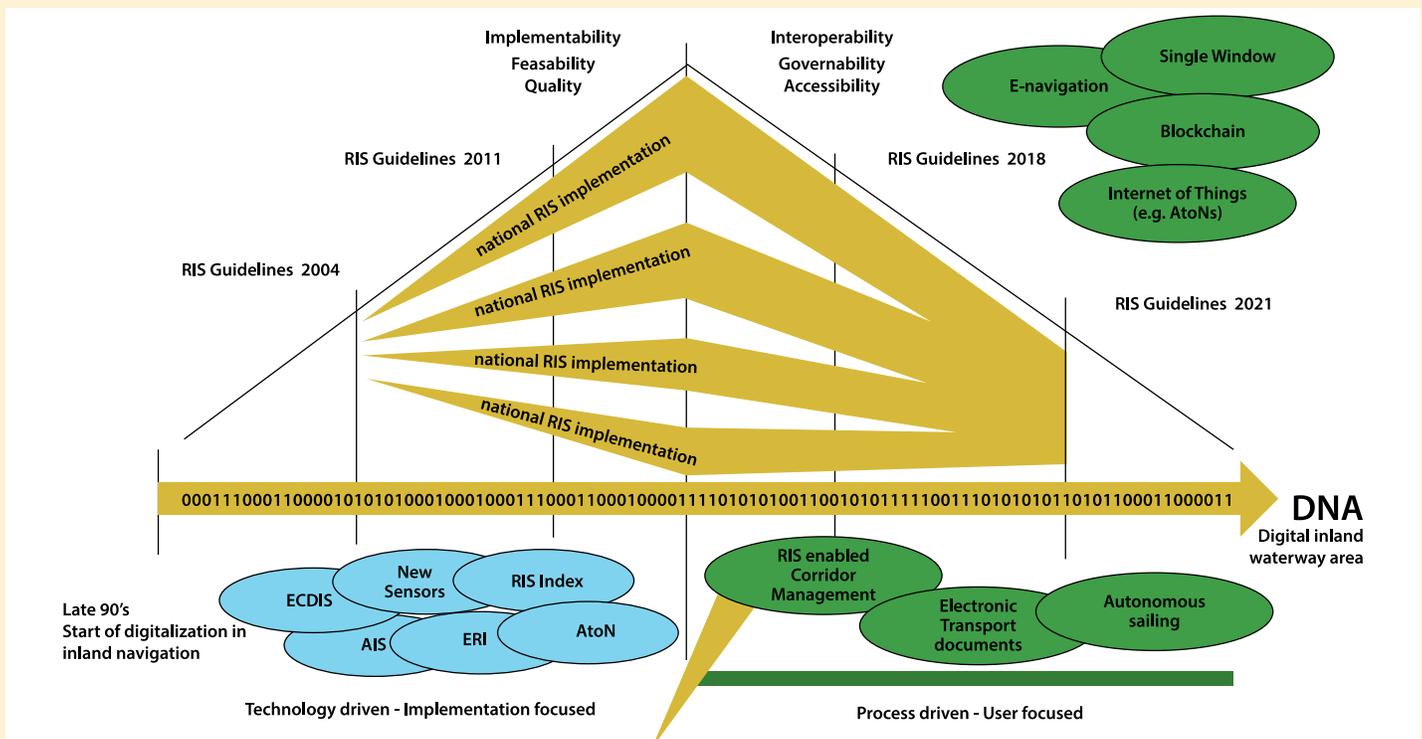


Fig. 19 The evolution of the RIS Guidelines towards DINA



Standardisation, interoperability, interconnectivity and proprietary solutions

- Improve the quality and reliability of traffic and transport data
- Innovative solutions (IoT, Block chain)
- Short and medium-term solutions (autonomous sailing)
- Privacy and building confidence, stakeholder acceptance (“legal” issues)
- Cooperation between private and public partners
- Cyber security

More than ten years after the adoption and transposition of the RIS Directive in Europe, an important level of experience has been accumulated at EU, Member State and stakeholder’s level. At the same time, Important IT and technological developments took place. RIS has been recently included in the Digital Inland Waterway Area strategy (DINA) (Fig.19), whose aim is to interconnect and unlock the potential of information systems on infrastructure, people. Vessels, management and cargo components of inland waterway

## Globalisation of the River Information Services Guidelines

The concept of River Information Services has originated from Europe, and so does the principle of RIS enable Corridor

Management. It was soon recognized that RIS can also bring benefits to waterway users on other continent, thus waterway



Fig. 20 River Information Services implementation sequence



authorities around the world started with the implementation of RIS in the domain. In the framework of PIANC there has always been a good cooperation between Europe and the USA on the development of RIS towards a worldwide concept.

It became obvious that the RIS Guidelines need to become a tool suitable for guiding the worldwide implementation of RIS and taking due consideration of developments in other transport domains. For this reason the new RIS Guidelines 2018 are currently transformed into guidelines for stakeholders in the inland waterborne transport domain all over the world.

In those cases where RIS are deemed to be necessary for the safety of traffic flow, the protection of the environment, the efficiency of transport and to augment the traffic on the waterways while keeping the safety at least on the same level, the competent authority should provide the necessary expertise and arrange funding to provide the desired levels of technology and expertise to meet the objectives.

The RIS services, and their relation with the RIS Key Technologies, can be seen as a layered model presented in Fig.20 The implementation of RIS should contain a least Fairway Information Services

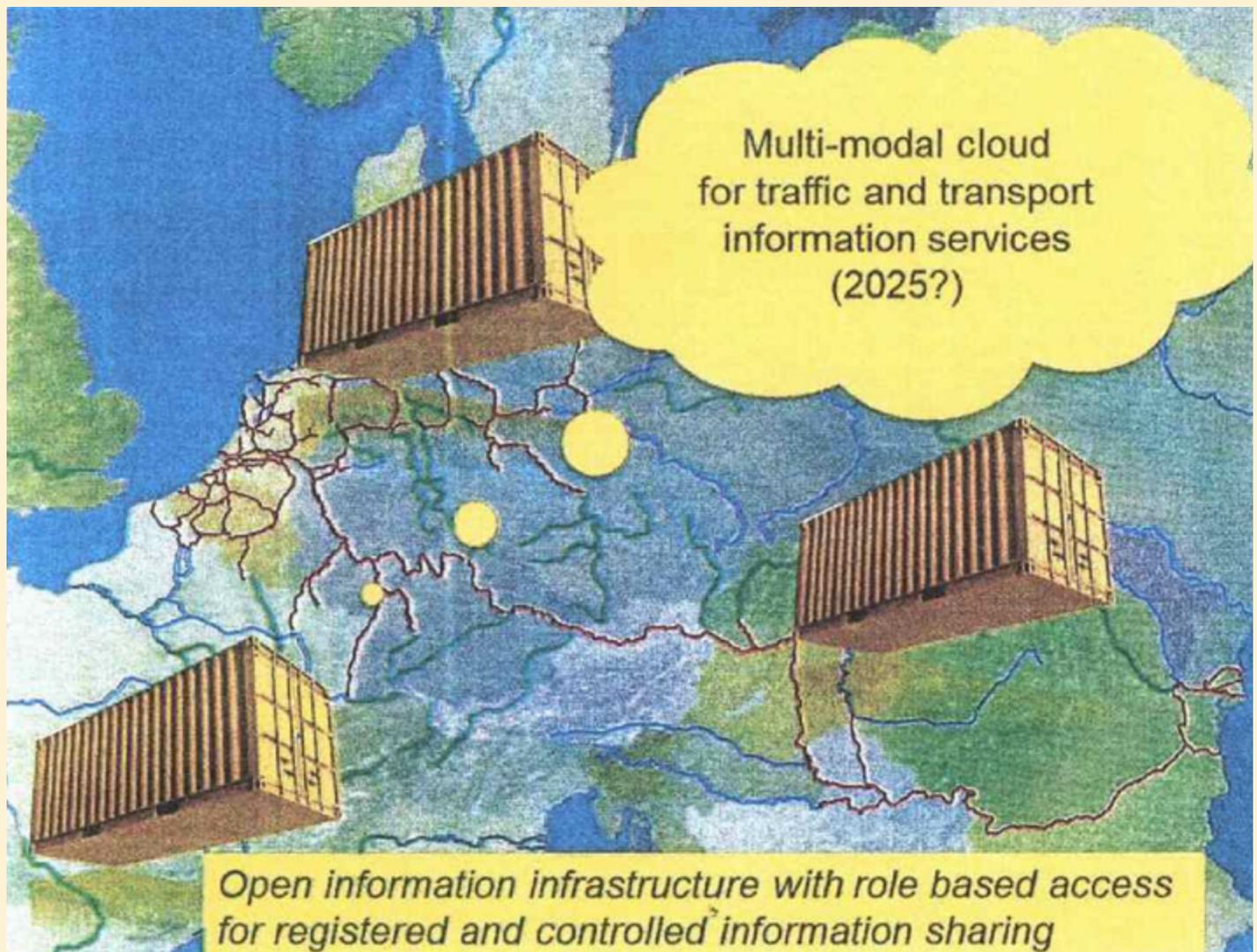


Fig. 21 Multi-modal cloud





*Finally, we must acknowledge the universal truth  
O Powerful Water  
I might have violated  
The laws of nature  
knowingly or unknowingly  
Foolishly or impudently,  
Take away whatever is wrong or deficient in me...*

and in the next step it can be extended with traffic information then with traffic management as the primary services. Based on these three primary services the other services can be implemented.

Eventually RIS can be part of a Multi-modal cloud (Fig.21) for traffic and transport information services enabling efficient transport throughout the different modalities available at and during the transport of goods. The information needed before, during and after transport will be an open information infrastructure with role based access for registered and controlled information sharing.

#### References

1. *Geo-Hydro-Morphology of Hugli Estuary* by Dr. A.N. Biswas.

2. S.N.Ghosh; *Tidal Hydraulic Engineering* Oxford and IBM Publishing Co. Pvt. Ltd. New Delhi.

3. S.N.Ghosh, Bikash Choudhury : *Dredging technology in Riverine and Coastal Areas: Abc Publications.*

4. *Methodology for Reclamation of Nayachara Island by Dredge Material from Jellingham Shoal of Hooghly Eastuary* by DCI TSHD.

Conference Hydro 2017, 22nd International

*conference on Hydraulics: Water Resources and Coastal Engineering, Indian Society of Hydraulics (ISH). L.D. Collage of Engineering, Ahmedabad, December 21-23, 2017.*

*Balkrishna Yadav, Dubey R.P, Chaudhuri Bikas, Prasad Kr. Bhaskaran.*

5. *Manuscript Charts by John Thornton, Hydrographer of the East Indian Company (1669-1701) By MONIQUE DE LA ROWCIERE, Paris*

6. *Performance Evaluation of Inland Waterways* SANTOS J.T.A.N, CARDOSOP, MANCHADO W.V SILVEIRA J.V.O.S "SMART RIVERS 2013"

7. *The idea of the expansion of the Urban Public Transport system based on "Water bus"* ZHAO Donghua; HUANG DOUDOU; CHEN Hong "SMART RIVERS 2013"

8. *BALARI BAR AND REGINE OF HOOGLY EASTUARY* M.G. Hiranandani and S.T.Ghotankar

9. *Increasing need for Cooperation in Vessel Traffic Management* HEUVEL Jasper Vandeu, ROOVERS Geert Antea Group; Oosterhout, Netherlands "SMART RIVERS 2013"

10. *Application of Mathematical Modeling in River Bhagirathi Hooghly and Formulation of River Management Plan*

R.P.S. Kahlon, B.Chaudhuri, M.N.Roy, K.Chakraborty, R.Mahapatra. "SMART RIVERS 2013"

The author can be reached at [bchaudhuri57@gmail.com](mailto:bchaudhuri57@gmail.com)





STRATEGIC ROLE  
OF SMP IN TRADE  
AND LOGISTICS  
IN INDIA'S ACT  
EAST POLICY





# EMERGING FORCES OF TRADE AND INVESTMENT IN THE BIMSTEC: A COMMENTARY

*Dr. Nilanjan Ghosh*

Dr. Nilanjan Ghosh is Director, Observer Research Foundation, Kolkata, prior to which he had been Chief Economist at MCX (I) Ltd in Mumbai, and Faculty at TERI University, New Delhi.

An economist by training, he is considered as a leading development analyst of South Asia. A regular columnist in Indian national dailies, Dr Ghosh has authored eight books and monographs.

*While talking of the challenges and opportunities associated with trade and investment in the BIMSTEC region in the post-COVID scenario, Nilanjan Ghosh highlights the importance of the city of Kolkata and its port as a critical hub for connectivity and regional development.*

## Introduction

Founded in 1997, BIMSTEC's (The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) inexplicable slumber for the first 17 years of existence was succeeded by a sudden spurt in its mentions in various policy academic forums. As an international organisation of seven South and South East Asian nations around the Bay (namely, Sri Lanka, India, Nepal, Bhutan, Bangladesh, Myanmar and Thailand),

the hopes around the institution had been high, though it has failed to live up to it so far! Yet, the enhanced frequency of its allusions since 2014 can be attributed to primarily two factors: a> need for an alternate institutional mechanism due to uncertainty in SAARC resulting from aggravation in India-Pakistan geopolitical relations; and b> ascendance of China through the Belt and Road Initiative (BRI). As



such, BIMSTEC is rife with challenges and opportunities, none of which have featured succinctly in academic and policy debates so far.

Earlier, in my column in Mail Today, I delineated the inherent challenges associated with BIMSTEC, and what essentially pulled it back over the years to emerge as an active platform for regional interactions through cultural exchanges, tourism, trade and investment. The challenges occur in the forms of a> Reactive regionalism b> China's Belt and Road Initiative (BRI), c> Lack of policy manouverablity of larger member states, d> Global Warming and Climate Change, and e> Poor physical infrastructure.

Reactive regionalism is posed against proactive regionalism. Regionalism provides a platform for different countries to pool their strengths and work towards tapping untapped opportunities or combatting challenges: something that cannot be addressed by individual countries. I define the notion of proactive regionalism as tapping untapped opportunities through cooperation or joint endeavours. However, member nations seem to have awakened to the idea of BIMSTEC only when they felt that the challenges posed by the uncertainties in SAARC, or the rise of the BRI are too overwhelming (at least the Indian case seems so). This is reactive regionalism! The success of regionalism has largely depended on proactive steps driven by political will. What pulled BIMSTEC back for a long period of time was lack of political will,

and even today, not much resource has been invested in this institution to really make it a success, despite the noise made around it lately!

The second challenge is definitely posed with ascendance of China and BRI. China's "market imperialistic" designs loom large all across the region. With the exception of Bhutan and India, all other BIMSTEC member nations have given their consent to BRI. China finds immense opportunities to exploit both the input and the product markets in the region that presents itself with cheap labour, a repository of natural resources, and a young population whose incomes are rising at one of the highest rates in the world! India has been wary of the BRI for geopolitical reasons, trade deficits, and possible market invasion. Therefore, one may notice a divergence in thinking among the member-nations with the ways to treat China and BRI, which may be construed as both opportunity and threat at the same time.

From the first two only, one may construe the third challenge that can emerge with bigger member-nations' manouverability with domestic policies for broader regional goals! This becomes an even bigger challenge in federal democracy. The fourth challenge across the Bay is global warming and climate change, which poses itself as a regional threat through sea-level rise and increasing intensity of extreme events. Interestingly, despite being a collaborative forum, BIMSTEC will not be able to apply for adaptation funds



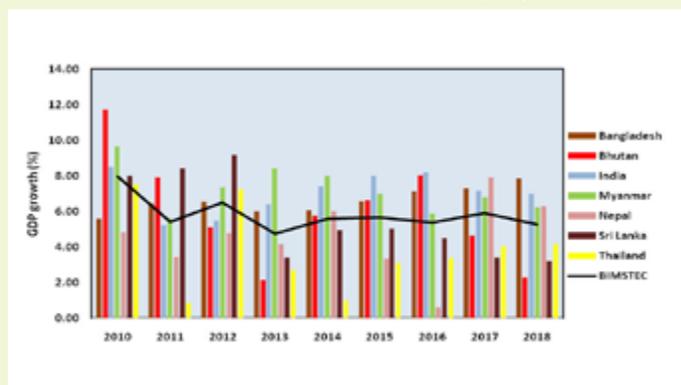
from platforms like Green Climate Fund, as only nations can apply for the same. This will require amendments in the mandate/constitution of the Funds. The fifth challenge is with respect to the disappointing state of physical

infrastructure, classified as physical capital. The recent spurt in development of road and maritime connectivity by China, India, and Japan is noticeable, but there still remains a long way to go.

## The opportunities associated with BIMSTEC Free Trade area

Though the BIMSTEC free trade agreement (FTA) is being discussed ever since 2004, there has hardly been any progress on that front mainly due to lack of initiatives from the larger members of the bloc, namely, India and Thailand. For long, the forum has engaged in deliberations on ameliorating tariff concessions on commodities trade, minimising non-tariff barriers through customs cooperation, trade in services, creating enabling investment conditions through cooperation, and dispute resolution mechanisms. One needs to note here that there are immense opportunities for enhancement of the intra-regional trade in the region, if only trade barriers are improved. This can be noted from the fact that the purchasing power of the region spurred by high GDP growth rates and demographic dividend due to a high percentage of youth in the total population is increasing. The BIMSTEC region comprises 1.63 billion people with a combined GDP of US\$ 2.8 trillion. Over the past five years, member countries have maintained an average economic growth trajectory of 6.5 percent (Figure 1).

**Fig. 1. Annual GDP Growth Rates of BIMSTEC Nations (%)**



Source: 'Authors' own using World Bank data.'

As can be made out from Table 1, while the BIMSTEC members' generic demographic structures suggest that 58-62% of the population is in the age cohort of 15-54 years, the overall percentage of population in the above age group is 59% in the entire BIMSTEC. For any economy, a large component of the consumption demand is generated by this age group. Further, 26.57% of the total population of the BIMSTEC is under 15 that reveals the strength of the "reserve bench" of human capital and consumer demand generator over time. The smaller BIMSTEC nations have a large reliance on foreign trade to meet their consumption needs.

**Table 1: A reflection of demographic dividend in the BIMSTEC**

Country	Population in 2018	% in the age group of 15-54	Total population in age group of 15-54	% opulation under 15	Total population in age group under 15
India	1296834042	59.03	765521135	26.98	349885825
Thailand	68,615,858	59.95	41135207	16.73	11479433
Bangladesh	159,453,001	59.21	94412122	27.29	43514724
Nepal	29,717,587	58.7	17444224	29.54	8778575
Bhutan	766397	62.13	476162	25.35	194282
Sri Lanka	22,576,592	56.06	12656437	23.75	5361941
Myanmar	55,622,506	60.02	33384628	26.56	14773338
<b>Total</b>	<b>1633585983</b>		<b>965029915</b>		<b>433988117</b>
Percentage in total population of the specified age group			59.07		26.57

However, there is a prevalence of sizeable amount of informal trade that does not get reflected in trade statistics<sup>ii</sup>.

Table 2 is an exposition of the intra-regional trade intensity index among the BIMSTEC members. An index of more (or less) than one indicates a bilateral trade flow that is larger (or smaller) than expected, given the partner country's importance in world trade. In other words, trade intensity index while measuring the ratio of trade share of a country/region to the share of world trade with a partner, also indicates the potential for trade growth when the ratio is less than unity.

As can be noted from Table 2, the smaller nations in the bloc (namely, Bhutan, Nepal, Sri Lanka, and Myanmar) reveal high trade intensity index that is symptomatic of their high levels of dependency on intra-regional trading as compared to their trade outside the regional bloc. This is, however, not true

for Thailand and India, which reveal a much higher trading dependency in regions outside the BIMSTEC. From a trading perspective, the thus-exhibited very high trade intensity index of the smaller nations and a greater than unity trade intensity index for most years for India and Thailand indicate that an unmet demand of the smaller nations are met by the bigger ones, and the appetite of trade is still prevalent. Therefore, the BIMSTEC FTA can prove beneficial for the region.

Of course, that does not imply that the FTA will be an unmixed blessing. Rather, as argued by me in an earlier publication the results of FTAs are always varying across a commodity value-chain.<sup>iii</sup> It is not a "win, win" game, but a "zero-sum" situation. Further, the benefits across the member countries will not be uniform, or rather disproportionate. Notwithstanding these words of caution, there is no denying that as per some estimates the BIMSTEC, FTA will generate employment and help in poverty alleviation in the region.<sup>iv</sup>



**Table 2: Trade intensity index of member countries within the regional bloc**

Year	Bangladesh	Bhutan	India	Myanmar	Nepal	Sri Lanka	Thailand
2004	4.97	35.68	1.67	26.98	1.67	1.67	1.67
2005	4.58	34.78	1.45	16.73	1.45	1.45	1.45
2006	3.96	30.02	1.30	27.29	1.30	1.30	1.30
2007	4.11	30.32	1.25	29.54	1.25	1.25	1.25
2008	4.13	29.60	1.00	25.35	1.00	1.00	1.00
2009	3.38	28.49	0.93	23.75	0.93	0.93	0.93
2010	3.41	23.99	0.89	26.56	0.89	0.89	0.89
2011	3.28	22.00	0.87		0.87	0.87	0.87
2012	3.01	23.80	0.88	55,622,506	0.88	0.88	0.88
2013	2.95	24.77	0.96	55,622,506	0.96	0.96	0.96
2014	3.00	25.04	1.11	55,622,506	1.11	1.11	1.11
2015	2.74	24.30	1.16	55,622,506	1.16	1.16	1.16
2016	2.74	25.56	1.20	55,622,506	1.20	1.20	1.20
2017	3.05	24.18	1.11	55,622,506	1.11	1.11	1.11

Source: Economic Research and Regional Cooperation Department (ERCD), Asian Development Bank (as cited in Basu and Ghosh 2020)



# The Indian concerns and priorities

## India's exit from RCEP

India withdrew from the mega-trade deal, Regional Comprehensive Economic Partnership (RCEP) negotiations in November 2019. There were many who felt that India should not have done so as a mega-trade deal that entails ASEAN and five important economies (namely, Australia, China, Japan, South Korea, and New Zealand) would have helped the Indian Micro, Small and Medium Enterprises (MSMEs) to integrate well with the ASEAN and other economies' value-chain. While the opportunity indeed exists, so are the threats! It is important that complementarities in trade be looked at while getting into any form of FTA. Whether this complementarity really exists is a working hypothesis without any solid empirical analysis or evidence. Rather, things may simply work the other way round. On the other hand, inefficiencies in the labour markets, low productivity, inefficient production process, high transaction costs created by fragmented markets do not allow Indian products to be competitive enough in the final goods and inputs markets. India's MSME sector may find a larger market, but given its inherent inefficiencies it is highly unlikely to compete with the ASEAN.

The rationales for India for coming out of RCEP are many more. The very presence of China for whom RCEP fits best in its market imperialistic designs is one of them. The recent souring of the geopolitical relation of the two Himalayan neighbours triggered by

the border tensions have only added further fuel to the fire. The protectionist responses from India are witnessed through creation of barriers for China in the context of trade, investment and markets. Further, the Indian experience with the FTAs with ASEAN nations have only resulted in a rise in bilateral trade deficits for India. This has also punctured the Indian contemplation of getting into FTAs with Australia and New Zealand, where again the bilateral trade deficits have been rising over time even without the FTAs!<sup>v</sup> Add to, even in terms of investment climate, most of the RCEP partners have a higher rank than India in terms of ease-of-doing-business index, with the exception of Cambodia, Laos, and Philippines.<sup>vi</sup> In that sense, the RCEP partners are in better positions than India to attract investment.

The situation with the BIMSTEC-FTA is, however, not comparable with that of RCEP. The Indian position here, rather, is much the opposite, and there remains enough reason for India to take a leadership role in creating a BIMSTEC free trade area. A coordinated and joint endeavour from a more or less geographically contiguous region is much more conducive to create a better investment climate and attract investments. Yet, the apparent lukewarm and sloth response from India on this ground seems to be based on the widespread feeling that being already a dominant trade partner with most BIMSTEC nations, there is not be



much for India to gain from a BIMSTEC FTA!<sup>vii</sup> This is a wrong presumption as creation of a free trade area will also help smooth movement of factors (apart from products) within the region

## Priorities for BIMSTEC in the onset of COVID

BIMSTEC should prioritise in creating a bloc with enabling conditions for investment and business, rather than confining its endeavours to trade promotion only. The “Make in India” initiative of the Modi government was made to work through “competitive federalism” among the Indian states, with the apparent objective to improve the nation’s rank in World Bank’s Ease of Doing Business (EoDB) ranking.

There are two clear concerns against this existing EoDB index. First, it is uncertain whether such indicators that essentially call for reducing the “transaction costs” from the governance perspective adequately capture the on-ground conditions of doing business, as has been pointed out by a recent publication by the Asia Competitiveness Institute (ACI), National University of Singapore. Second, in no way, these conditions can adequately represent the overall business environment that can woo investors: these reflect very few partial conditions. History and political environments have a massive bearing on business environment. As an example, the hostile business environments prevailing in the 34 years of rule of the Left Front in West Bengal left the state languishing, despite late attempts toward revival by CM Buddhadeb Bhattacharya. The

with minimum transaction costs. This can increase the overall regional competitiveness of its products and services in relation to the outside world.

situation has not improved much despite the present West Bengal government’s excellent performance in Business Reforms Action Plan (BRAP) implementation. On the other hand, despite Odisha’s inclement natural conditions and Maoist threats in certain corners, the stable federal government has been able to woo private investors thereby converting underdeveloped districts to engines of development.<sup>viii</sup>

A recent research in ORF suggested that the UN Sustainable Development Goals (SDG) are major enablers of business competitiveness.<sup>ix</sup> The above contention is based on the premise that SDGs address the input and product market conditions through bolstering the potentially available capital classified in four types, namely, physical capital, natural capital, social capital and human capital, which are critical inputs to businesses to thrive. Almost all the SDGs are embedded in one form of capital or the other, i.e., human (SDGs 1 – 5: reflecting on poverty, hunger, health, education, and gender equality), physical (SDGs 8 and 9: employment, growth, industry, innovation and infrastructure), natural (SDGs 14 and 15: life below water and land respectively) and social (SDGs 10 and 16: social institutional variables etc).





Exchange of MOU with Thailand in November 2019

The study revealed that the SDG index thus developed is an enabling explanatory factor for the Ease-of-Doing-Business Index developed by the ACI. The study also indicated that financial capital gets drawn towards those destinations where enabling business conditions are already created through prevalence of the four types of capital.

What are the implications of such results for BIMSTEC, when the world economy is reeling under the impacts of the pandemic? The world is witnessing a growing level of protectionism in some of the major economies, with restrictions imposed on trade in goods, services and labour movements. This will definitely affect the BIMSTEC nations,

as a large part of the demand for “skilled human capital” of the developed world has been met by them.

This augurs well with the prediction that growth may be spurred from the digital space mostly from services, with a simultaneous slump of traditional manufacturing. The BIMSTEC already has a kick-start with the services sector that has grown organically without policy pushes. Therefore, the sector may emerge as the growth-engine of the region. With this inherent organic advantage, there remains the great opportunity to exploit the regional value-chain within BIMSTEC. Research shows that India-Thailand trade can help other BIMSTEC nations to be integrated in the regional and



global value chains through backward linkages.<sup>x</sup> Yet it needs to be kept in mind that large part of the unorganised and informal services remain outside the purview of the digital space, and integrating them in this space poses a challenge.

From a global perspective, China cannot remain a trusted partner anymore. Rather, the India-factor in the QUAD in the Indo-Pacific in the post-COVID world becomes significant and as a prime force to combat the China-factor. A changing global economic order will make many to focus on India as a preferred destination for investment. This works for the advantage of BIMSTEC. They present themselves with all four factors of business in abundance: namely, human capital, social capital, natural capital and an improving physical capital. This part is relatively less explored, and can be the fulcrum of regional development in the post-COVID world.

Much in contrary to the thinking that SDG achievements will be negatively affected by the global pandemic, BIMSTEC nations should treat SDGs as an opportunity to create enabling

## The Role of Kolkata and its Port

There is no doubt that the BIMSTEC lends itself to regional integration more organically whether in terms of physical connectivity or in terms of economic and strategic cooperation than SAARC, as stated earlier. BIMSTEC therefore may emerge as a plausible alternative to SAARC if there is sufficient interest

business environment. They already have a massive resource natural and human capital (already explained in terms of the demographic dividend in Table 1). They need to cash in on those for attracting investments. In a recent article in Financial Times, Amartya Sen reiterated the need for the welfare state during the crisis phase drawing the example of how it emerged during the World War 2 in Britain.<sup>xi</sup> This is tantamount to promoting human and social capital that helps to reduce the overall transaction costs, thereby creating a competitive business environment. IMF's emphasis on unimpeded trade mechanisms as a counteractive force to combat the post-pandemic global slump is of utmost importance. From that perspective, the BIMSTEC imperatives should lie on promoting uninterrupted trade and developing the region as a preferred destination for investments by advancing the cause of the SDGs. This will help in reducing the overall transaction costs of doing business by creating smooth access to labour and capital markets, as also help reduce the overall social transaction costs through regional development and poverty reduction.

among the member nations.

From the connectivity perspective, there are at least three major projects that, when finished, could transform the movement of goods and vehicles through the countries in the bloc. One is the Kaladan Multimodal project that



seeks to link India and Myanmar. The project envisages connecting Kolkata to Sittwe port in Myanmar, and then Mizoram by river and road. Despite the fact that India and Myanmar signed a framework agreement in 2008, it is yet to be fully completed. The Asian Trilateral Highway connecting India and Thailand through Myanmar, and the BBIN Motor Vehicles Agreement are the other two in this physical connectivity endeavour, though the latter have faced a major stumbling block due to objections raised by the Bhutanese parliament on environmental grounds. It is in this context, Kolkata and its port will have important roles to play.

Kolkata, as such, being a major city and historically hub of activity in the eastern part of India, will definitely be playing an important role in this context. This is not only from the perspective of connectivity, but also from the perspective of being a business hub. It is true that the critical edge that West Bengal had in terms of manufacturing has long been lost, thanks to the flight of industrial capital during the 34 years of rule of the Left Front! Yet, its organic advantage from a strategic perspective cannot be overruled. The first is with respect to location which provides it the advantage of being connected to various parts of the BIMSTEC region easily. It can act as the gateway for India's north-east (of course, the town of Siliguri in northern West Bengal also

does that). It is also well-connected with India's west, south, and north through land and air (also over sea with the south). The growing incomes of India's western and southern states provide a potent product market for the BIMSTEC. Kolkata's port (through Kolkata and Haldia) and air connectivity can ideally help to connect to those markets. From a natural capital perspective, a huge resource of the natural capital stock exists around the metropolis or they

are well-connected with the city through roadways and railways. This is in the form of forests, rivers, mines, etc. The city of Kolkata is the cheapest of all the large metros in India, thereby helping the cause of cheap, skilled labour. As

an example, as per some unverified estimates, one needs at least 30% and 50% more salary in hand in Delhi and Mumbai respectively than Kolkata (when you need to rent an accommodation) to consume an identical consumption basket. The other critical element of the 4-capital phenomenon described in the last section entails social capital. The rich culture, social institutions and social relations of the city of Kolkata make it grand repository of social capital as well that enhances the overall quality of life. What the city needs is an overhaul in its physical capital, and that has been happening over the last decade.

However, there remains enough hope for Kolkata port playing a major role in

***In November 2019, the Memorandum of Understanding (MOU) signed between Ranong Port (Port Authority of Thailand) and the Kolkata Port Trust***



physical connectivity. In November 2019, the Memorandum of Understanding (MOU) signed between Ranong Port (Port Authority of Thailand) and the Kolkata Port Trust along with Port Trusts of Chennai and Vishakhapatnam will enable BIMSTEC achieve its objective of strengthening connectivity. This also creates an enabling force for India's Act East Policy. These MOUs will not only enhance connectivity between Thailand's West Coast and India's East Coast, but is envisaged to reduce sea travel time between India and Thailand from two weeks to a week. The importance of the Kolkata port

## Concluding remarks

The priorities of BIMSTEC should therefore be on creation of a sustainable investment and enabling business climate, and enable trade. Under such circumstances, the platform and the member nations should emphasise on promoting the 4-capitals through promotion of the SDG's. It also needs to identify that a regional growth hub can be grown around Kolkata because of the immense advantages that can be accrued in the process. Despite the demise of Kolkata as a manufacturing hub over years, the city has grown as a hub of services. This has not happened due to policy-driven initiatives, but

will get even further highlighted in the context of the BIMSTEC and BBIN, as the National Waterways Act 2016 creates the connectivity of the region with industrial hinterlands through National Waterways 1. The topography of NW-1 which falls within the flat terrain of the Indo-Gangetic plain is predominantly agricultural with some of the major cities of India lying in this region. This also creates potential for transboundary freshwater cooperation in the region, though the issue remains subjected to a host of misconceptions and mistrust.

organically. Probably, even now or in near future, Kolkata may not grow as a manufacturing hub, but its organic positioning as a service hub serving the cause of connectivity, trading, and various forms of services should be buttressed through further development of physical infrastructure. The city is ideally poised to be the fulcrum of growth of the BIMSTEC, with large parts of the connectivity endeavors being driven by the ports in Haldia and Kolkata, apart from other means. The Kolkata Port Trust that completes 150 years in 2020 therefore has its job cut out for the future.



## Endnotes

- i. World Bank (2020), "World Development Indicators online database," Washington D.C. accessed at HYPERLINK "<https://datacatalog.worldbank.org/dataset/world-development-indicators>" \t "\_blank" <https://datacatalog.worldbank.org/dataset/world-development-indicators>
- ii. Janaka Wijayasiri, "Challenges to a BIMSTEC FTA-A Sri Lankan Perspective" in BIMSTEC: The Road Ahead, Research and Information System for Developing Countries, 2016, <http://www.ris.org.in/sites/default/files/BIMSTEC%20Report%20%283%29.pdf>
- iii. Nilanjan Ghosh et al. "India's FTAs with East and SE Asia: Impact of India-Malaysia CECA on the Edible Oil Value Chain", Occasional Paper no. 73, Observer Research Foundation, 2015.
- iv. Ibid
- v. Nilanjan Ghosh. "Regional Comprehensive Economic Partnership: Issues and Concerns for India", in De, P. and A. Raychaudhury (eds.) 25 years of WTO and India: A Retrospective. New Delhi: Sage Publishers. 2020
- vi. Nilanjan Ghosh "Time for BIMSTEC to realise potential", Mail Today, February 17. 2020.
- vii. <https://economictimes.indiatimes.com/news/economy/foreign-trade/implementation-of-free-trade-agreement-can-help-grow-intra-bimstec-trade-official/articleshow/65932903.cms?from=mdr>
- viii. Nilanjan Ghosh, Soumya Bhowmick, and Roshan Saha, "'A 'social' index for Ease of Doing Business", The Hindu Business Line, May 29, 2019.  
  
Nilanjan Ghosh "The Sustainable Business Index", Mail Today, April 29, 2019.
- ix. Nilanjan Ghosh, Soumya Bhowmick, and Roshan Saha "SDG Index and Ease of Doing Business in India: A sub-national study", Occasional Paper no. 199, Observer Research Foundation, 2019.
- x. Estiaque Bari, "Value Chains in BIMSTEC Region: Current Status, Possibilities and Challenges," Policy Brief No. 10, Centre for Policy Dialogue, 2018.
- xi. Sen, A. "A better society can emerge from the lockdowns". Financial Times. April 15. 2020.  
  
HYPERLINK "[https://economictimes.indiatimes.com/opinion/et-commentary/left-rules-west-bengal-for-34-years-and-ruins-](https://economictimes.indiatimes.com/opinion/et-commentary/left-rules-west-bengal-for-34-years-and-ruins-the-state/articleshow/8382473.cms?from=mdr)







# INDIA'S NEIGHBOURS, SHIPPING LOGISTICS AND THE ROLE OF SYAMA PRASAD MOOKERJEE PORT, KOLKATA

*Utpal Sinha*

Shri Utpal Sinha retired as Traffic Manager KoPT in 2013. Joining as a Probationary Traffic Officer in 1976, his role in trade promotion and facilitation for the Port, had been laudable. He served as Deputy Chairman, Calcutta Dock Labour Board.

Presently, he is Guest Faculty of IISWBM Kolkata in Transport Logistics MBA stream, as well as associated with IPA as a Consultant.

It is a proud privilege that I have been given the opportunity to share a few thoughts on some aspects of Port related activities in the volume, to be published in commemoration of 150 years of formal existence of the port where I was fortunate to play a minor role as a professional in my service career.

It is a long journey of 38 years in the port hierarchy, starting as a Probationary Officer in early 1976 and calling it quits in end 2013.

It was altogether a new world. After completing my post-graduation from Calcutta University, I started teaching Chemistry in a college under the same university. Then there was a drastic career diversion from academics to the port profession. Before that, I had not even seen the west of Kidderpore - not to

speak of the port as such. So everything was refreshingly new in an altogether unknown environment and, at the same time, challenging to me.

But once the rigours of port outdoor work set in my psyche, I gradually started entering into the thick of things, gathering knowledge by way of interaction with seniors and competent staff who were quite sizable in those years. So the process of baptism started and over the years, the subject of chemistry underwent a metamorphological change of sorts into transport logistics, with shipping activity at its core.

The topic I will cover is the perspective of our International Trade vis-a-vis our immediate neighbouring countries and the role of Kolkata port in a broader geopolitical scenario. While on this issue,





Discharging containers at Netaji Subhash Docks with Mobile Harbour Crane

may we delve upon a country-wise EXIM and domestic Trade pattern.

At the very start, we must recollect that so far as our Port is concerned, our attention should be on Bangladesh, Bhutan, Nepal, Myanmar and to some extent, Sri Lanka. Trade with Pakistan has very little bearing on our port traffic. Also, due to the 'ACT EAST' policy of our country and our Port being geographically close to the ASEAN (Association of SouthEast Asian Nations.) group of countries, we have to take a look at the level of trade in those countries of the ASEAN, too.

**Bangladesh:** Our neighbouring country since its present inception in 1971, enjoys the closest trade interchange

with India. And Kolkata being the nearest port, historically, had become the most active port support system in the EXIM Trade. Pursuant to decisions taken in SAARC summit, both the member nations of Bangladesh and India, enjoyed a trade interchange in a big way, though Bangladeshi exports to India are far outweighed by imports from India. With SAFTA in place since 2006, the concept of Free Trade Area has worked as a catalyst to the Trade by way of rationalisation of Customs tariff and procedures. Indian exports have grown from a mere 1.6% of its International Trade basket in 2005-06 to 2.5% in 2018-19, the corresponding value-wise increase being from \$ 6.8 billion to \$ 28.5 billion, under the umbrella of SAFTA (South Asian



Free Trade Area) covered countries, with Bangladesh exports standing at \$ 9.21 billion in 2018-19 vis-a-vis imports at the level of \$ 1.04 billion only in 2005-06.

The route for Bangladesh exports mostly centres around roads and to some extent via rail, passing through the nominated interchange points on the Eastern boundary of West Bengal. Utilisation of our port system is minimal. There were efforts in the early part of this century to introduce vessels connecting Kolkata, Chattogram and Myanmar ports, but due to lack of enough inducement, the efforts could not last long.

However, the very recent development of small size container vessels to move cargo from Kolkata/Haldia to Tripura as Gateway to the North East may go a long way in using Bangladesh port facilities of Chattogram and Mongla. Further initiation of full container rake service by CONCOR (Container Corporation of India) from its terminal near our Port to Bangladesh may usher in a significant development in the EXIM activities in the emerging Multimodal transport network of the country.

Added to that is the existence of NW-2 to harness IWT (Inland Water Transport) potential for movement of goods to Bangladesh or even to the North Eastern Region (NER) end, near Tripura border. Indo Bangladesh protocol in this regard



[Transit movement of goods from SMP, Kolkata to Tripura via Chattogram port under Indo-Bangladesh Coastal Agreement](#)



is already in place but this mode of transportation could not be kick-started earlier due to inadequate infrastructural development, poor navigability, despite the sector being less costly and more environment friendly. These days, the time factor assumes all the more criticality, which has somewhat constricted the potential growth of this logistics sector.

Hence, intensive and multimodal logistics of Trade movement from this part can always play a major role in enhancing our port activity in a bigger way. But mere logistics in such cases cannot be the sole decision maker as in these days geo-political relationships go a long way in deciding the course of International Trade. This is particularly true when the Chinese share of Bangladesh external Trade has already started making its presence felt through intensive utilization of Chattogram port. Allowing Bangladesh port as a third country entity for Nepal Trade, may have



a negative effect on movement of Indian trade through Indian road, rail, and water transport logistics. This aspect may be given a look in our discussion on Nepal Trade.

**Nepal:** Being a landlocked country, its international trade in particular is highly dependent on utilisation of Indian facilities. In keeping with this basic requirement, the relevant Indo-Nepal treaty has been in place since mid 1950s and the corresponding Trade protocol has subsequently been put to place, being subjected to periodical review, thereafter. Here also, the Treaty envisages specific border points for movement of transit EXIM goods, apart from domestic goods, as transit interfaces for rail/road operations. In this regard, the most operated transit interchange point is the Birgunj (Nepal), Raxaul (Bihar) corridor. Kolkata-Haldia system has been practically the only Gateway for this traffic, though earlier Kandla was also the approved Gateway. But in 2017-18, the logistics rationale has undergone a sea change with introduction of Visakhapatnam emerging as also another Gateway port. The volume of container traffic between Syama Prasad Mookerjee Port, Kolkata and Nepal, as borne by the Main Line Operators/agents in the fray, has registered a fall in 2019-20 vis-à-vis the earlier years, which may merit a serious look.

Earlier, the Nepal EXIM goods used to move utilising this port system, either through the roadway or through rail movement (of containers) in co-ordination with CONCOR. In the early days, it terminated at the Raxaul point in the

Indian side with subsequent movement to nearby Birgunj in Nepal side, through operation of truck services. Then the concept of 'Through Transportation' took shape enabling Nepal to set up an ICD (Inland Container Depot) at Birgunj and making the container train movement direct to the ICD, with necessary amendment in the relevant clauses of the Treaty, thus reducing the hassles of unnecessary transshipment at Indian end.

But since 2017-18 with Visakhapatnam coming in the picture and Maersk, the major MLO in this sector playing an active role, there has been a major shift of Nepal traffic away from our port system. CONCOR has been the major support system in this new route by utilisation of Multi Modal Transport system in a proper way, both being Registered MTOs (Multi-modal Transport Operator). It is reported that this Combine is moving containers inland to Nepal i.e. at Birgunj ICD, at a lesser rate, though its distance from Visakhapatnam is almost twice that of from Kolkata/Haldia. [Rail distance from Vizag to Nepal is 1422 km while the same from Haldia to Birgunj ICD is 848 km]. This has been possible because Maersk can bring Main Line vessels direct to Vizag thus avoiding feeding services from Singapore/Colombo for Kolkata bound vessels and saving on transshipment cost and leveraging on overall freight economics.

So in respect of Nepal traffic, it had become a major challenge for our port to operate at a level playing field. It is very difficult to wish away the burden of additional feeder transshipment cost for SPM Port Kolkata, but aggressive





First ever inland-waterways container cargo from India to Bangladesh through barge 'Pruthvi' - 2019

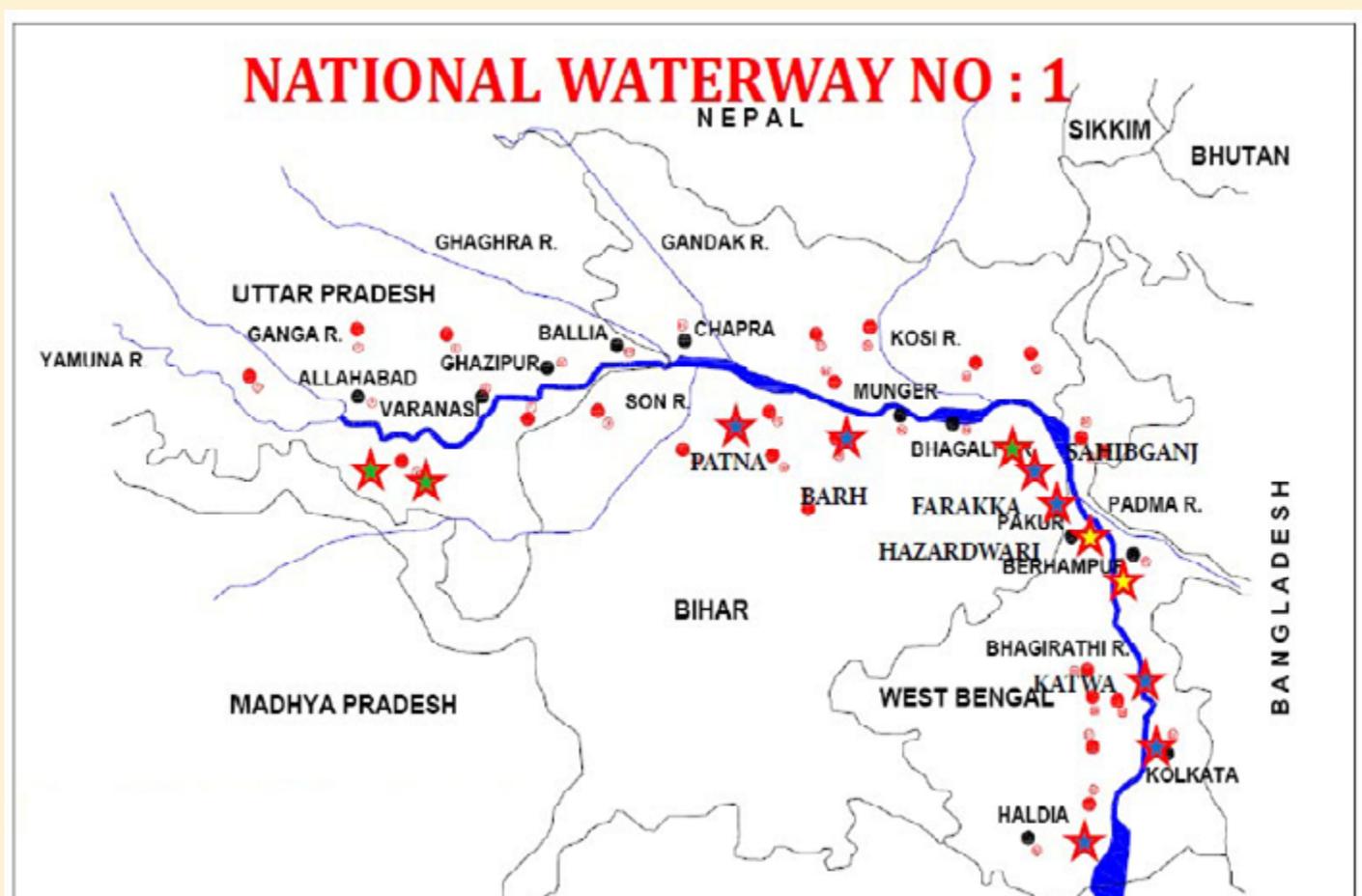
marketing with the concerned players for a dedicated service support system in our port terminal and tweaking the freight to some extent by factoring the issue of lesser inland travel time, may be the way out. The frontal Agencies in Nepalese Trade need to be brought into confidence with the offer of an innovative and holistic package.

Another dimension in this segment of traffic lies in the third country transit through Bangladesh ports, particularly Chattogram port, where main line vessels may come. In this scheme of logistics, a land transit through Phulbari in the 'Chicken Neck' portion of West Bengal assumes an important role, giving free hold for Nepal linked traffic to move through that corridor to reach Naxalbari area in the border transit. While considering the economics of logistics in this segment, the Bangladesh factor needs to be kept in view as in

these days, geo-political developments play a major role in the evolving patterns of bilateral and multilateral Trade. Particularly in our context, the presence of China as a major game changer in trying to capture more markets through political power play is an important factor, worthy of consideration. In any case, the Balance of Trade position is asymmetrically loaded in favour of India vis-a-vis Bangladesh and Nepal. Such situations may at times work adversely in the political process. Recent development by the Nepalese Government on redrawing the Manas Sarovar route is a pointer to this. As such, even port authorities have to keep track of all these factors, which often veer beyond commerce and allied logistics.

**Bhutan:** Till date, the trade servicing to this landlocked country is on a much





more even keel. But the same cannot lead to complacency from the main servicing port system of Kolkata-Haldia. The traffic trend (in TEUs) in Bhutan segment, which incidentally has shown a decline in 2019-20 vis-a-vis earlier year, may be given a look. Co-operation from India has centred very predominantly around the hydro power sector of Bhutan. So servicing of the related goods should get a priority with quality attributes adequately taken care of, to stall any future diversion of traffic, if any.

I may like to mention that National Waterway-6 linkage on Aiyra river covers Assam-Mizoram-Nagaland with extension to the border of Myanmar, through Manipur via IWT-road multimodal chain. This concept has the utilisation factor of Sittwe in Myanmar

in mind, in a similar way as is now being done by accessing Chattogram and other Bangladesh ports for subsequent inland movement to Tripura and North Eastern parts of the country. There should be serious talks and initiatives in this regard involving the Government of Myanmar. The recent introduction of Chattogram shipping route from our Port to move cargo to Tripura and further North East, is a pointer in this regard. If this model gets going, this port/IWT (Inland Water Transport) system may be utilised, to also support the northern part of Myanmar with EXIM movement involving Sittwe port.

The above submission on Myanmar actually gains ground because of our 'ACT EAST' policy and association with ASEAN countries and setting up of a

Trade agreement in the form of AFTA where India is exploring more trade volume vis-a-vis 10 ASEAN countries. In this sector, however, the position is somewhat of a converse of what we encountered in SAFTA trade. The trade agreement is also subject to periodical review and a 2018 report suggests that almost 14% of our Foreign trade is linked to this zone. However, our imports constitute a major share of \$ 47.13 billion in the total basket of \$ 81.3 billion trade.

Yet, for foreign trade collaboration with the ASEAN countries, our port system is very conveniently placed, at least for

Myanmar and Thailand, vis-a-vis other East coast major and non-major ports, spanning from Dhamra to Chennai.

Natural constraints like draft in our port system may be a dampener but our relative geographical proximity to ASEAN countries may be leveraged through our strong hinterland connectivity to one of the most vibrant Economic zones clustering around the NCR of North India, as well as our nearness to the NER states through

the Bangladesh Protocol route. The framework of 'Act East Policy' now has to be given a critical, actionable push

***The framework of 'Act East Policy' now has to be given a critical, actionable push to rationalise more traffic into our port system in the continuing dynamics of business synergies in respect of our neighbouring countries.***



ICP inauguration programme at Birgunj April 7, 2018

to rationalise more traffic into our port system in the continuing dynamics of business synergies in respect of our neighbouring countries. As these countries also share a common boundary with another as well as the economically major China, our steps should now be more proactive and prompt and amenable to diversification/ restructuring of the cost/tariffs and service facilities, to consolidate a logically larger share of the traffic pie.

While on the issue of flight of cargo, things are much more challenging now because of emergence of nearby non-major ports and growing involvement of private support service in the key operational areas of the major ports. The process is now more complex and in a dynamic flux, an evolving story of continually shifting priorities and loyalties in tune with emerging economics of logistics and geo-political-business relations.

Having said so, I still feel direct interaction with the Trade should go a long way in feeling the business pulse. Our experience in the period between

late 1990s and early 2000 will amply attest to that. The Port during that period had formed a core Marketing Team to approach the Trade in different parts of the country and Nepal too. The process was very much imperative in view of the gradually dwindling amount of cargo. At a particular point, a dock system of Kidderpore Docks had to be closed and a Damocles' sword was looming large with the fear of further closure.

As Head of that team, I took a hands-on initiative by fanning out to different parts of North India, Orissa and Nepal to understand the requirements of the trade and instil confidence in them for better services they could avail of at our port at competitive cost.

Major consumer goods players in North India Carpet Exporters in East U.P, Aluminium exporter NALCO in Orissa, the reefer cargo Exporters in Orissa and the entire Nepal Trade were our target clientele. We had reached out to those places, held interactions with the Trade, keeping the local Chambers of Commerce, Shipping companies,



Cruise Vessel Ganges Voyager II on the River Hooghly - 2019



container operators, Nepal Trade Bodies, Log Importers Association, as part of our marketing drive. Even rail service providers like CONCOR were made a part of the team along with the Eastern and South Eastern Railway to lay emphasis on rail support over costlier road logistics. The North East tea exporters were also part of our interaction in Guwahati. This inclusive marketing process had geared up enough confidence in the Trade so that cargo, particularly containers, had staged a comeback. The lost ground was retrieved in good measure in the next few years and from around 2007 onwards, container log traffic had registered a generous upswing. In the process, we had to do some cost rationalisation also by tweaking port charges.

I understand under the dynamic leadership of the present Chairman, the port has taken important strides in reaching out to Bangladesh as well as NER, using the Bangladesh Protocol route.

As already mentioned earlier, there was the first trial movement of container ships from Kolkata Port to Agartala, (Tripura) and Assam via Chattogram Port. Also, I'm told the barge M.V. Pruthvi had most recently sailed from Haldia Dock Complex to Pangaon Port, Bangladesh, on her maiden voyage, carrying 45 x 20 feet Exim containers.

A large number of trade and tariff concessions are also being offered to the landlocked country of Nepal. As part of

the joint initiative with CONCOR to start a new route to Nepal for transit cargo through India's gateway ports, the first container train from NS Docks of KDS, to Jogbani, Nepal, was flagged off in 2018.

I understand a new transshipment procedure aimed at priority loading of containers evacuated under Electronic Cargo Transport System (ECTS) has begun at SPM Port, which would usher in a new era of cross-border cooperation between India and Nepal.

I am told SPM Port has been organising regular Trade/Business meets/Road Shows with the stakeholders of the Port viz, the Users, the Trade, commercial and business interests and the shipping and rail/roads fraternity and Customs and other statutory authorities to bring in additional cargo. SPM Port is seriously going for 'Ease of Doing Business' aimed at streamlining of the rules and procedures to make them transparent in order to create an e-friendly digital ecosystem, conducive to the future implementation of the ERP (Enterprise Resource Planning) so that the logistics/transaction costs with its stakeholders is considerably reduced.

All these are pointers in the right direction and Syama Prasad Mookerjee Port needs to pursue these initiatives with focus and vigour so that the Port earns its rightful place as an important hub in South East Asian Trade dynamics.

*The author can be reached at [madhutpal@gmail.com](mailto:madhutpal@gmail.com)*





# TRANSFORMATION AND LOGISTICS INTEGRATION AT KOLKATA PORT: PROSPECTS OF AN INTERNATIONAL BULK TRANSHIPMENT HUB

*Prabal Basu*

Shri Prabal Basu, Chairman and Managing Director of Balmer Lawrie and Co. Ltd. is a qualified Chartered Accountant, Company Secretary, Cost and Management Accountant. He is credited for significantly contributing to the strategic investment decisions and leveraging technology for the Company's growth.

*"The Kolkata Port Trust (KoPT) is not only a place used by ships, it is a part of history. It witnessed the Satyagraha movement and Independence and was the harbinger of industrial development in this part of the world. It also helped in spreading India's spirituality to the world and displayed our country's efforts towards self-reliance. Many a great luminary has used this port to travel to the West. Among such people was Swami Vivekananda, who is known to return from Chicago to Kolkata via Budge Budge." - Shri Narendra Modi, Hon'ble Prime Minister of India.*

These words of our Hon'ble Prime Minister beautifully elicit the significance of India's oldest and only riverine port, the Kolkata Port. Over the years, the Port has steadily gained strategic

importance for cranking the growth engine of Eastern India. The Kolkata Port crossed the noteworthy milestone of completing 150 years, which very few institutions in the country can be proud of. As part of the inaugural ceremony of the sesquicentennial celebrations held on 11th and 12th January 2020 in Kolkata, various programs were organised and the occasion was graced by none other than our Hon'ble Prime Minister, Shri Narendra Modi. During his visit, Shri Modi inaugurated a memorial on the banks of the Hooghly at Millennium Park where the first ships entering the port of Kolkata used to moor. The Port was rechristened as the Syama Prasad Mookerjee Port to mark the occasion. This event, the performance of the port, key initiatives being taken to make it an international transshipment hub and the





The head office building at Kolkata

various port development initiatives

being driven by the Ministry of Shipping augur well for the Kolkata Port.

Historically, most of the ports cities around the world have been busy commercial hubs owing to economic activities like export, import and other logistics movements. In our country too, owing to the various initiatives of the Government, the ports have continued to contribute significantly to the economic growth and development.

**The Indian Logistics sector, currently valued at USD 150 billion, is an integral part of India's GDP and is**

**expected to become worth USD 215 billion in the next couple of years.**

The evolving Logistics landscape comprises numerous activities and players and is a complex network of partnerships and handoffs. In this milieu, the ports are playing an extremely vital role in Logistics integration. The ports sector in India is being driven by high growth in external trade. According to the Ministry of Shipping, around 95% of India's trading by volume and 70% by value is done through maritime transport. The Government of India is aiming to create port capacity of 3200 Million Metric Tonnes (MMT) by 2020



and has initiated the National Maritime Development Programme, an initiative to develop the maritime sector with a planned outlay of USD 11.8 billion.<sup>1</sup> Port capacity is expected to grow at a CAGR of 5% to 6% by 2022, thereby, adding a

capacity of 275 to 325 MMT.<sup>2</sup>

<sup>1</sup>*Indian Ports Industry Report, June 2020; Indian Brand Equity Foundation*

<sup>2</sup>*ReportLinkers 'Indian Logistics Industry Outlook, 2020'*

## Government initiatives giving a fillip to port activity

The Government of India understands the challenges of the Logistics sector and has been proactively implementing initiatives to make it more robust and facilitate Ease of Doing Business in India. With the easing of FDI norms, implementation of GST, introduction of the E-Way Bill, increasing globalisation, growth of E-commerce, positive changes in the regulatory policies, and the various Government initiatives such as Bhartamala, Sagarmala, Dedicated Freight Corridors, Inland Waterways and Coastal Shipping programs, Make in India, Multi-Modal Logistics Park Policy, Digital India etc., **the Logistics sector is poised to grow manifold in the years to come.** India's rank has also gone up from 54 in 2014 to 44 in 2018 in the World Bank's Logistics Performance Index (LPI), in terms of overall logistics performance amongst 160 countries

The Government initiatives and programs are also giving the much-needed fillip to the port development in the country. **The Bharatmala scheme has been designed to facilitate AI road connectivity around port areas across India for enabling seamless movement of freight and cargo.** The Government has outlined 2,100 km of road network, spanning along the country's coastline. **The Sagarmala scheme, on the other hand, includes various port development programs**

**like port modernisation & new port development, port connectivity, port-led industrialisation, coastal community development and coastal shipping & inland waterways.** India, with its 7500 km of coastline interspersed with more than 200 ports and over 14000 km of waterway, is ranked 16th in the world among the maritime countries. India has 12 major and 205 notified minor and intermediate ports. **A stable port-rail network is also being created to establish smooth connectivity between the country's domestic ports and various industrial hubs, through rail routes.**

The Indian Government has allowed Foreign Direct Investment of up to 100% under the automatic route for port and harbour construction and maintenance projects. It has also facilitated a 10-year tax holiday to enterprises that develop, maintain and operate ports, inland waterways and inland ports. The Government has taken several measures to improve operational efficiency through mechanisation, deepening the draft and speedy evacuations. The Government is also looking to develop the inland waterway sector as an alternative to road and rail routes to transport goods to the nation's ports and hopes to attract private investment in the sector. The ports sector in India has received a cumulative FDI worth





Container Freight Station of Balmer Lawrie at Kolkata

USD 1.64 billion between April 2000 and March 2023. Increasing investment and cargo traffic point towards a healthy outlook for the Indian ports sector.

*Indian Ports Industry Report, June 2020; Indian Brand Equity Foundation*

## Transformation and Logistics Integrations at Kolkata Port

The port industry is facing an increasingly competitive business environment globally. Among the various types of cargoes handled by ports, transshipment cargoes are considered foot-loose and therefore transshipment ports probably encounter the most severe competition. Very interestingly, the top five global transshipment hubs are in Asia with Singapore being number one. A little analysis of the strategy of Singapore Port, the largest transshipment hub in the world in terms of container throughput, clearly

highlights its exemplary performance. **The key differentiators include port institutions and governance, shipping network and connectivity, innovation and technology and environmental management of the port.** It is also important to understand the major challenges facing the port and the opportunities in future development. Though global connectivity is the hallmark of Singapore port and its success, the comprehensive port facilities and services are excellent in terms of quality, efficiency,



competitiveness and reliability. With the ability to handle over 2,000 containers per vessel, and a turnaround time of less than 12 hours, Singapore port is indeed benchmark worthy.

The Kolkata Port is strategically located and has played a major role in establishing the City of Joy as a prime maritime corridor for national as well as international trade routes reaching to countries across Asia and Australia. The Port is reasonably busy and handles different shipments and significant volume of cargo to and from some of the most popular export-import destinations including South East Asian countries like Hong Kong, Singapore, Korea, Thailand, China and Vietnam, and many other places like New Zealand, Australia, Marshall Island (Oceania), Liberia, Panama, Cyprus, Greece, Malta, Bahamas, Antigua, Norway, Qatar and United Kingdom.

For domestic movements, the Kolkata Port is catering to the needs of not only West Bengal, but a vast hinterland including the seven North Eastern states and neighbouring countries. The Kolkata Dock System (KDS) and the Haldia Dock Complex (HDC), part of KoPT are well-equipped and advantageously placed to handle the country's Eastbound cargo. India has benefitted from inland waterways. Haldia and Varanasi have been connected through the same. The development of waterways has improved KoPT's connectivity with industrial centres in East India and has made trade easier for our neighbouring countries like Bangladesh, Bhutan, Myanmar and Nepal. The Gateway port

for the North East, Nepal and Bhutan has always been Kolkata. Of late the Visakhapatnam Port has been posing a big challenge to Kolkata port in terms of moving containerised cargo to Nepal. However, Bulk Cargo movement from any other port other than Kolkata has higher inland movement costs. This makes Kolkata a unique port.

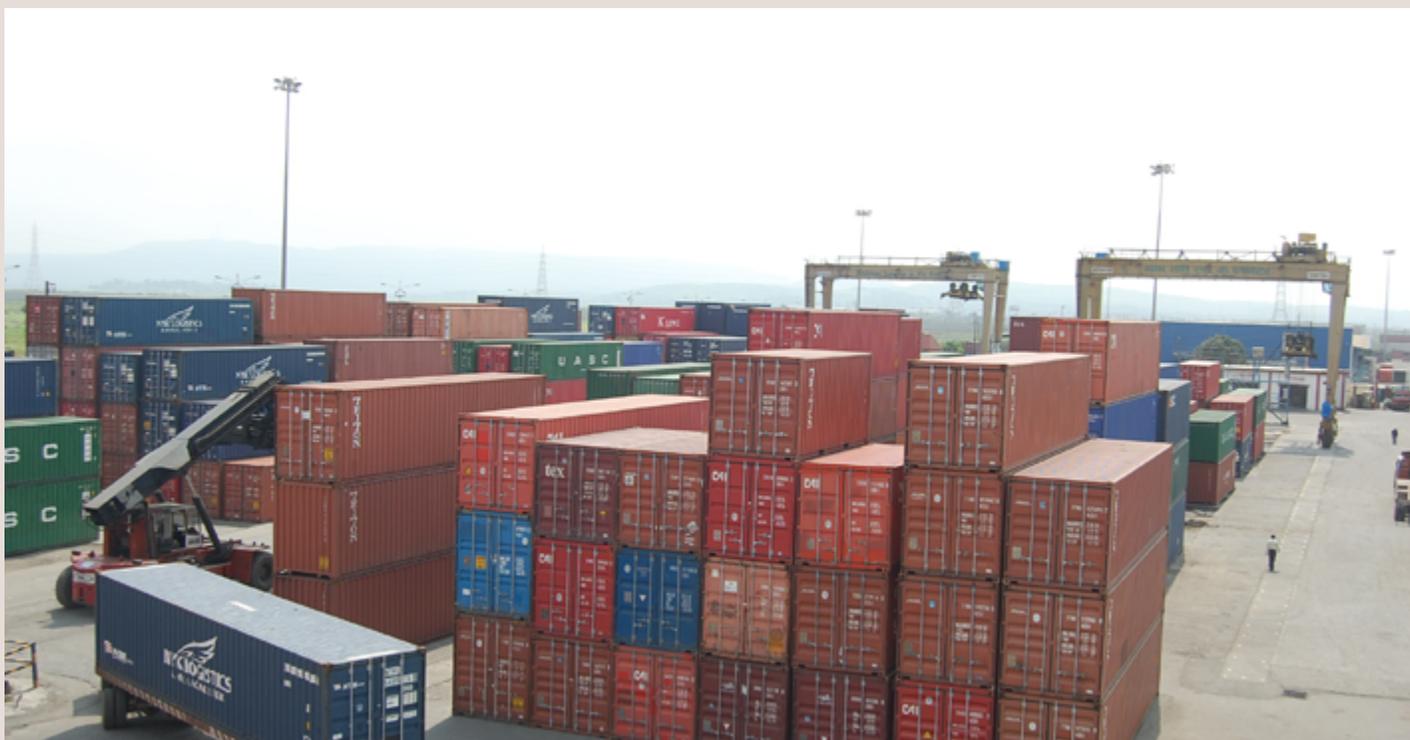
As per the Administrative Report 2018-19 of KoPT, Kolkata Port handled around 64 MT of traffic in 2018-19 creating an all-time record in the history of the port surpassing the previous highest of 58 MT handled in 2017-18. KoPT registered a high growth of around 10% over traffic handled in 2017-18, which was the 2nd highest among major ports, being much higher than the

***In 2018-19, 3,649 ships called at KoPT, the highest number of ships amongst all the Major Ports of India.***

average growth rate of 2.9% clocked by Indian Major Ports. Kolkata Port ranked first amongst all Indian Major Ports in terms of Coking Coal and other Coal handling, second in other liquids and third in Container Traffic handling in 2018-2019. Today, the Kolkata Port is ranked 5th amongst the major ports in the country. In 2018-19, 3,649 ships called at KoPT, the highest number of ships amongst all the Major Ports of India.

With the 'Look East' policy of the Indian Government, huge infrastructure projects are expected to come up in the North East, which would open up possibilities of increased cargo movement through the Kolkata Port. Improvement in connectivity with the North East and further trade in this region would open up opportunities for EXIM trade. The development of





Container Freight Station of Balmer Lawrie at Mumbai

states like Bihar and Jharkhand for which Kolkata acts as a Gateway Sea Port will further encourage a significant enhancement of cargo into Kolkata Port. The revival of the steel industry will also augment growth of Kolkata Port. KoPT has already started handling Capesize vessels and this will encourage more and more such vessels calling in to the Port.

As per the Administrative Report 2018-19 of KoPT, the Port has been making investments in both KDS and HDC and proactively undertaking improvement initiatives particularly to facilitate trade and port usage. The road connectivity was improved and the railway network of KDS was modernised and upgraded. KoPT initiated an extended port gate facility away from the city limits on 300 acres of land owned by it, to meet the growing traffic needs, facilitate aggregation / dispersal of cargo through the waterway and ease road congestion. The Port is also planning to set up a new

deep-sea port at Tajpur in West Bengal. The multi-modal transport terminal at Haldia and the new lock gate at Farakka is expected to be in place by 2021. KoPT has allotted about 80 acres of land to the different industries for setting up of port-based infrastructure, which would bring additional cargo to HDC. Similarly, major land parcels are also being allotted at KDS to various port-based industries for setting up of bulk pulses / food-grain handling systems including processing and storage and setting up of new Container Freight Stations.

Significant investments are also being made in information and communication technology and IT-enabled services to optimise operations and enhance customer service. Internet of Things (IoT), Automation technology, Blockchain technology, Cloud Computing, Big Data Analysis, Artificial Intelligence (AI) and Robotics are being leveraged by ports across the world to



enhance service quality, reduce cost and minimise human intervention. In August 2019, India became the first country in the world to issue Biometric Seafarer Identity Document (BSID), capturing the facial biometric data of seafarers. In October 2019, to facilitate ease of doing business, the Radio Frequency Identification (RFID) based Port Access Control System (PACS) was introduced at KDS. This system helps “paperless” permits for port entry avoiding human contact. Moreover, tracking all vehicles by the system also prevents revenue

leakages and malpractices at gates. KoPT also introduced a Logistic Data Bank to track container cargo almost on a real time basis.

The Kolkata Port has successfully placed West Bengal and our country on the world map along with the other major Indian ports. With further development initiatives in the pipeline being planned, the immense potential of the Port will surely be unearthed.

## The Way Forward – KoPT’s future as an International Bulk Transshipment Hub

*“Optimism is the faith that leads to achievement. Nothing can be done without hope and confidence.” – Helen Keller*

Today we are in unprecedented times. COVID-19 has brought with it umpteen challenges, which nobody was prepared for. Global container trade is in for a major disruption. Domestic and EXIM trade is impacted and hence, ports are expected to experience reduced traffic volumes. Reduced freight volume is leading to low utilisation of road and rail infrastructure. As reported in the Economic Times dated 10th August 2020, owing to COVID-19, India’s major ports continued to witness a fall in cargo handling, registering around 18% dip to 193.38 MT between April and July this fiscal, according to the Indian Ports Association (IPA). Cargo volumes at these 12 major ports under the control of the Centre declined for the fourth straight month in July 2020 and all ports barring Mormugao saw a negative growth. Ports like Chennai, Cochin

and Kamrajar saw their cargo volumes nosedive over 30% during April-July, while JNPT and Kolkata suffered a drop of over 20%.

However, amidst all the uncertainties and challenges there is a lot of hope, lot of positivity and lot of optimism. Very interestingly, the Haldia Dock Complex (HDC) achieved an all-time high by handling 46.67 MT of cargo in 2019-20 and despite COVID-19 pandemic, HDC has been successful in not only retaining its cargo but also mobilising new cargo such as steel. It has handled 7.27 MT since April 2020. HDC evolved marketing strategies to make it conducive for prospective organisations to invest via land-related activities.

KoPT was in the news in July 2020 for a significant transshipment. On 21st July 2020, the first trial container ship MV Shejyoti sailed from the Kolkata port to Chattogram port carrying cargo for transshipment through Bangladesh to the North Eastern states. This





Ocean Chartering

new route reduced time and logistics cost for cargo movement. In the last couple of years, several activities undertaken by the Port, enhanced its capability of being an international bulk transshipment hub. A transshipment procedure aimed at priority loading of containers evacuated under Electronic Cargo Transport System (ECTS) was introduced at KoPT, which ushered in a new era of cross border cooperation between India and Nepal. This brought down transaction / detention costs with no intermediaries at Kolkata, replacing of manual documents with digital ones, thereby increasing the logistics efficiency for transshipment of Nepal imports through Kolkata Port.

Ports known for exemplary logistics integration typically focus on effective collaboration of its information and communication systems, value-added services, multimodal systems and

operations and supply chain integration practices. Focus on appropriate governance structures, supply chain collaboration to meet the changing needs of users and customers and improve competitiveness, and reduction in vessel turnaround time will steer KoPT to realise its vision of being an international bulk transshipment hub.

Moreover, the soon to be released 'National Logistics Policy' that aims to promote seamless movement of goods across the country will also create a conducive business environment for the Port. Besides this, KoPT may strategise and formulate policies to benefit from the regional port development projects such as Sagarmala and the 'Look East Policy'. KoPT must also prioritise on establishing robust maritime networks and proactive partnership initiatives with neighbouring and South East Asian countries and invest in domestic



infrastructural development initiatives within the national policy framework to reach its goal.

Post COVID-19, the future looks bright in the background of a positive environment being fostered by the Hon'ble Prime Minister's vision of the economy, the 'Atma Nirbhar Bharat'

## KoPT and Balmer Lawrie

We will not do justice to this article if we do not mention the wonderful relationship between Balmer Lawrie and KoPT. If we look back at the history of Logistics in India, the British had contributed significantly to the sector. One of the key factors that drove rapid and profound development of Britain as a nation of successful merchants, was its ability to safely, quickly and economically transport goods across countries by sea. In September 1599 an association of 'merchant adventurers' was formed in London with a specific intention of trading with India. Soon after, this came to be known as the East India Company and received a Royal Charter from Queen Elizabeth I.

Of course, as is well known, this led to the historic events of the Battle of Plassey in 1757 and domination of the British in all spheres of Indian life, with its economic and political base in "Calcutta" and in times to **come Calcutta saw the birth of two firms that grew into successful institutions contributing immensely to the Logistics domain. One was Balmer Lawrie & Co. Ltd. founded as a partnership firm in Kolkata in the year**

initiative, the 'can-do spirit' in the society and the immense resilience being showcased by Indians. With opportunities galore and a business environment filled with hope, there's no looking back for KoPT. It's time to gear up to ride on the surging crest that's not far away!

**1867 and the other was Kolkata Port commissioned in 1870, the first major as well as the only riverine port of the country.** Balmer Lawrie Logistics has deep connections with the prime ports of the country like Paradip, Cochin, Nhava Sheva, Mumbai, Kandla, Mundra, Visakhapatnam, Chennai etc. and the association with KoPT is more than a century old. Both Balmer Lawrie and KoPT have a rich history and legacy to cherish. Both the companies successfully crossed the milestone of 150 years and have always extended support to each other.

Balmer Lawrie commissioned its first Container Freight Station (CFS) in Kolkata on land leased from KoPT in November 1994. Further, the CFS was expanded twice again on land leased from KoPT in 2001 and 2008 respectively. Balmer Lawrie established rail connectivity with KDS by way of a Merry-Go-Round using the Port Railway, developing the land connecting the CFS to the Port Railways and procurement of 15 Rail Flats. The third expansion was through procurement of additional land from KoPT on lease for 15 years in the year 2009-10. Since then Balmer Lawrie

***Balmer Lawrie commissioned its first Container Freight Station (CFS) in Kolkata on land leased from KoPT in November 1994.***





Transportation of locos

has been serving the EXIM community of Eastern India, Nepal and Bhutan as the extended arm of KoPT. Balmer Lawrie also took two warehousing sheds from KoPT at Kantapukur and Khidirpur on long term lease to service the customers in the Eastern Region.

Balmer Lawrie has been associated with KoPT since it commenced operations in international freight forwarding and Customs handling activities. Balmer Lawrie used the services and infrastructure of ports of Kolkata and Haldia for movement and handling of cargo both in containers, project cargo, bulk and break bulk for the Government, PSU and Private customers of the Eastern Region of India. Some of the prestigious movements handled at KoPT include project cargo handling for esteemed customers like NTPC, IOCL, ONGC, handling of Over Dimensional Cargo and Out of Gauge cargo for NALCO, Coal India, BHEL, RITES and managing of shipments to neighbouring countries like Bangladesh.

In the recent past an MoU was signed between our CFS at Kolkata and KoPT

under which, an earmarked area at the CFS will be considered as extension of the Port and boxes will move from KDS to our CFS through Rail. The objective was to decongest the road and improve rail connectivity of the Port. Being a diversified PSE, Balmer Lawrie is presently in the manufacturing and services sectors. The Greases and Lubricants and Industrial Packaging plants at Kolkata were also set-up on leased land from KoPT. Beyond business, Balmer Lawrie and KoPT joined hands for the beautification of Ghats in Kolkata as part of Swachh Bharat Abhiyan. As responsible Corporate Citizens, both KoPT and Balmer Lawrie have worked towards sustainable development of the region.

*“Growth is never by mere chance; it is the result of forces working together.” – James Cash Penney*

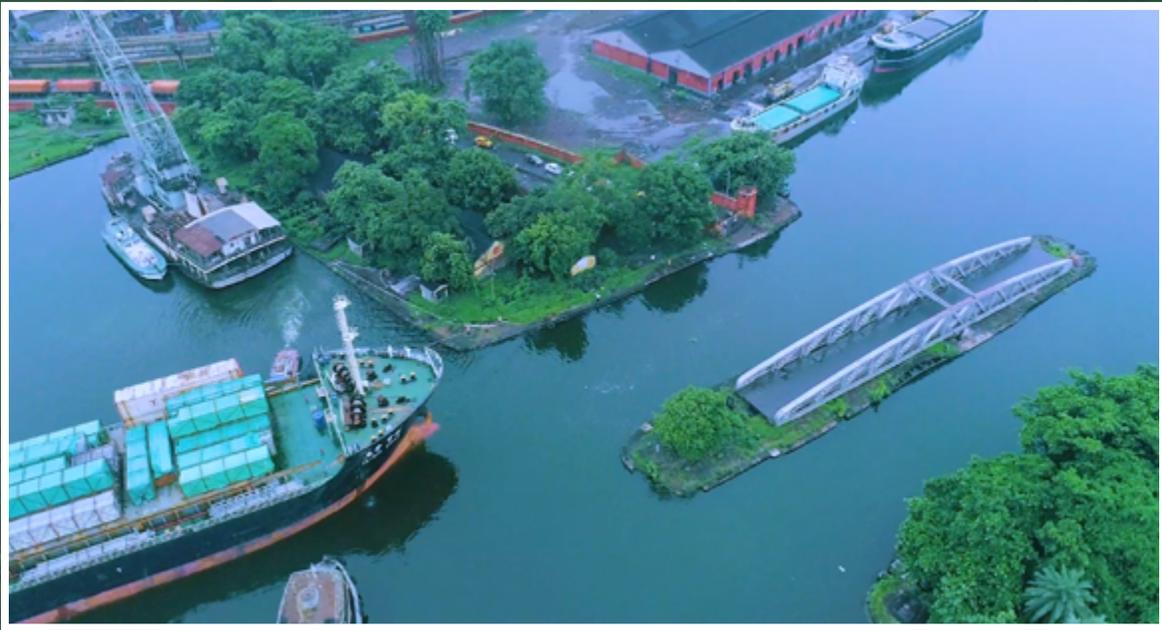
KoPT, Balmer Lawrie and many other similar organisations in this part of the country are such forces working together to drive the Eastern Region on a path of unlimited growth!



# Swing Bridge and Bascule Bridge

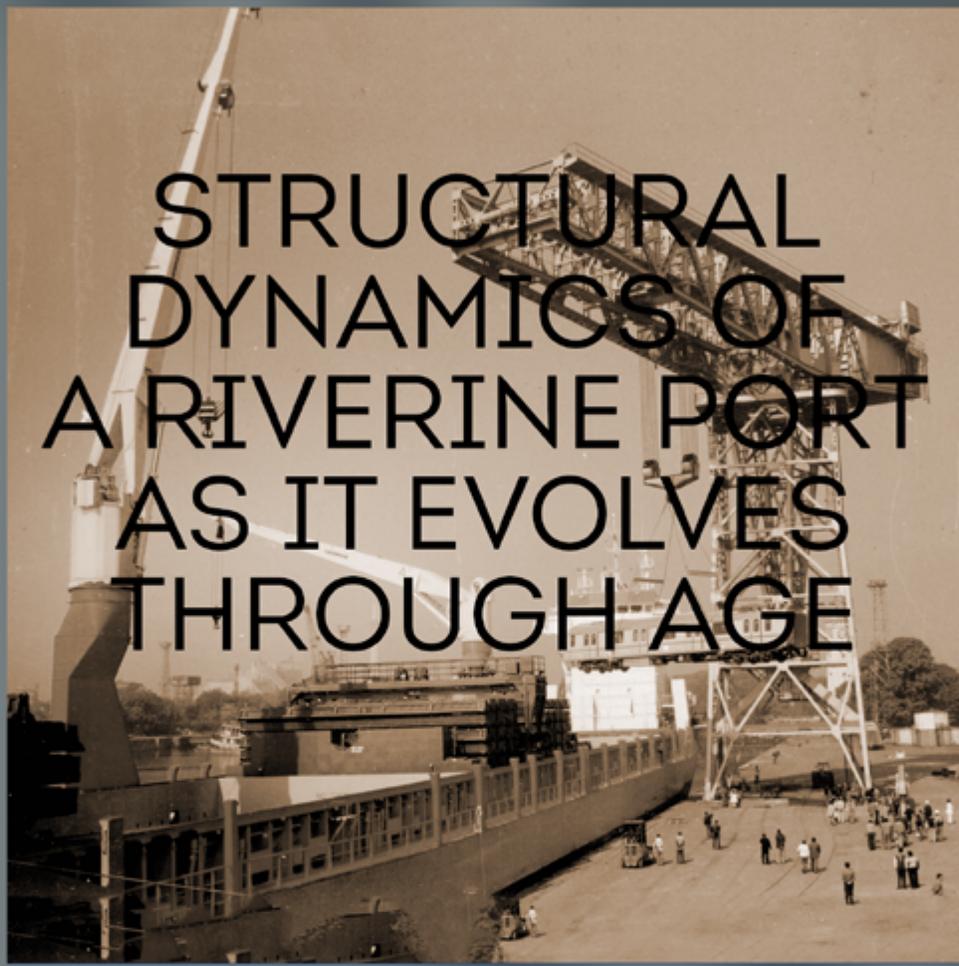
The two bridges were built by the Port in continuation of the roads that existed before the docks were built. The bridges are engineering marvels that have facilitated movement of cargo and citizens, allowing vehicular traffic movement over the docks while the vessels are not in transit.

Watch the video: <https://youtu.be/EP50HWo91YQ>





# STRUCTURAL DYNAMICS OF A RIVERINE PORT AS IT EVOLVES THROUGH AGE





# A DYNAMIC ORGANISATION SMP, KOLKATA

*Sarmistha Pradhan*

Smt. Sarmistha Pradhan retired as Secretary, SMP, Kolkata. She played an active role in the setting up and running of the port's Heritage Centre. During her 37-year stint in port, she has dealt with HR and other administrative matters and has contributed in various committees of Indian Ports Association.

*The genesis of different ports in our country has been diverse, especially the oldest port like ours, which grew into a major port, driven by its own needs and compelling factors. Tracing the legislative framework for a body corporate to manage the affairs of the riverine port, the following article brings out the changes in the organisation structure over time, with glimpses into the future.*

As Syama Prasad Mookerjee Port Kolkata, moves on beyond 150 years it is time to take a look at the administrative structure over the years and envisage the future. In this article an attempt has been made to capture the changes in organization structure, the supporting legislations and the future trend of the only river port of India.

## **Administrative Machinery**

From the days of the East India Company till 1921, Marine Affairs was under the Governor General, who exercised superintendence through the Public (General) Department. Control shifted to Finance under the Department of Commerce in 1921. Major ports were under the Department of Communications from 1937 till 1942

when the Department of War Transport took over. Post-independence, the Department was renamed as Ministry of Transport and after some more changes in the nomenclature, the governing Ministry of Major Ports was the Ministry of Shipping till November 2020 when it was renamed as "Ministry of Ports, Shipping and Waterways".

## **Genesis of Port Commissioners**

For decades after the arrival of European traders on the shores of the Hooghly, there was no concept of creating shore facilities for transit storage of cargo or providing shore-based cargo handling equipment. Dinghy boats carried goods between shore and ships at moorings.



All attention was on navigation as borne out by some major time marks - A competent Pilot Service (1669); Master Attendant or Harbour Master (1694); short lived Pricing Warehouse of mud and thatch (1709); Fort William (1716); Municipality for city (1717); Marine Establishment accountable to the Directors of East India Company (1758); Annual River Survey (1765).

Need for permanent port facility arose in mid 19th century for several reasons like, advent of steamships, opening of Suez Canal, introduction of railways, governance of India by British Crown, increased trade with China, mandatory routing of Chinese goods to England through Kolkata and to top it - a series of Cyclones. The failed Port Canning in Sunderbans and demands of the Bengal Chamber of Commerce led to finalization of site for port or shore facilities on the eastern bank of the river. There was also growing private interest in setting up a continuous wharf from Clive Ghat to Chandpal Ghat. But the Government wanted a public body, subject to Government supervision.

A River Trust for conservancy from Calcutta to Sandheads was formed under Act X of 1866 as a Department of the Municipality under a Subcommittee of Justices, but failed within 16 months. Striking a balance between the merchants, shipping agents and the Government department, the Calcutta Port Act, 1869 was passed for constitution of a Trust for the port facilities only. On 17th October 1870, the Commissioners for Improvement of

the Port of Calcutta was constituted by way of amendment of Calcutta Port Act, 1869 (Act V of 1870). This Act, however, provided only for improving the port facilities with no responsibility of the Pilotage or River Survey or Channel Maintenance. By an amendment in 1871, the Port Commissioners were appointed as Conservators of the Port. A holistic role of the Port Commissioners in the entire maritime navigation from Sandheads to the port in Calcutta came about in 1881 when conservation of port approaches was also made over to them with further amendment of the Act. But Pilotage eluded control of the port authority till post-independence.

***On 17th October 1870 the Commissioners for Improvement of the Port of Calcutta was constituted by way of amendment of Calcutta Port Act, 1869 (Act V of 1870).***

Prior to appointment of Commissioners in 1870, Government had taken up construction of four screw pile jetties in the selected area with cranes and sheds for the accommodation of seagoing trade. Two more were planned. As

per the new legislation, the domain of Port Commissioners was limited to the six jetties which could be increased in length to accommodate larger vessels. The Commissioners were not empowered to execute Duff Bruce's plan for construction of Docks at Kidderpore to handle the increasing rail traffic. It was Act II of 1885 which finally gave such powers to the Commissioners, including power to raise loans for the project.

All the amendments to Calcutta Port Act, 1869 were consolidated to form the Calcutta Port Act, 1890 which continued to govern the port till 1975. The significance of this Act is that more



than a century later certain clauses like Municipal Tax Assessment and providing landing places for passengers were not repealed for the port of Calcutta in The Major Port Trusts Act, 1963.

In 1870, apart from Chairman and Vice Chairman, there were seven Government appointed Commissioners, none of whom represented the trade. In 1871 a merchant prince of Calcutta was appointed as a Commissioner. The number of Commissioners rose to fifteen under the Calcutta Port Act, 1890 thus making it a more representative body especially of the Trade.

The Commissioners were empowered to fix rates, dispose of any question relating to the services of employees and execute works by way of delegation of power to officers. They worked through formation of Committees, which examined the proposals of Departments and placed them before the Commissioners. In 1889 there were six committees: Port Marine and Survey; Jetties and Works; Finance and Establishment; Tramway and Railways; Bridge; and Docks.

The Member, Board of Revenue, Bengal Government was the ex-officio Chairman of Calcutta Port Commissioners till 1921. The Vice Chairman was a full-time officer and functioned as the executive head and additionally as Chief Engineer. In 1900 the posts of Vice Chairman and Chief Engineer were split.

In 1921 after 50 years of the port's genesis, the Northern limits of the port

and port approaches were extended upto Konnagar and Kalna respectively by way of a notification under the Indian Ports Act, 1908. The port of Calcutta was also declared a Major Port. In 1926 the number of Commissioners rose to nineteen with four seats kept for the Indian mercantile community and number of committees was reduced to two.

The India Act of 1935 brought all Major ports under the direct control of the Central Government and Indians could be appointed as officers for the first time. Post-independence, the number of Commissioners was raised to twenty-

***The India Act of 1935 brought all Major ports under the direct control of the Central Government and Indians could be appointed as officers for the first time.***

two with induction of Labour representatives. For bringing about long pending Labour Reforms, Calcutta Dock Labour Board (CDLB) which was constituted in 1952 under Dock Workers (Regulation of Employment) Act, 1948, with common Chairman of the Port and of CDLB. Unfortunately, no

benefit to trade in terms of productivity or turnaround was apparent. After the Major Ports Reforms Committee (MPRC) recommended abolition of Dock Labour Boards in the early '90s, the Dock Workers Regulation of Employment (Inapplicability to Major Ports) Act, 1997 was enacted for merger of Dock Labour Boards with respective Port Trusts.

The Major Port Trusts Act 1963, which came into effect in 1964 for the major ports of Vizag, Kandla and Cochin was made applicable to the port of Calcutta by way of an amendment in 1975. The new Act did not alter to any great extent the day-to-day operations and running



of the port. An amendment of the Act in 1982 permitted more than one Deputy Chairman in the Board to allow Haldia Dock Complex more autonomy. However, Delegation of Powers below Heads of Departments was specifically prohibited by the same amendment though junior level officers were exercising such powers for a long time.

Rate fixation, which was always a contentious issue with the trade, was made into a consultative process by creation of Tariff Authority for Major Ports (TAMP) in 1997 by amendment of the Act of 1963.

In keeping with the more recent policy of Government to open up infrastructure development to private investors, adopting BOT/PPP models of development and shift to Landlord Port Model, the MPT Act, 1963 was amended again in 2000 permitting the Port Trust Board to enter into agreement with any body corporate to perform any of the services and functions assigned to the Board. This has allowed collection of royalty from the service provider thus taking the port from a regulator to revenue generator.

The Major Port Authorities Bill, which was passed by the Lok Sabha in September 2020 promises greater autonomy to major ports with tariff fixation in the domain of the Board, disbanding of TAMP and an Adjudicatory Body for dispute resolution. The power of the Board to make regulations for Planning and Development will become independent of powers of any

local authority to make regulations. These and many other changes in the governing legislature will empower the Boards to meet the future challenges, especially with respect to PPP projects and exploitation of Estate properties. The Indian Ports Act, 1908 is also under overhaul.

## Departments of the Port

While the Port Commissioners worked through formation of Committees, for regular port functioning there was a Departmental level structure with the Head of Department appointed by the Government. The number of

***In 2015, additional five Departments were created for HDC by notifying the General Managers as Heads of Departments.***

Departments varied over the years reaching a maximum number of fifteen in mid nineteen eighties to reduce to nine in 2013. Again in 2015, additional five Departments were created for HDC by notifying the General Managers as Heads of Departments.

Departments of Marine, Civil Engineering, Mechanical Engineering, Traffic, Finance and Secretary's Department were the result of continuous planning and creation of port facilities at newer locations. Incidentally, during the Haldia Dock Project the Mechanical Engineering Department supervised the work of Haldia Oil Jetty with mechanical rigs and Civil Engineers were deputed from Kolkata for the dock construction. The other departments were formed at different stages to meet changing patterns of governance and responsibilities.

After the transfer of the Port Approaches Department to the



Commissioners in 1881, responsibilities of the Deputy Conservator's Department, apart from the Docks and Moorings, covered Hydrographic Survey, Navigational Aids, Wireless Communication, Boat Registration, regulating handling of Hazardous cargo and in later years maintenance of the Commissioners fleet under an Engineering Superintendent. Bengal Pilot Service was transferred to the Commissioners in 1948 and in early nineteen sixties, the Head of Marine Department was renamed as Director of Marine Department. Presently there are five sections - River and Harbour Pilotage, Hydrographic Survey, Dredging and Despatch Services and Engineer Superintendent. With passage of time and reduction of the port's own fleet with outsourcing of some services these five sections too may not last long.

The Hydraulic Study Department (HSD) came up in 1962 for comprehensive understanding of the river Hooghly involving mathematical studies, generation of tidal propagation data and river model studies. The department also looks after communication systems, the VTMS which guides merchant vessels till the Pilots board at Sagar (for Kolkata bound vessels) or at Upper Auckland (for Haldia bound vessels).

The Labour Department owes its origin to the partition of the country, loss of marine crew to East Pakistan and filling

up the resultant vacancies on urgent basis by Indian nationals after necessary training as Inland Water Transport Crew. Also, under the decasualisation policy for labour welfare, bulk of contractual shore workers were absorbed by 1969. A special Department under Chief Labour Officer was created in 1961 for handling these matters. Since 2013 it is a Division in GAD.

Though there were Doctors working in the port before the Second World War,

the growth of the Medical Department can be traced to the Japanese bombings of the Docks in 1942/43. An Emergency Hospital with 60 beds on the riverbank was set up in an existing shelter. A 200 bed Hospital was commissioned in 1970, the Centenary year of the Port. In the sesquicentenary year, plans for a multi-speciality 600 bed Hospital on PPP basis are underway. The Medical Department has reaffirmed its importance during the ongoing COVID 19 Pandemic by setting up a 100 bed Isolation

***The Medical Department has reaffirmed its importance during the ongoing COVID 19 Pandemic by setting up a 100 bed Isolation and Treatment Unit with 4 HDUs and a COVID Ashram for asymptomatic positive patients.***

and Treatment Unit with 4 HDUs and a COVID Ashram for asymptomatic positive patients.

Land transfer and land acquisition were essential since the initial appointment of the Port Commissioners in 1870. Be it for creation of quays, wharves and warehouses or for contiguity of the riverfront facilities or for creating approaches to the pontoon bridge or setting up the Port Commissioners railways, or Tramways as called in those times, or Impounded docks and



all other later day projects, detailed documentation of the instruments of land transfer was necessary. Port land was also leased out for setting up port-based industries. The port being related to the growth of the city of Kolkata also made land available for setting up Power Stations, Fire Stations, Police Stations, Public Roads, Bridges, Ferry Jetties, Bathing Ghats, Circular Rail and in more recent history an entire stretch of riverfront for city beautification, The Millenium Park. For management of the vast estates the Land department was formed. In 2004 when a common cadre structure was decided for all major Ports, the status of the Land Department was reduced to that of a Division under General Administration. But now plans are afoot to restore the independent Department structure and implement the proposed township plan which will unlock the revenue potential of land in Kolkata.

In the eighties three new Departments were created - Planning and Research, Vigilance and Ship Repair Complex.

A Planning Cell with members drawn from Accounts and Traffic was created under the Secretary's Department in 1964 for project planning. In 1984 it became a full-fledged department under Director Planning & Research.

Vigilance was looked after by the Vigilance and Security Advisor till 1984 as a semi-independent section in the Secretary's Department. Vigilance was separated and placed under a Chief Vigilance Officer (CVO) and the post notified as that of Head of Department.

As a part of continuous improvement, the status of CVO was enhanced to the level of Deputy Chairman in 2016.

The Ship Repair Complex created out of Mechanical Engineering Department in 1986 was however short lived and was soon merged with the parent Department in 1991.

A major boost to KDS was commissioning of the Container Terminal in 1991. A separate unit headed by a Terminal Manager with both Engineering stream officers and Traffic Officers was created under Traffic Department. Gradually with outsourcing of equipment and activities the need for Mechanical Engineering support came down and the full structure of the Terminal was not reached.

***In the eighties  
three new  
Departments were  
created - Planning  
& Research,  
Vigilance and Ship  
Repair Complex.***

## **The Haldia Story**

The Haldia Dock Project was taken up by the port of Calcutta to reduce congestion, avail deeper drafts downstream and replace traditional cargo handling by mechanized systems. Govt. of India constituted several committees to examine the functioning of Haldia as a part of Calcutta Port or as an independent one. In 1975, a Committee under Shri A.K. Mukherjee, Dy. Comptroller and Auditor General of India recommended that Haldia should have autonomy with both executive and financial powers, a General Manager corresponding in status to the Dy. Chairman and should operate as complementary to KDS under one Trust Body. A very specific recommendation that was implemented in letter and spirit was that the personnel in HDC



should have separate cadre. Thus, came about the creation of two entities called Kolkata Dock System (KDS) and Haldia Dock Complex (HDC) under one common Board of Trustees.

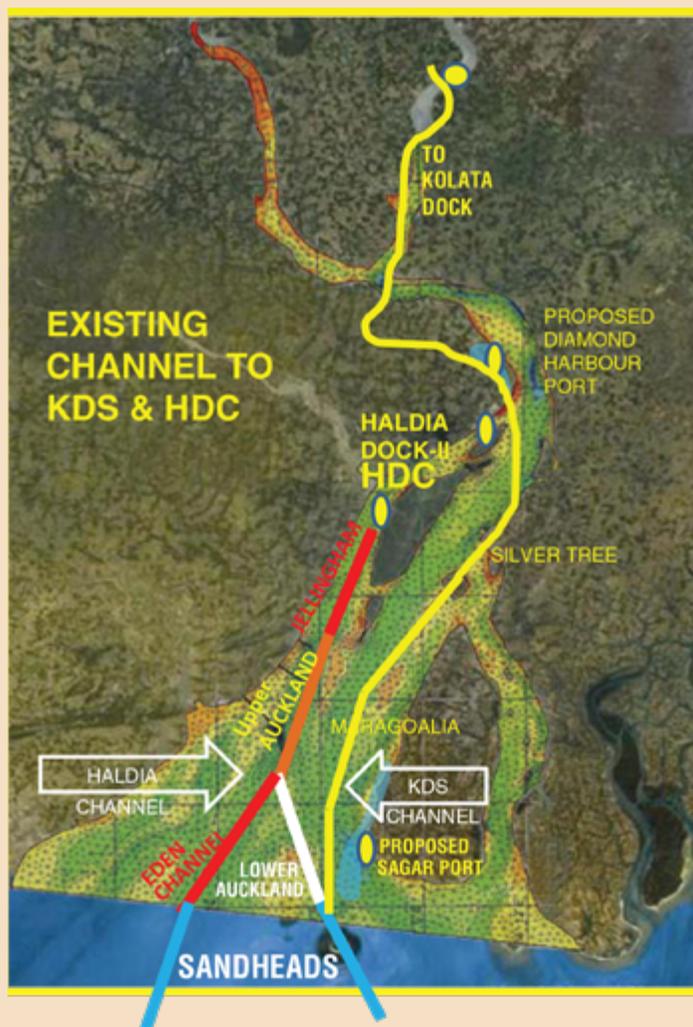
Till 1982 a General Manager remained in charge of day to day running of HDC. This post was later converted into a post of Deputy Chairman in 1982 with amendment of the MPT Act, 1963. Delegated powers of Deputy Chairman HDC were equivalent to that of Chairman and higher than those of Deputy Chairman of KDS or any other major port. Promotional opportunities of officers and staff posted at Haldia were made better than those of Kolkata to attract and retain manpower.

Establishment was kept totally separate with no cross movement between Kolkata and Haldia Docks.

After commissioning of HDC in February, 1977, another Committee headed by Shri H.R. Laxminarayan, Development Adviser (Ports) was set up in 1981. It recommended specific actions for enabling Haldia to function as a self-contained administrative and operational unit which included strengthening the Administration of Haldia with a Legal Cell, Design Cell and a Secretariat for Dy. Chairman.

In 1988, two posts of General Manager at Head of Department (HOD) pay scale were created below Deputy Chairman. One was in charge of Management and Services and the other in charge of Operations and Works. The General Managers (GMs) had 10 Divisions under them, headed by Managers whose pay scale was in between that of HOD and Dy HOD of KDS. There was no post of HOD for HDC, while at that time in KDS there were 15 posts of HOD. In 1996 four of the HOD posts of KDS were declared as common for both Dock Systems by Ministry of Shipping – Director (Planning and Research), Chief Hydraulic Engineer, Financial Advisor and Chief Accounts Officer (FA & CAO) and Director Marine Department (DMD).

Under the Cadre Restructuring Report of 2004, the number of GM level posts at Haldia stood at 5. These posts were notified as Head of Department in 2015. The 5 GMs presently head the Divisions of Management and Services; Finance; Engineering; Traffic Operations and Marine. This necessitated redefining the relative roles of FA & CAO vis-a-vis GM (Finance) as also DMD vis-a-vis GM (Marine). Now GM (Finance) handles independently all matters related



Navigational Channels for KDS and HDC - 2016

to Finance of HDC and shares the accounts with FA&CAO for the purpose of preparation of comprehensive Annual Accounts of the port. GM (Marine) has been entrusted with the responsibility of channel dredging and Marine operations at Haldia, including operations at Anchorages.

Demand for delinking Haldia led to the constitution of another Committee headed by Shri S. Gopalan, DA (Ports) in 1993. Though delinking was not favoured in the report submitted in 1995, it recommended that maintenance of fairway and related activities should be undertaken considering the river system in its totality and not as individual approaches to two separate entities. It recommended removal of some irritants in the functioning of HDC so that both dock systems can play complementary roles supplementing and not supplanting each other. These included enunciation of principles for equitable and rational apportionment of common expenditure, declaring the two General Managers of HDC as HOD, opening promotional channels of HDC officers to HOD posts of Kolkata, stationing of Pilots at Haldia, locating Dredging and River Survey Wings at Haldia, etc.

Regarding Fairway maintenance, the Hydraulic Study continues to guide the dredging plans in consultation with external experts as required. Following the natural closure of Auckland channel in 2015 the channels leading to HDC and KDS are separate, Rangafalla for Kolkata and Eden for Haldia. Channel dredging is required for the Haldia channel. Incidentally, Govt. of India has been extending support to the Capital Dredging and River Training Programme with reimbursement of expenditure

incurred by the port. The reimbursement was upto 80% of cost from 1968-69 to 1979-80, upto 90% between 1980-81 to 1991-92 and thereafter upto 100% from 1992-93 to 2012-13. For the years 2012-13 to 2015-16, a total assistance of Rs.1501.35 crore was approved by the Cabinet. For the subsequent period upto 2019-20 Rs 998.08 crore was sanctioned. As per latest Dredging Policy, work is awarded by SMP Kolkata on tender basis and after third party audit, reimbursement is claimed from Government.

Many of the other recommendations have since been implemented with appropriate orders of Government but some have lost relevance. For instance, HOD and Deputy HOD posts are filled up under a composite method from amongst all major Ports. So, the recommendation for promotion to KDS HOD post is not material now. Trainee Pilots on completion of training are stationed at Kolkata but work at Haldia through arrangements which do not affect shipping. An HOD post for Marine with responsibility for dredging is now available. Principles of apportionment of common costs have since been frozen.

Common cadre across all the major ports was explored long back. In 1982 a common Management Trainee Scheme was proposed by the Government but only SMP Kolkata implemented the scheme in a truncated manner between 1983 and 1993. In recent times recruitment from amongst UPSC Civil Services aspirants has been decided at all India level. For standardizing Service regulations of all major ports, a Regulation Standardization Committee operates under IPA. Transfer policy across ports has been introduced for HODs and will soon be introduced for



## Structure of Syama Prasad Mookerjee Port, Kolkata



## The Port also holds stake in the following companies



juniors. There are suggestions for an all-India Port cadre too.

At the end of 150 years the Port organization has one Chairman, two Deputy Chairman, 8 HoDs for KDS and 5 HoDs for HDC. For effective implementation of diverse works and projects, the port has equity participation in 5 companies namely, Bhor Sagar Port Limited, Kolkata Port Infrastructure Development Corporation, Calcutta Haldia Port Road Company Limited, Indian Port Rail and Ropeways Corporation Limited and Kolkata Riverfront Development Private Ltd.

## The Vibrant Future

150 years old SMP Kolkata has not survived without its share of challenges. Locational advantage of inland water connectivity, deep drafted pockets at Sandheads along with a loyal trade group has helped the port all through. Can the port bank on the same for the voyage ahead?

These days we talk of Port ecosystem. The term is aptly used and reflects the essential features of a natural ecosystem - dynamic, interdependence amongst constituents and self-sustaining. How does such an old port with its traditional standalone structure and archaic practices of command and control respond to the new requirement of being a part of an ecosystem where technology driven activities are ever emerging along with major policy decisions at national level? SMP Kolkata with a socio-economic objective has to thrive and compete with not only private ports but private terminals in major ports. The future will be determined by change in attitude towards customers and service providers and flexibility to respond to external forces. The forces may be changes in hinterland business, captive industries seeking other ports, sops rolled out by private ports for end-to-end logistics support and the like.

KDS with huge untapped potential of Estate properties, requires skilled personnel to take forward plans for



utilization of this asset. Providing land to industries has to become easier and free of uncertainties. The long stretch of waterfront land can attract industries like ship/barge building, ship repairs, ship breaking on one hand and tourism related activities on the other hand with River Cruises, Heritage Tours, Yachting, Ropeways, Marina and Watershows.

To achieve all these, a radical overhaul of the existing organisation structure with its rigid department structure is the need of the hour. There are plenty of dynamic officers who because of their hierarchical position in the organization are unable to put forth their views or contribute effectively.

The future organisation will require personnel who with their experience in ports, logistics and network with clients can drive new business. Restructuring is essentially to infuse a new order of functional thought, shedding

shyness in decision making at all levels, work towards outcomes rather than transactions, infuse fresh blood empowered with modern management tools for working in harmony with experienced port officers and employees with their strong domain knowledge. Officers and employees also have to be assured of protection from penalisation on the basis of post decision scrutiny to come out of the inertia gripping a major section of present manpower.

SMP Kolkata may have to start with being one corporate body, planning for the entire port, irrespective of location of facilities, doing away with the two major verticals of KDS and HDC. Sharing a common pool of manpower with smooth transition across the entire port is necessary. The original idea of an HDC establishment separate from KDS needs a thorough review, especially

## AN ARCHITECT'S VISION

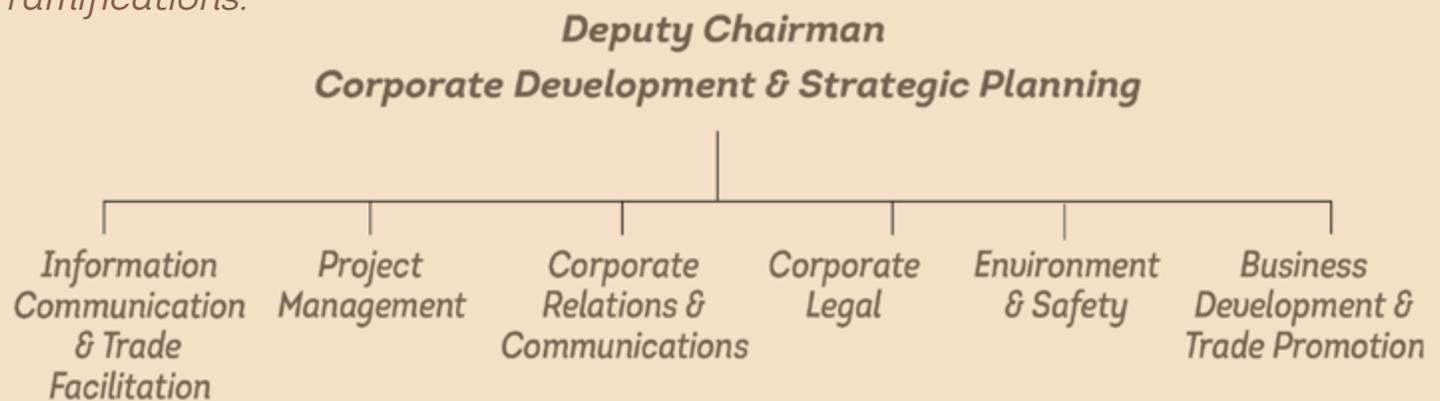


because of recent policy of inter-port transfers and composite method of filling up senior level posts.

A focussed and radically different organisation structure was envisaged

by a consultant engaged by the Ministry of Shipping in 2014. An extract from the report, titled “Blueprint For organisational Restructuring of Major Ports” is reproduced below:

*The major ports traditionally work as a vertical organization with a well laid down set of guidelines where decisions travel top down for implementation/execution through a structured process and are subject to reviews and monitoring. This structure is essentially function led and with rigid divides. The changed order would need devising a matrix module on lines of horizontal structure so as to empower employees to make routine operational decisions, associate and create collaborative solutions, be driven by objectives while adhering to the corporate policies and consult the senior management on policy issues that have larger ramifications.*



To envisage the future organisation of SMP Kolkata, the above report is an eye opener. It talks of a matrix formation to ensure functional integration and facilitate interdisciplinary collaboration in the port operations and development processes. There would not be any rigid compartmentalisation of function or roles within the matrix sub-groups and members can swing between the sub-groups. Thus, specialised functional knowledge will be available to all projects across the organisation. Team performance rather than individual performance has to be recognised. The teams can be a mix of regular and contractual persons and be assignment specific and not function specific.

Certain functions hitherto carried out

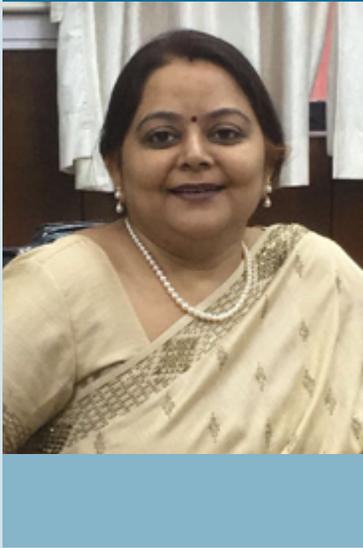
by sections or divisions subordinate to existing departments will require to be brought to the forefront in the new restructured organisation. These would include Marketing and Business Development, Planning, EDP/IT, Public Relations and Legal Cells.

The authorities are aware of the needs of the port for meeting future requirements. In recent times the Ministry has engaged a consultant for a study on manpower reorganization of ports. The work is underway. With a change in the thought process and a restructured organization, SMP Kolkata will meet all challenges and be effective in the port-led economic development of the nation.



CARING  
FOR THE  
COMMUNITY





# THE OTHER HALF OF THE PORT – THE PORT OFFICERS’ WIVES’ ASSOCIATION

*Jyoti Kumar*

Smt. Jyoti Kumar as President, CPTOWA, has been at the helm of the Association since October 2017, and has taken several initiatives in furthering the cause of community care.

## The Early Years

The Calcutta Port Trust Officers’ Wives’ Association commenced its journey way back in 1961 with modest means.

Registered under the Societies’ Act, it started with a ‘Mahila Samity’ where a few women from the economically

weaker sections were provided a ‘hands-on’ training in needle-work, and weaving, by a small group of port officers’ wives who had volunteered to contribute their mite in the betterment of the society in their own humble way.

## Caring for the Citizens of the City

As early as 1984, the CPTOWA started an ‘Old Age Home’ in a small plot of land leased by the Port for the purpose, under the auspices of Smt Pushpa Dutt, the then President of CPTOWA, wife of the then Chairman Shri TC Dutt. It was a visionary idea at that point of time that started with only three senior citizens as residents, and touched the lives of many senior citizens who were taken care of by the ‘home’ in their twilight years.

Primarily with the patronage of the Syama Prasad Mookerjee Port (SMP),

(erstwhile Kolkata Port Trust), the activities of the Association have spread far and wide; the entity with modest beginnings has now grown into an organisation that is deeply involved in community-care and social work with three primary schools for children, and one adult education centre, besides the ‘old-age home’.

‘Astarag’, the ‘Old Age Home’ with about forty residents today, caters to the needs of the senior citizens with all the care and gentleness that they deserve, providing them with a dignified living





Residents of ASTARAG unfurling the national flag - 2018

in the autumnal years of their lives. The senior citizens are well taken care with nutritious food, attendant medical facilities with regular doctors' visits and support of personal staff, for those who may be in need of help.

A library and a common room television-set caters to the recreational needs and mental well-being of the residents. Occasionally, short excursions during Pujas, as well as picnics are arranged, where members of the Association also spend time with them in a friendly and convivial atmosphere.

A team of personnel employed by the Association looks after the day to day service requirements of the 'home' in a

professional way, paying attention to the critical individual needs of the residents. It is, undoubtedly, an exacting task for these attendants, who perform their daily duties with dedication, responding to the call of the samaritan who quietly dwells in their hearts.

With growing nuclear families in the cities, and the younger generation relocating to other places in pursuance of their vocations, some of the elderly are found to opt for staying in an old-age home where they can live with relative comfort and care and with dignity, free from the hassles of living alone in their own houses. We can see the growing demand for such 'homes' for the seniors all around us today.



## The Welfare of Children

The CPTOWA had also paid attention to the children from underprivileged homes who were less fortunate in being denied access to education, often getting misdirected early in their lives. Our Association had been able to set up three primary schools and one adult education centre, that are presently housed in the three buildings provided by the Port. The school presently has about 250 children, who are able to receive primary education almost free of any cost. Most of the children are first-generation school-goers.

Apart from the routine of academic classes taken by teachers who are employed by the Association, they also learn the art of yoga, take lessons on protection of the environment, participate in the Independence Day parades and other extra-curricular activities, apart from being given occasional breathers through excursions. At the end of the day, it gives us immense satisfaction to see the eager and expectant faces of the children who are so keen to learn and explore the world.



Children of Flower II school on Independence Day -2019

# The Mahila Samity

The 'Mahila Samity' continues its good work as it did in its early years. The 'Samity' inmates have innovated their handicrafts with the changing times, making new jute bags and folders that are eco-friendly, besides having an aesthetic appeal. These products have become immensely popular in the last few years. The Mahila Samity has been instrumental in making these needy women self-reliant and economically empowered.



Members of the Association with the school children

The SMP Kolkata has been the chief patron for our Association and has been supportive in all our endeavours of social work. The Port has thus been discharging its 'Corporate Social Responsibility' since a long time, well before the concept of CSR came into

vogue.

I am fortunate to be associated with CPTOWA which is one of its kind amongst all the other ports in the



Felicitation of Shri Barun Chanda, eminent author and actor, by CPTOWA 2018





Annual Function of CPTOWA at MERI auditorium - 2018

country. Its quiet work and altruistic reach has been warmly appreciated by many including Mr D.T. Joseph, former Secretary, Ministry of Shipping who hailed it as a model initiative worthy of being followed by other ports and took special interest in the activities of the Association. The voluntary work by the members of our Association fulfills the innate urge in all of us to give something back to society, in our own humble way.

As President of the CPTOWA, I extend my warm and cordial greetings to the SMP Kolkata on this momentous occasion and wish the organisation further outreaches itself, holding a candle to the margins of the society who are not that fortunate in their trials of life, achieving excellence in the times to come.



Smt. Jyoti Kumar, President CPTOWA at the annual function at MERI - 2018



# REMINISCENCE





# KOLKATA PORT- SOME REFLECTIONS

*Anindo Majumdar*

Shri Anindo Majumdar IAS (1985) was the Dy Chairman of erstwhile Kolkata Port Trust from Oct 2006 to May 2010, and held additional charge of Chairman from June 2009 to May 2010. A distinguished bureaucrat, Shri Majumdar held various posts in the GOI before retiring as the Secretary, Central Vigilance Commission.

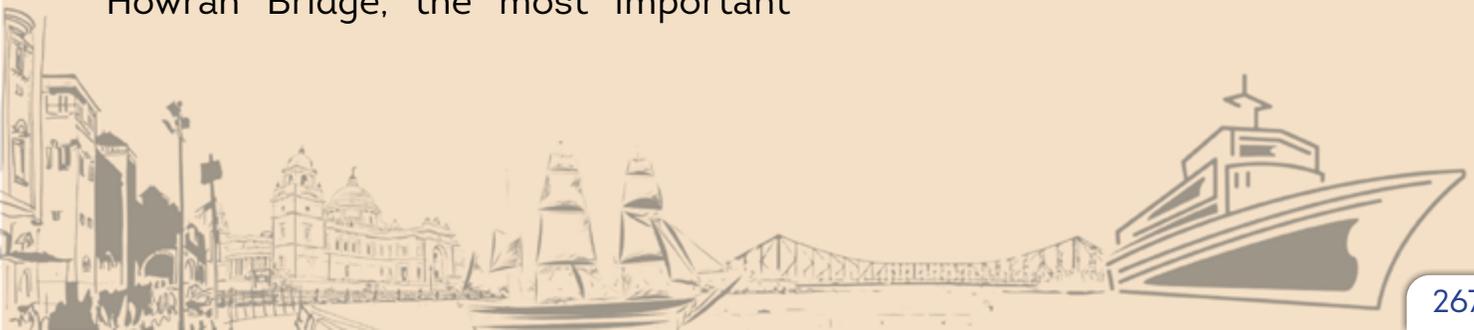
## Kolkata Port - Some Reflections

I joined Kolkata Port as Deputy Chairman with a bit of trepidation. Although, I was dissuaded by some of my colleagues in my cadre from taking up this assignment, I was very keen on joining the port. Apart from my personal reasons for a posting in Kolkata, I had a genuine desire to work in Kolkata port. Ships, boats, river, sea and ports had always fascinated me. I was also attracted by the rich heritage of Kolkata port and the important role it plays in trade and commerce. The other attraction was the River Hooghly - I had always wanted to traverse its entire length

When I joined, the port on 16th October, 2006, it was buzzing with activity. On the very next day, a gala cultural programme was organized at Rabindra Sadan to celebrate the 137th foundation day of the port. Soon after, in November, 2016, Howrah Bridge, the most important

landmark of the city of Kolkata, was illuminated by the port and another big cultural programme was organized to commemorate the occasion. These events enabled me to get a glimpse of the activities of the Port and also to get to know members of the Port family. Also, contrary to what I had expected, there was a lot of positivity in the air and there was a lot of expectation and hope about the future.

The port was already in the midst of a remarkable turnaround by the time I joined it. The cargo handled by the port was increasing and reached a record level in the year 2007-08. Haldia Dock Complex traditionally contributes the major share of cargo handled by the Port. However, from the year 2005 onwards, even the Kolkata Dock System started contributing significantly by handling increasing volumes of containerized cargo.





138<sup>th</sup> Anniversary of the Port - 2008

A number of works for strengthening the infrastructure at Kolkata and Haldia were taken up to facilitate handling of more cargo. A new yard for stacking containerized cargo was developed at Basra lines. The road infrastructure within the Kidderpore Docks and the Netaji Subhash Docks was strengthened.

I already had some familiarity with the Shipping and Port sector in view of my earlier stint in the Andaman and Nicobar Islands. Although the ports there are not really in the same league as Kolkata Port in terms of scale of operation and the cargo mix, nevertheless, the basics of port management were similar and I was somewhat familiar with port and shipping terminology and with some cargo handling equipment.

However, after a while I came to know

from first-hand experience about the unique features of Kolkata Port and how these affect port operations. I became aware about issues such as the limitation of draft, the narrowness of the shipping channel, dependence on tides etc. all of which impact port operations. During one of my field visits, I travelled on the shipping channel to and from Sandheads and this helped me to understand the challenges of navigation in such a difficult channel. I also became aware of how difficult it was to undertake transshipment operations at Sandheads.

The issue of draft in the port has been a perennial problem over the years. Although the port had engaged the Dredging Corporation of India (DCI) for maintenance dredging, the problem remained. There used to be continuous





Commissioning of Pilot Vessel 'Ma Ganga' built in Kolkata - 2008

parleys with the DCI officers with each side blaming the other. Capital Dredging was seen as the only way to solve this problem in the long run and accordingly a proposal was submitted to the Government of India for conducting a feasibility study for this purpose but despite repeated meetings in New Delhi nothing materialized during my tenure.

The general feeling in Govt. of India appeared to be that it would be futile to try to solve the problem of draft in the port and that it would be instead better to set up a new deeper drafted port further down the river. However, unfortunately, all efforts to set up a new port have till date proved to be futile.

A proposal to set up a port at Sagar Island around 2003-4 with the assistance of JICA, did not materialize.

During 2006-8, another feasibility study was commissioned to develop a port at Diamond Harbour but even this proposal was shelved. Another proposal to set up a deep sea port at Sandheads, which had fueled a lot of expectations and was believed by many to be a game changer for the port, was dropped without even conducting a feasibility study although global tenders were invited for this purpose.

During the year 2009, operations of the Port were severely hampered due to heavy siltation in the main Auckland channel. To meet his challenge, it was decided to operationalize the Eden Channel as an alternative channel and preliminary works for this purpose commenced. I believe that the channel was eventually operationalized a couple of years later.



During my tenure, the industrial relations scenario at the port was peaceful with no major work stoppages on account of strike etc.

Kolkata Port plays an important role in the cultural and social life of the city. The clubs and institutions of the port were vibrant and quite often organized cultural events. Sometimes, seminars on more serious subjects were also organized. The port had a very good soccer team which participated in the city's senior division league with distinction.

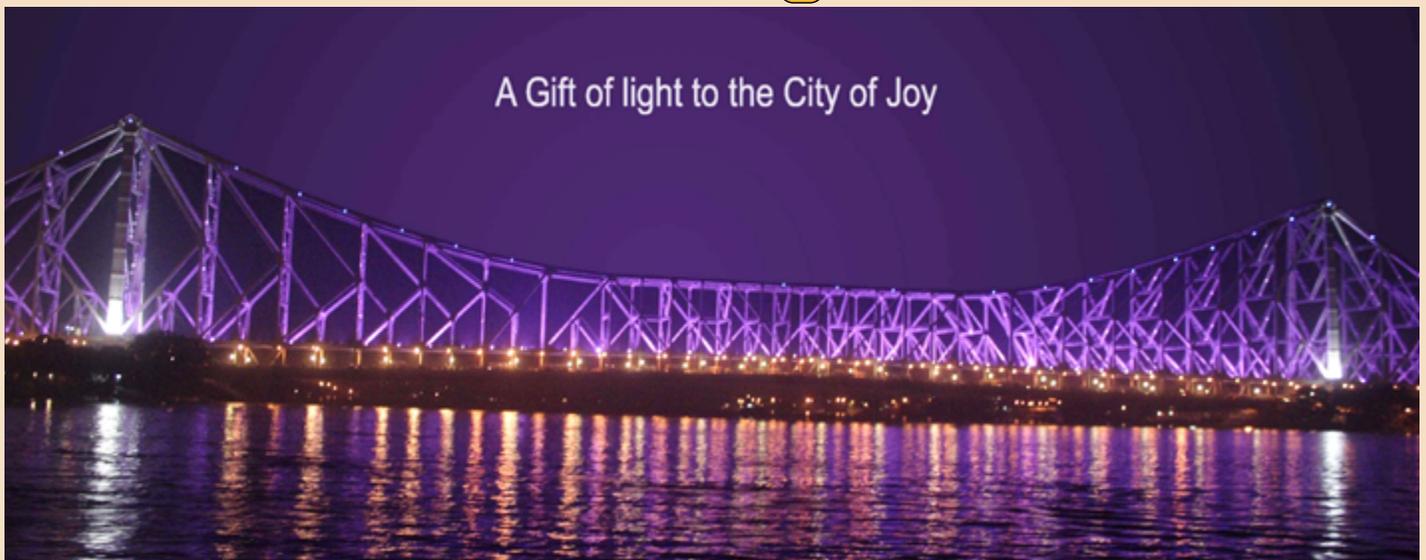
Kolkata, is a city on the river Hooghly. Kolkata Port Trust ( now SPMP) is the conservator of the river and the land along the banks of the river belongs to it. The water front of Kolkata is dotted with a number of majestic heritage buildings, many of which are relics of our colonial era. The Strand road separates these buildings from the wharves along the river. Ferry services are operated from here. There is a flower market nearby. There are some dilapidated Ghats along these wharves and in some of them religious rites are performed. Although

two parks have been developed in recent years, the area in and around the warehouses is very congested and presents a very shabby and even ugly look.

Many cities, around the world, have redeveloped their waterfront in order to make them attractive to visitors and to promote tourism and other economic activities. Port Madero, in Buenos Aires, which has some striking similarities with Kolkata, has converted its warehouses to residential and commercial uses, hotels, restaurants, heritage museums etc. The waterfront has become a new tourist attraction. Likewise, Liverpool and London, both of which are river ports have redeveloped their waterfronts.

Kolkata Port, can likewise, develop the waterfront along Strand Road in an imaginative and creative manner. The warehouses which exist on the Strand Road need to be redeveloped. These warehouses are buildings of great historical and heritage interest. A port museum could be established in one of these warehouses to showcase

[Dynamic Illumination of Rabindra Setu on 'International Day of Light'](#)



Howrah Bridge



the rich history of the port. Models of some famous ships of the past could be displayed in the centre. The Documentation Centre, which was set up in 2009, could be integrated in the museum.

The idea to redevelop the waterfront along the Strand Road is not new. Indeed, a number of meetings have been held to discuss this subject. Unfortunately, for a variety of reasons, nothing concrete has materialized till date. It is also not an easy task as there are a number of parties who have a stake in the matter and who need to

develop a consensus on the matter. Moreover, there are legal issues too. Most importantly, is the issue of funding. However, all these problems are not insurmountable and the proposal should be actively pursued.

Kolkata Port, in its long and rich history of 150 years, has weathered many a storm and has always bounced back. Today, it is reinventing itself. New initiatives taken in recent years are likely to transform the port

*I congratulate Kolkata Port Trust on reaching this momentous milestone and wish it all the very best in the future.*

**The author can be reached at [anindo60@gmail.com](mailto:anindo60@gmail.com)**

*"It would be our worst enemy who would wish us to live only on the glories of the past and die off from the face of the earth in sheer passivity. By continuous achievement alone we can justify our great ancestry. We do not honour our ancestors by the false claim that they are omniscient and had nothing more to learn."*

**- Sir Jagadish Chandra Bose**





# REMINISCENCES OF A HYDROGRAPHER

*Cmde Gautam Dutta*

Cmde Gautam Dutta graduated from T.S. Dufferin Bombay, in 1973 and joined the Marine Department. A Fellow of The Institution of Surveyors, he had held command of survey and research vessels, and has a vast experience in surveying. Retiring as Chief Hydrographer in 2013, Cmde Dutta served as Consultant to M/s. WAPCOS Ltd, Port & Harbour Division, Gurgaon 2014 to 2015.

The River Hugli was navigated by the Portuguese, Dutch, French and Danish sailors to trade in silver in exchange for cotton, muslin textiles, spices, saltpeter, rice and other items for the European markets. The British were late entrants into this trade arriving in the early 17th century, under the aegis of the British East India Company (EIC). With the increased shipping, the need to create modern port facilities was felt, which over time gradually grew,

laying the foundations of the port of Calcutta, the first modern day port in India.

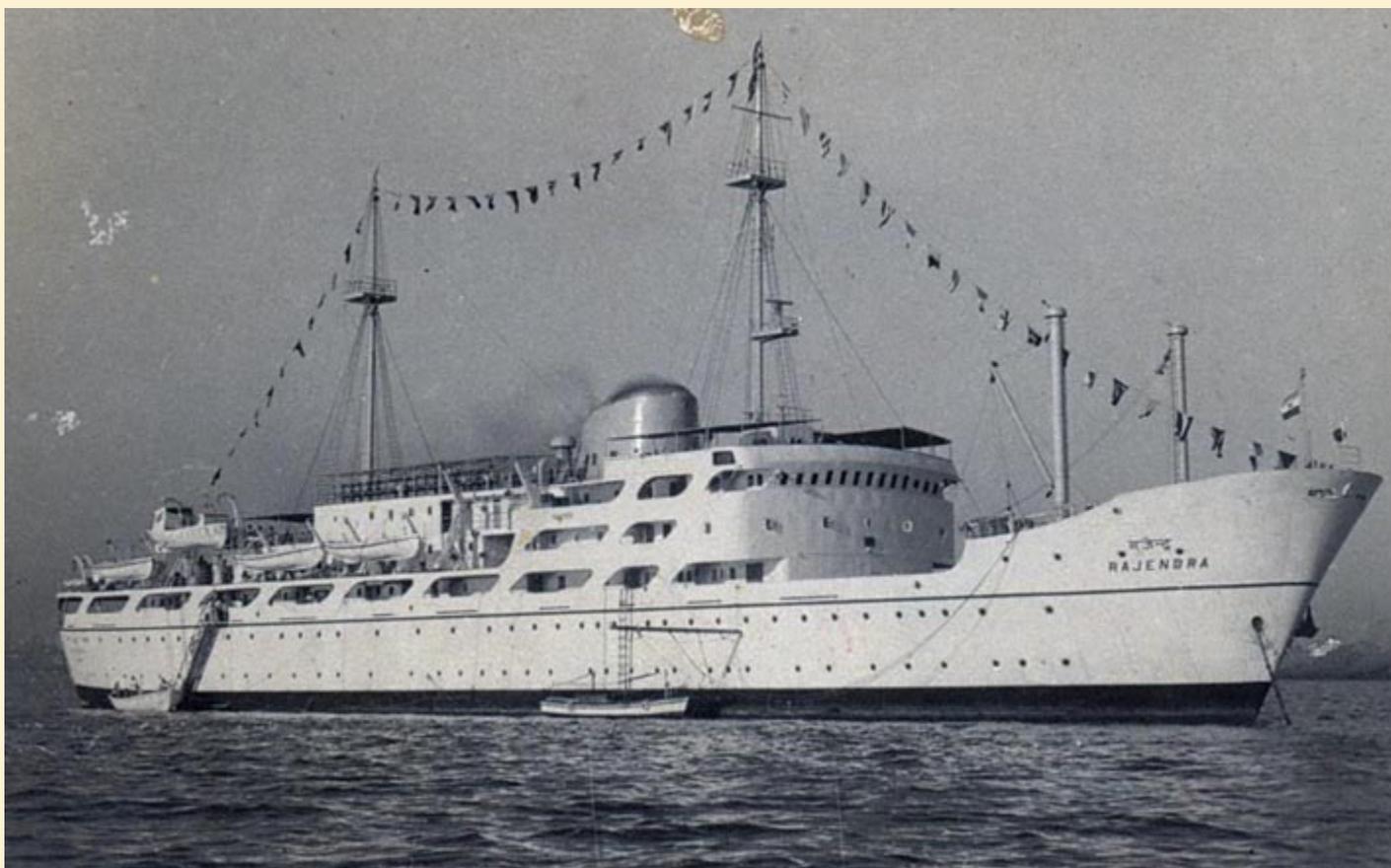
In order to navigate ships safely, the 'Approaches' to the Port and the River needed to be thoroughly charted for the guidance of the mariners. The river Hugli was difficult to navigate, as depths on the river kept varying with shifting of the sands that were continually brought down by the river. The EIC founded a Joint Service of the Pilots and Surveyors, which continued till 1863 when it was separated from the Pilot Service and the present Hugli River Survey Service (HRS) was formed, which was subsequently transferred to the Calcutta Port Commissioners on 1st November, 1881.

HRS inducted the brightest talents from the premier training ship of the



Training Ship "DUFFERIN" (Mumbai, 1927 - 72)





Training Ship "RAJENDRA" (Mumbai, 1972-92)

country, T.S. "Dufferin" since 1930, for hydrographic surveying and studying the mighty Ganges. Cadets from the training ship joined the Port as Probationary Assistant River Surveyors, a job more lucrative than the career at sea, then.

In July 1973, I was a bright, eager and wet behind the ears 19-year-old, who assumed that he had acquired all the knowledge that existed in the maritime

world, being a graduate from a world renowned institution. However, shortly after joining the HRS, I realized that my knowledge was based on a foundation, which was as firm as the shifting sands of the river Hugli. I discovered that I had much to learn even from the crew members on board. I resolved to soak in all the knowledge, so that I could be a worthy successor of this distinguished Service.

## Responsibilities of the HRS

Officers of this hydrographic organization are probably the only Hydrographers who are also navigators, hydrologists, cartographers and administrators. Efficient functioning of HRS is crucial for safety of navigation, pilotage, dredging and hydraulic research on the Hugli. Based on hydrographic data, ensuring authenticity, accuracy, quality and precision of all charts and River Notices, HRS is responsible for ensuring that risks to navigation are minimised.



## Tides in the Hugli and their Influence

Tides are the regular periodic rise and fall of the surface of the seas discernable along the shores. The resultant horizontal movement of the water is known as Tidal Current.

The instance of High Water is when the tide has risen to its maximum height and has just started to fall; similarly the instance of Low Water is when the tide has fallen to its lowest and has just started to rise.

Tides are generated by the gravitational forces exerted by the heavenly bodies on the oceans, especially the Sun and the Moon; with the Moon playing the dominant role owing to its proximity to the Earth. Due to their orbital motion,

when these gravitational luni-solar forces are in 'conjunction' during the New and Full moon phases that occur fortnightly, correspond to 'Amavasya and 'Purnima', causing Spring Tides and when in opposition on 'quadrature', cause Neap Tides. Tidal heights in 'Springs' are higher than in 'Neaps'.

The impact of such a tidal occurrence for the shipping on this river is crucial, as the higher rise of tides allows deep-drafted vessels to ply over the shallow bars with adequate under-keel clearances.

Had it not been for these tidal heights the Hugli would not have been navigable by sea-going vessels.

## Our River – The three 'B's

River Hugli is known for its 3Bs: Bars, Bends and Bores. There are 14 bars in the river which are to be negotiated, with

sharp bends and meandering channels that restrict the size and speed of the vessels.



Quintant/Large Sextant



Station Pointer



Bores occur at low water times, during perigee spring tides when the flow of the flood stream from the sea is checked by the narrow, shallow restricted bed of the river. They sweep the river with great speeds, unleashing havoc for the crafts on the river, in the moorings, damaging riverside berths, pontoons and jetties, as well as shifting the sands with resultant shoaling at certain stretches of the river.

The entire River regime from Nabadwip to Sandheads, consists of the 'Higher Reaches' (25 localities), 'Upper Reaches' (27 localities), 'Inner Estuary' (4 localities) and the 'Outer Estuary' (3 localities).

There are three distinct Seasons on the River: Dry – November to February (with weak currents), Floods – March to June (with strong flood currents) and Freshets – July to October (with strong ebb currents). The river level is the least during the Dry season and the

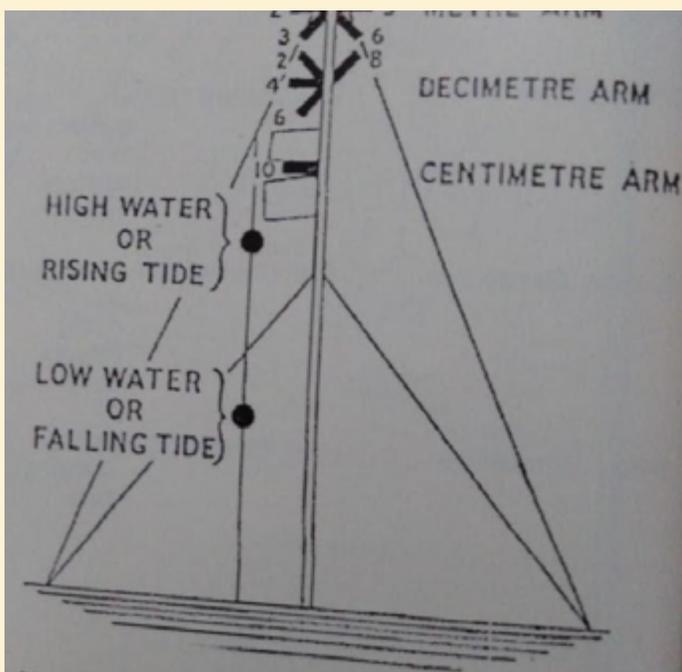
highest during the Freshets.

The tides on the river that are semi-diurnal in nature have two flood and two ebb cycles in a day, with varying strengths between Spring and Neap tides.

The Hugly navigable channel follows the course usual of tidal rivers that is 'off the Points' and 'into the Bights', where the 'Crossings' stretch from one bank of the river to the opposite bank.

As the river fans out over a crossing, the velocity of the flow and turbulence even out, resulting in settling of the suspended sediments and formation of shoals and bars over the crossings that are considerably affected by the seasonal changes in the river.

Whereas Balari Bar and Kukrahatti Crossing would shoal during the peak of Freshets, Eastern Gut would be deepest during that period but Pir Serang would shoal at the onset of Freshets.



Day Semaphore



Visual Tide Gauge

The upper tracks of the crossings in the Upper Reaches are navigable during strong Floods while the lower tracks open up during the Freshets.

The Hugli which broadens out considerably from Diamond Harbour and spills out into the Bay through a number of channels, is beset with a large number of tidal bars and tidal islands ('Chars') from Balari to Sagar. The formation of these islands along

## My First Posting

While accompanying for survey of 'Koffri Reach' on a launch on my first day at work, I was told by my seniors that the river Hugli was formed by the confluence of the rivers Bhagirathi and Jalengi at Nabadwip, both offshoots of the Ganga. The HRS was responsible for carrying out regular hydrographic surveys-both 'Routine' and 'Annual', of the entire stretch of the Hugli, 74 nautical miles upstream of Calcutta to more than 120 nautical miles downstream, including the connected river systems.

The navigable river and channels leading to our Port included the entire stretch from about Jangipur Barrage in the north to Lat. 20° 45' N below Eastern Channel Light Vessel in the south, in the Bay of Bengal. Such delineation of the Port's conservancy limits was necessary for prevention of 'commission of acts likely to affect the river injuriously'. For this purpose, the river was set out into various 'localities' and each had their distinctive characteristics and names.

with the bars, sandbanks and mud-flats pose a real challenge to navigation by restricting the co-axial flow of tides, which affects the depths on various bars. Conforming to estuarine characteristics, many a channel develop between these sandbanks that remain navigable for a few years and close down with alternative channels opening up.

We had used the Sextant during our on-board training, but at HRS, were introduced to the Quintant and the Station Pointer - the quintessential duo. The Station Pointer was a 3-armed protractor which made the Hydrographers' work of plotting and position-fixing faster.

Following week I was posted at Hugli Point Station for 'undergoing rigorous training'. Hugli Point is situated on the left bank (eastern bank) of the Hugli, opposite the Rupnarain confluence. I learnt that the 'Eastern Gut Bar', a narrow and shallow channel, located off Hugli Point almost hugging the left bank, was the trickiest stretch of the river where there were counter-eddy currents running during the flood tide. The confluence of the two tidal streams, the Hugli and the Rupnarain just below Hugli Point, produce some of the most 'troublesome eddies' that affect many an inward ship, which have to make more than 90° alteration of course to negotiate the sharp bend from Hugli Bight into Nurpur. Inward





Survey Vessel "Haldia"

vessels tend to take a 'run' for the bank off the Hugli Point jetty area. The low powered vessels negotiating this sharp bend in strong tides, are prone to drift westward onto the 'James and Mary' shoals where a number of ships have been wrecked, including the S.S. 'Royal James and Mary' (1694). This area is known as the 'graveyard of ships' as a number of vessels that got grounded

there, had been 'sucked' into the sand.

Our day started at 4 AM, going out in the launch with the Sounding Serang for taking notice of the 'governing bars', learning the nuances of lead-casts, the lead-line markings, and manoeuvring the launch on each Track. The soundings were accurate, thanks to the skill of our Leadsman. I have never known them to have missed the shoal soundings



Pneumercator's Automatic Tide gauge



Manned Light Vessel 'Hesperus' Lower Gasper - 1865



ever. I was reminded of Mr. Samuel L. Clemens, a.k.a, Mark Twain. Sounding once completed, we had to rush down with the report to the Commander so that the same could be broadcast to all shipping and all concerned, before a fixed time that morning.

During routine surveys of the day, we had to observe and learn the operations of the Kelvin-Hughes echo-sounder on the launch, reading the echograph to decipher the depths, read the semaphore, tide-gauge for ascertaining the rise of tide, putting the 'reduced' depths on the pencil chart, inking-in the Final Chart etc. The Hugli River Tide Table was our 'Bible'. Seniors would quiz us every fortnight, on the various information contained therein.

## First Survey Vessel

My first sailing down the river on River Survey Vessel Haldia in the winter of 1973 was a learning experience – unmooring of the craft by the Heave – up and Hawser-boats, taking in the lines and sheering out of the Hastings moorings off Tuckta Ghat. It was a fine act to move up the craft to the 'hauling-out space', turning around and proceeding out past the Tolly's Nullah, Kidderpore, Netaji Subhas Docks, and Garden Reach.

Further downstream on the right bank, was shown the Panchpara Boundary Pillar, which demarcated the earlier Port Limits. Almost opposite to it was the 'Hangman's Point'. A funny name! As the legend goes, several men who were tried for mutiny and murder on-

Within a short period of time, I became quite adept at taking Quintant angles, keeping the field-book and recording the rise of tide. My training elevated me to accompany the qualified Hydrographers as their assistant. During the season of 'Floods', the

Eastern Gut Bar could shoal by more than 0.2m in a single day, even AM and PM tides. With the unpredictable movement of the 'Mukrapatti' Sand during the vernal equinoctial perigee spring tides, the Eastern Gut Bar could precariously shoal to the extent of being critical, when for certain days the 'bar' could be closed to navigation and Western Gut Bar opened as an alternate shipping channel.

board, were hung there during the 'Company Days'!

It was early winter. RSV 'Haldia' was to carry out the bank-to-bank annual surveys of the inner estuary from Diamond Harbour to Sagar. MS class vessels, RSV Tribeni and Research

Vessel Anusandhani, undertook surveys south of Sagar in the outer estuary up to Sandheads.

That winter, Commander carried out theodolite observations atop various columns for re-triangulation in the Lower Reaches of the river. Reports on the status of each column were sent to the Chief Engineer including a Note for civil repairs for their maintenance. Annual survey of each Locality included



fixing of bank-lines, especially at Diamond Harbour, Kalpi, Ghoramara, Nayachara, Bedford and other islands that invariably changed over time, due to accretion or erosion by the tides. All the navigational and surveying marks were inspected and attended to by the Row-Boats as required. All visual gauges were 'levelled-to' and the automatic gauges at Sagar and Balari inspected. A report on the status of the ATGs and Bench-Marks was sent to the Survey of India, Dehradun. During high water time the numerous wrecks at Sagar, Bedford, Jellingham including the 'Dalrymple Lump' at Diamond Harbour were 'sounded' to re-ascertain their positions and check the depths over them.

Once, in the month of May 1976, while posted on board RSV Tribeni, we had to sail out immediately after a cyclone in the Bay for the inspection of the Lower Reaches. After inspecting the Pneumercator's tide-gauge and supplying provisions to the

Sagar Semaphore, we proceeded to Sandheads the following morning.

We fixed the positions of all channel buoys, the Upper Gasper Light-Vessel (unmanned), and the three (then manned) light vessels at Lower Gasper, Intermediate and Eastern Channel. These three light vessels were manned round the year in spite of the vagaries of nature. Logistic support was rendered by the Port's Despatch vessel on a regular basis including supply of 'mutton-on-hooves'.

On completion of the entire inspection till Sandheads, the Commander sent wireless messages indicating the up-to-date positions of all the buoys, light-vessels that were the vital markers of the navigational channel. It was sunset time when we anchored and called it a day. What a colourful sunset! An absolutely stunning and heavenly sight. Was wondering about the 'canvas' which the Almighty had exhibited for us. Copper-coloured sunrise and



Sagar LightHouse (Left Bank of Estuary)



Dariapur LightHouse (Right Bank of Estuary)



sunset were one of the early signs of approaching cyclones at sea, including the increase in the halo around the moon, which we saw the previous night. The Chief Officer quipped that people “pay” to see such sunsets but we get paid for it!

The various old names in the Lower Reach localities such as Jellingham, Auckland, Mizzen, Middleton, Gasper and the like, bewildered me. Interestingly, I learnt that these names

## Training of Officers

These were my formative years in the HRS throughout, HRS provided in-service training to all new recruits; our ‘teachers’ were our senior officers with whom we had the opportunity of being posted on board survey vessels and shore stations. With particular senior officers we developed a mentor-protégé relationship. Their guidance was always forthcoming. New recruits learnt their job while serving in various capacities. There were no formal theoretical lessons as such; the same had to be learnt by

## Commissioning of Haldia Docks

In 1976-77, I was posted at the new survey station, Haldia Port Survey Unit (HPSU). Though construction of Approach jetty, lock-gates and berths for the Haldia Dock Complex were already completed, the dock system was yet to commence operation. The Cutter Suction Dredger ‘CSD Aquarius’ was dredging inside the dock basin,

had been inherited from the colonial past and were being continued with the tradition of the names of the localities as were shown in early English charts by pilot-hydrographer George Herron and the Royal Indian Marines. Sagar Island had its name as Cox’s Island and its upper part as Rogue’s Island. Mizzen was derived from a Portuguese word ‘Middling’ and ‘Jilinga’ sands came to be known as Jellingham.

self-study. The various Hydrographic Practices and other nuances of the trade were learnt from the seniors. At the end of 3 years, I appeared for the First Departmental Examination in Hydrography which included River Knowledge, Ship-Knowledge, Seamanship, Meteorology, Instrument and Equipment Knowledge, Laws of the Sea, and Riparian Rights among others. Passing the Final Examination in 1978, I was designated as Senior Hydrographer, a Charge Surveyor by profession.

followed by its immediate survey, carrying out a wire-sweep of particular dredged sections, for locating any unknown under-water obstructions.

It was a tough year as the deadline for commissioning of the Docks had to be met. The caissons of the three lock gates were built in a horizontal position by the builder, inside the dock basin. After



completion they floated it out, but for placing it vertically over the lock gate grooves and setting it on the rails, they sought the Port's help. Commander HPSU, Berthing Masters along with the Engineers of Haldia Dock Project took it up. It was a feat in towing them to the site and partially sinking them and snugly placing them into the groove-rails.

The first ship 'M.V. Vishwa Vijay' of Shipping Corporation of India entered Haldia Docks on 25th February 1977.

## HRS goes Digital

With the onset of the 1980s, HRS was all set to go digital. Kelvin-Hughes echo-sounders were replaced with digital dual frequency Deso-20 echo-sounders. Aging Hi-Fix system was replaced by the French Digital Positioning and Track-plotting system, Syledis systems followed by DGPS in 1995. Automated Data Acquisition and Processing systems were adopted in the next decade. HRS moved onto metric charts on Transverse Mercator Projection.

While visiting the Sagar Light-House with the Survey of India team, I was fascinated to learn that the light exhibited atop the light-house actually worked on the principle of a Petromax lantern. The pressure in the kerosene

## In Command

I was posted in Command of Higher Reaches Survey party by 1986. Initially known as Ganga Barrage Project party,

My Next posting was on board Dredger 'Jalengi'- a hopper-suction, centre bow-well steam-driven dredger, as an Assistant of the Survey Party. Each dredger had two Hydrographers on board to conduct daily hydrographic survey of the 'bar' and prepare a tracing for the Captain to identify the shallow stretches requiring dredging. Later on, I was posted on board as the Officer-in-Charge, Surveys, on passing the Pilot's examination.

tanks was pumped up. The mantle was lit just before sunset, when the glass-case enclosing the lantern space was fully covered, which at the time of sunset was taken off, and another cover that masked the portion of the unlit arc of Sagar Lt. House, was kept on.

The light characteristic of Sagar Light House was flashing every 3 seconds. A cuckoo-clock mechanism drove a turntable, rotating around the light on top which took 9 sec for each complete turn. On top of the turntable 3 concentric circles of prisms were fitted at 120° apart. Hence, when each of the 3 prisms came in focus, the beam showed as a flash every 3 sec to a mariner at sea.

it was established in 1950 in order to provide volumetric data for regulating the quantity of water to be released





Bore Tide on the Hugli at Koffri Reach

from the proposed Farakka Barrage and canal without creating floods, and for publication of charts for anticipated increase in inland water traffic. At HRS, we had the house boat 'Blue Wing' to serve as a floating accommodation and the survey launch 'Kopai', to carry out the surveys.

Housing heritage monuments, temples, establishments and ghats on both banks, the Higher Reaches of the Hugli reveal herself as Nabadwip, the birthplace of Mahaprabhu Chaitanya Dev and the famous 108 terracotta Shiva temples of Ambika Kalna. The famous weavers' villages of Dhatrigram and, further downstream, Guptipara and Shantipur are located close to each

other. Balagarh is famous for the tiles and the country boats that the artisans make. During the 1971 war, the boat-makers of Kalna even supplied boats to the Indian Navy. At Tribeni, Port's uppermost automatic tidal gauge station was housed at the M/s. Tribeni Tissues' jetty. Further downstream is Chandannagar, the French settlement of colonial times and the historical town of Sreerampur with its mixed legacy of Danish, British and Bengali settlements.

The Hydraulic Study Department, Port's R&D wing, was set up in 1961-62 for a scientific and systematic study of this dynamic river. During planning for spurs at Sankrail, Haldia docks, Ganga Barrage in the 1950s, the initial studies



were carried out at Central Water and Power Research Station (CWPRS), established as early as 1916, had physical models of the Hugli at Pune. HRS officers collected hydrographic data, published charts and liaised with CWPRS continuously, for carrying out their experiments on the Port Model and Estuary Model.

The months of April-May are known as 'Season of Winds' when the outer estuarine regions of the river experience strong winds and ferocious tidal currents. Once during that season in 1991, when in Command of Research Vessel Anusandhani, we carried out

radio-tracer experiments at Jellingham channel jointly with scientists of BARC, Mumbai. After dropping the scientists at Haldia, on our way down to Sagar, we observed two persons waving frantically for help, about 3-4 miles downstream. As our ship's motorboats were out of commission, Anusandhani had to be manoeuvred very close to the distressed persons who were holding onto wreckage of a capsized boat and drifting up with the flood tide. 'Man-overboard' life-buoys were thrown towards them and the persons were quickly picked up on board and precious lives saved.

## Search for Wreck of M.V. Talent

On the night of 18th-19th June 1993, a Panamanian flag vessel MV 'Talent' at Sandheads bound for Calcutta had developed a 7° starboard list and had requested for Pilot for proceeding up to sheltered waters. Due to the prevailing heavy and inclement weather, the Pilot Vessel was in the vicinity of Intermediate Light Vessel, upstream of her usual cruising station at Sandheads. 'Talent' was advised to proceed upstream to pick-up Pilot, while PV was proceeding down to meet her.

Within the next 10 minutes, she communicated over VHF that she was sinking. No 'SOS' or 'MAYDAY' message seemed to have been sent by her. It was around day-break when her lights were last seen and the vessel was visible no more. It seemed the vessel capsized so fast that the ship's crew did not even have time to put on their life jackets.

Later, they were seen floating and swimming in the choppy waters. Pilot Vessel was able to rescue the 3 survivors in that rough and heavy weather and had reported the last position of 'Talent' as Intermediate Light Vessel bearing 165° distance 5-5.5 miles.

It was a matter of serious concern for the Port as no survey vessel was immediately available then, for emergency survey, due to their ongoing repairs at Calcutta. The Indian Navy was requested to help in locating the wreck which posed a serious threat to navigation. I was directed to proceed on board the naval vessel INS 'Investigator', which was pressed into action. Since helicopter reconnaissance sorties did not reveal any visual signs of the wreck, search for the wreck continued jointly from on board the INS Investigator and INS Nirdeshak .



In the early part of August the same year, an outward vessel from Haldia hit an underwater wreck in about 4-5 miles SSE of Lower Gasper Light Vessel. The vessel had punctured her forward tank and had to be brought back to Haldia by the same Pilot for urgent repairs. Shipping between Sagar and Sandheads stood closed.

The following day, the Director, Marine Department along with other senior marine officers on board DCI Dredger, joined for overseeing the search for the wreck. Prior to boarding the DCI Dredger, we held a meeting with the concerned Pilot and took the details of the vessel's last course steered, speed made good and the time taken, for recording vessel's position after the 'hit', so that we could narrow down the

area for the search.

On the Dredger, echo-sounder scanning of every 3" of longitude was carried out from westwards towards the channel. By about late evening the tell-tale signs of the presence of a wreck was noticed with sudden deepening of the river bed. The 'spike' indicating the wreck was evident on the echo-graph. Its position and time was noted.

Having located it, the dredger remained anchored east of the position till all the ships waiting at Sagar and Sandheads passed through the area safely.

A warning to the mariners is noted in the British Admiralty Chart of the Hugli river even now: "Mariners are advised not to attempt to navigate the Hugli River without local assistance".

*The author can be reached at [captdudda@gmail.com](mailto:captdudda@gmail.com)*

*"Imagination is everything. It is the preview of life's coming attractions."*

**- Albert Einstein**



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
SYAMA PRASAD MOOKERJEE PORT, KOLKATA  
Formerly Kolkata Port Trust





# INFORMATION TECHNOLOGY IN THE PORT OF KOLKATA – A JOURNEY THAT CONTINUES

*Dr. Deepankar Sinha*

Dr. Deepankar Sinha, Professor, Indian Institute of Foreign Trade (IIFT) and Ex-Deputy Director (Computers), Kolkata Dock System.

Kolkata Port, standing tall for the last 150 years, has many tales to tell and lessons to share. Of the many issues

that the stakeholders refer to about the port, one fact which intrigues my mind is that of night navigation.

## Queries of a Curious Mind

There are few questions which continue to baffle me. How does the port manage to keep its 232 km long river channel illuminated? How does it place buoys along the entire meandering stretch of the river Bhagirathi-Hooghly? What was the source of power 150 years ago?

There were, of course, no provisions of solar light, LED, or battery in those days – buoys were instead lighted with compressed gas as fuel comprising solid calcium carbide, soaked with kerosene oil. This was something similar to the “Hazak” lamps some of us have seen, especially in the rural settings. The history of navigational buoys is as old

as some of the maritime relics of 13th century. Some floating markers might have existed in those days; the earliest recorded buoy named *La Compasso de Navigare*, was reportedly laid at Guadalquivir, approaching Sevilla, Spain, in 1296. In 1594, King Henry VIII of England granted a Charter to the Guild of Shipmen and Mariners to look into the aspect of navigational aids to make the marking of the waterway with these buoys, a kind of professional activity. The Guild later evolved to form the Corporation of Trinity House. In 1594, Queen Elizabeth I gave them the rights to establish buoys and beacons for modernizing the English shipping channels. There existed a





Vessel with the Lamp - guiding ships for 100 years (1870 ~ the 1980s)

network of such buoys but without much of a communication system.

Even in the 1980s, down 200 km from Kolkata, light vessels anchored in mid-river, were used as navigational aids to shipping. It was a vessel with no propelling capabilities. The crew would light the fuel lamps as the dusk settled. But then, I had always wondered about the precise ways they got their provisions, their specific modes of communication – was it a life of Robinson Crusoe, who secluded himself in an island for 28 years! In Kolkata Port, as much as I can recollect, almost periodically, say, after every 28 days, a “Despatch Vessel” (DV) (the name I remember is DV ‘Nadia’) would go downstream - replenishing

the ration, fuel, potable water and other accessories. It seemed reasonable until I was intrigued by the level and scale of preparedness that would be needed to attend to a mid-sea ship in case of a medical emergency!

I will cite an instance to make good my point. In 1989, one day, a new attendant in his mid-20s served morning tea and was waiting for instruction. I asked his name, and with a little bit of prodding, he came out with a stunning admission that made his eyes moist. He got this job on a compassionate ground, after his father died in-harness (on duty). He was on board a light-vessel (named LV ‘Candle’) which got swept away during a cyclone in November 1988, never to be found



again. My natural curiosity was on the nature of the communication system. How would information flow from the

mid-river activity points to the shore-based office?

## The Early Days of Computerisation

The computer system in Kolkata Port dates back to 1987 (July), the year I joined the port. SN - 73, an Indian equivalent of PDP - 11/23, from Digital Equipment Corporation (DEC), a 16-bit-mini computer system, was installed, crunching data relating to the Cargo-Balance-System (CBS) in a batch mode. CBS served the office of Superintendent of Collection, a wing, interfacing with the port customers, responsible for collecting tariffs from the shippers and the carriers. The IT team comprised three Assistant Systems Managers, six programmers, and few supervisors (for data punching and entry). The data was first punched on cards, then processed, using software developed by CMCLimited, once a name that was almost synonymous with reliability and robustness.

Before joining the port, in 1986, I had a short stint of training at Rourkela Steel Plant in Burroughs Mainframe system (a stack-architected machine), conducted by the Computer Society of India (CSI). We had the opportunity to run computer programs written in FORTRAN IV language. The mini system in Kolkata Port operated on Instruction-Set-Architecture (ISA). The dimensions of the machine were equivalent to a

five feet tall almirah. At the same time, a mainframe would be similar to two mini-systems or so. In those days, programmers wrote most of the business applications in COBOL (Commercial Business Oriented Language). My skills, however, did not match with the scale of what the port needed.

### ***In 1991 Kolkata port successfully implemented the Online-Container-Tracking-System (OCTS) using INGRESS RDBMS.***

I had no clue about the Disk-Operating-system (DOS) that ran on personal computers (PCs). In 1989, the first PC (DCM - Turbo) with MS-DOS Operating Systems was installed in Planning Department. I was posted there as Senior Investigator, not to investigate unscrupulous

cases but to analyze data to assist in corporate planning. I was somewhat relieved from the embarrassment of clarifying the mystery of my designation to common folks when I was designated as the Statistical Officer. I was asked to use the PC with no application software other than MS Word and a spreadsheet - Lotus 123, an IBM product. The spreadsheet made things exciting but did not quite meet the advanced needs of data processing. IBM in 1990 launched a PC-based database - "Approach" with a spreadsheet-like interface when we started using it.



## Inroads in Culling Ships' Data from Manual Means to Machine

By then, my colleague and I had started developing the "Ship-card" system. This attempt was basically to computerize the data that reached the department at the beginning of the month, giving details about the previous month's cargo handling activities. For every ship, officials recorded the performance in the manual register. The information was meticulously recorded by a 3 man army - collating the data from at least five documents and cross-checking them with another set of, say, five other source materials. With folios measuring around 13 inches in length and approximately 8 inches in breadth, the register had about 15 columns formatted using a ruler and pencil.

The data on a ship at port included the ship's type and length, its width, dead-weight-tonnage, gross and net registered tonnage, flag or the country of origin, registration, cargo, and its weight, pre-berthing delay, working time, non-working time etc. Subsequently, we fed the same data into the spreadsheet. It helped us in computing average values and ratios and making comparative studies. After that, we ensured that the parameters of berth-occupancy (BO) and turn-around-time (TRT) were computed at our end and put in the manual register. But we wondered if it was really necessary to make the same entries in the manual record book. However much we engaged in such advanced (at least reckoned in those days) means of data processing, we were not quite in sync with the

mainstream perception of the necessity of documenting everything on pen and paper, as our work's reliability was not established. It took some time to convince the people around that the system driven results were faster and accurate.

As the dependence on PC outputs increased, we faced a two-fold challenge - first, only a single user could interface with the system and second, the spreadsheet imposed restrictions on the type and range of making queries. We, however, could convince our the then Head-of-Department (HoD) of the usefulness of the new technology and shortly obtained a sanction for procurement of a

***In 2000, Kolkata Port set up premises wise local area networks (LAN), installed servers, and extended desktops to all data capturing points.***

PC with an 80286 processor with 2 MB RAM, D Base software from the accredited agency, WIPRO. Gradually, the system minimized the need for manual data recording, but these were still early days and we continued with the print-outs. We learned to code, and gradually the utility of the PCs caught the imagination of the departments. Colleagues started taking an active interest and in 1995 we installed a PC with a 20486 processor with 4 MB RAM. We set up a host-based system, using the UNIX operating system, connecting two dumb terminals and 2 PCs as dumb entity using Term, a terminal emulation software. We upgraded the database to Foxbase software and processed all traffic data in batch mode. The PCs started to make inroads gradually into the entire eco systems of the port...



with initial apprehension and curiosity, followed by acceptance. Once the magic of machine computation put paid to the initial skepticism and anxiety, the seniors of various other departments were keen to get hold of the systems first, barring ours. We initially gave the terminals to

the assistants who were engaged in much of the data entry work. By this time, my team picked up the art of code modification in the shortest possible time, and I had many plans crossing my mind.

## Stage Being Set for 'Online' Transactions

Meanwhile, online systems started making progress, and in 1991, Kolkata port successfully implemented the Online-Container-Tracking-System (OCTS) using INGRESS RDBMS. It was a fault-tolerant system with two servers on the Sun Solaris platform integrated to a RAID 5 storage. The servers, named London and Boston, were connected to VT 200 dumb terminals in different booths that captured data from the hard documents generated at the loading and unloading areas. It was a host-based system developed by CMC Limited.

I was interested in job opportunities at CMC and contemplated a changeover. I qualified in all the three interviews but could not produce the 'No-objection' certificate from Kolkata Port. The then Chairman called and assured me of his plans to assign me a special role. Our HoD supported him and opined that this assignment would be a game-changer in my learning. Though, financially I did not gain much but I was drawn into the closer echelons of corporate

governance, especially port operations and management.

From 1991 to 1993, I was on deputation to the Chairman's office as his Executive Secretary, a post created to accommodate me in the new role. Though I was seated in a small room opposite his chamber, it had a window AC and a PC with a printer. Very few had this privilege, and no one in the entry-level could ever think of enjoying such a facility. I desired to learn INGRESS and had understood the way an RDBMS worked. The success of OCTS led to extending this concept to the realm of capturing non-container cargo operations. Tata Consultancy Services (TCS), a leading firm, developed the cargo-accountal-system (CAS) but failed to deliver the results. The port could, however, reap the benefits of OCTS once the middle management chipped in with their suggestions. This outcome was an exercise of meaningful learning in that management support and readiness of acceptance is crucial to the success of any IT systems.

## Networks Appear

In 2000, Kolkata Port set up premises-wise local area networks (LAN), installed servers, and extended desktops to all the data capturing points. The authority outsourced the job of software development to enable the online capture of data for all 14 Kolkata Dock System (KDS) departments. System-

Requirement-Specification (SRS) was drawn up, and modules were made beta-ready. However, a problem cropped up with the developer. There were teething issues of trust deficit, an element of apprehension associated with freezing of the systems contours for attainment of finality. The port officials made



frequent changes in the SRS and were quite skeptical in the acceptance of the final software, lest that obviated the chances of further modifications and manoeuvrability. The trial continued till 2006, with partial implementation of the modules. At this point, I was put at the helm of affairs. The IT team was united and put in their whole hearted support. The matter was settled in phases. We generated our payrolls, managed our HR

information, regulated our purchases and inventory, maintained electronic land (estate) records, and generated estate bills. The cargo billing module was still inchoate. However, we could not integrate OCTS (a two-tier software) with the ERP system (a three-tier software) and operations/accountal/ management of non-container cargo remained non-computerized.

## Emergence of New Challenges

Around this time, the IT wing faced two significant challenges - (i) the Indian Ports Association (IPA) initiated the development of an Electronic Data Interchange (EDI) for ports under the project named Port-Community-System (PCS); (ii) the obsolescence of the host-based system, followed by weakening support on INGRESS application.

PCS demanded a data interface with the terminal operating system, such as OCTS. The OCTS required the replacement of VT220 terminals, as host-based systems were replaced by client-server applications. The PCs replaced the VT (dumb) terminals.

We decided on a two-fold strategy: first, apply a painkiller of sorts like getting the non-working terminals replaced and second, executing a therapeutic treatment, i.e rolling out a complete replacement strategy. In OCTS, the cables connecting the terminals were co-axial cables with speed (for data transfer) limitations. Also, the device linking the wires to the terminals was almost obsolete. Some old equipment was taken

***Haldia Dock Complex (HDC) implemented a client-server based Terminal Operating System (TOS) developed by National Informatics Centre (NIC).***

out of the store shelves and repaired by an experienced techie, whom my team tracked and this exercise made much headway. The VT terminals were not available; we contacted the firm which manufactured these and sought some cues on their current dispensation. A reference led us to a manufacturer from whom we purchased just a few machines to replace the non-working ones. The tension born out of an uncertainty was riding high; we explored the possibility of quick implementation of a ready-to-use package as a replacement of OCTS. All the systems were required to be customized, and as such, we could not decide on a ready-to-use package.

Meanwhile, Haldia Dock Complex (HDC) implemented a client-server based Terminal operating system (TOS) developed by National Informatics Centre (NIC), which was a two-tier system on IBM's DB2 platform. The team could leverage its synergies borne out of sound domain knowledge and diligence. After the usual paperwork, we placed an order with NIC. However,



we needed to connect Subhas Bhavan (SB), the operational headquarters, and other offices to implement the ERP modules with optical fibre cable (OFC). This exercise was a mind-boggling one. We were required to cover a 17 km stretch in the city of Kolkata, across three different busy streets.

As cabling would take a long time, we connected SB with the OCTS building through wireless data transmission towers. This was the first wireless connectivity in Kolkata Port, except that we had a wireless voice communication system for the mariners like VHF and Radio Telephony. We extended this technology to a radius of 20 km from SB. It connected all crucial operational points - Ramnagar Wireless Station, Buj Buj jetties, Majherhat Hospital, Harbour Master's office, the Materials Management Department, the Fire Office, the Railway Control, the Civil Engineering Complex, and the Kidderpore Docks and similar other offices. We faced several hiccups; on stormy nights, the wireless system antenna would sway from its normal position, and we were flooded with a flurry of phone calls. The team deliberated upon themselves and decided to explore a hybrid network - a combination of OFC and wireless services. We connected with OFC to the

extent possible and only left the last mile for wireless connectivity.

Buj Buj was almost 20 km afar for which laying of OFC was not feasible. We roped in Railtel, a railway offshoot specializing in data communication using their power grid. Buj Buj was connected with the nearest railway station with OFC and further connected with the Railtel network to the Majherhat railway station, a point closest to our hospital.

I remember a related incident vividly.

***Subsequently, in 2008, we implemented Port-Community-System (PCS), an online platform for port stakeholders initiated by the Indian Ports Association (IPA).***

CESC filed a police complaint against our carrying out of micro-tunneling for laying cables that caused power disruption. We were summoned to the BNR police station. It was one of those days of the 2008 football world cup tournament; the entire city was charged up with frenzied expectations and a power disconnect triggered by an agency,

was almost nothing short of a criminal offence. The residents flocked to the CESC office with a barrage of complaints; the only way CESC found to calm them down was to summon my team and myself to the police station. The issue got resolved, but we were forewarned - not to go ahead with the cable laying operation across the city during the pendency of the world cup fever.



## The Secret Tunnel Story

At the next stage, the project was almost doomed when I was told that we needed to cross over the water to reach the other side of the dock to connect the two sides of the Netaji Subhas Dock. Underwater cable laying was a specialized job and the contractor pleaded his inability to execute it. There was an under-water conduit, which was found out after intense in-house deliberation. It was a tunnel through which 33 KVA power lines and other cables crossed through the Docks.

In 2008, we implemented Port-community-System (PCS), an online platform for port stakeholders initiated by the Indian Ports Association (IPA), which crossed the dock's two sides - east and west. The tunnel was approximately

45 feet deep and around 80 feet wide, partially submerged in water.

We fixed the date of carrying out the drainage work with a submersible pump but there were so many imponderables: who would make a deep dive inside? What was there in store? What would happen in case of an emergency inside the tunnel? The one who laid the cable inside the bowels of the earth came out dazed with his voice choked. We realized how difficult and traumatic it was for him to negotiate through the dark muddy alley with around 4 feet of filthy waste. I was told that it took quite a few days for him to return to the state of normalcy. The starkness of the incident has stayed with me to this day.

## The Nationwide Port Connect and the Early Shoots of ERP

Subsequently, in 2008, we implemented Port-Community-System (PCS), an online platform for port stakeholders initiated by the Indian Ports Association (IPA). Kolkata Port received the Silver award in the international forum of ports for the dedicated implementation. We were also ready with our Port-Operations-Management System, a three-tier application architecture developed using Oracle 10g with Data Guard, a disaster recovery (DR) arrangement. Phase II of the bespoke ERP application was on the verge of completion.

In the midst of fully operational applications, we observed, to our surprise, that the operations slowed

down even when the data volumes were low and servers were new. We identified the need for query (SQL) optimization and database tuning, regarding which our team had scant knowledge. We worked with external experts and resolved the issue.

The legacy system of OCTS (on Ingress platform) had substantial data, and we could not think of just dispensing with it. We set up a data-warehouse with Business Intelligence (BI) tools to carry out online-analytical-processing (OLAP). A dedicated team from CDAC successfully performed the extract-clean-transform-load (ECTL) operation of the Ingress dump and Foxbase data and developed a data warehouse.



## Mitigating the Other Challenges in Collective Spirit

The challenge was far from over – the then Deputy Harbour Master - River (DHMR) wanted online capture of information on vessel flow. However, this could be possible only if marine control at Sagar Island, 148 km, down the river, from Kolkata, was connected. We installed the PCs and provided a remote login facility from Head Office Server. They could access the internet and software modules, but things were not working due to slow response. We crafted a four-section connectivity strategy:

- 1. Connect SPS with wireless towers set up on Jawahar Tower (JT) in Haldia*
- 2. Connect (wireless) JT to Antenna placed on Haldia Railway Station*
- 3. Further connect through Railtel grid to Rail Bhawan, Kolkata*
- 4. Connect Rail Bhawan through OFC to Kolkata port Head office. The tender was floated. After I left, it was implemented along with connectivity to Nurpur, another intermediate riverside Marine Survey Station (Hooghly Point)*

Meanwhile, the River Pilots sought to replace the conventional navigation charts with electronic charts. The pilots demanded real-time testing. We decided to board an outward-bound sea-going ship and test the software during its voyage from Kidderpore dock to Sagar station. We boarded a vessel at a berth; it was an easy climb as we used a crew gangway.

The journey through the meandering river was the most exciting experience for me. After 5 km of the voyage, some country boats, obstructing the ships' way- could be seen as specks in the RADAR (Radio Detection and Ranging) on

the vessel's Bridge. Were those fishing boats? Those were boats for carrying river clay to the idol makers in the city. Kolkata's Kumartuli - a place known for clay sculpture worldwide, holds a unique distinction in art and pottery and idol sculpture. The word 'Kumor' refers to the potter-sculptors. A little further down the river, a similar view greeted me - this time, there were fishing boats. At one point, the river's bend blocked a complete view of the other section of the channel. River pilot established voice communication with the ship cruising from the opposite direction to warn about its impending movement. It was on



The VTMS tower at Sagar Island – the eye of the port mariners



this occasion that I came to know about coloured buoys. A green coloured buoy, implied that the vessel should keep the floater on its left; the red buoy meant the ship should be on her right while on the outward passage. A black and yellow striped buoy would allow the vessel to take either side. I was well aware of the fact that navigation to Kolkata port faced the challenge of 3Bs - the bars (silted ridges), the bends, and the bores.

The navigation software's accuracy was found satisfactory with both the AIS (Automatic Identification System) and GPS interfaces. As the ship slowed down I braced myself for one of the most nerve-wracking experiences of my life.

I climbed down a rope ladder to step into the pilot launch approximately 40 feet below the cargo vessel's deck. In mid-river close to the sea, the water was choppy, making both the ship and the launch unstable. I was initially hesitant to disembark but the vessel was headed towards Colombo, and I could not possibly be part of the crew and I had to get down.

## Lending Support to Port Security

Port security was a growing concern. IT division had a herculean task when they installed bio-metric access to port premises interlinked with boom barriers in the dock system. The installation was tedious, but enrolling around 6000

The launch continuously popped up and down and eventually took us to the pilot vessel. The crew served us with sumptuous lunch. The return was to be on board a vessel from Singapore calling at Kolkata Port and I had to again climb up the ship's deck using the rope ladders. By the time we were nearing the dock, it was already 6:30 pm with approaching darkness and the ship had to anchor as it had no night sailing provision. We were a team of seven, and all of us disembarked on the pilot launch using the ship's rope ladder in the dark.

Pilots were provided with PCs with inbuilt software. Presently, I understand that 'AtoN's (Aid to Navigation) are used to generate virtual pathways for ship's pilot from the Sagar Base Station. This system has the device of marking a missing buoy or light vessel 'virtually' along the electronic chart, exactly on the same point, or even simulate a new "virtual navigational marker", if required. This system is to aid navigation when buoys get drifted away or are missing. Wonders of technology!

employees in the bio-metric database was a nightmare. Many of them worked in port vessels, remote sites on river banks and islands. This process was successfully executed.



## Other Benefits of IT Implementation – an Organisational Face-lift

We introduced a shelf of office automation applications. It included an email system, a new website, a Geographical Information System (GIS) to aid estate management; document scanning of all resolution papers by the Board of Trustees and land records; data processing for the camera installed in Howrah bridge; introduction of the LIBSYS for our library; and a system for preservation of our old archival records. We also introduced a method to

generate SMS alerts on deposit balances to stakeholders, availing of cargo and vessel services.

We completed the Proof-of-Concept (PoC) for camera surveillance and wireless container tracking at the container yard. I understand the former is in place now. Interestingly, we used the fire ladder provided by Port Fire service to install data readers on light masts, at the height of 15 feet, in the container yard.

## The Concluding Lines: Thinking Aloud on Few Issues

I am associated with Kolkata Port for the past 33 years, 22 years on the roll, and now intermittently in an advisory role representing IIFT. I had the privilege of carrying out the business-process reengineering (BPR) as a part of the project assigned to IIFT. The exercise identified around 300 redundant processes and is now the basis for developing the ERP application, replacing the earlier version. Many inside stories are hitherto unknown to many stakeholders. The IT structure in Kolkata port with a robust backbone, is at par with that of any modern organization, though perceptions about it may reasonably vary. The challenges in the port are not new but they need to be gainfully tackled through continuous adaptation and improvisation. We find a mention of

***Subsequently, in 2008, we implemented Port-Community-System (PCS), an online platform for port stakeholders initiated by the Indian Ports Association (IPA). Kolkata port received the Silver award***

draft maintenance of 7 meters at Kolkata in Calcutta-Port Commissioners (CPC)' resolution in 1919 and today, the port can be best described as a multi-drafted one, with drafts ranging from 50 meters to 6 meters. We need to concentrate on integrating operations in Sandheads, Sagar, Diamond Harbour, Haldia, Buj Buj, Kolkata, and now with inland waterway terminals and the proposed extended gateway terminal at the upcoming Balagarh. We need not compare our operations with ports that accommodate Panamax or Suezmax carriers. The maximum length of a ship that can visit KDS is 172 meters that allows a maximum of two ship-to-shore cranes (gantry or mobile) with twin lifts per move. This operation can be doubled for Panamax and three



times for Suezmax carriers. Either we compare ports with similar draft levels or compute output per hour per DWT. The comparisons of performance based on the Turn-Round-Time (TRT) per se are difficult to interpret. We know that TRT is less for ships carrying less than full load. It would be prudent to use TRT per TEU or Ton. Thus we need to set right the metrics of measurement for evaluating our ports. The future focus should be for industry 4.0 applications, IoT for buoy monitoring, equipment maintenance, lock gate operation, store management, metrics of measurement for evaluating transac and similar activities. Artificial intelligence (AI) based applications to capture prevailing sentiments of port stakeholders available with social media, news reports, published articles,

should be the sunrise areas of focus. I recently had the opportunity to put such an analysis in a meeting presided over by the Special Secretary, Logistics, Ministry of Commerce. Needless to say, all EDI systems need to be blockchain-based to ensure the security of electronic transactions which enhance stakeholders' confidence. IT needs to be based on a customer-centric approach and should not be obsessed with mere cost savings alone. This journey is a never-ending one, and I wish Kolkata port would steer its course as usual. I thank the Syama Prasad Mookerjee Port, Kolkata for providing me the opportunity to narrate my memoirs and put to perspective the port's journey in information technology in the commemorating volume

The author can be reached at [dsinha@iift.edu](mailto:dsinha@iift.edu)

*"Knowledge is never the exclusive possession of any favoured race; the whole world is inter-dependent and a constant stream of thought had through ages enriched the common heritage of mankind."*

- Sir Jagadish Chandra Bose





# MY EARLY DAYS IN CALCUTTA PORT (1945 - 1949)

*K N Ganguly*

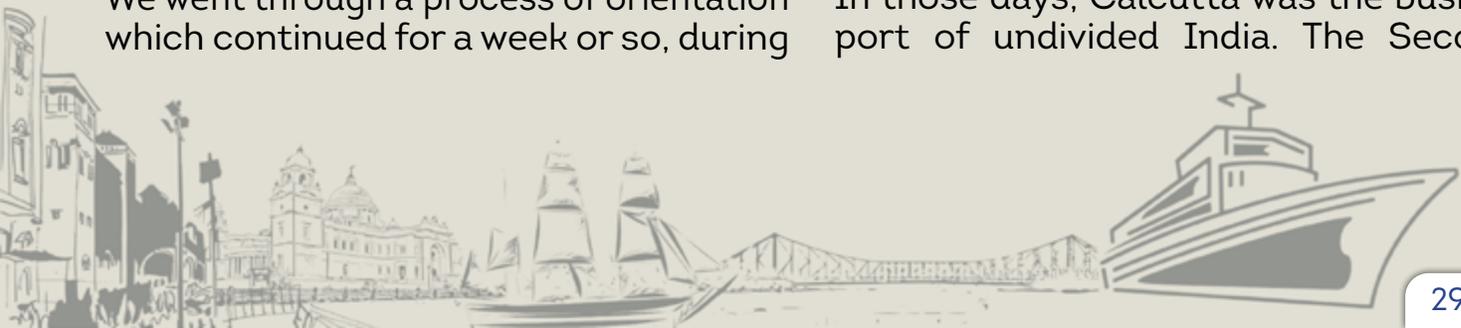
Shri K N Ganguly, retired as Secretary, Calcutta Port Trust, with 39 years' experience in Traffic Operations and Port Administration. He was associated with the Haldia Project since its inception, headed the Planning Cell and was a member of various committees.

I retired from Calcutta Port Trust in 1982, that is, 37 years ago. I had joined Port service 37 years before that, in 1945, at the age of 21. At that time, I was a post-graduate and a law student of Calcutta University. Now, at 95, I can still recollect my first day at the Port and that was 23rd June 1945. It was a grey morning with a slight drizzle. Four of us probationers had assembled at Calcutta jetties where ships carrying import cargo were berthed. Escorted by a senior officer, we trudged along, covering about a kilometer of the quay with the ships berthed alongside. On the way, we met several Port officers in military uniform, as members of the Defense of India (Docks) unit. They were not required to perform any military duties as such, but were under obligation to serve in the army, whenever required. In fact, a battalion consisting of Calcutta Port employees was at that time operating at the Port of Basra in Mesopotamia.

We went through a process of orientation which continued for a week or so, during

which we met many officers, both senior and junior. We were a bit awed when we realized that the Port was a vast organization with its own railway system and more than a hundred roads, mostly short connectors but also several important arterial ones. The Port had a fleet of more than one hundred vessels, some of which were registered as sea-going vessels. The oldest were the dredger "*Ganga*" and the despatch vessel "*Empire Oberon*", which sank off Akra, near Baj Baj in 1959, while towing a barge carrying engineering materials for Haldia Anchorage. I remember many of the launches bore the names of English flowers and birds, such as "Daisy", "Pansy", "Tulip", "Heron", "Mallard" and so on. There was a large storage depot behind Kidderpore Dock II comprising around thirty sheds where export cargo brought by rail or road would be stored. Interestingly, they bore names taken from the Greek alphabet such as Alpha, Beta, Theta etc.

In those days, Calcutta was the busiest port of undivided India. The Second





'Low Tide' - Customs House Ghat with ships in moorings -1860 [© British Library London Shelf mark Photo 29/(28)]

World War had not ended as yet and much of the Port's traffic was military cargo. The docks were crowded with ships flying different colours. There was also a lot of coastal traffic in those days - iron buckets, coir, spices. With the fragrant smell of tea wafting in, the docks exuded a peculiar aroma. And there was a variety of sounds: the blaring of ships' and tugs' horns, the clanging of cranes and derricks and the rumbling of handcarts over the cobbled quays. At the age of 21, I was in the first flush of youth, eager to learn, eyes filled with wonderment, savouring, as it were, every bit of sight, sound and smell of the docks.

Within a year or so, we were given charge

as Assistant Superintendents. The duties of an Assistant Superintendent were mostly operational, and he was expected to be constantly on the rounds, supervising ship's work. Calcutta Port in those days was not only the premier port of India but also had earned a name for itself in operational competence. Senior officers routinely came on rounds every morning, and the Assistant Superintendent - the junior-most officer - had to accompany them with a sheaf of papers in hand from one berth to another, covering one kilometer or more.

In those days, the major items of the port's export cargo were tea, jute and coal. Tea chests came by both



rail and road and were stored in large warehouses near the docks. Jute came to the port directly from the jute mills located on both sides of the river, either as jute bales or gunnies. They came in barges and the cargo was transferred directly to ships.

At that time, cargo-handling was done by traditional methods. In the manual coal berth, coal would be lifted manually from the dump adjacent to the berth, carried in baskets on their heads by workers who would practically run over wooden planks to the ship's deck and drop the coal into the ship's hold, where trimming workers would trim the cargo to maintain the ship's balance. The cranes in the Kidderpore docks were hydraulic ones and would not move by themselves, unlike electric cranes. Therefore, whenever a ship was berthed, those cranes would have to be shifted manually so as to position them against

the working hatches.

With foodgrains, the position was paradoxical. The import cargo came in bulk, was bagged and stitched inside the hatches and unloaded in the same manner as general cargo. However, later, a grain silo with bagging and stitching machines and a conveyor system from the ship was built behind berth No. 22 of Kidderpore Docks. But the King George's Dock, a newer dock now known as Netaji Subhas Dock, was even in those days a very modern dock. Here the berths were fitted with electric cranes and there were large well-lit sheds and wide quays capable of taking large ships.

When I joined Calcutta Port Commissioners in 1945, the city was passing through possibly the worst of times. In 1943, it was bombed by Japanese planes. A couple of bombs were dropped on the Central Docks



Old Howrah Bridge 1890s



in the Port, killing a large number of workers. In the same year, three million persons lost their lives in the great Bengal Famine. Many of them had come to Calcutta in search of food, and for many days, the streets of Calcutta were full of walking skeletons, a ghastly sight. The people of the city came out in huge numbers to help them by opening gruel kitchens and distributing clothes to them, but due to disease and extreme malnutrition, the survival rate was practically nil.

The Second World War ended in September 1945. That ended 'black-out' nights and other restrictions. But in the very next year, on 16th August, the darkest day in the city's history, Calcutta witnessed the 'Great Calcutta Killings'. I was posted in Kidderpore Dock, West Side at that time and was on morning shift on that day. I left my house in Ballygunge by cycle at 6 A.M. Nothing untoward happened on the way,

but around 8 A.M., news of stray killings started trickling in. Luckily, transport with police escort was provided to us for our return journey. It was then that we saw the deserted streets and corpses lying here and there.

Just a year later, on 15th August, our country became free. It brought great joy and jubilation to the whole country but utter disaster to millions of persons who migrated to West Bengal as refugees, after being uprooted from their homes in East Bengal, and who became destitutes overnight. Many came to Calcutta, occupied the platforms of the railway stations, city parks and other empty spaces. This human tragedy did not affect the Port as such, though the Partition did. However, it was only after I came to the Head Office that I learnt about the myriads of problems that the Port had to face after Independence and the Partition of the country.



Southward view of Strand Road from the Port Head Office - 1890s





Port Commissioner's Head Office, 15 Stand Road - 1876

The problems were both cargo and personnel related. The specific items of cargo where we faced problems were Jute and Tea, both of which were major exports.

There were huge warehouses where Tea was stored on arrival by rail and river routes, pending shipment. Tea meant for shipment to the U.K. was called "*Standing Tea*" and the chests containing such tea bore special marks. The other major cargo, Jute, came to the Port in barges directly from the Jute mills located on both sides of the river around Calcutta. There were jute bales and gunnies which were shipped directly from the riverside.

While Darjeeling Tea came to Calcutta

by rail, Assam Tea and Jute were moved by the river route through and from East Bengal, which became part of Pakistan, now a foreign country. Although there was no immediate problem since status quo was maintained by all the parties, the future was still uncertain. The completion of a rail link between West Bengal and Assam was started by the Indian Railways, but it took several years to be completed. However, the British steamer companies continued their operations for some time before closing down. This considerably affected the Jute and Tea export traffic of the Port. Besides, the freight equalization policy of the Government of India in respect of certain core commodities like coal neutralized the locational advantages of Calcutta Port.





Port crafts at Hastings Moorings - 1900



Paddle Steamer 'HOWRAH' - 1921

(© SMP Kolkata)

The personnel problem was related to River and Harbour Pilots and crew members of the Port vessels and craft. At the time of Independence, river pilots belonged to the Central Government service, which was transferred to the Port Commissioners by a Central Act in 1948.

Till 1930, recruitment to the services used to be made in England. Though initially, after Independence, the British pilots did not agree to serve the Port Commissioners, after negotiations, most of them agreed to continue on 3-year or 5-year contracts. The Indian officers also made certain demands before joining the Port Commissioners. However, these were amicably settled after prolonged negotiations with them. Pilots were recruited as Leadsman Apprentices through selection from among cadets of the pre-sea Training Ship, stationed in Bombay. They became full-fledged pilots after completion of a 5-year training period and after passing prescribed examinations.

Before Independence, Harbour Pilots, designated as Assistant Harbour Masters were all British, with the exception of two or three, since the first Indian officer,

Jagadish Prasad, was appointed only in 1946. Only Master Mariners, that is, persons qualified to be the captain of sea-going ships could be appointed to this post. Since most of the British also left India after independence, the problem was very acute. However, unlike the River Pilots, the Harbour Pilots only needed six months' training. Besides, after the War, ex-Naval officers were also available. So there was no immediate crisis. The Port also had a few certified Marine Engineers in the sea-going vessels and the position in their case was similar to that of the Master Mariners.

The marine crew of the Port Commissioners' vessels and craft were all from East Bengal, presently Bangladesh. An official assurance was given to them that there would be no discrimination against them and that they would be allowed to continue in service till superannuation.

However, the problem of replacement against attrition still remained. Initially, efforts were made to recruit sea-faring men from Ratnagiri in the West Coast, but only a few men could be recruited. So the West Bengal government was approached for starting an Inland Water



Transport Training centre for local boys. This was hugely successful and became the source of supply of main personnel to the Port.

The Marine Department was a constant source of headache for the Port Administration. There were many committees, tribunals and court cases. I was deeply involved with all these and the facts are still fresh in my mind. But they happened much after 1949, the cut-off year of my article and cannot be included here.

Like any other international port, Calcutta Port was also visited by a large number of foreign ships and their crew members presented a mosaic of colours. But the Port's own personnel were equally diverse. The top officials were mostly British and there was also a large number of Anglo-Indians in all

the Departments. Even the smaller communities like the Parsis, Jews and Armenians were represented in the Port. It can also be recalled with pride that the first Chief of Staff of the Indian Navy, Admiral Ramdas, had served in the River Survey Service before joining the Royal Indian Navy. An ex-Ambassador to the U.S.A., Dr. P.K. Banerji had also served as a Traffic Probationer for a brief period. There were several others of equal eminence – noted tennis player Sumant Mishra, who represented India in the Davis Cup tournament several times, prominent Hockey players, Jansen, Glacken and G. Singh, who were all members of the Indian Hockey Team which won the Gold Medal in the Olympics in 1948. Uttam Kumar, the legendary film star and matinee idol of Bengal, served in the Accounts Department of the Port Commissioners



Ceremony of laying of foundation stone of the King Georges Dock by HRH Duke of Connaught - February 2, 1921

(© SMP Kolkata)



for some time before he opted for a film career.

There were other luminaries of the silver screen the Port could boast of. A Draughtsman in the River Surveyor's Drawing Office, Ganguly performed in commercial Bengali films regularly, of course with official permission. Later, he took premature retirement to join films permanently. He was a good-looking person with a dignified appearance and well-suited to such roles. Meenakshi Goswami, wife of a senior marine Engineer was a well-known actor. I also came to know that 'Durga', the little girl who played the role of Apu's sister in Satyajit Ray's first and most famous film, 'Pather Panchali' later on married a river pilot of Calcutta Port.

Coming to myself, I spent the first four years of my career in the Traffic department of the Port Commissioners. Being the junior-most officers, my

batch-mates and I were mostly posted in shift duty in the Docks. It was a fully operational job. We were expected to supervise the work of five or six ships covering a stretch of more than a kilometer, which required us to be constantly on our legs. Apart from the physical hardship, the routine nature of the work irked me. I started toying with the idea of going back to Law College. Before joining the port, I had cleared two examinations with First Class and only the final one was left. Just then, I had a stroke of luck. It so happened that both the posts of Assistant Secretary in the Head Office fell vacant and applications were invited for them from Port officers within a prescribed age limit. Naturally, I applied. There was a written test for which the papers were set by the Chairman himself and the answer scripts were also checked by him. This was followed by a long interview by the Chairman and the Deputy Chairman. Fortunately for me, I



Capital dredging for Haldia Project with 'MOT Dredge I' - 1967





First Oil jetty at Haldia commissioned in 1968 served as a catalyst in setting up of the Haldia Refinery

stood first and was asked to take up the new assignment immediately. I joined my new job on 23rd May 1949. I realized that for me, it was not just a promotion but almost a leap from out in the open to an air-conditioned room in the Head Office.

For the next 33 years of my career, I was intimately involved with myriads of challenges faced by the Port as a result of falling river drafts, growing size of ships, changes in cargo patterns, shrinking hinterland and, last but not the least, a large work-force bound by rigid systems and methods. All these led to a fast-growing gap between the income and expenditure of the Port. In retrospect, I think facing these challenges frontally was like salt and pepper to me, which added flavor to the otherwise bland food. Indeed, the

problems of the Port were intractable, but this ailing old Port always said it won't die. Yes, it has not only survived, but along with the satellite port at Haldia, modernization, mechanization and adoption of many innovative measures, it has regained its old stature, thanks to the able guidance of a highly competent management.

Finally, I can only say, *"Kolkata Port, I remember you fondly and I salute you for your courage, resilience and resurrection."*

And now, at age 96, perhaps I too can walk hand in hand with Old Port Kolkata and sing in glee,

*"Grow old along with me  
The best is yet to be."*

- Robert Browning



# The Lock Gates

Being impounded docks, lock gates play a crucial role, and as the name suggests, they are huge steel gates that are electro-hydraulically operated for the vessels to go in and out of the docks.

Watch the video: <https://youtu.be/30mNQ3Guu3E>





# KOLKATA PORT TRUST: EXCERPTS FROM A DIARY THAT WAS NEVER WRITTEN

*Dr. A. K. Chanda*

A member of the IAS, Dr. A. K. Chanda was allotted to West Bengal Cadre in 1976. A winner of Rafael Lusky Prize in Economics, Dr. Chanda was invited to become a member of the prestigious Phi Kappa Phi Honor Society, USA in 1984 based on his scholastic achievement. He served as Chairman of Kolkata Port Trust between 2002 and 2007. He was also Chairman of the Indian Port Association from 2007 to 2009.

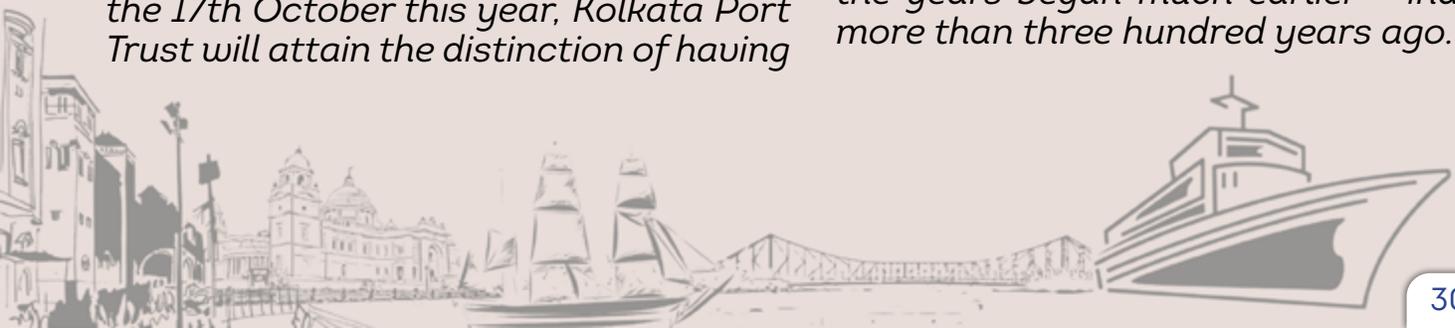
*In a passionately moving article, former Chairman, Dr Anup Kumar Chanda takes a dive into the history of the port and its early genesis, the various policies governing it, finely segueing it with the socio-political and economic issues of the times, to throw light on relatively unknown facts and historical markers that help us understand how the port survived and evolved over time. His interpretative focus, moved as much with empathy and objectivity, takes a sweep into the turbulence of time and space and some odd quirks of history to offer some engaging insights into how the port may prepare itself to meet its unique trust with the challenges of time.*

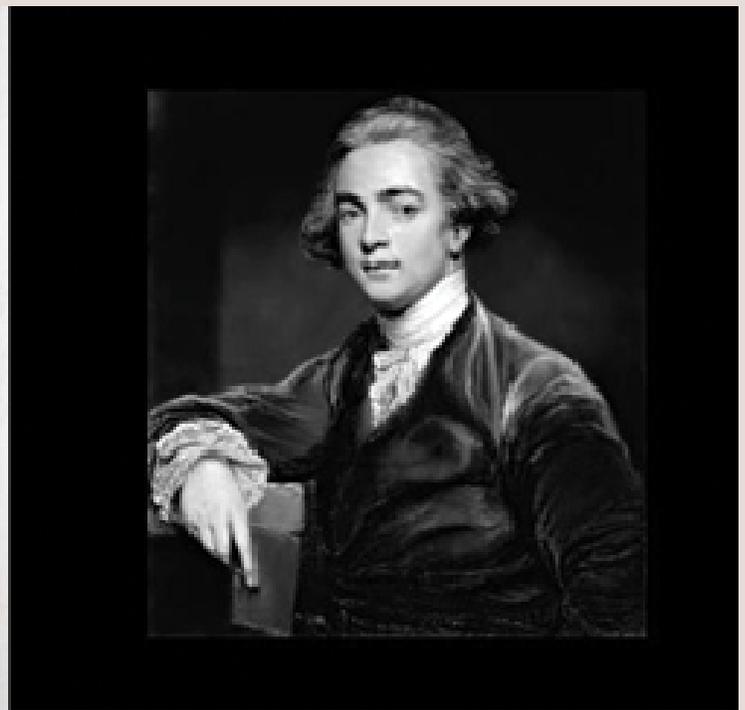
*"Alice: Would you tell me, please, which way I ought to go from here?  
The Cheshire Cat: That depends a good deal on where you want to get to."  
[Lewis Carroll, 'Alice in Wonderland']*

*150 years of glorious service to the nation is a rare achievement for any institution and it justifiably calls for celebration. The records of the Government of India show that back in 1870, Kolkata (then Calcutta) port, the only riverine port in the country, was brought under the aegis of the then British Government as the first Port Commission in India. Therefore, as per official records, on the 17th October this year, Kolkata Port Trust will attain the distinction of having*

*served the nation for 150 years.*

*But government records often hide more than what they reveal. In case of Kolkata port too, if one cares to go through the timeline of history, it will transpire that the distinguished service Kolkata Port (rechristened 'Syama Prasad Mookerjee Port' on 12 January 2020) has rendered to the nation over the years began much earlier - indeed more than three hundred years ago.*





Job Charnock (1630 - January 10, 1693)

## The Journey begins (1690)

### Near the ancient banyan tree in Ahiritollah Ghat or a ghat nearby

Historically, the nucleus of the present day Kolkata Port dates back to 1612 when trading rights were granted to the British Settlement in Eastern India by the Mughal Emperor Jahangir. Earlier in the early 16th century, the Portuguese used the present location of the port to anchor their ships, since they had found the upper reaches of the river Hugli (Hooghly) beyond Kolkata unsafe for navigation. In 1690, Job Charnock, an agent and an administrator of the British East India Company, founded a trading post at this site. Charnock had previously had disputes with officials of the Mughal Empire at the river port of Hugli and had been obliged to leave, after which he attempted unsuccessfully to establish

himself at other places down the river. When the Mughal officials, not wishing to lose what they had gained from the English company's commerce, permitted Charnock to return once more, he chose Calcutta as the seat of his operations. Charnock, it is believed, had landed at Sutanuti to which his pilot steered him by an ancient banyan tree in Ahiritollah Ghat or a ghat nearby. Since the area was situated on the river with jungle on three sides, it was considered safe from enemy invasion. Two and a half years after landing at Sutanuti, Charnock died there- but his remains were removed later to the grave in St. John's Churchyard near Lal Dighi (later known as 'Dalhousie Square' -- now 'B.B.D Bag').



## 'Calcutta' becomes the Capital of British India (1772)

*"Kalikata"* had been mentioned in the rent-roll of the Great Mughal emperor Akbar (also in Abu'l Fazl's 'Ain-i-Akbari', around 1590) and also shown in Manasa-Mangal. But perhaps it would be more appropriate to begin the story of the present day city of 'Calcutta' with the arrival of Job Charnock at Sutanuti on a rainy afternoon of August 24 in 1690. The East India Company employees, who had accompanied him, built for themselves houses as and where they pleased, though nothing had been done to build the proposed settlement. Sir John Goldsborough, who headed the Madras Presidency and also became responsible for Bengal later, was appalled at the sight when he arrived for an inspection after Charnock's death in January 1693.

Goldsborough identified a piece of land in the neighbouring village of "Kalikata" for the construction of the settlement but before he could do much, he died of a fever and was buried near Charnock's grave. By then, however, he had already entrusted Charles Eyre, Charnock's son-in-law, with the charge of Bengal, and it was Eyre who, on 10 November

1698, formally obtained lease of the three contiguous riverside villages of Sutanuti, Gobindapur and Kalikata from the Sabarna Roy Choudhury family, the local zamindars.

In 1717 the Mughal emperor Farrukh-Siyar granted the East India Company freedom of trade in return for a yearly payment of 3,000 rupees. This arrangement gave a great impetus to the growth of city of 'Calcutta' (as it was called by the British). A large number of Indian merchants flocked to the city. The servants of the company, under the company's flag, carried on a duty-free private trade. The growth of trade and commerce induced by the port enhanced the prosperity and importance of the city so much that it became the capital of British India in 1772, when the first Governor-General, Warren Hastings, transferred all important offices to Calcutta from Murshidabad, the erstwhile provincial Mughal capital. As the city grew in size and commercial importance, the need and demand for improvement of port facilities at Calcutta increased.

### Early Years

## In the Early Nineteenth Century

Till the first part of the nineteenth century, in the era of the sailing ships, the trade through Calcutta port mainly comprised hand-manufactured cotton goods and silk products of its hinterland. As the local economy became more closely integrated into the world economy under the impact of British rule, both the volume and the composition of

trade through Calcutta port changed. New export products such as indigo and raw cotton replaced handicraft goods as Calcutta's major exports, and European manufactured goods began to be imported through Calcutta to be distributed to an economic hinterland diversifying as a result of improved communications.



Meanwhile, in 1833 after the abolition of slavery in the British Empire, there was a huge demand for labourers in sugarcane plantations in the British Empire. This resulted in added importance for the port of Calcutta because from 1838 to 1917, the British used this port to ship off over half a million Indians from all over India, mostly from Bihar and Uttar Pradesh (especially Bhojpur and Awadh), to far-flung territories throughout the Empire, such as Mauritius, Fiji, South Africa, Trinidad and Tobago, Guyana, Suriname, and other Caribbean islands as indentured labourers. Today, there are millions of Indo-Mauritians, Indo-Fijians, and Indo-Caribbean people throughout the world.

As time rolled on, the power to rule this vast country passed from the East India Company to the British Crown in 1858. By the mid-nineteenth century, the

***The British used this port to ship off over half a million Indians from all over India***

massive increase of trade in Calcutta port demanded more storage space in and around the port complex. Between the 1850s and 1880s the trade in cash crops like jute, opium and tea increased significantly, displacing indigo and cotton as prime exports, while the gradual industrialization of the hinterland led to a new class of imports. About the same time, discovery of coal in Bengal also led to a diversified list of exports. Calcutta was also the main centre for import of cotton goods with the British mill-made cloth making increasing inroads into the Indian market. From here they were distributed throughout the hinterland comprising the provinces of Assam, Bengal, parts of northern India and central India. The increasing volume of trade and commerce gave rise to the need for a rapid expansion in port facilities to keep pace with the rate at which business was growing in Calcutta.

## **The Drive to Maturity: Calcutta Port blooms as the Commissioners take the reins of the port**

### **Establishment of a Port Commission (1870)**

As the trade through Calcutta port grew in volume and importance, merchants in the city began to demand improved port infrastructure with efficient cargo handling facilities. In 1863, there was a demand for setting up of a port trust under the aegis of the government. In response to the demand of the trade, the Bengal Legislative Council passed a law in 1866 to form a River Trust and to make the Port a department of the Municipality under a committee of Justices. The merchants, however, did

not welcome this move and the River Trust failed within sixteen months of its formation. So the Provincial Government had to intervene and initiate action in 1867 for the construction of four screw-pile jetties with supporting sheds for storage of merchandise. In 1869, construction two more screw-pile jetties with supporting shed was taken up. But the demand for increase of cargo handling capacity continued. About this time, the importance of Calcutta port also grew many times when the



Suez Canal opened in November, 1869. Finally in 1870, the Calcutta Port Act (Act V of 1870) was passed, and the affairs of the Port were brought under the administrative control of the Government with the appointment of a Port Commission in 1870, the first such commission to be set up in India.

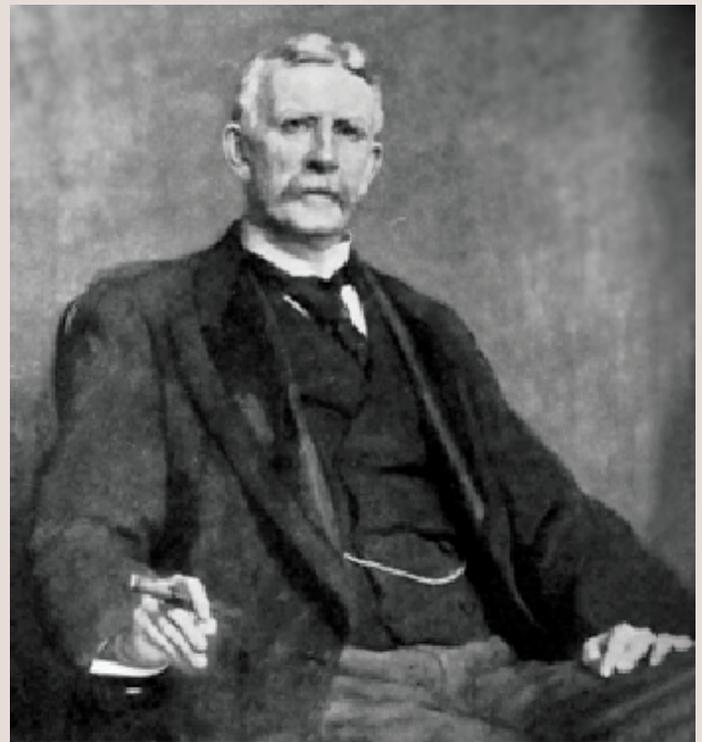
With the establishment of the Calcutta Port Commissioners with Mr. V. H. Schalch as Chairman (in addition to his usual duties as Member, Board of Revenue), Mr. Duff Bruce as Vice-Chairman and ex-officio Chief Engineer, and seven nominated members, the development of port facilities gathered momentum. By the end of 1870, eight jetties had been built on the Strand. To facilitate better and speedier cargo handling, shore based cranes were installed and night time operations on the jetties were started. The port also laid railway connections between the jetties and the railroad network of the Indian Railways. In 1871, the Port Commissioners were also appointed Bridge Commissioners to take charge of the Howrah Bridge then under construction by the Indian Railways. On completion of the construction work, the Commissioners took over the management of the Howrah Bridge in February 1875.

In the 1870s, export trade of tea, from Assam and northern Bengal, through Calcutta port increased exponentially. The port, therefore, decided to build a tea warehouse on the Strand bank lands to accommodate this increased volume of trade. Initially there was a hitch as the tea-brokers were somewhat reluctant to pay the warehousing charges. But the firms engaged in trade were keen to have the facilities and, therefore, the port went ahead with their plan. The tea

warehouse at Armenian Ghat on the Strand Bank was finally completed and made available from 1887.

The impounded Dock-I at Kidderpore came in 1893. The Kidderpore Dock II was completed in 1903. As cargo traffic at the port grew, so did the requirement of more kerosene, leading to the building of a petroleum wharf at Budge Budge in 1896.

The Commissioners of the Port of Calcutta thus did a commendable job



Sir Henry John Stedman Cotton  
(13 September 1845 – 22 October 1915)

within barely two decades of formation of the Port Trust. Because of their constant efforts, the port facilities at Calcutta underwent a sea change and soon the reputation of the port spread far and wide as a modern port comparable to ports in Europe. Writing in 1911, Sir Henry Cotton, ICS, one of the few non-Indians who served



as President of the Indian National Congress (1904), recalled his experience of landing in Calcutta in 1867. There were no jetties and Sir Cotton along with other passengers was '*ignominiously*' carried on shore on the backs of coolies who waded through soft and most disgusting mud. According to Cotton, the port of Calcutta earlier had the reputation of being "the dearest and at the same time, regarding the provision of modern appliances to facilitate shipping, the most backward port in the world". As one who loved India (he supported Indian Home Rule, and led the opposition to Lord Curzon's invasion of Tibet and partition of Bengal), Sir Henry was delighted to record that the picture completely changed within a few years after the formation of the Port Trust in 1870. The jetties and docks

became as much the pride of Calcutta as their absence had formerly been her disgrace.

In early 1914, the Chairman of the Port Commissioners submitted an application to the local Government requesting that a new dock system, proposed to be constructed by the port be named the King George's Dock, after His Imperial Majesty, King Georges V. The Governor General-in-Council, in turn, wrote to the Secretary of State for India on August 13, 1914 strongly recommending the proposal and soon thereafter the royal assent to the desired naming of the Dock system was received. The work of construction of the proposed King George's Dock, however, could not be started because of the sudden outbreak of World War I in August, 1914.

## During the First World War (28 July 1914 - 11 November 1918)

The outbreak of war in August 1914 took everyone by surprise. Because of war, the cargo volume handled at Calcutta port, both exports and imports, registered a sharp decline. Alarmed by the fall in income, the Commissioners of the port introduced, with effect from February 1, 1915, a war surcharge.

Fortunately, Calcutta port escaped any direct damage from the war. But it had its worst experience when the German Cruiser, 'Emden', sank five Calcutta steamers in the Bay of Bengal and bombarded the neighbouring port of

Madras. It resulted in such a panic that at one time the port was completely closed for nearly three weeks.

The war had a major consequence on the port's personnel as quite a few of its supervisory and other staff joined the war. These men were allowed by the Commissioners to draw half of their substantive pay while serving in the army or Navy. Many of them returned later when the war ended, including Sir Thomas H. Elderton, who later became the longest serving Chairman of the port for long 15 years (1932-1947).



## The King Georges Dock (1928)

After WWI, major construction works at the port were taken up once again. In 1925, the Garden Reach jetty was added to accommodate greater cargo traffic.

The King George's Dock, which was planned back in 1914 before the war, was, however, delayed and was ultimately commissioned on December

29, 1928 by the then Viceroy Lord Irwin (renamed later as 'Netaji Subhas Dock' in 1973). Thus the port operations gradually started shifting downstream. The port also acquired the largest fleet of dredging vessels to maintain the channel to meet the need for higher drafts by the incoming vessels.

## The Great Depression (October 24, 1929)

The newly built King Georges Dock, however, failed to bring about the projected increase in throughput at the port because of an unexpected development over which the port authorities had no control. This was the 'Great Depression' that affected the world trade. Just the year before, in 1929-30, the port's traffic had registered a new high—being consecutively the third year to post traffic volume exceeding the pre-war figures. But suddenly, being hit by depression, the traffic at the port in 1930-31 declined by as much as 24% less than in 1929-30 and much of its newly created facilities remained

unutilized.

In 1931-32, the traffic at the port showed a further decline with consequent adverse impact on the revenue of the port in spite of introduction of a surcharge from April 1931. No sign of improvement in traffic was visible even in 1932-33. To tackle the deteriorating financial position, the port authorities increased the tariff and also adopted severe austerity measures. It was indeed a difficult time. Fortunately for the port, the troubled times due to depression were over by the year 1933-34.

## During the Second World War (1 September 1939 – 2 September 1945)

The port played a very important role in the Second World War. It also suffered the most disastrous bombing attack by the Japanese forces. Sir Thomas Elderton, who himself had participated in WWI, was the Chairman of the port throughout the war period.

The war and the Axis victories both in Europe and Asia had its impact on the working of the port in 1942-43. As one after another the great cities of Hong

Kong, Singapore and Rangoon fell to the advancing Japanese army, the fate of Calcutta seemed uncertain. In April 1942 the port was practically closed, for enemy action was apprehended and for some months comparatively few ships were sent to Calcutta.

On the midnight of December 20, 1942, the city of Calcutta experienced bomb blasts for the first time as the World War II reached its peak. The Imperial



Japanese Army Air Force (IJAAF) had chosen Calcutta as one of their main targets since India was a de facto ally of the British Empire at that time. The air strike was followed by further raids on 21st and 22nd of December and multiple day sorties notably on the 24th December Christmas Eve. The next major air raid was next year on 15th of January 1943. The raids were mostly conducted at night by the Japanese fighter aircraft.

The air raids at the end of December, 1942 and in January, 1943 scared large numbers of dock workers. Many of them left Calcutta in panic. As a result, the rate of working ships during January, 1943 was only about a third of the normal rate and work continued to be slow throughout February.

On 5th December 1943, there was a disastrous attack on the Kidderpore dock yard of Calcutta port. It was the worst of the enemy attacks on the city of Calcutta. The reason the Japanese targeted the Kidderpore Dock was that they wanted to disrupt the supply lines to China. Most of the shipments destined to China at that time would land in this dock and then get transported to China through the railway tracks up to the

Assam border.

Around 500 people lost their lives in the dock attack along with massive destruction of ships and property in the warehouses. Most of the victims were coolies and labourers sleeping in their quarters. Unlike previous night raids on the city this was a day time raid something which the allied forces had not anticipated and the squadrons meant for defending the city had just returned to Calcutta from Chittagong and were just not ready to retaliate.

Forty-two members of the port staff were killed in the raid. During and after the raid, when morale in Calcutta was at its lowest, the employees of Calcutta port exhibited exemplary courage and kept the operations going. The number of deserters was negligible. Mr. D. B. Manning, Chief Engineer of the dredger 'Sandpiper' was awarded M.B.E.; Salamat Ullah, a Lascar, was awarded the British Empire Medal (Civil Division) while the names of Janab Ali, 1st Class Inland Master, Toffail Ahmed, Seacunny and Mohamed Ismail, Inland Master, were published in the Gazette of India as an expression of commendation for brave conduct.

## Many Constraints

Barely two years after the end of Second World War, India achieved independence. Like other important public bodies of free India, Calcutta Port also celebrated the Independence Day on August 15, 1947. There were 25 foreign ships at anchor in the Calcutta Docks on that day all decorated and flying the national flag of India.

With the advent of freedom, Calcutta

Port, with its first Indian Chairman Mr. N.M. Ayyar, ICS having taken over the charge on 28 April 1947 just about three months before independence, was called upon to champion the national cause by way of functioning as the gateway to Eastern India to promote the trade and commerce of its vast hinterland comprising the entire eastern region including Bihar and Uttar Pradesh



and the two land-locked Himalayan Kingdoms of Nepal and Bhutan.

It was not an easy task. Being a riverine port, a major constraint for Calcutta port has always been its low draft varying between 7 and 8 metres at Kolkata Dock System (KDS) and 7.5 and 8.5 metres at Haldia Dock Complex (HDC). Added to this, the increasing siltation in the river further reduces the depth of the navigational channel making it difficult for the port to handle bigger vessels that call for higher draft.

## Port Canning: A Grand Misadventure

The representation of Bengal Chamber of Commerce received due attention of the rulers of the time. But for compelling reasons, action on it had to wait. After the '*Revolt of 1857*' was over, the East India Company was abolished in favour of direct rule of India by the British government. The new administration planned for development of a new port near the junction of the Bidyadhari and Matla rivers in the 'Sunderban' area. It was called 'Port Canning', named after the then Governor General, Lord Canning, though Canning himself reportedly treated the project with supreme contempt.

Even in the British period, there was great concern over the waning depth of the navigational channel due to siltation. As early as in 1853, an alarmed Bengal Chamber of Commerce drew the attention of the then Governor General Lord Dalhousie's colonial government to the fact that the river Hugli was silting up gradually choking Calcutta port, and unless remedial measures are taken in time it would spell disaster for the riverine commerce and the port of Calcutta.

The port began its operations in 1861-62 with the number of ships arrival increasing steadily until around 1867. But a series of unfortunate events upset the business and income of the port. In August, 1865, a ship named the 'Eagle Speed', carrying indentured labourers, was grounded and sank off Hamilton Island following which the government issued an order prohibiting Port Canning to be used for emigration. The Company and the Municipality also came to loggerheads and were engaged in constant litigation. But the event that really did in Port Canning was one they had been warned about well in advance.

## Henry Piddington: The Man Who Saw Tomorrow

In 1853, Henry Piddington, an English sea captain with years of sailing experience in East India and China, who later settled in Calcutta, came to know that a new port was being proposed on the Matla river. Based on his studies, he was of the firm view that Port Canning should not be built on the southeastern side of Calcutta as it

was vulnerable to storms. He immediately wrote a letter to the then Governor-General Lord Dalhousie explaining in detail why he believed that the location of Port Canning made it vulnerable to storm surges. If the new port was built there, Piddington wrote, "*everyone and everything must be prepared to see a day when,*





Henry Piddington (7 January, 1797 – 7 April, 1858)

## The Tempest

Late of the night of 1st November, 1867, a cyclone made landfall in South Bengal, passing over Port Canning with *“fearful violence”*. The Englishman newspaper reported, *“A storm wave nearly 6 feet high carried away a portion of the riverbank jetties; the railway is much injured and the station destroyed”*. The eye of the storm had, in fact, passed over Port Canning itself, according to the Bengal government’s Annual Report for 1867-68: *“The station house, goods sheds and the railway hotel were*

## End of Port Canning

After the cyclone was over, an attempt was made to revive the port. It somehow limped on for another 3 years. Finally in 1871, the port was officially closed and the moorings were also removed. The only positive thing to have come out

## Dredging Begins at Calcutta Port

Meanwhile, as the Port Canning was still doing its business, the idea of improving

*in the midst of the horrors of a hurricane, they will find a terrific mass of salt water rolling in, or rising up upon them, with such rapidity that the whole settlement will be inundated to a depth of from five to fifteen feet”*.

But his advice was not heeded. Piddington, “one of the first Cassandras of climate science”, as Amitav Ghosh calls him in his recent work ‘The Great Derangement’ (2016), died on the 7th of April, 1858 and was buried in the French Cemetery in Chandernagore. Nine years after his death, his warning came true.

*all blown down; the Port Canning Company’s store hulk Hashemy carried away a great portion of the Railway Jetty, and the fresh water tanks were salted by the storm-wave”*. Some 90 people and 500 heads of cattle were reported lost and even the survivors suffered greatly for want of drinking water, since everything, including wells, had been inundated with sea water. The port and the town had been reduced to a *“bleached skeleton”*.

of the whole affair was the ‘Sealdah-Canning Line’, the first of 4 railway lines that form the Sealdah South Section railway line today, the company had built to transport goods from the new port to Calcutta.

navigability of the river Hugli was being discussed at Calcutta port. In 1865,



Captain Reddie, a master attendant, wrote a letter to the Government suggesting to get a dredger from England. He referred in his letter about employment of dredgers in the Danube and the Mississippi and was confident that in this way great improvement could be effected in the channels of the river Hugli.

By 1866-67, the steam dredger 'Agitator' began to work in river Hugli and the results of this experiment were satisfactory. By 1867, it was apparent that the fears about the silting of the Hugli had been greatly overstated, and simply putting a dredger to work in the Hugli was far more cost-effective than trying to build a whole new port.

The quest for a solution to improve the navigability in the approach channel through measures other than regular mechanical dredging, however, continued to engage the attention of the then government. In fact, it was back in the latter half of the 19th Century the idea of construction of a barrage on Ganga to divert its waters into Hugli as a solution was first suggested by none other than the great British general and irrigation engineer Sir Arthur Cotton.

Despite Sir Arthur's advice, the matter continued to drift, firstly because for a pretty long time till the early part of the



Sir Arthur Thomas Cotton (15 May, 1803 – 24 July, 1899)

twentieth century, the draft available at Calcutta port with dredging support was adequate for the kind of vessels plying at that time. So, there was no apparent urgency to improve the draft at the port. Secondly, in the last leg of their rule in India, the British were perhaps not too keen to undertake any major project to improve navigability in the river. The Calcutta port, therefore, continued to function as usual with the draft as available in the river along with the dredging support it had at its command, and in doing so it did not face much of a problem to retain its pre-eminence amongst the ports in India, at least till independence.

## The Agony of Calcutta Port: The Beginning

### Capital of British India shifts to Delhi (1911)

The challenges facing the Calcutta port changed dramatically after independence. But before we dwell on it, let us not lose sight of a major turning point in history when, just about four decades before our independence

in 1947, the capital of British India was shifted from Calcutta to Delhi on December 12, 1911.

The shifting of capital to Delhi was a major blow to the political and economic importance of Bengal. Prior to this,



Calcutta was not just the political but also the commercial capital of British India. The trade volumes from Bengal were higher than that of Bombay for most part of the time period between 1871 and 1939. The Bank of Bengal was also much larger than the Bank of Bombay. The Bank of Bengal captured larger deposits and the volume of government deposits in the banks in Bengal was also much larger given that it was the political capital till 1911. The dominance continued till 1913 but then, following the shifting of capital from Calcutta to Delhi, Bombay slowly closed the gap.

In 1913, total clearing house transactions were Rs. 65, 035 lakh with Calcutta settling 51% of these transactions compared to Bombay's share of 33.7%. Delhi was insignificant. However, the gap between Calcutta and Bombay narrowed with each subsequent year. In 1947, the shares became almost equal. From 1947 onwards, Bombay began to gain over Calcutta. In 1950, Bombay's share was nearly 6% higher than that of Calcutta.

Earlier, in Bengal, a much larger number of companies was floated compared to Bombay. Nearly 45-50% of Indian

companies were floated in Bengal compared to Bombay's share of 13-15%. But after shifting of capital, the position began to change. By 1918, Calcutta and Bombay controlled 43% and 40% respectively of rupee companies and 73% and 19% for sterling companies. The dominance of Calcutta over Bombay, especially in sterling markets, was mainly due to tea companies.

The shifting of capital from Calcutta to Delhi was a retaliatory act of the British rulers against the role played by Bengal in the freedom struggle. It was a gross injustice -- but regrettably, even after the British had left India, no one even thought of shifting the capital of the independent India back to Kolkata. It could have been a befitting gesture conveying a strong message of disapproval to the British of their revengeful action against men who were in the forefront of the freedom struggle. The new India, however, preferred not to look back in its journey ahead. The inaction perpetuated a historic injustice and in a way endorsed the unjust revengeful action of the British against Bengal for their role in the freedom struggle.

## Shift of Capital from Calcutta: Impact on Calcutta port

The shifting of political capital from Calcutta to Delhi by the British in 1911 was a major blow to the business of the port for it crippled the port's primary users, viz., the trade and business in Bengal and the entire eastern region. It was the beginning of a process of insidious decadence and soon its adverse impact was manifest on the business of the

port. The rot had thus begun with the shifting of capital from Calcutta in 1911, but the condition worsened beyond measure after 1947, the year we gained our independence.

*"Oh, what a port it was! All you could see were vessels all over the river waiting for their turn. It was such a busy port."*, reminisced



the veteran Captain J. C. Anand, Ex-Chairman, Indian Registrar of Shipping and a doyen of the Indian shipping industry, once told me while recalling the halcyon days of Calcutta port as he had seen decades ago in the early 1950's during his visit to Calcutta in his salad days as a young mariner.

The same sentiment is also echoed by the eminent historian Professor Barun De in his 'Kolkata Port Trust Anniversary Lecture' delivered in 2005. In his address titled "*The History of Kolkata Port and the Hooghly river and its future*", he recalls when he was a boy about the time of the Second World War, how his father would drive him and his mother "*in his old Austin 12 to the Strand for a walk along the still unfenced river path. He would park at a place [...] in front of the Lascar Memorial, commemorating the Indian seamen who took part in the First World War. Near it [was] the old Takta Ghat (plank landing stage) where [...] till early Independence days [...] the good ship Maharaja used to dock ferrying people to and from the Andaman Islands (occasionally to the Penitentiary there).*" Continuing further, in a bid to describe how busy Calcutta port was at that time, he fondly recollects, "*All through the Second World War and till the 1950s, from Man of War Jetty to Outram Ghat, there would be ships at moorings filling the River.*"

And then there is a discernible tinge of sadness in him when he says, "*I often wonder what happened to them. Why did they suddenly disappear in the Fifties and Sixties?*"

The questions raised by Prof. De are indeed searching and they go far beyond the constraint of so called 'low draft', most commonly associated with Calcutta port. Chronicling the history of the 'Port of Calcutta', Professor Nilmani Mukherjee writes:

"Even at the end of the First Five Year Plan ....with an average of 65 to 70 ships in her docks and the jetties and river moorings .... [Calcutta port] could well claim a place among the first ten places in the world. Standing on the swing bridge and looking into the dock basin, one could see ships from almost every part of the world - Britain, the Scandinavian countries, the Baltic, the Americans, Japan, New Zealand, Russia and India...."[Nilmani Mukherjee, pp.193]

The graphic portrayal in Prof. Mukherjee's narrative as above of the state of business at Calcutta port even at the end of the First Five Year Plan (1956) is a testimony to the fond recollections of Captain Anand or Prof. De regarding how vibrant and bustling the port was in the early fifties. The 'sudden disappearance' of the brisk business at the port soon thereafter is, therefore, in my opinion, a phenomenon too startling and can hardly be explained in terms of 'draft' alone. 'Low draft', no doubt, adversely impacts a port's business, but it would do so slowly - over a period of time, not in the sudden abrupt manner as it happened in Calcutta port in the wake of independence. So, it is not a simple affair and there seems to be more than what meets the eye.



## 1947: India wins Freedom but ...

### Bengal Divided:

### “This Bloody Line”

On 15 July 1947, the Indian Independence Act of the British Parliament stipulated that the British rule in India would come to an end on 15 August 1947. It also stipulated that India will be partitioned into two sovereign dominions known as the Hindu majority state of Indian Union and Muslim majority state of Pakistan. The Parliament also authorized setting up of a 'Boundary Commission' consisting of a Chairman and two nominees each from India and Pakistan.

Lord Listowel, the then Secretary of State for India, proposed the name of Sir Cyril John Radcliffe, 1st Viscount Radcliffe, a British lawyer and Lord of Appeal in Ordinary, for appointment as Chairman of the Boundary Commissions

On July 8, 1947, Sir Cyril Radcliffe arrived in Delhi to demarcate the boundaries between India and Pakistan. Believe it or not, it was his first visit to India.

Radcliffe had exactly five weeks to draw the borders between an independent India and the newly created Pakistan. He chaired two Boundary Commissions, one for Punjab and one for Bengal. The Bengal Boundary Commission consisted of Justice Abu Saleh Akram and Justice SA Rehman (League nominees) and Justice C. C. Biswas and Justice B. K Mukherji (Congress nominees). All nominees were High Court judges. The Commission held public sittings. The sittings took place in Calcutta High Court from July 16 to 24 (except Sunday, July 20). Radcliffe, however, did not attend the public sittings but



Sir Cyril John Radcliffe: The Man Who Drew the Borders between India and Pakistan

studied daily the records and materials submitted. As the Commission did not reach an agreement, Radcliffe alone gave the award on 9 August 1947, demarcating the boundaries of Bengal.

Finally, the power was officially transferred to Pakistan and India on 14 and 15 August respectively, under the Indian Independence Act, 1947. Partition was declared on 17th August 1947, two days after India gained Independence.

Based on 'Radcliffe award', Bengal was divided. Three days before the award was released, Radcliffe had left India on August 14, 1947, never to return to the land he divided. It is believed he had been forewarned by an astrologer that he would be killed if he ever visited India again.



Radcliffe and his 1947 job of drawing the border between India and Pakistan is beautifully captured in English poet W.H. Auden's 'Partition', a poem he wrote in 1966:

*"Unbiased at least he was when he  
arrived on his mission,  
Having never set eyes on this land he was  
called to partition  
Between two peoples fanatically at odds,  
With their different diets and  
incompatible gods.  
'Time,' they had briefed him in London, 'is  
short. It's too late  
For mutual reconciliation or rational  
debate:  
The only solution now lies in separation.  
The Viceroy thinks, as you will see from  
his letter,  
That the less you are seen in his company  
the better,  
So we've arranged to provide you with  
other accommodation.  
We can give you four judges, two Moslem  
and two Hindu,  
To consult with, but the final decision  
must rest with you.'*

*Shut up in a lonely mansion, with police  
night and day  
Patrolling the gardens to keep assassins  
away,  
He got down to work, to the task of  
settling the fate  
Of millions. The maps at his disposal were  
out of date  
And the Census Returns almost certainly  
incorrect,  
But there was no time to check them, no  
time to inspect  
Contested areas. The weather was  
frightfully hot,  
And a bout of dysentery kept him  
constantly on the trot,  
But in seven weeks it was done, the  
frontiers decided,  
A continent for better or worse divided.  
The next day he sailed for England, where  
he quickly forgot  
The case, as a good lawyer must. Return  
he would not,  
Afraid, as he told his Club, that he might  
get shot."*



## The Partition of Bengal: Its impact on Calcutta Port

The partition of Bengal in 1947 led to unprecedented upheavals resulting in one of the largest mass migrations in human history. Because of partition, about 14 million people were displaced. The violence that ensued after partition resulted in savage death of a million innocent people while millions more were injured. About 80,000 women were kidnapped, out of whom 54,000 never returned to their countries. The partition gave rise to millions of people who came to West Bengal as 'refugees' – a new class of people never heard of before, who, like others, were born in India under British rule but suddenly had to leave behind everything they once thought was their own -- a price

they never imagined they would have to pay in exchange for freedom. While the rest of India was rejoicing in the glory of freedom, these hapless people were seen crossing the border in search of a new home leaving behind their own land for good – the land where they were born and where they hoped to live all their life.

The newly carved out state of West Bengal, already reeling under stress due to partition, was suddenly saddled with a colossal refugee problem requiring to undertake a massive programme of rehabilitation of millions of people migrating from East Pakistan – a mammoth task causing tremendous strain on the woefully inadequate



The plight of Partition



resources that the new state of West Bengal was left with after partition.

The partition of Bengal was also a sudden blow to the trade and commerce of the state with devastating impact on the major industries of undivided

## Jute ('golden fibre')

Bengal was one of the most important centres for growing and producing jute, known as the 'golden fibre', at that time. The jute industry, the largest industry in Bengal before partition, had boomed during the Second World War. But, Radcliffe line dividing the British Indian province of Bengal between India and Pakistan left every single jute mill in West Bengal while four-fifths of the jute producing land remained in East Pakistan (now 'Bangladesh'). So, after partition, the best quality jute fibre was cultivated mostly in East Pakistan -- but it was no longer available to the jute mills in West Bengal leading to a slump in inputs to keep the mills running. The industry, therefore, faced a serious crisis. Five jute mills in Calcutta shut down within a year. By October 1947, only two-third of the normal volume of jute arrived in the city.

India and East Pakistan initially decided to cooperate with each other and reached a trade agreement to import raw jute from East Bengal for West

## Paper and Leather

West Bengal's paper and leather industry faced similar problems. The paper mills used East Bengal's Bamboo

Bengal, such as, jute, paper, leather, etc. And since most major industries in the state as well as in the hinterland of the port were adversely affected due to partition, for the business of the port of Calcutta in the aftermath of partition, was nothing short of a disaster.

Bengal's mills. But the arrangement fell through. Soon the two countries became competitors. East Bengal invested in jute mills and began to develop Chittagong port to export raw jute. India, on the other hand, encouraged jute cultivation. Both the countries set up customs and check posts at the border to curb smuggling of jute.

Because of competition between India and Bangladesh, the price of jute in the world market sky-rocketed. Therefore, there was a search worldwide for alternatives to jute. By early 1960's, several substitutes for jute were identified leading to a massive fall in global demand for jute products in industrial countries. That was how the once prosperous jute industry of colonial Bengal came to be included in the list of sick industries with disastrous impact on the economy and business of the state of West Bengal and the port of Calcutta.

and the tanneries consumed leather, also mainly produced in East Bengal. Like jute, lack of raw material pushed



these two industries into decline with adverse impact on the economy and

business of the State and the port.

## Bank Failure

The shocks suffered by Bengal, one after the other, beginning from the shift of capital from Calcutta to Delhi in 1911 to subsequent partition of Bengal in 1947 had a devastating impact on the Bengal's economy. In between, the Great Depression that started in 1929 and lasted until the late 1930s also weakened many export firms in Calcutta. This apart, the World War II that had ended just two years ago in 1945 made matters even worse. Thus, during the period 1915-65, the state

witnessed a large number of banking failures, nearly 360 banks in number. The problem aggravated further after independence when during the period 1947-65 alone, there were 168 bank failures in West Bengal as against just 13 closed in the Bombay region in the same period. The consequent rapid decline in the industrial climate of the state naturally spelt disaster for Calcutta Port too.

## After Independence: The Agony continues

### Freight Equalization Policy: The Last Straw that Broke the Camel's back

But the agony of the newly created state of West Bengal was yet to be over. There were still more in store. And unfortunately, it was the 'most unkindest cut of all' -- for this time it came from no foreign ruler.

In 1952, the Government of India introduced the 'Freight Equalization' policy (FEP) purportedly to promote balanced regional development of industries throughout the country. Under the policy, it was decided that certain listed 'essential' items, such as, coal, iron ore, steel, aluminium, cement

etc. would be made available at the same price throughout the country. This meant a factory could be set up anywhere in India for which the cost of transportation of the 'listed' minerals would be subsidized by the Central Government. Following the policy, industrialists began to get coal, iron ore, steel, aluminium, cement etc. at the same price as they used to get in the mineral-rich states, for setting up plants anywhere in the country.

The policy took away the competitive advantage

***In 1950, West Bengal and Bihar accounted for 92 percent of all iron and steel production in India and 48 percent of all manufacturing output in engineering-related industries.***



of the eastern region, and benefited the western, southern and northern regions. The policy severely hurt the economic prospects of the mineral-rich states like West Bengal, Bihar (including present-day Jharkhand), Madhya Pradesh (including present-day Chhattisgarh) and Odisha, since it was no longer advantageous to the private capital to set up production facilities in these areas. On the contrary, the decision to set up a factory now primarily depended on the availability of cheap labor, the price of land or proximity of the location of the proposed unit to the coastal trade hubs and markets in other parts of the country. Transportation cost no longer remained a factor. Defenders of the FEP argued that the subsidies were relatively small, but the data shows that the amounts were enough for the industries to move away from eastern India to other parts of the country.

According to Stuart Corbridge, Professor of International Development, London School of Economics, the freight equalization policy discouraged the establishment of *“resource-processing industries in eastern India, as opposed to the extractive industries, which seem to have imposed on the region a version of the ‘resource curse’ noted more frequently in sub-Saharan Africa.”*

In the western region, the policy especially benefited the coastal states, such as, Maharashtra and Gujarat. It also greatly benefited the cement manufacturers in the South Indian states, as limestone and dolomite became cheaper to transport from North India. In the northern region, the

policy benefited Delhi, its surrounding districts and state of Punjab.

In 1950, West Bengal and Bihar accounted for 92 percent of all iron and steel production in India and 48 percent of all manufacturing output in engineering-related industries. In the pre-independence era, the mineral-rich eastern region, being proximate to raw materials, particularly iron ore, was the preferred location for setting up mineral based manufacturing and engineering-related industries. Because of this advantage, major business houses like the Tatas and the Dalmias had set up their industries in Bihar, and most of the engineering industries were located in the state of West Bengal. But the new policy of freight equalization tilted the balance in favour of states/UTs, like, Gujarat, Maharashtra, Tamil Nadu, Punjab and Delhi.

The FEP was manifestly discriminatory as it included only a few selected items, such as, coal, iron ore, aluminium etc. under the head ‘essential items’ for which the eastern region had comparative advantage. The policy, however, did not apply to raw materials such as cotton, thus depriving the eastern states of a fair opportunity to set up cotton and textile mills. There was no effort to attain regional balance in this case. As a result, states such as Maharashtra and Gujarat retained their hegemony and economic imbalance in cotton/textile continued as ever before.

The FEP continued for decades as a stumbling block for the entire mineral-rich states in the eastern region, including West Bengal, preventing them from harnessing their huge potential for industrial development.

***The policy was eventually scrapped in 1993 after India’s economy was liberalized.***



Since the volume of trade that moves through a port is primarily dependent on the prosperity of its hinterland, the policy of freight equalization also dealt a death blow to the business of Calcutta port. The FEP compelled the eastern region to remain as a 'mineral-exporting' region only, and served as a major impediment to the development of 'mineral-processing' industries (such as, engineering, etc.). As a result, the ports on the east coast, such as Kolkata, Paradip, Dhamra, Vizag etc., continued to remain mainly 'dry-bulk' ports exporting raw minerals, such as, coal, iron ore, etc. originating in the eastern region to other regions of the country (or abroad). Thereafter, the same raw materials exported from the east coast ports are processed in manufacturing industries elsewhere producing value-added containerized traffic handled at western and southern ports proximate to such industries. The unjust and discriminatory policy of freight equalization has thus been the main cause of de-industrialization and economic stagnation of the entire eastern region in the wake of

independence with consequent adverse impact on the profitability of ports on the east coast.

Despite opposition and protests, FEP continued for over four decades. The policy was eventually scrapped in 1993 after India's economy was liberalized. But it was too late. The damage had been done. The states in the eastern region were left behind in their race for development. No one ever bothered to think of a way to recompense the affected states for the injustice meted out to them for decades due to the misconceived policy that inhibited the growth and progress of the entire eastern region through gross discrimination and neglect.

*"I guess the only time most people think about injustice is when it happens to them."*

[Charles Bukowski, 'Ham on Rye']

Talking of Calcutta port, its suffering and loss on account of freight equalization policy is not too difficult to comprehend. The fate of a port, after all, is wedded to the hinterland it serves.

## Picking up the gauntlet: Calcutta Port spreads its Wings

### Haldia Dock Complex (1977)

Prior to independence, there were only five ports in the country, viz., Kolkata (1870), Mumbai (1873), Chennai (1881), Mormugao (1885), Visakhapatnam (1933), each one distant from the other, catering to their respective vast hinterland. But after independence, industrial development being a major objective in a new free India, there was need for proliferation and expansion of port facilities throughout the country. As a result, several new ports were set up having the advantage of preferred

locations, higher draft as well as the benefit of modern equipment with higher operational efficiency. The competition hotted up. The older ports, like Calcutta Port, naturally began to feel the heat. The port authorities at Calcutta soon realized that they needed to pull up their socks to catch up so that the cargo from their traditional hinterland is not taken away by the new ports.

About the same time, after independence, the river Hugli also



started becoming hugely silted because of sluggish freshwater from upstream and due to strong saline intrusion from the sea. So, in 1957, being concerned with the waning depth in the river Hugli, the Union Government engaged Dr. Walter Hensen, the renowned German hydraulic engineer, for an expert opinion on how to address the silting problems of the port access in Calcutta and to determine the minimum volume of water needed to flush out the sediment borne by the river Hugli to ensure the desired depth, especially during the non-monsoon period, along the shipping track to Calcutta. Dr. Hensen was also requested to specify the period and frequency of such release of water with the help of simulation studies.

Later, another eminent engineer from Holland, Dr. J.J. Dronkers, Director of

the Hydraulic Section, Rijkswaterstaat Deltadienst (Rijkswaterstaat Delta Service), The Hague, was also invited by the Government of India to undertake a similar study. Both the experts suggested that a minimum of 40,000 cusecs of water must flow along the river Bhagirathi-Hugli uninterruptedly every day during the rainless season (i.e., from January to May) for sustenance of navigability of the river Hugli to the south of Calcutta up to Hugli Point (confluence of the Hugli & the Rupnarayan rivers). They also indicated in their report that implementation of their recommendations would restore the depth of the river Hugli down of Calcutta to the situation prevailing in 1936.

In this backdrop, the Farakka Barrage Project was drawn up by the Government



Coal handling berth at Haldia Docks



of India and it was supposed to play a critical role in improving the depth of the river Hugli. Built at a cost of \$208 million, the Farakka Barrage started its operation 21 April 1975. Located in Murshidabad and Malda districts of West Bengal at about 300 km north of Kolkata, it has a 42 kilometres long Feeder Canal from the barrage to the Bhagirathi-Hugli River for a flow of 40,000 cusec, whose bed width is wider than that of Suez Canal.

Unfortunately, a sustained discharge of a minimum of 40,000 cusec discharge, as recommended by the experts, especially during the non-monsoon months through the Feeder Canal from the barrage, did not finally materialize due to trans-border political compulsions. Actually the amount of water reaching Farakka through the Ganga is now far less to ensure release of 40,000 cusecs of water to the Bhagirathi-Hugli daily, particularly during the dry months of the year. This is primarily due to diversion of water from Ganga and its tributaries by the states with riparian rights in the upper reaches, like, Uttar Pradesh and Bihar, for irrigation and other purposes. This had started already before independence, around the 2<sup>nd</sup> or 3<sup>rd</sup> decades of the 20th Century, and the process gathered momentum with the initiation of the five year plans in the early 1950s. The population growth all over North India in the Indo-Gangetic valley has compounded the problem further; the waste that is dumped by the households as well as the industrial and other various units along the river bank finds its way into the Ganges, all the way from Haridwar. Moreover, because of deforestation in the

upper catchment of the river and her tributaries, there was gradual reduction of upland discharge in the Hugli. The inevitable consequence of all these has been arise in siltation on the river bed and consequent decrease in depth of shipping channel. The gradual choking of the channel also led to steady rise in the salinity or brackishness of the river water affecting the quality of drinking water in Calcutta.

Because of such continuing sediment-accretion on riverbed going on for years, even sustained upland discharge of 40,000 cusecs daily during dry months will at present be insufficient for flushing out sediments. As the matter stands now, natural flushing of sediment seaward is practically impossible. In the present scenario, therefore, dredging is an unavoidable option to ensure removal of sediment from the riverbed to facilitate navigation through the shipping channel at Calcutta port.

***The Farakka Barrage project, on completion in 1975, raised new hope for Calcutta port.***

Be that as it may, the Farakka Barrage project, on completion in 1975, raised new hope for Calcutta port. About the same time, to cope with challenges of the changing times, the port authorities also decided to take guard to meet the increasing competition from other ports. On 12 March 1966, just about a decade before commissioning of Farakka Barrage, a new natural, deep-water port at Paradip on the east coast of India in Jagatsinghpur district of Odisha, situated at the confluence of the river Mahanadi and the Bay of Bengal, had started its operation. The new Paradip port had a distinct draft advantage over Calcutta port, in handling dry bulk cargo vessels of larger size. For



the sake of competitiveness, therefore, Calcutta port needed to identify a suitable location with higher draft facility to handle vessels of larger size – particularly, vessels carrying dry bulk cargo, like coal, iron ore, sugar, fertilizer etc., originating from its traditional hinterland. After evaluating the available options, the port authorities decided to set up the new dock complex at Haldia, about 120 kilometres downstream from Calcutta, at the meeting place of Haldi river and Hugli river, in a sleepy hamlet in Midnapore district (now, Purba Medinipur).

To start with, a riverside jetty was constructed at Haldia to handle crude oil and petroleum products so that the refinery at Barauni can be supplied with crude oil. The construction of the oil jetty commenced in June 1965 and was

completed in July 1968. Subsequently, Haldia Dock Complex was commissioned on 28 February, 1977 through the entry of vessel M.V. Viswavijay. An impounded Dock System with 12 Berths, Haldia Dock Complex (HDC) has 3 Oil Jetties and 3 Barge Jetties in the River for handling Oil carried by Barges. There are also facilities to handle lash vessels at Haldia Anchorage.

The biggest attraction of Haldia is faster evacuation, availability of rail rakes, lower railway rake freight rate, and a strategic location catering to a large hinterland. This is the reason why despite stiff competition from other adjoining deep drafted ports, industries prefer to use it. However, due to draft limitation, bigger vessels cannot sail into the dock with full load. Only Panamax or lower and Handymax vessels -- that too after



M.T. Arctic Blue, the 3rd largest Ultra Large Crude Carrier (4, 84,276 tonnes capacity) in the world, carrying 3, 50,000 tonnes of POL(Crude) at Sandheads, December 2002



lightening cargo at other ports, like, Paradip -- can enter it. In the process, the importers end up spending around \$1.2/MT additional cost here.

So the challenges remain. But, despite constraints, Kolkata Port Trust, with its two dock systems, is doing an excellent job and continues to grow at a rate much

higher than the national average. There is, however, little room for complacency. As a riverine port, the port of Kolkata faces the challenge of waning depth due to siltation in its navigational channel -- both at Kolkata and Haldia - so much so that at times one wonders if it is time to write the epitaph of the port!

## Is Calcutta port a low drafted port?

It is here we must pause for a while and have a close look at the special features of the Kolkata port. It is, in a way, a 'sui generis'. It has a 232 kilometres long navigational channel, the longest amongst all Indian ports and one of the longest in the world. And within its navigational channel, the port has an intriguing draft profile with a monotonically increasing slope, having a low draft of 6.5-7.5 metres at one end of the channel, viz. at Kolkata, while at the other end, viz. at Sandheads, the draft is more than 50 metres, arguably the highest in the world, where the port can handle with ease the largest vessels doing rounds in the global shipping circuit. For most of us, therefore, who identify Kolkata port as one with low draft it maybe a news that at Sandheads, Kolkata Port used to regularly undertake 'ship to ship lighterage' operation of crude oil in association with the Shipping Corporation of India till March 2008 i.e. till commissioning of Paradip SBM and pipeline up to Haldia. The lighterage operations at the Sandheads had begun in October 2002. Generally, a quantity of about 4 million MT used to be handled

during fair weather period (from mid-September to mid-March each year). During monsoon, however, vessel operation at Sandheads is not possible due to adverse weather condition.

In fact, Kolkata Port has handled some of the largest vessels in the world at Sandheads. In December 2002, the port handled M.T. Arctic Blue, the 3rd largest Ultra Large Crude Carrier (4, 84,276 tonnes capacity) in the world, at Sandheads, which had entered the port carrying 3,50,000 tonnes of POL (Crude). Within a month thereafter, the port handled the 378-metre long vessel of 457,841 tonnes capacity Saudi Arabian flagged M T Folk-I carrying 330,900 tonnes of crude at the Sandheads. Both the M.T. Arctic Blue and the M T Folk-I are too large to enter any Indian port due to lack of draft."

So, would someone tell me whether with such feathers in its cap the Kolkata port is really a low drafted port? Or, is it a deep drafted port - so deep that the like of it is rare to come by? Well, the answer, to my mind, is - *it depends on where you are doing your business.*

## Kolkata Port: Looking into the Future & Beyond

After independence, India went ahead with development plans in which primacy

was accorded to the public sector. The ports, considered vital for promotion of



trade and commerce, were kept within the fold of Govt. initiative. The policy underwent a paradigm shift in the 1990s when, in consonance with its new policy of liberalization and globalization, the Government of India issued guidelines permitting private sector participation in major ports in 1996. In 1997, major ports were also allowed to setup joint ventures with foreign ports, minor ports and private companies.

The new policy led to a major transformation in the port landscape in India. Today, there are 13 major ports (12 Govt. owned and 1 corporatized) and about 200 non-major/minor ports in India handling around 95 percent of India's total EXIM trade by volume and 70 per cent by value.

India is richly endowed with maritime resources. To tap its huge potential, the Ministry of Shipping, Government of India has drawn up a flagship programme 'Sagarmala', which was released on 14th April, 2016. The main objective of this programme is to reduce logistics cost for EXIM and domestic trade and to promote port-led development in the country by harnessing India's 7,500 km long coastline, 14,500 km of potentially navigable waterways and strategic locations on key international maritime trade routes.

The 'Sagarmala' vision document accords a lot of emphasis on the last mile connectivity to the ports. Currently, around 87% of Indian freight to and from ports uses either road or rail for transportation of goods. But, due to capacity constraints on highways and

railway lines, a significant share of this cargo experiences 'idle time' during its transit to the ports. This adds to the cost for which Indian exports and imports lose their competitive edge. By comparison, transportation through waterways is 50% cheaper than by road and nearly 30% cheaper than by rail. It is also much safer and environment-friendly. Despite these advantages, it accounts for only about 0.4% of India's

modal split. In contrast, coastal and inland water transportation contributes to 47% of China's freight modal mix, whereas in Japan and USA, this share is 34% and 12.4% respectively. So, there is a huge scope of savings for the trade and business by shifting movement

of commodities, like, coal, iron ore, cement and steel to coastal and inland waterways. Under 'Sagarmala', therefore, a major thrust has been accorded on promotion of coastal shipping and inland water transport in future.

The stress on promotion of inland water transport (IWT) and coastal shipping in the 'Sagarmala' programme can be a game changer for Kolkata port. The port of Kolkata is the only riverine port in India. But, unfortunately, the intrinsic strength and potential of the river Hugli where the port is situated and its strategic locational advantage in terms of connectivity with NW1, NW2 and the neighbouring Bangladesh has not been harnessed so far. Even within Kolkata Port, the 'riverine' character of the port has often been perceived as a handicap – perhaps because of the port's constant engagement to compete with other ports which are all sea-ports. It is time

***About 200 non-major/minor ports in India handling around 95 percent of India's total EXIM trade by volume and 70 per cent by value.***



now for Kolkata port to re-discover itself and harness the potential of the river. The current emphasis of the Central Government on promotion of coastal shipping and inland water transport, therefore, opens a new window of opportunities for Kolkata port.

The neglect of inland water transport through the river is also, to a large extent, attributable to the partition of Bengal at the time of independence. This was succinctly summed up by Prof. Barun De in his 2005 'Kolkata Port Trust Anniversary Lecture' as he ruefully recounted memories of the days gone by:

*"The creation of East Pakistan and then its secession into Bangladesh meant that the traffic down the Brahmaputra - Yamuna system to Goalundo and then through, what we remember, at least those of us who are old enough to remember, as the Inner Channel or even the Outer Channel through the Sunderbans, going past Khulna towards Barisal. This was completely disrupted, throwing out of gear companies like the Rivers Steam Navigation Company."*

Prior to independence, the inland water system played a major role in the transportation network serving Kolkata port. The linkage of the port to Assam and the areas now included in Bangladesh was provided through rivers like the Bhagirathi, Jamuna, Padma etc. and the linked canal system.

The partition disrupted India's trade relations with East Pakistan (now Bangladesh) and had serious adverse impact on water borne trade as well as connectivity with the north-eastern states. For river steamers in Bengal, the new border was disastrous. About the same time, owing to myriad problems relating to navigability of NW1, river transportation of cargo between Kolkata

and Prayagraj (Allahabad) also gradually stopped. No wonder, over the years the inland water transport business along



Dr. Bidhan Chandra Roy

the river practically became a sort of folk tale and fable of the past.

The partition might have also led to extinction of the legendary sailing skills of the 'majhi's and 'mallah's (boatmen) of riverine Bengal and could have even caused disruption of operation of the Mooring Master's office in Calcutta port but for the thoughtful intervention of Late Dr. Bidhan Chandra Roy, the then Chief Minister of West Bengal. At one point of time there were 2000 Marine crew in Calcutta port under Mooring Master's section alone, responsible for the maintenance of all moorings along the Strands and Budge Budge jetties. The section was under the Harbour



Master (Port) and still is, but the staff strength is less than two hundred today. After partition, the crew of the Marine Department which comprised mainly Bengali Muslims from Khulna and adjoining areas gradually left India. It was a difficult time for the Marine Department to man the fleet of crafts at that time. It was Dr. B.C. Roy then who, in order to rehabilitate the Bengali refugees from East Pakistan, desired the creation of a training centre under the Inland Water Transport Division of the State Government for imparting 'hands

on' training to them for recruitment as 'Lascars' in Port and Govt. of West Bengal.( IWT) etc.

Later, as an expression of gratitude, a statue of Dr. Roy was installed at Takta Ghat by the Marine crew of that generation in his honour. The statue was unveiled by the then Union Minister of Shipping and Transport, Shri. Raj Bahadur, on 6 July, 1973.

The visionary is no more, but his legend lives on.

## Coastal Shipping and Inland Water transport: A Ray of Hope

There have been many discussions in the past to revive coastal shipping as well as inland water transport for the benefit of trade and commerce. It is no

easy task due to years of neglect, but certain developments in the recent past inspire confidence and rekindle hope of its success in the days ahead.

## Promotion of Indo-Bangladesh Trade: The Protocol Routes

Following the liberation of Bangladesh in 1971, our bilateral relations showed signs of improvement. In the new cheerful environment, India and Bangladesh signed a Protocol for Inland Water Trade and Transit (PIWTT) in 1972 for inland waterways connectivity between the two countries for promotion of bilateral trade as well as to improve the connectivity to north-eastern States of India through waterways. As per the Protocol, inland vessels of one country are allowed to transit to the other through the specified routes. Under the Protocol, 50:50 cargo-sharing by Indian and Bangladeshi vessels is permitted both for transit and inter-country trade.

It was a laudable initiative. But despite all

efforts, not much action was visible on the ground.

The protocol was renewed on May 20, 2015 for five years with a provision of automatic renewal for the next five years, giving long-term assurance to stakeholders. In the new memorandum, the number of protocol routes was increased from eight to ten. The two countries also agreed to introduce trade between 'Chilmari' (Bangladesh) and 'Dhubri' (Assam) to facilitate export of stone chips, and other Bhutanese and northeast cargo and to provide easy access for traders to the hinterland of Bangladesh, and lower Assam region. The new protocol also included 'Jogighopa' (Assam) and 'Bahadurabad' (Bangladesh) as new



'ports of call' to provide connectivity to Meghalaya, Assam and Bhutan.



Map showing the Routes under Indo-Bangladesh Protocol for Inland Water Trade and Transit

Another new route in the protocol is 'Rajshahi (Bangladesh) -Dhulian (West Bengal)-Rajshahi' and its extension up to Aricha (270 km). This will reduce the cost of transporting goods, such as, stone chips etc. to northern Bangladesh. It will also decongest the Land Custom Stations on both sides. The two countries have also agreed to develop round the year navigation along the Ashuganj -- Zakiganj stretch (309 km) of Kushiyara river and 'Sirajganj - Daikhowa' stretch (146 km) of Jamuna river in the Indo-Bangladesh protocol route and to share the costs

in the ratio of 80:20 between India and Bangladesh respectively. A Rs. 305-crore dredging project in the 'Sirajganj-Daikhowa' section of Jamuna river has also been drawn up to create a nearly 4,000 km-long fairway from Varanasi in Uttar Pradesh to Sadiya in upper Assam (bordering Arunachal Pradesh) through Bangladesh. As a result, the NW1 route would ultimately stretch from Varanasi to Haldia to the Indo-Bangladesh protocol route going up to Ashuganj and Dhubri, where it would meet NW2 connecting up to Sadiya. In a recent major development on July 23, 2020, the first trans-shipment of container cargo from Kolkata port reached the landlocked Agartala in the north-east via Bangladesh's Chittagong port.

All these new developments rekindle hope regarding boost in the volume of river-borne trade with Bangladesh and the north-eastern in the near future -- which would be of immense benefit to Kolkata port. It will strengthen India's ties with its key neighbour Bangladesh, which is of strategic importance particularly, in the backdrop of current border standoff with China.

## Promotion of Indo Bangladesh Trade: What is to be done?

But there is still a major irritant. As of now, about 60% of India-Bangladesh trade, primarily non-containerized cargo, move through road via the congested 'Petrapole-Benapole' Check Post, Asia's largest land customs station. The congestion (approximately 400 trucks per day both ways) coupled with a lack of uniformity in axle-load restrictions

leads to delay and a substantial cost on the trade. This is a major reason for slow growth in bi-lateral trade; the high cost of formal trade also leads to a high volume of informal trade.

The solution to this problem lies in containerizing and shifting road cargo to cheaper rail and, most preferably, through inland river transport, the latter



being the cheapest and an environment-friendly mode of transport. The saving in logistic cost would in turn lead to higher growth in volume of business. Therefore, in the larger interest of promotion of bi-

lateral trade with Bangladesh, diversion of cargo from land customs to water route should be accorded the topmost priority -- and doing so will be a shot in the arm for the business of Kolkata port.

## Jal Marg Vikas Project: Development of National Waterways 1

For promotion of trade along the waterways, another major step taken by the Central Government is the World Bank assisted Rs. 5,369 crore 'Jal Marg Vikas Project' to develop NW 1, with assured three-metres depth, between Varanasi and Haldia, covering a distance of 1,380 km. The scheme envisages multi-modal terminals along the route at Varanasi, Haldia and Sahibganj, with other inter-modal terminals and bunkering facilities. Scheduled for completion in six years, the project can be a game changer for Kolkata port helping it to emerge as a multi-modal transport hub.

The Kalughat Terminal in Saran district in Bihar would enable transportation of cargo from Kolkata to Nepal through this waterway.



Cargo Transportation along National Waterways 1



The 1620 kilometres long National Waterways 1 from Prayagraj to Haldia (Source: Inland Waterways Authority of India)

For Kolkata port, the route will connect Haldia to the Indo-Bangladesh protocol route. The project will also benefit the landlocked state of Nepal and Bhutan.

Operations have started, and goods are being transported through this route. On November 2018, the first container movement happened on NW-1 when PepsiCo moved its 16 containers from Kolkata to Varanasi on the inland vessel MV RN Tagore. The cargo movement for the landlocked Nepal and Bhutan is also partly taking place through the riverine route till Sahibgunj, from where trucks move goods to Nepal and Bhutan.

Morning shows the day. The message is now too clear to be missed. For Kolkata port, the 'Jal Marg Vikas project', on completion, will bring bounties only a river can give to its blessed.



## Coastal Shipping Agreement: India & Bangladesh

On 6 June 2015, a coastal shipping agreement was signed between India and Bangladesh. It was a major step in strengthening the maritime trade ties between the two neighbours, and would help Bangladesh to trade with Nepal and Bhutan through India. The agreement would also help in development of a cost-effective and environment-friendly mode of cargo transportation to India's landlocked northeast.

Despite its huge potential, cargo movement in the coastal shipping segment is still sluggish. To achieve its true potential, certain promotional measures are urgently called for. There is at present a substantial trade imbalance in our bilateral trade with imports from Bangladesh being much lower than our exports. As a result, most cargo carrying vessels from India to Bangladesh return empty that leads to high logistics cost adversely affecting

the competitive edge of coastal trade. A review of the coastal shipping agreement is, therefore, needed to allow for transshipment of cargo via any of the ports on the east coast that will help in reducing the problem of non-availability of return cargo from Bangladesh, which would benefit both the countries in the long run. Added to this, there should be dedicated berths to ensure priority berthing for coastal vessels as these vessels cannot adjust their speed. For Kolkata Dock System, it should be possible to earmark such dedicated berth in Kidderpore Dock II.

The measures discussed above for strengthening of trade ties with Bangladesh, through both inland as well as coastal routes, are also necessary in our mutual interest, particularly in the light of the growing geopolitical importance of the Bay of Bengal region.

## The Changing Geo-political Scenario in the Bay of Bengal Region

Since the latter part of the twentieth century, the Bay of Bengal as a region is going through a reorientation from a dormant sea to a hotbed of new opportunities. The earliest recognition of such a transformation came in the

early 1990s with India's 'Look East' Policy. In consonance with the said policy, the Government of India opened the gates of trade and exchange laying great emphasis on a region that was not in its priority list previously.

### BIMSTEC

The 'Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation' (BIMSTEC), an international organization of seven nations of South Asia and Southeast Asia, founded in 1997 through the

Bangkok Declaration, enhanced the importance of the Bay of Bengal region and brought it further into focus. The initiative links five countries from South Asia namely, Bangladesh, India, Sri Lanka, Bhutan, and Nepal, and two from



Southeast Asia, namely, Myanmar, and Thailand. For the first 17 years since its inception, it was not so active. But since 2014, there has been noticeable spurt in its activities. India attaches great importance to BIMSTEC, primarily for two reasons: (i) its potential to emerge as an alternate mechanism to SAARC and (ii) gradual ascendancy of China through their Belt and Road Initiative (BRI).

Recently, in November 2019, India hosted the first-ever BIMSTEC Conclave of Ports at Visakhapatnam. The conclave discussed various ways of strengthening the maritime ties between the member-countries. Significantly, a Memorandum of Understanding (MOU) was also signed during the conclave between Ranong Port (Port Authority

of Thailand) and the Port of Kolkata along with Port Trusts of Chennai and Vishakhapatnam. These MOUs will not only enhance connectivity between Thailand's West Coast and India's East Coast, but will also reduce sea travel time between India and Thailand from two weeks to a week.

BIMSTEC brings into focus the growing importance of Kolkata Port in the emerging geopolitical scenario because of its strategic location. As the initiative aims to facilitate coastal shipping in the region boosting trade between the member countries, it opens a window of new opportunities for the port to help it to emerge as a major beneficiary of the connectivity of the region with industrial hinterlands through National Waterways 1...

## The 'Act East' Policy

In 2014 the Govt. of India announced the 'Act East' policy expanding the horizons of economic integration to re-position India's interest from just Southeast Asia to East Asia and the Pacific. In the 'Act

East' policy, the state of West Bengal as a region is crucial since it is the pivot for any activity that takes place in the Bay of Bengal region vis-a-vis the 'Act East' Policy.

## Kolkata Port: Its Growing Importance in the emerging Geo-political Scenario

The changing geopolitics of Asia in the new millennium, marked by China's sharp rise and India's emergence, has led to renewed importance of Kolkata port. In the recent years, the footprints of China are now increasingly visible around the Bay of Bengal in the port gateways to be built in Kyaukpyu (Myanmar) under Beijing's Belt and Road Initiative (BRI) and the Port of Hambantota in Sri Lanka (85% of the Port having been leased out to China Merchants Port Ltd.). This apart, the 'Gwadar port' in Balochistan

province of Pakistan officially has also been leased to China for 43 years, until 2059. The Bangladesh, on its part, is also going ahead with development of a deep-drafted port, with 16 metres draft, at Matarbari area in Chittagong Division with Japanese assistance, scheduled to be operational by 2026. In this backdrop, India urgently needs to take a relook at its trade as well as maritime policy and factor in the geopolitical changes taking place in the Bay of Bengal region. In the present geopolitical scenario, it



is of supreme importance for India to act fast to secure its strategic access to the sea by developing a deep drafted

port at a location proximate to Kolkata -- and it must be done soon. The matter brooks no delay

## The proposed deep drafted ports at Sagar and Tajpur: Early bird catches the worm. What if you're late?

In the early 1990s, Kolkata Port authorities realized that the cargo volume handled at the port cannot be improved merely by port modernization. The limitation of low draft at their existing locations of operation was staring in the face. Only an alternative location, with substantial draft capable of handling larger vessels, would ensure future survival and success of the port. In their pursuit for such a place, the port authorities identified a location on 'Sagar Islands' in the Bay of Bengal near the confluence of the Bhagirathi and the sea.

The problems that plague Kolkata Port and how they could be solved have, therefore, been well within the knowledge of the authorities for decades now, but somehow no tangible action could be taken so far. Land acquisition, a major issue now, would have been much easier to handle earlier, but decision continued to be deferred. Meanwhile, with liberalization in port policy, new private ports started being set up all over the country, including one at close proximity of Haldia, namely, at 'Dhamra', with a draft of 17.2 metres. Still, no decision regarding construction of a deep drafted port for Kolkata Port Trust was taken.

It was only as late as in May 2013 the Indian government approved the setting up of a new deep sea port at Sagar Islands. After close interaction with the State Government, 'BhorSagar Port

Ltd.' (BSPL), a joint venture company (74:26) between Kolkata Port Trust and the Government of West Bengal, was set up to undertake development of the project. It was decided that the construction work of Sagar Port would start in 2017-18 and be completed in five years.

But hereafter what happened is not quite clear. It appears from press reports that while the Kolkata Port was preparing itself to go ahead with the building of a new port at Sagar, an alternative location was identified by the State Government, perhaps in 2016, at Tajpur, close to Haldia, in Purba Medinipur district of West Bengal. The State Government considered the new location to be a more promising one and desired to build the Tajpur port as a State Govt. owned port. It was decided to make the proposed new port at Tajpur operational by 2019.

Soon, however, 'better' became enemy of the 'good'. Kolkata Port's survival plan with an alternative port at Sagar, stood virtually scrapped due to the proposed new deep sea port at Tajpur. As against the State Government's idea of a new port at Tajpur, the Ministry of Shipping, Govt. of India, made it clear that Sagar port will not happen if Tajpur comes up, as it will amount to bad investment. The Ministry was of the firm view that two ports so close to each other would not be viable in view of current volume of trade in the hinterland. The Central



Government was, however, willing to join the State Government in developing the proposed Tajpur port and sought 74% share from them.

But the State Government apparently was in no mood to give majority share to the Centre. It offered the Centre 26% share and planned to attract private investment for the rest. Subsequently, however, after several rounds of deliberations, the State Govt. decided, around May 2017, to accept 26% stake in the proposed new port at Tajpur. It was also decided that the SPV 'BhorSagar Port Ltd', which was supposed to take up Sagar deep sea port, will take up the development of Tajpur Port as Phase 1 and the Sagar Port as Phase 2.

The bonhomie was, however, short lived. By early 2019, the State Government decided to go alone at Tajpur alleging delay by the Centre.

While the uncertainty over the fate of Sagar and Tajpur port continued to cast its shadow over the prospect of a deep drafted port in Bengal --- ironically, about the same time, on February 12, 2019, the foundation stone for a new deep drafted port, 'Subarnarekha', to be developed at Chumukh area in Baliapal block under Balasore district, Odisha, barely a hundred kilometres

from Haldia, was laid by Odisha Chief Minister, Shri Naveen Patnaik. The new 'Subarnarekha' port would have a draft of 18 metres, the deepest in the Odisha coast, to host large and heavily loaded ships targeting cargo from the same hinterland as that of Kolkata Port. A joint venture company (51:49) between Tata Steel and Chennai based Creative Port Private Ltd was assigned the task of developing the new port within 36 months. Unbeknownst to the people of Bengal, a formidable competitor of Kolkata Port Trust in the days ahead was born.

The latest status of 'Tajpur', going by the press reports, seems to be that the State Government is once again contemplating to develop the proposed deep-sea port at Tajpur, once again on its own, but has not formally communicated its final decision to the Centre as yet. Meanwhile, time rolls on. Our neighbours in the Bay of Bengal region continue to steal a march on us. The problems faced by Kolkata Port turn from bad to worse.

*"Urgency is unbelievably important when you're talking about, not little changes, but big changes."*

[John P. Kotter, Professor Emeritus, Harvard Business School]

## In Lieu of Conclusion

It is customary to wish a birthday baby all the very best in life. All well-wishers of Kolkata port will do it - shower their blessings and good wishes on the port. I, on my part too, would surely join them and tender my best wishes. But alongside, I also cherish a dream. The

dream of a day when the foundation stone of a deep drafted port under the aegis of Kolkata Port Trust will be laid and its work on ground will actually begin on a serious note so that we have our dream port well in time. Let me, therefore, on this glorious occasion



of the sesquicentennial celebration of the birthday of Kolkata Port, place on record my best wishes for the historic port of Kolkata with the fond hope that

this dream will soon come true.

Stay blessed Kolkata Port Trust. Many Many Happy Returns of the Day!

*[\*I have benefited from discussions with Capt. J. J. Biswas, Shri Amal Datta, Shrimati Sharmistha Pradhan, Shri Gautam Chakraborti, Capt. Biswajit Pakrashi, Shri Kaushik Chatterjee, all of them my former colleagues at Kolkata Port Trust. I am also thankful to my wife, Dhriti, for her time and patience in going through the draft. The usual disclaimer, however, applies.*

*The views expressed in this article are my own and in no way reflects the views of the Kolkata Port Trust or of the Government of India.]*

#### References:

1. Agarwal, Amol, "When Bombay overtook Calcutta: A history of India's financial geography", 'mint', 24 June 2017.
2. De, Barun, "The History of Kolkata Port and the Hooghly river & its future", Kolkata Port Trust Anniversary Lecture, 2005.
3. Dalrymple, William, "The Great Divide: The violent legacy of Indian Partition", 'The New Yorker', June 29, 2015.
4. "Freight equalization hit Bihar growth, says Prez", 'Hindustan Times', March 24, 2017.
5. Ghosh, Bishwanath, "Why August 24 matters - and yet does not matter - to Kolkata", 'The Hindu', 24 August, 2020.
6. Kaushik, R.K., "The lead-up to the Radcliffe award", 'The Tribune', 24 September 2020.
7. Mukherjee, Nilmani, "The Port of Calcutta: A Short History", Commissioners for the Port of Calcutta, 1968.
8. Ruparelia, Sanjay, Reddy, Sanjay, Harriss, John & Stuart Corbridge (Ed.), "Understanding India's New Political Economy: A Great Transformation?", Routledge, London, 2011.
9. "The Concrete Papparazzi: Forgotten History: The Port Canning Disaster", 29 January 2019.

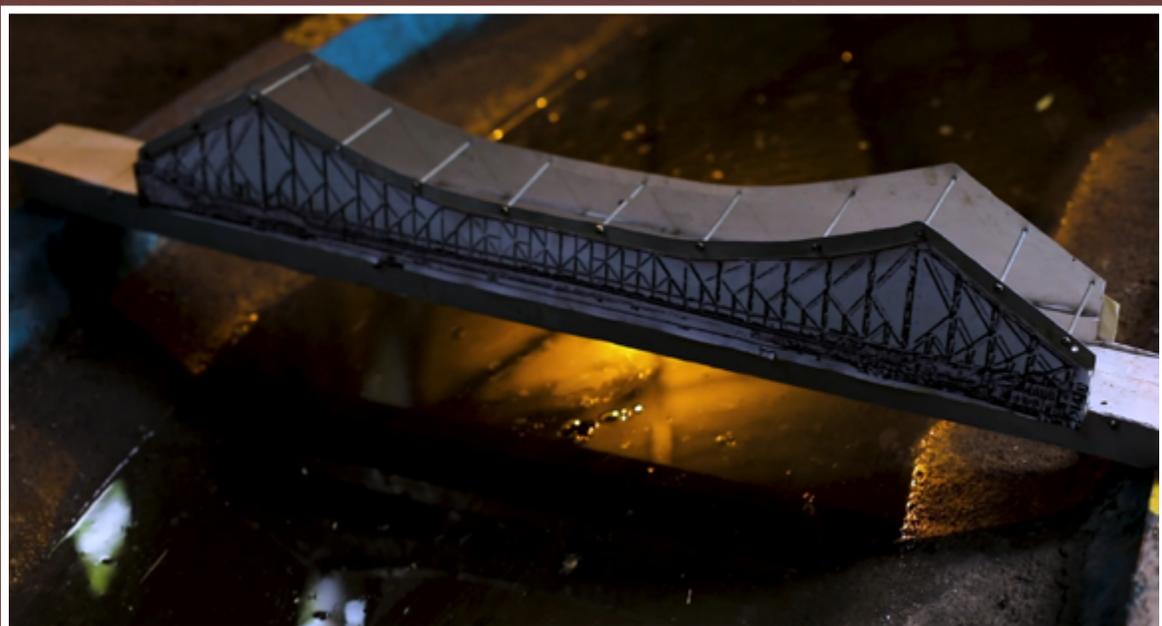
The author can be reached at [anupkumarchanda@gmail.com](mailto:anupkumarchanda@gmail.com)



# The Hydraulic Scaled Model

The Hydraulic Scaled Model, popularly known as the physical model of the river Hooghly and its estuary, is one of the largest physical models in the world. It was created on a 13-acre land in 1974 and replicates a stretch of 235 km of the river Hooghly in a live physical model.

Watch the video: <https://youtu.be/ETeO50Uo4mY>





PAST  
CHAIRPERSONS



---

# LEADERS AT THE HELM

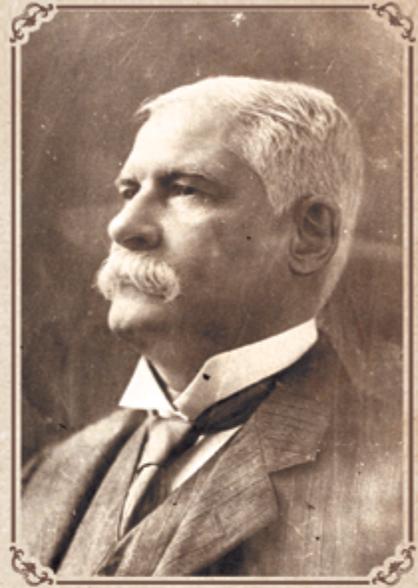
---



W. Duff Bruce  
*Vice-Chairman (1870-1889)*



J. H. Apjohn  
*Vice-Chairman (1891-1901)*



F. G. Dumayne  
*Vice-Chairman (1901-1913)*



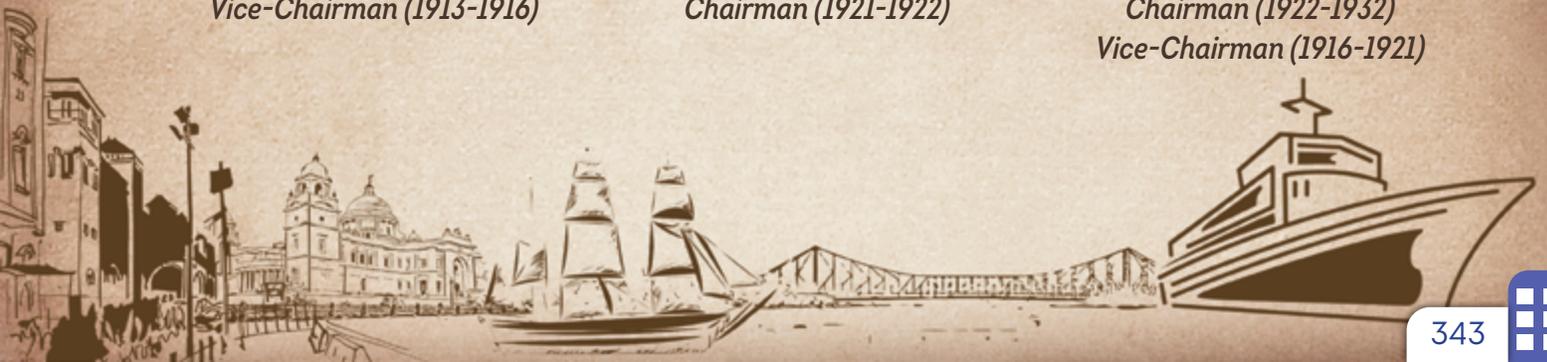
H. J. Hilary  
*Vice-Chairman (1913-1916)*

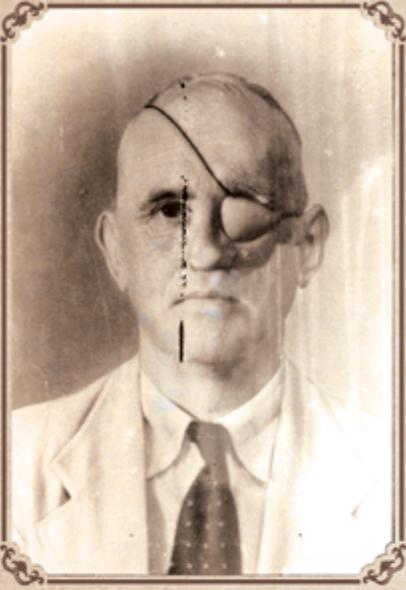


C. D. M. Hindley  
*Chairman (1921-1922)*



S. C. Stuart Williams  
*Chairman (1922-1932)*  
*Vice-Chairman (1916-1921)*





T. M. Elderton  
*Chairman (1932-1947)*



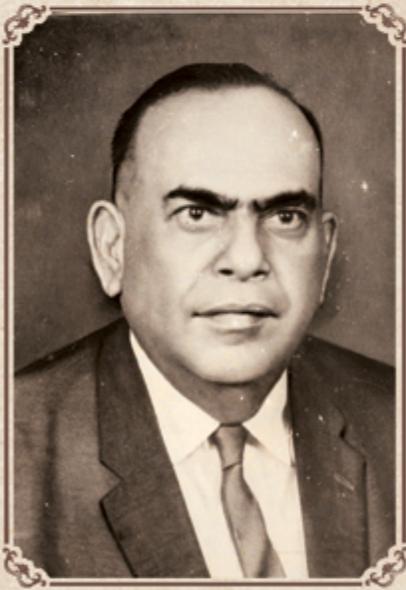
N. M. Ayyar, ICS  
*Chairman (1947-1953)*



R. Gupta, ICS  
*Chairman (1953-1956)*



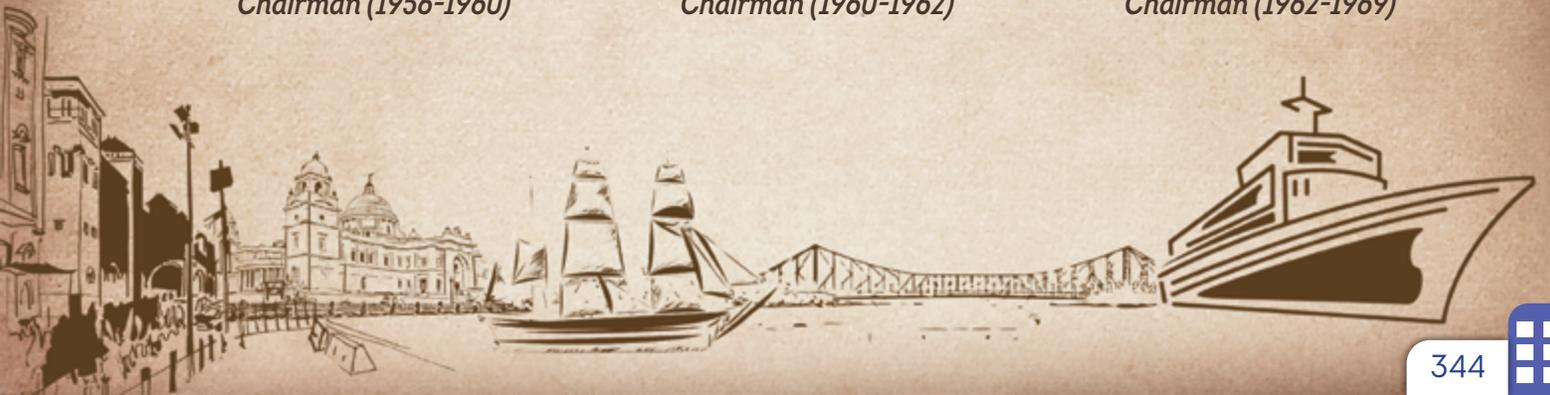
R. K. Mitra, ICS  
*Chairman (1956-1960)*



K. Mitter  
*Chairman (1960-1962)*



B. B. Ghosh  
*Chairman (1962-1969)*

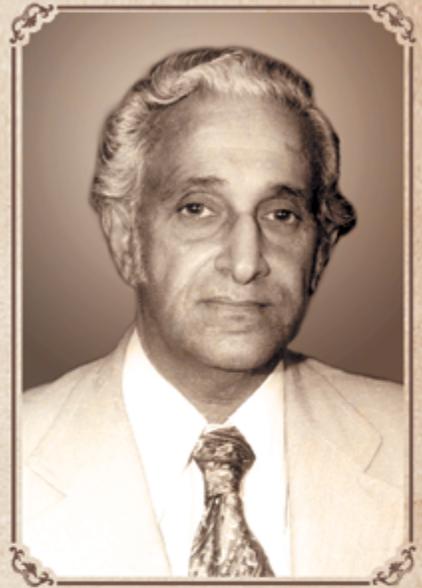




N. C. Sengupta, ICS  
*Chairman (1967-1970)*



K. K. Ray, IAS  
*Chairman (1970-1973)*



P. C. Mitra  
*Chairman (1973-1978)*



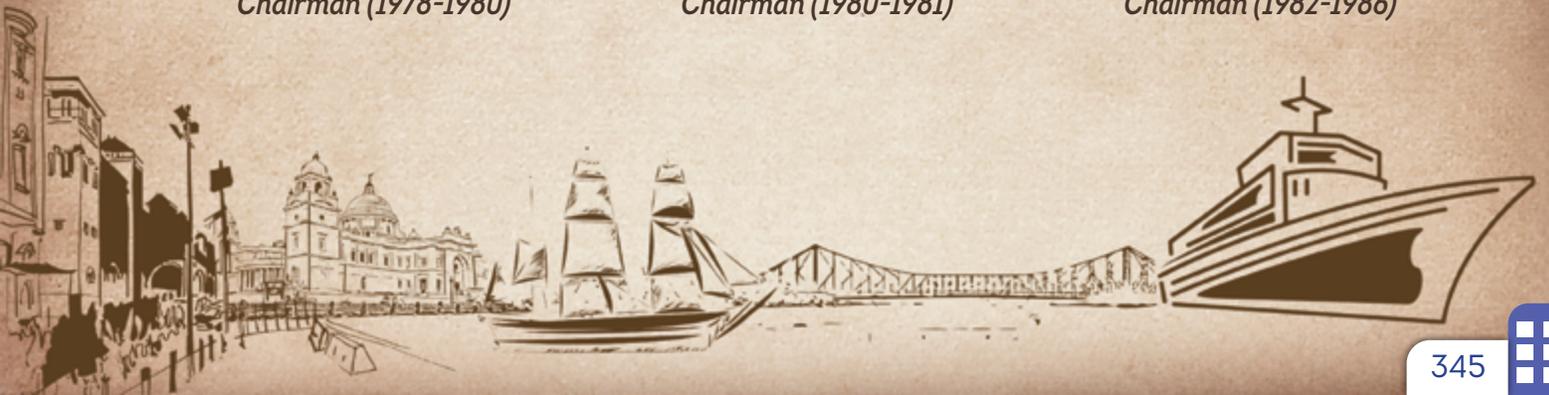
S. R. Das, IAS  
*Chairman (1978-1980)*



R. H. M. D'Silva, IAS  
*Chairman (1980-1981)*

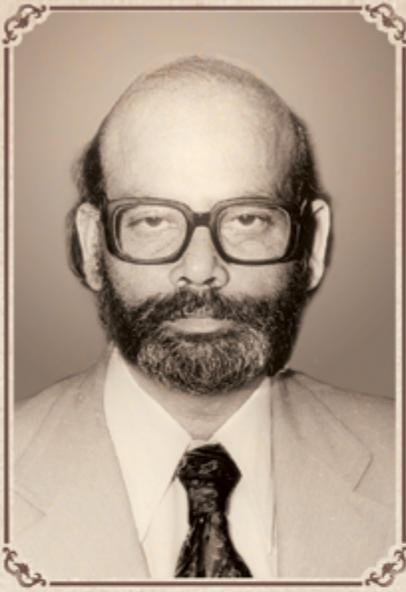


T. C. Dutt, IAS  
*Chairman (1982-1986)*





M. K. Kar Gupta, IAS  
*Chairman (1986-1989)*



Dr. A. C. Ray, IAS  
*Chairman (1989-1993)*



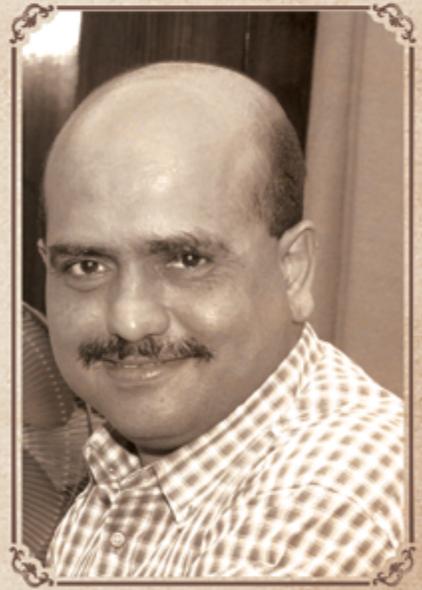
Dr. Bikram Sarkar, IAS  
*Chairman (1993-1997)*



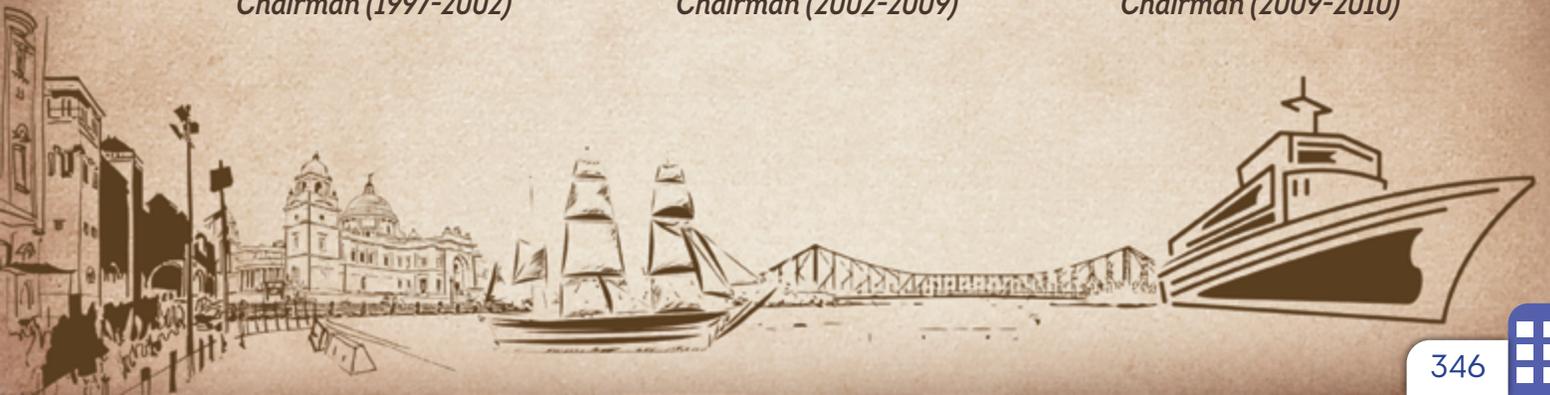
H. P. Roy, IAS  
*Chairman (1997-2002)*



Dr. A. K. Chanda, IAS  
*Chairman (2002-2009)*



A. Majumdar, IAS  
*Chairman (2009-2010)*





Shri AM Ranade, IPS  
*Chairman (2010-2010)*



M. L. Meena, IAS  
*Chairman (2010-2012)*



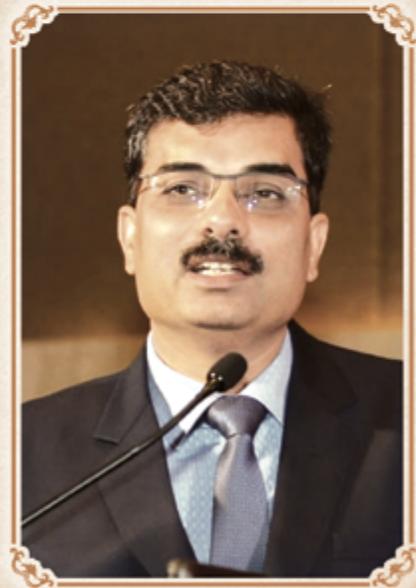
Manish Jain, IAS  
*Chairman (2012-2013)*



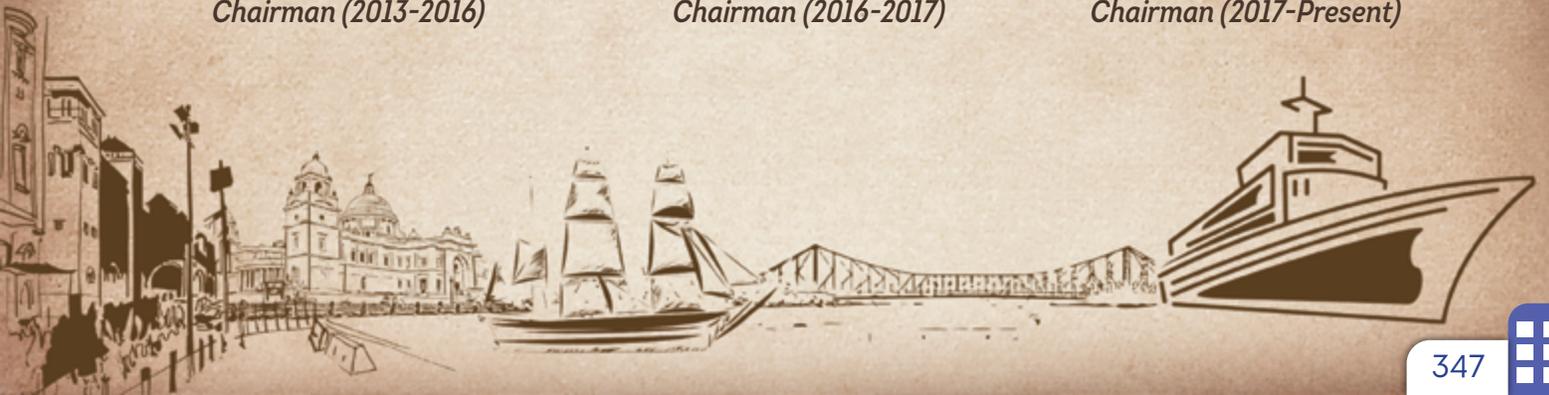
R. P. S. Kahlon, IAS  
*Chairman (2013-2016)*



M. T. Krishna Babu, IAS  
*Chairman (2016-2017)*



Vinit Kumar, IRSEE,  
*Chairman (2017-Present)*



# WHAT THEY SAY



“...I feel proud to work in Kolkata Port for the uniqueness of activities like lock gate opening to let in a ship.”

Biswajit Das  
Marine Deptt



“...transition from manual cargo handling to mechanical has made a great difference.”

Alok Kumar Karmakar  
AC Porter, Traffic Deptt



“...illumination is so good that night work can be done freely.”

Sadananda Maity  
HMEO Operator, TMILL





“...fast evacuation is moto of the Railway Division...”



Smt. Purba Bhattacharjee  
Deputy Manager (Rlys)



“...It is great to be in the team operating this interesting Bascule Bridge”



Samarendra Nath Bagchi  
Mech Engg Deptt



“...HMC in the berths, illumination, plot licencing, all have helped in increasing productivity...”



Shri Y. Kunjumon  
Sr Executive, Operations, TMILL



“...matter of great pride to be associated with the maintenance of this iconic bridge...”



Sunil Kr Agasti  
Civil Deptt



Sunil Kr Agasti  
Junior Engineer Gr - I, Rabindra Setu  
Civil Engineering Deptt.





“...I'm a witness to the changes in access control methods from ID card to Biometric...”

Ashim Kumar Dey  
Inspector, PSO



“...Seeing development over the years.”

Ananda Mallick  
Marine Deptt



“...performing my duty as a lady constable of Kolkata port gives me the sense of shade of a giant banyan tree...”

Uma Basu  
PSO



“...with computerisation work has become smoother...”

Shri Subhendu Sekhar Paul  
Shed Supervisor, ShandCH Division





“...requested GRP to get into train with Railway staff during lockdown...”



Barin Ghosal  
Clerk, Estate Division



“...I feel proud to have worked here when port celebrated 125 years and also 150 years...”



Partha Basak  
Security Guard, PSO



“...words cannot describe what I feel while assisting senior officers to maintain this landmark Howrah Bridge...”



Rabindranath Bera  
Workman, Rabindra Setu



“...I work in the Electrical maintenance jobs of the Bascule Bridge...”



Subodh Kabiraj  
Mech Engg Deptt





“...I'm coming regularly to office in this Covid situation as port has ensured safety measures...”

Koyelia Banerjee  
RO, Estate Div



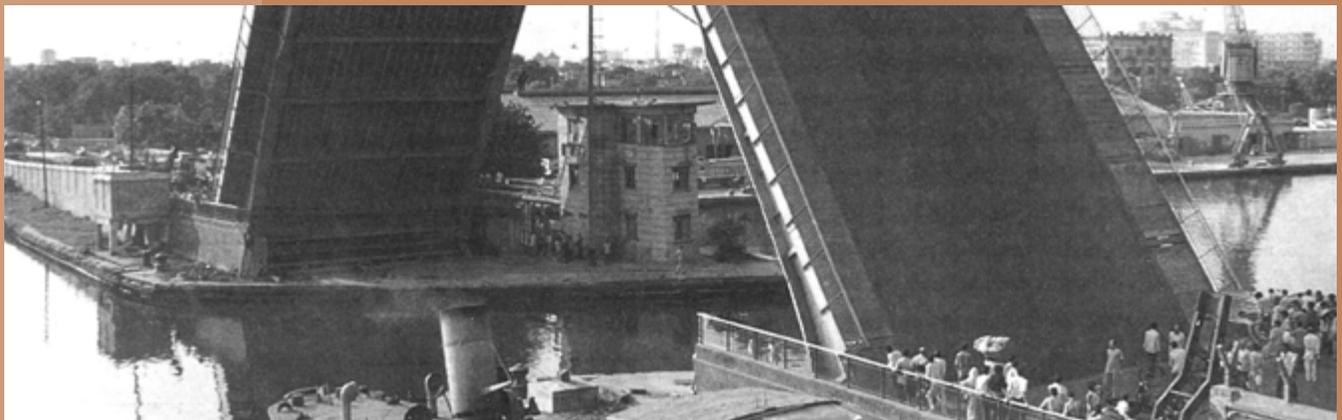
“...I don't have any desire to work in a company other than Syama Prasad Mookerjee Port”

Ram Kripal Kurmi  
Traffic



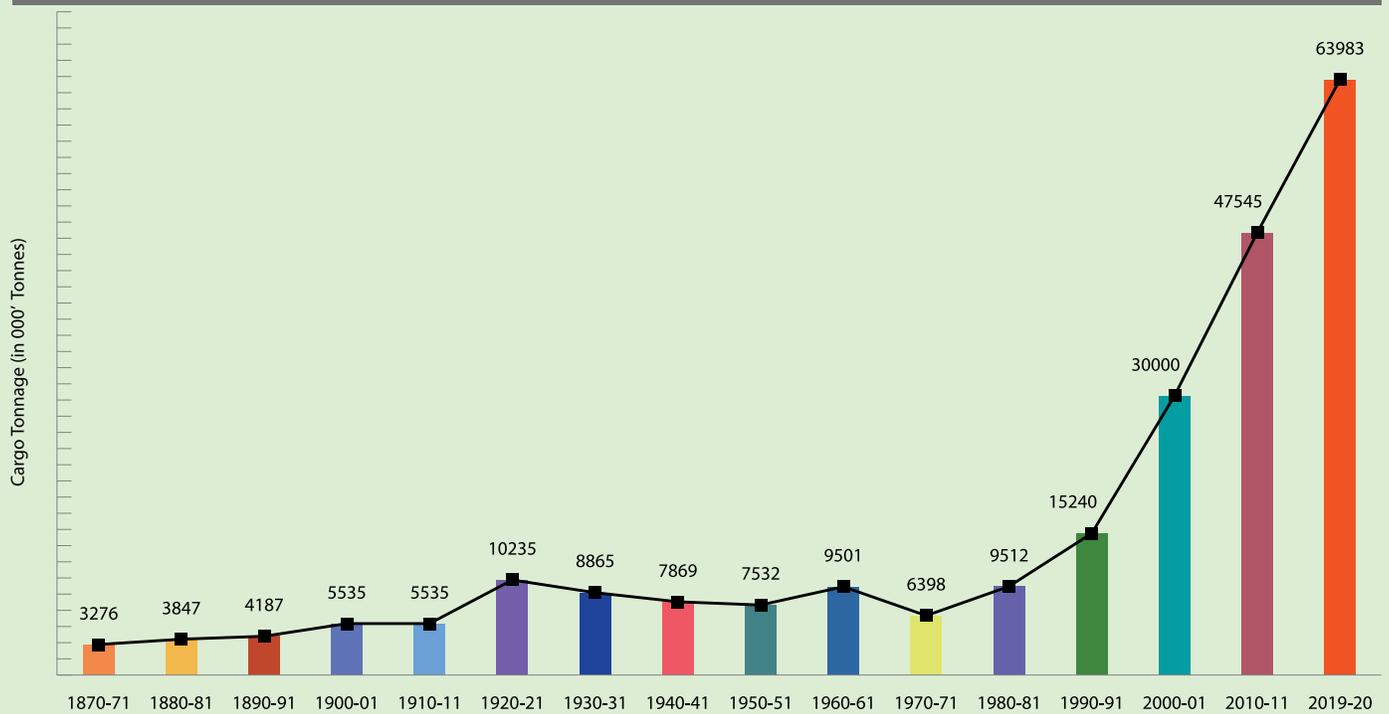
“...we feel proud of our work together in this port...”

Nimai Ghosh  
Basudev Sarkar  
Rabindranath Kar  
Marine Deptt

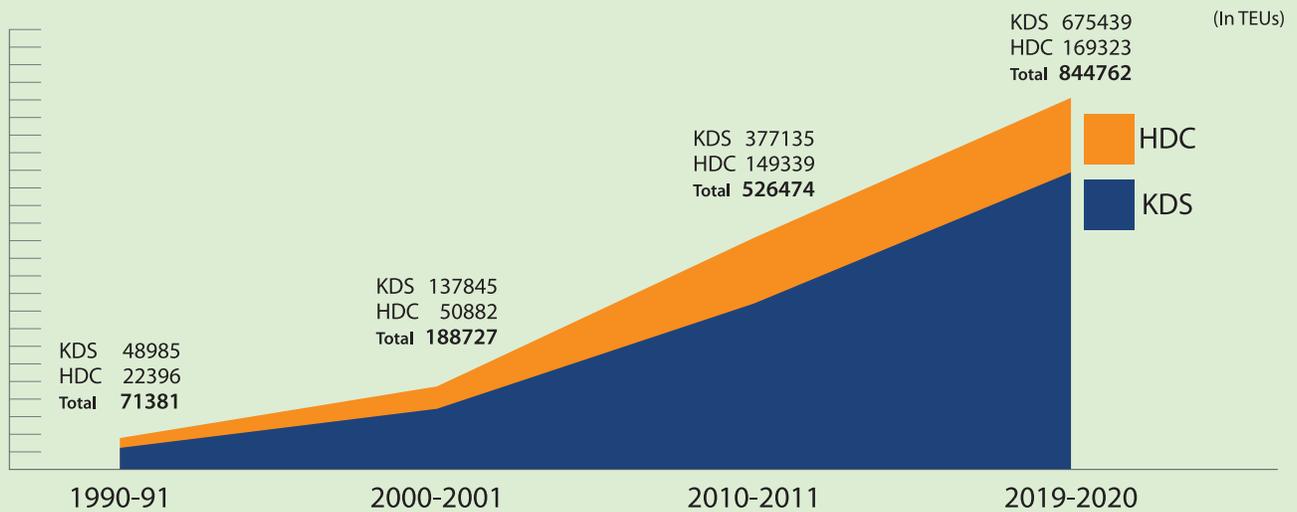


# PORT PERFORMANCE

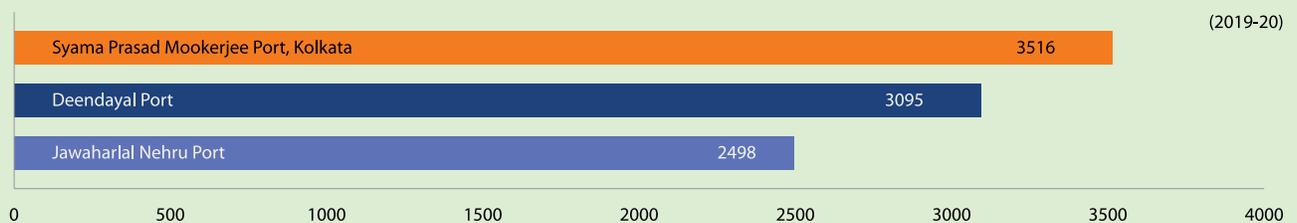
## Upward Trend of Cargo Handling over the Decades



## Continuous Growth in Container Handling over the Decades



## Top in Vessel Traffic among Indian Major Ports





## UTSAV

“Utsav”, a 33-feet high commemorative installation constructed at the site where the ships berthed at the riverside Calcutta Jetties since the early years of the Port, has been designed by the award-winning sculptor, Shri Tapas Sarkar on the Port’s 150th year.

It depicts that ‘unity in association with rhythm gives strength and promise to achieve success’.

The human figures that unite to raise the boat form towards great heights are encircled by other figures in celebration, telling the story of the first riverine port of the country.





## L'ENVOI

*“Out of the silt and the marshes, where the Hooghly winds  
down to the sea,  
Built we a port and a harbour, where the liner can rest at  
her quay;*

*Grew there a trade that is world-wide, as the produce of  
mill, mine and plain  
We bartered for goods from the Westward, the East and  
the Southern main;*

*Fifty years have we laboured and prospered; for how many  
more who shall say*

*Still we look to the future undaunted from our port at the  
head of the Bay.”*

**[From: THE CALCUTTA PORT TRUST: A BRIEF HISTORY OF FIFTY YEARS  
WORK 1870-1920, Published by Thacker, Spink & Co.in 1920]**

...the lines brimming with a quiet confidence and pride, an amused curiosity of what the future holds for the port and a robust optimism to navigate through the odds, are but etched in history, in the pages of a brief history of the port, marking the golden jubilee of the Port's birthday in 1920...

*“...And a hundred years down the line,  
the ‘never-say-die’ port sails thro’ the rain and shine,  
bracing with wars, famines and fates locked,  
peoples displaced, a nation shocked,*

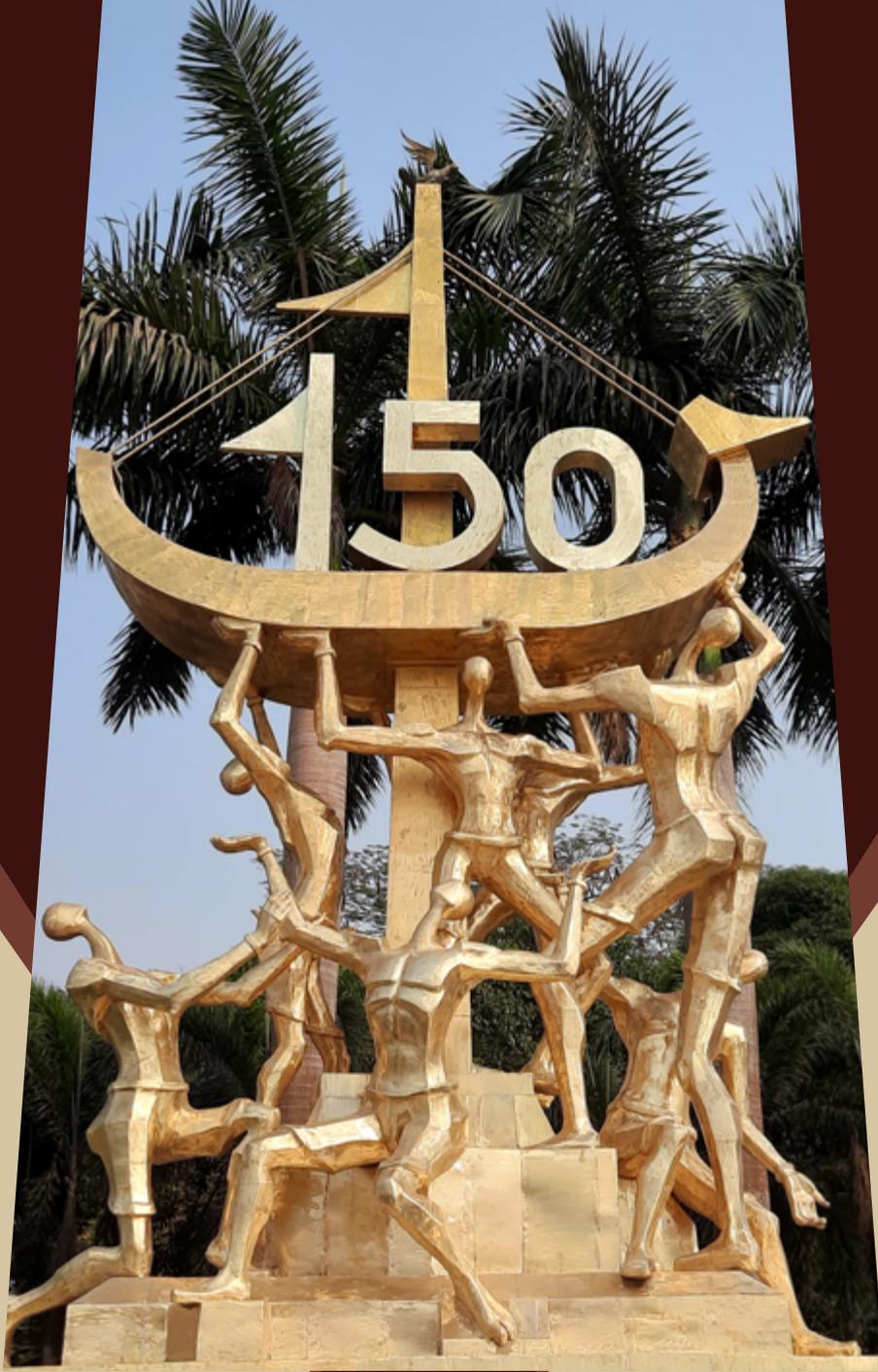
*ferrying a lifeline of wares to its customers’ door,  
with oil and coal and containers more,  
a ready respondent to the time’s mail,  
tools ready n’ sinews reserved when forecasts fail,*

*a new dock down the seas in its forays to the south;  
ready for transshipment at the estuarine mouth,  
ahoy to the the seafarers, a gateway port of the east,  
an emerging hub in inland trade, meeting its timely tryst,*

*surfing through the sky waters set in a future’s rhyme,*

*a port of exchange, a fraternal gateway and a life sublime...”*





श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता  
**SYAMA PRASAD MOOKERJEE PORT, KOLKATA**  
Formerly Kolkata Port Trust

**15, Strand Road, Kolkata 700001**